Electronically Filed in TPUC Docket Room on April 5, 2022 at 4:13 p.m.

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
NASHVILLE, TENNESSEE

IN RE: THE APPLICATION OF JACKSON SUSTAINABILITY COOPERATIVE FOR A DETERMINATION OF EXEMPTION AND IN THE ALTERNATIVE, FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	))))))	**DOCKET NO. 21-00061**

AFFIDAVIT OF CUSTODIAN OF RECORDS OF E A SOLAR, LLC

STATE OF TENNESSEE)

COUNTY OF WILLIAMSON)

Comes the affiant, Dennis Emberling, and after first being duly sworn, states the following under oath:

1. I am over the age of eighteen (18) years and am competent to give oath.

2. I am the Chief Executive Officer of E A Solar, LLC. E A Solar, LLC is the manager of Community Development Enterprises - Jackson I, the solar developer of the Solar Facility referenced in the demand for documents of Tennessee Electric Cooperative Association. Community Development Enterprises - Jackson I, the solar developer, has provided documents in discovery, and those documents are adopted here by reference.

3. As Chief Executive Officer I am a custodian of the all records generated or received by E A Solar, LLC and have the authority to certify the same.

4. The attached records are kept as a matter of regularly conducted business and regular practice of E A Solar, LLC and are to the best of my knowledge, information and belief, accurate records of E A Solar, LLC

5. The attached records are produced as kept in the usual course of business, and are labeled to correspond with the categories in the demand.

6. There are no documents responsive to demand category 4.

7. Documents responsive to demand 6 include the attached documents. Also, the contract with Northern Reliability is responsive to demand category 6. It was provided in discovery by Jackson Sustainability Cooperative.

FURTHER AFFIANT SAITH NOT.

Dennis Emberling

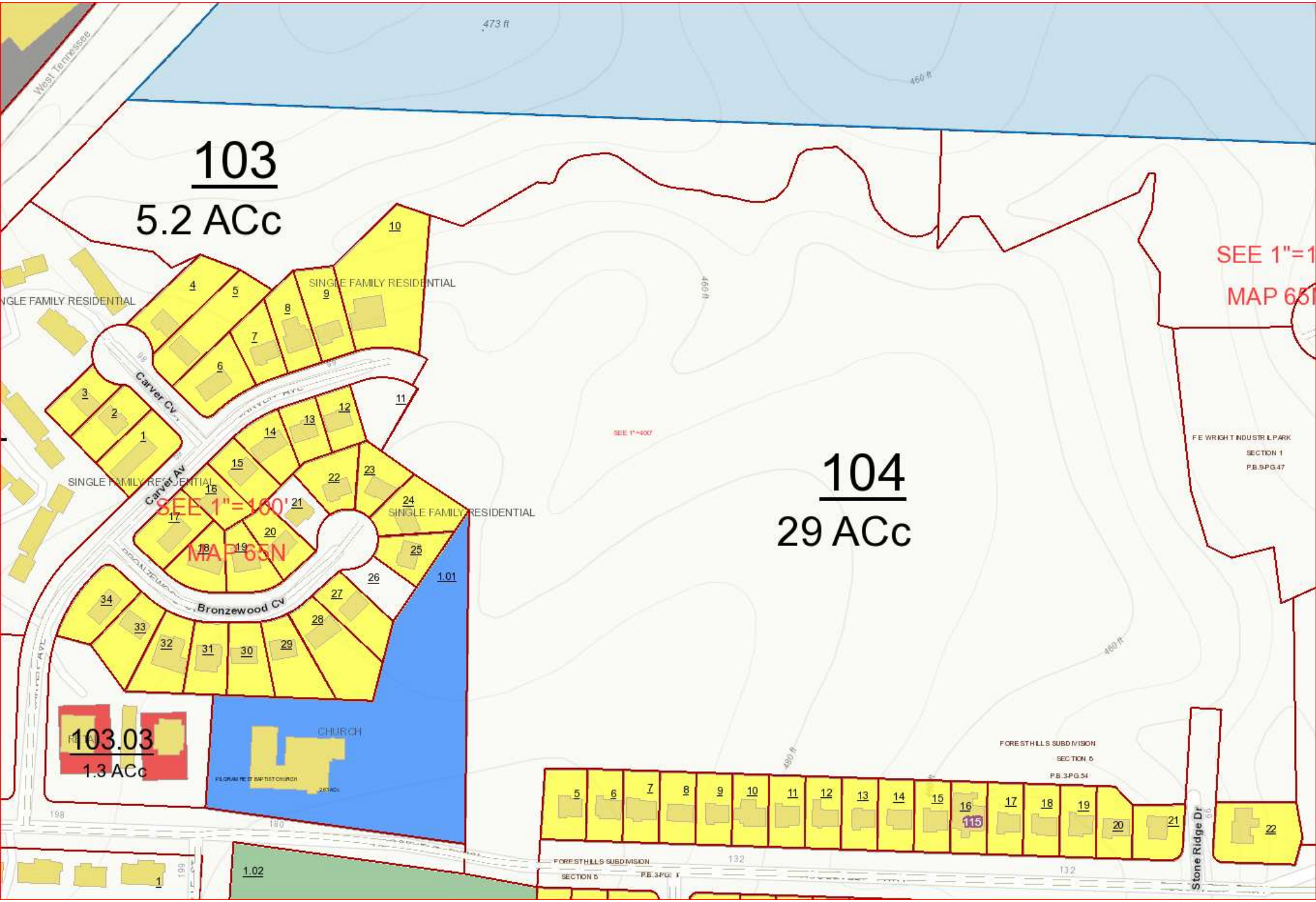
Dennis Emberling, Chief Executive Officer

Sworn to and subscribed before me this the 8th day of March, 2022.

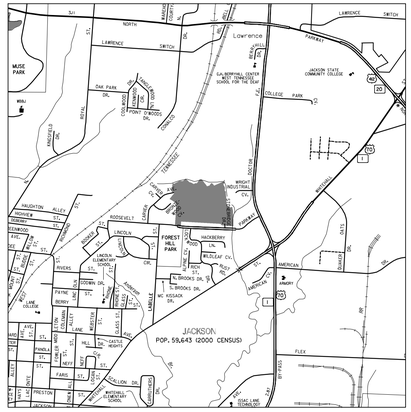
Brandee Perrin
(Notary Public)

BRANDEE PERRIN
STATE OF TENNESSEE NOTARY PUBLIC
DAVIDSON COUNTY

My Commission expires: 9th July 2024


103
5.2 ACc
104
29 ACc
103.03
1.3 ACc
SEE 1"=100'
MAP 65N
SEE 1"=1
MAP 65
SINGLE FAMILY RESIDENTIAL
SINGLE FAMILY RESIDENTIAL
SINGLE FAMILY RESIDENTIAL
Carver Cv
Carver Av
Bronzewood Cv
CHURCH
PILGRIM REST BAPTIST CHURCH
.263 ACc
FORESTHILLS SUBDIVISION
SECTION 5
P.B. 3 PG. 54
FORESTHILLS SUBDIVISION
SECTION 5
P.B. 3 PG. 1
F E WRIGHT INDUSTRIL PARK
SECTION 1
P.B. 9 PG. 47
Stone Ridge Dr
West Tennessee
473 ft
460 ft
480 ft
198
180
132
132
1.01
1.02

EAS000001



VICINITY MAP - NOT TO SCALE

N

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

LEGEND

- PROPERTY LINE
- PROPERTY ADJOINER LINE
- CENTERLINE OF ROAD
- MAJOR CONTOUR (10 FT)
- MINOR CONTOUR (2 FT)
- ▲ 1/2-INCH REBAR WITH L.I. SMITH CAP SET
- △ REBAR FOUND
- □ MONUMENT FOUND
- ○ UNMARKED POINT

BOUNDARY SURVEY FOR: COMMUNITY DEVELOPMENT ENTERPRISES

1104 WHITEHALL STREET
JACKSON, TN 38301

MADISON COUNTY, TENNESSEE

TAX MAP 065 PARCEL 104.00

REFERENCE: BOOK 733, PAGE 731

AREA = +/- 28.50 ACRES

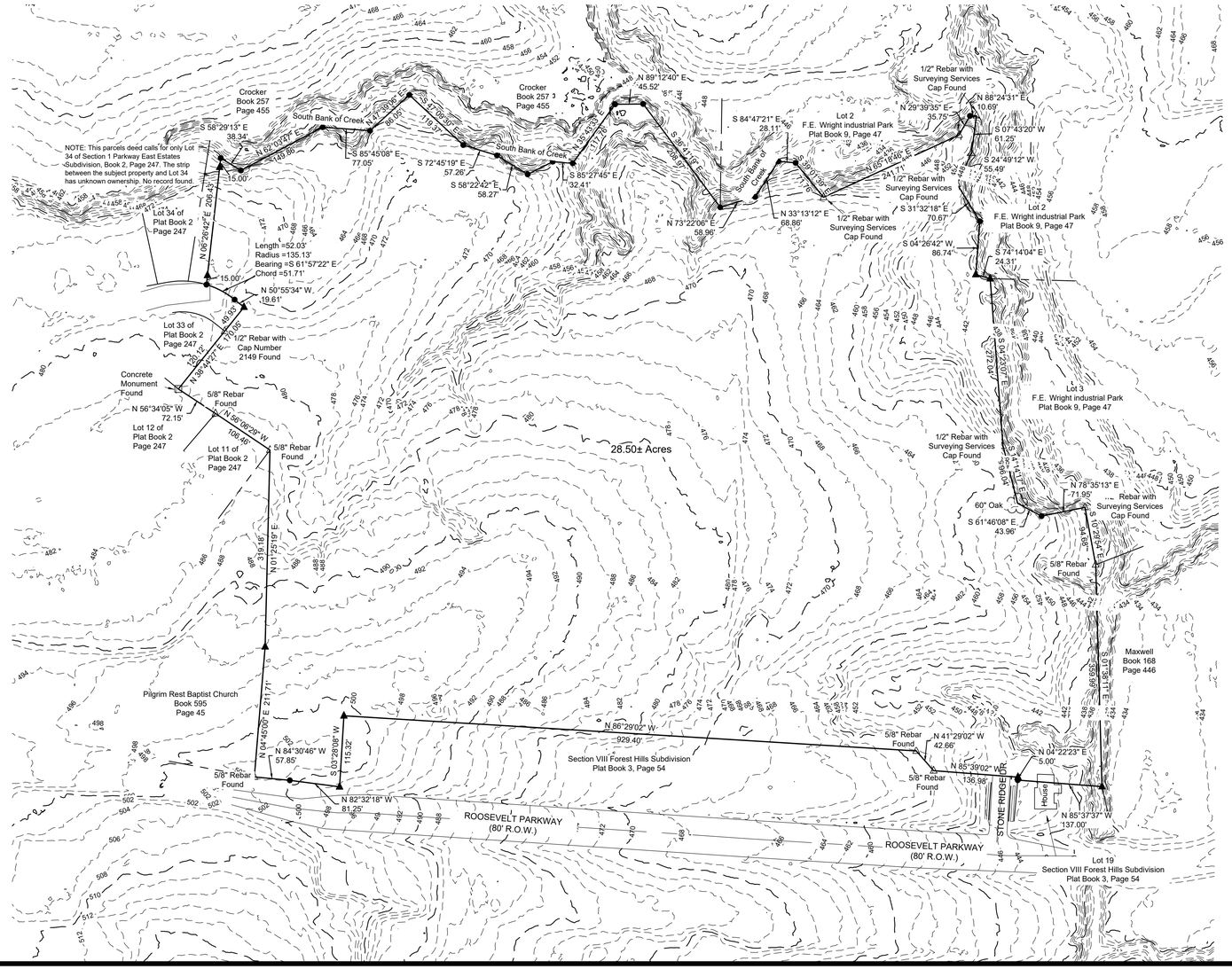
NOTE: THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, COVENANTS, OR RESTRICTIONS, EITHER WRITTEN OR UNWRITTEN. THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT.

THIS SITE LIES WITHIN ZONE X, AREAS OUTSIDE OF 1% ANNUAL CHANCE V (100-YR STORM) FLOODPLAIN, AS INDICATED ON FEMA NFIP FIRM MAP NUMBER 47113CO168E, EFFECTIVE DATE OF AUGUST 3, 2009.

ENCROACHMENT NOTE:
THE HOUSE ON LOT 19 APPEARS TO ENCROACH ONTO THE PROPERTY NEAR THE SOUTH EAST CORNER OF THE SUBJECT PROPERTY.

A 2-FT CONTOUR INTERVAL IS SHOWN HERE-ON.

SURVEY FIELD WORK WAS COMPLETED ON 12/11/2020



I HEREBY CERTIFY THAT THIS IS A CATEGORY II SURVEY AND THAT THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS IN EXCESS OF 1:10,000 USING GPS AND TOTAL STATION SURVEY EQUIPMENT BY THE METHOD OF RANDOM TRAVERSE. THIS SURVEY WAS PERFORMED IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE.

DATE: DECEMBER 23, 2020

WILLIAM P. SMITH, R.L.S
TENNESSEE REGISTRATION NO. 2093

0′ 100′ 200′ 300′

COMMUNITY DEV. ENT. SOLAR MICROGRID

ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TN

REVISIONS

NO.	DESCRIPTION	DATE

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WILLIAM P. SMITH, JR. 2093 REGISTERED LAND SURVEYOR STATE OF TENNESSEE

SHEET: TOPOGRAPHIC BOUNDARY SURVEY
NUMBER: 1 of 1

L.I. Smith and Associates, Inc.
LAND DEVELOPMENT | INFRASTRUCTURE DESIGN
SURVEYING SERVICES
302 North Caldwell Street Paris, TN 38242 , 731-644-1014 | www.lismith.com
475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

DRAWN BY: MBP | CHECKED BY: WPS | SCALE: 1"=100'
PROJECT # 201044 | DATE: 12/23/20

EAS000002

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY & RENEWABLE ENERGY

Guide to the Federal Investment Tax Credit for Commercial Solar Photovoltaics



Photo credit Dennis Schroeder, NREL

Disclaimer: This guide provides an overview of the federal investment tax credit for those interested in commercial solar photovoltaics, or PV. It does not constitute professional tax advice or other professional financial guidance. And it should not be used as the only source of information when making purchasing decisions, investment decisions, or tax decisions, or when executing other binding agreements.

Overview

- The solar investment tax credit (ITC) is a tax credit that can be claimed on federal corporate income taxes for 30% of the cost of a solar photovoltaic (PV) system that is placed in service during the tax year.[1] (Other types of renewable energy are also eligible for the ITC but are beyond the scope of this guidance.)
- To be eligible for the 30% ITC, a solar PV system must have commenced construction on or before December 31, 2019. The tax credit will decrease to 26% for systems commencing construction in 2020, 22% for systems commencing construction in 2021, and 10% for systems commencing construction in 2022 or thereafter. Any PV system placed in service after 2023, regardless of when it commenced construction, can receive a maximum tax credit of 10%.[2]
- Typically, a solar PV system that is eligible for the ITC can also use an accelerated depreciation corporate deduction.

The **U.S. Department of Energy Solar Energy Technologies Office** supports early-stage research and development to improve the affordability, reliability, and performance of solar technologies on the grid. The office invests in innovative research efforts that securely integrate more solar energy into the grid, enhance the use and storage of solar energy, and lower solar electricity costs.

Eligible Projects

To be eligible for the business ITC, the solar PV system must be:

- Used by a business subject to U.S. federal income taxes (i.e., it cannot be used by a tax-exempt entity like a charity)
- Located in the United States or U.S. territories (though can only be used against federal income tax obligations)[3]
- Systems must use new and limited previously used equipment[4]
- Not used to generate energy for heating a swimming pool.

The eligible ITC percentage scales down over time as follows:

- 30% tax credit for projects commencing construction between January 1, 2006, and December 31, 2019, but placed in service before 2024
- 26% tax credit for projects commencing construction between January 1, 2020, and December 31, 2020, but placed in service before 2024
- 22% tax credit for projects commencing construction between January 1, 2021, and December 31, 2021, but placed in service before 2024
- 10% tax credit for projects commencing construction after December 31, 2021, or placed in service after December 31, 2023.[5]

A solar project is considered to have commenced construction if:

- At least 5% of final qualifying project costs are incurred. Expenses have to be "integral" to generating electricity, and equipment and services have to be delivered (or delivered within 3.5 months after payment).
- Or, "physical work of significant nature" is commenced on the project site or on project equipment at the factory. Physical work has to be "integral" to the project. Preliminary activities on site (e.g., clearing the site

or building a fence or an access road) do not count as "integral." The project does not require proof of continuous work if the system is placed in service within four years.[6]

Eligible Expenses

The ITC is calculated by multiplying the applicable tax credit percentage (10%–30%) by the "tax basis," which is the amount invested in eligible property. Eligible property includes the following:

- Solar PV panels, inverters, racking, balance-of-system equipment, and sales and use taxes on the equipment
- Installation costs and indirect costs
- Step-up transformers, circuit breakers, and surge arrestors
- Energy storage devices (if charged by a renewable energy system more than 75% of the time)[7]

Other Incentives and the ITC

For current information on incentives, including incentive-specific contact information, see the Database of State Incentives for Renewables and Efficiency (DSIRE) at www.dsireusa.org.

Electric Utility and State Government Rebates

Under most circumstances, solar PV system rebates provided by a utility or state government are considered taxable income and do not affect the tax basis when calculating the ITC. For example, if the tax basis is $1,000,000 for a PV system installed at a retail business that commenced construction before December 31, 2019 and was placed in service before December 31, 2023, and the state government gives a one-time rebate of $100,000, the ITC would be calculated as follows:

0.3 * $1,000,000 = $300,000[8]

One exception is if the rebate is provided by a utility to a customer for purchasing or installing any "energy conservation measure," including solar PV, at a residence.[9] When this is the case, the utility rebate is subtracted from the tax basis, reducing the amount of the ITC claimed; however, the rebate is not considered taxable income. For example, if the tax basis is $1,000,000 for a PV system installed at an apartment complex and the utility gave a one-time rebate of $100,000, and the project commenced construction before December 31, 2019 and was placed in service before December 31, 2023, the ITC would be calculated as follows:

0.3 * ($1,000,000 - $100,000) = $270,000

Other Incentives

The following are some examples of incentives and policies associated with a solar PV system that typically do not reduce the tax basis related to the ITC (but some may be considered taxable income):

- Revenue from the sale of renewable energy credits or other environmental attributes associated with the electricity generated by the solar PV system[10]
- Payments for a state performance-based incentive
- State and local income tax credits
- State and local property tax exemptions on the equipment
- Taxable state or nonprofit grants
- Loan guarantees
- Tax-exempt and subsidized energy financing (in 2009 or after)
- Depreciation deductions (see below).

Accelerated Depreciation and the Depreciation Bonus

Accelerated Depreciation

A taxpayer who claims the commercial ITC for a solar PV system placed in service can typically also take advantage of accelerated depreciation (Modified Accelerated Cost-Recovery System, or MACRS) to reduce the overall cost of a PV installation. To calculate the income on which federal corporate taxes are owed, a business takes the difference between its revenues and expenses, plus or minus any adjustments to income. Because depreciation is considered an expense, having a larger amount to depreciate during the tax year results in a smaller overall tax liability. Note that while the ITC is a tax *credit*—a dollar-for-dollar reduction in taxes owed—depreciation is a *deduction*, meaning it only reduces a business's taxes by the depreciation amount multiplied by the business's tax rate (see below for an example).

When the commercial ITC[11] is claimed, accelerated depreciation rules allow the full tax basis minus half the ITC to be depreciated over a five-year MACRS depreciation schedule using a half-year convention[12] (where any unused depreciation can be carried forward indefinitely)[13]. Under the rules of this depreciation schedule, taxpayers are allowed to deduct a larger portion of this amount in earlier years, giving them the benefit of a greater immediate reduction in federal tax liability.

Bonus Depreciation

A business with a solar PV system placed in service between January 1, 2008, and September 8, 2010, or between January 1, 2012, and December 31, 2017, can elect to claim a 50% depreciation bonus. Systems placed in service between September 9, 2010 and December 31, 2011 or between January 1, 2018 and December 31, 2022, can elect to claim a 100% bonus depreciation. Starting in 2023, the percentage of capital equipment that can be expensed immediately drops 20% per year (e.g., 80% in 2023 and 60% in 2024) until the provision drops to 0% in 2027.[14]

Example of a Calculation

A generic example can help illustrate how each incentive could be calculated and applied at a business. Consider a business that commenced construction of a $1,000,000 solar PV system in 2021, placed it in service in 2023, and uses the calendar year as its tax year. What is the net effect of claiming the ITC, bonus depreciation, and accelerated depreciation on its 2023 tax liability?

ITC Calculation

As indicated above for a solar PV property that commenced construction in 2021 and was eligible for a 22% ITC,

when the tax basis is $1,000,000, the 22% ITC reduces tax liability by $220,000.

Bonus Depreciation Calculation

Because the business is claiming the ITC, its depreciable basis for the system after applying the ITC is 89% (100% - 22%/2) of the tax basis:

0.89 * $1,000,000 = $890,000

To calculate the bonus depreciation for a solar PV property placed in service in 2023, the business multiplies the depreciable basis by 80%:

0.8 * $890,000 = $712,000

Accelerated Depreciation Calculation

In the example, the business uses accelerated depreciation to determine what amount of depreciation it will deduct in each year from 2023 to 2028. Assuming this five-year recovery period, a half-year convention, and a 200% declining balance method, IRS Publication 946 Table A-1 lists the depreciation rate as 20% for Year 1. The business calculates its accelerated depreciation deduction by taking the difference between the original depreciable basis and the amount claimed for the bonus depreciation and multiplying by the depreciation rate:

0.20 * ($890,000 - $712,000) = $35,600

Total Impact on Tax Liability

Assuming the business has a federal tax rate of 21%, the net impact of depreciation deductions is calculated as:

0.21 * ($712,000 + $35,600) = $156,996

Therefore, the total reduced tax liability for 2023 from depreciation deductions and the ITC is:

$220,000 + $156,996 = $376,996

The business will continue to claim accelerated depreciation deductions for tax years 2024, 2025, 2026, 2027, and 2028—but the specific depreciation rate will vary by year.[15]

Unused Tax Credits

Carryback and Carryforward Rules

Unused tax credits related to the commercial ITC may be carried back 1 year and forward 20 years. After 20 years, one- half of any unused credit can be deducted, with the remaining amount expiring.

Tax Equity Financing

When a business developing a solar project does not have a large tax liability, tax equity financing may be an option to take full advantage of federal tax benefits. The business can partner with a tax equity investor who has a relatively large tax appetite and can make use of the tax benefits. There are the following three commonly used models, although the specific arrangements can be quite complicated:

- **Sale-Leasebacks:** The developer sells the solar PV system to a tax equity investor who leases the system back to the developer.
- **Partnership Flips:** The developer and investor form a partnership, and the economic returns "flip" from the investor to the developer after the investor makes use of the tax benefits and achieves target yields.
- **Inverted Leases:** The developer leases the system to the investor, structuring the agreement in a way that allows the investor to use the tax benefits.

Other Issues

Tax-Exempt Entities

Generally, if the solar PV system is used by a tax-exempt entity such as a school, municipal utility, government agency, or charity, the ITC may not be claimed.

In some states, a tax-exempt entity can indirectly benefit from federal tax benefits related to solar by entering into a *third- party ownership (TPO)* arrangement. Specifically, a tax-exempt entity can agree to purchase the electricity produced by a solar PV system owned and installed by a solar company (who claims the associated federal tax benefits) for an agreed- upon number of years at a set price. This type of TPO arrangement is called a *power purchase agreement (PPA)*. As of June 29, 2019, at least 28 states and Washington, D.C. authorize this type of TPO, 7 states prohibit them, and their legal status is unclear in the rest.[16] Additionally, the ITC cannot be claimed if a tax-exempt entity simply leases the solar equipment, which is another common type of TPO arrangement used in the residential and commercial sectors; thus, in states that do not allows PPAs, tax-exempt entities cannot use the TPO arrangement to capture tax benefits.

Financing

Eligible solar PV equipment purchased through debt financing qualifies for the ITC. However, individuals (including partnerships or limited liability companies), S corporations, and closely-held C corporations financing a solar PV project by borrowing on a "nonrecourse basis" face additional rules that may delay claiming of the ITC. Borrowing on a nonrecourse basis means the borrower is not personally liable to repay the loan, and the lender primarily relies on the solar PV project as collateral. In general, the portion of the solar PV project paid through nonrecourse financing is not immediately

A Note on Recapture Rules

Though the ITC can be claimed in full for the year in which the solar PV system is placed in service, the business claiming the ITC must retain ownership of the system until the sixth year of the system's operation, or the business will be required to repay a portion of the tax credit. Because the ITC "vests" at a rate of 20% per year over five years, any "unvested" portion is recaptured (i.e., repaid to the Department of the Treasury) if something happens during the five years that would have made the project ineligible for the ITC in the first place. For example, if the business claims the ITC and then sells the system a year later, after it has only vested 20%, it will have to repay 80% of the amount it claimed from the ITC to the Department of the Treasury.

included when calculating the ITC (although several exceptions exist); instead, in future tax years, the taxpayer can claim the ITC on the portion of the loan principal (but not the interest) as it is repaid.

Structures and Building Integrated PV

Structures holding the solar PV system may be eligible for the ITC if the solar PV system is designed with the primary goal of electricity generation and other uses of the structure are merely incidental.[17] Though structural components typically do not qualify for the ITC, the IRS noted an exception for components "so specifically engineered that it is in essence part of the machinery or equipment with which it functions."[18]

Claiming the ITC

To claim the ITC, a taxpayer must complete and attach IRS Form 3468 to their tax return. Instructions for completing the form are available at http://www.irs.gov/pub/irs-pdf/i3468.pdf ("Instructions for Form 3468," IRS).

More Information

Ask Questions

Internal Revenue Service (IRS), 1111 Constitution Avenue, N.W., Washington, D.C. 20224, (800) 829-1040.

Find Resources

- The federal statute regarding the ITC: 26 U.S.C. § 48 at www.govinfo.gov.
- Updated information on the status of the ITC: DSIRE at www.dsireusa.org. ■

Endnotes

[1] 126 U.S.C. § 48, https://www.govinfo.gov/content/pkg/USCODE-2011-title26/pdf/USCODE-2011-title26-subtitleA-chap1-subchapA-partIV-subpartE-sec48.pdf.

[2] Tax Cuts and Jobs Act of 2017

[3] The IRS has ruled the ITC can be claimed by U.S. corporations, citizens, or partnerships that own solar in U.S. territories; however, companies and individuals are not eligible to receive the tax benefits if they do not pay federal income tax, which means most Puerto Ricans and Puerto Rican companies are ineligible. Therefore, solar assets in U.S. territories would most likely need to be owned by outside U.S. investors to take advantage of the ITC (Farrell, Mac, Lindsay Cherry, Jeffrey Lepley, Astha Ummat, and Giovanni Pagan. 2018. *Reimagining Grid Solutions: A Better Way Forward for Puerto Rico.* Prepared for the Global Collaboratory Panel. https://sipa.columbia.edu/sites/default/files/embedded-media/Reimagining%20Grid%20Solutions_Final%20SIPA%20REPORT_0.pdf).

[4] No more than 20% of the eligible value of the PV system can be classified as used equipment.

[5] Tax Cuts and Jobs Act of 2017

[6] "Beginning of Construction for the Investment Tax Credit under Section 48." IRS. Notice 2018-59. https://www.irs.gov/pub/irs-drop/n-18-59.pdf.

[7] Additional considerations apply when the energy storage device is also used to store energy generated from a source other than the solar PV system. For more information, see:

• IRS. 2013, February 22. IRS private letter ruling 121432-12. http://www.irs.gov/pub/irs-wd/1308005.pdf.

• Elgqvist, Emma, Kate Anderson, and Edward Settle. 2018. *Federal Tax Incentives for Energy Storage Systems*. Golden, CO: National Renewable Energy Laboratory. NREL/FS-7A40-70384. https://www.nrel.gov/docs/fy18osti/70384.pdf.



Aerial view of solar panels on the rooftop of a building in Rancho Cordova, California. *Photo credit Michele Parry.*

[8] If the project commenced construction between January 1, 2020, and December 31, 2020, and it was placed in service before 2024, the ITC is calculated as 0.26 * $1,000,000 = $260,000.

[9] 26 U.S.C. § 136, https://www.govinfo.gov/app/details/USCODE-2011-title26/USCODE-2011-title26-subtitleA-chap1-subchapB-partIII-sec136.

[10] IRS. 2010, September 3. IRS private letter ruling 201035003. https://www.irs.gov/pub/irs-wd/1035003.pdf.

[11] For projects claiming a 30% ITC, project owners can depreciate 85% of the tax basis, or 100% - 30%/2 = 85% (26 U.S.C. § 168, https://www.govinfo.gov/app/details/USCODE-2017-title26/USCODE-2017-title26-subtitleA-chap1-subchapB-partVI-sec168).

[12] A half-year convention is a tax principle that treats equipment as if it were installed in the middle of the tax year (regardless of when it was actually installed), allowing half a year's depreciation for the first tax year. The half-year convention effectively spreads the five-year MACRS depreciation over six years, with the first year being calculated as half of the 200% declining-balance basis.

[13] Before 2018, any unused depreciation could be carried back 2 years and forward 20 years, but that changed with the passage of the Tax Cuts and Jobs Act of 2017 ("Who Needs Sec. 179 Expensing When 100% Bonus Depreciation is Available?" Thomson Reuters Tax and Accounting. October 5, 2018. https://tax.thomsonreuters.com/news/who-needs-sec-179-expensing-when-100-bonus-depreciation-is-available/).

[14] The bonus depreciation, after 2018, is available for purchased new and used equipment. (Martin, Keith. 2017, December. "How the US Tax Changes Affect Transactions." Norton Rose Fulbright Project Finance Newswire. https://www.nortonrosefulbright.com/en-us/knowledge/publications/68becf68/how-the-us-tax-changes-affect-transactions).

[15] IRS. 2015. *How to Depreciate Property*. Publication 946, Cat. No. 13081F. http://www.irs.gov/pub/irs-pdf/p946.pdf.

[16] DSIRE (Database of State Incentives for Renewables and Efficiency). 2019. *Third-Party Solar PV Power Purchase Agreements.* Updated June 2019. https://www.dsireusa.org/resources/detailed-summary-maps/ ("Detailed Summary Maps").

[17] Meehan, Chris. "Solar Carports, Incentives and the Investment Tax Credit: It's Complicated, Kinda." Solar-Estimate. Last updated August 1, 2019: https://www.solar-estimate.org/news/solar-carports-incentives-investment-tax-credit-113017.

[18] IRS. 2010, October 29. IRS private letter ruling 201043023. https://www.irs.gov/pub/irs-wd/1043023.pdf.

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SOLAR ENERGY TECHNOLOGIES OFFICE

For more information, visit: energy.gov/eere/solar

DOE/EE-2006 • January 2020

FILED

CHARTER
OF
JACKSON SUSTAINABILITY COOPERATIVE

The undersigned person, under the Tennessee Nonprofit Corporation Act, adopts the following Charter for JACKSON SUSTAINABILITY COOPERATIVE.

1. The name of the Corporation is JACKSON SUSTAINABILITY COOPERATIVE.

2. The purpose or purposes for which this Corporation is formed are:

   (a) To assist its members in sharing supplemental electrical energy from renewable sources while contributing to the redevelopment of the Roosevelt Parkway neighborhood in Jackson, Tennessee;

   (b) To promote corporate goals for renewable energy where the Members cannot economically justify building, maintaining and operating their own renewable solar energy facilities;

   (c) To assist its members in the efficient and economical use of energy;

   (d) To use smart meter technology to allow members who share a solar facility to directly connect to the solar facility and share supplemental energy with other members;

   (e) To engage in research and to promote and develop energy conservation and sources and methods of conserving, producing, converting, and delivering energy;

   (f) To accomplish improved energy efficiency by acquiring the ability to monitor electricity usage by individual circuits;

   (g) To promote energy conservation through research into methods of conserving, producing, converting, and delivering energy;

   (h) To provide programs and training in solar energy for members by enhancing labor skills, and providing educational enrichment and curricula for schools and colleges.

   (i) To purchase, lease as lessee, and in any manner acquire the use of solar equipment, machines, supplies, and systems necessary or useful for furnishing supplemental electrical energy to its members in carrying out the purposes of the Corporation;

   (j) To acquire the use of, to the extent permitted by law, the franchises, rights, privileges, licenses, rights-of-way and easements necessary or useful for furnishing supplemental electrical energy to its members in carrying out the purposes of the Corporation;

   (k) To purchase, lease as lessee, or in any other manner acquire or dispose of any and all real and personal property or any interest therein necessary or useful for furnishing

B1034-0020 05/14/2021 8:34 AM Received by Tennessee Secretary of State Tre Hargett

supplemental electrical energy to its members in carrying out the purposes of the Corporation;

(l) To borrow money, to make and issue bonds, notes and other evidences of indebtedness, secured or unsecured, and used in payment for property acquired, or for any of the other purposes of the Corporation, to secure the payment by deeds of trust upon, or by the pledge of any other lien upon, any or all of the property, rights, privileges or permits of the Corporation, wheresoever situated, acquired or to be acquired;

(m) To do and perform, either for itself or its members, any and all acts and things, and to have and exercise any and all of the foregoing purposes or as may be permitted by the Acts under which the Corporation is formed, for any lawful act or activity necessary or convenient to effect the foregoing purposes, including, but not limited to, the exercise of all powers granted to electric membership corporations as set forth in the Tennessee Electric G&T Cooperative Act of 2009, T.C.A. § 48-69-101 *et seq.*, as amended from time to time.

3. (a) The Corporation is a not for profit corporation organized for the benefit of its members pursuant to the provisions of the Tennessee Electric G&T Cooperative Act of 2009, T.C.A. § 48-69-101 *et seq*.

(b) The Corporation is a mutual benefit corporation.

(c) Membership and membership rights, privileges and obligations shall be as prescribed in the Bylaws of the Corporation.

(d) The private property of the Members of the Corporation shall be exempt from execution for the debts of the Corporation.

4. The period of duration of this Corporation is perpetual.

5. The name and complete address of the Corporation's registered agent is John A. Beam, III, P.O. Box 280240, 709 Taylor Street, Nashville, Davidson County, Tennessee 37208.

6. The name and address of the incorporator is: John A. Beam, III, P.O. Box 280240, Nashville, Davidson County, Tennessee 37228-0240.

7. The address of the Corporation's principal office is 1031 Greystone Square, Jackson, Madison County, Tennessee 38305.

8. The affairs of the Corporation shall be managed by a Board of Directors. The number of the Directors of the Corporation and the method of their election shall be established in the Bylaws. The number of initial, organizational Directors of this Corporation shall be five persons. The five organizational Directors shall serve until the solar facility is tested, commissioned, and certified, and then at the next annual meeting of the members the Directors will be elected under the process established in the Bylaws. The names and addresses of the organizational Directors who shall

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manage the affairs and business of the Corporation until the election of the Directors after the solar facility is operational are listed as follows:

(a) Dr. Ann Keyl, 445 Walnut Street, Jackson, TN 38305
(b) Mr. Robert Starr, 140 Sunnyvalley Drive, Jackson, TN 38305
(c) Mr. Jeff Frieling, 161 Shadow Ridge Drive, Jackson, TN 38305
(d) Dennis Emberling, 5548 Trousdale Drive, Brentwood, TN 37027
(e) David Shimon, 19840 W. Dixie Hwy, Unit #3311, Miami, FL 33180

9. The Corporation may be dissolved under provision established in the Bylaws.

10. Directors shall not have personal liability to the Corporation for monetary damages for a breach of fiduciary duty as a Director. This limitation shall not eliminate or limit the liability of the director for any breach of a director's duty of loyalty to the corporation or for any acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law.

11. Except as specifically limited in Section 48-58-502 of the Tennessee Nonprofit Corporation Act, this corporation shall indemnify against liability incurred in a proceeding by any individual made a party to the proceeding because he or she was or is a director or officer of this Corporation if the person conducted himself or herself in good faith and reasonably believed that:

(a) In the case of conduct in his or her official capacity with the Corporation, the conduct was in the Corporation's best interest;

(b) In all other cases, the conduct was at least not opposed to the best interest of the Corporation;

(c) In the case of any criminal proceeding the individual had no reasonable cause to believe the conduct was unlawful; and

(d) Conduct with respect to an employee benefit plan for a purpose reasonably believed to be in the interest of the participants and beneficiaries of the plan and the conduct was at least not opposed to their best interest.

12. The document is to be effective upon filing by the Secretary of State.

Dated this 14th day of May, 2021.

John A. Beam, III, Incorporator

BK/PG: CH42/1400-1403
21006751

4 PGS:AL-CHARTER	
MARIE BATCH: 224679	05/17/2021 - 10:22 AM
VALUE	0.00
MORTGAGE TAX	0.00
TRANSFER TAX	0.00
RECORDING FEE	5.00
ARCHIVE FEE	0.00
DP FEE	2.00
REGISTER'S FEE	0.00
TOTAL AMOUNT	7.00

STATE OF TENNESSEE, MADISON COUNTY
ANGIE BYERS
REGISTER OF DEEDS

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How big are Power line losses?

blog.se.com/energy-management-energy-efficiency/2013/03/25/how-big-are-power-line-losses

Jacques Schonek March 25, 2013



Electricity has to be transmitted from large power plants to the consumers via extensive networks. The transmission over long distances creates power losses. The major part of the energy losses comes from Joule effect in transformers and power lines. The energy is lost as heat in the conductors.

Considering the main parts of a typical Transmission & Distribution network, here are the average values of power losses at the different steps*:

- **1-2%** – Step-up transformer from generator to Transmission line
- **2-4%** – Transmission line
- **1-2%** – Step-down transformer from Transmission line to Distribution network
- **4-6%** – Distribution network transformers and cables

The **overall losses** between the power plant and consumers is then in the range **between 8 and 15%.**

Is it the biggest challenge?

This must not be mixed up with the **efficiency of power plants** like nuclear, coal-fired or natural gas turbine. These technologies are based on a thermodynamic cycle, which efficiency is **in the order of 35%**. This means that the combustion of coal, for example, will produce heat, which will be converted into mechanical energy and then into electricity.

The global transformation is summarized on the picture below where “units” represent units of energy.

From the energy assessment, it can be concluded that 100 units saved at home can save 300 units saved at the power plant. This should be a real encouragement to save energy for a greener environment.

Don’t mix up heat and electricity!

However, it is important to note that the units saved at the power plant are units of heat, and not units of electrical energy. Each unit saved at home represents one unit of electrical energy saved at the power plant, in addition to the energy saved along the line. As mentioned earlier, this represent between 8 and 15% of the electrical energy produced.

Otherwise, this energy assessment relates to fuel burning power plants, and not to renewable energy like hydro-electricity or wind turbines. These technologies have a much better efficiency and do not produce heat for the energy conversion. The 100 units saved at home represent much less than 300 units saved at the power plant.

But this is not a good reason for wasting electricity!

*Reference: IEC document “Efficient Electrical Energy Transmission and Distribution” (2007)

Department of the Treasury
Internal Revenue Service

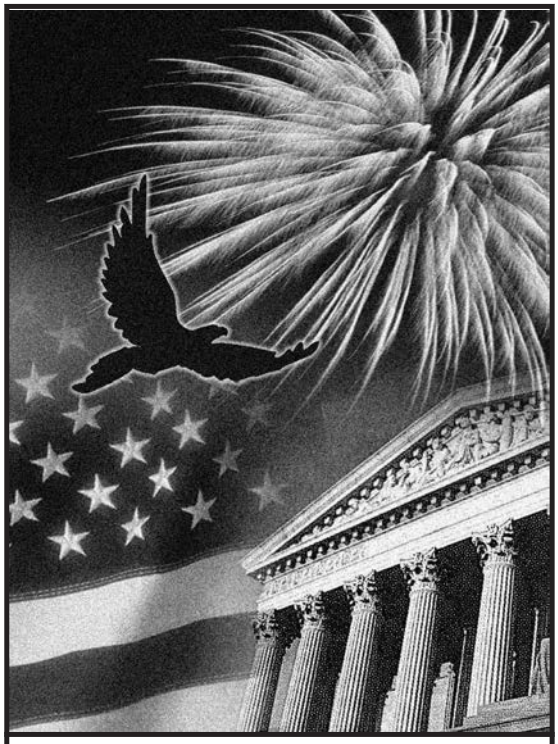
Publication 946
Cat. No. 13081F

How To Depreciate Property

- **Section 179 Deduction**
- **Special Depreciation Allowance**
- **MACRS**
- **Listed Property**

For use in preparing

2019 Returns



Get forms and other information faster and easier at:
- *IRS.gov* (English)
- *IRS.gov/Spanish* (Español)
- *IRS.gov/Chinese* (中文)
- *IRS.gov/Korean* (한국어)
- *IRS.gov/Russian* (Русский)
- *IRS.gov/Vietnamese* (TiếngViệt)

Mar 23, 2020

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Future Developments

For the latest information about developments related to Pub. 946, such as legislation enacted after this publication was published, go to *IRS.gov/Pub946*.

What's New for 2019

Increased section 179 deduction dollar limits. The maximum you can elect to deduct for most section 179 property you placed in service in tax years beginning in 2019 is $1,020,000 ($1,055,000 for qualified enterprise zone property). This limit is reduced by the amount by which the cost of section 179 property placed in service during the tax year exceeds $2,550,000. See *Dollar Limits* in chapter 2.

Also, the maximum section 179 expense deduction for sport utility vehicles placed in service in tax years beginning in 2019 is $25,500.

Second generation biofuel plant property. The special depreciation allowance has been extended to include qualified second generation biofuel plant property placed in service before January 1, 2021. See *Qualified Second Generation Biofuel Plant Property* in chapter 3.

Certain race horses. The 3-year recovery period has been extended for race horses 2 years old or younger placed in service before January 1, 2021. See *Which Property Class Applies* in chapter 4.

Qualified motorsports entertainment complexes. The 7-year recovery period has been extended for qualified motorsports entertainment complexes placed in service before January 1, 2021. See *Which Property Class Applies* in chapter 4.

Qualified Indian reservation property. The accelerated recovery period for qualified Indian reservation property has been extended for property placed in service before January 1, 2021. See *Indian Reservation Property* in chapter 4.

Depreciation limits on business vehicles. The total section 179 deduction and depreciation you can deduct for a passenger automobile, including a truck or van, you use in your business and first placed in service in 2019 is $10,100, if the special depreciation allowance does not apply. See *Maximum Depreciation Deduction* in chapter 5.

What's New for 2020

Section 179 deduction dollar limits. For tax years beginning in 2020, the maximum section 179 expense deduction is $1,040,000 ($1,075,000 for qualified enterprise zone property). This limit is reduced by the amount by which the cost of section 179 property placed in service during the tax year exceeds $2,590,000.

Also, the maximum section 179 expense deduction for sport utility vehicles placed in service in tax years beginning in 2020 is $25,900.

The increased section 179 deduction will not apply to qualified empowerment zone property placed in service after December 31, 2020.

Expiration of the special depreciation allowance for qualified second generation biofuel plant property. The special depreciation allowance will not apply to qualified second generation biofuel plant property placed in service after December 31, 2020.

Expiration of the treatment for certain race horses. The 3-year recovery period for race horses 2 years old or younger will not apply to horses placed in service after December 31, 2020.

Expiration of the treatment for qualified motorsports entertainment complexes. Qualified motorsports entertainment complexes placed in service after December 31, 2020, will not be treated as 7-year property under MACRS.

Expiration of the accelerated depreciation for qualified Indian reservation property. The accelerated recovery period for qualified Indian reservation property will not apply to property placed in service after December 31, 2020.

Reminders

Photographs of missing children. The Internal Revenue Service is a proud partner with the *National Center for Missing & Exploited Children® (NCMEC)*. Photographs of missing children selected by the Center may appear in this publication on pages that would otherwise be blank. You can help bring these children home by looking at the photographs and calling 1-800-THE-LOST (1-800-843-5678) if you recognize a child.

Introduction

This publication explains how you can recover the cost of business or income-producing property through deductions for depreciation (for example, the special depreciation allowance and deductions under the Modified Accelerated Cost Recovery System (MACRS)). It also explains how you can elect to take a section 179 deduction,

instead of depreciation deductions, for certain property and the additional rules for listed property.

CAUTION *The depreciation methods discussed in this publication generally do not apply to property placed in service before 1987. For more information, see Pub. 534, Depreciating Property Placed in Service Before 1987.*

Definitions. Many of the terms used in this publication are defined in the *Glossary* near the end of the publication. Glossary terms used in each discussion under the major headings are listed before the beginning of each discussion throughout the publication.

Do you need a different publication? The following table shows where you can get more detailed information when depreciating certain types of property.

For information on depreciating:	See Publication:
A car	463, Travel, Gift, and Car Expenses
Residential rental property	527, Residential Rental Property (Including Rental of Vacation Home)
Office space in your home	587, Business Use of Your Home (Including Use by Daycare Providers)
Farm property	225, Farmer's Tax Guide

Comments and suggestions. We welcome your comments about this publication and your suggestions for future editions.

You can send us comments through *IRS.gov/FormComments*. Or you can write to:

Internal Revenue Service
Tax Forms and Publications
1111 Constitution Ave. NW, IR-6526
Washington, DC 20224

Although we can't respond individually to each comment received, we do appreciate your feedback and will consider your comments as we revise our tax forms, instructions, and publications. We can't answer tax questions sent to the above address.

Tax questions. If you have a tax question not answered by this publication or *How To Get Tax Help* section at the end of this publication, go to the IRS Interactive Tax Assistant page at *IRS.gov/Help/ITA* where you can find topics using the search feature or by viewing the categories listed.

Getting tax forms, instructions, and publications. Visit *IRS.gov/Forms* to download current and prior-year forms, instructions, and publications.

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1.

Overview of Depreciation

Introduction

Depreciation is an annual income tax deduction that allows you to recover the cost or other basis of certain property over the time you use the property. It is an allowance for the wear and tear, deterioration, or obsolescence of the property.

This chapter discusses the general rules for depreciating property and answers the following questions.

- What property can be depreciated?
- What property cannot be depreciated?
- When does depreciation begin and end?
- What method can you use to depreciate your property?
- What is the basis of your depreciable property?
- How do you treat repairs and improvements?
- Do you have to file Form 4562?
- How do you correct depreciation deductions?

Useful Items

You may want to see:

Publication

- ❑ **534** Depreciating Property Placed in Service Before 1987
- ❑ **535** Business Expenses
- ❑ **538** Accounting Periods and Methods
- ❑ **551** Basis of Assets

Form (and Instructions)

- ❑ **Sch C (Form 1040 or 1040-SR)** Profit or Loss From Business
- ❑ **2106** Employee Business Expenses
- ❑ **3115** Application for Change in Accounting Method
- ❑ **4562** Depreciation and Amortization

See chapter 6 for information about getting publications and forms.

What Property Can Be Depreciated?

Terms you may need to know (see Glossary):

Adjusted basis

Basis

Commuting

Disposition

Fair market value

Intangible property

Listed property

Placed in service

Tangible property

Term interest

Useful life

You can depreciate most types of tangible property (except land), such as buildings, machinery, vehicles, furniture, and equipment. You can also depreciate certain intangible property, such as patents, copyrights, and computer software.

To be depreciable, the property must meet all the following requirements.

- It must be property you own.
- It must be used in your business or income-producing activity.
- It must have a determinable useful life.
- It must be expected to last more than 1 year.

The following discussions provide information about these requirements.

Property You Own

To claim depreciation, you must usually be the owner of the property. You are considered as owning property even if it is subject to a debt.

Example 1. You made a down payment to purchase rental property and assumed the previous owner's mortgage. You own the property and you can depreciate it.

Example 2. You bought a new van that you will use only for your courier business. You will be making payments on the van over the next 5 years. You own the van and you can depreciate it.

Leased property. You can depreciate leased property only if you retain the incidents of ownership in the property (explained below). This means you bear the burden of exhaustion of the capital investment in the property. Therefore, if you lease property from someone to use in your trade or business or for the production of income, generally you cannot depreciate its cost because you do not retain the incidents of ownership. You can, however, depreciate any capital improvements you make to the property. See *How Do You Treat Repairs and Improvements* later in this chapter, and *Additions and Improvements* under *Which Recovery Period Applies* in chapter 4.

If you lease property to someone, you can generally depreciate its cost even if the lessee (the person leasing from you) has agreed to preserve, replace, renew, and maintain the property. However, if the lease provides that the lessee is to maintain the property and return to you the same property or its equivalent in value at the expiration of the lease in as good condition and value as when leased, you cannot depreciate the cost of the property.

Incidents of ownership. Incidents of ownership in property include the following.

- The legal title to the property.
- The legal obligation to pay for the property.
- The responsibility to pay maintenance and operating expenses.
- The duty to pay any taxes on the property.
- The risk of loss if the property is destroyed, condemned, or diminished in value through obsolescence or exhaustion.

Life tenant. Generally, if you hold business or investment property as a life tenant, you can depreciate it as if you were the absolute owner of the property. However, see *Certain term interests in property* under *Excepted Property*, later.

Cooperative apartments. If you are a tenant–stockholder in a cooperative housing corporation and use your cooperative apartment in your business or for the production of income, you can depreciate your stock in the corporation, even though the corporation owns the apartment.

Figure your depreciation deduction as follows.

1. Figure the depreciation for all the depreciable real property owned by the corporation in which you have a proprietary lease or right of tenancy. If you bought your cooperative stock after its first offering, figure the depreciable basis of this property as follows.
   a. Multiply your cost per share by the total number of outstanding shares, including any shares held by the corporation.
   b. Add to the amount figured in (a) any mortgage debt on the property on the date you bought the stock.
   c. Subtract from the amount figured in (b) any mortgage debt that is not for the depreciable real property, such as the part for the land.

2. Subtract from the amount figured in (1) any depreciation for space owned by the corporation that can be rented but cannot be lived in by tenant–stockholders.
3. Divide the number of your shares of stock by the total number of outstanding shares, including any shares held by the corporation.
4. Multiply the result of (2) by the percentage you figured in (3). This is your depreciation on the stock.

Your depreciation deduction for the year cannot be more than the part of your adjusted basis in the stock of the corporation that is allocable to your business or income-producing property. You must also reduce your depreciation deduction if only a portion of the property is used in a business or for the production of income.

Example. You figure your share of the cooperative housing corporation's depreciation to be $30,000. Your adjusted basis in the stock of the corporation is $50,000. You use one half of your apartment solely for business purposes. Your depreciation deduction for the stock for the year cannot be more than $25,000 (1/2 of $50,000).

Change to business use. If you change your cooperative apartment to business use, figure your allowable depreciation as explained earlier. The basis of all the depreciable real property owned by the cooperative housing corporation is the smaller of the following amounts.

- The fair market value of the property on the date you change your apartment to business use. This is considered to be the same as the corporation's adjusted basis minus straight line depreciation, unless this value is unrealistic.
- The corporation's adjusted basis in the property on that date. Do not subtract depreciation when figuring the corporation's adjusted basis.

If you bought the stock after its first offering, the corporation's adjusted basis in the property is the amount figured in (1) above. The fair market value of the property is considered to be the same as the corporation's adjusted basis figured in this way minus straight line depreciation, unless the value is unrealistic.

For a discussion of fair market value and adjusted basis, see Pub. 551.

Property Used in Your Business or Income-Producing Activity

To claim depreciation on property, you must use it in your business or income-producing activity. If you use property to produce income (investment use), the income must be taxable. You cannot depreciate property that you use solely for personal activities.

Partial business or investment use. If you use property for business or investment purposes and for personal purposes, you can deduct depreciation based only on the business or investment use. For example, you cannot deduct depreciation on a car used only for commuting, personal shopping trips, family vacations, driving children to and from school, or similar activities.



You must keep records showing the business, investment, and personal use of your property. For more information on the records you must keep for listed property, such as a car, see *What Records Must Be Kept* in chapter 5.



Although you can combine business and investment use of property when figuring depreciation deductions, do not treat investment use as qualified business use when determining whether the business-use requirement for listed property is met. For information about qualified business use of listed property, see What Is the Business-Use Requirement *in chapter 5.*

Office in the home. If you use part of your home as an office, you may be able to deduct depreciation on that part based on its business use. For information about depreciating your home office, see Pub. 587.

Inventory. You cannot depreciate inventory because it is not held for use in your business. Inventory is any property you hold primarily for sale to customers in the ordinary course of your business.

If you are a rent-to-own dealer, you may be able to treat certain property held in your business as depreciable property rather than as inventory. See *Rent-to-own dealer* under *Which Property Class Applies Under GDS* in chapter 4.

In some cases, it is not clear whether property is held for sale (inventory) or for use in your business. If it is unclear, examine carefully all the facts in the operation of the particular business. The following example shows how a careful examination of the facts in two similar situations results in different conclusions.

Example. Maple Corporation is in the business of leasing cars. At the end of their useful lives, when the cars are no longer profitable to lease, Maple sells them. Maple does not have a showroom, used car lot, or individuals to sell the cars. Instead, it sells them through wholesalers or by similar arrangements in which a dealer's profit is not intended or considered. Maple can depreciate the leased cars because the cars are not held primarily for sale to customers in the ordinary course of business, but are leased.

If Maple buys cars at wholesale prices, leases them for a short time, and then sells them at retail prices or in sales in which a dealer's profit is intended, the cars are treated as inventory and are not depreciable property. In this situation, the cars are held primarily for sale to customers in the ordinary course of business.

Containers. Generally, containers for the products you sell are part of inventory and you cannot depreciate them. However, you can depreciate containers used to ship your products if they have a life longer than 1 year and meet the following requirements.

- They qualify as property used in your business.
- Title to the containers does not pass to the buyer.

To determine if these requirements are met, consider the following questions.

- Does your sales contract, sales invoice, or other type of order acknowledgment indicate whether you have retained title?
- Does your invoice treat the containers as separate items?
- Do any of your records state your basis in the containers?

Property Having a Determinable Useful Life

To be depreciable, your property must have a determinable useful life. This means that it must be something that wears out, decays, gets used up, becomes obsolete, or loses its value from natural causes.

Property Lasting More Than One Year

To be depreciable, property must have a useful life that extends substantially beyond the year you place it in service.

Example. You maintain a library for use in your profession. You can depreciate it. However, if you buy technical books, journals, or information services for use in your business that have a useful life of 1 year or less, you cannot depreciate them. Instead, you deduct their cost as a business expense.

What Property Cannot Be Depreciated?

Terms you may need to know (see Glossary):

Amortization

Basis

Goodwill

Intangible property

Remainder interest

Term interest

Certain property cannot be depreciated. This includes land and certain excepted property.

Land

You cannot depreciate the cost of land because land does not wear out, become obsolete, or get used up. The cost of land generally includes the cost of clearing, grading, planting, and landscaping.

Although you cannot depreciate land, you can depreciate certain land preparation costs, such as landscaping costs, incurred in preparing land for business use. These costs must be so closely associated with other depreciable property that you can determine a life for them along with the life of the associated property.

Example. You constructed a new building for use in your business and paid for grading, clearing, seeding, and planting bushes and trees. Some of the bushes and trees were planted right next to the building, while others were planted around the outer border of the lot. If you replace the building, you would have to destroy the bushes and trees right next to it. These bushes and trees are closely associated with the building, so they have a determinable useful life. Therefore, you can depreciate them. Add your other land preparation costs to the basis of your land because they have no determinable life and you cannot depreciate them.

Excepted Property

Even if the requirements explained in the preceding discussions are met, you cannot depreciate the following property.

- Property placed in service and disposed of in the same year. Determining when property is placed in service is explained later.
- Equipment used to build capital improvements. You must add otherwise allowable depreciation on the equipment during the period of construction to the basis of your improvements. See Uniform Capitalization Rules in Pub. 551.
- Section 197 intangibles. You must amortize these costs. Section 197 intangibles are discussed in detail in chapter 8 of Pub. 535. Intangible property, such as certain computer software, that is not section 197 intangible property, can be depreciated if it meets certain requirements. See *Intangible Property*, later.
- Certain term interests.

Certain term interests in property. You cannot depreciate a term interest in property created or acquired after July 27, 1989, for any period during which the remainder interest is held, directly or indirectly, by a person related to you. A term interest in property means a life interest in property, an interest in property for a term of years, or an income interest in a trust.

Related persons. For a description of related persons, see *Related Persons*, later. For this purpose, however, treat as related persons only the relationships listed in items (1) through (10) of that discussion and substitute "50%" for "10%" each place it appears.

Basis adjustments. If you would be allowed a depreciation deduction for a term interest in property except that the holder of the remainder interest is related to you, you must generally reduce your basis in the term interest by any depreciation or amortization not allowed.

If you hold the remainder interest, you must generally increase your basis in that interest by the depreciation not allowed to the term interest holder. However, do not increase your basis for depreciation not allowed for periods during which either of the following situations applies.

- The term interest is held by an organization exempt from tax.
- The term interest is held by a nonresident alien individual or foreign corporation, and the income from the term interest is not effectively connected with the conduct of a trade or business in the United States.

Exceptions. The above rules do not apply to the holder of a term interest in property acquired by gift, bequest, or inheritance. They also do not apply to the holder of dividend rights that were separated from any stripped preferred stock if the rights were purchased after April 30, 1993, or to a person whose basis in the stock is determined by reference to the basis in the hands of the purchaser.

When Does Depreciation Begin and End?

Terms you may need to know (see Glossary):

Basis

Exchange

Placed in service

You begin to depreciate your property when you place it in service for use in your trade or business or for the production of income. You stop depreciating property either when you have fully recovered your cost or other basis or when you retire it from service, whichever happens first.

Placed in Service

You place property in service when it is ready and available for a specific use, whether in a business activity, an income-producing activity, a tax-exempt activity, or a personal activity. Even if you are not using the property, it is in service when it is ready and available for its specific use.

Example 1. Donald Steep bought a machine for his business. The machine was delivered last year. However, it was not installed and operational until this year. It is considered placed in service this year. If the machine had been ready and available for use when it was delivered, it would be considered placed in service last year even if it was not actually used until this year.

Example 2. On April 6, Sue Thorn bought a house to use as residential rental property. She made several repairs and had it ready for rent on July 5. At that time, she began to advertise it for rent in the local newspaper. The house is considered placed in service in July when it was ready and available for rent. She can begin to depreciate it in July.

Example 3. James Elm is a building contractor who specializes in constructing office buildings. He bought a truck last year that had to be modified to lift materials to second-story levels. The installation of the lifting equipment was completed and James accepted delivery of the modified truck on January 10 of this year. The truck was placed in service on January 10, the date it was ready and available to perform the function for which it was bought.

Conversion to business use. If you place property in service in a personal activity, you cannot claim depreciation. However, if you change the property's use to use in a business or income-producing activity, then you can begin to depreciate it at the time of the change. You place the property in service in the business or income-producing activity on the date of the change.

Example. You bought a home and used it as your personal home several years before you converted it to rental property. Although its specific use was personal and no depreciation was allowable, you placed the home in service when you began using it as your home. You can begin to claim depreciation in the year you converted it to rental property because its use changed to an income-producing use at that time.

Idle Property

Continue to claim a deduction for depreciation on property used in your business or for the production of income even if it is temporarily idle (not in use). For example, if you stop using a machine because there is a temporary lack of a market for a product made with that machine, continue to deduct depreciation on the machine.

Cost or Other Basis Fully Recovered

You stop depreciating property when you have fully recovered your cost or other basis. You fully recover your basis when your section 179 deduction, allowed or allowable depreciation deductions, and salvage value, if applicable, equal the cost or investment in the property. See *What Is the Basis of Your Depreciable Property*, later.

Retired From Service

You stop depreciating property when you retire it from service, even if you have not fully recovered its cost or other basis. You retire property from service when you permanently withdraw it from use in a trade or business or from use in the production of income because of any of the following events.

- You sell or exchange the property.
- You convert the property to personal use.
- You abandon the property.

- You transfer the property to a supplies or scrap account.
- The property is destroyed.



If you included the property in a general asset account, see How Do You Use General Asset Accounts *in chapter 4 for the rules that apply when you dispose of that property.*

What Method Can You Use To Depreciate Your Property?

Terms you may need to know (see Glossary):

Adjusted basis
Basis
Convention
Exchange
Fiduciary
Grantor
Intangible property
Nonresidential real property
Placed in service
Related persons
Residential rental property
Salvage value
Section 1245 property
Section 1250 property
Standard mileage rate
Straight line method
Unit-of-production method
Useful life

You must use the Modified Accelerated Cost Recovery System (MACRS) to depreciate most property. MACRS is discussed in chapter 4.

You cannot use MACRS to depreciate the following property.

- Property you placed in service before 1987.
- Certain property owned or used in 1986.
- Intangible property.
- Films, video tapes, and recordings.
- Certain corporate or partnership property acquired in a nontaxable transfer.
- Property you elected to exclude from MACRS.

The following discussions describe the property listed above and explain what depreciation method should be used.

Property You Placed in Service Before 1987

You cannot use MACRS for property you placed in service before 1987 (except property you placed in service after July 31, 1986, if MACRS was elected). Property placed in service before 1987 must be depreciated under the methods discussed in Pub. 534.

For a discussion of when property is placed in service, see *When Does Depreciation Begin and End*, earlier.

Use of real property changed. You must generally use MACRS to depreciate real property that you acquired for personal use before 1987 and changed to business or income-producing use after 1986.

Improvements made after 1986. You must treat an improvement made after 1986 to property you placed in service before 1987 as separate depreciable property. Therefore, you can depreciate that improvement as separate property under MACRS if it is the type of property that otherwise qualifies for MACRS depreciation. For more information about improvements, see *How Do You Treat Repairs and Improvements*, later, and *Additions and Improvements* under *Which Recovery Period Applies* in chapter 4.

Property Owned or Used in 1986

You may not be able to use MACRS for property you acquired and placed in service after 1986 if any of the situations described below apply. If you cannot use MACRS, the property must be depreciated under the methods discussed in Pub. 534.



For the following discussions, do not treat property as owned before you placed it in service. If you owned property in 1986 but did not place it in service until 1987, you do not treat it as owned in 1986.

Personal property. You cannot use MACRS for personal property (section 1245 property) in any of the following situations.

1. You or someone related to you owned or used the property in 1986.
2. You acquired the property from a person who owned it in 1986 and as part of the transaction the user of the property did not change.
3. You lease the property to a person (or someone related to this person) who owned or used the property in 1986.
4. You acquired the property in a transaction in which:
   a. The user of the property did not change, and

b. The property was not MACRS property in the hands of the person from whom you acquired it because of (2) or (3) above.

Real property. You generally cannot use MACRS for real property (section 1250 property) in any of the following situations.

- You or someone related to you owned the property in 1986.
- You lease the property to a person who owned the property in 1986 (or someone related to that person).
- You acquired the property in a like-kind exchange, involuntary conversion, or repossession of property you or someone related to you owned in 1986. MACRS applies only to that part of your basis in the acquired property that represents cash paid or unlike property given up. It does not apply to the carried-over part of the basis.

Exceptions. The rules above do not apply to the following.

1. Residential rental property or nonresidential real property.
2. Any property if, in the first tax year it is placed in service, the deduction under the Accelerated Cost Recovery System (ACRS) is more than the deduction under MACRS using the half-year convention. For information on how to figure depreciation under ACRS, see Pub. 534.
3. Property that was MACRS property in the hands of the person from whom you acquired it because of (2) above.

Related persons. For this purpose, the following are related persons.

1. An individual and a member of his or her family, including only a spouse, child, parent, brother, sister, half-brother, half-sister, ancestor, and lineal descendant.
2. A corporation and an individual who directly or indirectly owns more than 10% of the value of the outstanding stock of that corporation.
3. Two corporations that are members of the same controlled group.
4. A trust fiduciary and a corporation if more than 10% of the value of the outstanding stock is directly or indirectly owned by or for the trust or grantor of the trust.
5. The grantor and fiduciary, and the fiduciary and beneficiary, of any trust.
6. The fiduciaries of two different trusts, and the fiduciaries and beneficiaries of two different trusts, if the same person is the grantor of both trusts.
7. A tax-exempt educational or charitable organization and any person (or, if that person is an individual, a member of that person's family) who directly or indirectly controls the organization.
8. Two S corporations, and an S corporation and a regular corporation, if the same persons own more than 10% of the value of the outstanding stock of each corporation.
9. A corporation and a partnership if the same persons own both of the following.
   a. More than 10% of the value of the outstanding stock of the corporation.
   b. More than 10% of the capital or profits interest in the partnership.
10. The executor and beneficiary of any estate.
11. A partnership and a person who directly or indirectly owns more than 10% of the capital or profits interest in the partnership.
12. Two partnerships, if the same persons directly or indirectly own more than 10% of the capital or profits interest in each.
13. The related person and a person who is engaged in trades or businesses under common control. See section 52(a) and 52(b) of the Internal Revenue Code.

When to determine relationship. You must determine whether you are related to another person at the time you acquire the property.

A partnership acquiring property from a terminating partnership must determine whether it is related to the terminating partnership immediately before the event causing the termination.

Constructive ownership of stock or partnership interest. To determine whether a person directly or indirectly owns any of the outstanding stock of a corporation or an interest in a partnership, apply the following rules.

1. Stock or a partnership interest directly or indirectly owned by or for a corporation, partnership, estate, or trust is considered owned proportionately by or for its shareholders, partners, or beneficiaries. However, for a partnership interest owned by or for a C corporation, this applies only to shareholders who directly or indirectly own 5% or more of the value of the stock of the corporation.
2. An individual is considered to own the stock or partnership interest directly or indirectly owned by or for the individual's family.
3. An individual who owns, except by applying rule (2), any stock in a corporation is considered to own the stock directly or indirectly owned by or for the individual's partner.
4. For purposes of rule (1), (2), or (3), stock or a partnership interest considered to be owned by a person under rule (1) is treated as actually owned by that person. However, stock or a partnership interest considered to be owned by an individual under rule (2) or (3) is not treated as owned by that individual for reapplying either rule (2) or (3) to make another person considered to be the owner of the same stock or partnership interest.

Intangible Property

Generally, if you can depreciate intangible property, you usually use the straight line method of depreciation. However, you can choose to depreciate certain intangible property under the income forecast method (discussed later).



You cannot depreciate intangible property that is a section 197 intangible or that otherwise does not meet all the requirements discussed earlier under What Property Can Be Depreciated*.*

Straight Line Method

This method lets you deduct the same amount of depreciation each year over the useful life of the property. To figure your deduction, first determine the adjusted basis, salvage value, and estimated useful life of your property. Subtract the salvage value, if any, from the adjusted basis. The balance is the total depreciation you can take over the useful life of the property.

Divide the balance by the number of years in the useful life. This gives you your yearly depreciation deduction. Unless there is a big change in adjusted basis or useful life, this amount will stay the same throughout the time you depreciate the property. If, in the first year, you use the property for less than a full year, you must prorate your depreciation deduction for the number of months in use.

Example. In April, Frank bought a patent for $5,100 that is not a section 197 intangible. He depreciates the patent under the straight line method, using a 17-year useful life and no salvage value. He divides the $5,100 basis by 17 years to get his $300 yearly depreciation deduction. He only used the patent for 9 months during the first year, so he multiplies $300 by $^{9}/_{12}$ to get his deduction of $225 for the first year. Next year, Frank can deduct $300 for the full year.

Patents and copyrights. If you can depreciate the cost of a patent or copyright, use the straight line method over the useful life. The useful life of a patent or copyright is the lesser of the life granted to it by the government or the remaining life when you acquire it. However, if the patent or copyright becomes valueless before the end of its useful life, you can deduct in that year any of its remaining cost or other basis.

Computer software. Computer software is generally a section 197 intangible and cannot be depreciated if you acquired it in connection with the acquisition of assets constituting a business or a substantial part of a business.

However, computer software is not a section 197 intangible and can be depreciated, even if acquired in connection with the acquisition of a business, if it meets all of the following tests.

- It is readily available for purchase by the general public.
- It is subject to a nonexclusive license.
- It has not been substantially modified.

If the software meets the tests above, it may also qualify for the section 179 deduction and the special depreciation allowance, discussed later. If you can depreciate the cost of computer software, use the straight line method over a useful life of 36 months.

Tax-exempt use property subject to a lease. The useful life of computer software leased under a lease agreement entered into after March 12, 2004, to a tax-exempt organization, governmental unit, or foreign person or entity (other than a partnership), cannot be less than 125% of the lease term.

Certain created intangibles. You can amortize certain intangibles created on or after December 31, 2003, over a 15-year period using the straight line method and no salvage value, even though they have a useful life that cannot be estimated with reasonable accuracy. For example, amounts paid to acquire memberships or privileges of indefinite duration, such as a trade association membership, are eligible costs.

The following are not eligible.

- Any intangible asset acquired from another person.
- Created financial interests.
- Any intangible asset that has a useful life that can be estimated with reasonable accuracy.
- Any intangible asset that has an amortization period or limited useful life that is specifically prescribed or prohibited by the Code, regulations, or other published IRS guidance.
- Any amount paid to facilitate an acquisition of a trade or business, a change in the capital structure of a business entity, and certain other transactions.

You must also increase the 15-year safe harbor amortization period to a 25-year period for certain intangibles related to benefits arising from the provision, production, or improvement of real property. For this purpose, real property includes property that will remain attached to the real property for an indefinite period of time, such as roads, bridges, tunnels, pavements, and pollution control facilities.

Income Forecast Method

You can choose to use the income forecast method instead of the straight line method to depreciate the following depreciable intangibles.

- Motion picture films or video tapes.
- Sound recordings.
- Copyrights.
- Books.
- Patents.

Under the income forecast method, each year's depreciation deduction is equal to the cost of the property, multiplied by a fraction. The numerator of the fraction is the

current year's net income from the property, and the denominator is the total income anticipated from the property through the end of the 10th taxable year following the taxable year the property is placed in service. For more information, see section 167(g) of the Internal Revenue Code.

Films, video tapes, and recordings. You cannot use MACRS for motion picture films, video tapes, and sound recordings. For this purpose, sound recordings are discs, tapes, or other phonorecordings resulting from the fixation of a series of sounds. You can depreciate this property using either the straight line method or the income forecast method.

Participations and residuals. You can include participations and residuals in the adjusted basis of the property for purposes of computing your depreciation deduction under the income forecast method. The participations and residuals must relate to income to be derived from the property before the end of the 10th taxable year after the property is placed in service. For this purpose, participations and residuals are defined as costs, which by contract vary with the amount of income earned in connection with the property.

Instead of including these amounts in the adjusted basis of the property, you can deduct the costs in the taxable year that they are paid.

Videocassettes. If you are in the business of renting videocassettes, you can depreciate only those videocassettes bought for rental. If the videocassette has a useful life of 1 year or less, you can currently deduct the cost as a business expense.

Corporate or Partnership Property Acquired in a Nontaxable Transfer

MACRS does not apply to property used before 1987 and transferred after 1986 to a corporation or partnership (except property the transferor placed in service after July 31, 1986, if MACRS was elected) to the extent its basis is carried over from the property's adjusted basis in the transferor's hands. You must continue to use the same depreciation method as the transferor and figure depreciation as if the transfer had not occurred. However, if MACRS would otherwise apply, you can use it to depreciate the part of the property's basis that exceeds the carried-over basis.

The nontaxable transfers covered by this rule include the following.

- A distribution in complete liquidation of a subsidiary.
- A transfer to a corporation controlled by the transferor.
- An exchange of property solely for corporate stock or securities in a reorganization.
- A contribution of property to a partnership in exchange for a partnership interest.
- A partnership distribution of property to a partner.

Election To Exclude Property From MACRS

If you can properly depreciate any property under a method not based on a term of years, such as the unit-of-production method, you can elect to exclude that property from MACRS. You make the election by reporting your depreciation for the property on line 15 in Part II of Form 4562 and attaching a statement as described in the Instructions for Form 4562. You must make this election by the return due date (including extensions) for the tax year you place your property in service. However, if you timely filed your return for the year without making the election, you can still make the election by filing an amended return within 6 months of the due date of the return (excluding extensions). Attach the election to the amended return and write “Filed pursuant to section 301.9100-2” on the election statement. File the amended return at the same address you filed the original return.

Use of standard mileage rate. If you use the standard mileage rate to figure your tax deduction for your business automobile, you are treated as having made an election to exclude the automobile from MACRS. See Pub. 463 for a discussion of the standard mileage rate.

What Is the Basis of Your Depreciable Property?

Terms you may need to know (see Glossary):

Abstract fees

Adjusted basis

Basis

Exchange

Fair market value

To figure your depreciation deduction, you must determine the basis of your property. To determine basis, you need to know the cost or other basis of your property.

Cost as Basis

The basis of property you buy is its cost plus amounts you paid for items such as sales tax (see *Exception* below), freight charges, and installation and testing fees. The cost includes the amount you pay in cash, debt obligations, other property, or services.

Exception. You can elect to deduct state and local general sales taxes instead of state and local income taxes as an itemized deduction on Schedule A (Form 1040 or 1040-SR). If you make that choice, you cannot include those sales taxes as part of your cost basis.

Assumed debt. If you buy property and assume (or buy subject to) an existing mortgage or other debt on the property, your basis includes the amount you pay for the property plus the amount of the assumed debt.

Example. You make a $20,000 down payment on property and assume the seller's mortgage of $120,000. Your total cost is $140,000, the cash you paid plus the mortgage you assumed.

Settlement costs. The basis of real property also includes certain fees and charges you pay in addition to the purchase price. These are generally shown on your settlement statement and include the following.

- Legal and recording fees.
- Abstract fees.
- Survey charges.
- Owner's title insurance.
- Amounts the seller owes that you agree to pay, such as back taxes or interest, recording or mortgage fees, charges for improvements or repairs, and sales commissions.

For fees and charges you cannot include in the basis of property, see *Real Property* in Pub. 551.

Property you construct or build. If you construct, build, or otherwise produce property for use in your business, you may have to use the uniform capitalization rules to determine the basis of your property. For information about the uniform capitalization rules, see Pub. 551 and the regulations under section 263A of the Internal Revenue Code.

Other Basis

Other basis usually refers to basis that is determined by the way you received the property. For example, your basis is other than cost if you acquired the property in exchange for other property, as payment for services you performed, as a gift, or as an inheritance. If you acquired property in this or some other way, see Pub. 551 to determine your basis.

Property changed from personal use. If you held property for personal use and later use it in your business or income-producing activity, your depreciable basis is the lesser of the following.

1. The fair market value (FMV) of the property on the date of the change in use.
2. Your original cost or other basis adjusted as follows.
    a. Increased by the cost of any permanent improvements or additions and other costs that must be added to basis.
    b. Decreased by any deductions you claimed for casualty and theft losses and other items that reduced your basis.

Example. Several years ago, Nia paid $160,000 to have her home built on a lot that cost her $25,000. Before changing the property to rental use last year, she paid $20,000 for permanent improvements to the house and claimed a $2,000 casualty loss deduction for damage to the house. Land is not depreciable, so she includes only the cost of the house when figuring the basis for depreciation.

Nia's adjusted basis in the house when she changed its use was $178,000 ($160,000 + $20,000 – $2,000). On the same date, her property had an FMV of $180,000, of which $15,000 was for the land and $165,000 was for the house. The basis for depreciation on the house is the FMV on the date of change ($165,000), because it is less than her adjusted basis ($178,000).

Property acquired in a nontaxable transaction. Generally, if you receive property in a nontaxable exchange, the basis of the property you receive is the same as the adjusted basis of the property you gave up. Special rules apply in determining the basis and figuring the MACRS depreciation deduction and special depreciation allowance for property acquired in a like-kind exchange or involuntary conversion. See *Like-kind exchanges and involuntary conversions* under *How Much Can You Deduct* in chapter 3, and *Figuring the Deduction for Property Acquired in a Nontaxable Exchange* in chapter 4.

There are also special rules for determining the basis of MACRS property involved in a like-kind exchange or involuntary conversion when the property is contained in a general asset account. See *How Do You Use General Asset Accounts* in chapter 4.

Adjusted Basis

To find your property's basis for depreciation, you may have to make certain adjustments (increases and decreases) to the basis of the property for events occurring between the time you acquired the property and the time you placed it in service. These events could include the following.

- Installing utility lines.
- Paying legal fees for perfecting the title.
- Settling zoning issues.
- Receiving rebates.
- Incurring a casualty or theft loss.

For a discussion of adjustments to the basis of your property, see *Adjusted Basis* in Pub. 551.

If you depreciate your property under MACRS, you may also have to reduce your basis by certain deductions and credits with respect to the property. For more information, see *What Is the Basis for Depreciation* in chapter 4.

Basis adjustment for depreciation allowed or allowable. You must reduce the basis of property by the depreciation allowed or allowable, whichever is greater. Depreciation allowed is depreciation you actually deducted (from which you received a tax benefit). Depreciation allowable is depreciation you are entitled to deduct.

If you do not claim depreciation you are entitled to deduct, you must still reduce the basis of the property by the full amount of depreciation allowable.

If you deduct more depreciation than you should, you must reduce your basis by any amount deducted from which you received a tax benefit (the depreciation allowed).

How Do You Treat Repairs and Improvements?

If you improve depreciable property, you must treat the improvement as separate depreciable property. Improvement means an addition to or partial replacement of property that is a betterment to the property, restores the property, or adapts it to a new or different use. See section 1.263(a)-3 of the regulations.

You generally deduct the cost of repairing business property in the same way as any other business expense. However, if the cost is for a betterment to the property, to restore the property, or to adapt the property to a new or different use, you must treat it as an improvement and depreciate it.

Example. You repair a small section on one corner of the roof of a rental house. You deduct the cost of the repair as a rental expense. However, if you completely replace the roof, the new roof is an improvement because it is a restoration of the building. You depreciate the cost of the new roof.

Improvements to rented property. You can depreciate permanent improvements you make to business property you rent from someone else.

Do You Have To File Form 4562?

Terms you may need to know (see Glossary):

Amortization

Listed property

Placed in service

Standard mileage rate

Use Form 4562 to figure your deduction for depreciation and amortization. Attach Form 4562 to your tax return for the current tax year if you are claiming any of the following items.

- A section 179 deduction for the current year or a section 179 carryover from a prior year. See chapter 2 for information on the section 179 deduction.
- Depreciation for property placed in service during the current year.
- Depreciation on any vehicle or other listed property, regardless of when it was placed in service. See chapter 5 for information on listed property.
- A deduction for any vehicle if the deduction is reported on a form other than Schedule C (Form 1040 or 1040-SR).
- Amortization of costs if the current year is the first year of the amortization period.
- Depreciation or amortization on any asset on a corporate income tax return (other than Form 1120-S, U.S. Income Tax Return for an S Corporation) regardless of when it was placed in service.



You must submit a separate Form 4562 for each business or activity on your return for which a Form 4562 is required.

Table 1-1 presents an overview of the purpose of the various parts of Form 4562.

Employee. Do not use Form 4562 if you are an employee and you deduct job-related vehicle expenses using either actual expenses (including depreciation) or the standard mileage rate. Instead, use Form 2106.

How Do You Correct Depreciation Deductions?

If you deducted an incorrect amount of depreciation in any year, you may be able to make a correction by filing an amended return for that year. See *Filing an Amended Return*, next. If you are not allowed to make the correction on an amended return, you may be able to change your accounting method to claim the correct amount of depreciation. See *Changing Your Accounting Method*, later.

Filing an Amended Return

You can file an amended return to correct the amount of depreciation claimed for any property in any of the following situations.

- You claimed the incorrect amount because of a mathematical error made in any year.
- You claimed the incorrect amount because of a posting error made in any year.
- You have not adopted a method of accounting for property placed in service by you in tax years ending after December 29, 2003.
- You claimed the incorrect amount on property placed in service by you in tax years ending before December 30, 2003.

Adoption of accounting method defined. Generally, you adopt a method of accounting for depreciation by using a permissible method of determining depreciation

when you file your first tax return, or by using the same impermissible method of determining depreciation in two or more consecutively filed tax returns.

For an exception to the 2-year rule, see section 6.01(1)(b) of Revenue Procedure 2019-43 on page 1115 of Internal Revenue Bulletin 2019-48, available at www.irs.gov/irb/2019-48_IRB#REV-PROC-2019-43.

When to file. If an amended return is allowed, you must file it by the later of the following.

- 3 years from the date you filed your original return for the year in which you did not deduct the correct amount. A return filed before an unextended due date is considered filed on that due date.
- 2 years from the time you paid your tax for that year.

Changing Your Accounting Method

Generally, you must get IRS approval to change your method of accounting. You must generally file Form 3115, Application for Change in Accounting Method, to request a change in your method of accounting for depreciation.

The following are examples of a change in method of accounting for depreciation.

- A change from an impermissible method of determining depreciation for depreciable property, if the impermissible method was used in two or more consecutively filed tax returns.
- A change in the treatment of an asset from nondepreciable to depreciable or vice versa.
- A change in the depreciation method, period of recovery, or convention of a depreciable asset.
- A change from not claiming to claiming the special depreciation allowance if you did not make the election to not claim any special allowance.
- A change from claiming a 50% special depreciation allowance to claiming a 100% special depreciation allowance for qualified property acquired and placed in service by you after September 27, 2017 (if you did not make the election under section 168(k)(10) to claim 50% special depreciation allowance).

Changes in depreciation that are not a change in method of accounting (and may only be made on an amended return) include the following.

- An adjustment in the useful life of a depreciable asset for which depreciation is determined under section 167.
- A change in use of an asset in the hands of the same taxpayer.
- Making a late depreciation election or revoking a timely valid depreciation election (including the election not to deduct the special depreciation allowance). If you elected not to claim any special depreciation allowance, a change from not claiming to claiming the special depreciation allowance is a revocation of the election and is not an accounting method change. Generally, you must get IRS approval to make a late depreciation election or revoke a depreciation election. You must submit a request for a letter ruling to make a late election or revoke an election.
- Any change in the placed in service date of a depreciable asset.

See section 1.446-1(e)(2)(ii)(d) of the regulations for more information and examples.

IRS approval. If your change in method of accounting for depreciation is described in Revenue Procedure 2019-43, on page 1107 of Internal Revenue Bulletin 2019-48, you may be able to get approval from the IRS to make that change under the automatic change request procedures generally covered in Revenue Procedure 2015-13 on page 419 of Internal Revenue Bulletin 2015-5. If you do not qualify to use the automatic procedures to get approval, you must use the advance consent request procedures generally covered in Revenue Procedure 2015-13. Also, see the Instructions for Form 3115 for more information on getting approval, including lists of scope limitations and automatic accounting method changes.

Additional guidance. For additional guidance and special procedures for changing your accounting method, automatic change procedures, amending your return, and filing Form 3115, see Revenue Procedure 2015-13 on page 419 of Internal Revenue Bulletin 2015-5 available at www.irs.gov/irb/2015-05_IRB#RP-2015-13, and Revenue Procedure 2019-43 on page 1107 of Internal Revenue Bulletin 2019-48, available at www.irs.gov/irb/2019-48_IRB#REV-PROC-2019-43.

Section 481(a) adjustment. If you file Form 3115 and change from an impermissible method to a permissible method of accounting for depreciation, you can make a section 481(a) adjustment for any unclaimed or excess amount of allowable depreciation. The adjustment is the difference between the total depreciation actually deducted for the property and the total amount allowable prior to the year of change. If no depreciation was deducted, the adjustment is the total depreciation allowable prior to the year of change. A negative section 481(a) adjustment results in a decrease in taxable income. It is taken into account in the year of change and is reported on your business tax returns as "other expenses." A positive section 481(a) adjustment results in an increase in taxable income. It is generally taken into account over 4 tax years and is reported on your business tax returns as "other income." However, you can elect to use a 1-year adjustment period and report the adjustment in the year of change if the total adjustment is less than $50,000. Make the election by completing the appropriate line on Form 3115.

If you file a Form 3115 and change from one permissible method to another permissible method, the section 481(a) adjustment is zero.

Table 1-1. **Purpose of Form 4562**

This table describes the purpose of the various parts of Form 4562. For more information, see Form 4562 and its instructions.

Part	Purpose
I	• Electing the section 179 deduction • Figuring the maximum section 179 deduction for the current year • Figuring any section 179 deduction carryover to the next year
II	• Reporting the special depreciation allowance for property (other than listed property) placed in service during the tax year • Reporting depreciation deductions on property being depreciated under any method other than Modified Accelerated Cost Recovery System (MACRS)
III	• Reporting MACRS depreciation deductions for property placed in service before this year • Reporting MACRS depreciation deductions for property (other than listed property) placed in service during the current year
IV	• Summarizing other parts
V	• Reporting the special depreciation allowance for automobiles and other listed property • Reporting MACRS depreciation on automobiles and other listed property • Reporting the section 179 cost elected for automobiles and other listed property • Reporting information on the use of automobiles and other transportation vehicles
VI	• Reporting amortization deductions

2.

Electing the Section 179 Deduction

Introduction

You can elect to recover all or part of the cost of certain qualifying property, up to a limit, by deducting it in the year you place the property in service. This is the section 179 deduction. You can elect the section 179 deduction instead of recovering the cost by taking depreciation deductions.

CAUTION *Estates and trusts cannot elect the section 179 deduction.*

This chapter explains what property does and does not qualify for the section 179 deduction, what limits apply to the deduction (including special rules for partnerships and corporations), and how to elect it. It also explains when and how to recapture the deduction.

Useful Items

You may want to see:

Publication

- ❑ **537** Installment Sales
- ❑ **544** Sales and Other Dispositions of Assets
- ❑ **954** Tax Incentives for Distressed Communities

Form (and Instructions)

- ❑ **4562** Depreciation and Amortization
- ❑ **4797** Sales of Business Property

See chapter 6 for information about getting publications and forms.

What Property Qualifies?

Terms you may need to know (see Glossary):

Adjusted basis

Basis

Class life

Structural components

Tangible property

To qualify for the section 179 deduction, your property must meet all the following requirements.

- It must be eligible property.
- It must be acquired for business use.
- It must have been acquired by purchase.
- It must not be property described later under *What Property Does Not Qualify*.

The following discussions provide information about these requirements and exceptions.

Eligible Property

To qualify for the section 179 deduction, your property must be one of the following types of depreciable property.

1. Tangible personal property.
2. Other tangible property (except buildings and their structural components) used as:
   a. An integral part of manufacturing, production, or extraction, or of furnishing transportation, communications, electricity, gas, water, or sewage disposal services;
   b. A research facility used in connection with any of the activities in (a) above; or
   c. A facility used in connection with any of the activities in (a) for the bulk storage of fungible commodities.
3. Single-purpose agricultural (livestock) or horticultural structures. See chapter 7 of Pub. 225 for definitions and information regarding the use requirements that apply to these structures.
4. Storage facilities (except buildings and their structural components) used in connection with distributing petroleum or any primary product of petroleum.
5. Off-the-shelf computer software.
6. Qualified section 179 real property (described below).

Tangible personal property. Tangible personal property is any tangible property that is not real property. It includes the following property.

- Machinery and equipment.
- Property contained in or attached to a building (other than structural components), such as refrigerators, grocery store counters, office equipment, printing presses, testing equipment, and signs.
- Gasoline storage tanks and pumps at retail service stations.
- Livestock, including horses, cattle, hogs, sheep, goats, and mink and other furbearing animals.
- Portable air conditioners or heaters placed in service by you in tax years beginning after 2015.
- Certain property used predominantly to furnish lodging or in connection with the furnishing of lodging (except as provided in section 50(b)(2)).

The treatment of property as tangible personal property for the section 179 deduction is not controlled by its treatment under local law. For example, property may not be tangible personal property for the deduction even if treated so under local law, and some property (such as fixtures) may be tangible personal property for the deduction even if treated as real property under local law.

Off-the-shelf computer software. Off-the-shelf computer software is qualifying property for purposes of the section 179 deduction. This is computer software that is readily available for purchase by the general public, is subject to a nonexclusive license, and has not been substantially modified. It includes any program designed to cause a computer to perform a desired function. However, a database or similar item is not considered computer software unless it is in the public domain and is incidental to the operation of otherwise qualifying software.

Qualified section 179 real property. You can elect to treat certain qualified real property you placed in service during the tax year as section 179 property. If this election is made, the term "section 179 property" will include any qualified real property that is:

- Qualified improvement property as described in section 168(e)(6) of the Internal Revenue Code, and
- Any of the following improvements to nonresidential real property placed in service after the date the nonresidential real property was first placed in service.
  1. Roofs.
  2. Heating, ventilation, and air-conditioning property.
  3. Fire protection and alarm systems.
  4. Security systems.

For more information, see *Special rules for qualified section 179 real property*, later.

Qualified improvement property. Generally, this is any improvement to an interior portion of a building that is nonresidential real property if the improvement is placed in service after the date the building was first placed in service.

Also, qualified improvement property does not include the cost of any improvement attributable to the following:

- The enlargement of the building,
- Any elevator or escalator, or
- The internal structural framework of the building.

Property Acquired for Business Use

To qualify for the section 179 deduction, your property must have been acquired for use in your trade or business. Property you acquire only for the production of income, such as investment property, rental property (if renting property is not your trade or business), and property that produces royalties, does not qualify.

Partial business use. When you use property for both business and nonbusiness purposes, you can elect the section 179 deduction only if you use the property more than 50% for business in the year you place it in service. If you use the property more than 50% for business, multiply the cost of the property by the percentage of business use. Use the resulting business cost to figure your section 179 deduction.

Example. May Oak bought and placed in service an item of section 179 property costing $11,000. She used the property 80% for her business and 20% for personal

purposes. The business part of the cost of the property is $8,800 (80% × $11,000).

Property Acquired by Purchase

To qualify for the section 179 deduction, your property must have been acquired by purchase. For example, property acquired by gift or inheritance does not qualify.

Property is not considered acquired by purchase in the following situations.

1. It is acquired by one component member of a controlled group from another component member of the same group.
2. Its basis is determined either:
   a. In whole or in part by its adjusted basis in the hands of the person from whom it was acquired, or
   b. Under the stepped-up basis rules for property acquired from a decedent.
3. It is acquired from a related person.

Related persons. Related persons are described under *Related persons,* earlier. However, to determine whether property qualifies for the section 179 deduction, treat as an individual's family only his or her spouse, ancestors, and lineal descendants and substitute "50%" for "10%" each place it appears.

Example. Ken Larch is a tailor. He bought two industrial sewing machines from his father. He placed both machines in service in the same year he bought them. They do not qualify as section 179 property because Ken and his father are related persons. He cannot claim a section 179 deduction for the cost of these machines.

What Property Does Not Qualify?

Terms you may need to know (see Glossary):

Basis

Class life

Certain property does not qualify for the section 179 deduction. This includes the following.

Land and Improvements

Land and land improvements do not qualify as section 179 property. Land improvements include swimming pools, paved parking areas, wharves, docks, bridges, and fences.

Excepted Property

Even if the requirements explained earlier under *What Property Qualifies* are met, you cannot elect the section 179 deduction for the following property.

- Certain property you lease to others (if you are a noncorporate lessor).
- Property used predominantly outside the United States, except property described in section 168(g)(4) of the Internal Revenue Code.
- Property used by certain tax-exempt organizations, except property used in connection with the production of income subject to the tax on unrelated trade or business income.
- Property used by governmental units or foreign persons or entities, except property used under a lease with a term of less than 6 months.

Leased property. Generally, you cannot claim a section 179 deduction based on the cost of property you lease to someone else. This rule does not apply to corporations. However, you can claim a section 179 deduction for the cost of the following property.

1. Property you manufacture or produce and lease to others.
2. Property you purchase and lease to others if both the following tests are met.
   a. The term of the lease (including options to renew) is less than 50% of the property's class life.
   b. For the first 12 months after the property is transferred to the lessee, the total business deductions you are allowed on the property (other than rents and reimbursed amounts) are more than 15% of the rental income from the property.

How Much Can You Deduct?

Terms you may need to know (see Glossary):

Adjusted basis

Basis

Placed in service

Your section 179 deduction is generally the cost of the qualifying property. However, the total amount you can elect to deduct under section 179 is subject to a dollar limit and a business income limit. These limits apply to each taxpayer, not to each business. However, see *Married Individuals* under *Dollar Limits*, later. For a passenger automobile, the total section 179 deduction and depreciation deduction are limited. See *Do the Passenger Automobile Limits Apply* in chapter 5.

If you deduct only part of the cost of qualifying property as a section 179 deduction, you can generally depreciate the cost you do not deduct.

Trade-in of other property. If you buy qualifying property with cash and a trade-in, its cost for purposes of the section 179 deduction includes only the cash you paid.

Example. Silver Leaf, a retail bakery, traded two ovens having a total adjusted basis of $680 for a new oven costing $1,320. They received an $800 trade-in allowance for the old ovens and paid $520 in cash for the new oven. The bakery also traded a used van with an adjusted basis of $4,500 for a new van costing $9,000. They received a $4,800 trade-in allowance on the used van and paid $4,200 in cash for the new van.

Only the portion of the new property's basis paid by cash qualifies for the section 179 deduction. Therefore, Silver Leaf's qualifying costs for the section 179 deduction are $4,720 ($520 + $4,200).

Dollar Limits

The total amount you can elect to deduct under section 179 for most property placed in service in tax years beginning in 2019 generally cannot be more than $1,020,000. If you acquire and place in service more than one item of qualifying property during the year, you can allocate the section 179 deduction among the items in any way, as long as the total deduction is not more than $1,020,000. You do not have to claim the full $1,020,000.



The amount you can elect to deduct is not affected if you place qualifying property in service in a short tax year or if you place qualifying property in service for only a part of a 12-month tax year.



After you apply the dollar limit to determine a tentative deduction, you must apply the business income limit (described later) to determine your actual section 179 deduction.

Example. In 2019, you bought and placed in service $1,020,000 in machinery and a $25,000 circular saw for your business. You elect to deduct $995,000 for the machinery and the entire $25,000 for the saw, a total of $1,020,000. This is the maximum amount you can deduct. Your $25,000 deduction for the saw completely recovered its cost. Your basis for depreciation is zero. The basis for depreciation of your machinery is $25,000. You figure this by subtracting your $995,000 section 179 deduction for the machinery from the $1,020,000 cost of the machinery.

Situations affecting dollar limit. Under certain circumstances, the general dollar limits on the section 179 deduction may be reduced or increased or there may be additional dollar limits. The general dollar limit is affected by any of the following situations.

- The cost of your section 179 property placed in service exceeds $2,550,000.
- Your business is an enterprise zone business.
- You placed in service a sport utility or certain other vehicles.
- You are married filing a joint or separate return.

Costs Exceeding $2,550,000

If the cost of your qualifying section 179 property placed in service in a year is more than $2,550,000, you must generally reduce the dollar limit (but not below zero) by the amount of cost over $2,550,000. If the cost of your section 179 property placed in service during 2019 is $3,570,000 or more, you cannot take a section 179 deduction.

Example. In 2019, Jane Ash placed in service machinery costing $2,600,000. This cost is $50,000 more than $2,550,000, so she must reduce her dollar limit to $970,000 ($1,020,000 – $50,000).

Enterprise Zone Businesses

An increased section 179 deduction is available to enterprise zone businesses for qualified zone property placed in service during the tax year, in an empowerment zone. For more information, including the definitions of “enterprise zone business” and “qualified zone property,” see sections 1397A, 1397C, and 1397D of the Internal Revenue Code.

The dollar limit on the section 179 deduction is increased by the smaller of:

- $35,000; or
- The cost of section 179 property that is also qualified zone property placed in service before January 1, 2021 (including such property placed in service by your spouse, even if you are filing a separate return).

Note. You take into account only 50% (instead of 100%) of the cost of qualified zone property placed in service in a year when figuring the reduced dollar limit for costs exceeding $2,550,000 (explained earlier).

Sport Utility and Certain Other Vehicles

You cannot elect to expense more than $25,500 of the cost of any heavy sport utility vehicle (SUV) and certain other vehicles placed in service in tax years beginning in 2019. This rule applies to any 4-wheeled vehicle primarily designed or used to carry passengers over public streets, roads, or highways, that is rated at more than 6,000 pounds gross vehicle weight and not more than 14,000 pounds gross vehicle weight. However, the $25,500 limit does not apply to any vehicle:

- Designed to seat more than nine passengers behind the driver's seat,
- Equipped with a cargo area (either open or enclosed by a cap) of at least 6 feet in interior length that is not readily accessible from the passenger compartment, or
- That has an integral enclosure fully enclosing the driver compartment and load carrying device, does

not have seating rearward of the driver's seat, and has no body section protruding more than 30 inches ahead of the leading edge of the windshield.

Married Individuals

If you are married, how you figure your section 179 deduction depends on whether you file jointly or separately. If you file a joint return, you and your spouse are treated as one taxpayer in determining any reduction to the dollar limit, regardless of which of you purchased the property or placed it in service. If you and your spouse file separate returns, you are treated as one taxpayer for the dollar limit, including the reduction for costs over $2,550,000. You must allocate the dollar limit (after any reduction) between you equally, unless you both elect a different allocation. If the percentages elected by each of you do not total 100%, 50% will be allocated to each of you.

Example. Jack Elm is married. He and his wife file separate returns. Jack bought and placed in service $2,550,000 of qualified farm machinery in 2019. His wife has her own business, and she bought and placed in service $300,000 of qualified business equipment. Their combined dollar limit is $720,000. This is because they must figure the limit as if they were one taxpayer. They reduce the $1,020,000 dollar limit by the $300,000 excess of their costs over $2,550,000.

They elect to allocate the $720,000 dollar limit as follows.

- $684,000 ($720,000 x 95%) to Mr. Elm's machinery.
- $36,000 ($720,000 x 5%) to Mrs. Elm's equipment.

If they did not make an election to allocate their costs in this way, they would have to allocate $360,000 ($720,000 × 50%) to each of them.

Joint return after filing separate returns. If you and your spouse elect to amend your separate returns by filing a joint return after the due date for filing your return, the dollar limit on the joint return is the lesser of the following amounts.

- The dollar limit (after reduction for any cost of section 179 property over $2,550,000).
- The total cost of section 179 property you and your spouse elected to expense on your separate returns.

Example. The facts are the same as in the previous example except that Jack elected to deduct $300,000 of the cost of section 179 property on his separate return and his wife elected to deduct $20,000. After the due date of their returns, they file a joint return. Their dollar limit for the section 179 deduction is $320,000. This is the lesser of the following amounts.

- $720,000—The dollar limit less the cost of section 179 property over $2,550,000.
- $320,000—The total they elected to expense on their separate returns.

Business Income Limit

The total cost you can deduct each year after you apply the dollar limit is limited to the taxable income from the active conduct of any trade or business during the year. Generally, you are considered to actively conduct a trade or business if you meaningfully participate in the management or operations of the trade or business.

Any cost not deductible in 1 year under section 179 because of this limit can be carried to the next year. Special rules apply to a deduction of qualified section 179 real property that is placed in service by you in tax years beginning before 2016 and disallowed because of the business income limit. See *Special rules for qualified section 179 real property* under *Carryover of disallowed deduction*, later.

Taxable income. In general, figure taxable income for this purpose by totaling the net income and losses from all trades and businesses you actively conducted during the year. Net income or loss from a trade or business includes the following items.

- Section 1231 gains (or losses).
- Interest from working capital of your trade or business.
- Wages, salaries, tips, or other pay earned as an employee.

For information about section 1231 gains and losses, see chapter 3 in Pub. 544.

In addition, figure taxable income without regard to any of the following.

- The section 179 deduction.
- The self-employment tax deduction.
- Any net operating loss carryback or carryforward.
- Any unreimbursed employee business expenses.

Two different taxable income limits. In addition to the business income limit for your section 179 deduction, you may have a taxable income limit for some other deduction. You may have to figure the limit for this other deduction taking into account the section 179 deduction. If so, complete the following steps.

Step	Action
1	Figure taxable income without the section 179 deduction or the other deduction.
2	Figure a hypothetical section 179 deduction using the taxable income figured in Step 1.
3	Subtract the hypothetical section 179 deduction figured in Step 2 from the taxable income figured in Step 1.
4	Figure a hypothetical amount for the other deduction using the amount figured in Step 3 as taxable income.

5	Subtract the hypothetical other deduction figured in Step 4 from the taxable income figured in Step 1.
6	Figure your actual section 179 deduction using the taxable income figured in Step 5.
7	Subtract your actual section 179 deduction figured in Step 6 from the taxable income figured in Step 1.
8	Figure your actual other deduction using the taxable income figured in Step 7.

Example. On February 1, 2019, the XYZ corporation purchased and placed in service qualifying section 179 property that cost $1,020,000. It elects to expense the entire $1,020,000 cost under section 179. In June, the corporation gave a charitable contribution of $10,000. A corporation's limit on charitable contributions is figured after subtracting any section 179 deduction. The business income limit for the section 179 deduction is figured after subtracting any allowable charitable contributions. XYZ's taxable income figured without the section 179 deduction or the deduction for charitable contributions is $1,040,000. XYZ figures its section 179 deduction and its deduction for charitable contributions as follows.

Step 1– Taxable income figured without either deduction is $1,040,000.

Step 2– Using $1,040,000 as taxable income, XYZ's hypothetical section 179 deduction is $1,020,000.

Step 3– $20,000 ($1,040,000 – $1,020,000).

Step 4– Using $20,000 (from Step 3) as taxable income, XYZ's hypothetical charitable contribution (limited to 10% of taxable income) is $2,000.

Step 5– $1,038,000 ($1,040,000 – $2,000).

Step 6– Using $1,038,000 (from Step 5) as taxable income, XYZ figures the actual section 179 deduction. Because the taxable income is at least $1,020,000, XYZ can take a $1,020,000 section 179 deduction.

Step 7– $20,000 ($1,040,000 – $1,020,000).

Step 8– Using $20,000 (from Step 7) as taxable income, XYZ's actual charitable contribution (limited to 10% of taxable income) is $2,000.

Carryover of disallowed deduction. You can carry over for an unlimited number of years, the cost of any qualified section 179 real property that you placed in service in tax years beginning after 2015, and that you elected to expense, but were unable to deduct because of the business income limitation. This disallowed deduction amount is shown on line 13 of Form 4562. You use the amount you carry over to determine your section 179 deduction in the next year. Enter that amount on line 10 of your Form 4562 for the next year.

If you place more than one property in service in a year, you can select the properties for which all or a part of the costs will be carried forward. Your selections must be shown in your books and records. For this purpose, treat section 179 costs allocated from a partnership or an S corporation as one item of section 179 property. If you do not make a selection, the total carryover will be allocated equally among the properties you elected to expense for the year.

If costs from more than 1 year are carried forward to a subsequent year in which only part of the total carryover can be deducted, you must deduct the costs being carried forward from the earliest year first.

Special rules for qualified section 179 real property. You can carry over to 2020 a 2019 deduction attributable to qualified section 179 real property that you placed in service during the tax year and that you elected to expense but were unable to take because of the business income limitation. See *Carryover of disallowed deduction*, earlier. Thus, the amount of any 2019 disallowed section 179 expense deduction attributable to qualified section 179 real property will be reported on line 13 of Form 4562.

TIP *If there is a sale or other disposition of your property (including a transfer at death) before you can use the full amount of any outstanding carryover of your disallowed section 179 deduction, neither you nor the new owner can deduct any of the unused amount. Instead, you must add it back to the property's basis.*

Partnerships and Partners

The section 179 deduction limits apply both to the partnership and to each partner. The partnership determines its section 179 deduction subject to the limits. It then allocates the deduction among its partners.

Each partner adds the amount allocated from partnerships (shown on Schedule K-1 (Form 1065), Partner's Share of Income, Deductions, Credits, etc.) to his or her nonpartnership section 179 costs and then applies the dollar limit to this total. To determine any reduction in the dollar limit for costs over $2,550,000, the partner does not include any of the cost of section 179 property placed in service by the partnership. After the dollar limit (reduced for any nonpartnership section 179 costs over $2,550,000) is applied, any remaining cost of the partnership and nonpartnership section 179 property is subject to the business income limit.

Partnership's taxable income. For purposes of the business income limit, figure the partnership's taxable income by adding together the net income and losses from all trades or businesses actively conducted by the partnership during the year. See the Instructions for Form 1065 for information on how to figure partnership net income (or loss). However, figure taxable income without regard to credits, tax-exempt income, the section 179 deduction, and guaranteed payments under section 707(c) of the Internal Revenue Code.

Partner's share of partnership's taxable income. For purposes of the business income limit, the taxable income of a partner engaged in the active conduct of one or more of a partnership's trades or businesses includes his or her

allocable share of taxable income derived from the partnership's active conduct of any trade or business.

Example. In 2019, Beech Partnership placed in service section 179 property with a total cost of $3,000,000. The partnership must reduce its dollar limit by $50,000 ($3,000,000 – $2,550,000). Its maximum section 179 deduction is $970,000 ($1,020,000 – $50,000), and it elects to expense that amount. The partnership's taxable income from the active conduct of all its trades or businesses for the year was $1,000,000, so it can deduct the full $970,000. It allocates $40,000 of its section 179 deduction and $50,000 of its taxable income to Dean, one of its partners.

In addition to being a partner in Beech Partnership, Dean is also a partner in the Cedar Partnership, which allocated to him a $30,000 section 179 deduction and $35,000 of its taxable income from the active conduct of its business. He also conducts a business as a sole proprietor and, in 2019, placed in service in that business qualifying section 179 property costing $55,000. He had a net loss of $5,000 from that business for the year.

Dean does not have to include section 179 partnership costs to figure any reduction in his dollar limit, so his total section 179 costs for the year are not more than $2,550,000 and his dollar limit is not reduced. His maximum section 179 deduction is $1,020,000. He elects to expense all of the $70,000 in section 179 deductions allocated from the partnerships ($40,000 from Beech Partnership plus $30,000 from Cedar Partnership), plus $55,000 of his sole proprietorship's section 179 costs, and notes that information in his books and records. However, his deduction is limited to his business taxable income of $80,000 ($50,000 from Beech Partnership, plus $35,000 from Cedar Partnership, minus $5,000 loss from his sole proprietorship). He carries over $45,000 ($125,000 – $80,000) of the elected section 179 costs to 2020. He allocates the carryover amount to the cost of section 179 property placed in service in his sole proprietorship, and notes that allocation in his books and records.

Different tax years. For purposes of the business income limit, if the partner's tax year and that of the partnership differ, the partner's share of the partnership's taxable income for a tax year is generally the partner's distributive share for the partnership tax year that ends with or within the partner's tax year.

Example. John and James Oak are equal partners in Oak Partnership. Oak Partnership uses a tax year ending January 31. John and James both use a tax year ending December 31. For its tax year ending January 31, 2019, Oak Partnership's taxable income from the active conduct of its business is $80,000, of which $70,000 was earned during 2018. John and James each include $40,000 (each partner's entire share) of partnership taxable income in computing their business income limit for the 2019 tax year.

Adjustment of partner's basis in partnership. A partner must reduce the basis of his or her partnership interest by the total amount of section 179 expenses allocated from the partnership even if the partner cannot currently deduct the total amount. If the partner disposes of his or her partnership interest, the partner's basis for determining gain or loss is increased by any outstanding carryover of disallowed section 179 expenses allocated from the partnership.

Adjustment of partnership's basis in section 179 property. The basis of a partnership's section 179 property must be reduced by the section 179 deduction elected by the partnership. This reduction of basis must be made even if a partner cannot deduct all or part of the section 179 deduction allocated to that partner by the partnership because of the limits.

S Corporations

Generally, the rules that apply to a partnership and its partners also apply to an S corporation and its shareholders. The deduction limits apply to an S corporation and to each shareholder. The S corporation allocates its deduction to the shareholders who then take their section 179 deduction subject to the limits.

Figuring taxable income for an S corporation. To figure taxable income (or loss) from the active conduct by an S corporation of any trade or business, you total the net income and losses from all trades or businesses actively conducted by the S corporation during the year.

To figure the net income (or loss) from a trade or business actively conducted by an S corporation, you take into account the items from that trade or business that are passed through to the shareholders and used in determining each shareholder's tax liability. However, you do not take into account any credits, tax-exempt income, the section 179 deduction, and deductions for compensation paid to shareholder-employees. For purposes of determining the total amount of S corporation items, treat deductions and losses as negative income. In figuring the taxable income of an S corporation, disregard any limits on the amount of an S corporation item that must be taken into account when figuring a shareholder's taxable income.

Other Corporations

A corporation's taxable income from its active conduct of any trade or business is its taxable income figured with the following changes.

1. It is figured before deducting the section 179 deduction, any net operating loss deduction, and special deductions (as reported on the corporation's income tax return).
2. It is adjusted for items of income or deduction included in the amount figured in 1, above, not derived from a trade or business actively conducted by the corporation during the tax year.

How Do You Elect the Deduction?

Terms you may need to know (see Glossary):

Listed property

Placed in service

Election. You elect to take the section 179 deduction by completing Part I of Form 4562.



If you elect the deduction for listed property (described in chapter 5*), complete Part V of Form 4562 before completing Part I.*

For property placed in service in 2019, file Form 4562 with either of the following.

- Your original 2019 tax return, whether or not you file it timely.
- An amended return for 2019 filed within the time prescribed by law. An election made on an amended return must specify the item of section 179 property to which the election applies and the part of the cost of each such item to be taken into account. The amended return must also include any resulting adjustments to taxable income.



You must keep records that show the specific identification of each piece of qualifying section 179 property. These records must show how you acquired the property, the person you acquired it from, and when you placed it in service.

Election for qualified section 179 real property. You can elect to expense certain qualified real property that you placed in service as section 179 property for tax years beginning in 2019. For more information, see *Election* above. Also, see Revenue Procedure 2019-8 on page 347 of Internal Revenue Bulletin 2019-3, available at *www.irs.gov/irb/2019-03_IRB#RP-2019-08*.

Revoking an election. An election (or any specification made in the election) to take a section 179 deduction for 2019 can be revoked without IRS approval by filing an amended return. The amended return must be filed within the time prescribed by law. The amended return must also include any resulting adjustments to taxable income. Once made, the revocation is irrevocable.

When Must You Recapture the Deduction?

Terms you may need to know (see Glossary):

Disposition

Exchange

Recapture

Recovery period

Section 1245 property

You may have to recapture the section 179 deduction if, in any year during the property's recovery period, the percentage of business use drops to 50% or less. In the year the business use drops to 50% or less, you include the recapture amount as ordinary income in Part IV of Form 4797. You also increase the basis of the property by the recapture amount. Recovery periods for property are discussed under *Which Recovery Period Applies* in chapter 4.



If you sell, exchange, or otherwise dispose of the property, do not figure the recapture amount under the rules explained in this discussion. Instead, use the rules for recapturing depreciation explained in chapter 3 of Pub. 544 under Section 1245 Property*. For qualified real property, see Notice 2013-59 for determining the portion of the gain that is attributable to section 1245 property upon the sale or other disposition of qualified real property. You can find Notice 2013-59 at www.irs.gov/irb/2013-40_IRB/ar14.html.*



If the property is listed property (described in chapter 5), do not figure the recapture amount under the rules explained in this discussion when the percentage of business use drops to 50% or less. Instead, use the rules for recapturing excess depreciation in chapter 5 under What Is the Business-Use Requirement.

Figuring the recapture amount. To figure the amount to recapture, take the following steps.

1. Figure the depreciation that would have been allowable on the section 179 deduction you claimed. Begin with the year you placed the property in service and include the year of recapture.
2. Subtract the depreciation figured in (1) from the section 179 deduction you claimed. The result is the amount you must recapture.

Example. In January 2017, Paul Lamb, a calendar year taxpayer, bought and placed in service section 179 property costing $10,000. The property is not listed property. The property is 3-year property. He elected a $5,000 section 179 deduction for the property and also elected

not to claim a special depreciation allowance. He used the property only for business in 2017 and 2018. In 2019, he used the property 40% for business and 60% for personal use. He figures his recapture amount as follows.

Section 179 deduction claimed (2017)		$5,000.00
Minus: Allowable depreciation using Table A-1 (instead of section 179 deduction):		
2017	$1,666.50	
2018	2,222.50	
2019 ($740.50 × 40% (business))	296.20	4,185.20
2019 — Recapture amount		**$ 814.80**

Paul must include $814.80 in income for 2019.

CAUTION *If any qualified zone property placed in service during a particular year ceases to be used in an empowerment zone by an enterprise zone business in a later year, the benefit of the increased section 179 deduction must be reported as other income on your return.*

3.

Claiming the Special Depreciation Allowance

Introduction

You can take a special depreciation allowance to recover part of the cost of qualified property (defined next), placed in service during the tax year. The allowance applies only for the first year you place the property in service. The allowance is an additional deduction you can take after any section 179 deduction and before you figure regular depreciation under MACRS for the year you place the property in service.

This chapter explains what is qualified property. It also includes rules regarding how to figure an allowance, how to elect not to claim an allowance, and when you must recapture an allowance.

See chapter 6 for information about getting publications and forms.

What Is Qualified Property?

Terms you may need to know (see Glossary):

Business/investment use

Improvement

Nonresidential real property

Placed in service

Residential rental property

Structural components

Your property is qualified property if it is one of the following.

- Qualified reuse and recycling property.
- Qualified second generation biofuel plant property.
- Certain qualified property acquired before September 28, 2017.
- Certain qualified property acquired after September 27, 2017.
- Certain plants bearing fruits and nuts.

The following discussions provide information about the types of qualified property listed above for which you can take the special depreciation allowance.

Qualified Reuse and Recycling Property

You can take a 50% special depreciation allowance for qualified reuse and recycling property. Qualified reuse and recycling property is any machinery or equipment (not including buildings or real estate), along with any appurtenance, that is used exclusively to collect, distribute, or recycle qualified reuse and recyclable materials (as defined in section 168(m)(3)(B) of the Internal Revenue Code). Qualified reuse and recycling property also includes software necessary to operate such equipment. The property must meet the following requirements.

- The property must be depreciated under MACRS.
- The property must have a useful life of at least 5 years.
- The original use of the property must begin with you after August 31, 2008.
- You must have acquired the property by purchase (as discussed under *Property Acquired by Purchase* in chapter 2) after August 31, 2008, with no binding written contract for the acquisition in effect before September 1, 2008.
- The property must be placed in service for use in your trade or business after August 31, 2008.

Excepted Property

Qualified reuse and recycling property does not include any of the following.

- Any rolling stock or other equipment used to transport reuse or recyclable materials.
- Property required to be depreciated using the Alternative Depreciation System (ADS). For other property

required to be depreciated using ADS, see *Required use of ADS* under *Which Depreciation System (GDS or ADS) Applies* in chapter 4.

- Other bonus depreciation property to which section 168(k) of the Internal Revenue Code applies.
- Property for which you elected not to claim any special depreciation allowance (discussed later).
- Property placed in service and disposed of in the same tax year.
- Property converted from business use to personal use in the same tax year acquired. Property converted from personal use to business use in the same or later tax year may be qualified reuse and recycling property.

Qualified Second Generation Biofuel Plant Property

You can take a 50% special depreciation allowance for qualified second generation biofuel plant property (as defined in section 40(b)(6)(E) of the Internal Revenue Code). The property must meet the following requirements.

1. The property is used in the United States solely to produce second generation biofuel.
2. The original use of the property must begin with you after December 20, 2006.
3. You must have acquired the property by purchase (as discussed under *Property Acquired by Purchase* in chapter 2) after December 20, 2006, with no binding written contract for acquisition in effect before December 21, 2006.
4. The property must be placed in service for use in your trade or business or for the production of income before January 1, 2021.

Special Rules

Syndicated leasing transaction. If qualified second generation biofuel plant property is originally placed in service by a lessor after October 3, 2008, the property is sold within 3 months of the date it was placed in service, and the user of the property does not change, then the property is treated as originally placed in service by the taxpayer no earlier than the date of the last sale.

Multiple units of property subject to the same lease will be treated as originally placed in service no earlier than the date of sale if the property is sold within 3 months after the final unit is placed in service and the period between the time the first and last units are placed in service does not exceed 12 months.

Excepted Property

Qualified second generation property does not include the following.

- Property placed in service and disposed of in the same tax year.
- Property converted from business use to personal use in the same tax year it is acquired. Property converted from personal use to business use in the same or later tax year may be qualified second generation biofuel plant property.
- Property required to be depreciated using the Alternative Depreciation System (ADS). For other property required to be depreciated using ADS, see *Required use of ADS.* under *Which Depreciation System (GDS or ADS) Applies* in chapter 1.
- Property for which you elected not to claim any special depreciation allowance (discussed later).
- Property for which a deduction was taken under section 179C for certain qualified refinery property.
- Other bonus depreciation to which section 168(k) of the Internal Revenue Code applies.

Certain Qualified Property Acquired Before September 28, 2017

Certain qualified property (defined below), acquired before September 28, 2017, and placed in service in 2019, is eligible for a 30% special depreciation allowance. Property with a long production period and certain aircraft acquired before September 28, 2017, and placed in service in 2019, is eligible for 40% special depreciation allowance. Your property is qualified property if it meets the following requirements.

1. It is one of the following types of property.
   a. Tangible property depreciated under MACRS with a recovery period of 20 years or less.
   b. Water utility property depreciated under MACRS.
   c. Computer software defined in and depreciated under section 167(f)(1) of the Internal Revenue Code.
2. The property must also be placed in service before January 1, 2020 (or before January 1, 2021, for certain property with a long production period and for certain aircraft). See *Long Production Period Property* and *Noncommercial Aircraft*, later.
3. The original use of the property must begin with you.
4. It is not excepted property (explained later in *Excepted property*).

Long Production Period Property

To be qualified property, long production period property must meet the following requirements.

- It must meet the requirements in (1)–(4).
- The property has a recovery period of at least 10 years or is transportation property. Transportation property is tangible personal property used in the trade or business of transporting persons or property.
- The property is subject to section 263A of the Internal Revenue Code.

- The property has an estimated production period exceeding 1 year and an estimated production cost exceeding $1,000,000.
- You must have acquired the property, or acquired the property pursuant to a written contract entered into, before January 1, 2020.

Noncommercial Aircraft

To be qualified property, noncommercial aircraft must meet the following requirements.

- It must meet the requirements in (2)–(4).
- The aircraft must not be tangible personal property used in the trade or business of transporting persons or property (except for agricultural or firefighting purposes).
- The aircraft must be purchased (as discussed under *Property Acquired by Purchase* in chapter 2) by a purchaser who at the time of the contract for purchase, makes a nonrefundable deposit of the lesser of 10% of the cost or $100,000.
- The aircraft must have an estimated production period exceeding 4 months and a cost exceeding $200,000.
- You must have acquired the aircraft, or acquired the aircraft pursuant to a written contract entered into, before January 1, 2020.

Special Rules

Sale-leaseback. If you sold qualified property you placed in service and leased it back within 3 months after you originally placed it in service, the property is treated as originally placed in service no earlier than the date it is used by you under the leaseback.

Syndicated leasing transactions. If qualified property is originally placed in service by a lessor, the property is sold within 3 months of the date it was placed in service, and the user of the property does not change, then the property is treated as originally placed in service by the taxpayer no earlier than the date of the last sale.

Multiple units of property subject to the same lease will be treated as originally placed in service no earlier than the date of the last sale if the property is sold within 3 months after the final unit is placed in service and the period between the time the first and last units are placed in service does not exceed 12 months.

Excepted Property

Qualified property acquired before September 28, 2017, does not include any of the following.

- Property placed in service and disposed of in the same tax year.
- Property converted from business use to personal use in the same tax year acquired. Property converted from personal use to business use in the same or later tax year may be qualified property.
- Property required to be depreciated under the Alternative Depreciation System (ADS). This includes listed property used 50% or less in a qualified business use. For other property required to be depreciated using ADS, see *Required use of ADS* under *Which Depreciation System (GDS or ADS) Applies* in chapter 4.
- Property for which you elected not to claim any special depreciation allowance (discussed later).

Certain Qualified Property Acquired After September 27, 2017

You can take a 100% special depreciation allowance for property acquired after September 27, 2017, and placed in service before January 1, 2023 (or before January 1, 2024, for certain property with a long production period and for certain aircraft). Your property is qualified property if it meets the following.

- Tangible property depreciated under MACRS with a recovery period of 20 years or less.
- Computer software defined in and depreciated under section 167(f)(1) of the Internal Revenue Code.
- Water utility property.
- Qualified film, television, and live theatrical productions, as defined in sections 181(d) and (e) of the Internal Revenue Code.
- A specified plant for which you made the election to apply section 168(k)(5) for the tax year in which the plant is planted or grafted (explained later in *Certain Plants Bearing Fruits and Nuts*).
- It is not excepted property (explained later in *Excepted Property*).

Qualified property must also be placed in service before January 1, 2027 (or before January 1, 2028, for certain property with a long production period and for certain aircraft) and can be either new property or certain used property.

Excepted Property

Qualified property acquired after September 27, 2017, does not include any of the following.

- Property placed in service, or planted or grafted, and disposed of in the same tax year.
- Property converted from business use to personal use in the same tax year acquired. Property converted from personal use to business use in the same or later tax year may be qualified property.
- Property required to be depreciated under the Alternative Depreciation System (ADS). This includes listed property used 50% or less in a qualified business use. For other property required to be depreciated using ADS, see *Required use of ADS* under *Which Depreciation System (GDS or ADS) Applies* in chapter 4.
- Property for which you elected not to claim any special depreciation allowance (discussed later).

- Property described in section 168(k)(9)(A) and placed in service in any tax year beginning after December 31, 2017.
- Property described in section 168(k)(9)(B) and placed in service in any tax year beginning after December 31, 2017.

Certain Plants Bearing Fruits and Nuts

You can elect to claim a 100% special depreciation allowance for the adjusted basis of certain specified plants (defined later) bearing fruits and nuts planted or grafted after September 27, 2017, and before January 1, 2023.

A specified plant is:

- Any tree or vine that bears fruits or nuts, and
- Any other plant that will have more than one yield of fruits or nuts and generally has a pre-productive period of more than 2 years from planting or grafting to the time it begins bearing fruits or nuts.

Any property planted or grafted outside the United States does not qualify as a specified plant.

If you elect to claim the special depreciation allowance for any specified plant, the special depreciation allowance applies only for the tax year in which the plant is planted or grafted. The plant will not be treated as qualified property eligible for the special depreciation allowance in the subsequent tax year in which it is placed in service.

To make the election, attach a statement to your timely filed return (including extensions) for the tax year in which you plant or graft the specified plant(s) indicating you are electing to apply section 168(k)(5) and identifying the specified plant(s) for which you are making the election. The election once made cannot be revoked without IRS consent.

See section 168(k)(5) of the Internal Revenue Code.

How Much Can You Deduct?

Terms you may need to know (see Glossary):

Adjusted basis

Basis

Placed in service

Figure the special depreciation allowance by multiplying the depreciable basis of qualified reuse and recycling property, certain qualified property acquired before September 28, 2017, certain qualified property acquired after September 27, 2017, and certain plants bearing fruits and nuts by the applicable percentage.

For qualified property other than listed property, enter the special depreciation allowance on Form 4562, Part II, line 14. For qualified property that is listed property, enter the special depreciation allowance on Form 4562, Part V, line 25.



If you place qualified property in service in a short tax year, you can take the full amount of a special depreciation allowance.

Depreciable basis. This is the property's cost or other basis multiplied by the percentage of business/investment use, reduced by the total amount of any credits and deductions allocable to the property.

The following are examples of some credits and deductions that reduce depreciable basis.

- Any section 179 deduction.
- Any deduction for removal of barriers to the disabled and the elderly.
- Any disabled access credit, enhanced oil recovery credit, and credit for employer-provided childcare facilities and services.
- Basis adjustment to investment credit property under section 50(c) of the Internal Revenue Code.
- Section 181 expense deduction.

For additional credits and deductions that affect basis, see section 1016 of the Internal Revenue Code.

For information about how to determine the cost or other basis of property, see *What Is the Basis of Your Depreciable Property* in chapter 1. For a discussion of business/investment use, see *Partial business or investment use* under *Property Used in Your Business or Income-Producing Activity* in chapter 1.

Depreciating the remaining cost. After you figure your special depreciation allowance for your qualified property, you can use the remaining cost to figure your regular MACRS depreciation deduction (discussed in chapter 4). Therefore, you must reduce the depreciable basis of the property by the special depreciation allowance before figuring your regular MACRS depreciation deduction.

Example. On July 1, 2019, Tom Brown placed in service in his business qualified property that cost $450,000, and that he acquired before September 28, 2017. He did not elect to claim a section 179 deduction. He deducts 30% of the cost ($135,000) as a special depreciation allowance for 2019. He uses the remaining $315,000 of the cost to figure his regular MACRS depreciation deduction for 2019 and later years.

Like-kind exchanges and involuntary conversions. If you acquired qualified property in a like-kind exchange or involuntary conversion after September 27, 2017, and the qualified property is new property, the carryover basis and any excess basis of the acquired property is eligible for the special depreciation allowance.

If you acquired qualified property in a like-kind exchange or involuntary conversion after September 27, 2017, and the qualified property is used property, only the

excess basis of the acquired property is eligible for the special depreciation allowance. After you figure your special allowance, you can use the remaining carryover basis to figure your regular MACRS depreciation deduction. See *Figuring the Deduction for Property Acquired in a Nontaxable Exchange* in chapter 4 under *How Is the Depreciation Deduction Figured*.

How Can You Elect Not To Claim an Allowance?

You can elect, for any class of property, not to deduct any special depreciation allowances for all property in such class placed in service during the tax year.

To make an election, attach a statement to your return indicating what election you are making and the class of property for which you are making the election.

The election must be made separately by each person owning qualified property (for example, by the partnerships, by the S corporation, or for each member of a consolidated group by the common parent of the group).

When to make election. Generally, you must make the election on a timely filed tax return (including extensions) for the year in which you place the property in service.

However, if you timely filed your return for the year without making the election, you can still make the election by filing an amended return within 6 months of the due date of the original return (not including extensions). Attach the election statement to the amended return. On the amended return, write "Filed pursuant to section 301.9100-2."

Revoking an election. Once you elect not to deduct a special depreciation allowance for a class of property, you cannot revoke the election without IRS consent. A request to revoke the election is a request for a letter ruling.

CAUTION *If you elect not to have any special depreciation allowance apply, the property placed in service after 2015 will not be subject to an alternative minimum tax adjustment for depreciation.*

When Must You Recapture an Allowance?

When you dispose of property for which you claimed a special depreciation allowance, any gain on the disposition is generally recaptured (included in income) as ordinary income up to the amount of the special depreciation allowance previously allowed or allowable. See *When Do You Recapture MACRS Depreciation* in chapter 4 for more information.

Recapture of allowance deducted for qualified GO Zone property. If, in any year after the year you claim the special depreciation allowance for qualified GO Zone property (including specified GO Zone extension property), the property ceases to be used in the GO Zone, you may have to recapture as ordinary income the excess benefit you received from claiming the special depreciation allowance. For additional guidance, see Notice 2008-25 on page 484 of Internal Revenue Bulletin 2008-9 available at *www.irs.gov/irb/2008-09_IRB/index.html*.

Qualified cellulosic biomass ethanol plant property, qualified cellulosic biofuel plant property, and qualified second generation biofuel plant property. If, in any year after the year you claim the special depreciation allowance for any qualified cellulosic biomass ethanol plant property, qualified cellulosic biofuel plant property, or qualified second generation biofuel plant property, the property ceases to be qualified cellulosic biomass ethanol plant property, qualified cellulosic biofuel plant property, or qualified second generation biofuel plant property, you may have to recapture as ordinary income the excess benefit you received from claiming the special depreciation allowance.

Recapture of allowance for qualified Recovery Assistance property. If, in any year after the year you claim the special depreciation allowance for qualified Recovery Assistance property, the property ceases to be used in the Kansas disaster area, you may have to recapture as ordinary income the excess benefit you received from claiming the special depreciation allowance. For additional guidance, see Notice 2008-67 on page 307 of Internal Revenue Bulletin 2008-32, available at *www.irs.gov/irb/2008-32_IRB/index.html*.

Recapture of allowance for qualified disaster assistance property. If, in any year after the year you claim the special depreciation allowance for qualified disaster assistance property, the property ceases to be used in the applicable disaster area, you may have to recapture as ordinary income the excess benefit you received from claiming the special depreciation allowance.

4.

Figuring Depreciation Under MACRS

Introduction

The Modified Accelerated Cost Recovery System (MACRS) is used to recover the basis of most business and investment property placed in service after 1986.

MACRS consists of two depreciation systems, the General Depreciation System (GDS) and the Alternative Depreciation System (ADS). Generally, these systems provide different methods and recovery periods to use in figuring depreciation deductions.

CAUTION *To be sure you can use MACRS to figure depreciation for your property, see* What Method Can You Use To Depreciate Your Property *in chapter 1.*

This chapter explains how to determine which MACRS depreciation system applies to your property. It also discusses other information you need to know before you can figure depreciation under MACRS. This information includes the property's recovery class, placed in service date, and basis, as well as the applicable recovery period, convention, and depreciation method. It explains how to use this information to figure your depreciation deduction and how to use a general asset account to depreciate a group of properties. Finally, it explains when and how to recapture MACRS depreciation.

Useful Items

You may want to see:

Publication

- ❑ **225** Farmer's Tax Guide
- ❑ **463** Travel, Gift, and Car Expenses
- ❑ **544** Sales and Other Dispositions of Assets
- ❑ **551** Basis of Assets
- ❑ **587** Business Use of Your Home (Including Use by Daycare Providers)

Form (and Instructions)

- ❑ **2106** Employee Business Expenses
- ❑ **4562** Depreciation and Amortization

See chapter 6 for information about getting publications and forms.

Which Depreciation System (GDS or ADS) Applies?

Terms you may need to know (see Glossary):

Listed property

Nonresidential real property

Placed in service

Property class

Recovery period

Residential rental property

Tangible property

Tax exempt

Your use of either the General Depreciation System (GDS) or the Alternative Depreciation System (ADS) to depreciate property under MACRS determines what depreciation method and recovery period you use. You must generally use GDS unless you are specifically required by law to use ADS or you elect to use ADS.

If you placed your property in service in 2019, complete Part III of Form 4562 to report depreciation using MACRS. Complete section B of Part III to report depreciation using GDS, and complete section C of Part III to report depreciation using ADS. If you placed your property in service before 2019 and are required to file Form 4562, report depreciation using either GDS or ADS on line 17 in Part III.

Required use of ADS. You must use ADS for the following property.

- Nonresidential real property, residential real property, and qualified improvement property held by an electing real property trade or business (as defined in section 163(j)(7)(B) of the Internal Revenue Code). For more information, see Revenue Procedure 2019-8 on page 347 of the Internal Revenue Bulletin 2019-3 available at *www.irs.gov/irb/2019-03_IRB#RP-2019-08*.
- Any property with a recovery period of 10 years or more under the GDS held by an electing farming business (as defined in section 163(j)(7)(C) of the Internal Revenue Code). For more information, see Revenue Procedure 2019-8 on page 347 of the Internal Revenue Bulletin 2019-3 available at *www.irs.gov/irb/2019-03_IRB#RP-2019-08*.
- Any tax-exempt use property.
- Any tax-exempt bond-financed property.
- All property used predominantly in a farming business and placed in service in any tax year during which an election not to apply the uniform capitalization rules to certain farming costs is in effect.
- Any property imported from a foreign country for which an Executive Order is in effect because the country maintains trade restrictions or engages in other discriminatory acts.

CAUTION *If you are required to use ADS to depreciate your property, you cannot claim any special depreciation allowance (discussed in chapter 3) for the property.*

Electing ADS. Although your property may qualify for GDS, you can elect to use ADS. The election must generally cover all property in the same property class that you placed in service during the year. However, the election for residential rental property and nonresidential real property can be made on a property-by-property basis. Once you make this election, you can never revoke it.

You make the election by completing Form 4562, Part III, line 20.

Which Property Class Applies Under GDS?

Terms you may need to know (see Glossary):

Class life

Nonresidential real property

Placed in service

Property class

Recovery period

Residential rental property

Section 1245 property

Section 1250 property

The following is a list of the nine property classifications under GDS and examples of the types of property included in each class. These property classes are also listed under column (a) in section B, Part III, of Form 4562. For detailed information on property classes, see Appendix B, Table of Class Lives and Recovery Periods, in this publication.

1. ***3-year property***.
   a. Tractor units for over-the-road use.
   b. Any race horse over 2 years old when placed in service before January 1, 2009. (Any race horse placed in service after December 31, 2008, and before January 1, 2021, is treated as 3-year property regardless of the age of the race horse.)
   c. Any other horse (other than a race horse) over 12 years old when placed in service.
   d. Qualified rent-to-own property (defined later).
2. ***5-year property***.
   a. Automobiles, taxis, buses, and trucks.
   b. Any qualified technological equipment.
   c. Office machinery (such as typewriters, calculators, and copiers).
   d. Any property used in research and experimentation.
   e. Breeding cattle and dairy cattle.
   f. Appliances, carpets, furniture, etc., used in a residential rental real estate activity.
   g. Certain geothermal, solar, and wind energy property.
   h. Any machinery equipment (other than any grain bin, cotton ginning asset, fence, or other land improvement) used in a farming business and placed in service after 2017, in tax years ending after 2017. The original use of the property must begin with you after 2017.
3. ***7-year property***.
   a. Office furniture and fixtures (such as desks, files, and safes).
   b. Used agricultural machinery and equipment placed in service after 2017, grain bins, cotton ginning assets, or fences used in a farming business (but no other land improvements).
   c. Railroad track.
   d. Any property that does not have a class life and has not been designated by law as being in any other class.
   e. Certain motorsports entertainment complex property (defined later) placed in service before January 1, 2021.
   f. Any natural gas gathering line placed in service after April 11, 2005. See *Natural gas gathering line and electric transmission property*, later.
4. ***10-year property***.
   a. Vessels, barges, tugs, and similar water transportation equipment.
   b. Any single-purpose agricultural or horticultural structure.
   c. Any tree or vine bearing fruits or nuts.
   d. Qualified small electric meter and qualified smart electric grid system (defined later) placed in service on or after October 3, 2008.
5. ***15-year property***.
   a. Certain improvements made directly to land or added to it (such as shrubbery, fences, roads, sidewalks, and bridges).
   b. Any retail motor fuels outlet (defined later), such as a convenience store.
   c. Any municipal wastewater treatment plant.
   d. Initial clearing and grading land improvements for gas utility property.
   e. Electric transmission property (that is section 1245 property) used in the transmission at 69 or more kilovolts of electricity placed in service after April 11, 2005. See *Natural gas gathering line and electric transmission property*, later.
   f. Any natural gas distribution line placed in service after April 11, 2005, and before January 1, 2011.
   g. Any telephone distribution plant and comparable equipment used for 2-way exchange of voice and data communications.
6. ***20-year property.***
   a. Farm buildings (other than single-purpose agricultural or horticultural structures).

b. Municipal sewers not classified as 25-year property.

c. Initial clearing and grading land improvements for electric utility transmission and distribution plants.

7. ***25-year property.*** This class is water utility property, which is either of the following.

   a. Property that is an integral part of the gathering, treatment, or commercial distribution of water, and that, without regard to this provision, would be 20-year property.

   b. Municipal sewers other than property placed in service under a binding contract in effect at all times since June 9, 1996.

8. ***Residential rental property.*** This is any building or structure, such as a rental home (including a mobile home), if 80% or more of its gross rental income for the tax year is from dwelling units. A dwelling unit is a house or apartment used to provide living accommodations in a building or structure. It does not include a unit in a hotel, motel, or other establishment where more than half the units are used on a transient basis. If you occupy any part of the building or structure for personal use, its gross rental income includes the fair rental value of the part you occupy.

9. ***Nonresidential real property.*** This is section 1250 property, such as an office building, store, or warehouse, that is neither residential rental property nor property with a class life of less than 27.5 years.

Qualified rent-to-own property. Qualified rent-to-own property is property held by a rent-to-own dealer for purposes of being subject to a rent-to-own contract. It is tangible personal property generally used in the home for personal use. It includes computers and peripheral equipment, televisions, videocassette recorders, stereos, camcorders, appliances, furniture, washing machines and dryers, refrigerators, and other similar consumer durable property. Consumer durable property does not include real property, aircraft, boats, motor vehicles, or trailers.

If some of the property you rent to others under a rent-to-own agreement is of a type that may be used by the renters for either personal or business purposes, you still can treat this property as qualified property as long as it does not represent a significant portion of your leasing property. However, if this dual-use property does represent a significant portion of your leasing property, you must prove that this property is qualified rent-to-own property.

Rent-to-own dealer. You are a rent-to-own dealer if you meet all the following requirements.

- You regularly enter into rent-to-own contracts (defined below) in the ordinary course of your business for the use of consumer property.
- A substantial portion of these contracts end with the customer returning the property before making all the payments required to transfer ownership.
- The property is tangible personal property of a type generally used within the home for personal use.

Rent-to-own contract. This is any lease for the use of consumer property between a rent-to-own dealer and a customer who is an individual, which meets all of the following requirements.

- Is titled “Rent-to-Own Agreement,” “Lease Agreement with Ownership Option,” or other similar language.
- Provides a beginning date and a maximum period of time, not to exceed 156 weeks or 36 months from the beginning date, for which the contract can be in effect (including renewals or options to extend).
- Provides for regular periodic (weekly or monthly) payments that can be either level or decreasing. If the payments are decreasing, no payment can be less than 40% of the largest payment.
- Provides for total payments that generally exceed the normal retail price of the property plus interest.
- Provides for total payments that do not exceed $10,000 for each item of property.
- Provides that the customer has no legal obligation to make all payments outlined in the contract and that, at the end of each weekly or monthly payment period, the customer can either continue to use the property by making the next payment or return the property in good working order with no further obligations and no entitlement to a return of any prior payments.
- Provides that legal title to the property remains with the rent-to-own dealer until the customer makes either all the required payments or the early purchase payments required under the contract to acquire legal title.
- Provides that the customer has no right to sell, sublease, mortgage, pawn, pledge, or otherwise dispose of the property until all contract payments have been made.

Motorsports entertainment complex. This is a racing track facility permanently situated on land that hosts one or more racing events for automobiles, trucks, or motorcycles during the 36-month period after the first day of the month in which the facility is placed in service. The events must be open to the public for the price of admission.

Qualified smart electric grid system. A qualified smart electric grid system means any smart grid property used as part of a system for electric distribution grid communications, monitoring, and management placed in service after October 3, 2008, by a taxpayer who is a supplier of electrical energy or a provider of electrical energy services. Smart grid property includes electronics and related equipment that is capable of:

- Sensing, collecting, and monitoring data of or from all portions of a utility's electric distribution grid;
- Providing real-time, two-way communications to monitor or to manage the grid; and

- Providing real-time analysis of an event prediction based on collected data that can be used to provide electric distribution system reliability, quality, and performance.

Retail motor fuels outlet. Real property is a retail motor fuels outlet if it is used to a substantial extent in the retail marketing of petroleum or petroleum products (whether or not it is also used to sell food or other convenience items) and meets any one of the following three tests.

- It is not larger than 1,400 square feet.
- 50% or more of the gross revenues generated from the property are derived from petroleum sales.
- 50% or more of the floor space in the property is devoted to petroleum marketing sales.

A retail motor fuels outlet does not include any facility related to petroleum and natural gas trunk pipelines.

Qualified improvement property. Generally, this is any improvement to an interior part of a building that is nonresidential real property, and the improvement is section 1250 property and is placed in service by you after 2017 and after the date the building was first placed in service by any person.

However, a qualified improvement does not include any improvement for which the expenditure is attributable to any of the following.

- The enlargement of the building.
- Any elevator or escalator.
- The internal structural framework of the building.

Qualified smart electric meter. A qualified smart electric meter is any time-based meter and related communication equipment, which is placed in service by a supplier of electric energy or a provider of electric energy services and which is capable of being used by you as part of a system that meets all of the following requirements.

- Measures and records electricity usage data on a time-differentiated basis in at least 24 separate time segments per day.
- Provides for the exchange of information between the supplier or provider and the customer's smart electric meter in support of time-based rates or other forms of demand response.
- Provides data to the supplier or provider so that the supplier or provider can provide energy usage information to customers electronically.
- Provides all commercial and residential customers of such supplier or provider with net metering. Net metering means allowing a customer a credit, if any, as complies with applicable federal and state laws and regulations for providing electricity to the supplier or provider.

Natural gas gathering line and electric transmission property. Any natural gas gathering line placed in service after April 11, 2005, is treated as 7-year property, and electric transmission property (that is section 1245 property) used in the transmission at 69 or more kilovolts of electricity and any natural gas distribution line placed in service after April 11, 2005, are treated as 15-year property, if the following requirements are met.

- The original use of the property must have begun with you after April 11, 2005. Original use means the first use to which the property is put, whether or not by you. Therefore, property used by any person before April 12, 2005, is not original use. Original use includes additional capital expenditures you incurred to recondition or rebuild your property. However, original use does not include the cost of reconditioned or rebuilt property you acquired. Property containing used parts will not be treated as reconditioned or rebuilt if the cost of the used parts is not more than 20% of the total cost of the property.
- The property must not be placed in service under a binding contract in effect before April 12, 2005.
- The property must not be self-constructed property (property you manufacture, construct, or produce for your own use), if you began the manufacture, construction, or production of the property before April 12, 2005. Property that is manufactured, constructed, or produced for your use by another person under a written binding contract entered into by you or a related party before the manufacture, construction, or production of the property is considered to be manufactured, constructed, or produced by you.

What Is the Placed in Service Date?

Terms you may need to know (see Glossary):

Placed in service

You begin to claim depreciation when your property is placed in service for either use in a trade or business or the production of income. The placed in service date for your property is the date the property is ready and available for a specific use. It is therefore not necessarily the date it is first used. If you converted property held for personal use to use in a trade or business or for the production of income, treat the property as being placed in service on the conversion date. See *Placed in Service* under *When Does Depreciation Begin and End* in chapter 1 for examples illustrating when property is placed in service.

What Is the Basis for Depreciation?

Terms you may need to know (see Glossary):

Basis

The basis for depreciation of MACRS property is the property's cost or other basis multiplied by the percentage of business/investment use. For a discussion of business/investment use, see *Partial business or investment use* under *Property Used in Your Business or Income-Producing Activity* in chapter 1. Reduce that amount by any credits and deductions allocable to the property. The following are examples of some credits and deductions that reduce basis.

- Any deduction for section 179 property.
- Any deduction under section 179B of the Internal Revenue Code for capital costs to comply with Environmental Protection Agency sulfur regulations.
- Any deduction under section 179D of the Internal Revenue Code for certain energy efficiency commercial building property placed in service after December 31, 2005, and before January 1, 2021.
- Any deduction for removal of barriers to the disabled and the elderly.
- Any disabled access credit, enhanced oil recovery credit, and credit for employer-provided childcare facilities and services.
- Any special depreciation allowance.
- Basis adjustment for investment credit property under section 50(c) of the Internal Revenue Code.

For additional credits and deductions that affect basis, see section 1016 of the Internal Revenue Code.

Enter the basis for depreciation under column (c) in Part III of Form 4562. For information about how to determine the cost or other basis of property, see *What Is the Basis of Your Depreciable Property* in chapter 1.

Which Recovery Period Applies?

Terms you may need to know (see Glossary):

Active conduct of a trade or business

Basis

Improvement

Listed property

Nonresidential real property

Placed in service

Property class

Recovery period

Residential rental property

Section 1245 property

The recovery period of property is the number of years over which you recover its cost or other basis. It is determined based on the depreciation system (GDS or ADS) used.

Recovery Periods Under GDS

Under GDS, property is depreciated over one of the following recovery periods.

Property Class	Recovery Period
3-year property	3 years [1]
5-year property	5 years
7-year property	7 years
10-year property	10 years
15-year property	15 years [2]
20-year property	20 years
25-year property	25 years [3]
Residential rental property	27.5 years
Nonresidential real property	39 years [4]

[1] 5 years for qualified rent-to-own property placed in service before August 6, 1997.

[2] 39 years for property that is a retail motor fuels outlet placed in service before August 20, 1996 (31.5 years if placed in service before May 13, 1993), unless you elected to depreciate it over 15 years.

[3] 20 years for property placed in service before June 13, 1996, or under a binding contract in effect before June 10, 1996.

[4] 31.5 years for property placed in service before May 13, 1993 (or before January 1, 1994, if the purchase or construction of the property is under a binding contract in effect before May 13, 1993, or if construction began before May 13, 1993).

The GDS recovery periods for property not listed above can be found in Appendix B, *Table of Class Lives and Recovery Periods*. Residential rental property and nonresidential real property are defined earlier under *Which Property Class Applies Under GDS*.

Enter the appropriate recovery period on Form 4562 under column (d) in section B of Part III, unless already shown (for 25-year property, residential rental property, and nonresidential real property).

Office in the home. If your home is a personal-use single family residence and you begin to use part of your

home as an office, depreciate that part of your home as nonresidential real property over 39 years (31.5 years if you began using it for business before May 13, 1993). However, if your home is an apartment in an apartment building that you own and the building is residential rental property, as defined earlier under *Which Property Class Applies Under GDS*, depreciate the part used as an office as residential rental property over 27.5 years. See Pub. 587 for a discussion of the tests you must meet to claim expenses, including depreciation, for the business use of your home.

Home changed to rental use. If you begin to rent a home that was your personal home before 1987, you depreciate it as residential rental property over 27.5 years.

Indian Reservation Property

The recovery periods for qualified property you placed in service on an Indian reservation after 1993 and before 2021 are shorter than those listed earlier. The following table shows these shorter recovery periods.

Property Class	Recovery Period
3-year property	2 years
5-year property	3 years
7-year property	4 years
10-year property	6 years
15-year property	9 years
20-year property	12 years
Nonresidential real property	22 years

Nonresidential real property is defined earlier under *Which Property Class Applies Under GDS*.

Use this chart to find the correct percentage table to use for qualified Indian reservation property.

IF your recovery period is:	**THEN** use the following table in Appendix A:
2 years	A-21
3 years	A-1, A-2, A-3, A-4, or A-5
4 years	A-22
6 years	A-23
9 years	A-14, A-15, A-16, A-17, or A-18
12 years	A-14, A-15, A-16, A-17, or A-18
22 years	A-24

Qualified property. Property eligible for the shorter recovery periods are 3-, 5-, 7-, 10-, 15-, and 20-year property and nonresidential real property. You must use this property predominantly in the active conduct of a trade or business within an Indian reservation. The rental of real property that is located on an Indian reservation is treated as the active conduct of a trade or business within an Indian reservation.

The following property is not qualified property.

1. Property used or located outside an Indian reservation on a regular basis, other than qualified infrastructure property.
2. Property acquired directly or indirectly from a related person.
3. Property placed in service for purposes of conducting or housing class I, II, or III gaming activities. These activities are defined in section 4 of the Indian Regulatory Act (25 U.S.C. 2703).
4. Any property you must depreciate under ADS. Determine whether property is qualified without regard to the election to use ADS and after applying the special rules for listed property not used predominantly for qualified business use (discussed in chapter 5).

Note. You can make an election out of the shorter recovery period(s) above for qualified Indian reservation property in a class of property that is placed in service in a tax year beginning after December 31, 2015.

To make this election, attach a statement to your timely filed return (including extensions) for the tax year in which you place the property in service indicating the class of property for which you are making the election and that, for such class, you are electing not to apply section 168(j). Once made, this election is irrevocable.

CAUTION *If you make this election, the property placed in service in a tax year beginning after December 31, 2015, will be subject to an alternative minimum tax adjustment for depreciation.*

Qualified infrastructure property. Item (1) above does not apply to qualified infrastructure property located outside the reservation that is used to connect with qualified infrastructure property within the reservation. Qualified infrastructure property is property that meets all the following rules.

- It is qualified property, as defined earlier, except that it is outside the reservation.
- It benefits the tribal infrastructure.
- It is available to the general public.
- It is placed in service in connection with the active conduct of a trade or business within a reservation.

Infrastructure property includes, but is not limited to, roads, power lines, water systems, railroad spurs, and communications facilities.

Related person. For purposes of item (2) above, see *Related persons* in the discussion on property owned or used in 1986 under *What Method Can You Use To Depreciate Your Property* in chapter 1 for a description of related persons.

Indian reservation. The term Indian reservation means a reservation as defined in section 3(d) of the Indian Financing Act of 1974 (25 U.S.C. 1452(d)) or section 4(10) of the Indian Child Welfare Act of 1978 (25 U.S.C. 1903(10)). Section 3(d) of the Indian Financing Act of

1974 defines reservation to include former Indian reservations in Oklahoma. For a definition of the term "former Indian reservations in Oklahoma," see Notice 98-45 in Internal Revenue Bulletin 1998-35.

Recovery Periods Under ADS

The recovery periods for most property are generally longer under ADS than they are under GDS. The following table shows some of the ADS recovery periods.

Property	Recovery Period
Rent-to-own property	4 years
Automobiles and light duty trucks	5 years
Computers and peripheral equipment	5 years
High technology telephone station equipment installed on customer premises	5 years
High technology medical equipment	5 years
Personal property with no class life	12 years
Natural gas gathering lines	14 years
Single-purpose agricultural and horticultural structures	15 years
Any tree or vine bearing fruits or nuts	20 years
Initial clearing and grading land improvements for gas utility property	20 years
Initial clearing and grading land improvements for electric utility transmission and distribution plants	25 years
Electric transmission property used in the transmission at 69 or more kilovolts of electricity	30 years
Natural gas distribution lines	35 years
Nonresidential real property	40 years
Residential rental property	30 years[1]
Section 1245 real property not listed in Appendix B	40 years
Railroad grading and tunnel bore	50 years

[1]40 years for property placed in service before January 1, 2018.

The ADS recovery periods for property not listed above can be found in the tables in Appendix B. Rent-to-own property, residential rental property, and nonresidential real property are defined earlier under *Which Property Class Applies Under GDS*.

Tax-exempt use property subject to a lease. The ADS recovery period for any property leased under a lease agreement to a tax-exempt organization, governmental unit, or foreign person or entity (other than a partnership) cannot be less than 125% of the lease term.

Additions and Improvements

An addition or improvement you make to depreciable property is treated as separate depreciable property. See *How Do You Treat Repairs and Improvements* in chapter 1 for a definition of improvements. Its property class and recovery period are the same as those that would apply to the original property if you had placed it in service at the same time you placed the addition or improvement in service. The recovery period begins on the later of the following dates.

- The date you place the addition or improvement in service.
- The date you place in service the property to which you made the addition or improvement.

Example. You own a rental home that you have been renting out since 1981. If you put an addition on the home and place the addition in service this year, you would use MACRS to figure your depreciation deduction for the addition. Under GDS, the property class for the addition is residential rental property and its recovery period is 27.5 years because the home to which the addition is made would be residential rental property if you had placed it in service this year.

Which Convention Applies?

Terms you may need to know (see Glossary):

Basis

Convention

Disposition

Nonresidential real property

Placed in service

Recovery period

Residential rental property

Under MACRS, averaging conventions establish when the recovery period begins and ends. The convention you use determines the number of months for which you can claim depreciation in the year you place property in service and in the year you dispose of the property.

The mid-month convention. Use this convention for nonresidential real property, residential rental property, and any railroad grading or tunnel bore.

Under this convention, you treat all property placed in service or disposed of during a month as placed in service or disposed of at the midpoint of the month. This means that a one-half month of depreciation is allowed for the month the property is placed in service or disposed of.

Your use of the mid-month convention is indicated by the "MM" already shown under column (e) in Part III of Form 4562.

The mid-quarter convention. Use this convention if the mid-month convention does not apply and the total depreciable bases of MACRS property you placed in service

during the last 3 months of the tax year (excluding nonresidential real property, residential rental property, any railroad grading or tunnel bore, property placed in service and disposed of in the same year, and property that is being depreciated under a method other than MACRS) are more than 40% of the total depreciable bases of all MACRS property you placed in service during the entire year.

Under this convention, you treat all property placed in service or disposed of during any quarter of the tax year as placed in service or disposed of at the midpoint of that quarter. This means that, for a 12-month taxable year, 1 1/2 months of depreciation is allowed for the quarter the property is placed in service or disposed of.

If you use this convention, enter "MQ" under column (e) in Part III of Form 4562.

CAUTION *For purposes of determining whether the mid-quarter convention applies, the depreciable basis of property you placed in service during the tax year reflects the reduction in basis for amounts expensed under section 179 and the part of the basis of property attributable to personal use. However, it does not reflect any reduction in basis for any special depreciation allowance.*

The half-year convention. Use this convention if neither the mid-quarter convention nor the mid-month convention applies.

Under this convention, you treat all property placed in service or disposed of during a tax year as placed in service or disposed of at the midpoint of the year. This means that for a 12-month taxable year, a one-half year of depreciation is allowed for the year the property is placed in service or disposed of.

If you use this convention, enter "HY" under column (e) in Part III of Form 4562.

See *Figuring the Deduction for a Short Tax Year*, later, for information on the short tax year rules.

Which Depreciation Method Applies?

Terms you may need to know (see Glossary):

- Declining balance method
- Listed property
- Nonresidential real property
- Placed in service
- Property class
- Recovery period
- Residential rental property
- Straight line method
- Tax exempt

MACRS provides three depreciation methods under GDS and one depreciation method under ADS.

- The 200% declining balance method over a GDS recovery period.
- The 150% declining balance method over a GDS recovery period.
- The straight line method over a GDS recovery period.
- The straight line method over an ADS recovery period.

CAUTION *For property placed in service before 1999, you could have elected the 150% declining balance method using the ADS recovery periods for certain property classes. If you made this election, continue to use the same method and recovery period for that property.*

Table 4-1 lists the types of property you can depreciate under each method. It also gives a brief explanation of the method, including any benefits that may apply.

Depreciation Methods for Farm Property

If you place personal property in service in a farming business after 1988, and before 2018, you must generally depreciate it under GDS using the 150% declining balance method unless you are a farmer who must depreciate the property under ADS using the straight line method or you elect to depreciate the property under GDS or ADS using the straight line method. You can depreciate real property using the straight line method under either GDS or ADS.

Note. For 3-, 5-, 7-, or 10-year property used in a farming business and placed in service after 2017, in tax years ending after 2017, the 150% declining balance method is no longer required. However, the 150% declining balance method will continue to apply to any 15- or 20-year property used in a farming business to which the straight line method does not apply or to property for which you elect the use of the 150% declining balance method.

Fruits or nut trees and vines. Depreciate trees and vines bearing fruits or nuts under GDS using the straight line method over a recovery period of 10 years.

ADS required for some farmers. If you elect not to apply the uniform capitalization rules to any plant produced in your farming business, you must use ADS. You must use ADS for all property you place in service in any year the election is in effect. See the regulations under section 263A of the Internal Revenue Code for information on the uniform capitalization rules that apply to farm property.

Electing a Different Method

As shown in Table 4-1, you can elect a different method for depreciation for certain types of property. You must

make the election by the due date of the return (including extensions) for the year you placed the property in service. However, if you timely filed your return for the year without making the election, you can still make the election by filing an amended return within 6 months of the due date of the return (excluding extensions). Attach the election to the amended return and write "Filed pursuant to section 301.9100-2" on the election statement. File the amended return at the same address you filed the original return. Once you make the election, you cannot change it.



If you elect to use a different method for one item in a property class, you must apply the same method to all property in that class placed in service during the year of the election. However, you can make the election on a property-by-property basis for nonresidential real and residential rental property.

150% election. Instead of using the 200% declining balance method over the GDS recovery period for property in the 3-, 5-, 7-, or 10-year property classes, you can elect to use the 150% declining balance method. Make the election by entering "150 DB" under column (f) in Part III of Form 4562.

Straight line election. Instead of using either the 200% or 150% declining balance methods over the GDS recovery period, you can elect to use the straight line method over the GDS recovery period. Make the election by entering "S/L" under column (f) in Part III of Form 4562.

Election of ADS. As explained earlier under *Which Depreciation System (GDS or ADS) Applies*, you can elect to use ADS even though your property may come under GDS. ADS uses the straight line method of depreciation over fixed ADS recovery periods. Most ADS recovery periods are listed in Appendix B, or see the table under *Recovery Periods Under ADS*, earlier.

Make the election by completing line 20 in Part III of Form 4562.

15- or 20-year farm property. Instead of using the 150% declining balance method over a GDS recovery period for 15- or 20-year property you use in a farming business (other than real property), you can elect to depreciate it using either of the following methods.

- The straight line method over a GDS recovery period.
- The straight line method over an ADS recovery period.

How Is the Depreciation Deduction Figured?

Terms you may need to know (see Glossary):

Adjusted basis

Amortization

Basis

Business/investment use

Convention

Declining balance method

Disposition

Exchange

Nonresidential real property

Placed in service

Property class

Recovery period

Straight line method

Unadjusted basis

To figure your depreciation deduction under MACRS, you first determine the depreciation system, property class, placed in service date, basis amount, recovery period, convention, and depreciation method that applies to your property. Then, you are ready to figure your depreciation deduction. You can figure it using a percentage table provided by the IRS, or you can figure it yourself without using the table.

Using the MACRS Percentage Tables

To help you figure your deduction under MACRS, the IRS has established percentage tables that incorporate the applicable convention and depreciation method. These percentage tables are in Appendix A near the end of this publication.

Which table to use. Appendix A contains the *MACRS Percentage Table Guide*, which is designed to help you locate the correct percentage table to use for depreciating your property. The percentage tables immediately follow the guide.

Rules Covering the Use of the Tables

The following rules cover the use of the percentage tables.

1. You must apply the rates in the percentage tables to your property's unadjusted basis.
2. You cannot use the percentage tables for a short tax year. See *Figuring the Deduction for a Short Tax Year* later, for information on the short tax year rules.
3. Once you start using the percentage tables for any item of property, you must generally continue to use them for the entire recovery period of the property.
4. You must stop using the tables if you adjust the basis of the property for any reason other than:
   a. Depreciation allowed or allowable, or
   b. An addition or improvement to that property that is depreciated as a separate item of property.

Table 4-1. **Depreciation Methods**

Note. The declining balance method is abbreviated as DB and the straight line method is abbreviated as SL.		
Method	**Type of Property**	**Benefit**
GDS using 200% DB	• Nonfarm 3-, 5-, 7-, and 10-year property • Farm 3-, 5-, 7-, and 10-year property placed in service after 2017, in tax years ending after 2017	• Provides a greater deduction during the earlier recovery years • Changes to SL when that method provides an equal or greater deduction
GDS using 150% DB	• Farm 3-, 5-, 7-, or 10-year property placed in service before 2018 • All 15- and 20-year property • Nonfarm 3-, 5-, 7-, or 10-year property[2] • Farm 3-, 5-, 7-, or 10-year property placed in service after 2017[2]	• Provides a greater deduction during the earlier recovery years • Changes to SL when that method provides an equal or greater deduction[1]
GDS using SL	• Nonresidential real property • Residential rental property • Trees or vines bearing fruits or nuts • Water utility property • All 3-, 5-, 7-, 10-, 15-, and 20-year property[2] • Property for which you elected section 168(k)(4) of the Internal Revenue Code for a tax year beginning before January 1, 2018 • Qualified improvement property (as defined in section 168(e)(6) of the Internal Revenue Code) placed in service after 2017	• Provides for equal yearly deductions (except for the first and last years)
ADS using SL	• Listed property used 50% or less for business • Property used predominantly outside the U.S. • Tax-exempt property • Tax-exempt bond-financed property • Farm property used when an election not to apply the uniform capitalization rules is in effect • Imported property[3] • Any property for which you elect to use this method[4] • Any nonresidential real property, residential rental property, or qualfied improvement property held by an electing real property trade or business (as defined in section 163(j)(7)(B) of the Internal Revenue Code) • Any property that has a recovery period of 10 years or more under the GDS that is held by an electing farming business (as defined in section 163(j)(7)(C) of the Internal Revenue Code)	• Provides for equal yearly deductions (except for the first and last years)

[1]The MACRS percentage tables in Appendix A have the switch to the straight line method built into their rates.
[2]See section 168(b)(5) of the Internal Revenue Code.
[3]See section 168(g)(6) of the Internal Revenue Code.
[4]See section 168(g)(7) of the Internal Revenue Code.

Basis adjustments other than those made due to the items listed in (4) include an increase in basis for the recapture of a clean-fuel deduction or credit and a reduction in basis for a casualty loss.

Basis adjustment due to recapture of clean-fuel vehicle deduction or credit. If you increase the basis of your property because of the recapture of part or all of a deduction for clean-fuel vehicles or the credit for clean-fuel vehicle refueling property placed in service before January 1, 2006, you cannot continue to use the percentage tables. For the year of the adjustment and the remaining recovery period, you must figure the depreciation deduction yourself using the property's adjusted basis at the end of the year. See *Figuring the Deduction Without Using the Tables*, later.

Basis adjustment due to casualty loss. If you reduce the basis of your property because of a casualty, you cannot continue to use the percentage tables. For the year of

the adjustment and the remaining recovery period, you must figure the depreciation yourself using the property's adjusted basis at the end of the year. See *Figuring the Deduction Without Using the Tables*, later.

Example. On October 26, 2018, Sandra Elm, a calendar year taxpayer, bought and placed in service in her business a new item of 7-year property. It cost $39,000 and she elected a section 179 deduction of $24,000. She also made an election under section 168(k)(7) not to deduct the special depreciation allowance for 7-year property placed in service in 2018. Her unadjusted basis after the section 179 deduction was $15,000 ($39,000 – $24,000). She figured her MACRS depreciation deduction using the percentage tables. For 2018, her MACRS depreciation deduction was $536.

In July 2019, the property was vandalized and Sandra had a deductible casualty loss of $3,000. She must adjust the property's basis for the casualty loss, so she can no longer use the percentage tables. Her adjusted basis at the end of 2019, before figuring her 2019 depreciation, is $11,464. She figures that amount by subtracting the 2018 MACRS depreciation of $536 and the casualty loss of $3,000 from the unadjusted basis of $15,000. She must now figure her depreciation for 2019 without using the percentage tables.

Figuring the Unadjusted Basis of Your Property

You must apply the table rates to your property's unadjusted basis each year of the recovery period. Unadjusted basis is the same basis amount you would use to figure gain on a sale, but you figure it without reducing your original basis by any MACRS depreciation taken in earlier years. However, you do reduce your original basis by other amounts, including the following.

- Any amortization taken on the property.
- Any section 179 deduction claimed.
- Any special depreciation allowance taken on the property.

For business property you purchase during the year, the unadjusted basis is its cost minus these and other applicable adjustments. If you trade property, your unadjusted basis in the property received is the cash paid plus the adjusted basis of the property traded minus these adjustments.

MACRS Worksheet

You can use this worksheet to help you figure your depreciation deduction using the percentage tables. Use a separate worksheet for each item of property. Then, use the information from this worksheet to prepare Form 4562.

CAUTION *Do not use this worksheet for automobiles. Use the* Depreciation Worksheet for Passenger Automobiles *in chapter 5.*

MACRS Worksheet
Keep for Your Records

Part I

1. MACRS system (GDS or ADS)		
2. Property class		
3. Date placed in service		
4. Recovery period		
5. Method and convention		
6. Depreciation rate (from tables)		

Part II

7. Cost or other basis*	$	
8. Business/investment use	%	
9. Multiply line 7 by line 8		$
10. Total claimed for section 179 deduction and other items		$
11. Subtract line 10 from line 9. This is your tentative basis for depreciation		$
12. Multiply line 11 by the applicable percentage if the special depreciation allowance applies. This is your special depreciation allowance. Enter -0- if this is not the year you placed the property in service, the property is not qualified property, or you elected not to claim a special allowance		$
13. Subtract line 12 from line 11. This is your basis for depreciation		
14. Depreciation rate (from line 6)		
15. Multiply line 13 by line 14. This is your MACRS depreciation deduction		$

*If real estate, do not include cost (basis) of land.

The following example shows how to figure your MACRS depreciation deduction using the percentage tables and the MACRS Worksheet.

Example. You bought office furniture (7-year property) for $10,000 and placed it in service on August 11, 2019. You use the furniture only for business. This is the only property you placed in service this year. You did not elect a section 179 deduction and the property is not qualified property for purposes of claiming a special depreciation allowance so your property's unadjusted basis is its cost, $10,000. You use GDS and the half-year convention to figure your depreciation. You refer to the *MACRS Percentage Table Guide* in Appendix A and find that you should use Table A-1. Multiply your property's unadjusted basis each year by the percentage for 7-year property given in Table A-1. You figure your depreciation deduction using the MACRS Worksheet as follows.

MACRS Worksheet *Keep for Your Records*

Part I

1. MACRS system (GDS or ADS)		GDS
2. Property class		7-year
3. Date placed in service		8/11/19
4. Recovery period		7-year
5. Method and convention		200%DB/Half-Year
6. Depreciation rate (from tables)		.1429

Part II

7. Cost or other basis*	$10,000	
8. Business/investment use	100 %	
9. Multiply line 7 by line 8		$10,000
10. Total claimed for section 179 deduction and other items		-0-
11. Subtract line 10 from line 9. This is your tentative basis for depreciation		$10,000
12. Multiply line 11 by the applicable percentage if the special depreciation allowance applies. This is your special depreciation allowance. Enter -0- if this is not the year you placed the property in service, the property is not qualified property, or you elected not to claim a special allowance		-0-
13. Subtract line 12 from line 11. This is your basis for depreciation		$10,000
14. Depreciation rate (from line 6)		.1429
15. Multiply line 13 by line 14. This is your MACRS depreciation deduction		$1,429

*If real estate, do not include cost (basis) of land.

If there are no adjustments to the basis of the property other than depreciation, your depreciation deduction for each subsequent year of the recovery period will be as follows.

Year	Basis	Percentage	Deduction
2020	$10,000	24.49%	$2,449
2021	10,000	17.49	1,749
2022	10,000	12.49	1,249
2023	10,000	8.93	893
2024	10,000	8.92	892
2025	10,000	8.93	893
2026	10,000	4.46	446

Examples

The following examples are provided to show you how to use the percentage tables. In both examples, assume the following.

- You use the property only for business.
- You use the calendar year as your tax year.
- You use GDS for all the properties.

Example 1. You bought a building and land for $120,000 and placed it in service on March 8. The sales contract showed that the building cost $100,000 and the land cost $20,000. It is nonresidential real property. The building's unadjusted basis is its original cost, $100,000.

You refer to the *MACRS Percentage Table Guide* in Appendix A and find that you should use Table A-7a. March is the third month of your tax year, so multiply the building's unadjusted basis, $100,000, by the percentages for the third month in Table A-7a. Your depreciation deduction for each of the first 3 years is as follows:

Year	Basis	Percentage	Deduction
1st	$ 100,000	2.033%	$2,033
2nd	100,000	2.564	2,564
3rd	100,000	2.564	2,564

Example 2. During the year, you bought a machine (7-year property) for $4,000, office furniture (7-year property) for $1,000, and a computer (5-year property) for $5,000. You placed the machine in service in January, the furniture in September, and the computer in October. You do not elect a section 179 deduction and none of these items is qualified property for purposes of claiming a special depreciation allowance.

You placed property in service during the last 3 months of the year, so you must first determine if you have to use the mid-quarter convention. The total bases of all property you placed in service during the year is $10,000. The $5,000 basis of the computer, which you placed in service during the last 3 months (the fourth quarter) of your tax year, is more than 40% of the total bases of all property

($10,000) you placed in service during the year. Therefore, you must use the mid-quarter convention for all three items.

You refer to the *MACRS Percentage Table Guide* in Appendix A to determine which table you should use under the mid-quarter convention. The machine is 7-year property placed in service in the first quarter, so you use Table A-2. The furniture is 7-year property placed in service in the third quarter, so you use Table A-4. Finally, because the computer is 5-year property placed in service in the fourth quarter, you use Table A-5. Knowing what table to use for each property, you figure the depreciation for the first 2 years as follows.

Year	Property	Basis	Percentage	Deduction
1st	Machine	$4,000	25.00	$1,000
2nd	Machine	4,000	21.43	857
1st	Furniture	1,000	10.71	107
2nd	Furniture	1,000	25.51	255
1st	Computer	5,000	5.00	250
2nd	Computer	5,000	38.00	1,900

Sale or Other Disposition Before the Recovery Period Ends

If you sell or otherwise dispose of your property before the end of its recovery period, your depreciation deduction for the year of the disposition will be only part of the depreciation amount for the full year. You have disposed of your property if you have permanently withdrawn it from use in your business or income-producing activity because of its sale, exchange, retirement, abandonment, involuntary conversion, or destruction. After you figure the full-year depreciation amount, figure the deductible part using the convention that applies to the property.

Half-year convention used. For property for which you used a half-year convention, the depreciation deduction for the year of the disposition is half the depreciation determined for the full year.

Mid-quarter convention used. For property for which you used the mid-quarter convention, figure your depreciation deduction for the year of the disposition by multiplying a full year of depreciation by the percentage listed below for the quarter in which you disposed of the property.

Quarter	Percentage
First	12.5%
Second	37.5
Third	62.5
Fourth	87.5

Example. On December 2, 2016, you placed in service an item of 5-year property costing $10,000. You did not claim a section 179 deduction and the property does not qualify for a special depreciation allowance. Your unadjusted basis for the property was $10,000. You used the mid-quarter convention because this was the only item of business property you placed in service in 2016 and it was placed in service during the last 3 months of your tax year. Your property is in the 5-year property class, so you used Table A-5 to figure your depreciation deduction. Your deductions for 2016, 2017, and 2018, were $500 (5% of $10,000), $3,800 (38% of $10,000), and $2,280 (22.80% of $10,000). You disposed of the property on April 6, 2019. To determine your depreciation deduction for 2019, first figure the deduction for the full year. This is $1,368 (13.68% of $10,000). April is in the second quarter of the year, so you multiply $1,368 by 37.5% to get your depreciation deduction of $513 for 2019.

Mid-month convention used. If you dispose of residential rental or nonresidential real property, figure your depreciation deduction for the year of the disposition by multiplying a full year of depreciation by a fraction. The numerator of the fraction is the number of months (including partial months) in the year that the property is considered in service. The denominator is 12.

Example. On July 2, 2017, you purchased and placed in service residential rental property. The property cost $100,000, not including the cost of land. You used Table A-6 to figure your MACRS depreciation for this property. You sold the property on March 2, 2019. You file your tax return based on the calendar year.

A full year of depreciation for 2019 is $3,636. This is $100,000 multiplied by .03636 (the percentage for the seventh month of the third recovery year) from Table A-6. You then apply the mid-month convention for the 2 1/2 months of use in 2019. Treat the month of disposition as one-half month of use. Multiply $3,636 by the fraction, 2.5 over 12, to get your 2019 depreciation deduction of $757.50.

Figuring the Deduction Without Using the Tables

Instead of using the rates in the percentage tables to figure your depreciation deduction, you can figure it yourself. Before making the computation each year, you must reduce your adjusted basis in the property by the depreciation claimed the previous year(s).



Figuring MACRS deductions without using the tables will generally result in a slightly different amount than using the tables.

Declining Balance Method

When using a declining balance method, you apply the same depreciation rate each year to the adjusted basis of your property. You must use the applicable convention for the first tax year and you must switch to the straight line

method beginning in the first year for which it will give an equal or greater deduction. The straight line method is explained later.

You figure depreciation for the year you place property in service as follows.

1. Multiply your adjusted basis in the property by the declining balance rate.
2. Apply the applicable convention.

You figure depreciation for all other years (before the year you switch to the straight line method) as follows.

1. Reduce your adjusted basis in the property by the depreciation allowed or allowable in earlier years.
2. Multiply this new adjusted basis by the same declining balance rate used in earlier years.

If you dispose of property before the end of its recovery period, see *Using the Applicable Convention*, later, for information on how to figure depreciation for the year you dispose of it.

Figuring depreciation under the declining balance method and switching to the straight line method is illustrated in *Example 1*, later, under *Examples*.

Declining balance rate. You figure your declining balance rate by dividing the specified declining balance percentage (150% or 200% changed to a decimal) by the number of years in the property's recovery period. For example, for 3-year property depreciated using the 200% declining balance method, divide 2.00 (200%) by 3 to get 0.6667, or a 66.67% declining balance rate. For 15-year property depreciated using the 150% declining balance method, divide 1.50 (150%) by 15 to get 0.10, or a 10% declining balance rate.

The following table shows the declining balance rate for each property class and the first year for which the straight line method gives an equal or greater deduction.

Property Class	Method	Declining Balance Rate	Year
3-year	200% DB	66.667%	3rd
5-year	200% DB	40.0	4th
7-year	200% DB	28.571	5th
10-year	200% DB	20.0	7th
15-year	150% DB	10.0	7th
20-year	150% DB	7.5	9th

Straight Line Method

When using the straight line method, you apply a different depreciation rate each year to the adjusted basis of your property. You must use the applicable convention in the year you place the property in service and the year you dispose of the property.

You figure depreciation for the year you place property in service as follows.

1. Multiply your adjusted basis in the property by the straight line rate.
2. Apply the applicable convention.

You figure depreciation for all other years (including the year you switch from the declining balance method to the straight line method) as follows.

1. Reduce your adjusted basis in the property by the depreciation allowed or allowable in earlier years (under any method).
2. Determine the depreciation rate for the year.
3. Multiply the adjusted basis figured in (1) by the depreciation rate figured in (2).

If you dispose of property before the end of its recovery period, see *Using the Applicable Convention*, later, for information on how to figure depreciation for the year you dispose of it.

Straight line rate. You determine the straight line depreciation rate for any tax year by dividing the number 1 by the years remaining in the recovery period at the beginning of that year. When figuring the number of years remaining, you must take into account the convention used in the year you placed the property in service. If the number of years remaining is less than 1, the depreciation rate for that tax year is 1.0 (100%).

Using the Applicable Convention

The applicable convention (discussed earlier under *Which Convention Applies*) affects how you figure your depreciation deduction for the year you place your property in service and for the year you dispose of it. It determines how much of the recovery period remains at the beginning of each year, so it also affects the depreciation rate for property you depreciate under the straight line method. See *Straight line rate* in the previous discussion. Use the applicable convention, as explained in the following discussions.

Half-year convention. If this convention applies, you deduct a half-year of depreciation for the first year and the last year that you depreciate the property. You deduct a full year of depreciation for any other year during the recovery period.

Figure your depreciation deduction for the year you place the property in service by dividing the depreciation for a full year by 2. If you dispose of the property before the end of the recovery period, figure your depreciation deduction for the year of the disposition the same way. If you hold the property for the entire recovery period, your depreciation deduction for the year that includes the final 6 months of the recovery period is the amount of your unrecovered basis in the property.

Mid-quarter convention. If this convention applies, the depreciation you can deduct for the first year you depreciate the property depends on the quarter in which you place the property in service.

A quarter of a full 12-month tax year is a period of 3 months. The first quarter in a year begins on the first day of the tax year. The second quarter begins on the first day of the fourth month of the tax year. The third quarter begins on the first day of the seventh month of the tax year. The fourth quarter begins on the first day of the tenth month of the tax year. A calendar year is divided into the following quarters.

Quarter	Months
First	January, February, March
Second	April, May, June
Third	July, August, September
Fourth	October, November, December

Figure your depreciation deduction for the year you place the property in service by multiplying the depreciation for a full year by the percentage listed below for the quarter you place the property in service.

Quarter	Percentage
First	87.5%
Second	62.5
Third	37.5
Fourth	12.5

If you dispose of the property before the end of the recovery period, figure your depreciation deduction for the year of the disposition by multiplying a full year of depreciation by the percentage listed below for the quarter you dispose of the property.

Quarter	Percentage
First	12.5%
Second	37.5
Third	62.5
Fourth	87.5

If you hold the property for the entire recovery period, your depreciation deduction for the year that includes the final quarter of the recovery period is the amount of your unrecovered basis in the property.

Mid-month convention. If this convention applies, the depreciation you can deduct for the first year that you depreciate the property depends on the month in which you place the property in service. Figure your depreciation deduction for the year you place the property in service by multiplying the depreciation for a full year by a fraction. The numerator of the fraction is the number of full months in the year that the property is in service plus 1/2 (or 0.5). The denominator is 12.

If you dispose of the property before the end of the recovery period, figure your depreciation deduction for the year of the disposition the same way. If you hold the property for the entire recovery period, your depreciation deduction for the year that includes the final month of the recovery period is the amount of your unrecovered basis in the property.

Example. You use the calendar year and place nonresidential real property in service in August. The property is in service 4 full months (September, October, November, and December). Your numerator is 4.5 (4 full months plus 0.5). You multiply the depreciation for a full year by 4.5/12, or 0.375.

Examples

The following examples show how to figure depreciation under MACRS without using the percentage tables. Figures are rounded for purposes of the examples. Assume for all the examples that you use a calendar year as your tax year.

Example 1—200% DB method and half-year convention. In February, you placed in service depreciable property with a 5-year recovery period and a basis of $1,000. You do not elect to take the section 179 deduction and the property does not qualify for a special depreciation allowance. You use GDS and the 200% declining balance (DB) method to figure your depreciation. When the straight line (SL) method results in an equal or larger deduction, you switch to the SL method. You did not place any property in service in the last 3 months of the year, so you must use the half-year convention.

First year. You figure the depreciation rate under the 200% DB method by dividing 2 (200%) by 5 (the number of years in the recovery period). The result is 40%. You multiply the adjusted basis of the property ($1,000) by the 40% DB rate. You apply the half-year convention by dividing the result ($400) by 2. Depreciation for the first year under the 200% DB method is $200.

You figure the depreciation rate under the straight line (SL) method by dividing 1 by 5, the number of years in the recovery period. The result is 20%.You multiply the adjusted basis of the property ($1,000) by the 20% SL rate. You apply the half-year convention by dividing the result ($200) by 2. Depreciation for the first year under the SL method is $100.

The DB method provides a larger deduction, so you deduct the $200 figured under the 200% DB method.

Second year. You reduce the adjusted basis ($1,000) by the depreciation claimed in the first year ($200). You multiply the result ($800) by the DB rate (40%). Depreciation for the second year under the 200% DB method is $320.

You figure the SL depreciation rate by dividing 1 by 4.5, the number of years remaining in the recovery period. (Based on the half-year convention, you used only half a year of the recovery period in the first year.) You multiply the reduced adjusted basis ($800) by the result (22.22%). Depreciation under the SL method for the second year is $178.

The DB method provides a larger deduction, so you deduct the $320 figured under the 200% DB method.

Third year. You reduce the adjusted basis ($800) by the depreciation claimed in the second year ($320). You

multiply the result ($480) by the DB rate (40%). Depreciation for the third year under the 200% DB method is $192.

You figure the SL depreciation rate by dividing 1 by 3.5. You multiply the reduced adjusted basis ($480) by the result (28.57%). Depreciation under the SL method for the third year is $137.

The DB method provides a larger deduction, so you deduct the $192 figured under the 200% DB method.

Fourth year. You reduce the adjusted basis ($480) by the depreciation claimed in the third year ($192). You multiply the result ($288) by the DB rate (40%). Depreciation for the fourth year under the 200% DB method is $115.

You figure the SL depreciation rate by dividing 1 by 2.5. You multiply the reduced adjusted basis ($288) by the result (40%). Depreciation under the SL method for the fourth year is $115.

The SL method provides an equal deduction, so you switch to the SL method and deduct the $115.

Fifth year. You reduce the adjusted basis ($288) by the depreciation claimed in the fourth year ($115) to get the reduced adjusted basis of $173. You figure the SL depreciation rate by dividing 1 by 1.5. You multiply the reduced adjusted basis ($173) by the result (66.67%). Depreciation under the SL method for the fifth year is $115.

Sixth year. You reduce the adjusted basis ($173) by the depreciation claimed in the fifth year ($115) to get the reduced adjusted basis of $58. There is less than one year remaining in the recovery period, so the SL depreciation rate for the sixth year is 100%. You multiply the reduced adjusted basis ($58) by 100% to arrive at the depreciation deduction for the sixth year ($58).

Example 2—SL method and mid-month convention. In January, you bought and placed in service a building for $100,000 that is nonresidential real property with a recovery period of 39 years. The adjusted basis of the building is its cost of $100,000. You use GDS, the straight line (SL) method, and the mid-month convention to figure your depreciation.

First year. You figure the SL depreciation rate for the building by dividing 1 by 39 years. The result is .02564. The depreciation for a full year is $2,564 ($100,000 × .02564). Under the mid-month convention, you treat the property as placed in service in the middle of January. You get 11.5 months of depreciation for the year. Expressed as a decimal, the fraction of 11.5 months divided by 12 months is .958. Your first-year depreciation for the building is $2,456 ($2,564 × .958).

Second year. You subtract $2,456 from $100,000 to get your adjusted basis of $97,544 for the second year. The SL rate is .02629. This is 1 divided by the remaining recovery period of 38.042 years (39 years reduced by 11.5 months or .958). Your depreciation for the building for the second year is $2,564 ($97,544 × .02629).

Third year. The adjusted basis is $94,980 ($97,544 – $2,564). The SL rate is .027 (1 divided by 37.042 remaining years). Your depreciation for the third year is $2,564 ($94,980 × .027).

Example 3—200% DB method and mid-quarter convention. During the year, you bought and placed in service in your business the following items.

Item	Month Placed in Service	Cost
Safe	January	$4,000
Office furniture	September	1,000
Computer (not listed property)	October	5,000

You do not elect a section 179 deduction and these items do not qualify for a special depreciation allowance. You use GDS and the 200% declining balance (DB) method to figure the depreciation. The total bases of all property you placed in service this year is $10,000. The basis of the computer ($5,000) is more than 40% of the total bases of all property placed in service during the year ($10,000), so you must use the mid-quarter convention. This convention applies to all three items of property. The safe and office furniture are 7-year property and the computer is 5-year property.

First and second year depreciation for safe. The 200% DB rate for 7-year property is .28571. You determine this by dividing 2.00 (200%) by 7 years. The depreciation for the safe for a full year is $1,143 ($4,000 × .28571). You placed the safe in service in the first quarter of your tax year, so you multiply $1,143 by 87.5% (the mid-quarter percentage for the first quarter). The result, $1,000, is your deduction for depreciation on the safe for the first year.

For the second year, the adjusted basis of the safe is $3,000. You figure this by subtracting the first year's depreciation ($1,000) from the basis of the safe ($4,000). Your depreciation deduction for the second year is $857 ($3,000 × .28571).

First and second year depreciation for furniture. The furniture is also 7-year property, so you use the same 200% DB rate of .28571. You multiply the basis of the furniture ($1,000) by .28571 to get the depreciation of $286 for the full year. You placed the furniture in service in the third quarter of your tax year, so you multiply $286 by 37.5% (the mid-quarter percentage for the third quarter). The result, $107, is your deduction for depreciation on the furniture for the first year.

For the second year, the adjusted basis of the furniture is $893. You figure this by subtracting the first year's depreciation ($107) from the basis of the furniture ($1,000). Your depreciation for the second year is $255 ($893 × .28571).

First and second year depreciation for computer. The 200% DB rate for 5-year property is .40. You determine this by dividing 2.00 (200%) by 5 years. The depreciation for the computer for a full year is $2,000 ($5,000 × .40). You placed the computer in service in the fourth quarter of your tax year, so you multiply the $2,000 by 12.5% (the mid-quarter percentage for the fourth quarter). The result, $250, is your deduction for depreciation on the computer for the first year.

For the second year, the adjusted basis of the computer is $4,750. You figure this by subtracting the first year's depreciation ($250) from the basis of the computer ($5,000). Your depreciation deduction for the second year is $1,900 ($4,750 × .40).

Example 4—200% DB method and half-year convention. Last year, in July, you bought and placed in service in your business a new item of 7-year property. This was the only item of property you placed in service last year. The property cost $39,000 and you elected a $24,000 section 179 deduction. You also made an election under section 168(k)(7) not to deduct the special depreciation allowance for 7-year property placed I service last year. Your unadjusted basis for the property is $15,000. Because you did not place any property in service in the last 3 months of your tax year, you used the half-year convention. You figured your deduction using the percentages in Table A-1 for 7-year property. Last year, your depreciation was $2,144 ($15,000 × 14.29%).

In July of this year, your property was vandalized. You had a deductible casualty loss of $3,000. You spent $3,500 to put the property back in operational order. Your adjusted basis at the end of this year is $13,356. You figured this by first subtracting the first year's depreciation ($2,144) and the casualty loss ($3,000) from the unadjusted basis of $15,000. To this amount ($9,856), you then added the $3,500 repair cost.

You cannot use the table percentages to figure your depreciation for this property for this year because of the adjustments to basis. You must figure the deduction yourself. You determine the DB rate by dividing 2.00 (200%) by 7 years. The result is .28571 or 28.571%. You multiply the adjusted basis of your property ($13,356) by the declining balance rate of .28571 to get your depreciation deduction of $3,816 for this year.

Figuring the Deduction for Property Acquired in a Nontaxable Exchange

If your property has a carryover basis because you acquired it in a nontaxable transfer such as a like-kind exchange or involuntary conversion, you must generally figure depreciation for the property as if the transfer had not occurred. However, see *Like-kind exchanges and involuntary conversions*, earlier, in chapter 3 under *How Much Can You Deduct* and *Property Acquired in a Like-kind Exchange or Involuntary Conversion* next.

Property Acquired in a Like-kind Exchange or Involuntary Conversion

You must generally depreciate the carryover basis of property acquired in a like-kind exchange or involuntary conversion over the remaining recovery period of the property exchanged or involuntarily converted. You also generally continue to use the same depreciation method and convention used for the exchanged or involuntarily converted property. This applies only to acquired property with the same or a shorter recovery period and the same or more accelerated depreciation method than the property exchanged or involuntarily converted. The excess basis (the part of the acquired property's basis that exceeds its carryover basis), if any, of the acquired property is treated as newly placed in service property.

For acquired property that has a longer recovery period or less accelerated depreciation method than the exchanged or involuntarily converted property, you must generally depreciate the carryover basis of the acquired property as if it were placed in service in the same tax year as the exchanged or involuntarily converted property. You also generally continue to use the longer recovery period and less accelerated depreciation method of the acquired property.

If the MACRS property you acquired in the exchange or involuntary conversion is qualified property, discussed earlier in chapter 3 under *What Is Qualified Property*, you can claim a special depreciation allowance on the carryover basis. Special rules apply to vehicles acquired in a trade-in. For information on how to figure depreciation for a vehicle acquired in a trade-in that is subject to the passenger automobile limits, see *Deductions For Passenger Automobiles Acquired in a Trade-in* under *Do the Passenger Automobile Limits Apply* in chapter 5.



Like-kind exchanges completed after December 31, 2017, are generally limited to exchanges of real property not held primarily for sale.

Election out. Instead of using the above rules, you can elect, for depreciation purposes, to treat the adjusted basis of the exchanged or involuntarily converted property as if disposed of at the time of the exchange or involuntary conversion. Treat the carryover basis and excess basis, if any, for the acquired property as if placed in service the later of the date you acquired it or the time of the disposition of the exchanged or involuntarily converted property. The depreciable basis of the new property is the adjusted basis of the exchanged or involuntarily converted property plus any additional amount you paid for it. The election, if made, applies to both the acquired property and the exchanged or involuntarily converted property. This election does not affect the amount of gain or loss recognized on the exchange or involuntary conversion.

When to make the election. You must make the election on a timely filed return (including extensions) for the year of replacement. The election must be made separately by each person acquiring replacement property. In the case of a partnership, S corporation, or consolidated group, the election is made by the partnership, by the S corporation, or by the common parent of a consolidated group, respectively. Once made, the election may not be revoked without IRS consent.

For more information and special rules, see the Instructions for Form 4562.

Property Acquired in a Nontaxable Transfer

You must depreciate MACRS property acquired by a corporation or partnership in certain nontaxable transfers over the property's remaining recovery period in the transferor's hands, as if the transfer had not occurred. You must continue to use the same depreciation method and convention as the transferor. You can depreciate the part of the property's basis that exceeds its carryover basis

(the transferor's adjusted basis in the property) as newly purchased MACRS property.

The nontaxable transfers covered by this rule include the following.

- A distribution in complete liquidation of a subsidiary.
- A transfer to a corporation controlled by the transferor.
- An exchange of property solely for corporate stock or securities in a reorganization.
- A contribution of property to a partnership in exchange for a partnership interest.
- A partnership distribution of property to a partner.

Figuring the Deduction for a Short Tax Year

You cannot use the MACRS percentage tables to determine depreciation for a short tax year. A short tax year is any tax year with less than 12 full months. This section discusses the rules for determining the depreciation deduction for property you place in service or dispose of in a short tax year. It also discusses the rules for determining depreciation when you have a short tax year during the recovery period (other than the year the property is placed in service or disposed of).

For more information on figuring depreciation for a short tax year, see Revenue Procedure 89-15, 1989-1 C.B. 816.

Using the Applicable Convention in a Short Tax Year

The applicable convention establishes the date property is treated as placed in service and disposed of. Depreciation is allowable only for that part of the tax year the property is treated as in service. The recovery period begins on the placed in service date determined by applying the convention. The remaining recovery period at the beginning of the next tax year is the full recovery period less the part for which depreciation was allowable in the first tax year.

The following discussions explain how to use the applicable convention in a short tax year.

Mid-month convention. Under the mid-month convention, you always treat your property as placed in service or disposed of on the midpoint of the month it is placed in service or disposed of. You apply this rule without regard to your tax year.

Half-year convention. Under the half-year convention, you treat property as placed in service or disposed of on the midpoint of the tax year it is placed in service or disposed of.

First or last day of month. For a short tax year beginning on the first day of a month or ending on the last day of a month, the tax year consists of the number of months in the tax year. If the short tax year includes part of a month, you generally include the full month in the number of months in the tax year. You determine the midpoint of the tax year by dividing the number of months in the tax year by 2. For the half-year convention, you treat property as placed in service or disposed of on either the first day or the midpoint of a month.

For example, a short tax year that begins on June 20 and ends on December 31 consists of 7 months. You use only full months for this determination, so you treat the tax year as beginning on June 1 instead of June 20. The midpoint of the tax year is the middle of September ($3\frac{1}{2}$ months from the beginning of the tax year). You treat property as placed in service or disposed of on this midpoint.

Example. Tara Corporation, a calendar year taxpayer, was incorporated on March 15. For purposes of the half-year convention, it has a short tax year of 10 months, ending on December 31, 2019. During the short tax year, Tara placed property in service for which it uses the half-year convention. Tara treats this property as placed in service on the first day of the sixth month of the short tax year, or August 1, 2019.

Not on first or last day of month. For a short tax year not beginning on the first day of a month and not ending on the last day of a month, the tax year consists of the number of days in the tax year. You determine the midpoint of the tax year by dividing the number of days in the tax year by 2. For the half-year convention, you treat property as placed in service or disposed of on either the first day or the midpoint of a month. If the result of dividing the number of days in the tax year by 2 is not the first day or the midpoint of a month, you treat the property as placed in service or disposed of on the nearest preceding first day or midpoint of a month.

Mid-quarter convention. To determine if you must use the mid-quarter convention, compare the basis of property you place in service in the last 3 months of your tax year to that of property you place in service during the full tax year. The length of your tax year does not matter. If you have a short tax year of 3 months or less, use the mid-quarter convention for all applicable property you place in service during that tax year.

You treat property under the mid-quarter convention as placed in service or disposed of on the midpoint of the quarter of the tax year in which it is placed in service or disposed of. Divide a short tax year into 4 quarters and determine the midpoint of each quarter.

For a short tax year of 4 or 8 full calendar months, determine quarters on the basis of whole months. The midpoint of each quarter is either the first day or the midpoint of a month. Treat property as placed in service or disposed of on this midpoint.

To determine the midpoint of a quarter for a short tax year of other than 4 or 8 full calendar months, complete the following steps.

1. Determine the number of days in your short tax year.
2. Determine the number of days in each quarter by dividing the number of days in your short tax year by 4.

3. Determine the midpoint of each quarter by dividing the number of days in each quarter by 2.

If the result of (3) gives you a midpoint of a quarter that is on a day other than the first day or midpoint of a month, treat the property as placed in service or disposed of on the nearest preceding first day or midpoint of that month.

Example. Tara Corporation, a calendar year taxpayer, was incorporated and began business on March 15. It has a short tax year of 9 1/2 months, ending on December 31. During December, it placed property in service for which it must use the mid-quarter convention. This is a short tax year of other than 4 or 8 full calendar months, so it must determine the midpoint of each quarter.

1. First, it determines that its short tax year beginning March 15 and ending December 31 consists of 292 days.
2. Next, it divides 292 by 4 to determine the length of each quarter, 73 days.
3. Finally, it divides 73 by 2 to determine the midpoint of each quarter, the 37th day.

The following table shows the quarters of Tara Corporation's short tax year, the midpoint of each quarter, and the date in each quarter that Tara must treat its property as placed in service.

Quarter	Midpoint	Placed in Service
3/15 – 5/26	4/20	4/15
5/27 – 8/07	7/02	7/01
8/08 – 10/19	9/13	9/01
10/20 – 12/31	11/25	11/15

The last quarter of the short tax year begins on October 20, which is 73 days from December 31, the end of the tax year. The 37th day of the last quarter is November 25, which is the midpoint of the quarter. November 25 is not the first day or the midpoint of November, so Tara Corporation must treat the property as placed in service in the middle of November (the nearest preceding first day or midpoint of that month).

Property Placed in Service in a Short Tax Year

To figure your MACRS depreciation deduction for the short tax year, you must first determine the depreciation for a full tax year. You do this by multiplying your basis in the property by the applicable depreciation rate. Then, determine the depreciation for the short tax year. Do this by multiplying the depreciation for a full tax year by a fraction. The numerator (top number) of the fraction is the number of months (including parts of a month) the property is treated as in service during the tax year (applying the applicable convention). The denominator (bottom number) is 12. See *Depreciation After a Short Tax Year*, later, for information on how to figure depreciation in later years.

Example 1—half-year convention. Tara Corporation, with a short tax year beginning March 15 and ending December 31, placed in service on March 16, an item of 5-year property with a basis of $1,000. This is the only property the corporation placed in service during the short tax year. Tara does not elect to claim a section 179 deduction and the property does not qualify for a special depreciation allowance. The depreciation method for this property is the 200% declining balance method. The depreciation rate is 40% and Tara applies the half-year convention.

Tara treats the property as placed in service on August 1. The determination of this August 1 date is explained in the example illustrating the half-year convention under *Using the Applicable Convention in a Short Tax Year*, earlier. Tara is allowed 5 months of depreciation for the short tax year that consists of 10 months. The corporation first multiplies the basis ($1,000) by 40% (the declining balance rate) to get the depreciation for a full tax year of $400. The corporation then multiplies $400 by 5/12 to get the short tax year depreciation of $167.

Example 2—mid-quarter convention. Tara Corporation, with a short tax year beginning March 15 and ending on December 31, placed in service on October 16, an item of 5-year property with a basis of $1,000. Tara does not elect to claim a section 179 deduction and the property does not qualify for a special depreciation allowance. The depreciation method for this property is the 200% declining balance method. The depreciation rate is 40%. The corporation must apply the mid-quarter convention because the property was the only item placed in service that year and it was placed in service in the last 3 months of the tax year.

Tara treats the property as placed in service on September 1. This date is shown in the table provided in the example illustrating the mid-quarter convention under *Using the Applicable Convention in a Short Tax Year*, earlier, for property that Tara Corporation placed in service during the quarter that begins on August 8 and ends on October 19. Under MACRS, Tara is allowed 4 months of depreciation for the short tax year that consists of 10 months. The corporation first multiplies the basis ($1,000) by 40% to get the depreciation for a full tax year of $400. The corporation then multiplies $400 by 4/12 to get the short tax year depreciation of $133.

Property Placed in Service Before a Short Tax Year

If you have a short tax year after the tax year in which you began depreciating property, you must change the way you figure depreciation for that property. If you were using the percentage tables, you can no longer use them. You must figure depreciation for the short tax year and each later tax year as explained next.

Depreciation After a Short Tax Year

You can use either of the following methods to figure the depreciation for years after a short tax year.

- The simplified method.
- The allocation method.

You must use the method you choose consistently.

Using the simplified method for a 12-month year. Under the simplified method, you figure the depreciation for a later 12-month year in the recovery period by multiplying the adjusted basis of your property at the beginning of the year by the applicable depreciation rate.

Example. Assume the same facts as in *Example 1* under *Property Placed in Service in a Short Tax Year*, earlier. The Tara Corporation claimed depreciation of $167 for its short tax year. The adjusted basis on January 1 of the next year is $833 ($1,000 – $167). Tara's depreciation for that next year is 40% of $833, or $333.

Using the simplified method for a short year. If a later tax year in the recovery period is a short tax year, you figure depreciation for that year by multiplying the adjusted basis of the property at the beginning of the tax year by the applicable depreciation rate, and then by a fraction. The fraction's numerator is the number of months (including parts of a month) in the tax year. Its denominator is 12.

Using the simplified method for an early disposition. If you dispose of property in a later tax year before the end of the recovery period, determine the depreciation for the year of disposition by multiplying the adjusted basis of the property at the beginning of the tax year by the applicable depreciation rate and then multiplying the result by a fraction. The fraction's numerator is the number of months (including parts of a month) the property is treated as in service during the tax year (applying the applicable convention). Its denominator is 12.

Using the allocation method for a 12-month or short tax year. Under the allocation method, you figure the depreciation for each later tax year by allocating to that year the depreciation attributable to the parts of the recovery years that fall within that year. Whether your tax year is a 12-month or short tax year, you figure the depreciation by determining which recovery years are included in that year. For each recovery year included, multiply the depreciation attributable to that recovery year by a fraction. The fraction's numerator is the number of months (including parts of a month) that are included in both the tax year and the recovery year. Its denominator is 12. The allowable depreciation for the tax year is the sum of the depreciation figured for each recovery year.

Example. Assume the same facts as in *Example 1* under *Property Placed in Service in a Short Tax Year*, earlier. The Tara Corporation's first tax year after the short tax year is a full year of 12 months, beginning January 1 and ending December 31. The first recovery year for the 5-year property placed in service during the short tax year extends from August 1 to July 31. Tara deducted 5 months of the first recovery year on its short-year tax return. Seven months of the first recovery year and 5 months of the second recovery year fall within the next tax year. The depreciation for the next tax year is $333, which is the sum of the following.

- $233—The depreciation for the first recovery year ($400 × 7/12).
- $100—The depreciation for the second recovery year. This is figured by multiplying the adjusted basis of $600 ($1,000 – $400) by 40%, then multiplying the $240 result by 5/12.

Using the allocation method for an early disposition. If you dispose of property before the end of the recovery period in a later tax year, determine the depreciation for the year of disposition by multiplying the depreciation figured for each recovery year or part of a recovery year included in the tax year by a fraction. The numerator of the fraction is the number of months (including parts of months) the property is treated as in service in the tax year (applying the applicable convention). The denominator is 12. If there is more than one recovery year in the tax year, you add together the depreciation for each recovery year.

How Do You Use General Asset Accounts?

Terms you may need to know (see Glossary):

Adjusted basis
Amortization
Amount realized
Basis
Convention
Disposition
Exchange
Placed in service
Recovery period
Section 1245 property
Unadjusted basis

To make it easier to figure MACRS depreciation, you can group separate properties into one or more general asset accounts (GAAs). You can then depreciate all the properties in each account as a single item of property.

Property you cannot include. You cannot include property in a GAA if you use it in both a personal activity and a trade or business (or for the production of income) in the year in which you first place it in service. If property you

included in a GAA is later used in a personal activity, see *Terminating GAA Treatment*, later.

Property generating foreign source income. For information on the GAA treatment of property that generates foreign source income, see sections 1.168(i)-1(c)(1)(ii) and (f) of the regulations.

Change in use. Special rules apply to figuring depreciation for property in a GAA for which the use changes during the tax year. Examples include a change in use resulting in a shorter recovery period and/or more accelerated depreciation method or a change in use resulting in a longer recovery period and/or a less accelerated depreciation method. See sections 1.168(i)-1(h) and 1.168(i)-4 of the regulations.

Grouping Property

Each GAA must include only property you placed in service in the same tax year and that has the following in common.

- Recovery period.
- Depreciation method.
- Convention.

The following rules also apply when you establish a GAA.

- ***Mid-quarter convention.*** Property subject to the mid-quarter convention can only be grouped into a GAA with property placed in service in the same quarter of the tax year.
- ***Mid-month convention.*** Property subject to the mid-month convention can only be grouped into a GAA with property placed in service in the same month of the tax year.
- ***Passenger automobiles.*** Passenger automobiles subject to the limits on passenger automobile depreciation must be grouped into a separate GAA.

See section 1.168(i)-1(c)(2)(ii) of the regulations for additional rules that apply when you establish a GAA.

Figuring Depreciation for a GAA

After you have set up a GAA, you generally figure the MACRS depreciation for it by using the applicable depreciation method, recovery period, and convention for the property in the GAA. For each GAA, record the depreciation allowance in a separate depreciation reserve account.

Example. Make & Sell, a calendar year corporation, set up a GAA for 10 machines. The machines cost a total of $10,000 and were placed in service in June 2019. One of the machines cost $8,200 and the rest cost a total of $1,800. This GAA is depreciated under the 200% declining balance method with a 5-year recovery period and a half-year convention. Make & Sell did not claim the section 179 deduction on the machines and the machines did not qualify for a special depreciation allowance. The depreciation allowance for 2019 is $2,000 [($10,000 × 40%) ÷ 2]. As of January 1, 2020, the depreciation reserve account is $2,000.

Passenger automobiles. To figure depreciation on passenger automobiles in a GAA, apply the deduction limits discussed in chapter 5 under *Do the Passenger Automobile Limits Apply*. Multiply the amount determined using these limits by the number of automobiles originally included in the account, reduced by the total number of automobiles removed from the GAA, as discussed in *Terminating GAA Treatment*, later.

Disposing of GAA Property

When you dispose of property included in a GAA, the following rules generally apply.

- Neither the unadjusted depreciable basis (defined later) nor the depreciation reserve account of the GAA is affected. You continue to depreciate the account as if the disposition had not occurred.
- The property is treated as having an adjusted basis of zero, so you cannot realize a loss on the disposition. If the property is transferred to a supplies, scrap, or similar account, its basis in that account is zero.
- Any amount realized on the disposition is treated as ordinary income, up to the limit discussed later under *Treatment of amount realized*.

However, these rules do not apply to any disposition described later under *Terminating GAA Treatment*.

Disposition. Property in a GAA is considered disposed of when you do any of the following.

- Permanently withdraw it from use in your trade or business or from the production of income.
- Transfer it to a supplies, scrap, or similar account.
- Sell, exchange, retire, physically abandon, or destroy it.

The retirement of a structural component of real property is not a disposition unless it is a partial disposition. See section 1.168(i)-1(e)(1) of the regulations.

Treatment of amount realized. When you dispose of property in a GAA, you must recognize any amount realized from the disposition as ordinary income, up to a limit. The limit is:

1. The unadjusted depreciable basis of the GAA, **plus**
2. Any expensed costs for property in the GAA that are subject to recapture as depreciation (not including any expensed costs for property that you removed from the GAA under the rules discussed later under *Terminating GAA Treatment*), **minus**
3. Any amount previously recognized as ordinary income upon the disposition of other property from the GAA.

Unadjusted depreciable basis. The unadjusted depreciable basis of a GAA is the total of the unadjusted depreciable bases of all the property in the GAA. The unadjusted depreciable basis of an item of property in a GAA is the amount you would use to figure gain or loss on its sale, but figured without reducing your original basis by any depreciation allowed or allowable in earlier years. However, you do reduce your original basis by other amounts, including any amortization deduction, section 179 deduction, special depreciation allowance, and electric vehicle credit.

Expensed costs. Expensed costs that are subject to recapture as depreciation include the following.

1. The section 179 deduction.
2. Amortization deductions for the following.
    a. Pollution control facilities.
    b. Removal of barriers for the elderly and disabled.
    c. Tertiary injectants.
    d. Reforestation expenses.

Example 1. The facts are the same as in the example under *Figuring Depreciation for a GAA*, earlier. In February 2020, Make & Sell sells the machine that cost $8,200 to an unrelated person for $9,000. The machine is treated as having an adjusted basis of zero.

On its 2020 tax return, Make & Sell recognizes the $9,000 amount realized as ordinary income because it is not more than the GAA's unadjusted depreciable basis ($10,000) plus any expensed cost (for example, the section 179 deduction) for property in the GAA ($0), minus any amounts previously recognized as ordinary income because of dispositions of other property from the GAA ($0).

The unadjusted depreciable basis and depreciation reserve of the GAA are not affected by the sale of the machine. The depreciation allowance for the GAA in 2020 is $3,200 [($10,000 – $2,000) × 40%].

Example 2. Assume the same facts as in *Example 1*. In June 2021, Make & Sell sells seven machines to an unrelated person for a total of $1,100. These machines are treated as having an adjusted basis of zero.

On its 2021 tax return, Make & Sell recognizes $1,000 as ordinary income. This is the GAA's unadjusted depreciable basis ($10,000) plus the expensed costs ($0), minus the amount previously recognized as ordinary income ($9,000). The remaining amount realized of $100 ($1,100 – $1,000) is section 1231 gain (discussed in chapter 3 of Pub. 544).

The unadjusted depreciable basis and depreciation reserve of the GAA are not affected by the disposition of the machines. The depreciation allowance for the GAA in 2021 is $1,920 [($10,000 – $5,200) × 40%].

Terminating GAA Treatment

You must remove the following property from a GAA.

- Property held by a partnership that terminates under section 708(b)(1)(B).
- Property you dispose of in a nonrecognition transaction or an abusive transaction.
- Property you dispose of in a qualifying disposition or in a disposition of all the property in the GAA, if you choose to terminate GAA treatment.
- Property you dispose of in a like-kind exchange or an involuntary conversion.
- Property you change to personal use.
- Property for which you must recapture any allowable credit or deduction, such as the investment credit, the credit for qualified electric vehicles, the credit for alternative fuel vehicle refueling property placed in service before 2021, the section 179 deduction, or the deduction for clean-fuel vehicles and clean-fuel vehicle refueling property placed in service before 2006.

If you remove property from a GAA, you must make the following adjustments.

1. Reduce the unadjusted depreciable basis of the GAA by the unadjusted depreciable basis of the property as of the first day of the tax year in which the disposition, change in use, partnership technical termination, or recapture event occurs. You can use any reasonable method that is consistently applied to determine the unadjusted depreciable basis of the property you remove from a GAA.
2. Reduce the depreciation reserve account by the depreciation allowed or allowable for the property (computed in the same way as computed for the GAA) as of the end of the tax year immediately preceding the year in which the disposition, change in use, or recapture event occurs.

These adjustments have no effect on the recognition and character of prior dispositions subject to the rules discussed earlier under *Disposing of GAA Property*.

Nonrecognition transactions. If you dispose of GAA property in a nonrecognition transaction, you must remove it from the GAA. The following are nonrecognition transactions.

- The receipt by one corporation of property distributed in complete liquidation of another corporation.
- The transfer of property to a corporation solely in exchange for stock in that corporation if the transferor is in control of the corporation immediately after the exchange.
- The transfer of property by a corporation that is a party to a reorganization in exchange solely for stock and securities in another corporation that is also a party to the reorganization.
- The contribution of property to a partnership in exchange for an interest in the partnership.

- The distribution of property (including money) from a partnership to a partner.
- Any transaction between members of the same affiliated group during any year for which the group makes a consolidated return.

Rules for recipient (transferee). The recipient of the property (the person to whom it is transferred) must include your (the transferor's) adjusted basis in the property in a GAA. If you transferred either all of the property, the last item of property, or the remaining portion of the last item of property, in a GAA, the recipient's basis in the property is the result of the following.

- The adjusted depreciable basis of the GAA as of the beginning of your tax year in which the transaction takes place, **minus**
- The depreciation allowable to you for the year of the transfer.

For this purpose, the adjusted depreciable basis of a GAA is the unadjusted depreciable basis of the GAA minus any depreciation allowed or allowable for the GAA.

Abusive transactions. If you dispose of GAA property in an abusive transaction, you must remove it from the GAA. A disposition is an abusive transaction if it is not a nonrecognition transaction (described earlier) or a like-kind exchange or involuntary conversion and a main purpose for the disposition is to get a tax benefit or a result that would not be available without the use of a GAA. Examples of abusive transactions include the following.

1. A transaction with a main purpose of shifting income or deductions among taxpayers in a way that would not be possible without choosing to use a GAA to take advantage of differing effective tax rates.
2. A choice to use a GAA with a main purpose of disposing of property from the GAA so that you can use an expiring net operating loss or credit. For example, if you have a net operating loss carryover or a credit carryover, the following transactions will be considered abusive transactions unless there is strong evidence to the contrary.
    a. A transfer of GAA property to a related person.
    b. A transfer of GAA property under an agreement where the property continues to be used, or is available for use, by you.

Figuring gain or loss. You must determine the gain, loss, or other deduction due to an abusive transaction by taking into account the property's adjusted basis. The adjusted basis of the property at the time of the disposition is the result of the following.

- The unadjusted depreciable basis of the property, **minus**
- The depreciation allowed or allowable for the property figured by using the depreciation method, recovery period, and convention that applied to the GAA in which the property was included.

If there is a gain, the amount subject to recapture as ordinary income is the smaller of the following.

1. The depreciation allowed or allowable for the property, including any expensed cost (such as section 179 deductions) or the special depreciation allowance for the property.
2. The result of the following:
    a. The original unadjusted depreciable basis of the GAA (plus, for section 1245 property originally included in the GAA, any expensed cost), **minus**
    b. The total gain previously recognized as ordinary income on the disposition of property from the GAA.

Qualifying dispositions. If you dispose of GAA property in a qualifying disposition, you can choose to remove the property from the GAA. A qualifying disposition is one that does not involve all the property, or the last item of property, remaining in a GAA and that is described by any of the following.

1. A disposition that is a direct result of fire, storm, shipwreck, other casualty, or theft.
2. A charitable contribution for which a deduction is allowed.
3. A disposition that is a direct result of a cessation, termination, or disposition of a business, manufacturing or other income-producing process, operation, facility, plant, or other unit (other than by transfer to a supplies, scrap, or similar account).
4. A nontaxable transaction other than a nonrecognition transaction (described earlier), a like-kind exchange or involuntary conversion, a technical termination of a partnership, or a transaction that is nontaxable only because it is a disposition from a GAA.

If you choose to remove the property from the GAA, figure your gain, loss, or other deduction resulting from the disposition in the manner described earlier under *Abusive transactions*.

Like-kind exchanges and involuntary conversions. If you dispose of GAA property as a result of a like-kind exchange or involuntary conversion, you must remove from the GAA the property that you transferred. See chapter 1 of Pub. 544 for information on these transactions. Figure your gain, loss, or other deduction resulting from the disposition in the manner described earlier under *Abusive transactions*.

Example. Sankofa, a calendar-year corporation, maintains one GAA for 12 machines. Each machine costs $15,000 and was placed in service in 2017. Of the 12 machines, nine cost a total of $135,000 and are used in Sankofa's New York plant and three machines cost $45,000 and are used in Sankofa's New Jersey plant. Assume this GAA uses the 200% declining balance depreciation method, a 5-year recovery period, and a half-year convention. Sankofa does not claim the section 179 deduction

and the machines do not qualify for a special depreciation allowance. As of January 1, 2019, the depreciation reserve account for the GAA is $93,600.

In May 2019, Sankofa sells its entire manufacturing plant in New Jersey to an unrelated person. The sales proceeds allocated to each of the three machines at the New Jersey plant is $5,000. This transaction is a qualifying disposition, so Sankofa chooses to remove the three machines from the GAA and figure the gain, loss, or other deduction by taking into account their adjusted bases.

For Sankofa's 2019 return, the depreciation allowance for the GAA is figured as follows. As of December 31, 2018, the depreciation allowed or allowable for the three machines at the New Jersey plant is $23,400. As of January 1, 2019, the unadjusted depreciable basis of the GAA is reduced from $180,000 to $135,000 ($180,000 minus the $45,000 unadjusted depreciable bases of the three machines), and the depreciation reserve account is decreased from $93,600 to $70,200 ($93,600 minus $23,400 depreciation allowed or allowable for the three machines as of December 31, 2018). The depreciation allowance for the GAA in 2019 is $25,920 [($135,000 – $70,200) × 40%].

For Sankofa's 2019 return, gain or loss for each of the three machines at the New Jersey plant is determined as follows. The depreciation allowed or allowable in 2019 for each machine is $1,440 [(($15,000 – $7,800) × 40%) ÷ 2]. The adjusted basis of each machine is $5,760 (the adjusted depreciable basis of $7,200 removed from the account less the $1,440 depreciation allowed or allowable in 2019). As a result, the loss recognized in 2019 for each machine is $760 ($5,760 – $5,000). This loss is subject to section 1231 treatment. See chapter 3 of Pub. 544 for information on section 1231 losses.

Disposition of all property in a GAA. If you dispose of all the property, or the last item of property, in a GAA, you can choose to end the GAA. If you make this choice, you figure the gain or loss by comparing the adjusted depreciable basis of the GAA with the amount realized.

If there is a gain, the amount subject to recapture as ordinary income is limited to the result of the following.

- The depreciation allowed or allowable for the GAA, including any expensed cost (such as section 179 deductions or the additional depreciation allowed or allowable for the GAA), **minus**
- The total gain previously recognized as ordinary income on the disposition of property from the GAA.

Like-kind exchanges and involuntary conversions. If you dispose of all the property or the last item of property in a GAA as a result of a like-kind exchange or involuntary conversion, the GAA terminates. You must figure the gain or loss in the manner described above under *Disposition of all property in a GAA*.

Example. Duforcelf, a calendar-year corporation, maintains a GAA for 1,000 calculators that cost a total of $60,000 and were placed in service in 2016. Assume this GAA is depreciated under the 200% declining balance method, has a recovery period of 5 years, and uses a half-year convention. Duforcelf does not claim the section 179 deduction and the calculators do not qualify for a special depreciation allowance. In 2018, Duforcelf sells 200 of the calculators to an unrelated person for $10,000. The $10,000 is recognized as ordinary income.

In March 2019, Duforcelf sells the remaining calculators in the GAA to an unrelated person for $35,000. Duforcelf decides to end the GAA.

On the date of the disposition, the adjusted depreciable basis of the account is $23,040 (unadjusted depreciable basis of $60,000 minus the depreciation allowed or allowable of $36,960). In 2019, Duforcelf recognizes a gain of $11,960. This is the amount realized of $35,000 minus the adjusted depreciable basis of $23,040. The gain subject to recapture as ordinary income is limited to the depreciation allowed or allowable minus the amounts previously recognized as ordinary income ($36,960 – $10,000 = $26,960). Therefore, the entire gain of $11,960 is recaptured as ordinary income.

Electing To Use a GAA

An election to include property in a GAA is made separately by each owner of the property. This means that an election to include property in a GAA must be made by each member of a consolidated group and at the partnership or S corporation level (and not by each partner or shareholder separately).

How to make the election. Make the election by completing line 18 of Form 4562.

When to make the election. You must make the election on a timely filed tax return (including extensions) for the year in which you place in service the property included in the GAA. However, if you timely filed your return for the year without making the election, you still can make the election by filing an amended return within 6 months of the due date of the return (excluding extensions). Attach the election to the amended return and write "Filed pursuant to section 301.9100-2" on the election statement.



You must maintain records that identify the property included in each GAA, that establish the unadjusted depreciable basis and depreciation reserve of the GAA, and that reflect the amount realized during the year upon dispositions from each GAA. However, see chapter 2 for the recordkeeping requirements for section 179 property.

Revoking an election. You can revoke an election to use a GAA only in the following situations.

- You include in the GAA property that generates foreign source income, both United States and foreign source income, or combined gross income of an FSC, a DISC, or a possessions corporation and its related supplier, and that inclusion results in a substantial distortion of income.
- You remove property from the GAA as described under *Terminating GAA Treatment*, earlier.

When Do You Recapture MACRS Depreciation?

Terms you may need to know (see Glossary):

Disposition

Nonresidential real property

Recapture

Residential rental property

When you dispose of property that you depreciated using MACRS, any gain on the disposition is generally recaptured (included in income) as ordinary income up to the amount of the depreciation previously allowed or allowable for the property. Depreciation, for this purpose, includes the following.

- Any section 179 deduction claimed on the property.
- Any deduction under section 179B of the Internal Revenue Code for capital costs to comply with Environmental Protection Agency sulfur regulations.
- Any deduction under section 179C of the Internal Revenue Code for certain qualified refinery property placed in service after August 8, 2005, and before January 1, 2014.
- Any deduction under section 179D of the Internal Revenue Code for certain energy efficient commercial building property placed in service after December 31, 2005, and before January 1, 2021.
- Any deduction under section 179E of the Internal Revenue Code for qualified advanced mine safety equipment property placed in service after December 20, 2006, and before January 1, 2018.
- Any deduction under section 190 of the Internal Revenue Code for removal of barriers to the disabled and the elderly.
- Any deduction under section 193 of the Internal Revenue Code for tertiary injectants.
- Any special depreciation allowance previously allowed or allowable for the property (unless you elected not to claim it).

There is no recapture for residential rental and nonresidential real property unless that property is qualified property for which you claimed a special depreciation allowance. For more information on depreciation recapture, see Pub. 544.

5.

Additional Rules for Listed Property

Introduction

This chapter discusses the deduction limits and other special rules that apply to certain listed property. Listed property includes cars and other property used for transportation, property used for entertainment, and certain computers.

Deductions for listed property (other than certain leased property) are subject to the following special rules and limits.

- ***Deduction for employees.*** If your use of the property is not for your employer's convenience or is not required as a condition of your employment, you cannot deduct depreciation or rent expenses for your use of the property as an employee.
- ***Business-use requirement.*** If the property is not used predominantly (more than 50%) for qualified business use, you cannot claim the section 179 deduction or a special depreciation allowance. In addition, you must figure any depreciation deduction under the Modified Accelerated Cost Recovery System (MACRS) using the straight line method over the ADS recovery period. You may also have to recapture (include in income) any excess depreciation claimed in previous years. A similar inclusion amount applies to certain leased property.
- ***Passenger automobile limits and rules.*** Annual limits apply to depreciation deductions (including section 179 deductions and any special depreciation allowance) for certain passenger automobiles. You can continue to deduct depreciation for the unrecovered basis resulting from these limits after the end of the recovery period.

This chapter defines listed property and explains the special rules and depreciation deduction limits that apply, including the special inclusion amount rule for leased property. It also discusses the recordkeeping rules for listed property and explains how to report information about the property on your tax return.

Useful Items

You may want to see:

Publication

- ❑ **463** Travel, Gift, and Car Expenses
- ❑ **535** Business Expenses
- ❑ **587** Business Use of Your Home (Including Use by Daycare Providers)

Form (and Instructions)

- ❑ **2106** Employee Business Expenses
- ❑ **2106-EZ** Unreimbursed Employee Business Expenses
- ❑ **4562** Depreciation and Amortization
- ❑ **4797** Sales of Business Property

See chapter 6 for information about getting publications and forms.

What Is Listed Property?

Terms you may need to know (see Glossary):

Capitalized

Commuting

Improvement

Recovery period

Straight line method

Listed property is any of the following.

- Passenger automobiles (as defined later).
- Any other property used for transportation, unless it is an excepted vehicle.
- Property generally used for entertainment, recreation, or amusement (including photographic, phonographic, communication, and video recording equipment).

Improvements to listed property. An improvement made to listed property that must be capitalized is treated as a new item of depreciable property. The recovery period and method of depreciation that apply to the listed property as a whole also apply to the improvement. For example, if you must depreciate the listed property using the straight line method, you must also depreciate the improvement using the straight line method.

Passenger Automobiles

A passenger automobile is any four-wheeled vehicle made primarily for use on public streets, roads, and highways and rated at 6,000 pounds or less of unloaded gross vehicle weight (6,000 pounds or less of gross vehicle weight for trucks and vans). It includes any part, component, or other item physically attached to the automobile at the time of purchase or usually included in the purchase price of an automobile.

The following vehicles are not considered passenger automobiles for these purposes.

- An ambulance, hearse, or combination ambulance-hearse used directly in a trade or business.
- A vehicle used directly in the trade or business of transporting persons or property for pay or hire.
- A truck or van that is a qualified nonpersonal use vehicle.

Qualified nonpersonal use vehicles. Qualified nonpersonal use vehicles are vehicles that by their nature are not likely to be used more than a minimal amount for personal purposes. They include the trucks and vans listed as excepted vehicles under *Other Property Used for Transportation*, next. They also include trucks and vans that have been specially modified so that they are not likely to be used more than a minimal amount for personal purposes, such as by installation of permanent shelving and painting the vehicle to display advertising or the company's name.

For a detailed discussion of passenger automobiles, including leased passenger automobiles, see Pub. 463.

Other Property Used for Transportation



Although vehicles used to transport persons or property for pay or hire and vehicles rated at more than the 6,000-pound threshold are not passenger automobiles, they are still "other property used for transportation" and are subject to the special rules for listed property.

Other property used for transportation includes trucks, buses, boats, airplanes, motorcycles, and any other vehicles used to transport persons or goods.

Excepted vehicles. Other property used for transportation does not include the following qualified nonpersonal use vehicles (defined earlier under *Passenger Automobiles*).

- Clearly marked police and fire vehicles.
- Unmarked vehicles used by law enforcement officers if the use is officially authorized.
- Ambulances used as such and hearses used as such.
- Any vehicle with a loaded gross vehicle weight of over 14,000 pounds that is designed to carry cargo.
- Bucket trucks (cherry pickers), cement mixers, dump trucks (including garbage trucks), flatbed trucks, and refrigerated trucks.
- Combines, cranes and derricks, and forklifts.
- Delivery trucks with seating only for the driver, or only for the driver plus a folding jump seat.
- Qualified moving vans.
- Qualified specialized utility repair trucks.
- School buses used in transporting students and employees of schools.
- Other buses with a capacity of at least 20 passengers that are used as passenger buses.
- Tractors and other special purpose farm vehicles.

Clearly marked police and fire vehicle. A clearly marked police or fire vehicle is a vehicle that meets all the following requirements.

- It is owned or leased by a governmental unit or an agency or instrumentality of a governmental unit.
- It is required to be used for commuting by a police officer or fire fighter who, when not on a regular shift, is on call at all times.
- It is prohibited from being used for personal use (other than commuting) outside the limit of the police officer's arrest powers or the fire fighter's obligation to respond to an emergency.
- It is clearly marked with painted insignia or words that make it readily apparent that it is a police or fire vehicle. A marking on a license plate is not a clear marking for these purposes.

Qualified moving van. A qualified moving van is any truck or van used by a professional moving company for moving household or business goods if the following requirements are met.

- No personal use of the van is allowed other than for travel to and from a move site or for minor personal use, such as a stop for lunch on the way from one move site to another.
- Personal use for travel to and from a move site happens no more than five times a month on average.
- Personal use is limited to situations in which it is more convenient to the employer, because of the location of the employee's residence in relation to the location of the move site, for the van not to be returned to the employer's business location.

Qualified specialized utility repair truck. A truck is a qualified specialized utility repair truck if it is not a van or pickup truck and all the following apply.

- The truck was specifically designed for and is used to carry heavy tools, testing equipment, or parts.
- Shelves, racks, or other permanent interior construction has been installed to carry and store the tools, equipment, or parts and would make it unlikely that the truck would be used, other than minimally, for personal purposes.
- The employer requires the employee to drive the truck home in order to be able to respond in emergency situations for purposes of restoring or maintaining electricity, gas, telephone, water, sewer, or steam utility services.

Can Employees Claim a Deduction?

If you are an employee, you can claim a depreciation deduction for the use of your listed property (whether owned or rented) in performing services as an employee only if your use is a business use. The use of your property in performing services as an employee is a business use only if both the following requirements are met.

- The use is for your employer's convenience.
- The use is required as a condition of your employment.

If these requirements are not met, you cannot deduct depreciation (including the section 179 deduction) or rent expenses for your use of the property as an employee.

Note. Employee expenses for transportation and for the depreciation of certain listed property (such as computers placed in service before 2018) paid or incurred in a tax year beginning after December 31, 2017, and before January 1, 2026, may not be claimed as a miscellaneous itemized deduction subject to the two-percent floor. If you are not entitled to claim these expenses as an above-the-line deduction, you may not claim a deduction for the expense on your 2019 return.

Employer's convenience. Whether the use of listed property is for your employer's convenience must be determined from all the facts. The use is for your employer's convenience if it is for a substantial business reason of the employer. The use of listed property during your regular working hours to carry on your employer's business is generally for the employer's convenience.

Condition of employment. Whether the use of listed property is a condition of your employment depends on all the facts and circumstances. The use of property must be required for you to perform your duties properly. Your employer does not have to require explicitly that you use the property. However, a mere statement by the employer that the use of the property is a condition of your employment is not sufficient.

Example 1. Virginia Sycamore is employed as a courier with We Deliver, which provides local courier services. She owns and uses a motorcycle to deliver packages to downtown offices. We Deliver explicitly requires all delivery persons to own a car or motorcycle for use in their employment. Virginia's use of the motorcycle is for the convenience of We Deliver and is required as a condition of employment.

Example 2. Bill Nelson is an inspector for Uplift, a construction company with many sites in the local area. He must travel to these sites on a regular basis. Uplift does not furnish an automobile or explicitly require him to use his own automobile. However, it pays him for any costs he incurs in traveling to the various sites. The use of his own automobile or a rental automobile is for the convenience of Uplift and is required as a condition of employment.

Example 3. Assume the same facts as in *Example 2*, except that Uplift furnishes a car to Bill, who chooses to use his own car and receive payment for using it. The use of his own car is neither for the convenience of Uplift nor required as a condition of employment.

Example 4. Marilyn Lee is a pilot for Y Company, a small charter airline. Y requires pilots to obtain 80 hours of

flight time annually in addition to flight time spent with the airline. Pilots usually can obtain these hours by flying with the Air Force Reserve or by flying part-time with another airline. Marilyn owns her own airplane. The use of her airplane to obtain the required flight hours is neither for the convenience of the employer nor required as a condition of employment.

Example 5. David Rule is employed as an engineer with Zip, an engineering contracting firm. He occasionally takes work home at night rather than work late in the office. He owns and uses a home computer, which is virtually identical to the office model. His use of the computer is neither for the convenience of his employer nor required as a condition of employment.

What Is the Business-Use Requirement?

Terms you may need to know (see Glossary):

Adjusted basis
Business/investment use
Capitalized
Commuting
Declining balance method
Fair market value (FMV)
Nonresidential real property
Placed in service
Recapture
Recovery period
Straight line method

You can claim the section 179 deduction and a special depreciation allowance for listed property and depreciate listed property using GDS and a declining balance method if the property meets the business-use requirement. To meet this requirement, listed property must be used predominantly (more than 50% of its total use) for qualified business use. If this requirement is not met, the following rules apply.

- Property not used predominantly for qualified business use during the year it is placed in service does not qualify for the section 179 deduction.
- Property not used predominantly for qualified business use during the year it is placed in service does not qualify for a special depreciation allowance.
- Any depreciation deduction under MACRS for property not used predominantly for qualified business use during any year must be figured using the straight line method over the ADS recovery period. This rule applies each year of the recovery period.
- Excess depreciation on property previously used predominantly for qualified business use must be recaptured (included in income) in the first year in which it is no longer used predominantly for qualified business use.
- A lessee must add an inclusion amount to income in the first year in which the leased property is not used predominantly for qualified business use.

CAUTION *Being required to use the straight line method for an item of listed property not used predominantly for qualified business use is not the same as electing the straight line method. It does not mean that you have to use the straight line method for other property in the same class as the item of listed property.*

Exception for leased property. The business-use requirement generally does not apply to any listed property leased or held for leasing by anyone regularly engaged in the business of leasing listed property.

You are considered regularly engaged in the business of leasing listed property only if you enter into contracts for the leasing of listed property with some frequency over a continuous period of time. This determination is made on the basis of the facts and circumstances in each case and takes into account the nature of your business in its entirety. Occasional or incidental leasing activity is insufficient. For example, if you lease only one passenger automobile during a tax year, you are not regularly engaged in the business of leasing automobiles. An employer who allows an employee to use the employer's property for personal purposes and charges the employee for the use is not regularly engaged in the business of leasing the property used by the employee.

How To Allocate Use

To determine whether the business-use requirement is met, you must allocate the use of any item of listed property used for more than one purpose during the year among its various uses.

For passenger automobiles and other means of transportation, allocate the property's use on the basis of mileage. You determine the percentage of qualified business use by dividing the number of miles you drove the vehicle for business purposes during the year by the total number of miles you drove the vehicle for all purposes (including business miles) during the year.

For other listed property, allocate the property's use on the basis of the most appropriate unit of time the property is actually used (rather than merely being available for use). For example, you can determine the percentage of business use of a computer by dividing the number of hours you used the computer for business purposes during the year by the total number of hours you used the computer for all purposes (including business use) during the year.

Entertainment use. Treat the use of listed property for entertainment, recreation, or amusement purposes as a business use only to the extent you can deduct expenses (other than interest and property tax expenses) due to its use as an ordinary and necessary business expense.

Commuting use. The use of an automobile for commuting is not business use, regardless of whether work is performed during the trip. For example, a business telephone call made on a car telephone while commuting to work does not change the character of the trip from commuting to business. This is also true for a business meeting held in a car while commuting to work. Similarly, a business call made on an otherwise personal trip does not change the character of a trip from personal to business. The fact that an automobile is used to display material that advertises the owner's or user's trade or business does not convert an otherwise personal use into business use.

Use of your automobile by another person. If someone else uses your automobile, do not treat that use as business use unless one of the following conditions applies.

1. That use is directly connected with your business.
2. You properly report the value of the use as income to the other person and withhold tax on the income where required.
3. You are paid a fair market rent.

Treat any payment to you for the use of the automobile as a rent payment for purposes of item (3).

Employee deductions. If you are an employee, do not treat your use of listed property as business use unless it is for your employer's convenience and is required as a condition of your employment. See *Can Employees Claim a Deduction*, earlier.

Qualified Business Use

Qualified business use of listed property is any use of the property in your trade or business. However, it does not include the following uses.

- The leasing of property to any 5% owner or related person (to the extent the property is used by a 5% owner or person related to the owner or lessee of the property).
- The use of property as pay for the services of a 5% owner or related person.
- The use of property as pay for services of any person (other than a 5% owner or related person), unless the value of the use is included in that person's gross income and income tax is withheld on that amount where required.

CAUTION *Property does not stop being used predominantly for qualified business use because of a transfer at death.*

Exception for leasing or compensatory use of aircraft. Treat the leasing of any aircraft by a 5% owner or related person, or the compensatory use of any aircraft, as a qualified business use if at least 25% of the total use of the aircraft during the year is for a qualified business use.

5% owner. For a business entity that is not a corporation, a 5% owner is any person who owns more than 5% of the capital or profits interest in the business.

For a corporation, a 5% owner is any person who owns, or is considered to own, either of the following.

- More than 5% of the outstanding stock of the corporation.
- Stock possessing more than 5% of the total combined voting power of all stock in the corporation.

Related persons. For a description of related persons, see *Related persons* in the discussion on property owned or used in 1986 under *What Method Can You Use To Depreciate Your Property* in chapter 1. For this purpose, however, treat as related persons only the relationships listed in items (1) through (10) of that discussion and substitute “50%” for “10%” each place it appears.

Examples. The following examples illustrate whether the use of business property is qualified business use.

Example 1. John Maple is the sole proprietor of a plumbing contracting business. John employs his brother, Richard, in the business. As part of Richard's pay, he is allowed to use one of the company automobiles for personal use. The company includes the value of the personal use of the automobile in Richard's gross income and properly withholds tax on it. The use of the automobile is pay for the performance of services by a related person, so it is not a qualified business use.

Example 2. John, in *Example 1*, allows unrelated employees to use company automobiles for personal purposes. He does not include the value of the personal use of the company automobiles as part of their compensation and he does not withhold tax on the value of the use of the automobiles. This use of company automobiles by employees is not a qualified business use.

Example 3. James Company Inc. owns several automobiles that its employees use for business purposes. The employees are also allowed to take the automobiles home at night. The fair market value of each employee's use of an automobile for any personal purpose, such as commuting to and from work, is reported as income to the employee and James Company withholds tax on it. This use of company automobiles by employees, even for personal purposes, is a qualified business use for the company.

Investment Use

The use of property to produce income in a nonbusiness activity (investment use) is not a qualified business use. However, you can treat the investment use as business

use to figure the depreciation deduction for the property in a given year.

Example 1. Sarah Bradley uses a home computer 50% of the time to manage her investments. She also uses the computer 40% of the time in her part-time consumer research business. Sarah's home computer is listed property because it is not used at a regular business establishment. She does not use the computer predominantly for qualified business use. Therefore, she cannot elect a section 179 deduction or claim a special depreciation allowance for the computer. She must depreciate it using the straight line method over the ADS recovery period. Her combined business/investment use for determining her depreciation deduction is 90%.

Example 2. If Sarah uses her computer 30% of the time to manage her investments and 60% of the time in her consumer research business, it is used predominantly for qualified business use. She can elect a section 179 deduction and, if she does not deduct all the computer's cost, she can claim a special depreciation allowance and depreciate the computer using the 200% declining balance method over the GDS recovery period. Her combined business/investment use for determining her depreciation deduction is 90%.

Recapture of Excess Depreciation

If you used listed property more than 50% in a qualified business use in the year you placed it in service, you must recapture (include in income) excess depreciation in the first year you use it 50% or less. You also increase the adjusted basis of your property by the same amount.

Excess depreciation is:

1. The depreciation allowable for the property (including any section 179 deduction and special depreciation allowance claimed) for years before the first year you do not use the property predominantly for qualified business use, **minus**
2. The depreciation that would have been allowable for those years if you had not used the property predominantly for qualified business use in the year you placed it in service.

To determine the amount in (2) above, you must refigure the depreciation using the straight line method and the ADS recovery period.

Example. In June 2015, Ellen Rye purchased and placed in service a pickup truck that cost $18,000. She used it only for qualified business use for 2015 through 2018. Ellen claimed a section 179 deduction of $10,000 based on the purchase of the truck. She began depreciating it using the 200% DB method over a 5-year GDS recovery period. The pickup truck's gross vehicle weight was over 6,000 pounds, so it was not subject to the passenger automobile limits discussed later under *Do the Passenger Automobile Limits Apply*. During 2019, she used the truck 50% for business and 50% for personal purposes. She includes $4,018 excess depreciation in her gross income for 2019. The excess depreciation is determined as follows.

Total section 179 deduction ($10,000) and depreciation claimed ($6,618) for 2015 through 2018. (Depreciation is from Table A-1.)		$16,618
Minus: Depreciation allowable (Table A-8):		
2015 – 10% of $18,000	$1,800	
2016 – 20% of $18,000	3,600	
2017 – 20% of $18,000	3,600	
2018 – 20% of $18,000	3,600	12,600
Excess depreciation		**$4,018**

If Ellen's use of the truck does not change to 50% for business and 50% for personal purposes until 2021, there will be no excess depreciation. The total depreciation allowable using Table A-8 through 2021 will be $18,000, which equals the total of the section 179 deduction and depreciation she will have claimed.

Where to figure and report recapture. Use Form 4797, Part IV, to figure the recapture amount. Report the recapture amount as other income on the same form or schedule on which you took the depreciation deduction. For example, report the recapture amount as other income on Schedule C (Form 1040 or 1040-SR) if you took the depreciation deduction on Schedule C. If you took the depreciation deduction on Form 2106, report the recapture amount as other income on Schedule 1 (Form 1040 or 1040-SR), line 8.

Lessee's Inclusion Amount

If you use leased listed property other than a passenger automobile for business/investment use, you must include an amount in your income in the first year your qualified business-use percentage is 50% or less. Your qualified business-use percentage is the part of the property's total use that is qualified business use (defined earlier). For the inclusion amount rules for a leased passenger automobile, see *Leasing a Car* in chapter 4 of Pub. 463.

The inclusion amount is the sum of Amount A and Amount B, described next. However, see the special rules for the inclusion amount, later, if your lease begins in the last 9 months of your tax year or is for less than 1 year.

Amount A. Amount A is:

1. The fair market value of the property, multiplied by
2. The business/investment use for the first tax year the qualified business-use percentage is 50% or less, multiplied by
3. The applicable percentage from Table A-19 in Appendix A.

The fair market value of the property is the value on the first day of the lease term. If the capitalized cost of an item of listed property is specified in the lease agreement, you must treat that amount as the fair market value.

Amount B. Amount B is:

1. The fair market value of the property, multiplied by
2. The average of the business/investment use for all tax years the property was leased that precede the first tax year the qualified business-use percentage is 50% or less, multiplied by
3. The applicable percentage from Table A-20 in Appendix A.

Maximum inclusion amount. The inclusion amount cannot be more than the sum of the deductible amounts of rent for the tax year in which the lessee must include the amount in gross income.

Inclusion amount worksheet. The following worksheet is provided to help you figure the inclusion amount for leased listed property.

Inclusion Amount Worksheet for Leased Listed Property
Keep for Your Records

1.	Fair market value	
2.	Business/investment use for first year business use is 50% or less	
3.	Multiply line 1 by line 2.	
4.	Rate (%) from Table A-19	
5.	Multiply line 3 by line 4. This is Amount A.	
6.	Fair market value	
7.	Average business/investment use for years property leased before the first year business use is 50% or less	
8.	Multiply line 6 by line 7	
9.	Rate (%) from Table A-20	
10.	Multiply line 8 by line 9. This is Amount B.	
11.	Add line 5 and line 10. This is your inclusion amount. Enter here and as ***other income*** on the form or schedule on which you originally took the deduction (for example, Schedule C or F (Form 1040 or 1040-SR), Schedule 1 (Form 1040 or 1040-SR), Form 1120, etc.)	

Example. On February 1, 2017, Larry House, a calendar year taxpayer, leased and placed in service a computer with a fair market value of $3,000. The lease is for a period of 5 years. Larry does not use the computer at a regular business establishment, so it is listed property. His business use of the property (all of which is qualified business use) is 80% in 2017, 60% in 2018, and 40% in 2019. He must add an inclusion amount to gross income for 2019, the first tax year his qualified business-use percentage is 50% or less. The computer has a 5-year recovery period under both GDS and ADS. 2019 is the third tax year of the lease, so the applicable percentage from Table A-19 is –19.8%. The applicable percentage from Table A-20 is 22%. Larry's deductible rent for the computer for 2019 is $800.

Larry uses the Inclusion amount worksheet to figure the amount he must include in income for 2018. His inclusion amount is $224, which is the sum of –$238 (Amount A) and $462 (Amount B).

Inclusion Amount Worksheet for Leased Listed Property
Keep for Your Records

1.	Fair market value	$3,000	
2.	Business/investment use for first year business use is 50% or less	40	%
3.	Multiply line 1 by line 2.	1,200	
4.	Rate (%) from Table A-19	–19.8	%
5.	Multiply line 3 by line 4. This is Amount A.	–238	
6.	Fair market value	3,000	
7.	Average business/investment use for years property leased before the first year business use is 50% or less	70	%
8.	Multiply line 6 by line 7	2,100	
9.	Rate (%) from Table A-20	22.0	%
10.	Multiply line 8 by line 9. This is Amount B.	462	
11.	Add line 5 and line 10. This is your inclusion amount. Enter here and as ***other income*** on the form or schedule on which you originally took the deduction (for example, Schedule C or F (Form 1040 or 1040-SR), Schedule 1 (Form 1040 or 1040-SR), Form 1120, etc.)	$224	

Lease beginning in the last 9 months of your tax year. The inclusion amount is subject to a special rule if all the following apply.

- The lease term begins within 9 months before the close of your tax year.
- You do not use the property predominantly (more than 50%) for qualified business use during that part of the tax year.
- The lease term continues into your next tax year.

Under this special rule, add the inclusion amount to income in the next tax year. Figure the inclusion amount by taking into account the average of the business/investment use for both tax years (line 2 of the Inclusion Amount Worksheet for Leased Listed Property) and the applicable percentage for the tax year the lease term begins. Skip lines 6 through 9 of the worksheet and enter zero on line 10.

Example 1. On August 1, 2018, Julie Rule, a calendar year taxpayer, leased and placed in service an item of listed property. The property is 5-year property with a fair market value of $10,000. Her property has a recovery period of 5 years under ADS. The lease is for 5 years. Her business use of the property was 50% in 2018 and 90% in 2019. She paid rent of $3,600 for 2018, of which $3,240 is deductible. She must include $147 in income in 2019. The $147 is the sum of Amount A and Amount B. Amount A is $147 ($10,000 × 70% × 2.1%), the product of the fair market value, the average business use for 2018 and 2019, and the applicable percentage for year one from Table A-19. Amount B is zero.

Lease for less than one year. A special rule for the inclusion amount applies if the lease term is less than one year and you do not use the property predominantly (more than 50%) for qualified business use. The amount included in income is the inclusion amount (figured as described in the preceding discussions) multiplied by a fraction. The numerator of the fraction is the number of days in the lease term and the denominator is 365 (or 366 for leap years).

The lease term for listed property other than residential rental or nonresidential real property includes options to renew. If you have two or more successive leases that are part of the same transaction (or a series of related transactions) for the same or substantially similar property, treat them as one lease.

Example 2. On October 1, 2018, John Joyce, a calendar year taxpayer, leased and placed in service an item of listed property that is 3-year property. This property had a fair market value of $15,000 and a recovery period of 5 years under ADS. The lease term was 6 months (ending on March 31, 2019), during which he used the property 45% in business. He must include $71 in income in 2019. The $71 is the sum of Amount A and Amount B. Amount A is $71 ($15,000 × 45% × 2.1% × 183/365), the product of the fair market value, the average business use for both years, and the applicable percentage for year one from Table A-19, prorated for the length of the lease. Amount B is zero.

Where to report inclusion amount. Report the inclusion amount figured as described in the preceding discussions as other income on the same form or schedule on which you took the deduction for your rental costs. For example, report the inclusion amount as other income on Schedule C (Form 1040 or 1040-SR) if you took the deduction on Schedule C. If you took the deduction for rental costs on Form 2106, report the inclusion amount as other income on Schedule 1 (Form 1040 or 1040-SR), line 8.

Do the Passenger Automobile Limits Apply?

Terms you may need to know (see Glossary):

- Basis
- Convention
- Placed in service
- Recovery period

The depreciation deduction, including the section 179 deduction and special depreciation allowance, you can claim for a passenger automobile (defined earlier) each year is limited.

This section describes the maximum depreciation deduction amounts for 2019 and explains how to deduct, after the recovery period, the unrecovered basis of your property that results from applying the passenger automobile limits.

Exception for leased cars. The passenger automobile limits generally do not apply to passenger automobiles leased or held for leasing by anyone regularly engaged in the business of leasing passenger automobiles. For information on when you are considered regularly engaged in the business of leasing listed property, including passenger automobiles, see *Exception for leased property*, earlier, under *What Is the Business-Use Requirement*.

Maximum Depreciation Deduction

The passenger automobile limits are the maximum depreciation amounts you can deduct for a passenger automobile. They are based on the date you placed the automobile in service.

Passenger Automobiles

The maximum deduction amounts for most passenger automobiles are shown in the following table.

Maximum Depreciation Deduction for Passenger Automobiles (including Trucks and Vans) Acquired After September 27, 2017, and Placed in Service in 2019

Date Placed In Service	1st Year	2nd Year	3rd Year	4th & Later Year
2019	$18,100[1]	$16,100	$9,700	$5,760
2018	$18,000[2]	$16,000	$9,600	$5,760

[1]If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum depreciation deduction is $10,100.

[2]If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum depreciation deduction is $10,000.

Maximum Depreciation Deduction for Passenger Automobiles (including Trucks and Vans) Acquired Before September 28, 2017, and Placed in Service in 2019

Date Placed In Service	1st Year	2nd Year	3rd Year	4th & Later Year
2019	$14,900[1]	$16,100	$9,700	$5,760
2018	$16,400[2]	$16,000	$9,600	$5,760

[1]If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum depreciation deduction is $10,100.

[2]If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum depreciation deduction is $10,000.

Maximum Depreciation Deduction for Passenger Automobiles Placed in Service Before 2018

Date Placed In Service	1st Year	2nd Year	3rd Year	4th & Later Years
2017	$11,160[1]	$5,100	$3,050	$1,875
2016	11,160[1]	5,100	3,050	1,875
2015	11,160[2]	5,100	3,050	1,875
2014	11,160[3]	5,100	3,050	1,875
2013	11,160[3]	5,100	3,050	1,875
2012	11,160[3]	5,100	3,050	1,875
2011	11,060[4]	4,900	2,950	1,775
2010	11,060[4]	4,900	2,950	1,775
2009	10,960[5]	4,800	2,850	1,775
2008	10,960[5]	4,800	2,850	1,775
2007	3,060	4,900	2,850	1,775
2006	2,960	4,800	2,850	1,775

[1] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,160.

[2] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,160. Also, if you placed in service the vehicle in a tax year beginning in 2015 and ending in 2016, and you elected to accelerate certain credits in lieu of the special depreciation for that tax year, the maximum deduction is $3,160.

[3] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,160.

[4] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,060.

[5] If you elected **not** to claim any special depreciation allowance for the vehicle or the vehicle is **not** qualified property, the maximum deduction is $2,960.



If your business/investment use of the automobile is less than 100%, you must reduce the maximum deduction amount by multiplying the maximum amount by the percentage of business/investment use determined on an annual basis during the tax year.



If you have a short tax year, you must reduce the maximum deduction amount by multiplying the maximum amount by a fraction. The numerator of the fraction is the number of months and partial months in the short tax year and the denominator is 12.

Example. On April 15, 2019, Virginia Hart bought and placed in service a new car for $14,500. She used the car only in her business. She files her tax return based on the calendar year. She does not elect a section 179 deduction and elected not to claim any special depreciation allowance for the 5-year property. Under MACRS, a car is 5-year property. Since she placed her car in service on April 15 and used it only for business, she uses the percentages in Table A-1 to figure her MACRS depreciation on the car. Virginia multiplies the $14,500 unadjusted basis of her car by 0.20 to get her MACRS depreciation of $2,900 for 2019. This $2,900 is below the maximum depreciation deduction of $10,100 for passenger automobiles placed in service in 2019. She can deduct the full $2,900.

Electric Vehicles

The maximum depreciation deductions for passenger automobiles that are produced to run primarily on electricity are higher than those for other automobiles. The maximum deduction amounts for electric vehicles placed in service after August 5, 1997, and before January 1, 2007, are shown in the following table. Owners of electric vehicles placed in service after December 31, 2006, should use the table of maximum deduction amounts in the

previous section titled Passenger Automobiles for electric vehicles classified as passenger automobiles or use the table of maximum deduction amounts for trucks and vans, later, for electric vehicles classified as trucks and vans.

Maximum Depreciation Deduction for Electric Vehicles

Date Placed In Service	1st Year	2nd Year	3rd Year	4th & Later Years
2006	$8,980	$14,400	$8,650	$5,225
2005	8,880	14,200	8,450	5,125
2004	31,830[1]	14,300	8,550	5,125
5/06/2003–12/31/2003	32,030[2]	14,600	8,750	5,225
1/01/2003–5/05/2003	22,880[3]	14,600	8,750	5,225

[1] If you elected **not** to claim any special depreciation allowance for the vehicle or the vehicle is **not** qualified property, or the vehicle is qualified Liberty Zone property, the maximum deduction is $8,880.

[2] If you acquired the vehicle before 5/06/03, the maximum deduction is $22,880. If you elected **not** to claim any special depreciation allowance for the vehicle, the vehicle is **not** qualified property, or the vehicle is qualified Liberty Zone property, the maximum deduction is $9,080.

[3] If you elected **not** to claim any special depreciation allowance for the vehicle, the vehicle is **not** qualified property, or the vehicle is qualified Liberty Zone property, the maximum deduction is $9,080.

Trucks and Vans

The maximum depreciation deductions for trucks and vans placed in service after 2002 are higher than those for other passenger automobiles. The maximum deduction amounts for trucks and vans are shown in the following table.

Maximum Depreciation Deduction for Trucks and Vans Placed in Service Before 2018

Date Placed In Service	1st Year	2nd Year	3rd Year	4th & Later Years
2017	$11,560[1]	$5,700	$3,450	$2,075
2016	11,560[1]	5,700	3,350	2,075
2015	11,460[2]	5,600	3,350	1,975
2014	11,460[3]	5,500	3,350	1,975
2013	11,360[4]	5,400	3,250	1,975
2012	11,360[4]	5,300	3,150	1,875
2011	11,260[5]	5,200	3,150	1,875
2010	11,160[6]	5,100	3,050	1,875
2009	11,060[7]	4,900	2,950	1,775
2008	11,160[8]	5,100	3,050	1,875
2007	3,260	5,200	3,050	1,875
2006	3,260	5,200	3,150	1,875

[1] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,560.

[2] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,460. Also, if you placed in service the vehicle in a tax year beginning in 2015 and ending in 2016, and you elected to accelerate certain credits in lieu of the special depreciation for that tax year, the maximum deduction is $3,460.

[3] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,460.

[4] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,360.

[5] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,260.

[6] If you elected **not** to claim any special depreciation allowance or the vehicle is **not** qualified property, the maximum deduction is $3,160.

[7] If you elected **not** to claim any special depreciation allowance for the vehicle or the vehicle is **not** qualified property, the maximum deduction is $3,060.

[8] If you elected **not** to claim any special depreciation allowance for the vehicle or the vehicle is **not** qualified property, the maximum deduction is $3,160.

Depreciation Worksheet for Passenger Automobiles

You can use the following worksheet to figure your depreciation deduction using the percentage tables. Then, use the information from this worksheet to prepare Form 4562.

Depreciation Worksheet for Passenger Automobiles
Keep for Your Records



Part I

1. MACRS system (GDS or ADS) . . . . . _____
2. Property class . . . . . _____
3. Date placed in service . . . . . _____
4. Recovery period . . . . . _____

5. Method and convention . . . . . _____
6. Depreciation rate (from tables) . . . . . _____
7. Maximum depreciation deduction for this year from the appropriate table . . . . . _____
8. Business/investment-use percentage . . . . . _____
9. Multiply line 7 by line 8. This is your adjusted maximum depreciation deduction . . . . . _____
10. Section 179 deduction claimed this year (not more than line 9). Enter -0- if this is not the year you placed the car in service . . . . . _____

Note.
1) If line 10 is equal to line 9, stop here. Your combined section 179 and depreciation deduction (including your special depreciation allowance) is limited to the amount on line 9.
2) If line 10 is less than line 9, complete Part II.

Part II

11. Subtract line 10 from line 9. This is the limit on the amount you can deduct for depreciation (including any special depreciation allowance) . . . . . _____
12. Cost or other basis (reduced by any alternative motor vehicle credit[1] or credit for electric vehicles[2]) . . . . . _____
13. Multiply line 12 by line 8. This is your business/investment cost . . . . . _____
14. Section 179 deduction claimed in the year you placed the car in service . . . . . _____
15. Subtract line 14 from line 13. This is your tentative basis for depreciation . . . . . _____
16. Multiply line 15 by the applicable percentage if the special depreciation allowance applies. This is your special depreciation allowance. Enter -0- if this is not the year you placed the car in service, the car is not qualified property, or you elected not to claim a special depreciation allowance . . . . . _____

Note.
1) If line 16 is equal to line 11, stop here. Your depreciation deduction (including your special depreciation allowance) is limited to the amount on line 11.
2) If line 16 is less than line 11, complete Part III.

Part III

17. Subtract line 16 from line 11. This is the limit on the amount you can deduct for MACRS depreciation . . . . . _____
18. Subtract line 16 from line 15. This is your basis for depreciation . . . . . _____
19. Multiply line 18 by line 6. This is your tentative MACRS depreciation deduction . . . . . _____
20. Enter the lesser of line 17 or line 19. This is your MACRS depreciation deduction . . . . . _____

[1] When figuring the amount to enter on line 12, do not reduce your cost or other basis by any section 179 deduction you claimed for your car.

[2] Reduce the basis by the lesser of $4,000 or 10% of the cost of the vehicle even if the credit is less than that amount.

Deductions After the Recovery Period

If the depreciation deductions for your automobile are reduced under the passenger automobile limits, you will have unrecovered basis in your automobile at the end of the recovery period. If you continue to use the automobile for business, you can deduct that unrecovered basis after the recovery period ends. You can claim a depreciation deduction in each succeeding tax year until you recover your full basis in the car. The maximum amount you can deduct each year is determined by the date you placed the car in service and your business/investment-use percentage. See *Maximum Depreciation Deduction*, earlier.

Unrecovered basis is the cost or other basis of the passenger automobile reduced by any clean-fuel vehicle deduction, electric vehicle credit, depreciation, and section 179 deductions that would have been allowable if you had used the car 100% for business and investment use and the passenger automobile limits had not applied.



You cannot claim a depreciation deduction for listed property other than passenger automobiles after the recovery period ends. There is no unrecovered basis at the end of the recovery period because you are considered to have used this property 100% for business and investment purposes during all of the recovery period.

Example. In May 2013, you bought and placed in service a car costing $31,500. The car was 5-year property under GDS (MACRS). You did not elect a section 179 deduction and elected not to claim any special depreciation allowance for the 5-year property. You used the car exclusively for business during the recovery period (2013 through 2018). You figured your depreciation as shown below.

Year	Percentage	Amount	Limit	Allowed
2013	20.0%	$6,300	$3,160	$3,160
2014	32.0	10,080	5,100	5,100
2015	19.2	6,048	3,050	3,050
2016	11.52	3,629	1,875	1,875
2017	11.52	3,629	1,875	1,875
2018	5.76	1,814	1,875	1,875
Total				**$16,935**

At the end of 2018, you had an unrecovered basis of $14,565 ($31,500 – $16,935). If in 2019 and later years you continue to use the car 100% for business, you can deduct each year the lesser of $1,875 or your remaining unrecovered basis.

If your business use of the car had been less than 100% during any year, your depreciation deduction would have been less than the maximum amount allowable for that year. However, in figuring your unrecovered basis in the car, you would still reduce your basis by the maximum amount allowable as if the business use had been 100%. For example, if you had used your car 60% for business instead of 100%, your allowable depreciation deductions would have been $8,739 ($14,565 × 60%), but you still would have to reduce your basis by $14,565 to determine your unrecovered basis.

Deductions for Passenger Automobiles Acquired in a Trade-in

If you acquire a passenger automobile in a trade-in, depreciate the carryover basis separately as if the trade-in did not occur. Depreciate the part of the new automobile's basis that exceeds its carryover basis (excess basis) as if it were newly placed in service property. This excess basis is the additional cash paid for the new automobile in the trade-in.

The depreciation figured for the two components of the basis (carryover basis and excess basis) is subject to a single passenger automobile limit. Special rules apply in determining the passenger automobile limits. These rules and examples are discussed in section 1.168(i)-6(d)(3) of the regulations.

Instead of figuring depreciation for the carryover basis and the excess basis separately, you can elect to treat the old automobile as disposed of and both of the basis components for the new automobile as if placed in service at the time of the trade-in. For more information, including how to make this election, see *Election out* under *Property Acquired in a Like-Kind Exchange or Involuntary Conversion* in chapter 4 and sections 1.168(i)-6(i) and 1.168(i)-6(j) of the regulations.



Like-kind exchanges completed after December 31, 2017, are generally limited to exchanges of real property not held primarily for sale. Section 1.168(i)-6 of the regulations does not reflect this change in law.

What Records Must Be Kept?

Terms you may need to know (see Glossary):

Business/investment use

Circumstantial evidence

Documentary evidence

You cannot take any depreciation or section 179 deduction for the use of listed property unless you can prove your business/investment use with adequate records or with sufficient evidence to support your own statements. For listed property, you must keep records for as long as any recapture can still occur. Recapture can occur in any tax year of the recovery period.

Adequate Records



To meet the adequate records requirement, you must maintain an account book, diary, log, statement of expense, trip sheet, or similar record or other documentary evidence that, together with the receipt, is sufficient to establish each element of an expenditure or use. You do not have to record information in an account book, diary, or similar record if the information is already shown on the receipt. However, your records should back up your receipts in an orderly manner.

Elements of expenditure or use. Your records or other documentary evidence must support all the following.

- The amount of each separate expenditure, such as the cost of acquiring the item, maintenance and repair costs, capital improvement costs, lease payments, and any other expenses.
- The amount of each business and investment use (based on an appropriate measure, such as mileage for vehicles and time for other listed property), and the total use of the property for the tax year.
- The date of the expenditure or use.
- The business or investment purpose for the expenditure or use.

Written documents of your expenditure or use are generally better evidence than oral statements alone. You do not have to keep a daily log. However, some type of record containing the elements of an expenditure or the business or investment use of listed property made at or

near the time of the expenditure or use and backed up by other documents is preferable to a statement you prepare later.

Timeliness. You must record the elements of an expenditure or use at the time you have full knowledge of the elements. An expense account statement made from an account book, diary, or similar record prepared or maintained at or near the time of the expenditure or use is generally considered a timely record if, in the regular course of business:

- The statement is given by an employee to the employer, or
- The statement is given by an independent contractor to the client or customer.

For example, a log maintained on a weekly basis, that accounts for use during the week, will be considered a record made at or near the time of use.

Business purpose supported. Generally, an adequate record of business purpose must be in the form of a written statement. However, the amount of detail necessary to establish a business purpose depends on the facts and circumstances of each case. A written explanation of the business purpose will not be required if the purpose can be determined from the surrounding facts and circumstances. For example, a salesperson visiting customers on an established sales route will not normally need a written explanation of the business purpose of his or her travel.

Business use supported. An adequate record contains enough information on each element of every business or investment use. The amount of detail required to support the use depends on the facts and circumstances. For example, a taxpayer who uses a truck for both business and personal purposes and whose only business use of the truck is to make customer deliveries on an established route can satisfy the requirement by recording the length of the route, including the total number of miles driven during the tax year and the date of each trip at or near the time of the trips.

Although you must generally prepare an adequate written record, you can prepare a record of the business use of listed property in a computer memory device that uses a logging program.

Separate or combined expenditures or uses. Each use by you is normally considered a separate use. However, you can combine repeated uses as a single item.

Record each expenditure as a separate item. Do not combine it with other expenditures. If you choose, however, you can combine amounts you spent for the use of listed property during a tax year, such as for gasoline or automobile repairs. If you combine these expenses, you do not need to support the business purpose of each expense. Instead, you can divide the expenses based on the total business use of the listed property.

You can account for uses that can be considered part of a single use, such as a round trip or uninterrupted business use, by a single record. For example, you can account for the use of a truck to make deliveries at several locations that begin and end at the business premises and can include a stop at the business in between deliveries by a single record of miles driven. You can account for the use of a passenger automobile by a salesperson for a business trip away from home over a period of time by a single record of miles traveled. Minimal personal use (such as a stop for lunch between two business stops) is not an interruption of business use.

Confidential information. If any of the information on the elements of an expenditure or use is confidential, you do not need to include it in the account book or similar record if you record it at or near the time of the expenditure or use. You must keep it elsewhere and make it available as support to the IRS director for your area on request.

Substantial compliance. If you have not fully supported a particular element of an expenditure or use, but have complied with the adequate records requirement for the expenditure or use to the satisfaction of the IRS director for your area, you can establish this element by any evidence the IRS director for your area deems adequate.

If you fail to establish to the satisfaction of the IRS director for your area that you have substantially complied with the adequate records requirement for an element of an expenditure or use, you must establish the element as follows.

- By your own oral or written statement containing detailed information as to the element.
- By other evidence sufficient to establish the element.

If the element is the cost or amount, time, place, or date of an expenditure or use, its supporting evidence must be direct evidence, such as oral testimony by witnesses or a written statement setting forth detailed information about the element or the documentary evidence. If the element is the business purpose of an expenditure, its supporting evidence can be circumstantial evidence.

Sampling. You can maintain an adequate record for part of a tax year and use that record to support your business and investment use of listed property for the entire tax year if it can be shown by other evidence that the periods for which you maintain an adequate record are representative of the use throughout the year.

Example 1. Denise Williams, a sole proprietor and calendar year taxpayer, operates an interior decorating business out of her home. She uses her automobile for local business visits to the homes or offices of clients, for meetings with suppliers and subcontractors, and to pick up and deliver items to clients. There is no other business use of the automobile, but she and family members also use it for personal purposes. She maintains adequate records for the first 3 months of the year showing that 75% of the automobile use was for business. Subcontractor invoices and paid bills show that her business continued at approximately the same rate for the rest of the year. If there is no

change in circumstances, such as the purchase of a second car for exclusive use in her business, the determination that her combined business/investment use of the automobile for the tax year is 75% rests on sufficient supporting evidence.

Example 2. Assume the same facts as in *Example 1*, except that Denise maintains adequate records during the first week of every month showing that 75% of her use of the automobile is for business. Her business invoices show that her business continued at the same rate during the later weeks of each month so that her weekly records are representative of the automobile's business use throughout the month. The determination that her business/investment use of the automobile for the tax year is 75% rests on sufficient supporting evidence.

Example 3. Bill Baker, a sole proprietor and calendar year taxpayer, is a salesman in a large metropolitan area for a company that manufactures household products. For the first 3 weeks of each month, he occasionally uses his own automobile for business travel within the metropolitan area. During these weeks, his business use of the automobile does not follow a consistent pattern. During the fourth week of each month, he delivers all business orders taken during the previous month. The business use of his automobile, as supported by adequate records, is 70% of its total use during that fourth week. The determination based on the record maintained during the fourth week of the month that his business/investment use of the automobile for the tax year is 70% does not rest on sufficient supporting evidence because his use during that week is not representative of use during other periods.

Loss of records. When you establish that failure to produce adequate records is due to loss of the records through circumstances beyond your control, such as through fire, flood, earthquake, or other casualty, you have the right to support a deduction by reasonable reconstruction of your expenditures and use.

How Is Listed Property Information Reported?

You must provide the information about your listed property requested in Part V of Form 4562, Section A, if you claim either of the following deductions.

- Any deduction for a vehicle.
- A depreciation deduction for any other listed property.

If you claim any deduction for a vehicle, you must also provide the information requested in Section B. If you provide the vehicle for your employee's use, the employee must give you this information. If you provide any vehicle for use by an employee, you must first answer the questions in Section C to see if you meet an exception to completing Section B for that vehicle.

Vehicles used by your employees. You do not have to complete Section B, Part V, for vehicles used by your employees who are not more-than-5% owners or related persons if you meet at least one of the following requirements.

1. You maintain a written policy statement that prohibits one of the following uses of the vehicles.
   a. All personal use including commuting.
   b. Personal use, other than commuting, by employees who are not officers, directors, or 1%-or-more owners.
2. You treat all use of the vehicles by your employees as personal use.
3. You provide more than five vehicles for use by your employees, and you keep in your records the information on their use given to you by the employees.
4. For demonstrator automobiles provided to full-time salespersons, you maintain a written policy statement that limits the total mileage outside the salesperson's normal working hours and prohibits use of the automobile by anyone else, for vacation trips, or to store personal possessions.

Exceptions. If you file Form 2106, and you are not required to file Form 4562, report information about listed property on that form and not on Form 4562. Also, if you file Schedule C (Form 1040 or 1040-SR) and are claiming the standard mileage rate or actual vehicle expenses (except depreciation) and you are not required to file Form 4562 for any other reason, report vehicle information in Part IV of Schedule C and not on Form 4562.

6.

How To Get Tax Help

If you have questions about a tax issue, need help preparing your tax return, or want to download free publications, forms, or instructions, go to IRS.gov and find resources that can help you right away.

Preparing and filing your tax return. After receiving your wage and earning statements (Form W-2, W-2G, 1099-R, 1099-MISC) from all employers and interest and dividend statements from banks (Form 1099), you can find free options to prepare and file your return on IRS.gov or in your local community if you qualify.

The Volunteer Income Tax Assistance (VITA) program offers free tax help to people with low-to-moderate incomes, persons with disabilities, and limited-English-speaking taxpayers who need help preparing their own tax returns. The Tax Counseling for the Elderly (TCE) program offers free tax help for all taxpayers, particularly those who are 60 years of age and older. TCE volunteers

specialize in answering questions about pensions and retirement-related issues unique to seniors.

You can go to IRS.gov to see your options for preparing and filing your return which include the following.

- **Free File.** Go to *IRS.gov/FreeFile* to see if you qualify to use brand-name software to prepare and *e-file* your federal tax return for free.
- **VITA.** Go to *IRS.gov/VITA*, download the free IRS2Go app, or call 800-906-9887 to find the nearest VITA location for free tax preparation.
- **TCE.** Go to *IRS.gov/TCE*, download the free IRS2Go app, or call 888-227-7669 to find the nearest TCE location for free tax preparation.

Employers can register to use Business Services Online. The SSA offers online service for fast, free, and secure online W-2 filing options to CPAs, accountants, enrolled agents, and individuals who process Forms W-2, Wage and Tax Statement, and Form W-2c, Corrected Wage and Tax Statement. Employers can go to *SSA.gov/employer* for more information.



Getting answers to your tax law questions. On IRS.gov get answers to your tax questions anytime, anywhere.

- Go to *IRS.gov/Help* for a variety of tools that will help you get answers to some of the most common tax questions.
- Go to *IRS.gov/ITA* for the Interactive Tax Assistant, a tool that will ask you questions on a number of tax law topics and provide answers. You can print the entire interview and the final response for your records.
- Go to *IRS.gov/Forms* to search for our forms, instructions, and publications. You will find details on 2019 tax and hundreds of interactive links to help you find answers to your questions.
- You may also be able to access tax law information in your electronic filing software.

Tax reform. Tax reform legislation affects individuals, businesses, tax-exempt and government entities. Go to *IRS.gov/TaxReform* for information and updates on how this legislation affects your taxes.

IRS social media. Go to *IRS.gov/SocialMedia* to see the various social media tools the IRS uses to share the latest information on tax changes, scam alerts, initiatives, products, and services. At the IRS, privacy and security are paramount. We use these tools to share public information with you. **Don't** post your social security number or other confidential information on social media sites. Always protect your identity when using any social networking site.

The following IRS YouTube channels provide short, informative videos on various tax-related topics in English, Spanish, and ASL.

- *Youtube.com/irsvideos*.
- *Youtube.com/irsvideosmultilingual*.
- *Youtube.com/irsvideosASL*.

Watching IRS videos. The IRS Video portal (*IRSVideos.gov*) contains video and audio presentations for individuals, small businesses, and tax professionals.

Getting tax information in other languages. For taxpayers whose native language isn't English, we have the following resources available. Taxpayers can find information on IRS.gov in the following languages.

- *Spanish* (*IRS.gov/Spanish*).
- *Chinese* (*IRS.gov/Chinese*).
- *Korean* (*IRS.gov/Korean*).
- *Russian* (*IRS.gov/Russian*).
- *Vietnamese* (*IRS.gov/Vietnamese*).

The IRS Taxpayer Assistance Centers (TACs) provide over-the-phone interpreter service in over 170 languages, and the service is available free to taxpayers.

Getting tax forms and publications. Go to *IRS.gov/Forms* to view, download, or print all of the forms, instructions, and publication you may need. You can also download and view popular tax publications and instructions (including the 1040 and 1040-SR instructions) on mobile devices as an eBook at no charge at *IRS.gov/eBooks*. Or you can go to *IRS.gov/OrderForms* to place an order and have them mailed to you within 10 business days.

Access your online account (Individual taxpayers only). Go to *IRS.gov/Account* to securely access information about your federal tax account.

- View the amount you owe, pay online or set up an online payment agreement.
- Access your tax records online.
- Review the past 24 months of your payment history.
- Go to *IRS.gov/SecureAccess* to review the required identity authentication process.

Using direct deposit. The fastest way to receive a tax refund is to combine direct deposit and IRS *e-file*. Direct deposit securely and electronically transfers your refund directly into your financial account. Eight in 10 taxpayers use direct deposit to receive their refund. The IRS issues more than 90% of refunds in less than 21 days.

Getting a transcript or copy of a return. The quickest way to get a copy of your tax transcript is to go to *IRS.gov/Transcripts*. Click on either "Get Transcript Online" or "Get Transcript by Mail" to order a copy of your transcript. If you prefer, you can order your transcript by calling 800-908-9946.

Using online tools to help prepare your return. Go to *IRS.gov/Tools* for the following.

- The *Earned Income Tax Credit Assistant* (*IRS.gov/EICAssistant*) determines if you are eligible for the EIC.

- The *Online EIN Application* (*IRS.gov/EIN*) helps you get an employer identification number.
- The *IRS Withholding Calculator* (*IRS.gov/W4App*) makes it easier for everyone to pay the correct amount of tax during the year. The Estimator replaces the Withholding Calculator. The redesigned tool is a convenient, online way to check and tailor your withholding. It's more user-friendly for taxpayers, including retirees and self-employed individuals. The new and improved features include the following.
  - Easy to understand language;
  - The ability to switch between screens, correct previous entries, and skip screens that don't apply;
  - Tips and links to help you determine if you qualify for tax credits and deductions;
  - A progress tracker;
  - A self-employment tax feature; and
  - Automatic calculation of taxable social security benefits.
- The *First Time Homebuyer Credit Account Look-up* (*IRS.gov/HomeBuyer*) tool provides information on your repayments and account balance.
- The *Sales Tax Deduction Calculator* (*IRS.gov/SalesTax*) figures the amount you can claim if you itemize deductions on Schedule A (Form 1040 or 1040-SR), choose not to claim state and local income taxes, and you didn't save your receipts showing the sales tax you paid.

Resolving tax-related identity theft issues.

- The IRS doesn't initiate contact with taxpayers by email or telephone to request personal or financial information. This includes any type of electronic communication, such as text messages and social media channels.
- Go to *IRS.gov/IDProtection* for information.
- If your SSN has been lost or stolen or you suspect you're a victim of tax-related identity theft, visit *IRS.gov/IdentityTheft* to learn what steps you should take.

Checking on the status of your refund.

- Go to *IRS.gov/Refunds*.
- The IRS can't issue refunds before mid-February 2020, for returns that claimed the EIC or the ACTC. This applies to the entire refund, not just the portion associated with these credits.
- Download the official IRS2Go app to your mobile device to check your refund status.
- Call the automated refund hotline at 800-829-1954.

Making a tax payment. The IRS uses the latest encryption technology to ensure your electronic payments are safe and secure. You can make electronic payments online, by phone, and from a mobile device using the IRS2Go app. Paying electronically is quick, easy, and faster than mailing in a check or money order. Go to *IRS.gov/Payments* to make a payment using any of the following options.

- *IRS Direct Pay*: Pay your individual tax bill or estimated tax payment directly from your checking or savings account at no cost to you.
- *Debit or Credit Card*:Choose an approved payment processor to pay online, by phone, and by mobile device.
- *Electronic Funds Withdrawl*: Offered only when filing your federal taxes using tax preparation software or through a tax professional.
- *Electronic Federal Tax Payment System*: Best option for businesses. Enrollment is required.
- *Check or Money Order*: Mail your payment to the address listed on the notice or instructions.
- *Cash*: You may be able to pay your taxes at a participating retail store.
- *Same Day Wire*: You may be able to do same-day wire from your financial institution. Contact your financial institution for availability, cost, and cut-off time.

What if I can't pay now? Go to *IRS.gov/Payments* for more information about your options.

- Apply for an *online payment agreement* (*IRS.gov/OPA*) to meet your tax obligation in monthly installments if you can't pay your taxes in full today. Once you complete the online process, you will receive immediate notification of whether your agreement has been approved.
- Use the *Offer in Compromise Pre-Qualifier* (*IRS.gov/OIC*) to see if you can settle your tax debt for less than the full amount you owe.

Checking the status of an amended return. Go to *IRS.gov/WMAR* to track the status of Form 1040-X amended returns. Please note that it can take up to 3 weeks from the date you filed your amended return for it show up in our system and processing it can take up to 16 weeks.

Understanding an IRS notice or letter. Go to *IRS.gov/Notices* to find additional information about responding to an IRS notice or letter.

Contacting your local IRS office. Keep in mind, many questions can be answered on IRS.gov without visiting an IRS Tax Assistance Center (TAC). Go to *IRS.gov/LetUsHelp* for the topics people ask about most. If you still need help, IRS TACs provide tax help when a tax issue can't be handled online or by phone. All TACs now provide service by appointment so you'll know in advance that you can get the service you need without long wait times. Before you visit, go to *IRS.gov/TACLocator* to find the nearest TAC, check hours, available services, and appointment options. Or, on the IRS2Go app, under the Stay Connected tab, choose the Contact Us option and click on "Local Offices."

The Taxpayer Advocate Service (TAS) Is Here To Help You

What Is TAS?

TAS is an ***independent*** organization within the IRS that helps taxpayers and protects taxpayer rights. Their job is to ensure that every taxpayer is treated fairly and that you know and understand your rights under the *Taxpayer Bill of Rights*.

How Can You Learn About Your Taxpayer Rights?

The Taxpayer Bill of Rights describes 10 basic rights that all taxpayers have when dealing with the IRS. Go to *TaxpayerAdvocate.IRS.gov* to help you understand *what these rights mean to you* and how they apply. These are ***your*** rights. Know them. Use them.

What Can the TAS Do For You?

TAS can help you resolve problems that you can't resolve with the IRS. And their service is free. If you qualify for their assistance, you will be assigned to one advocate who will work with you throughout the process and will do everything possible to resolve your issue. TAS can help you if:

- Your problem is causing financial difficulty for you, your family, or your business;
- You face (or your business is facing) an immediate threat of adverse action; or
- You've tried repeatedly to contact the IRS but no one has responded, or the IRS hasn't responded by the date promised.

How Can You Reach TAS?

TAS has offices *in every state, the District of Columbia, and Puerto Rico*. Your local advocate's number is in your local directory and at *TaxpayerAdvocate.IRS.gov/Contact-Us*. You can also call us at 877-777-4778.

How Else Does TAS Help Taxpayers?

TAS works to resolve large-scale problems that affect many taxpayers. If you know of one of these broad issues, please report it to us at *IRS.gov/SAMS*.

TAS also has a website, *Tax Reform Changes*, which shows you how the new tax law may change your future tax filings and helps you plan for these changes. The information is categorized by tax topic in the order of the IRS Form 1040 or 1040-SR. Go to *TaxChanges.us* for more information.

TAS for Tax Professionals

TAS can provide a variety of information for tax professionals, including tax law updates and guidance. TAS programs, and ways to let TAS know about systemic problems you've see in your practice.

Low Income Taxpayer Clinics (LITCs)

LITCs are independent from the IRS. LITCs represent individuals whose income is below a certain level and need to resolve tax problems with the IRS, such as audits, appeals, and tax collection disputes. In addition, clinics can provide information about taxpayer rights and responsibilities in different languages for individuals who speak English as a second language. Services are offered for free or a small fee. To find a clinic near you, visit *IRC.gov/LITC* or see IRS Publication 4134, *Low Income Taxpayer Clinic List*.

Appendix A
MACRS Percentage Table Guide
General Depreciation System (GDS)
Alternative Depreciation System (ADS)

Chart 1. *Use this chart to find the correct percentage table to use for any property other than residential rental and nonresidential real property. Use Chart 2 for residential rental and nonresidential real property.*

MACRS System	Depreciation Method	Recovery Period	Convention	Class	Month or Quarter Placed in Service	Table
GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Half-Year	3, 5, 7, 10	Any	A-1
GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5
GDS	150%	GDS/3, 5, 7, 10	Half-Year	3, 5, 7, 10	Any	A-14
GDS	150%	GDS/3, 5, 7, 10	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-15 A-16 A-17 A-18
GDS	150%	GDS/15, 20	Half-Year	15 & 20	Any	A-1
GDS	150%	GDS/15, 20	Mid-Quarter	15 & 20	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5
GDS ADS	SL	GDS ADS	Half-Year	Any	Any	A-8
GDS ADS	SL	GDS ADS	Mid-Quarter	Any	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-9 A-10 A-11 A-12
ADS	150%	ADS	Half-Year	Any	Any	A-14
ADS	150%	ADS	Mid-Quarter	Any	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-15 A-16 A-17 A-18

Chart 2. *Use this chart to find the correct percentage table to use for residential rental and nonresidential real property. Use Chart 1 for all other property.*

MACRS System	Depreciation Method	Recovery Period	Convention	Class	Month or Quarter Placed in Service	Table
GDS	SL	GDS/27.5	Mid-Month	Residential Rental	Any	A-6
GDS	SL SL	GDS/31.5 GDS/39	Mid-Month	Nonresidential Real	Any	A-7 A-7a
ADS	SL	ADS/30	Mid-Month	Residential Rental	Any	A-13
	SL	ADS/40	Mid-Month	Residential Rental and Nonresidential Real	Any	A-13a

Chart 3. **Income Inclusion Amount Rates for MACRS Leased Listed Property**

	Table
Amount A Percentages	A-19
Amount B Percentages	A-20

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Table A-1. **3-, 5-, 7-, 10-, 15-, and 20-Year Property**
Half-Year Convention

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.750%
2	44.45	32.00	24.49	18.00	9.50	7.219
3	14.81	19.20	17.49	14.40	8.55	6.677
4	7.41	11.52	12.49	11.52	7.70	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.90	4.888
8			4.46	6.55	5.90	4.522
9				6.56	5.91	4.462
10				6.55	5.90	4.461
11				3.28	5.91	4.462
12					5.90	4.461
13					5.91	4.462
14					5.90	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Table A-2. **3-, 5-, 7-, 10-, 15-, and 20-Year Property**
Mid-Quarter Convention
Placed in Service in First Quarter

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	58.33%	35.00%	25.00%	17.50%	8.75%	6.563%
2	27.78	26.00	21.43	16.50	9.13	7.000
3	12.35	15.60	15.31	13.20	8.21	6.482
4	1.54	11.01	10.93	10.56	7.39	5.996
5		11.01	8.75	8.45	6.65	5.546
6		1.38	8.74	6.76	5.99	5.130
7			8.75	6.55	5.90	4.746
8			1.09	6.55	5.91	4.459
9				6.56	5.90	4.459
10				6.55	5.91	4.459
11				0.82	5.90	4.459
12					5.91	4.460
13					5.90	4.459
14					5.91	4.460
15					5.90	4.459
16					0.74	4.460
17						4.459
18						4.460
19						4.459
20						4.460
21						0.565

Table A-3. **3-, 5-, 7-, 10-, 15-, and 20-Year Property Mid-Quarter Convention Placed in Service in Second Quarter**

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	41.67%	25.00%	17.85%	12.50%	6.25%	4.688%
2	38.89	30.00	23.47	17.50	9.38	7.148
3	14.14	18.00	16.76	14.00	8.44	6.612
4	5.30	11.37	11.97	11.20	7.59	6.116
5		11.37	8.87	8.96	6.83	5.658
6		4.26	8.87	7.17	6.15	5.233
7			8.87	6.55	5.91	4.841
8			3.34	6.55	5.90	4.478
9				6.56	5.91	4.463
10				6.55	5.90	4.463
11				2.46	5.91	4.463
12					5.90	4.463
13					5.91	4.463
14					5.90	4.463
15					5.91	4.462
16					2.21	4.463
17						4.462
18						4.463
19						4.462
20						4.463
21						1.673

Table A-4. **3-, 5-, 7-, 10-, 15-, and 20-Year Property Mid-Quarter Convention Placed in Service in Third Quarter**

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	25.00%	15.00%	10.71%	7.50%	3.75%	2.813%
2	50.00	34.00	25.51	18.50	9.63	7.289
3	16.67	20.40	18.22	14.80	8.66	6.742
4	8.33	12.24	13.02	11.84	7.80	6.237
5		11.30	9.30	9.47	7.02	5.769
6		7.06	8.85	7.58	6.31	5.336
7			8.86	6.55	5.90	4.936
8			5.53	6.55	5.90	4.566
9				6.56	5.91	4.460
10				6.55	5.90	4.460
11				4.10	5.91	4.460
12					5.90	4.460
13					5.91	4.461
14					5.90	4.460
15					5.91	4.461
16					3.69	4.460
17						4.461
18						4.460
19						4.461
20						4.460
21						2.788

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Table A-5. **3-, 5-, 7-, 10-, 15-, and 20-Year Property**
Mid-Quarter Convention
Placed in Service in Fourth Quarter

Year	Depreciation rate for recovery period					
	3-year	5-year	7-year	10-year	15-year	20-year
1	8.33%	5.00%	3.57%	2.50%	1.25%	0.938%
2	61.11	38.00	27.55	19.50	9.88	7.430
3	20.37	22.80	19.68	15.60	8.89	6.872
4	10.19	13.68	14.06	12.48	8.00	6.357
5		10.94	10.04	9.98	7.20	5.880
6		9.58	8.73	7.99	6.48	5.439
7			8.73	6.55	5.90	5.031
8			7.64	6.55	5.90	4.654
9				6.56	5.90	4.458
10				6.55	5.91	4.458
11				5.74	5.90	4.458
12					5.91	4.458
13					5.90	4.458
14					5.91	4.458
15					5.90	4.458
16					5.17	4.458
17						4.458
18						4.459
19						4.458
20						4.459
21						3.901

Table A-6. **Residential Rental Property**
Mid-Month Convention
Straight Line—27.5 Years

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	3.485%	3.182%	2.879%	2.576%	2.273%	1.970%	1.667%	1.364%	1.061%	0.758%	0.455%	0.152%
2–9	3.636	3.636	3.636	3.636	3.636	3.636	3.636	3.636	3.636	3.636	3.636	3.636
10	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
11	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
12	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
13	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
14	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
15	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
16	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
17	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
18	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
19	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
20	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
21	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
22	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
23	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
24	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
25	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
26	3.637	3.637	3.637	3.637	3.637	3.637	3.636	3.636	3.636	3.636	3.636	3.636
27	3.636	3.636	3.636	3.636	3.636	3.636	3.637	3.637	3.637	3.637	3.637	3.637
28	1.97	2.273	2.576	2.879	3.182	3.485	3.636	3.636	3.636	3.636	3.636	3.636
29							0.152	0.455	0.758	1.061	1.364	1.667

Table A-7. **Nonresidential Real Property**
Mid-Month Convention
Straight Line—31.5 Years

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	3.042%	2.778%	2.513%	2.249%	1.984%	1.720%	1.455%	1.190%	0.926%	0.661%	0.397%	0.132%
2–7	3.175	3.175	3.175	3.175	3.175	3.175	3.175	3.175	3.175	3.175	3.175	3.175
8	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.175	3.175	3.175	3.175	3.175
9	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
10	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
11	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
12	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
13	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
14	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
15	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
16	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
17	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
18	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
19	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
20	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
21	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
22	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
23	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
24	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
25	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
26	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
27	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
28	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
29	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
30	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174
31	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175	3.174	3.175
32	1.720	1.984	2.249	2.513	2.778	3.042	3.175	3.174	3.175	3.174	3.175	3.174
33							0.132	0.397	0.661	0.926	1.190	1.455

Table A-7a. **Nonresidential Real Property**
Mid-Month Convention
Straight Line—39 Years

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	2.461%	2.247%	2.033%	1.819%	1.605%	1.391%	1.177%	0.963%	0.749%	0.535%	0.321%	0.107%
2–39	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564	2.564
40	0.107	0.321	0.535	0.749	0.963	1.177	1.391	1.605	1.819	2.033	2.247	2.461

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Table A-8. **Straight Line Method**
Half-Year Convention

Year	Recovery periods in years												
	2.5	**3**	**3.5**	**4**	**5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**
1	20.0%	16.67%	14.29%	12.5%	10.0%	8.33%	7.69%	7.14%	6.67%	6.25%	5.88%	5.56%	5.26%
2	40.0	33.33	28.57	25.0	20.0	16.67	15.39	14.29	13.33	12.50	11.77	11.11	10.53
3	40.0	33.33	28.57	25.0	20.0	16.67	15.38	14.29	13.33	12.50	11.76	11.11	10.53
4		16.67	28.57	25.0	20.0	16.67	15.39	14.28	13.33	12.50	11.77	11.11	10.53
5				12.5	20.0	16.66	15.38	14.29	13.34	12.50	11.76	11.11	10.52
6					10.0	16.67	15.39	14.28	13.33	12.50	11.77	11.11	10.53
7						8.33	15.38	14.29	13.34	12.50	11.76	11.11	10.52
8								7.14	13.33	12.50	11.77	11.11	10.53
9										6.25	11.76	11.11	10.52
10												5.56	10.53

Table A-8. *(Continued)*

Year	Recovery periods in years												
	10	**10.5**	**11**	**11.5**	**12**	**12.5**	**13**	**13.5**	**14**	**15**	**16**	**16.5**	**17**
1	5.0%	4.76%	4.55%	4.35%	4.17%	4.0%	3.85%	3.70%	3.57%	3.33%	3.13%	3.03%	2.94%
2	10.0	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
3	10.0	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
4	10.0	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
5	10.0	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
6	10.0	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
7	10.0	9.52	9.09	8.70	8.34	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
8	10.0	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
9	10.0	9.52	9.09	8.70	8.34	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
10	10.0	9.53	9.09	8.69	8.33	8.0	7.70	7.40	7.15	6.66	6.25	6.06	5.88
11	5.0	9.52	9.09	8.70	8.34	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.89
12			4.55	8.69	8.33	8.0	7.70	7.40	7.15	6.66	6.25	6.06	5.88
13					4.17	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.89
14							3.85	7.40	7.15	6.66	6.25	6.06	5.88
15									3.57	6.67	6.25	6.06	5.89
16										3.33	6.25	6.06	5.88
17											3.12	6.07	5.89
18													2.94

Table A-8. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	2.78%	2.63%	2.5%	2.273%	2.083%	2.0%	1.887%	1.786%	1.667%	1.429%	1.25%	1.111%	1.0%
2	5.56	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
3	5.56	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
4	5.55	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
5	5.56	5.26	5.0	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
6	5.55	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
7	5.56	5.26	5.0	4.546	4.167	4.0	3.773	3.572	3.333	2.857	2.50	2.222	2.0
8	5.55	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
9	5.56	5.27	5.0	4.546	4.167	4.0	3.773	3.572	3.333	2.857	2.50	2.222	2.0
10	5.55	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
11	5.56	5.27	5.0	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.50	2.222	2.0
12	5.55	5.26	5.0	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.50	2.222	2.0
13	5.56	5.27	5.0	4.546	4.166	4.0	3.773	3.572	3.334	2.857	2.50	2.222	2.0
14	5.55	5.26	5.0	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
15	5.56	5.27	5.0	4.546	4.166	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
16	5.55	5.26	5.0	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
17	5.56	5.27	5.0	4.546	4.166	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
18	5.55	5.26	5.0	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
19	2.78	5.27	5.0	4.546	4.166	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
20		2.63	5.0	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
21			2.5	4.546	4.166	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
22				4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
23				2.273	4.166	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
24					4.167	4.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
25					2.083	4.0	3.774	3.572	3.334	2.857	2.50	2.222	2.0
26						2.0	3.773	3.571	3.333	2.857	2.50	2.222	2.0
27							3.774	3.572	3.334	2.857	2.50	2.223	2.0
28								3.571	3.333	2.858	2.50	2.222	2.0
29								1.786	3.334	2.857	2.50	2.223	2.0
30									3.333	2.858	2.50	2.222	2.0
31									1.667	2.857	2.50	2.223	2.0
32										2.858	2.50	2.222	2.0
33										2.857	2.50	2.223	2.0
34										2.858	2.50	2.222	2.0
35										2.857	2.50	2.223	2.0
36										1.429	2.50	2.222	2.0
37											2.50	2.223	2.0
38											2.50	2.222	2.0
39											2.50	2.223	2.0
40											2.50	2.222	2.0
41											1.25	2.223	2.0
42												2.222	2.0
43												2.223	2.0
44												2.222	2.0
45												2.223	2.0
46												1.111	2.0
47–50													2.0
51													1.0

EAS000086

Table A-9. **Straight Line Method**
Mid-Quarter Convention
Placed in Service in First Quarter

Year	Recovery periods in years												
	2.5	**3**	**3.5**	**4**	**5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**
1	35.0%	29.17%	25.00%	21.88%	17.5%	14.58%	13.46%	12.50%	11.67%	10.94%	10.29%	9.72%	9.21%
2	40.0	33.33	28.57	25.00	20.0	16.67	15.38	14.29	13.33	12.50	11.77	11.11	10.53
3	25.0	33.33	28.57	25.00	20.0	16.67	15.39	14.28	13.33	12.50	11.76	11.11	10.53
4		4.17	17.86	25.00	20.0	16.67	15.38	14.29	13.33	12.50	11.77	11.11	10.53
5				3.12	20.0	16.66	15.39	14.28	13.34	12.50	11.76	11.11	10.52
6					2.5	16.67	15.38	14.29	13.33	12.50	11.77	11.11	10.53
7						2.08	9.62	14.28	13.34	12.50	11.76	11.11	10.52
8								1.79	8.33	12.50	11.77	11.12	10.53
9										1.56	7.35	11.11	10.52
10												1.39	6.58

Table A-9. *(Continued)*

Year	Recovery periods in years												
	10	**10.5**	**11**	**11.5**	**12**	**12.5**	**13**	**13.5**	**14**	**15**	**16**	**16.5**	**17**
1	8.75%	8.33%	7.95%	7.61%	7.29%	7.0%	6.73%	6.48%	6.25%	5.83%	5.47%	5.30%	5.15%
2	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
3	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
4	10.00	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
5	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
6	10.00	9.53	9.09	8.69	8.34	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
7	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
8	10.00	9.53	9.09	8.69	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
9	10.00	9.52	9.09	8.70	8.33	8.0	7.70	7.40	7.14	6.67	6.25	6.06	5.88
10	10.00	9.53	9.10	8.69	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
11	1.25	5.95	9.09	8.70	8.33	8.0	7.70	7.40	7.14	6.67	6.25	6.06	5.88
12			1.14	5.43	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.89
13					1.04	5.0	7.70	7.40	7.14	6.67	6.25	6.06	5.88
14							0.96	4.63	7.15	6.66	6.25	6.06	5.89
15									0.89	6.67	6.25	6.06	5.88
16										0.83	6.25	6.07	5.89
17											0.78	3.79	5.88
18													0.74

Table A-9. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	4.86%	4.61%	4.375%	3.977%	3.646%	3.5%	3.302%	3.125%	2.917%	2.500%	2.188%	1.944%	1.75%
2	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
3	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
4	5.56	5.26	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
5	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
6	5.56	5.26	5.000	4.546	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
7	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
8	5.56	5.26	5.000	4.546	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
9	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
10	5.56	5.27	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
11	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
12	5.56	5.27	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
13	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
14	5.56	5.27	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
15	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
16	5.56	5.27	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
17	5.55	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
18	5.56	5.27	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
19	0.69	5.26	5.000	4.545	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
20		0.66	5.000	4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
21			0.625	4.545	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
22				4.546	4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
23				0.568	4.167	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
24					4.166	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
25					0.521	4.0	3.773	3.571	3.334	2.857	2.500	2.222	2.00
26						0.5	3.774	3.572	3.333	2.857	2.500	2.223	2.00
27							2.358	3.571	3.334	2.858	2.500	2.222	2.00
28								3.572	3.333	2.857	2.500	2.223	2.00
29								0.446	3.334	2.858	2.500	2.222	2.00
30									3.333	2.857	2.500	2.223	2.00
31									0.417	2.858	2.500	2.222	2.00
32										2.857	2.500	2.223	2.00
33										2.858	2.500	2.222	2.00
34										2.857	2.500	2.223	2.00
35										2.858	2.500	2.222	2.00
36										0.357	2.500	2.223	2.00
37											2.500	2.222	2.00
38											2.500	2.223	2.00
39											2.500	2.222	2.00
40											2.500	2.223	2.00
41											0.312	2.222	2.00
42												2.223	2.00
43												2.222	2.00
44												2.223	2.00
45												2.222	2.00
46												0.278	2.00
47–50													2.00
51													0.25

EAS000088

Table A-10. **Straight Line Method**
Mid-Quarter Convention
Placed in Service in Second Quarter

Year	Recovery periods in years												
	2.5	**3**	**3.5**	**4**	**5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**
1	25.0%	20.83%	17.86%	15.63%	12.5%	10.42%	9.62%	8.93%	8.33%	7.81%	7.35%	6.94%	6.58%
2	40.0	33.33	28.57	25.00	20.0	16.67	15.38	14.29	13.33	12.50	11.77	11.11	10.53
3	35.0	33.34	28.57	25.00	20.0	16.67	15.38	14.28	13.33	12.50	11.76	11.11	10.53
4		12.50	25.00	25.00	20.0	16.66	15.39	14.29	13.34	12.50	11.77	11.11	10.53
5				9.37	20.0	16.67	15.38	14.28	13.33	12.50	11.76	11.11	10.52
6					7.5	16.66	15.39	14.29	13.34	12.50	11.77	11.11	10.53
7						6.25	13.46	14.28	13.33	12.50	11.76	11.11	10.52
8								5.36	11.67	12.50	11.77	11.12	10.53
9										4.69	10.29	11.11	10.52
10												4.17	9.21

Table A-10. *(Continued)*

Year	Recovery periods in years												
	10	**10.5**	**11**	**11.5**	**12**	**12.5**	**13**	**13.5**	**14**	**15**	**16**	**16.5**	**17**
1	6.25%	5.95%	5.68%	5.43%	5.21%	5.0%	4.81%	4.63%	4.46%	4.17%	3.91%	3.79%	3.68%
2	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
3	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
4	10.00	9.53	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
5	10.00	9.52	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
6	10.00	9.53	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
7	10.00	9.52	9.09	8.69	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
8	10.00	9.53	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
9	10.00	9.52	9.09	8.69	8.34	8.0	7.69	7.40	7.15	6.66	6.25	6.06	5.88
10	10.00	9.53	9.09	8.70	8.33	8.0	7.70	7.41	7.14	6.67	6.25	6.06	5.88
11	3.75	8.33	9.10	8.69	8.34	8.0	7.69	7.40	7.15	6.66	6.25	6.06	5.88
12			3.41	7.61	8.33	8.0	7.70	7.41	7.14	6.67	6.25	6.06	5.89
13					3.13	7.0	7.69	7.40	7.15	6.66	6.25	6.06	5.88
14							2.89	6.48	7.14	6.67	6.25	6.06	5.89
15									2.68	6.66	6.25	6.06	5.88
16										2.50	6.25	6.06	5.89
17											2.34	5.31	5.88
18													2.21

Table A-10. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	3.47%	3.29%	3.125%	2.841%	2.604%	2.5%	2.358%	2.232%	2.083%	1.786%	1.563%	1.389%	1.25%
2	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
3	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
4	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
5	5.55	5.26	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
6	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
7	5.55	5.26	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
8	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
9	5.55	5.27	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
10	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
11	5.55	5.27	5.000	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
12	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
13	5.55	5.27	5.000	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
14	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
15	5.55	5.27	5.000	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
16	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
17	5.55	5.27	5.000	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
18	5.56	5.26	5.000	4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
19	2.08	5.27	5.000	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
20		1.97	5.000	4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
21			1.875	4.546	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
22				4.545	4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
23				1.705	4.166	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
24					4.167	4.0	3.773	3.572	3.334	2.857	2.500	2.222	2.00
25					1.562	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
26						1.5	3.773	3.572	3.334	2.857	2.500	2.222	2.00
27							3.302	3.571	3.333	2.857	2.500	2.223	2.00
28								3.572	3.334	2.858	2.500	2.222	2.00
29								1.339	3.333	2.857	2.500	2.223	2.00
30									3.334	2.858	2.500	2.222	2.00
31									1.250	2.857	2.500	2.223	2.00
32										2.858	2.500	2.222	2.00
33										2.857	2.500	2.223	2.00
34										2.858	2.500	2.222	2.00
35										2.857	2.500	2.223	2.00
36										1.072	2.500	2.222	2.00
37											2.500	2.223	2.00
38											2.500	2.222	2.00
39											2.500	2.223	2.00
40											2.500	2.222	2.00
41											0.937	2.223	2.00
42												2.222	2.00
43												2.223	2.00
44												2.222	2.00
45												2.223	2.00
46												0.833	2.00
47–50													2.00
51													0.75

EAS000090

Table A-11. **Straight Line Method**
Mid-Quarter Convention
Placed in Service in Third Quarter

Year	Recovery periods in years												
	2.5	**3**	**3.5**	**4**	**5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**
1	15.0%	12.50%	10.71%	9.38%	7.5%	6.25%	5.77%	5.36%	5.00%	4.69%	4.41%	4.17%	3.95%
2	40.0	33.33	28.57	25.00	20.0	16.67	15.38	14.29	13.33	12.50	11.76	11.11	10.53
3	40.0	33.34	28.57	25.00	20.0	16.67	15.39	14.28	13.33	12.50	11.77	11.11	10.53
4	5.0	20.83	28.58	25.00	20.0	16.66	15.38	14.29	13.33	12.50	11.76	11.11	10.52
5			3.57	15.62	20.0	16.67	15.39	14.28	13.34	12.50	11.77	11.11	10.53
6					12.5	16.66	15.38	14.29	13.33	12.50	11.76	11.11	10.52
7						10.42	15.39	14.28	13.34	12.50	11.77	11.11	10.53
8							1.92	8.93	13.33	12.50	11.76	11.11	10.52
9									1.67	7.81	11.77	11.11	10.53
10											1.47	6.95	10.52
11													1.32

Table A-11. *(Continued)*

Year	Recovery periods in years												
	10	**10.5**	**11**	**11.5**	**12**	**12.5**	**13**	**13.5**	**14**	**15**	**16**	**16.5**	**17**
1	3.75%	3.57%	3.41%	3.26%	3.13%	3.0%	2.88%	2.78%	2.68%	2.50%	2.34%	2.27%	2.21%
2	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
3	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
4	10.00	9.52	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
5	10.00	9.53	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
6	10.00	9.52	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
7	10.00	9.53	9.09	8.70	8.34	8.0	7.69	7.41	7.14	6.66	6.25	6.06	5.88
8	10.00	9.52	9.09	8.69	8.33	8.0	7.70	7.40	7.14	6.67	6.25	6.06	5.88
9	10.00	9.53	9.09	8.70	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
10	10.00	9.52	9.09	8.69	8.33	8.0	7.70	7.40	7.14	6.67	6.25	6.06	5.88
11	6.25	9.53	9.10	8.70	8.34	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
12		1.19	5.68	8.69	8.33	8.0	7.70	7.40	7.14	6.67	6.25	6.06	5.89
13				1.09	5.21	8.0	7.69	7.41	7.15	6.66	6.25	6.06	5.88
14						1.0	4.81	7.40	7.14	6.67	6.25	6.06	5.89
15								0.93	4.47	6.66	6.25	6.06	5.88
16										4.17	6.25	6.07	5.89
17											3.91	6.06	5.88
18												0.76	3.68

Table A-11. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	2.08%	1.97%	1.875%	1.705%	1.563%	1.5%	1.415%	1.339%	1.250%	1.071%	0.938%	0.833%	0.75%
2	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
3	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
4	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
5	5.55	5.26	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
6	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
7	5.55	5.26	5.000	4.546	4.167	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
8	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
9	5.55	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
10	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.333	2.857	2.500	2.222	2.00
11	5.55	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
12	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
13	5.55	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
14	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
15	5.55	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
16	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
17	5.55	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
18	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
19	3.47	5.27	5.000	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
20		3.29	5.000	4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
21			3.125	4.546	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
22				4.545	4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
23				2.841	4.166	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
24					4.167	4.0	3.774	3.572	3.334	2.857	2.500	2.222	2.00
25					2.604	4.0	3.773	3.571	3.333	2.857	2.500	2.222	2.00
26						2.5	3.774	3.572	3.334	2.858	2.500	2.222	2.00
27							3.773	3.571	3.333	2.857	2.500	2.223	2.00
28							0.472	3.572	3.334	2.858	2.500	2.222	2.00
29								2.232	3.333	2.857	2.500	2.223	2.00
30									3.334	2.858	2.500	2.222	2.00
31									2.083	2.857	2.500	2.223	2.00
32										2.858	2.500	2.222	2.00
33										2.857	2.500	2.223	2.00
34										2.858	2.500	2.222	2.00
35										2.857	2.500	2.223	2.00
36										1.786	2.500	2.222	2.00
37											2.500	2.223	2.00
38											2.500	2.222	2.00
39											2.500	2.223	2.00
40											2.500	2.222	2.00
41											1.562	2.223	2.00
42												2.222	2.00
43												2.223	2.00
44												2.222	2.00
45												2.223	2.00
46												1.389	2.00
47–50													2.00
51													1.25

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Table A-12. **Straight Line Method**
Mid-Quarter Convention
Placed in Service in Fourth Quarter

Year	Recovery periods in years												
	2.5	3	3.5	4	5	6	6.5	7	7.5	8	8.5	9	9.5
1	5.0%	4.17%	3.57%	3.13%	2.5%	2.08%	1.92%	1.79%	1.67%	1.56%	1.47%	1.39%	1.32%
2	40.0	33.33	28.57	25.00	20.0	16.67	15.39	14.29	13.33	12.50	11.76	11.11	10.53
3	40.0	33.33	28.57	25.00	20.0	16.67	15.38	14.28	13.33	12.50	11.77	11.11	10.53
4	15.0	29.17	28.57	25.00	20.0	16.67	15.39	14.29	13.33	12.50	11.76	11.11	10.52
5			10.72	21.87	20.0	16.66	15.38	14.28	13.33	12.50	11.77	11.11	10.53
6					17.5	16.67	15.39	14.29	13.34	12.50	11.76	11.11	10.52
7						14.58	15.38	14.28	13.33	12.50	11.77	11.11	10.53
8							5.77	12.50	13.34	12.50	11.76	11.11	10.52
9									5.00	10.94	11.77	11.11	10.53
10											4.41	9.73	10.52
11													3.95

Table A-12. *(Continued)*

Year	Recovery periods in years												
	10	10.5	11	11.5	12	12.5	13	13.5	14	15	16	16.5	17
1	1.25%	1.19%	1.14%	1.09%	1.04%	1.0%	0.96%	0.93%	0.89%	0.83%	0.78%	0.76%	0.74%
2	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
3	10.00	9.52	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
4	10.00	9.52	9.09	8.70	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
5	10.00	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
6	10.00	9.52	9.09	8.70	8.34	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
7	10.00	9.53	9.09	8.69	8.33	8.0	7.69	7.41	7.14	6.67	6.25	6.06	5.88
8	10.00	9.52	9.09	8.70	8.34	8.0	7.69	7.40	7.15	6.66	6.25	6.06	5.88
9	10.00	9.53	9.09	8.69	8.33	8.0	7.70	7.41	7.14	6.67	6.25	6.06	5.88
10	10.00	9.52	9.09	8.70	8.34	8.0	7.69	7.40	7.15	6.66	6.25	6.06	5.88
11	8.75	9.53	9.09	8.69	8.33	8.0	7.70	7.41	7.14	6.67	6.25	6.06	5.88
12		3.57	7.96	8.70	8.34	8.0	7.69	7.40	7.15	6.66	6.25	6.06	5.89
13				3.26	7.29	8.0	7.70	7.41	7.14	6.67	6.25	6.06	5.88
14						3.0	6.73	7.40	7.15	6.66	6.25	6.06	5.89
15								2.78	6.25	6.67	6.25	6.06	5.88
16										5.83	6.25	6.06	5.89
17											5.47	6.07	5.88
18												2.27	5.15

Table A-12. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	0.69%	0.66%	0.625%	0.568%	0.521%	0.5%	0.472%	0.446%	0.417%	0.357%	0.313%	0.278%	0.25%
2	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
3	5.56	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
4	5.56	5.26	5.000	4.546	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
5	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
6	5.56	5.26	5.000	4.546	4.167	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
7	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
8	5.56	5.26	5.000	4.546	4.167	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
9	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
10	5.56	5.27	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
11	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.333	2.857	2.500	2.222	2.00
12	5.56	5.27	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
13	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
14	5.56	5.27	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
15	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
16	5.56	5.27	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
17	5.55	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
18	5.56	5.27	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
19	4.86	5.26	5.000	4.545	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
20		4.61	5.000	4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
21			4.375	4.545	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
22				4.546	4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
23				3.977	4.167	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
24					4.166	4.0	3.773	3.572	3.333	2.857	2.500	2.222	2.00
25					3.646	4.0	3.774	3.571	3.334	2.857	2.500	2.222	2.00
26						3.5	3.773	3.572	3.333	2.857	2.500	2.222	2.00
27							3.774	3.571	3.334	2.858	2.500	2.222	2.00
28							1.415	3.572	3.333	2.857	2.500	2.223	2.00
29								3.125	3.334	2.858	2.500	2.222	2.00
30									3.333	2.857	2.500	2.223	2.00
31									2.917	2.858	2.500	2.222	2.00
32										2.857	2.500	2.223	2.00
33										2.858	2.500	2.222	2.00
34										2.857	2.500	2.223	2.00
35										2.858	2.500	2.222	2.00
36										2.500	2.500	2.223	2.00
37											2.500	2.222	2.00
38											2.500	2.223	2.00
39											2.500	2.222	2.00
40											2.500	2.223	2.00
41											2.187	2.222	2.00
42												2.223	2.00
43												2.222	2.00
44												2.223	2.00
45												2.222	2.00
46												1.945	2.00
47–50													2.00
51													1.75

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Table A-13. **Residential Rental Property Placed in Service After 2017**
Straight Line — 30 Years
Mid-Month Convention

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	3.204%	2.926%	2.649%	2.371%	2.093%	1.815%	1.528%	1.250%	0.972%	0.694%	0.417%	0.139%
2–30	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333
31	0.139	0.417	0.694	0.972	1.250	1.528	1.815	2.093	2.371	2.649	2.926	3.204

Table A-13a. **Straight Line — 40 Years**
Mid-Month Convention

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	2.396%	2.188%	1.979%	1.771%	1.563%	1.354%	1.146%	0.938%	0.729%	0.521%	0.313%	0.104%
2–40	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
41	0.104	0.312	0.521	0.729	0.937	1.146	1.354	1.562	1.771	1.979	2.187	2.396

Table A-14. **150% Declining Balance Method**
Half-Year Convention

Year	Recovery periods in years												
	2.5	3	3.5	4	5	6	6.5	7	7.5	8	8.5	9	9.5
1	30.0%	25.0%	21.43%	18.75%	15.00%	12.50%	11.54%	10.71%	10.00%	9.38%	8.82%	8.33%	7.89%
2	42.0	37.5	33.67	30.47	25.50	21.88	20.41	19.13	18.00	16.99	16.09	15.28	14.54
3	28.0	25.0	22.45	20.31	17.85	16.41	15.70	15.03	14.40	13.81	13.25	12.73	12.25
4		12.5	22.45	20.31	16.66	14.06	13.09	12.25	11.52	11.22	10.91	10.61	10.31
5				10.16	16.66	14.06	13.09	12.25	11.52	10.80	10.19	9.65	9.17
6					8.33	14.06	13.09	12.25	11.52	10.80	10.19	9.64	9.17
7						7.03	13.08	12.25	11.52	10.80	10.18	9.65	9.17
8								6.13	11.52	10.80	10.19	9.64	9.17
9										5.40	10.18	9.65	9.17
10												4.82	9.16

Table A-14. *(Continued)*

Year	Recovery periods in years												
	10	10.5	11	11.5	12	12.5	13	13.5	14	15	16	16.5	17
1	7.50%	7.14%	6.82%	6.52%	6.25%	6.00%	5.77%	5.56%	5.36%	5.00%	4.69%	4.55%	4.41%
2	13.88	13.27	12.71	12.19	11.72	11.28	10.87	10.49	10.14	9.50	8.94	8.68	8.43
3	11.79	11.37	10.97	10.60	10.25	9.93	9.62	9.33	9.05	8.55	8.10	7.89	7.69
4	10.02	9.75	9.48	9.22	8.97	8.73	8.51	8.29	8.08	7.70	7.34	7.17	7.01
5	8.74	8.35	8.18	8.02	7.85	7.69	7.53	7.37	7.22	6.93	6.65	6.52	6.39
6	8.74	8.35	7.98	7.64	7.33	7.05	6.79	6.55	6.44	6.23	6.03	5.93	5.83
7	8.74	8.35	7.97	7.64	7.33	7.05	6.79	6.55	6.32	5.90	5.55	5.39	5.32
8	8.74	8.35	7.98	7.63	7.33	7.05	6.79	6.55	6.32	5.90	5.55	5.39	5.23
9	8.74	8.36	7.97	7.64	7.33	7.04	6.79	6.55	6.32	5.91	5.55	5.39	5.23
10	8.74	8.35	7.98	7.63	7.33	7.05	6.79	6.55	6.32	5.90	5.55	5.39	5.23
11	4.37	8.36	7.97	7.64	7.32	7.04	6.79	6.55	6.32	5.91	5.55	5.39	5.23
12			3.99	7.63	7.33	7.05	6.78	6.55	6.32	5.90	5.55	5.39	5.23
13					3.66	7.04	6.79	6.56	6.32	5.91	5.54	5.38	5.23
14							3.39	6.55	6.31	5.90	5.55	5.39	5.23
15									3.16	5.91	5.54	5.38	5.23
16										2.95	5.55	5.39	5.23
17											2.77	5.38	5.23
18													2.62

Table A-14. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	4.17%	3.95%	3.750%	3.409%	3.125%	3.000%	2.830%	2.679%	2.500%	2.143%	1.875%	1.667%	1.500%
2	7.99	7.58	7.219	6.586	6.055	5.820	5.500	5.214	4.875	4.194	3.680	3.278	2.955
3	7.32	6.98	6.677	6.137	5.676	5.471	5.189	4.934	4.631	4.014	3.542	3.169	2.866
4	6.71	6.43	6.177	5.718	5.322	5.143	4.895	4.670	4.400	3.842	3.409	3.063	2.780
5	6.15	5.93	5.713	5.328	4.989	4.834	4.618	4.420	4.180	3.677	3.281	2.961	2.697
6	5.64	5.46	5.285	4.965	4.677	4.544	4.357	4.183	3.971	3.520	3.158	2.862	2.616
7	5.17	5.03	4.888	4.627	4.385	4.271	4.110	3.959	3.772	3.369	3.040	2.767	2.538
8	4.94	4.69	4.522	4.311	4.111	4.015	3.877	3.747	3.584	3.225	2.926	2.674	2.461
9	4.94	4.69	4.462	4.063	3.854	3.774	3.658	3.546	3.404	3.086	2.816	2.585	2.388
10	4.94	4.69	4.461	4.063	3.729	3.584	3.451	3.356	3.234	2.954	2.710	2.499	2.316
11	4.94	4.69	4.462	4.063	3.729	3.583	3.383	3.205	3.072	2.828	2.609	2.416	2.246
12	4.95	4.69	4.461	4.063	3.729	3.584	3.383	3.205	2.994	2.706	2.511	2.335	2.179
13	4.94	4.69	4.462	4.064	3.730	3.583	3.383	3.205	2.994	2.590	2.417	2.257	2.114
14	4.95	4.69	4.461	4.063	3.729	3.584	3.383	3.205	2.994	2.571	2.326	2.182	2.050
15	4.94	4.69	4.462	4.064	3.730	3.583	3.383	3.205	2.994	2.571	2.253	2.110	1.989
16	4.95	4.69	4.461	4.063	3.729	3.584	3.383	3.205	2.994	2.571	2.253	2.039	1.929
17	4.94	4.69	4.462	4.064	3.730	3.583	3.383	3.205	2.994	2.571	2.253	2.005	1.871
18	4.95	4.70	4.461	4.063	3.729	3.584	3.383	3.205	2.994	2.571	2.253	2.005	1.815
19	2.47	4.69	4.462	4.064	3.730	3.583	3.383	3.205	2.994	2.571	2.253	2.005	1.806
20		2.35	4.461	4.063	3.729	3.584	3.384	3.205	2.993	2.571	2.253	2.005	1.806
21			2.231	4.064	3.730	3.583	3.383	3.205	2.994	2.571	2.253	2.005	1.806
22				4.063	3.729	3.584	3.384	3.205	2.993	2.571	2.253	2.005	1.806
23				2.032	3.730	3.583	3.383	3.205	2.994	2.571	2.253	2.005	1.806
24					3.729	3.584	3.384	3.205	2.993	2.571	2.253	2.004	1.806
25					1.865	3.583	3.383	3.205	2.994	2.571	2.253	2.005	1.806
26						1.792	3.384	3.205	2.993	2.571	2.253	2.004	1.806
27							3.383	3.205	2.994	2.571	2.253	2.005	1.806
28								3.205	2.993	2.572	2.253	2.004	1.806
29								1.602	2.994	2.571	2.253	2.005	1.806
30									2.993	2.572	2.253	2.004	1.806
31									1.497	2.571	2.253	2.005	1.806
32										2.572	2.253	2.004	1.806
33										2.571	2.252	2.005	1.806
34										2.572	2.253	2.004	1.806
35										2.571	2.252	2.005	1.806
36										1.286	2.253	2.004	1.806
37											2.252	2.005	1.806
38											2.253	2.004	1.806
39											2.252	2.005	1.806
40											2.253	2.004	1.806
41											1.126	2.005	1.806
42												2.004	1.805
43												2.005	1.806
44												2.004	1.805
45												2.005	1.806
46												1.002	1.805
47													1.806
48													1.805
49													1.806
50													1.805
51													0.903

EAS000096

Table A-15. **150% Declining Balance Method**
Mid-Quarter Convention
Property Placed in Service in First Quarter

Year	Recovery periods in years												
	2.5	3	3.5	4	5	6	6.5	7	7.5	8	8.5	9	9.5
1	52.50%	43.75%	37.50%	32.81%	26.25%	21.88%	20.19%	18.75%	17.50%	16.41%	15.44%	14.58%	13.82%
2	29.23	28.13	26.79	25.20	22.13	19.53	18.42	17.41	16.50	15.67	14.92	14.24	13.61
3	18.27	25.00	21.98	19.76	16.52	14.65	14.17	13.68	13.20	12.74	12.29	11.86	11.46
4		3.12	13.73	19.76	16.52	14.06	13.03	12.16	11.42	10.77	10.20	9.89	9.65
5				2.47	16.52	14.06	13.02	12.16	11.42	10.77	10.19	9.64	9.15
6					2.06	14.06	13.03	12.16	11.41	10.76	10.20	9.65	9.15
7						1.76	8.14	12.16	11.42	10.77	10.19	9.64	9.15
8								1.52	7.13	10.76	10.20	9.65	9.15
9										1.35	6.37	9.64	9.14
10												1.21	5.72

Table A-15. *(Continued)*

Year	Recovery periods in years												
	10	10.5	11	11.5	12	12.5	13	13.5	14	15	16	16.5	17
1	13.13%	12.50%	11.93%	11.41%	10.94%	10.50%	10.10%	9.72%	9.38%	8.75%	8.20%	7.95%	7.72%
2	13.03	12.50	12.01	11.56	11.13	10.74	10.37	10.03	9.71	9.13	8.61	8.37	8.14
3	11.08	10.71	10.37	10.05	9.74	9.45	9.18	8.92	8.67	8.21	7.80	7.61	7.42
4	9.41	9.18	8.96	8.74	8.52	8.32	8.12	7.93	7.74	7.39	7.07	6.92	6.77
5	8.71	8.32	7.96	7.64	7.46	7.32	7.18	7.04	6.91	6.65	6.41	6.29	6.17
6	8.71	8.32	7.96	7.64	7.33	7.04	6.78	6.53	6.31	5.99	5.80	5.71	5.63
7	8.71	8.32	7.96	7.64	7.33	7.04	6.77	6.54	6.31	5.90	5.54	5.38	5.23
8	8.71	8.32	7.96	7.64	7.33	7.04	6.78	6.53	6.31	5.91	5.54	5.38	5.23
9	8.71	8.32	7.96	7.64	7.33	7.04	6.77	6.54	6.31	5.90	5.54	5.38	5.23
10	8.71	8.31	7.97	7.63	7.32	7.04	6.78	6.53	6.31	5.91	5.54	5.38	5.23
11	1.09	5.20	7.96	7.64	7.33	7.04	6.77	6.54	6.31	5.90	5.54	5.38	5.23
12			1.00	4.77	7.32	7.03	6.78	6.53	6.31	5.91	5.54	5.38	5.22
13					0.92	4.40	6.77	6.54	6.32	5.90	5.54	5.38	5.23
14							0.85	4.08	6.31	5.91	5.55	5.38	5.22
15									0.79	5.90	5.54	5.38	5.23
16										0.74	5.55	5.37	5.22
17											0.69	3.36	5.23
18													0.65

Table A-15. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	7.29%	6.91%	6.563%	5.966%	5.469%	5.250%	4.953%	4.688%	4.375%	3.750%	3.281%	2.917%	2.625%
2	7.73	7.35	7.008	6.411	5.908	5.685	5.380	5.106	4.781	4.125	3.627	3.236	2.921
3	7.08	6.77	6.482	5.974	5.539	5.344	5.075	4.832	4.542	3.948	3.491	3.128	2.834
4	6.49	6.23	5.996	5.567	5.193	5.023	4.788	4.574	4.315	3.779	3.360	3.024	2.749
5	5.95	5.74	5.546	5.187	4.868	4.722	4.517	4.329	4.099	3.617	3.234	2.923	2.666
6	5.45	5.29	5.130	4.834	4.564	4.439	4.262	4.097	3.894	3.462	3.113	2.826	2.586
7	5.00	4.87	4.746	4.504	4.279	4.172	4.020	3.877	3.700	3.314	2.996	2.732	2.509
8	4.94	4.69	4.459	4.197	4.011	3.922	3.793	3.669	3.515	3.172	2.884	2.640	2.433
9	4.95	4.69	4.459	4.061	3.761	3.687	3.578	3.473	3.339	3.036	2.776	2.552	2.360
10	4.94	4.69	4.459	4.061	3.729	3.582	3.383	3.287	3.172	2.906	2.671	2.467	2.290
11	4.95	4.69	4.459	4.061	3.729	3.582	3.384	3.204	3.013	2.781	2.571	2.385	2.221
12	4.94	4.69	4.460	4.061	3.730	3.582	3.383	3.204	2.994	2.662	2.475	2.306	2.154
13	4.95	4.69	4.459	4.061	3.729	3.582	3.384	3.204	2.994	2.571	2.382	2.229	2.090
14	4.94	4.69	4.460	4.061	3.730	3.582	3.383	3.204	2.994	2.571	2.293	2.154	2.027
15	4.95	4.68	4.459	4.061	3.729	3.582	3.384	3.204	2.994	2.571	2.252	2.083	1.966
16	4.94	4.69	4.460	4.061	3.730	3.582	3.383	3.204	2.994	2.571	2.252	2.013	1.907
17	4.95	4.68	4.459	4.061	3.729	3.582	3.384	3.204	2.994	2.571	2.253	2.005	1.850
18	4.94	4.69	4.460	4.061	3.730	3.582	3.383	3.204	2.994	2.571	2.252	2.005	1.806
19	0.62	4.68	4.459	4.061	3.729	3.581	3.384	3.204	2.994	2.571	2.253	2.005	1.806
20		0.59	4.460	4.060	3.730	3.582	3.383	3.204	2.994	2.571	2.252	2.005	1.806
21			0.557	4.061	3.729	3.581	3.384	3.203	2.993	2.571	2.253	2.005	1.806
22				4.060	3.730	3.582	3.383	3.204	2.994	2.571	2.252	2.005	1.806
23				0.508	3.729	3.581	3.384	3.203	2.993	2.571	2.253	2.005	1.806
24					3.730	3.582	3.383	3.204	2.994	2.570	2.252	2.005	1.806
25					0.466	3.581	3.384	3.203	2.993	2.571	2.253	2.004	1.806
26						0.448	3.383	3.204	2.994	2.570	2.252	2.005	1.806
27							2.115	3.203	2.993	2.571	2.253	2.004	1.806
28								3.204	2.994	2.570	2.252	2.005	1.805
29								0.400	2.993	2.571	2.253	2.004	1.806
30									2.994	2.570	2.252	2.005	1.805
31									0.374	2.571	2.253	2.004	1.806
32										2.570	2.252	2.005	1.805
33										2.571	2.253	2.004	1.806
34										2.570	2.252	2.005	1.805
35										2.571	2.253	2.004	1.806
36										0.321	2.252	2.005	1.805
37											2.253	2.004	1.806
38											2.252	2.005	1.805
39											2.253	2.004	1.806
40											2.252	2.005	1.805
41											0.282	2.004	1.806
42												2.005	1.805
43												2.004	1.806
44												2.005	1.805
45												2.004	1.806
46												0.251	1.805
47													1.806
48													1.805
49													1.806
50													1.805
51													0.226

EAS000098

Table A-16. **150% Declining Balance Method**
Mid-Quarter Convention
Property Placed in Service in Second Quarter

Year	Recovery periods in years												
	2.5	3	3.5	4	5	6	6.5	7	7.5	8	8.5	9	9.5
1	37.50%	31.25%	26.79%	23.44%	18.75%	15.63%	14.42%	13.39%	12.50%	11.72%	11.03%	10.42%	9.87%
2	37.50	34.38	31.38	28.71	24.38	21.09	19.75	18.56	17.50	16.55	15.70	14.93	14.23
3	25.00	25.00	22.31	20.15	17.06	15.82	15.19	14.58	14.00	13.45	12.93	12.44	11.98
4		9.37	19.52	20.15	16.76	14.06	13.07	12.22	11.49	10.93	10.65	10.37	10.09
5				7.55	16.76	14.06	13.07	12.22	11.49	10.82	10.19	9.64	9.16
6					6.29	14.07	13.07	12.22	11.49	10.82	10.19	9.65	9.16
7						5.27	11.43	12.23	11.48	10.83	10.19	9.64	9.16
8								4.58	10.05	10.82	10.20	9.65	9.17
9										4.06	8.92	9.64	9.16
10												3.62	8.02

Table A-16. *(Continued)*

Year	Recovery periods in years												
	10	10.5	11	11.5	12	12.5	13	13.5	14	15	16	16.5	17
1	9.38%	8.93%	8.52%	8.15%	7.81%	7.50%	7.21%	6.94%	6.70%	6.25%	5.86%	5.68%	5.51%
2	13.59	13.01	12.47	11.98	11.52	11.10	10.71	10.34	10.00	9.38	8.83	8.57	8.34
3	11.55	11.15	10.77	10.42	10.08	9.77	9.47	9.19	8.92	8.44	8.00	7.80	7.60
4	9.82	9.56	9.31	9.06	8.82	8.60	8.38	8.17	7.97	7.59	7.25	7.09	6.93
5	8.73	8.34	8.04	7.88	7.72	7.56	7.41	7.26	7.12	6.83	6.57	6.44	6.32
6	8.73	8.34	7.98	7.64	7.33	7.04	6.78	6.55	6.35	6.15	5.95	5.86	5.76
7	8.73	8.34	7.98	7.64	7.33	7.04	6.79	6.55	6.32	5.91	5.55	5.38	5.25
8	8.73	8.34	7.98	7.64	7.33	7.05	6.78	6.55	6.32	5.90	5.55	5.39	5.23
9	8.73	8.34	7.99	7.64	7.33	7.04	6.79	6.54	6.32	5.91	5.55	5.38	5.23
10	8.73	8.35	7.98	7.63	7.33	7.05	6.78	6.55	6.32	5.90	5.54	5.39	5.23
11	3.28	7.30	7.99	7.64	7.33	7.04	6.79	6.54	6.32	5.91	5.55	5.38	5.23
12			2.99	6.68	7.32	7.05	6.78	6.55	6.32	5.90	5.54	5.39	5.23
13					2.75	6.16	6.79	6.54	6.32	5.91	5.55	5.38	5.24
14							2.54	5.73	6.33	5.90	5.54	5.39	5.23
15									2.37	5.91	5.55	5.38	5.24
16										2.21	5.54	5.39	5.23
17											2.08	4.71	5.24
18													1.96

Table A-16. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	5.21%	4.93%	4.688%	4.261%	3.906%	3.750%	3.538%	3.348%	3.125%	2.679%	2.344%	2.083%	1.875%
2	7.90	7.51	7.148	6.528	6.006	5.775	5.460	5.178	4.844	4.171	3.662	3.264	2.944
3	7.24	6.91	6.612	6.083	5.631	5.429	5.151	4.900	4.602	3.992	3.525	3.155	2.855
4	6.64	6.37	6.116	5.668	5.279	5.103	4.859	4.638	4.371	3.821	3.393	3.050	2.770
5	6.08	5.86	5.658	5.281	4.949	4.797	4.584	4.389	4.153	3.657	3.265	2.948	2.687
6	5.58	5.40	5.233	4.921	4.639	4.509	4.325	4.154	3.945	3.501	3.143	2.850	2.606
7	5.11	4.98	4.841	4.586	4.349	4.238	4.080	3.932	3.748	3.351	3.025	2.755	2.528
8	4.94	4.69	4.478	4.273	4.078	3.984	3.849	3.721	3.561	3.207	2.912	2.663	2.452
9	4.94	4.69	4.463	4.063	3.823	3.745	3.631	3.522	3.383	3.069	2.802	2.574	2.378
10	4.95	4.69	4.463	4.063	3.729	3.583	3.426	3.333	3.213	2.938	2.697	2.489	2.307
11	4.94	4.69	4.463	4.062	3.729	3.583	3.384	3.205	3.053	2.812	2.596	2.406	2.238
12	4.95	4.69	4.463	4.063	3.729	3.583	3.383	3.205	2.994	2.692	2.499	2.325	2.171
13	4.94	4.69	4.463	4.062	3.730	3.583	3.384	3.205	2.994	2.576	2.405	2.248	2.106
14	4.95	4.69	4.463	4.063	3.729	3.583	3.383	3.205	2.994	2.571	2.315	2.173	2.042
15	4.94	4.69	4.462	4.062	3.730	3.583	3.384	3.205	2.994	2.571	2.253	2.101	1.981
16	4.95	4.69	4.463	4.063	3.729	3.583	3.383	3.204	2.994	2.571	2.253	2.031	1.922
17	4.94	4.69	4.462	4.062	3.730	3.583	3.384	3.205	2.994	2.571	2.253	2.005	1.864
18	4.95	4.69	4.463	4.063	3.729	3.583	3.383	3.204	2.993	2.571	2.253	2.005	1.808
19	1.85	4.69	4.462	4.062	3.730	3.583	3.384	3.205	2.994	2.571	2.253	2.005	1.806
20		1.76	4.463	4.063	3.729	3.583	3.383	3.204	2.993	2.571	2.253	2.005	1.806
21			1.673	4.062	3.730	3.583	3.384	3.205	2.994	2.572	2.253	2.005	1.806
22				4.063	3.729	3.583	3.383	3.204	2.993	2.571	2.253	2.005	1.806
23				1.523	3.730	3.583	3.384	3.205	2.994	2.572	2.253	2.004	1.806
24					3.729	3.582	3.383	3.204	2.993	2.571	2.253	2.005	1.806
25					1.399	3.583	3.384	3.205	2.994	2.572	2.253	2.004	1.806
26						1.343	3.383	3.204	2.993	2.571	2.253	2.005	1.806
27							2.961	3.205	2.994	2.572	2.253	2.004	1.806
28								3.204	2.993	2.571	2.253	2.005	1.806
29								1.202	2.994	2.572	2.253	2.004	1.806
30									2.993	2.571	2.252	2.005	1.806
31									1.123	2.572	2.253	2.004	1.806
32										2.571	2.252	2.005	1.806
33										2.572	2.253	2.004	1.806
34										2.571	2.252	2.005	1.806
35										2.572	2.253	2.004	1.806
36										0.964	2.252	2.005	1.806
37											2.253	2.004	1.806
38											2.252	2.005	1.806
39											2.253	2.004	1.806
40											2.252	2.005	1.806
41											0.845	2.004	1.806
42												2.005	1.806
43												2.004	1.806
44												2.005	1.806
45												2.004	1.805
46												0.752	1.806
47													1.805
48													1.806
49													1.805
50													1.806
51													0.677

EAS000100

Table A-17. **150% Declining Balance Method**
Mid-Quarter Convention
Property Placed in Service in Third Quarter

Year	Recovery periods in years												
	2.5	3	3.5	4	5	6	6.5	7	7.5	8	8.5	9	9.5
1	22.50%	18.75%	16.07%	14.06%	11.25%	9.38%	8.65%	8.04%	7.50%	7.03%	6.62%	6.25%	5.92%
2	46.50	40.63	35.97	32.23	26.63	22.66	21.08	19.71	18.50	17.43	16.48	15.63	14.85
3	27.56	25.00	22.57	20.46	18.64	16.99	16.22	15.48	14.80	14.16	13.57	13.02	12.51
4	3.44	15.62	22.57	20.46	16.56	14.06	13.10	12.27	11.84	11.51	11.18	10.85	10.53
5			2.82	12.79	16.57	14.06	13.10	12.28	11.48	10.78	10.18	9.64	9.17
6					10.35	14.06	13.11	12.27	11.48	10.78	10.17	9.65	9.17
7						8.79	13.10	12.28	11.48	10.78	10.18	9.64	9.18
8							1.64	7.67	11.48	10.79	10.17	9.65	9.17
9									1.44	6.74	10.18	9.64	9.18
10											1.27	6.03	9.17
11													1.15

Table A-17. *(Continued)*

Year	Recovery periods in years												
	10	10.5	11	11.5	12	12.5	13	13.5	14	15	16	16.5	17
1	5.63%	5.36%	5.11%	4.89%	4.69%	4.50%	4.33%	4.17%	4.02%	3.75%	3.52%	3.41%	3.31%
2	14.16	13.52	12.94	12.41	11.91	11.46	11.04	10.65	10.28	9.63	9.05	8.78	8.53
3	12.03	11.59	11.18	10.79	10.43	10.08	9.77	9.46	9.18	8.66	8.20	7.98	7.78
4	10.23	9.93	9.65	9.38	9.12	8.88	8.64	8.41	8.20	7.80	7.43	7.26	7.09
5	8.75	8.51	8.33	8.16	7.98	7.81	7.64	7.48	7.32	7.02	6.73	6.60	6.47
6	8.75	8.34	7.97	7.63	7.33	7.05	6.79	6.65	6.54	6.31	6.10	6.00	5.90
7	8.75	8.34	7.97	7.63	7.33	7.05	6.79	6.55	6.31	5.90	5.55	5.45	5.38
8	8.74	8.34	7.97	7.63	7.33	7.05	6.79	6.54	6.31	5.90	5.55	5.38	5.23
9	8.75	8.34	7.97	7.63	7.33	7.05	6.79	6.55	6.32	5.91	5.55	5.39	5.23
10	8.74	8.34	7.97	7.63	7.32	7.05	6.79	6.54	6.31	5.90	5.55	5.38	5.23
11	5.47	8.35	7.96	7.63	7.33	7.05	6.79	6.55	6.32	5.91	5.55	5.39	5.23
12		1.04	4.98	7.64	7.32	7.04	6.80	6.54	6.31	5.90	5.55	5.38	5.23
13				0.95	4.58	7.05	6.79	6.55	6.32	5.91	5.55	5.39	5.22
14						0.88	4.25	6.54	6.31	5.90	5.55	5.38	5.23
15								0.82	3.95	5.91	5.55	5.39	5.22
16										3.69	5.55	5.38	5.23
17											3.47	5.39	5.22
18												0.67	3.27

Table A-17. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	3.13%	2.96%	2.813%	2.557%	2.344%	2.250%	2.123%	2.009%	1.875%	1.607%	1.406%	1.250%	1.125%
2	8.07	7.66	7.289	6.644	6.104	5.865	5.540	5.250	4.906	4.217	3.697	3.292	2.966
3	7.40	7.06	6.742	6.191	5.722	5.513	5.227	4.968	4.661	4.036	3.559	3.182	2.877
4	6.78	6.50	6.237	5.769	5.364	5.182	4.931	4.702	4.428	3.863	3.425	3.076	2.791
5	6.22	5.99	5.769	5.375	5.029	4.871	4.652	4.450	4.207	3.698	3.297	2.973	2.707
6	5.70	5.51	5.336	5.009	4.715	4.579	4.388	4.212	3.996	3.539	3.173	2.874	2.626
7	5.23	5.08	4.936	4.667	4.420	4.304	4.140	3.986	3.796	3.387	3.054	2.778	2.547
8	4.94	4.69	4.566	4.349	4.144	4.046	3.906	3.773	3.607	3.242	2.940	2.686	2.471
9	4.94	4.69	4.460	4.064	3.885	3.803	3.685	3.571	3.426	3.103	2.829	2.596	2.397
10	4.94	4.69	4.460	4.064	3.729	3.584	3.476	3.379	3.255	2.970	2.723	2.510	2.325
11	4.94	4.69	4.460	4.064	3.730	3.584	3.383	3.205	3.092	2.843	2.621	2.426	2.255
12	4.95	4.69	4.460	4.064	3.729	3.584	3.383	3.205	2.994	2.721	2.523	2.345	2.187
13	4.94	4.69	4.461	4.064	3.730	3.584	3.383	3.205	2.994	2.605	2.428	2.267	2.122
14	4.95	4.69	4.460	4.064	3.729	3.584	3.383	3.205	2.994	2.571	2.337	2.192	2.058
15	4.94	4.70	4.461	4.064	3.730	3.584	3.383	3.205	2.994	2.571	2.253	2.118	1.996
16	4.95	4.69	4.460	4.064	3.729	3.584	3.383	3.206	2.994	2.571	2.253	2.048	1.937
17	4.94	4.70	4.461	4.064	3.730	3.584	3.383	3.205	2.994	2.571	2.253	2.005	1.878
18	4.95	4.69	4.460	4.065	3.729	3.584	3.383	3.206	2.994	2.571	2.253	2.005	1.822
19	3.09	4.70	4.461	4.064	3.730	3.584	3.383	3.205	2.994	2.571	2.253	2.005	1.806
20		2.93	4.460	4.065	3.729	3.584	3.383	3.206	2.993	2.571	2.253	2.005	1.806
21			2.788	4.064	3.730	3.585	3.383	3.205	2.994	2.571	2.253	2.005	1.806
22				4.065	3.729	3.584	3.383	3.206	2.993	2.571	2.253	2.005	1.806
23				2.540	3.730	3.585	3.383	3.205	2.994	2.571	2.253	2.005	1.806
24					3.729	3.584	3.383	3.206	2.993	2.571	2.253	2.005	1.806
25					2.331	3.585	3.382	3.205	2.994	2.571	2.253	2.004	1.806
26						2.240	3.383	3.206	2.993	2.571	2.253	2.005	1.806
27							3.382	3.205	2.994	2.571	2.253	2.004	1.806
28							0.423	3.206	2.993	2.571	2.253	2.005	1.806
29								2.003	2.994	2.571	2.253	2.004	1.806
30									2.993	2.571	2.253	2.005	1.806
31									1.871	2.571	2.253	2.004	1.806
32										2.571	2.253	2.005	1.806
33										2.571	2.253	2.004	1.806
34										2.571	2.253	2.005	1.806
35										2.571	2.253	2.004	1.806
36										1.607	2.253	2.005	1.806
37											2.253	2.004	1.805
38											2.254	2.005	1.806
39											2.253	2.004	1.805
40											2.254	2.005	1.806
41											1.408	2.004	1.805
42												2.005	1.806
43												2.004	1.805
44												2.005	1.806
45												2.004	1.805
46												1.253	1.806
47													1.805
48													1.806
49													1.805
50													1.806
51													1.128

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Table A-18. **150% Declining Balance Method**
Mid-Quarter Convention
Property Placed in Service in Fourth Quarter

Year	Recovery periods in years												
	2.5	**3**	**3.5**	**4**	**5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**
1	7.50%	6.25%	5.36%	4.69%	3.75%	3.13%	2.88%	2.68%	2.50%	2.34%	2.21%	2.08%	1.97%
2	55.50	46.88	40.56	35.74	28.88	24.22	22.41	20.85	19.50	18.31	17.26	16.32	15.48
3	26.91	25.00	23.18	22.34	20.21	18.16	17.24	16.39	15.60	14.88	14.21	13.60	13.03
4	10.09	21.87	22.47	19.86	16.40	14.06	13.26	12.87	12.48	12.09	11.70	11.33	10.98
5			8.43	17.37	16.41	14.06	13.10	12.18	11.41	10.74	10.16	9.65	9.24
6					14.35	14.06	13.10	12.18	11.41	10.75	10.16	9.65	9.17
7						12.31	13.10	12.19	11.41	10.74	10.16	9.64	9.17
8							4.91	10.66	11.41	10.75	10.16	9.65	9.17
9									4.28	9.40	10.17	9.64	9.17
10											3.81	8.44	9.18
11													3.44

Table A-18. *(Continued)*

Year	Recovery periods in years												
	10	**10.5**	**11**	**11.5**	**12**	**12.5**	**13**	**13.5**	**14**	**15**	**16**	**16.5**	**17**
1	1.88%	1.79%	1.70%	1.63%	1.56%	1.50%	1.44%	1.39%	1.34%	1.25%	1.17%	1.14%	1.10%
2	14.72	14.03	13.40	12.83	12.31	11.82	11.37	10.96	10.57	9.88	9.27	8.99	8.73
3	12.51	12.03	11.58	11.16	10.77	10.40	10.06	9.74	9.44	8.89	8.40	8.17	7.96
4	10.63	10.31	10.00	9.70	9.42	9.15	8.90	8.66	8.43	8.00	7.61	7.43	7.25
5	9.04	8.83	8.63	8.44	8.24	8.06	7.87	7.69	7.52	7.20	6.90	6.75	6.61
6	8.72	8.32	7.95	7.63	7.33	7.09	6.96	6.84	6.72	6.48	6.25	6.14	6.03
7	8.72	8.31	7.96	7.63	7.33	7.05	6.78	6.53	6.31	5.90	5.66	5.58	5.50
8	8.72	8.32	7.95	7.62	7.33	7.05	6.78	6.53	6.31	5.90	5.54	5.38	5.22
9	8.72	8.31	7.96	7.63	7.33	7.05	6.78	6.53	6.31	5.90	5.54	5.38	5.23
10	8.71	8.32	7.95	7.62	7.32	7.05	6.78	6.54	6.31	5.91	5.54	5.38	5.22
11	7.63	8.31	7.96	7.63	7.33	7.05	6.78	6.53	6.31	5.90	5.54	5.38	5.23
12		3.12	6.96	7.62	7.32	7.04	6.78	6.54	6.30	5.91	5.55	5.38	5.22
13				2.86	6.41	7.05	6.78	6.53	6.31	5.90	5.54	5.38	5.23
14						2.64	5.94	6.54	6.30	5.91	5.55	5.38	5.22
15								2.45	5.52	5.90	5.54	5.37	5.23
16										5.17	5.55	5.38	5.22
17											4.85	5.37	5.23
18												2.02	4.57

Table A-18. *(Continued)*

Year	Recovery periods in years												
	18	19	20	22	24	25	26.5	28	30	35	40	45	50
1	1.04%	0.99%	0.938%	0.852%	0.781%	0.750%	0.708%	0.670%	0.625%	0.536%	0.469%	0.417%	0.375%
2	8.25	7.82	7.430	6.760	6.201	5.955	5.620	5.321	4.969	4.263	3.732	3.319	2.989
3	7.56	7.20	6.872	6.299	5.814	5.598	5.302	5.036	4.720	4.080	3.592	3.209	2.899
4	6.93	6.63	6.357	5.870	5.450	5.262	5.002	4.766	4.484	3.905	3.458	3.102	2.812
5	6.35	6.11	5.880	5.469	5.110	4.946	4.719	4.511	4.260	3.738	3.328	2.998	2.728
6	5.82	5.63	5.439	5.097	4.790	4.649	4.452	4.269	4.047	3.578	3.203	2.898	2.646
7	5.34	5.18	5.031	4.749	4.491	4.370	4.200	4.041	3.845	3.424	3.083	2.802	2.567
8	4.94	4.77	4.654	4.425	4.210	4.108	3.962	3.824	3.653	3.278	2.968	2.708	2.490
9	4.94	4.69	4.458	4.124	3.947	3.862	3.738	3.619	3.470	3.137	2.856	2.618	2.415
10	4.94	4.69	4.458	4.062	3.730	3.630	3.526	3.426	3.296	3.003	2.749	2.531	2.342
11	4.95	4.69	4.458	4.062	3.729	3.582	3.383	3.242	3.132	2.874	2.646	2.447	2.272
12	4.94	4.69	4.458	4.062	3.730	3.582	3.382	3.204	2.994	2.751	2.547	2.365	2.204
13	4.95	4.69	4.458	4.062	3.729	3.582	3.383	3.204	2.994	2.633	2.451	2.286	2.138
14	4.94	4.69	4.458	4.061	3.730	3.582	3.382	3.204	2.994	2.570	2.359	2.210	2.074
15	4.95	4.69	4.458	4.062	3.729	3.582	3.383	3.204	2.994	2.571	2.271	2.136	2.011
16	4.94	4.69	4.458	4.061	3.730	3.583	3.382	3.204	2.994	2.570	2.253	2.065	1.951
17	4.95	4.68	4.458	4.062	3.729	3.582	3.383	3.204	2.994	2.571	2.253	2.005	1.893
18	4.94	4.69	4.459	4.061	3.730	3.583	3.382	3.204	2.994	2.570	2.253	2.005	1.836
19	4.33	4.68	4.458	4.062	3.729	3.582	3.383	3.204	2.993	2.571	2.253	2.005	1.806
20		4.10	4.459	4.061	3.730	3.583	3.382	3.204	2.994	2.570	2.253	2.005	1.806
21			3.901	4.062	3.729	3.582	3.383	3.204	2.993	2.571	2.253	2.005	1.806
22				4.061	3.730	3.583	3.382	3.204	2.994	2.570	2.253	2.005	1.806
23				3.554	3.729	3.582	3.383	3.205	2.993	2.571	2.253	2.005	1.806
24					3.730	3.583	3.382	3.204	2.994	2.570	2.253	2.005	1.805
25					3.263	3.582	3.383	3.205	2.993	2.571	2.253	2.005	1.806
26						3.135	3.382	3.204	2.994	2.570	2.252	2.005	1.805
27							3.383	3.205	2.993	2.571	2.253	2.004	1.806
28							1.268	3.204	2.994	2.570	2.252	2.005	1.805
29								2.804	2.993	2.571	2.253	2.004	1.806
30									2.994	2.570	2.252	2.005	1.805
31									2.619	2.571	2.253	2.004	1.806
32										2.570	2.252	2.005	1.805
33										2.571	2.253	2.004	1.806
34										2.570	2.252	2.005	1.805
35										2.571	2.253	2.004	1.806
36										2.249	2.252	2.005	1.805
37											2.253	2.004	1.806
38											2.252	2.005	1.805
39											2.253	2.004	1.806
40											2.252	2.005	1.805
41											1.971	2.004	1.806
42												2.005	1.805
43												2.004	1.806
44												2.005	1.805
45												2.004	1.806
46												1.754	1.805
47													1.806
48													1.805
49													1.806
50													1.805
51													1.580

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RATES TO FIGURE INCLUSION AMOUNTS FOR LEASED LISTED PROPERTY

Table A-19. **Amount A Percentages**

Recovery Period of Property Under ADS	First Tax Year During Lease in Which Business Use is 50% or Less											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12 & Later**
Less than 7 years	2.1%	–7.2%	–19.8%	–20.1%	–12.4%	–12.4%	–12.4%	–12.4%	–12.4%	–12.4%	–12.4%	–12.4%
7 to 10 years	3.9%	–3.8%	–17.7%	–25.1%	–27.8%	–27.2%	–27.1%	–27.6%	–23.7%	–14.7%	–14.7%	–14.7%
More than 10 years	6.6%	–1.6%	–16.9%	–25.6%	–29.9%	–31.1%	–32.8%	–35.1%	–33.3%	–26.7%	–19.7%	–12.2%

Table A-20. **Amount B Percentages**

Recovery Period of Property Under ADS	First Tax Year During Lease in Which Business Use is 50% or Less											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12 & Later**
Less than 7 years	0.0%	10.0%	22.0%	21.2%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
7 to 10 years	0.0%	9.3%	23.8%	31.3%	33.8%	32.7%	31.6%	30.5%	25.0%	15.0%	15.0%	15.0%
More than 10 years	0.0%	10.1%	26.3%	35.4%	39.6%	40.2%	40.8%	41.4%	37.5%	29.2%	20.8%	12.5%

Qualified Indian Reservation Property Tables for Property Placed in Service Before 2021

Table A-21. **2-Year Qualified Indian Reservation Property Half-Year and Mid-Quarter Conventions**

Year	Half-Year Convention	Q-1	Q-2	Q-3	Q-4
1	50.00%	87.50%	62.50%	37.50%	12.50%
2	50.00	12.50	37.50	62.50	87.50

Table A-22. **4-Year Qualified Indian Reservation Property Half-Year and Mid-Quarter Conventions**

Year	Half-Year Convention	Q-1	Q-2	Q-3	Q-4
1	25.00%	43.75%	31.25%	18.75%	6.25%
2	37.50	28.13	34.37	40.63	46.87
3	18.75	14.06	17.19	20.31	23.44
4	12.50	12.50	12.50	12.50	12.50
5	6.25	1.56	4.69	7.81	10.94

Table A-23. **6-Year Qualified Indian Reservation Property Half-Year and Mid-Quarter Conventions**

Year	Half-Year Convention	Q-1	Q-2	Q-3	Q-4
1	16.67%	29.17%	20.83%	12.50%	4.17%
2	27.78	23.61	26.39	29.17	31.94
3	18.52	15.74	17.59	19.44	21.30
4	12.35	10.49	11.73	12.96	14.20
5	9.87	9.88	9.88	9.88	9.87
6	9.87	9.88	9.88	9.88	9.88
7	4.94	1.23	3.70	6.17	8.64

Table A-24. **Qualified Nonresidential Real Indian Reservation Property**
Mid-Month Convention
Straight Line—22 Years

Year	Month property placed in service											
	1	2	3	4	5	6	7	8	9	10	11	12
1	4.356%	3.977%	3.598%	3.220%	2.841%	2.462%	2.083%	1.705%	1.326%	0.947%	0.568%	0.189%
2-3	4.545	4.545	4.545	4.545	4.545	4.545	4.545	4.545	4.545	4.545	4.545	4.545
4	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
5	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
6	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
7	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
8	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
9	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
10	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
11	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
12	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
13	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
14	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
15	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
16	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
17	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
18	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
19	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
20	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
21	4.545	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.545
22	4.546	4.546	4.546	4.545	4.545	4.546	4.546	4.545	4.545	4.546	4.546	4.546
23	0.189%	0.568%	0.947%	1.326%	1.705%	2.083%	2.462%	2.841%	3.220%	3.598%	3.977%	4.356%

Appendix B — Table of Class Lives and Recovery Periods

The *Table of Class Lives and Recovery Periods* has two sections. The first section, *Specific Depreciable Assets Used In All Business Activities, Except As Noted,* generally lists assets used in all business activities. It is shown as Table B-1. The second section, *Depreciable Assets Used In The Following Activities,* describes assets used only in certain activities. It is shown as Table B-2.

How To Use the Tables

You will need to look at both Table B-1 and B-2 to find the correct recovery period. Generally, if the property is listed in Table B-1 you use the recovery period shown in that table. However, if the property is specifically listed in Table B-2 under the type of activity in which it is used, you use the recovery period listed under the activity in that table. Use the tables in the order shown below to determine the recovery period of your depreciable property.

Table B-1. Check Table B-1 for a description of the property. If it is described in Table B-1, also check Table B-2 to find the activity in which the property is being used. If the activity is described in Table B-2, read the text (if any) under the title to determine if the property is specifically included in that asset class. If it is, use the recovery period shown in the appropriate column of Table B-2 following the description of the activity. If the activity is not described in Table B-2 or if the activity is described but the property either is not specifically included in or is specifically excluded from that asset class, then use the recovery period shown in the appropriate column following the description of the property in Table B-1.

Tax-exempt use property subject to a lease. The recovery period for ADS cannot be less than 125% of the lease term for any property leased under a leasing arrangement to a tax-exempt organization, governmental unit, or foreign person or entity (other than a partnership).

Table B-2. If the property is not listed in Table B-1, check Table B-2 to find the activity in which the property is being used and use the recovery period shown in the appropriate column following the description.

Property not in either table. If the activity or the property is not included in either table, check the end of Table B-2 to find *Certain Property for Which Recovery Periods Assigned.* This property generally has a recovery period of 7 years for GDS or 12 years for ADS. See *Which Property Class Applies Under GDS* and *Which Recovery Period Applies* in chapter 4 for the class lives or the recovery periods for GDS and ADS for the following.

- Residential rental property and nonresidential real property (also see Appendix A, Chart 2).
- Qualified rent-to-own property.
- A motorsport entertainment complex placed in service before January 1, 2021.
- Any retail motor fuels outlet.
- Initial clearing and grading land improvements for gas utility property and electric utility transmission and distribution plants.
- Any water utility property.
- Certain electric transmission property used in the transmission at 69 or more kilovolts of electricity for sale and placed in service after April 11, 2005.
- Natural gas gathering and distribution lines placed in service after April 11, 2005.

Example 1. Richard Green is a paper manufacturer. During the year, he made substantial improvements to the land on which his paper plant is located. He checks Table B-1 and finds land improvements under asset class 00.3. He then checks Table B-2 and finds his activity, paper manufacturing, under asset class 26.1, *Manufacture of Pulp and Paper.* He uses the recovery period under this asset class because it specifically includes land improvements. The land improvements have a 13-year class life and a 7-year recovery period for GDS. If he elects to use ADS, the recovery period is 13 years. If Richard only looked at Table B-1, he would select asset class 00.3, *Land Improvements*, and incorrectly use a recovery period of 15 years for GDS or 20 years for ADS.

Example 2. Sam Plower produces rubber products. During the year, he made substantial improvements to the land on which his rubber plant is located. He checks Table B-1 and finds land improvements under asset class 00.3. He then checks Table B-2 and finds his activity, producing rubber products, under asset class 30.1, *Manufacture of Rubber Products.* Reading the headings and descriptions under asset class 30.1, Sam finds that it does not include land improvements. Therefore, Sam uses the recovery period under asset class 00.3. The land improvements have a 20-year class life and a 15-year recovery period for GDS. If he elects to use ADS, the recovery period is 20 years.

Example 3. Pam Martin owns a retail clothing store. During the year, she purchased a desk and a cash register for use in her business. She checks Table B-1 and finds office furniture under asset class 00.11. Cash registers are not listed in any of the asset classes in Table B-1. She then checks Table B-2 and finds her activity, retail store, under asset class 57.0, *Distributive Trades and Services,* which includes ***assets used in wholesale and retail trade***. This asset class does not specifically list office furniture or a cash register. She looks back at Table B-1 and uses asset class 00.11 for the desk. The desk has a 10-year class life and a 7-year recovery period for GDS. If she elects to use ADS, the recovery period is 10 years. For the cash register, she uses asset class 57.0 because cash registers are not listed in Table B-1 but it is an ***asset*** used in her retail business. The cash register has a 9-year class life and a 5-year recovery period for GDS. If she elects to use the ADS method, the recovery period is 9 years. ■

Table B-1. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years) GDS (MACRS)	Recovery Periods (in years) ADS
	SPECIFIC DEPRECIABLE ASSETS USED IN ALL BUSINESS ACTIVITIES, EXCEPT AS NOTED:			
00.11	**Office Furniture, Fixtures, and Equipment:** Includes furniture and fixtures that are not a structural component of a building. Includes such assets as desks, files, safes, and communications equipment. Does not include communications equipment that is included in other classes.	10	7	10
00.12	**Information Systems:** Includes computers and their peripheral equipment used in administering normal business transactions and the maintenance of business records, their retrieval and analysis. Information systems are defined as: 1) Computers: A computer is a programmable electronically activated device capable of accepting information, applying prescribed processes to the information, and supplying the results of these processes with or without human intervention. It usually consists of a central processing unit containing extensive storage, logic, arithmetic, and control capabilities. Excluded from this category are adding machines, electronic desk calculators, etc., and other equipment described in class 00.13. 2) Peripheral equipment consists of the auxiliary machines which are designed to be placed under control of the central processing unit. Nonlimiting examples are: Card readers, card punches, magnetic tape feeds, high speed printers, optical character readers, tape cassettes, mass storage units, paper tape equipment, keypunches, data entry devices, teleprinters, terminals, tape drives, disc drives, disc files, disc packs, visual image projector tubes, card sorters, plotters, and collators. Peripheral equipment may be used on-line or off-line. Does not incude equipment that is an integral part of other capital equipment that is included in other classes of economic activity, i.e., computers used primarily for process or production control, switching, channeling, and automating distributive trades and services such as point of sale (POS) computer systems. Also, does not include equipment of a kind used primarily for amusement or entertainment of the user.	6	5	5
00.13	**Data Handling Equipment; except Computers:** Includes only typewriters, calculators, adding and accounting machines, copiers, and duplicating equipment.	6	5	6
00.21	**Airplanes (airframes and engines), except those used in commercial or contract carrying of passengers or freight, and all helicopters (airframes and engines)**	6	5	6
00.22	**Automobiles, Taxis**	3	5	5
00.23	**Buses**	9	5	9
00.241	**Light General Purpose Trucks:** Includes trucks for use over the road (actual weight less than 13,000 pounds)	4	5	5
00.242	**Heavy General Purpose Trucks:** Includes heavy general purpose trucks, concrete ready mix-trucks, and ore trucks, for use over the road (actual unloaded weight 13,000 pounds or more)	6	5	6
00.25	**Railroad Cars and Locomotives, except those owned by railroad transportation companies**	15	7	15
00.26	**Tractor Units for Use Over-The-Road**	4	3	4
00.27	**Trailers and Trailer-Mounted Containers**	6	5	6
00.28	**Vessels, Barges, Tugs, and Similar Water Transportation Equipment, except those used in marine construction**	18	10	18
00.3	**Land Improvements:** Includes improvements directly to or added to land, whether such improvements are section 1245 property or section 1250 property, provided such improvements are depreciable. Examples of such assets might include sidewalks, roads, canals, waterways, drainage facilities, sewers (not including municipal sewers in Class 51), wharves and docks, bridges, fences, landscaping shrubbery, or radio and television transmitting towers. Does not include land improvements that are explicitly included in any other class, and buildings and structural components as defined in section 1.48-1(e) of the regulations. Excludes public utility initial clearing and grading land improvements as specified in Rev. Rul. 72-403, 1972-2 C.B. 102.	20	15	20
00.4	**Industrial Steam and Electric Generation and/or Distribution Systems:** Includes assets, whether such assets are section 1245 property or 1250 property, providing such assets are depreciable, used in the production and/or distribution of electricity with rated total capacity in excess of 500 Kilowatts and/or assets used in the production and/or distribution of steam with rated total capacity in excess of 12,500 pounds per hour for use by the taxpayer in its industrial manufacturing process or plant activity and not ordinarily available for sale to others. Does not include buildings and structural components as defined in section 1.48-1(e) of the regulations. Assets used to generate and/or distribute electricity or steam of the type described above, but of lesser rated capacity, are not included, but are included in the appropriate manufacturing equipment classes elsewhere specified. Also includes electric generating and steam distribution assets, which may utilize steam produced by a waste reduction and resource recovery plant, used by the taxpayer in its industrial manufacturing process or plant activity. Steam and chemical recovery boiler systems used for the recovery and regeneration of chemicals used in manufacturing, with rated capacity in excess of that described above, with specifically related distribution and return systems are not included but are included in appropriate manufacturing equipment classes elsewhere specified. An example of an excluded steam and chemical recovery boiler system is that used in the pulp and paper manufacturing equipment classes elsewhere specified. An example of an excluded steam and chemical recovery boiler system is that used in the pulp and paper manufacturing industry.	22	15	22

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
	DEPRECIABLE ASSETS USED IN THE FOLLOWING ACTIVITIES:			
01.1	**Agriculture:** Includes machinery and equipment, grain bins, and fences but no other land improvements, that are used in the production of crops or plants, vines, and trees; livestock; the operation of farm dairies, nurseries, greenhouses, sod farms, mushroom cellars, cranberry bogs, apiaries, and fur farms; the performance of agriculture, animal husbandry, and horticultural services.	10	7	10
01.11	**Cotton Ginning Assets**	12	7	12
01.21	**Cattle, Breeding or Dairy**	7	5	7
01.221	**Any breeding or work horse that is 12 years old or less at the time it is placed in service****	10	7	10
01.222	**Any breeding or work horse that is more than 12 years old at the time it is placed in service****	10	3	10
01.223	**Any race horse that is more than 2 years old at the time it is placed in service****	*	3	12
01.224	**Any horse that is more than 12 years old at the time it is placed in service and that is neither a race horse nor a horse described in class 01.222****	*	3	12
01.225	**Any horse not described in classes 01.221, 01.222, 01.223, or 01.224**	*	7	12
01.23	**Hogs, Breeding**	3	3	3
01.24	**Sheep and Goats, Breeding**	5	5	5
01.3	**Farm buildings except structures included in Class 01.4**	25	20	25
01.4	**Single purpose agricultural or horticultural structures (within the meaning of section 168(i)(13) of the Code)**	15	10***	15
10.0	**Mining:** Includes assets used in the mining and quarrying of metallic and nonmetallic minerals (including sand, gravel, stone, and clay) and the milling, beneficiation and other primary preparation of such materials.	10	7	10
13.0	**Offshore Drilling:** Includes assets used in offshore drilling for oil and gas such as floating, self-propelled and other drilling vessels, barges, platforms, and drilling equipment and support vessels such as tenders, barges, towboats and crewboats. Excludes oil and gas production assets.	7.5	5	7.5
13.1	**Drilling of Oil and Gas Wells:** Includes assets used in the drilling of onshore oil and gas wells and the provision of geophysical and other exploration services; and the provision of such oil and gas field services as chemical treatment, plugging and abandoning of wells and cementing or perforating well casings. Does not include assets used in the performance of any of these activities and services by integrated petroleum and natural gas producers for their own account.	6	5	6
13.2	**Exploration for and Production of Petroleum and Natural Gas Deposits:** Includes assets used by petroleum and natural gas producers for drilling of wells and production of petroleum and natural gas, including gathering pipelines and related storage facilities. Also includes petroleum and natural gas offshore transportation facilities used by producers and others consisting of platforms (other than drilling platforms classified in Class 13.0), compression or pumping equipment, and gathering and transmission lines to the first onshore transshipment facility. The assets used in the first onshore transshipment facility are also included and consist of separation equipment (used for separation of natural gas, liquids, and in Class 49.23), and liquid holding or storage facilities (other than those classified in Class 49.25). Does not include support vessels.	14	7	14
13.3	**Petroleum Refining:** Includes assets used for the distillation, fractionation, and catalytic cracking of crude petroleum into gasoline and its other components.	16	10	16
15.0	**Construction:** Includes assets used in construction by general building, special trade, heavy and marine construction contractors, operative and investment builders, real estate subdividers and developers, and others except railroads.	6	5	6
20.1	**Manufacture of Grain and Grain Mill Products:** Includes assets used in the production of flours, cereals, livestock feeds, and other grain and grain mill products.	17	10	17
20.2	**Manufacture of Sugar and Sugar Products:** Includes assets used in the production of raw sugar, syrup, or finished sugar from sugar cane or sugar beets.	18	10	18
20.3	**Manufacture of Vegetable Oils and Vegetable Oil Products:** Includes assets used in the production of oil from vegetable materials and the manufacture of related vegetable oil products.	18	10	18
20.4	**Manufacture of Other Food and Kindred Products:** Includes assets used in the production of foods and beverages not included in classes 20.1, 20.2 and 20.3.	12	7	12
20.5	**Manufacture of Food and Beverages—Special Handling Devices:** Includes assets defined as specialized materials handling devices such as returnable pallets, palletized containers, and fish processing equipment including boxes, baskets, carts, and flaking trays used in activities as defined in classes 20.1, 20.2, 20.3 and 20.4. Does not include general purpose small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	4	3	4

* Property described in asset classes 01.223, 01.224, and 01.225 are assigned recovery periods but have no class lives.
** A horse is more than 2 (or 12) years old after the day that is 24 (or 144) months after its actual birthdate.
*** 7 if property was placed in service before 1989.

EAS000110

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
21.0	**Manufacture of Tobacco and Tobacco Products:** Includes assets used in the production of cigarettes, cigars, smoking and chewing tobacco, snuff, and other tobacco products.	15	7	15
22.1	**Manufacture of Knitted Goods:** Includes assets used in the production of knitted and netted fabrics and lace. Assets used in yarn preparation, bleaching, dyeing, printing, and other similar finishing processes, texturing, and packaging, are elsewhere classified.	7.5	5	7.5
22.2	**Manufacture of Yarn, Thread, and Woven Fabric:** Includes assets used in the production of spun yarns including the preparing, blending, spinning, and twisting of fibers into yarns and threads, the preparation of yarns such as twisting, warping, and winding, the production of covered elastic yarn and thread, cordage, woven fabric, tire fabric, braided fabric, twisted jute for packaging, mattresses, pads, sheets, and industrial belts, and the processing of textile mill waste to recover fibers, flocks, and shoddies. Assets used to manufacture carpets, man-made fibers, and nonwovens, and assets used in texturing, bleaching, dyeing, printing, and other similar finishing processes, are elsewhere classified.	11	7	11
22.3	**Manufacture of Carpets and Dyeing, Finishing, and Packaging of Textile Products and Manufacture of Medical and Dental Supplies:** Includes assets used in the production of carpets, rugs, mats, woven carpet backing, chenille, and other tufted products, and assets used in the joining together of backing with carpet yarn or fabric. Includes assets used in washing, scouring, bleaching, dyeing, printing, drying, and similar finishing processes applied to textile fabrics, yarns, threads, and other textile goods. Includes assets used in the production and packaging of textile products, other than apparel, by creasing, forming, trimming, cutting, and sewing, such as the preparation of carpet and fabric samples, or similar joining together processes (other than the production of scrim reinforced paper products and laminated paper products) such as the sewing and folding of hosiery and panty hose, and the creasing, folding, trimming, and cutting of fabrics to produce nonwoven products, such as disposable diapers and sanitary products. Also includes assets used in the production of medical and dental supplies other than drugs and medicines. Assets used in the manufacture of nonwoven carpet backing, and hard surface floor covering such as tile, rubber, and cork, are elsewhere classified.	9	5	9
22.4	**Manufacture of Textile Yarns:** Includes assets used in the processing of yarns to impart bulk and/or stretch properties to the yarn. The principal machines involved are falsetwist, draw, beam-to-beam, and stuffer box texturing equipment and related highspeed twisters and winders. Assets, as described above, which are used to further process man-made fibers are elsewhere classified when located in the same plant in an integrated operation with man-made fiber producing assets. Assets used to manufacture man-made fibers and assets used in bleaching, dyeing, printing, and other similar finishing processes, are elsewhere classified.	8	5	8
22.5	**Manufacture of Nonwoven Fabrics:** Includes assets used in the production of nonwoven fabrics, felt goods including felt hats, padding, batting, wadding, oakum, and fillings, from new materials and from textile mill waste. Nonwoven fabrics are defined as fabrics (other than reinforced and laminated composites consisting of nonwovens and other products) manufactured by bonding natural and/or synthetic fibers and/or filaments by means of induced mechanical interlocking, fluid entanglement, chemical adhesion, thermal or solvent reaction, or by combination thereof other than natural hydration bonding as ocurs with natural cellulose fibers. Such means include resin bonding, web bonding, and melt bonding. Specifically includes assets used to make flocked and needle punched products other than carpets and rugs. Assets, as described above, which are used to manufacture nonwovens are elsewhere classified when located in the same plant in an integrated operation with man-made fiber producing assets. Assets used to manufacture man-made fibers and assets used in bleaching, dyeing, printing, and other similar finishing processes, are elsewhere classified.	10	7	10
23.0	**Manufacture of Apparel and Other Finished Products:** Includes assets used in the production of clothing and fabricated textile products by the cutting and sewing of woven fabrics, other textile products, and furs; but does not include assets used in the manufacture of apparel from rubber and leather.	9	5	9
24.1	**Cutting of Timber:** Includes logging machinery and equipment and roadbuilding equipment used by logging and sawmill operators and pulp manufacturers for their own account.	6	5	6
24.2	**Sawing of Dimensional Stock from Logs:** Includes machinery and equipment installed in permanent or well established sawmills.	10	7	10
24.3	**Sawing of Dimensional Stock from Logs:** Includes machinery and equipment in sawmills characterized by temporary foundations and a lack, or minimum amount, of lumberhandling, drying, and residue disposal equipment and facilities.	6	5	6
24.4	**Manufacture of Wood Products, and Furniture:** Includes assets used in the production of plywood, hardboard, flooring, veneers, furniture, and other wood products, including the treatment of poles and timber.	10	7	10
26.1	**Manufacture of Pulp and Paper:** Includes assets for pulp materials handling and storage, pulp mill processing, bleach processing, paper and paperboard manufacturing, and on-line finishing. Includes pollution control assets and all land improvements associated with the factory site or production process such as effluent ponds and canals, provided such improvements are depreciable but does not include buildings and structural components as defined in section 1.48-1(e)(1) of the regulations. Includes steam and chemical recovery boiler systems, with any rated capacity, used for the recovery and regeneration of chemicals used in manufacturing. Does not include assets used either in pulpwood logging, or in the manufacture of hardboard.	13	7	13

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
26.2	**Manufacture of Converted Paper, Paperboard, and Pulp Products:** Includes assets used for modification, or remanufacture of paper and pulp into converted products, such as paper coated off the paper machine, paper bags, paper boxes, cartons and envelopes. Does not include assets used for manufacture of nonwovens that are elsewhere classified.	10	7	10
27.0	**Printing, Publishing, and Allied Industries:** Includes assets used in printing by one or more processes, such as letter-press, lithography, gravure, or screen; the performance of services for the printing trade, such as bookbinding, typesetting, engraving, photo-engraving, and electrotyping; and the publication of newspapers, books, and periodicals.	11	7	11
28.0	**Manufacture of Chemicals and Allied Products:** Includes assets used to manufacture basic organic and inorganic chemicals; chemical products to be used in further manufacture, such as synthetic fibers and plastics materials; and finished chemical products. Includes assets used to further process man-made fibers, to manufacture plastic film, and to manufacture nonwoven fabrics, when such assets are located in the same plant in an integrated operation with chemical products producing assets. Also includes assets used to manufacture photographic supplies, such as film, photographic paper, sensitized photographic paper, and developing chemicals. Includes all land improvements associated with plant site or production processes, such as effluent ponds and canals, provided such land improvements are depreciable but does not include buildings and structural components as defined in section 1.48-1(e) of the regulations. Does not include assets used in the manufacture of finished rubber and plastic products or in the production of natural gas products, butane, propane, and by-products of natural gas production plants.	9.5	5	9.5
30.1	**Manufacture of Rubber Products:** Includes assets used for the production of products from natural, synthetic, or reclaimed rubber, gutta percha, balata, or gutta siak, such as tires, tubes, rubber footwear, mechanical rubber goods, heels and soles, flooring, and rubber sundries; and in the recapping, retreading, and rebuilding of tires.	14	7	14
30.11	**Manufacture of Rubber Products—Special Tools and Devices:** Includes assets defined as special tools, such as jigs, dies, mandrels, molds, lasts, patterns, specialty containers, pallets, shells; and tire molds, and accessory parts such as rings and insert plates used in activities as defined in class 30.1. Does not include tire building drums and accessory parts and general purpose small tools such as wrenches and drills, both power and hand-driven, and other general purpose equipment such as conveyors and transfer equipment.	4	3	4
30.2	**Manufacture of Finished Plastic Products:** Includes assets used in the manufacture of plastics products and the molding of primary plastics for the trade. Does not include assets used in the manufacture of basic plastics materials nor the manufacture of phonograph records.	11	7	11
30.21	**Manufacture of Finished Plastic Products—Special Tools:** Includes assets defined as special tools, such as jigs, dies, fixtures, molds, patterns, gauges, and specialty transfer and shipping devices, used in activities as defined in class 30.2. Special tools are specifically designed for the production or processing of particular parts and have no significant utilitarian value and cannot be adapted to further or different use after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general purpose small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	3.5	3	3.5
31.0	**Manufacture of Leather and Leather Products:** Includes assets used in the tanning, currying, and finishing of hides and skins; the processing of fur pelts; and the manufacture of finished leather products, such as footwear, belting, apparel, and luggage.	11	7	11
32.1	**Manufacture of Glass Products:** Includes assets used in the production of flat, blown, or pressed products of glass, such as float and window glass, glass containers, glassware and fiberglass. Does not include assets used in the manufacture of lenses.	14	7	14
32.11	**Manufacture of Glass Products—Special Tools:** Includes assets defined as special tools such as molds, patterns, pallets, and specialty transfer and shipping devices such as steel racks to transport automotive glass, used in activities as defined in class 32.1. Special tools are specifically designed for the production or processing of particular parts and have no significant utilitarian value and cannot be adapted to further or different use after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general purpose small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	2.5	3	2.5
32.2	**Manufacture of Cement:** Includes assets used in the production of cement, but does not include assets used in the manufacture of concrete and concrete products nor in any mining or extraction process.	20	15	20
32.3	**Manufacture of Other Stone and Clay Products:** Includes assets used in the manufacture of products from materials in the form of clay and stone, such as brick, tile, and pipe; pottery and related products, such as vitreous-china, plumbing fixtures, earthenware and ceramic insulating materials; and also includes assets used in manufacture of concrete and concrete products. Does not include assets used in any mining or extraction processes.	15	7	15

EAS000112

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
33.2	**Manufacture of Primary Nonferrous Metals:** Includes assets used in the smelting, refining, and electrolysis of nonferrous metals from ore, pig, or scrap, the rolling, drawing, and alloying of nonferrous metals; the manufacture of castings, forgings, and other basic products of nonferrous metals; and the manufacture of nails, spikes, structural shapes, tubing, wire, and cable.	14	7	14
33.21	**Manufacture of Primary Nonferrous Metals—Special Tools:** Includes assets defined as special tools such as dies, jigs, molds, patterns, fixtures, gauges, and drawings concerning such special tools used in the activities as defined in class 33.2, Manufacture of Primary Nonferrous Metals. Special tools are specifically designed for the production or processing of particular products or parts and have no significant utilitarian value and cannot be adapted to further or different use after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general purpose small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices. Rolls, mandrels and refractories are not included in class 33.21 but are included in class 33.2.	6.5	5	6.5
33.3	**Manufacture of Foundry Products:** Includes assets used in the casting of iron and steel, including related operations such as molding and coremaking. Also includes assets used in the finishing of castings and patternmaking when performed at the foundry, all special tools and related land improvements.	14	7	14
33.4	**Manufacture of Primary Steel Mill Products:** Includes assets used in the smelting, reduction, and refining of iron and steel from ore, pig, or scrap; the rolling, drawing and alloying of steel; the manufacture of nails, spikes, structural shapes, tubing, wire, and cable. Includes assets used by steel service centers, ferrous metal forges, and assets used in coke production, regardless of ownership. Also includes related land improvements and all special tools used in the above activities.	15	7	15
34.0	**Manufacture of Fabricated Metal Products:** Includes assets used in the production of metal cans, tinware, fabricated structural metal products, metal stampings, and other ferrous and nonferrous metal and wire products not elsewhere classified. Does not include assets used to manufacture non-electric heating apparatus.	12	7	12
34.01	**Manufacture of Fabricated Metal Products—Special Tools:** Includes assets defined as special tools such as dies, jigs, molds, patterns, fixtures, gauges, and returnable containers and drawings concerning such special tools used in the activities as defined in class 34.0. Special tools are specifically designed for the production or processing of particular machine components, products, or parts, and have no significant utilitarian value and cannot be adapted to further or different use after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	3	3	3
35.0	**Manufacture of Electrical and Non-Electrical Machinery and Other Mechanical Products:** Includes assets used to manufacture or rebuild finished machinery and equipment and replacement parts thereof such as machine tools, general industrial and special industry machinery, electrical power generation, transmission, and distribution systems, space heating, cooling, and refrigeration systems, commercial and home appliances, farm and garden machinery, construction machinery, mining and oil field machinery, internal combustion engines (except those elsewhere classified), turbines (except those that power airborne vehicles), batteries, lamps and lighting fixtures, carbon and graphite products, and electromechanical and mechanical products including business machines, instruments, watches and clocks, vending and amusement machines, photographic equipment, medical and dental equipment and appliances, and ophthalmic goods. Includes assets used by manufacturers or rebuilders of such finished machinery and equipment in activities elsewhere classified such as the manufacture of castings, forgings, rubber and plastic products, electronic subassemblies or other manufacturing activities if the interim products are used by the same manufacturer primarily in the manufacture, assembly, or rebuilding of such finished machinery and equipment. Does not include assets used in mining, assets used in the manufacture of primary ferrous and nonferrous metals, assets included in class 00.11 through 00.4 and assets elsewhere classified.	10	7	10
36.0	**Manufacture of Electronic Components, Products, and Systems:** Includes assets used in the manufacture of electronic communication, computation, instrumentation and control system, including airborne applications; also includes assets used in the manufacture of electronic products such as frequency and amplitude modulated transmitters and receivers, electronic switching stations, television cameras, video recorders, record players and tape recorders, computers and computer peripheral machines, and electronic instruments, watches, and clocks; also includes assets used in the manufacture of components, provided their primary use is products and systems defined above such as electron tubes, capacitors, coils, resistors, printed circuit substrates, switches, harness cables, lasers, fiber optic devices, and magnetic media devices. Specifically excludes assets used to manufacture electronic products and components, photocopiers, typewriters, postage meters and other electromechanical and mechanical business machines and instruments that are elsewhere classified. Does not include semiconductor manufacturing equipment included in class 36.1.	6	5	6
36.1	**Any Semiconductor Manufacturing Equipment**	5	5	5

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
37.11	**Manufacture of Motor Vehicles:** Includes assets used in the manufacture and assembly of finished automobiles, trucks, trailers, motor homes, and buses. Does not include assets used in mining, printing and publishing, production of primary metals, electricity, or steam, or the manufacture of glass, industrial chemicals, batteries, or rubber products, which are classified elsewhere. Includes assets used in manufacturing activities elsewhere classified other than those excluded above, where such activities are incidental to and an integral part of the manufacture and assembly of finished motor vehicles such as the manufacture of parts and subassemblies of fabricated metal products, electrical equipment, textiles, plastics, leather, and foundry and forging operations. Does not include any assets not classified in manufacturing activity classes, e.g., does not include any assets classified in asset guideline classes 00.11 through 00.4. Activities will be considered incidental to the manufacture and assembly of finished motor vehicles only if 75 percent or more of the value of the products produced under one roof are used for the manufacture and assembly of finished motor vehicles. Parts that are produced as a normal replacement stock complement in connection with the manufacture and assembly of finished motor vehicles are considered used for the manufacture assembly of finished motor vehicles. Does not include assets used in the manufacture of component parts if these assets are used by taxpayers not engaged in the assembly of finished motor vehicles.	12	7	12
37.12	**Manufacture of Motor Vehicles—Special Tools:** Includes assets defined as special tools, such as jigs, dies, fixtures, molds, patterns, gauges, and specialty transfer and shipping devices, owned by manufacturers of finished motor vehicles and used in qualified activities as defined in class 37.11. Special tools are specifically designed for the production or processing of particular motor vehicle components and have no significant utilitarian value, and cannot be adapted to further or different use, after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general purpose small tools such as wrenches and drills, both hand and powerdriven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	3	3	3
37.2	**Manufacture of Aerospace Products:** Includes assets used in the manufacture and assembly of airborne vehicles and their component parts including hydraulic, pneumatic, electrical, and mechanical systems. Does not include assets used in the production of electronic airborne detection, guidance, control, radiation, computation, test, navigation, and communication equipment or the components thereof.	10	7	10
37.31	**Ship and Boat Building Machinery and Equipment:** Includes assets used in the manufacture and repair of ships, boats, caissons, marine drilling rigs, and special fabrications not included in asset classes 37.32 and 37.33. Specifically includes all manufacturing and repairing machinery and equipment, including machinery and equipment used in the operation of assets included in asset class 37.32. Excludes buildings and their structural components.	12	7	12
37.32	**Ship and Boat Building Dry Docks and Land Improvements:** Includes assets used in the manufacture and repair of ships, boats, caissons, marine drilling rigs, and special fabrications not included in asset classes 37.31 and 37.33. Specifically includes floating and fixed dry docks, ship basins, graving docks, shipways, piers, and all other land improvements such as water, sewer, and electric systems. Excludes buildings and their structural components.	16	10	16
37.33	**Ship and Boat Building—Special Tools:** Includes assets defined as special tools such as dies, jigs, molds, patterns, fixtures, gauges, and drawings concerning such special tools used in the activities defined in classes 37.31 and 37.32. Special tools are specifically designed for the production or processing of particular machine components, products, or parts, and have no significant utilitarian value and cannot be adapted to further or different use after changes or improvements are made in the model design of the particular part produced by the special tools. Does not include general purpose small tools such as wrenches and drills, both hand and power-driven, and other general purpose equipment such as conveyors, transfer equipment, and materials handling devices.	6.5	5	6.5
37.41	**Manufacture of Locomotives:** Includes assets used in building or rebuilding railroad locomotives (including mining and industrial locomotives). Does not include assets of railroad transportation companies or assets of companies which manufacture components of locomotives but do not manufacture finished locomotives.	11.5	7	11.5
37.42	**Manufacture of Railroad Cars:** Includes assets used in building or rebuilding railroad freight or passenger cars (including rail transit cars). Does not include assets of railroad transportation companies or assets of companies which manufacture components of railroad cars but do not manufacture finished railroad cars.	12	7	12
39.0	**Manufacture of Athletic, Jewelry, and Other Goods:** Includes assets used in the production of jewelry; musical instruments; toys and sporting goods; motion picture and television films and tapes; and pens, pencils, office and art supplies, brooms, brushes, caskets, etc. **Railroad Transportation:** Classes with the prefix 40 include the assets identified below that are used in the commercial and contract carrying of passengers and freight by rail. Assets of electrified railroads will be classified in a manner corresponding to that set forth below for railroads not independently operated as electric lines. Excludes the assets included in classes with the prefix beginning 00.1 and 00.2 above, and also excludes any non-depreciable assets included in Interstate Commerce Commission accounts enumerated for this class.	12	7	12

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Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years)	
			GDS (MACRS)	ADS
40.1	**Railroad Machinery and Equipment:** Includes assets classified in the following Interstate Commerce Commission accounts: **Roadway accounts:** (16) Station and office buildings (freight handling machinery and equipment only) (25) TOFC/COFC terminals (freight handling machinery and equipment only) (26) Communication systems (27) Signals and interlockers (37) Roadway machines (44) Shop machinery **Equipment accounts:** (52) Locomotives (53) Freight train cars (54) Passenger train cars (57) Work equipment	14	7	14
40.2	**Railroad Structures and Similar Improvements:** Includes assets classified in the following Interstate Commerce Commission road accounts: (6) Bridges, trestles, and culverts (7) Elevated structures (13) Fences, snowsheds, and signs (16) Station and office buildings (stations and other operating structures only) (17) Roadway buildings (18) Water stations (19) Fuel stations (20) Shops and enginehouses (25) TOFC/COFC terminals (operating structures only) (31) Power transmission systems (35) Miscellaneous structures (39) Public improvements construction	30	20	30
40.3	**Railroad Wharves and Docks:** Includes assets classified in the following Interstate Commission Commerce accounts: (23) Wharves and docks (24) Coal and ore wharves	20	15	20
40.4	**Railroad Track**	10	7	10
40.51	**Railroad Hydraulic Electric Generating Equipment**	50	20	50
40.52	**Railroad Nuclear Electric Generating Equipment**	20	15	20
40.53	**Railroad Steam Electric Generating Equipment**	28	20	28
40.54	**Railroad Steam, Compressed Air, and Other Power Plan Equipment**	28	20	28
41.0	**Motor Transport—Passengers:** Includes assets used in the urban and interurban commercial and contract carrying of passengers by road, except the transportation assets included in classes with the prefix 00.2.	8	5	8
42.0	**Motor Transport—Freight:** Includes assets used in the commercial and contract carrying of freight by road, except the transportation assets included in classes with the prefix 00.2.	8	5	8
44.0	**Water Transportation:** Includes assets used in the commercial and contract carrying of freight and passengers by water except the transportation assets included in classes with the prefix 00.2. Includes all related land improvements.	20	15	20
45.0	**Air Transport:** Includes assets (except helicopters) used in commercial and contract carrying of passengers and freight by air. For purposes of section 1.167(a)-11(d)(2)(iv)(a) of the regulations, expenditures for "repair, maintenance, rehabilitation, or improvement," shall consist of direct maintenance expenses (irrespective of airworthiness provisions or charges) as defined by Civil Aeronautics Board uniform accounts 5200, maintenance burden (exclusive of expenses pertaining to maintenance buildings and improvements) as defined by Civil Aeronautics Board accounts 5300, and expenditures which are not "excluded additions" as defined in section 1.167(a)-11(d)(2)(vi) of the regulations and which would be charged to property and equipment accounts in the Civil Aeronautics Board uniform system of accounts.	12	7	12
45.1	**Air Transport (restricted):** Includes each asset described in the description of class 45.0 which was held by the taxpayer on April 15, 1976, or is acquired by the taxpayer pursuant to a contract which was, on April 15, 1976, and at all times thereafter, binding on the taxpayer. This criterion of classification based on binding contract concept is to be applied in the same manner as under the general rules expressed in section 49(b)(1), (4), (5) and (8) of the Code (as in effect prior to its repeal by the Revenue Act of 1978, section 312(c)(1), (d), 1978-3 C.B. 1, 60).	6	5	6
46.0	**Pipeline Transportation:** Includes assets used in the private, commercial, and contract carrying of petroleum, gas and other products by means of pipes and conveyors. The trunk lines and related storage facilities of integrated petroleum and natural gas producers are included in this class. Excludes initial clearing and grading land improvements as specified in Rev. Rul. 72-403, 1972-2; C.B. 102, but includes all other related land improvements.	22	15	22

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years) GDS (MACRS)	Recovery Periods (in years) ADS
48.11	**Telephone Communications:** Includes the assets classified below and that are used in the provision of commercial and contract telephonic services such as: **Telephone Central Office Buildings:** Includes assets intended to house central office equipment, as defined in Federal Communications Commission Part 31 Account No. 212 whether section 1245 or section 1250 property.	45	20	45
48.12	**Telephone Central Office Equipment:** Includes central office switching and related equipment as defined in Federal Communications Commission Part 31 Account No. 221. Does not include computer-based telephone central office switching equipment included in class 48.121. Does not include private branch exchange (PBX) equipment.	18	10	18
48.121	**Computer-based Telephone Central Office Switching Equipment:** Includes equipment whose functions are those of a computer or peripheral equipment (as defined in section 168(i)(2)(B) of the Code) used in its capacity as telephone central office equipment. Does not include private exchange (PBX) equipment.	9.5	5	9.5
48.13	**Telephone Station Equipment:** Includes such station apparatus and connections as teletypewriters, telephones, booths, private exchanges, and comparable equipment as defined in Federal Communications Commission Part 31 Account No. 231, 232, and 234.	10	7*	10*
48.14	**Telephone Distribution Plant:** Includes such assets as pole lines, cable, aerial wire, underground conduits, and comparable equipment, and related land improvements as defined in Federal Communications Commission Part 31 Account Nos. 241, 242.1, 242.2, 242.3, 242.4, 243, and 244.	24	15	24
48.2	**Radio and Television Broadcastings:** Includes assets used in radio and television broadcasting, except transmitting towers. **Telegraph, Ocean Cable, and Satellite Communications (TOCSC)** includes communications-related assets used to provide domestic and international radio-telegraph, wire-telegraph, ocean-cable, and satellite communications services; also includes related land improvements. If property described in Classes 48.31–48.45 is comparable to telephone distribution plant described in Class 48.14 and used for 2-way exchange of voice and data communication which is the equivalent of telephone communication, such property is assigned a class life of 24 years under this revenue procedure. Comparable equipment does not include cable television equipment used primarily for 1-way communication.	6	5	6
48.31	**TOCSC—Electric Power Generating and Distribution Systems:** Includes assets used in the provision of electric power by generation, modulation, rectification, channelization, control, and distribution. Does not include these assets when they are installed on customers premises.	19	10	19
48.32	**TOCSC—High Frequency Radio and Microwave Systems:** Includes assets such as transmitters and receivers, antenna supporting structures, antennas, transmission lines from equipment to antenna, transmitter cooling systems, and control and amplification equipment. Does not include cable and long-line systems.	13	7	13
48.33	**TOCSC—Cable and Long-line Systems:** Includes assets such as transmission lines, pole lines, ocean cables, buried cable and conduit, repeaters, repeater stations, and other related assets. Does not include high frequency radio or microwave systems.	26.5	20	26.5
48.34	**TOCSC—Central Office Control Equipment:** Includes assets for general control, switching, and monitoring of communications signals including electromechanical switching and channeling apparatus, multiplexing equipment patching and monitoring facilities, in-house cabling, teleprinter equipment, and associated site improvements.	16.5	10	16.5
48.35	**TOCSC—Computerized Switching, Channeling, and Associated Control Equipment:** Includes central office switching computers, interfacing computers, other associated specialized control equipment, and site improvements.	10.5	7	10.5
48.36	**TOCSC—Satellite Ground Segment Property:** Includes assets such as fixed earth station equipment, antennas, satellite communications equipment, and interface equipment used in satellite communications. Does not include general purpose equipment or equipment used in satellite space segment property.	10	7	10
48.37	**TOCSC—Satellite Space Segment Property:** Includes satellites and equipment used for telemetry, tracking, control, and monitoring when used in satellite communications.	8	5	8
48.38	**TOCSC—Equipment Installed on Customer's Premises:** Includes assets installed on customer's premises, such as computers, terminal equipment, power generation and distribution systems, private switching center, teleprinters, facsimile equipment and other associated and related equipment.	10	7	10
48.39	**TOCSC—Support and Service Equipment:** Includes assets used to support but not engage in communications. Includes store, warehouse and shop tools, and test and laboratory assets. **Cable Television (CATV):** Includes communications-related assets used to provide cable television community antenna television services. Does not include assets used to provide subscribers with two-way communications services.	13.5	7	13.5

* Property described in asset guideline class 48.13 which is qualified technological equipment as defined in section 168(i)(2) is assigned a 5-year recovery period.

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Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years) GDS (MACRS)	ADS
48.41	**CATV—Headend:** Includes assets such as towers, antennas, preamplifiers, converters, modulation equipment, and program non-duplication systems. Does not include headend buildings and program origination assets.	11	7	11
48.42	**CATV—Subscriber Connection and Distribution Systems:** Includes assets such as trunk and feeder cable, connecting hardware, amplifiers, power equipment, passive devices, directional taps, pedestals, pressure taps, drop cables, matching transformers, multiple set connector equipment, and convertors.	10	7	10
48.43	**CATV—Program Origination:** Includes assets such as cameras, film chains, video tape recorders, lighting, and remote location equipment excluding vehicles. Does not include buildings and their structural components.	9	5	9
48.44	**CATV—Service and Test:** Includes assets such as oscilloscopes, field strength meters, spectrum analyzers, and cable testing equipment, but does not include vehicles.	8.5	5	8.5
48.45	**CATV—Microwave Systems:** Includes assets such as towers, antennas, transmitting and receiving equipment, and broad band microwave assets is used in the provision of cable television services. Does not include assets used in the provision of common carrier services.	9.5	5	9.5
49.11	**Electric, Gas, Water and Steam, Utility Services:** Includes assets used in the production, transmission and distribution of electricity, gas, steam, or water for sale including related land improvements. **Electric Utility Hydraulic Production Plant:** Includes assets used in the hydraulic power production of electricity for sale, including related land improvements, such as dams, flumes, canals, and waterways.	50	20	50
49.12	**Electric Utility Nuclear Production Plant:** Includes assets used in the nuclear power production and electricity for sale and related land improvements. Does not include nuclear fuel assemblies.	20	15	20
49.121	**Electric Utility Nuclear Fuel Assemblies:** Includes initial core and replacement core nuclear fuel assemblies (i.e., the composite of fabricated nuclear fuel and container) when used in a boiling water, pressurized water, or high temperature gas reactor used in the production of electricity. Does not include nuclear fuel assemblies used in breader reactors.	5	5	5
49.13	**Electric Utility Steam Production Plant:** Includes assets used in the steam power production of electricity for sale, combustion turbines operated in a combined cycle with a conventional steam unit and related land improvements. Also includes package boilers, electric generators and related assets such as electricity and steam distribution systems as used by a waste reduction and resource recovery plant if the steam or electricity is normally for sale to others.	28	20	28
49.14	**Electric Utility Transmission and Distribution Plant:** Includes assets used in the transmission and distribution of electricity for sale and related land improvements. Excludes initial clearing and grading land improvements as specified in Rev. Rul. 72-403, 1972-2 C.B. 102.	30	20	30
49.15	**Electric Utility Combustion Turbine Production Plant:** Includes assets used in the production of electricity for sale by the use of such prime movers as jet engines, combustion turbines, diesel engines, gasoline engines, and other internal combustion engines, their associated power turbines and/or generators, and related land improvements. Does not include combustion turbines operated in a combined cycle with a conventional steam unit.	20	15	20
49.21	**Gas Utility Distribution Facilities:** Includes gas water heaters and gas conversion equipment installed by utility on customers' premises on a rental basis.	35	20	35
49.221	**Gas Utility Manufactured Gas Production Plants:** Includes assets used in the manufacture of gas having chemical and/or physical properties which do not permit complete interchangeability with domestic natural gas. Does not include gas-producing systems and related systems used in waste reduction and resource recovery plants which are elsewhere classified.	30	20	30
49.222	**Gas Utility Substitute Natural Gas (SNG) Production Plant (naphtha or lighter hydrocarbon feedstocks):** Includes assets used in the catalytic conversion of feedstocks or naphtha or lighter hydrocarbons to a gaseous fuel which is completely interchangeable with domestic natural gas.	14	7	14
49.223	**Substitute Natural Gas—Coal Gasification:** Includes assets used in the manufacture and production of pipeline quality gas from coal using the basic Lurgi process with advanced methanation. Includes all process plant equipment and structures used in this coal gasification process and all utility assets such as cooling systems, water supply and treatment facilities, and assets used in the production and distribution of electricity and steam for use by the taxpayer in a gasification plant and attendant coal mining site processes but not for assets used in the production and distribution of electricity and steam for sale to others. Also includes all other related land improvements. Does not include assets used in the direct mining and treatment of coal prior to the gasification process itself.	18	10	18
49.23	**Natural Gas Production Plant**	14	7	14
49.24	**Gas Utility Trunk Pipelines and Related Storage Facilities:** Excluding initial clearing and grading land improvements as specified in Rev. Rul. 72-40.	22	15	22
49.25	**Liquefied Natural Gas Plant:** Includes assets used in the liquefaction, storage, and regasification of natural gas including loading and unloading connections, instrumentation equipment and controls, pumps, vaporizers and odorizers, tanks, and related land improvements. Also includes pipeline interconnections with gas transmission lines and distribution systems and marine terminal facilities.	22	15	22

Table B-2. **Table of Class Lives and Recovery Periods**

Asset class	Description of assets included	Class Life (in years)	Recovery Periods (in years) GDS (MACRS)	ADS
49.3	**Water Utilities:** Includes assets used in the gathering, treatment, and commercial distribution of water.	50	20***	50
49.4	**Central Steam Utility Production and Distribution:** Includes assets used in the production and distribution of steam for sale. Does not include assets used in waste reduction and resource recovery plants which are elsewhere classified.	28	20	28
49.5	**Waste Reduction and Resource Recovery Plants:** Includes assets used in the conversion of refuse or other solid waste or biomass to heat or to a solid, liquid, or gaseous fuel. Also includes all process plant equipment and structures at the site used to receive, handle, collect, and process refuse or other solid waste or biomass in a waterwall, combustion system, oil or gas pyrolysis system, or refuse derived fuel system to create hot water, gas, steam and electricity. Includes material recovery and support assets used in refuse or solid refuse or solid waste receiving, collecting, handling, sorting, shredding, classifying, and separation systems. Does not include any package boilers, or electric generators and related assets such as electricity, hot water, steam and manufactured gas production plants classified in classes 00.4, 49.13, 49.221, and 49.4. Does include, however, all other utilities such as water supply and treatment facilities, ash handling and other related land improvements of a waste reduction and resource recovery plant.	10	7	10
50.	**Municipal Wastewater Treatment Plant**	24	15	24
51.	**Municipal Sewer**	50	20***	50
57.0	**Distributive Trades and Services:** Includes assets used in wholesale and retail trade, and personal and professional services. Includes section 1245 assets used in marketing petroleum and petroleum products.	9	5	9*
57.1	**Distributive Trades and Services—Billboard, Service Station Buildings and Petroleum Marketing Land Improvements:** Includes section 1250 assets, including service station buildings and depreciable land improvements, whether section 1245 property or section 1250 property, used in the marketing of petroleum and petroleum products, but not including any of these facilities related to petroleum and natural gas trunk pipelines. Includes car wash buildings and related land improvements. Includes billboards, whether such assets are section 1245 property or section 1250 property. Excludes all other land improvements, buildings and structural components as defined in section 1.48-1(e) of the regulations. See *Gas station convenience stores* in chapter 3.	20	15	20
79.0	**Recreation:** Includes assets used in the provision of entertainment services on payment of a fee or admission charge, as in the operation of bowling alleys, billiard and pool establishments, theaters, concert halls, and miniature golf courses. Does not include amusement and theme parks and assets which consist primarily of specialized land improvements or structures, such as golf courses, sports stadia, race tracks, ski slopes, and buildings which house the assets used in entertainment services.	10	7	10
80.0	**Theme and Amusement Parks:** Includes assets used in the provision of rides, attractions, and amusements in activities defined as theme and amusement parks, and includes appurtenances associated with a ride, attraction, amusement or theme setting within the park such as ticket booths, facades, shop interiors, and props, special purpose structures, and buildings other than warehouses, administration buildings, hotels, and motels. Includes all land improvements for or in support of park activities (e.g., parking lots, sidewalks, waterways, bridges, fences, landscaping, etc.), and support functions (e.g., food and beverage retailing, souvenir vending and other nonlodging accommodations) if owned by the park and provided exclusively for the benefit of park patrons. Theme and amusement parks are defined as combinations of amusements, rides, and attractions which are permanently situated on park land and open to the public for the price of admission. This guideline class is a composite of all assets used in this industry except transportation equipment (general purpose trucks, cars, airplanes, etc., which are included in asset guideline classes with the prefix 00.2), assets used in the provision of administrative services (asset classes with the prefix 00.1) and warehouses, administration buildings, hotels and motels.	12.5	7	12.5
	Certain Property for Which Recovery Periods Assigned			
	A. Personal Property With No Class Life		7	12
	Section 1245 Real Property With No Class Life		7	40
	B. Qualified Technological Equipment, as defined in section 168(i)(2).	**	5	5
	C. Property Used in Connection with Research and Experimentation referred to in section 168(e)(3)(B).	**	5	class life if no class life—12
	D. Alternative energy property described in sections 48(l)(3)(A)(ix) (as in effect on the day before the date of enactment (11/5/90) of the Revenue Reconciliation Act of 1990).	**	5	class life if no class life—12
	E. Biomass property described in section 48(l)(15) (as in effect on the day before the date of enactment (11/5/90) of the Revenue Reconciliation Act of 1990) and is a qualifying small production facility within the meaning of section 3(17)(c) of the Federal Power Act (16 U.S.C. 796(17)(C)), as in effect on September 1, 1986.	**	5	class life if no class life—12
	F. Energy property described in section 48(a)(3)(A) (or would be described if "solar or wind energy" were substituted for "solar energy" in section 48(a)(3)(A)(i)).	**	5	class life if no class life—12

* Any high technology medical equipment as defined in section 168(i)(2)(C) which is described in asset guideline class 57.0 is assigned a 5-year recovery period for the alternate MACRS method.

** The class life (if any) of property described in classes B, C, D, E, or F is determined by reference to the asset guideline classes. If an item of property described in paragraphs B, C, D, E, or F is not described in any asset guideline class, such item of property has no class life.

*** Use straight line over 25 years if placed in service after June 12, 1996, unless placed in service under a binding contract in effect before June 10, 1996, and at all times until placed in service.

EAS000118

Glossary

Abstract fees: Expenses generally paid by a buyer to research the title of real property.

Active conduct of a trade or business: Generally, for the section 179 deduction, a taxpayer is considered to conduct a trade or business actively if he or she meaningfully participates in the management or operations of the trade or business. A mere passive investor in a trade or business does not actively conduct the trade or business.

Adjusted basis: The original cost of property, plus certain additions and improvements, minus certain deductions such as depreciation allowed or allowable and casualty losses.

Amortization: A ratable deduction for the cost of intangible property over its useful life.

Amount realized: The total of all money received plus the fair market value of all property or services received from a sale or exchange. The amount realized also includes any liabilities assumed by the buyer and any liabilities to which the property transferred is subject, such as real estate taxes or a mortgage.

Basis: A measure of an individual's investment in property for tax purposes.

Business/investment use: Usually, a percentage showing how much an item of property, such as an automobile, is used for business and investment purposes.

Capitalized: Expended or treated as an item of a capital nature. A capitalized amount is not deductible as a current expense and must be included in the basis of property.

Circumstantial evidence: Details or facts which indirectly point to other facts.

Class life: A number of years that establishes the property class and recovery period for most types of property under the General Depreciation System (GDS) and Alternative Depreciation System (ADS).

Commuting: Travel between a personal home and work or job site within the area of an individual's tax home.

Convention: A method established under the Modified Accelerated Cost Recovery System (MACRS) to determine the portion of the year to depreciate property both in the year the property is placed in service and in the year of disposition.

Declining balance method: An accelerated method to depreciate property. The General Depreciation System (GDS) of MACRS uses the 150% and 200% declining balance methods for certain types of property. A depreciation rate (percentage) is determined by dividing the declining balance percentage by the recovery period for the property.

Disposition: The permanent withdrawal from use in a trade or business or from the production of income.

Documentary evidence: Written records that establish certain facts.

Exchange: To barter, swap, part with, give, or transfer property for other property or services.

Fair market value (FMV): The price that property brings when it is offered for sale by one who is willing but not obligated to sell, and is bought by one who is willing or desires to buy but is not compelled to do so.

Fiduciary: The one who acts on behalf of another as a guardian, trustee, executor, administrator, receiver, or conservator.

Fungible commodity: A commodity of a nature that one part may be used in place of another part.

Goodwill: An intangible property such as the advantage or benefit received in property beyond its mere value. It is not confined to a name but can also be attached to a particular area where business is transacted, to a list of customers, or to other elements of value in business as a going concern.

Grantor: The one who transfers property to another.

Improvement: An addition to or partial replacement of property that adds to its value, appreciably lengthens the time you can use it, or adapts it to a different use.

Intangible property: Property that has value but cannot be seen or touched, such as goodwill, patents, copyrights, and computer software.

Listed property: Passenger automobiles; any other property used for transportation; and property of a type generally used for entertainment, recreation or amusement.

Nonresidential real property: Most real property other than residential rental property.

Placed in service: Ready and available for a specific use whether in a trade or business, the production of income, a tax-exempt activity, or a personal activity.

Property class: A category for property under MACRS. It generally determines the depreciation method, recovery period, and convention.

Recapture: To include as income on your return an amount allowed or allowable as a deduction in a prior year.

Recovery period: The number of years over which the basis of an item of property is recovered.

Remainder interest: That part of an estate that is left after all the other provisions of a will have been satisfied.

Residential rental property: Real property, generally buildings or structures, if 80% or more of its annual gross rental income is from dwelling units.

Salvage value: An estimated value of property at the end of its useful life. Not used under MACRS.

Section 1245 property: Property that is or has been subject to an allowance for depreciation or amortization. Section 1245 property includes personal property, single purpose agricultural and horticultural structures, storage facilities used in connection with the distribution of petroleum or primary products of petroleum, and railroad grading or tunnel bores.

Section 1250 property: Real property (other than section 1245 property) which is or has been subject to an allowance for depreciation.

Standard mileage rate: The established amount for optional use in determining a tax deduction for automobiles instead of deducting depreciation and actual operating expenses.

Straight line method: A way to figure depreciation for property that ratably deducts the same amount for each year in the recovery period. The rate (in percentage terms) is determined by dividing 1 by the number of years in the recovery period.

Structural components: Parts that together form an entire structure, such as a building. The term includes those parts of a building such as walls, partitions, floors, and ceilings, as well as any permanent coverings such as paneling or tiling, windows and doors, and all components of a central air conditioning or heating system including motors, compressors, pipes and ducts. It also includes plumbing fixtures such as sinks, bathtubs, electrical wiring and lighting fixtures, and other parts that form the structure.

Tangible property: Property you can see or touch, such as buildings, machinery, vehicles, furniture, and equipment.

Tax-exempt: Not subject to tax.

Term interest: A life interest in property, an interest in property for a term of years, or an income interest in a trust. It generally refers to a present or future interest in income from property or the right to use property that terminates or fails upon the lapse of time, the occurrence of an event, or the failure of an event to occur.

Unadjusted basis: The basis of an item of property for purposes of figuring gain on a sale without taking into account any depreciation taken in earlier years but with adjustments for other amounts, including amortization, the section 179 deduction, any special depreciation allowance, any deduction claimed for clean-fuel vehicles or clean-fuel vehicle refueling property placed in service before January 1, 2006, and any electric vehicle credit.

Unit-of-production method: A way to figure depreciation for certain property. It is determined by estimating the number of units that can be produced before the property is worn out. For example, if it is estimated that a machine will produce 1000 units before its useful life ends, and it actually produces 100 units in a year, the percentage to figure depreciation for that year is 10% of the machine's cost less its salvage value.

Useful life: An estimate of how long an item of property can be expected to be usable in trade or business or to produce income.

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To help us develop a more useful index, please let us know if you have ideas for index entries. See "Comments and Suggestions" in the "Introduction" for the ways you can reach us.

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Tax Publications for Business Taxpayers

See *How To Get Tax Help* for a variety of ways to get publications, including by computer, phone, and mail.

General Guides

1 Your Rights as a Taxpayer
17 Your Federal Income Tax
334 Tax Guide for Small Business
910 IRS Guide to Free Tax Services

Employer's Guides

15 (Circular E), Employer's Tax Guide
15-A Employer's Supplemental Tax Guide
15-B Employer's Tax Guide to Fringe Benefits
51 (Circular A), Agricultural Employer's Tax Guide
80 (Circular SS), Federal Tax Guide for Employers in the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands
926 Household Employer's Tax Guide

Specialized Publications

225 Farmer's Tax Guide
463 Travel, Gift, and Car Expenses
505 Tax Withholding and Estimated Tax
510 Excise Taxes
515 Withholding of Tax on Nonresident Aliens and Foreign Entities
517 Social Security and Other Information for Members of the Clergy and Religious Workers
527 Residential Rental Property
534 Depreciating Property Placed in Service Before 1987
535 Business Expenses
536 Net Operating Losses (NOLs) for Individuals, Estates, and Trusts
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544 Sales and Other Dispositions of Assets
551 Basis of Assets
556 Examination of Returns, Appeal Rights, and Claims for Refund
560 Retirement Plans for Small Business
561 Determining the Value of Donated Property
583 Starting a Business and Keeping Records
587 Business Use of Your Home
594 The IRS Collection Process
597 Information on the United States-Canada Income Tax Treaty
598 Tax on Unrelated Business Income of Exempt Organizations
901 U.S. Tax Treaties
908 Bankruptcy Tax Guide
925 Passive Activity and At-Risk Rules
946 How To Depreciate Property
947 Practice Before the IRS and Power of Attorney
966 Electronic Federal Tax Payment System: A Guide to Getting Started
1544 Reporting Cash Payments of Over $10,000
1546 Taxpayer Advocate Service: Your Voice at the IRS

Spanish Language Publications

1SP Derechos del Contribuyente
179 (Circular PR), Guía Contributiva Federal para Patronos Puertorriqueños
594SP El Proceso de Cobro del IRS
850 (EN/SP) English-Spanish Glossary of Words and Phrases
1544SP Informe de Pagos en Efectivo en Exceso de $10,000

Commonly Used Tax Forms

See *How To Get Tax Help* for a variety of ways to get forms, including by computer, phone, and mail.

Form Number and Title		Catalog Number
W-2	Wage and Tax Statement	10134
W-4	Employee's Withholding Certificate	10220
940	Employer's Annual Federal Unemployment (FUTA) Tax Return	11234
941	Employer's QUARTERLY Federal Tax Return	17001
1040 or 1040-SR	U.S. Individual Income Tax Return	11320
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Sch R	Credit for the Elderly or the Disabled	11359
Sch SE	Self-Employment Tax	11358
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1040-X	Amended U.S. Individual Income Tax Return	11360
1065	U.S. Return of Partnership Income	11390
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Sch K-1	Partner's Share of Income, Deductions, Credits, etc.	11394
1120	U.S. Corporation Income Tax Return	11450
1120-S	U.S. Income Tax Return for an S Corporation	11510
Sch D	Capital Gains and Losses and Built-In Gains	11516
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2106	Employee Business Expenses	11700
2210	Underpayment of Estimated Tax by Individuals, Estates, and Trusts	11744
2441	Child and Dependent Care Expenses	11862
2848	Power of Attorney and Declaration of Representative	11980
3800	General Business Credit	12392
3903	Moving Expenses	12490
4562	Depreciation and Amortization	12906
4797	Sales of Business Property	13086
4868	Application for Automatic Extension of Time To File U.S. Individual Income Tax Return	13141
5329	Additional Taxes on Qualified Plans (Including IRAs) and Other Tax-Favored Accounts	13329
6252	Installment Sale Income	13601
8283	Noncash Charitable Contributions	62299
8300	Report of Cash Payments Over $10,000 Received in a Trade or Business	62133
8582	Passive Activity Loss Limitations	63704
8606	Nondeductible IRAs	63966
8822	Change of Address	12081
8822-B	Change of Address or Responsible Party—Business	57465
8829	Expenses for Business Use of Your Home	13232
8949	Sales and Other Dispositions of Capital Assets	37768
8959	Additional Medicare Tax	59475

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WHITE PAPER

April 2020

Underutilized Sources of Public Capital for the Clean Energy Sector

Even in uncomplicated times, accessing capital and other forms of financial support can be challenging. We summarize here a cross-section of federal and, on an exemplary basis, state financial support mechanisms currently available to the clean energy sector, beyond the historic, now waning Production Tax Credit and Investment Tax Credit. These programs—premised on the contribution to our innovation economy, domestic manufacturing and national security of renewables, energy efficiency solutions and storage systems—are available to developers, entrepreneurs, and investors. They offer a diverse quiver of arrows ranging from direct loans and grants, through loan guarantees and tax benefits, to opportunities for R&D collaboration with this nation's National Laboratories. We specifically highlight underutilized programs, but also include programs that, however well known in some circles, may now engage a broader coalition. Collectively, these financial support systems, some competitively awarded, are expected to allocate tens of billions of dollars across the spectrum of clean energy ventures and projects. They also may carry collateral benefits, reputational and otherwise.

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The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") focused on providing quick and direct relief to businesses and individuals. It did not include provisions related to the federal wind production tax credit ("PTC") or the federal solar investment tax credit ("ITC"), tax credits that the energy sector employs to advance lower-cost capital. Nonetheless, various federal and state sources of capital and public support, including in the forms of grants and loan guarantees, remain available to developers, investors, and entrepreneurs in connection with renewables, energy efficiency solutions, and energy storage platforms.

We focus here on a cross-section of these financial mechanisms, premised on the innovation, domestic manufacturing, and national security value of renewables, energy efficiency solutions, and storage systems. To the extent that the clean energy sector experiences COVID-19-related disruptions in access to capital, possible solutions may include currently available federal and state support mechanisms, such as the underutilized federal New Markets Tax Credit ("NMTC") program and the federal Rural Energy for America Program ("REAP") renewables-based loans, loan guarantees, and grants. In addition, we highlight comparable mechanisms, including innovation-based grants offered by the U.S. Department of Energy ("DOE"), and states, particularly the New York State Energy Research & Development Agency ("NYSERDA") and the Massachusetts Clean Energy Center ("MassCEC"). Finally, we summarize the current status of the PTC and ITC.

RENEWABLES AND EFFICIENCY GRANT, LOAN GUARANTEE, AND TAX CREDIT PROGRAMS

The NMTC program is designed to incentivize community development, job creation, and economic growth by attracting private investment to underserved communities. Approximately 40% of the U.S. census tracts qualify for NMTC investment—broadly, that encompasses census tracts where the individual poverty rate is at least 20% and the median family income does not exceed 80% of the area median. The NMTC program allows qualifying individual and corporate taxpayers to receive federal income tax credits in exchange for equity investments in vehicles certified as Community Development Entities ("CDEs") by the U.S. Treasury Department under its Community Development Financial Institutions Fund (the "CDI Fund"). CDEs that receive tax credit allocation authority under the program include U.S. corporations or partnerships that provide loans, investments, or financial counseling in low-income urban and rural communities. A CDE investor will receive a tax credit equal to 39% of its investment over a seven-year period, separate and apart from its returns on that investment. Accordingly, an NMTC investment can be very attractive to a CDE investor. CDEs then use that investment capital to provide flexible, affordable financing for environmentally sustainable projects within those underserved communities. From 2003 through late 2019, this program has allocated $52B in tax credits, including for wind projects, across all 50 states, the District of Columbia, and Puerto Rico. The NMTC is set to expire on December 31, 2020, but has previously been extended and is being considered for extension once again. As such, new allocations under the NMTC program will end in 2020 unless Congress acts. Various states also have NMTC programs.

Under REAP, the U.S. Department of Agriculture ("DOA") provides agricultural producers and rural small businesses with loan guarantees for renewable energy systems, including small and large solar and wind generation projects, as well as hydrogen, biomass, and geothermal projects. Entities that earn at least 50% of their gross income from agricultural operations qualify as "agricultural producers" under REAP and small businesses in municipal areas (i.e., cities or towns) with fewer than 50,000 inhabitants generally qualify as "rural small businesses" thereunder. REAP provides loan guarantees for up to 75% of total eligible project costs.[1] Applicants must provide at least 25% of the project costs and demonstrate sufficient revenue to repay the loan and cover project operation and maintenance expenses. In addition to loan guarantees, REAP provides grant funding to agricultural producers and rural small businesses to install renewable energy systems or make energy efficiency improvements. Renewable energy system grants range from $2,500 to $500,000, can be used to fund up to 25% of total eligible project costs, and can be combined with loan guarantees up to specified limits. Through REAP, the DOA has awarded approximately $1.3 billion in loan guarantees and $42 million in grants for nearly 350 wind energy systems to date.

DOE's loan guarantee program, administered through its Loan Programs Office ("LPO"), provides financing solutions to large-scale energy infrastructure projects as part of a mandate in the Energy Policy Act of 2005 (with regulations amended in

late 2016).[2] Up to $4.5 billion is currently available in loan guarantees for innovative (so-called "New or Significantly Improved Technology") and energy efficiency projects, with nearly $18 billion available as direct loans for advanced vehicles manufacturing. Obtaining loans and loan guarantees can be a significant undertaking. Further, the program is not without substantial cost to the applicant, including DOE's administrative costs, costs attributable to the applicant's credit risk and a cost allocation based on project risk. Nonetheless, an initial consultation with the LPO is on a "no fee, no commitment" basis, and therefore worth consideration. Further, our experience is that such programs can offer substantial direct and indirect value, including in the latter category reputational value. Through 2019, the LPO has issued more than $35 billion in loans and loan guarantees for more than 30 projects, with an overall positive performance record.

COMPETITIVE CLEAN ENERGY INNOVATION AND DEPLOYMENT OPPORTUNITIES

COVID-19 has prompted a renewed focus on research and development ("R&D"), domestic innovation, and energy security. To that end, we highlight certain R&D and commercialization grants that may be available for energy sector participants beyond the current Small Business Administration ("SBA") mechanisms in the CARES Act. These opportunities cover all stages of business activities, from R&D to project deployment, with a focus on innovative clean energy, and offer a broad range of direct and indirect benefits, including non-dilutive capital, independent technical validation, and the opportunity for access to extraordinary equipment, systems, and personnel. Awards are generally competitive (i.e., merit based), in some cases (including as a result of the Energy Policy Act of 2005) require impartial assessment of scientific or technical merit, and often reward public-private partnerships ("P3s"). DOE has deployed approximately $2B annually in the form of grants and cooperative agreements to public and private entities, including nonprofits.

- DOE's Office of Energy Efficiency and Renewable Energy ("EERE") offers grants and cooperative agreements to encourage R&D and deployment of a broad range of renewable energy, energy efficiency, and related technologies. Funding opportunities vary, but typically are focused on technology or systems development, not on startup funding, which is the focus of other DOE programs (including those noted below). Unsolicited proposals may be submitted, but must conform to applicable regulatory and guidance standards. Businesses in nearly every state have received EERE support. Energy efficiency includes innovation in plastics recycling and reductions (for example, highly recyclable or biodegradable plastics). While there is a wide range in terms of award amount, awards in the $1 million to $3 million range are typical at the lower end and often run for 12 to 36 months. Here is a link to open funding opportunities or solicitations, some of which reflect COVID-19 extensions.

- DOE also has multiple, sector-based divisions that generate, issue, and award competitively sourced grants. For example, DOE's Wind Energy Technologies Office ("WETO") focuses on technological developments designed to improve the reliability and affordability of wind energy and address barriers to deployment via competitively sourced grants focused on more efficient technologies that lower the cost of wind energy. DOE's Solar Energy Technology Office ("SETO") does the same for the solar sector, focusing on photovoltaics, concentrating solar power and systems integration. Demonstration projects have received such grants and SETO recently featured a grant for integrated thermal energy storage and Brayton cycle equipment demonstrations of $39M for one to two projects. The EERE link above includes these opportunities. Moreover, each division hosts webinars that are useful for first-time applicants.

- DOE's Advanced Research Projects Agency-Energy ("ARPA-E") provides grants for applied R&D related to advanced or transformative technologies addressing energy creation, distribution, and use. It is ideally suited to disruptive technologies, some of which may be too early-stage for private-sector investment alone. ARPA-E advances disruptive technologies with the potential to radically improve national and economic security, as well as our collective environmental well-being. ARPA-E remains

a well-known resource in the clean energy venture community, and the breadth of its awards is noteworthy, with recent funding announcements focused on ambient plastics reductions, not to mention fusion.

- DOE's Office of Technology Transitions Technology Commercialization Fund ("TCF") matches funds from private partners and provides equipment, services, and personnel, to promote promising energy technologies developed at DOE's National Laboratories including via cooperative research and development agreements ("CRADAs") governing joint development work.

Various states have undertaken clean energy initiatives, some modelled on or synergistic with federal programs. We highlight two such programs here, again on an exemplary basis.

- In order to support advancement of New York's carbon neutral electricity sector, innovation economy, and job growth, NYSERDA funds all aspects of the business cycle for a broad range of technologies, including Smart Grid technologies for New York-based businesses. Multi-year funding totals in the billions, with substantial price support in the form of offtake agreements to the wind sector. For example, NYSERDA's Storage Incentives offer a variety of incentives and support for storage innovation, including seed capital and grants. Here is a link to the NYSERDA energy storage program. The New York Green Bank, a specialized financial entity and division of NYSERDA, employs its own parallel strategies to advance private finance of clean energy technologies, systems, and projects, typically by leading rounds in comparatively small investments.

- MassCEC, the Massachusetts counterpart to NYSERDA, has an express mission of supporting innovators, entrepreneurs, and businesses through the so-called "valley of death" that new businesses in emergent sectors can experience. Among its many programs, the MassCEC adds its support or amplifies federal awards issued by the DOE or ARPA-E, among others, with up to $500,000 of additional capital. MassCEC provides seed investment to advance and commercialize clean energy technologies and businesses in the form of convertible notes up to $250,000. Here is a link to each MassCEC program.

WANING CLEAN ENERGY TAX CREDITS

Two tax credits, the PTC and the ITC, have played a historically important role in U.S. renewables development. The PTC allows owners and developers of both onshore and offshore wind energy facilities to claim a federal income tax credit on every kilowatt-hour of electricity generated during the ten year period after a facility is placed in service. For facilities that break ground from 2017 through 2020, the amount of the allowable credit is based on when the project commences construction. The PTC was scheduled to phase-down over time and expire in 2020 and therefore would have been unavailable to projects beginning construction after 2019, but was extended and increased during a single additional year, allowing specified renewables projects that commence construction in 2020 to be eligible for a 60% PTC.[3] Because the revised phase-down schedule actually increases (in an out-of-step fashion) the credit for projects beginning construction in 2020, projects may undertake, consistent with IRS guidance, to analyze and shift the "beginning of construction" threshold so as to fall within the 2020 year class and accordingly claim a 60% PTC, rather than a 40% PTC for projects commencing construction in 2019. Tax credit insurance has played, and will continue to play, an important role in these transactions. Currently, there is no PTC for projects for which construction begins after 2020.

The ITC is a federal income tax credit for capital investments in renewable energy projects. Unlike the PTC, the ITC is a one-time credit based on the investment value, earned when the project is placed into service. The ITC is particularly significant for capital-intensive projects, such as solar or offshore wind, but is most commonly used today for solar projects. Nonetheless, the ITC is phasing down. With respect to the ITC, owners and developers of large-scale wind energy facilities that commence construction prior to 2021 can elect to claim the ITC in lieu of the PTC, with some noteworthy nuances. For large-scale wind projects that elect to use the ITC instead of the PTC, the credit is reduced from the traditional 30% to 18% if construction begins in 2020; for solar projects, the credit is reduced from 30% to 26% if construction begins in 2020 and to 22% if construction begins in 2021. Currently, there is no ITC available for projects that commence construction after 2020 (for most wind projects) and 2021 (for most solar projects).

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ENDNOTES

1 REAP regulations are available at 7 C.F.R. § 4280.101, Subpart B (final rules promulgated with useful commentary at 79 Fed.Reg. 78220 (December 29, 2014)).

2 Current regulations are available at 10 C.F.R. Part 609 (final rule promulgated with useful commentary at 81 Fed.Reg. 90699 (December 15, 2016)).

3 Thus, current PTC eligibility is as follows: 100% PTC if construction began during 2016 or earlier; 80% PTC if construction began during 2017; 60% PTC if construction began during 2018; 40% PTC if construction began during 2019; and 60% PTC if construction begins during 2020.

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Part III. Administrative, Procedural, and Miscellaneous

Designated Qualified Opportunity Zones under Internal Revenue Code § 1400Z–2

Notice 2018–48

PURPOSE

This notice lists the population census tracts the Secretary of the Treasury (Secretary) designates as qualified opportunity zones (Zones).

BACKGROUND

Section 13823 of "An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for the fiscal year 2018," P.L. 115–97, which was enacted December 22, 2017, amended the Internal Revenue Code (Code) by adding §§ 1400Z–1 and 1400Z–2. Section 1400Z–1(b)(1)(A) of the Code allows the Chief Executive Officer (CEO) of each State to nominate a limited number of population census tracts to be designated as Zones for purposes of §§ 1400Z–1 and 1400Z–2.

Revenue Procedure 2018–16, 2018–9 I.R.B. 383, provided guidance to State CEOs on the procedure for making these nominations. Section 1400Z–1(b)(1)(B) of the Code provides that after the Secretary receives notice of the nominations, the Secretary may certify the nominations and designate the nominated tracts as Zones.

LIST OF DESIGNATED QUALIFIED OPPORTUNITY ZONES

Following is the complete list of all population census tracts that the Secretary designated as Zones for purposes of §§ 1400Z–1 and 1400Z–2. The Internal Revenue Service will be governed by this list in administering § 1400Z–2.

State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Autauga	01001020700	Low-Income Community	2011–2015
Alabama	Baldwin	01003010200	Low-Income Community	2011–2015
Alabama	Baldwin	01003010400	Non-LIC Contiguous	2011–2015
Alabama	Baldwin	01003010500	Low-Income Community	2011–2015
Alabama	Baldwin	01003010600	Low-Income Community	2011–2015
Alabama	Baldwin	01003011501	Non-LIC Contiguous	2011–2015
Alabama	Baldwin	01003011502	Low-Income Community	2011–2015
Alabama	Barbour	01005950100	Low-Income Community	2011–2015
Alabama	Bibb	01007010002	Low-Income Community	2011–2015
Alabama	Blount	01009050500	Low-Income Community	2011–2015
Alabama	Bullock	01011952200	Low-Income Community	2011–2015
Alabama	Butler	01013952800	Low-Income Community	2012–2016
Alabama	Calhoun	01015000700	Low-Income Community	2011–2015
Alabama	Calhoun	01015000800	Low-Income Community	2011–2015
Alabama	Calhoun	01015002101	Low-Income Community	2011–2015
Alabama	Chambers	01017954300	Low-Income Community	2011–2015
Alabama	Cherokee	01019955900	Low-Income Community	2011–2015
Alabama	Chilton	01021060102	Low-Income Community	2011–2015
Alabama	Choctaw	01023956800	Low-Income Community	2011–2015
Alabama	Clarke	01025957902	Low-Income Community	2011–2015
Alabama	Clay	01027959000	Low-Income Community	2011–2015
Alabama	Cleburne	01029959600	Low-Income Community	2011–2015
Alabama	Coffee	01031010900	Low-Income Community	2011–2015
Alabama	Colbert	01033020200	Low-Income Community	2011–2015
Alabama	Conecuh	01035960400	Low-Income Community	2011–2015
Alabama	Coosa	01037961000	Low-Income Community	2011–2015
Alabama	Covington	01039962000	Low-Income Community	2011–2015
Alabama	Covington	01039962700	Low-Income Community	2011–2015
Alabama	Crenshaw	01041963700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Cullman	01043964800	Low-Income Community	2011–2015
Alabama	Cullman	01043965000	Low-Income Community	2011–2015
Alabama	Dale	01045020700	Low-Income Community	2011–2015
Alabama	Dallas	01047956500	Low-Income Community	2011–2015
Alabama	DeKalb	01049960900	Low-Income Community	2011–2015
Alabama	Elmore	01051031000	Low-Income Community	2011–2015
Alabama	Elmore	01051031300	Low-Income Community	2011–2015
Alabama	Escambia	01053970400	Low-Income Community	2011–2015
Alabama	Etowah	01055001200	Low-Income Community	2011–2015
Alabama	Fayette	01057020300	Low-Income Community	2011–2015
Alabama	Franklin	01059973700	Low-Income Community	2011–2015
Alabama	Geneva	01061050300	Low-Income Community	2011–2015
Alabama	Greene	01063060200	Low-Income Community	2011–2015
Alabama	Hale	01065040400	Low-Income Community	2011–2015
Alabama	Henry	01067030200	Low-Income Community	2011–2015
Alabama	Houston	01069041500	Low-Income Community	2011–2015
Alabama	Jackson	01071950600	Low-Income Community	2011–2015
Alabama	Jefferson	01073000100	Low-Income Community	2011–2015
Alabama	Jefferson	01073000300	Low-Income Community	2011–2015
Alabama	Jefferson	01073000400	Low-Income Community	2011–2015
Alabama	Jefferson	01073000500	Low-Income Community	2011–2015
Alabama	Jefferson	01073000700	Low-Income Community	2011–2015
Alabama	Jefferson	01073000800	Low-Income Community	2011–2015
Alabama	Jefferson	01073001200	Low-Income Community	2011–2015
Alabama	Jefferson	01073001400	Low-Income Community	2011–2015
Alabama	Jefferson	01073001500	Low-Income Community	2011–2015
Alabama	Jefferson	01073001600	Low-Income Community	2011–2015
Alabama	Jefferson	01073001902	Low-Income Community	2011–2015
Alabama	Jefferson	01073002200	Low-Income Community	2011–2015
Alabama	Jefferson	01073002303	Low-Income Community	2011–2015
Alabama	Jefferson	01073002400	Low-Income Community	2011–2015
Alabama	Jefferson	01073002700	Low-Income Community	2011–2015
Alabama	Jefferson	01073002900	Low-Income Community	2011–2015
Alabama	Jefferson	01073003001	Low-Income Community	2011–2015
Alabama	Jefferson	01073003002	Low-Income Community	2011–2015
Alabama	Jefferson	01073003200	Low-Income Community	2011–2015
Alabama	Jefferson	01073003900	Low-Income Community	2011–2015
Alabama	Jefferson	01073004200	Low-Income Community	2011–2015
Alabama	Jefferson	01073004500	Low-Income Community	2011–2015
Alabama	Jefferson	01073010200	Low-Income Community	2011–2015
Alabama	Jefferson	01073011209	Low-Income Community	2011–2015
Alabama	Jefferson	01073011705	Non-LIC Contiguous	2011–2015
Alabama	Jefferson	01073012002	Low-Income Community	2011–2015
Alabama	Jefferson	01073012701	Low-Income Community	2011–2015
Alabama	Jefferson	01073013100	Low-Income Community	2011–2015
Alabama	Lamar	01075030100	Low-Income Community	2011–2015
Alabama	Lauderdale	01077010100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Lauderdale	01077010900	Low-Income Community	2011–2015
Alabama	Lawrence	01079979100	Low-Income Community	2011–2015
Alabama	Lee	01081040200	Low-Income Community	2011–2015
Alabama	Lee	01081040300	Low-Income Community	2011–2015
Alabama	Lee	01081040604	Low-Income Community	2011–2015
Alabama	Lee	01081040700	Low-Income Community	2011–2015
Alabama	Lee	01081040800	Low-Income Community	2011–2015
Alabama	Lee	01081041100	Low-Income Community	2011–2015
Alabama	Lee	01081041300	Low-Income Community	2011–2015
Alabama	Limestone	01083020201	Low-Income Community	2011–2015
Alabama	Limestone	01083020600	Low-Income Community	2011–2015
Alabama	Limestone	01083020700	Low-Income Community	2011–2015
Alabama	Lowndes	01085780800	Low-Income Community	2011–2015
Alabama	Macon	01087231500	Low-Income Community	2011–2015
Alabama	Macon	01087231603	Low-Income Community	2011–2015
Alabama	Macon	01087232200	Low-Income Community	2011–2015
Alabama	Madison	01089000201	Low-Income Community	2011–2015
Alabama	Madison	01089000202	Low-Income Community	2011–2015
Alabama	Madison	01089001301	Low-Income Community	2011–2015
Alabama	Madison	01089001402	Low-Income Community	2011–2015
Alabama	Madison	01089001500	Low-Income Community	2011–2015
Alabama	Madison	01089002100	Low-Income Community	2011–2015
Alabama	Madison	01089002501	Low-Income Community	2011–2015
Alabama	Madison	01089003000	Low-Income Community	2011–2015
Alabama	Madison	01089003100	Low-Income Community	2011–2015
Alabama	Madison	01089010622	Low-Income Community	2011–2015
Alabama	Marengo	01091972900	Low-Income Community	2011–2015
Alabama	Marion	01093964400	Low-Income Community	2011–2015
Alabama	Marion	01093964500	Non-LIC Contiguous	2011–2015
Alabama	Marshall	01095030100	Low-Income Community	2011–2015
Alabama	Mobile	01097000200	Low-Income Community	2011–2015
Alabama	Mobile	01097000401	Low-Income Community	2011–2015
Alabama	Mobile	01097000600	Low-Income Community	2011–2015
Alabama	Mobile	01097001002	Low-Income Community	2011–2015
Alabama	Mobile	01097001200	Low-Income Community	2011–2015
Alabama	Mobile	01097001302	Low-Income Community	2011–2015
Alabama	Mobile	01097001400	Low-Income Community	2011–2015
Alabama	Mobile	01097001501	Low-Income Community	2011–2015
Alabama	Mobile	01097001502	Low-Income Community	2011–2015
Alabama	Mobile	01097002600	Low-Income Community	2011–2015
Alabama	Mobile	01097002800	Low-Income Community	2011–2015
Alabama	Mobile	01097003402	Low-Income Community	2011–2015
Alabama	Mobile	01097006403	Low-Income Community	2011–2015
Alabama	Mobile	01097007400	Low-Income Community	2011–2015
Alabama	Monroe	01099076000	Low-Income Community	2011–2015
Alabama	Montgomery	01101000100	Low-Income Community	2011–2015
Alabama	Montgomery	01101000200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Montgomery	01101000300	Low-Income Community	2011–2015
Alabama	Montgomery	01101000500	Low-Income Community	2011–2015
Alabama	Montgomery	01101000600	Low-Income Community	2011–2015
Alabama	Montgomery	01101001000	Low-Income Community	2011–2015
Alabama	Montgomery	01101001100	Low-Income Community	2011–2015
Alabama	Montgomery	01101002100	Low-Income Community	2011–2015
Alabama	Montgomery	01101002900	Low-Income Community	2011–2015
Alabama	Montgomery	01101005603	Low-Income Community	2011–2015
Alabama	Montgomery	01101005902	Low-Income Community	2011–2015
Alabama	Montgomery	01101006000	Low-Income Community	2011–2015
Alabama	Morgan	01103000100	Low-Income Community	2011–2015
Alabama	Perry	01105687000	Low-Income Community	2011–2015
Alabama	Pickens	01107050100	Low-Income Community	2011–2015
Alabama	Pike	01109189100	Low-Income Community	2011–2015
Alabama	Randolph	01111000500	Low-Income Community	2011–2015
Alabama	Russell	01113030200	Low-Income Community	2011–2015
Alabama	St. Clair	01115040203	Low-Income Community	2011–2015
Alabama	Shelby	01117030703	Low-Income Community	2011–2015
Alabama	Sumter	01119011300	Low-Income Community	2011–2015
Alabama	Talladega	01121010900	Low-Income Community	2011–2015
Alabama	Tallapoosa	01123962300	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125010403	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125010404	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011600	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011701	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011800	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012100	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012303	Non-LIC Contiguous	2011–2015
Alabama	Tuscaloosa	01125012405	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012600	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012800	Low-Income Community	2011–2015
Alabama	Walker	01127020400	Low-Income Community	2011–2015
Alabama	Washington	01129044200	Low-Income Community	2011–2015
Alabama	Wilcox	01131035100	Low-Income Community	2011–2015
Alabama	Winston	01133965700	Low-Income Community	2011–2015
Alaska	Aleutians East	02013000100	Low-Income Community	2011–2015
Alaska	Aleutians West	02016000100	Low-Income Community	2011–2015
Alaska	Anchorage	02020000300	Low-Income Community	2011–2015
Alaska	Anchorage	02020000600	Low-Income Community	2011–2015
Alaska	Anchorage	02020000702	Low-Income Community	2011–2015
Alaska	Anchorage	02020000703	Low-Income Community	2011–2015
Alaska	Anchorage	02020001000	Low-Income Community	2011–2015
Alaska	Anchorage	02020001900	Low-Income Community	2011–2015
Alaska	Anchorage	02020002000	Low-Income Community	2011–2015
Alaska	Bethel	02050000300	Low-Income Community	2011–2015
Alaska	Fairbanks North Star	02090000100	Low-Income Community	2011–2015
Alaska	Fairbanks North Star	02090000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Alaska	Fairbanks North Star	02090001100	Low-Income Community	2011–2015
Alaska	Haines	02100000100	Low-Income Community	2012–2016
Alaska	Hoonah-Angoon	02105000300	Low-Income Community	2011–2015
Alaska	Kenai Peninsula	02122000100	Low-Income Community	2011–2015
Alaska	Matanuska-Susitna	02170000401	Low-Income Community	2011–2015
Alaska	Matanuska-Susitna	02170000701	Low-Income Community	2012–2016
Alaska	Nome	02180000100	Low-Income Community	2011–2015
Alaska	North Slope	02185000200	Low-Income Community	2011–2015
Alaska	Northwest Arctic	02188000100	Low-Income Community	2011–2015
Alaska	Prince of Wales-Hyder	02198000100	Low-Income Community	2011–2015
Alaska	Prince of Wales-Hyder	02198940100	Low-Income Community	2011–2015
Alaska	Wrangell	02275000300	Low-Income Community	2011–2015
Alaska	Yukon-Koyukuk	02290000200	Low-Income Community	2011–2015
American Samoa	Eastern	60010950100	Low-Income Community	2011–2015
American Samoa	Eastern	60010950200	Low-Income Community	2011–2015
American Samoa	Eastern	60010950300	Low-Income Community	2011–2015
American Samoa	Eastern	60010950500	Low-Income Community	2011–2015
American Samoa	Eastern	60010950600	Low-Income Community	2011–2015
American Samoa	Eastern	60010950700	Low-Income Community	2011–2015
American Samoa	Eastern	60010950900	Low-Income Community	2011–2015
American Samoa	Manu'a	60020951800	Low-Income Community	2011–2015
American Samoa	Western	60050951000	Low-Income Community	2011–2015
American Samoa	Western	60050951100	Low-Income Community	2011–2015
American Samoa	Western	60050951201	Low-Income Community	2011–2015
American Samoa	Western	60050951202	Low-Income Community	2011–2015
American Samoa	Western	60050951203	Low-Income Community	2011–2015
American Samoa	Western	60050951300	Low-Income Community	2011–2015
American Samoa	Western	60050951500	Low-Income Community	2011–2015
American Samoa	Western	60050951600	Low-Income Community	2011–2015
Arizona	Apache	04001945100	Low-Income Community	2011–2015
Arizona	Apache	04001970200	Low-Income Community	2011–2015
Arizona	Apache	04001970502	Non-LIC Contiguous	2011–2015
Arizona	Cochise	04003000301	Low-Income Community	2011–2015
Arizona	Cochise	04003000600	Low-Income Community	2011–2015
Arizona	Cochise	04003001100	Low-Income Community	2011–2015
Arizona	Cochise	04003001702	Low-Income Community	2011–2015
Arizona	Coconino	04005000900	Low-Income Community	2011–2015
Arizona	Coconino	04005002200	Non-LIC Contiguous	2011–2015
Arizona	Coconino	04005002300	Low-Income Community	2011–2015
Arizona	Coconino	04005942202	Low-Income Community	2011–2015
Arizona	Coconino	04005945000	Low-Income Community	2011–2015
Arizona	Coconino	04005945100	Low-Income Community	2011–2015
Arizona	Coconino	04005945200	Low-Income Community	2011–2015
Arizona	Gila	04007000900	Low-Income Community	2011–2015
Arizona	Gila	04007001100	Low-Income Community	2012–2016
Arizona	Gila	04007940400	Low-Income Community	2011–2015
Arizona	Graham	04009961201	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Greenlee	04011960100	Non-LIC Contiguous	2011–2015
Arizona	Greenlee	04011960300	Low-Income Community	2011–2015
Arizona	La Paz	04012020100	Low-Income Community	2011–2015
Arizona	La Paz	04012940300	Low-Income Community	2011–2015
Arizona	Maricopa	04013040502	Low-Income Community	2011–2015
Arizona	Maricopa	04013050604	Low-Income Community	2011–2015
Arizona	Maricopa	04013050607	Low-Income Community	2011–2015
Arizona	Maricopa	04013050609	Low-Income Community	2011–2015
Arizona	Maricopa	04013060801	Low-Income Community	2011–2015
Arizona	Maricopa	04013060902	Low-Income Community	2011–2015
Arizona	Maricopa	04013061024	Non-LIC Contiguous	2011–2015
Arizona	Maricopa	04013061200	Low-Income Community	2011–2015
Arizona	Maricopa	04013061300	Low-Income Community	2011–2015
Arizona	Maricopa	04013071910	Low-Income Community	2011–2015
Arizona	Maricopa	04013071913	Low-Income Community	2011–2015
Arizona	Maricopa	04013082024	Low-Income Community	2011–2015
Arizona	Maricopa	04013082208	Low-Income Community	2011–2015
Arizona	Maricopa	04013092401	Low-Income Community	2011–2015
Arizona	Maricopa	04013092500	Low-Income Community	2011–2015
Arizona	Maricopa	04013092600	Low-Income Community	2011–2015
Arizona	Maricopa	04013092900	Low-Income Community	2011–2015
Arizona	Maricopa	04013093001	Low-Income Community	2011–2015
Arizona	Maricopa	04013093104	Low-Income Community	2011–2015
Arizona	Maricopa	04013103210	Low-Income Community	2011–2015
Arizona	Maricopa	04013104205	Low-Income Community	2011–2015
Arizona	Maricopa	04013104401	Low-Income Community	2011–2015
Arizona	Maricopa	04013104402	Low-Income Community	2011–2015
Arizona	Maricopa	04013105501	Low-Income Community	2011–2015
Arizona	Maricopa	04013105502	Low-Income Community	2011–2015
Arizona	Maricopa	04013105503	Low-Income Community	2011–2015
Arizona	Maricopa	04013106003	Low-Income Community	2011–2015
Arizona	Maricopa	04013106802	Low-Income Community	2011–2015
Arizona	Maricopa	04013107201	Low-Income Community	2011–2015
Arizona	Maricopa	04013107300	Low-Income Community	2011–2015
Arizona	Maricopa	04013107400	Low-Income Community	2011–2015
Arizona	Maricopa	04013108902	Low-Income Community	2011–2015
Arizona	Maricopa	04013109002	Low-Income Community	2011–2015
Arizona	Maricopa	04013109003	Low-Income Community	2011–2015
Arizona	Maricopa	04013109200	Low-Income Community	2011–2015
Arizona	Maricopa	04013109300	Low-Income Community	2011–2015
Arizona	Maricopa	04013110100	Low-Income Community	2011–2015
Arizona	Maricopa	04013111700	Low-Income Community	2011–2015
Arizona	Maricopa	04013112100	Low-Income Community	2011–2015
Arizona	Maricopa	04013112509	Low-Income Community	2011–2015
Arizona	Maricopa	04013112512	Low-Income Community	2011–2015
Arizona	Maricopa	04013112513	Low-Income Community	2011–2015
Arizona	Maricopa	04013113100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Maricopa	04013113203	Low-Income Community	2011–2015
Arizona	Maricopa	04013113300	Low-Income Community	2011–2015
Arizona	Maricopa	04013113801	Low-Income Community	2011–2015
Arizona	Maricopa	04013113900	Low-Income Community	2011–2015
Arizona	Maricopa	04013114000	Low-Income Community	2011–2015
Arizona	Maricopa	04013114100	Low-Income Community	2011–2015
Arizona	Maricopa	04013114200	Low-Income Community	2011–2015
Arizona	Maricopa	04013114800	Low-Income Community	2011–2015
Arizona	Maricopa	04013114900	Low-Income Community	2011–2015
Arizona	Maricopa	04013115200	Low-Income Community	2011–2015
Arizona	Maricopa	04013115300	Low-Income Community	2011–2015
Arizona	Maricopa	04013115400	Low-Income Community	2011–2015
Arizona	Maricopa	04013115801	Low-Income Community	2011–2015
Arizona	Maricopa	04013116500	Low-Income Community	2011–2015
Arizona	Maricopa	04013116900	Low-Income Community	2011–2015
Arizona	Maricopa	04013117200	Low-Income Community	2011–2015
Arizona	Maricopa	04013117300	Low-Income Community	2011–2015
Arizona	Maricopa	04013217201	Low-Income Community	2011–2015
Arizona	Maricopa	04013218000	Low-Income Community	2011–2015
Arizona	Maricopa	04013318400	Low-Income Community	2011–2015
Arizona	Maricopa	04013318800	Low-Income Community	2011–2015
Arizona	Maricopa	04013319104	Low-Income Community	2011–2015
Arizona	Maricopa	04013319202	Low-Income Community	2011–2015
Arizona	Maricopa	04013319705	Low-Income Community	2011–2015
Arizona	Maricopa	04013420206	Low-Income Community	2011–2015
Arizona	Maricopa	04013421302	Low-Income Community	2011–2015
Arizona	Maricopa	04013421303	Low-Income Community	2011–2015
Arizona	Maricopa	04013421304	Low-Income Community	2011–2015
Arizona	Maricopa	04013421400	Low-Income Community	2011–2015
Arizona	Maricopa	04013421501	Low-Income Community	2011–2015
Arizona	Maricopa	04013421502	Low-Income Community	2011–2015
Arizona	Maricopa	04013422203	Low-Income Community	2011–2015
Arizona	Maricopa	04013422401	Low-Income Community	2011–2015
Arizona	Maricopa	04013422641	Non-LIC Contiguous	2011–2015
Arizona	Maricopa	04013522800	Low-Income Community	2011–2015
Arizona	Maricopa	04013523102	Low-Income Community	2011–2015
Arizona	Maricopa	04013523104	Low-Income Community	2011–2015
Arizona	Maricopa	04013614700	Low-Income Community	2011–2015
Arizona	Maricopa	04013723305	Low-Income Community	2011–2015
Arizona	Maricopa	04013817600	Low-Income Community	2011–2015
Arizona	Maricopa	04013941100	Low-Income Community	2011–2015
Arizona	Maricopa	04013941300	Low-Income Community	2011–2015
Arizona	Mohave	04015940400	Low-Income Community	2011–2015
Arizona	Mohave	04015951602	Low-Income Community	2011–2015
Arizona	Mohave	04015951900	Low-Income Community	2011–2015
Arizona	Mohave	04015952400	Low-Income Community	2011–2015
Arizona	Mohave	04015953900	Non-LIC Contiguous	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Mohave	04015954800	Low-Income Community	2011–2015
Arizona	Mohave	04015955000	Low-Income Community	2011–2015
Arizona	Navajo	04017960500	Low-Income Community	2011–2015
Arizona	Navajo	04017963300	Low-Income Community	2011–2015
Arizona	Navajo	04017965300	Low-Income Community	2011–2015
Arizona	Pima	04019000100	Low-Income Community	2011–2015
Arizona	Pima	04019000200	Low-Income Community	2011–2015
Arizona	Pima	04019000300	Low-Income Community	2011–2015
Arizona	Pima	04019000400	Low-Income Community	2011–2015
Arizona	Pima	04019000800	Low-Income Community	2011–2015
Arizona	Pima	04019001200	Low-Income Community	2011–2015
Arizona	Pima	04019001302	Low-Income Community	2011–2015
Arizona	Pima	04019001303	Low-Income Community	2011–2015
Arizona	Pima	04019001801	Low-Income Community	2011–2015
Arizona	Pima	04019002201	Low-Income Community	2011–2015
Arizona	Pima	04019002202	Low-Income Community	2011–2015
Arizona	Pima	04019002300	Low-Income Community	2011–2015
Arizona	Pima	04019002501	Low-Income Community	2011–2015
Arizona	Pima	04019002901	Low-Income Community	2011–2015
Arizona	Pima	04019003501	Low-Income Community	2011–2015
Arizona	Pima	04019003802	Low-Income Community	2011–2015
Arizona	Pima	04019004011	Low-Income Community	2011–2015
Arizona	Pima	04019004067	Low-Income Community	2011–2015
Arizona	Pima	04019004112	Low-Income Community	2011–2015
Arizona	Pima	04019004115	Low-Income Community	2011–2015
Arizona	Pima	04019004116	Low-Income Community	2011–2015
Arizona	Pima	04019004117	Low-Income Community	2011–2015
Arizona	Pima	04019004122	Low-Income Community	2011–2015
Arizona	Pima	04019004504	Low-Income Community	2011–2015
Arizona	Pima	04019004613	Low-Income Community	2011–2015
Arizona	Pima	04019410502	Non-LIC Contiguous	2011–2015
Arizona	Pima	04019940900	Low-Income Community	2011–2015
Arizona	Pima	04019941000	Low-Income Community	2011–2015
Arizona	Pinal	04021000310	Low-Income Community	2011–2015
Arizona	Pinal	04021000400	Low-Income Community	2012–2016
Arizona	Pinal	04021000700	Low-Income Community	2011–2015
Arizona	Pinal	04021000901	Low-Income Community	2011–2015
Arizona	Pinal	04021001000	Low-Income Community	2011–2015
Arizona	Pinal	04021001500	Low-Income Community	2011–2015
Arizona	Pinal	04021001900	Low-Income Community	2011–2015
Arizona	Pinal	04021002103	Low-Income Community	2011–2015
Arizona	Pinal	04021002300	Non-LIC Contiguous	2011–2015
Arizona	Santa Cruz	04023966302	Low-Income Community	2011–2015
Arizona	Santa Cruz	04023966402	Low-Income Community	2011–2015
Arizona	Yavapai	04025000606	Low-Income Community	2011–2015
Arizona	Yavapai	04025000900	Low-Income Community	2011–2015
Arizona	Yavapai	04025001601	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Yavapai	04025002100	Low-Income Community	2011–2015
Arizona	Yuma	04027000100	Low-Income Community	2011–2015
Arizona	Yuma	04027000700	Low-Income Community	2011–2015
Arizona	Yuma	04027010913	Low-Income Community	2011–2015
Arizona	Yuma	04027011202	Low-Income Community	2011–2015
Arizona	Yuma	04027011403	Low-Income Community	2011–2015
Arizona	Yuma	04027011501	Low-Income Community	2011–2015
Arizona	Yuma	04027011600	Low-Income Community	2011–2015
Arizona	Yuma	04027012100	Low-Income Community	2011–2015
Arkansas	Arkansas	05001480400	Low-Income Community	2011–2015
Arkansas	Ashley	05003960600	Low-Income Community	2011–2015
Arkansas	Benton	05007020301	Low-Income Community	2011–2015
Arkansas	Benton	05007021101	Low-Income Community	2011–2015
Arkansas	Boone	05009790501	Low-Income Community	2011–2015
Arkansas	Bradley	05011950300	Low-Income Community	2011–2015
Arkansas	Carroll	05015950300	Low-Income Community	2011–2015
Arkansas	Chicot	05017080300	Low-Income Community	2011–2015
Arkansas	Clark	05019953900	Low-Income Community	2011–2015
Arkansas	Cleburne	05023480300	Low-Income Community	2011–2015
Arkansas	Columbia	05027950200	Low-Income Community	2011–2015
Arkansas	Conway	05029950300	Low-Income Community	2011–2015
Arkansas	Craighead	05031000101	Low-Income Community	2011–2015
Arkansas	Craighead	05031000502	Low-Income Community	2011–2015
Arkansas	Craighead	05031000602	Low-Income Community	2011–2015
Arkansas	Crawford	05033020501	Low-Income Community	2011–2015
Arkansas	Crittenden	05035030600	Low-Income Community	2011–2015
Arkansas	Crittenden	05035030703	Low-Income Community	2011–2015
Arkansas	Dallas	05039970300	Low-Income Community	2011–2015
Arkansas	Desha	05041950100	Low-Income Community	2011–2015
Arkansas	Desha	05041950200	Low-Income Community	2011–2015
Arkansas	Drew	05043490300	Low-Income Community	2011–2015
Arkansas	Drew	05043490400	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030403	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030702	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030900	Low-Income Community	2011–2015
Arkansas	Franklin	05047950200	Low-Income Community	2011–2015
Arkansas	Garland	05051010700	Low-Income Community	2011–2015
Arkansas	Garland	05051010800	Low-Income Community	2011–2015
Arkansas	Garland	05051011500	Low-Income Community	2011–2015
Arkansas	Grant	05053470300	Low-Income Community	2011–2015
Arkansas	Greene	05055480500	Low-Income Community	2011–2015
Arkansas	Greene	05055480700	Low-Income Community	2011–2015
Arkansas	Hempstead	05057480300	Low-Income Community	2011–2015
Arkansas	Hot Spring	05059020200	Low-Income Community	2011–2015
Arkansas	Howard	05061950300	Low-Income Community	2011–2015
Arkansas	Independence	05063490200	Low-Income Community	2011–2015
Arkansas	Independence	05063490600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Arkansas	Jackson	05067480400	Low-Income Community	2011–2015
Arkansas	Jefferson	05069000502	Low-Income Community	2011–2015
Arkansas	Jefferson	05069001000	Low-Income Community	2011–2015
Arkansas	Jefferson	05069002400	Non-LIC Contiguous	2011–2015
Arkansas	Jefferson	05069002500	Low-Income Community	2011–2015
Arkansas	Johnson	05071952000	Low-Income Community	2011–2015
Arkansas	Lafayette	05073470100	Low-Income Community	2011–2015
Arkansas	Lawrence	05075470100	Low-Income Community	2011–2015
Arkansas	Little River	05081030102	Low-Income Community	2011–2015
Arkansas	Logan	05083950500	Low-Income Community	2011–2015
Arkansas	Marion	05089960202	Low-Income Community	2011–2015
Arkansas	Miller	05091020500	Low-Income Community	2011–2015
Arkansas	Mississippi	05093010700	Non-LIC Contiguous	2011–2015
Arkansas	Mississippi	05093010800	Low-Income Community	2011–2015
Arkansas	Mississippi	05093011100	Low-Income Community	2011–2015
Arkansas	Nevada	05099090200	Low-Income Community	2011–2015
Arkansas	Ouachita	05103950200	Low-Income Community	2011–2015
Arkansas	Ouachita	05103950600	Low-Income Community	2011–2015
Arkansas	Phillips	05107480400	Low-Income Community	2011–2015
Arkansas	Phillips	05107480600	Low-Income Community	2011–2015
Arkansas	Polk	05113950400	Low-Income Community	2011–2015
Arkansas	Pope	05115951300	Low-Income Community	2011–2015
Arkansas	Pope	05115951600	Low-Income Community	2011–2015
Arkansas	Pulaski	05119000200	Low-Income Community	2011–2015
Arkansas	Pulaski	05119001800	Low-Income Community	2011–2015
Arkansas	Pulaski	05119002500	Low-Income Community	2011–2015
Arkansas	Pulaski	05119002800	Low-Income Community	2011–2015
Arkansas	Pulaski	05119003001	Low-Income Community	2011–2015
Arkansas	Pulaski	05119003605	Low-Income Community	2011–2015
Arkansas	Pulaski	05119004600	Low-Income Community	2011–2015
Arkansas	Pulaski	05119004700	Low-Income Community	2011–2015
Arkansas	St. Francis	05123960400	Low-Income Community	2011–2015
Arkansas	St. Francis	05123960600	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000200	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000300	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000800	Low-Income Community	2011–2015
Arkansas	Sevier	05133080300	Low-Income Community	2011–2015
Arkansas	Union	05139950900	Low-Income Community	2011–2015
Arkansas	Union	05139951000	Low-Income Community	2011–2015
Arkansas	Van Buren	05141460200	Low-Income Community	2011–2015
Arkansas	Washington	05143010200	Low-Income Community	2011–2015
Arkansas	Washington	05143010301	Low-Income Community	2011–2015
Arkansas	Washington	05143010302	Low-Income Community	2011–2015
Arkansas	Washington	05143010600	Low-Income Community	2011–2015
Arkansas	Washington	05143011101	Low-Income Community	2011–2015
Arkansas	Washington	05143011200	Low-Income Community	2011–2015
Arkansas	White	05145070800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
California	Alameda	06001401000	Low-Income Community	2011–2015
California	Alameda	06001401400	Low-Income Community	2011–2015
California	Alameda	06001401500	Low-Income Community	2011–2015
California	Alameda	06001401600	Low-Income Community	2011–2015
California	Alameda	06001401700	Low-Income Community	2011–2015
California	Alameda	06001402200	Low-Income Community	2011–2015
California	Alameda	06001402400	Low-Income Community	2011–2015
California	Alameda	06001402500	Low-Income Community	2011–2015
California	Alameda	06001402600	Low-Income Community	2011–2015
California	Alameda	06001402700	Low-Income Community	2011–2015
California	Alameda	06001402800	Low-Income Community	2011–2015
California	Alameda	06001403300	Low-Income Community	2011–2015
California	Alameda	06001405901	Low-Income Community	2011–2015
California	Alameda	06001405902	Low-Income Community	2011–2015
California	Alameda	06001406000	Low-Income Community	2011–2015
California	Alameda	06001406100	Low-Income Community	2011–2015
California	Alameda	06001406201	Low-Income Community	2011–2015
California	Alameda	06001406202	Low-Income Community	2011–2015
California	Alameda	06001407200	Low-Income Community	2011–2015
California	Alameda	06001407300	Low-Income Community	2011–2015
California	Alameda	06001408400	Low-Income Community	2011–2015
California	Alameda	06001408500	Low-Income Community	2011–2015
California	Alameda	06001408600	Low-Income Community	2011–2015
California	Alameda	06001408700	Low-Income Community	2011–2015
California	Alameda	06001408800	Low-Income Community	2011–2015
California	Alameda	06001408900	Low-Income Community	2011–2015
California	Alameda	06001409000	Low-Income Community	2011–2015
California	Alameda	06001409500	Low-Income Community	2011–2015
California	Alameda	06001409700	Low-Income Community	2011–2015
California	Alameda	06001410500	Low-Income Community	2011–2015
California	Alameda	06001422900	Low-Income Community	2011–2015
California	Alameda	06001423200	Low-Income Community	2011–2015
California	Alameda	06001423500	Low-Income Community	2011–2015
California	Alameda	06001423901	Non-LIC Contiguous	2011–2015
California	Alameda	06001424001	Low-Income Community	2011–2015
California	Alameda	06001433102	Low-Income Community	2011–2015
California	Alameda	06001433700	Low-Income Community	2011–2015
California	Alameda	06001433800	Low-Income Community	2011–2015
California	Alameda	06001434000	Low-Income Community	2011–2015
California	Alameda	06001435400	Low-Income Community	2011–2015
California	Alameda	06001435602	Low-Income Community	2011–2015
California	Alameda	06001437500	Low-Income Community	2011–2015
California	Alameda	06001437600	Low-Income Community	2011–2015
California	Alameda	06001437701	Low-Income Community	2011–2015
California	Alameda	06001438201	Low-Income Community	2011–2015
California	Alameda	06001441923	Low-Income Community	2011–2015
California	Alameda	06001451404	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Alpine	06003010000	Non-LIC Contiguous	2011–2015
California	Amador	06005000102	Low-Income Community	2012–2016
California	Butte	06007000502	Low-Income Community	2011–2015
California	Butte	06007000604	Low-Income Community	2011–2015
California	Butte	06007001000	Low-Income Community	2011–2015
California	Butte	06007001100	Low-Income Community	2011–2015
California	Butte	06007001200	Low-Income Community	2011–2015
California	Butte	06007001300	Low-Income Community	2011–2015
California	Butte	06007002800	Low-Income Community	2011–2015
California	Butte	06007003001	Low-Income Community	2011–2015
California	Butte	06007003002	Low-Income Community	2011–2015
California	Calaveras	06009000400	Low-Income Community	2011–2015
California	Colusa	06011000300	Low-Income Community	2011–2015
California	Colusa	06011000500	Low-Income Community	2011–2015
California	Contra Costa	06013306002	Low-Income Community	2011–2015
California	Contra Costa	06013307201	Low-Income Community	2011–2015
California	Contra Costa	06013307202	Low-Income Community	2011–2015
California	Contra Costa	06013307205	Low-Income Community	2011–2015
California	Contra Costa	06013312000	Low-Income Community	2011–2015
California	Contra Costa	06013313101	Low-Income Community	2011–2015
California	Contra Costa	06013313206	Low-Income Community	2011–2015
California	Contra Costa	06013314103	Low-Income Community	2011–2015
California	Contra Costa	06013314104	Low-Income Community	2011–2015
California	Contra Costa	06013328000	Low-Income Community	2011–2015
California	Contra Costa	06013336101	Low-Income Community	2011–2015
California	Contra Costa	06013336202	Low-Income Community	2011–2015
California	Contra Costa	06013337200	Low-Income Community	2011–2015
California	Contra Costa	06013365002	Low-Income Community	2011–2015
California	Contra Costa	06013369001	Low-Income Community	2011–2015
California	Contra Costa	06013376000	Low-Income Community	2011–2015
California	Contra Costa	06013386000	Low-Income Community	2011–2015
California	Del Norte	06015000101	Low-Income Community	2011–2015
California	Del Norte	06015000102	Low-Income Community	2011–2015
California	El Dorado	06017030302	Low-Income Community	2011–2015
California	El Dorado	06017031600	Low-Income Community	2011–2015
California	El Dorado	06017031900	Low-Income Community	2011–2015
California	Fresno	06019000100	Low-Income Community	2011–2015
California	Fresno	06019000200	Low-Income Community	2011–2015
California	Fresno	06019000300	Low-Income Community	2011–2015
California	Fresno	06019000400	Low-Income Community	2011–2015
California	Fresno	06019000501	Low-Income Community	2011–2015
California	Fresno	06019000502	Low-Income Community	2011–2015
California	Fresno	06019000600	Low-Income Community	2011–2015
California	Fresno	06019000700	Low-Income Community	2011–2015
California	Fresno	06019000800	Low-Income Community	2011–2015
California	Fresno	06019000901	Low-Income Community	2011–2015
California	Fresno	06019000902	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Fresno	06019001000	Low-Income Community	2011–2015
California	Fresno	06019001100	Low-Income Community	2011–2015
California	Fresno	06019001201	Low-Income Community	2011–2015
California	Fresno	06019001202	Low-Income Community	2011–2015
California	Fresno	06019001301	Low-Income Community	2011–2015
California	Fresno	06019001303	Low-Income Community	2011–2015
California	Fresno	06019001407	Low-Income Community	2011–2015
California	Fresno	06019001410	Low-Income Community	2011–2015
California	Fresno	06019001411	Low-Income Community	2011–2015
California	Fresno	06019001500	Low-Income Community	2011–2015
California	Fresno	06019001700	Low-Income Community	2011–2015
California	Fresno	06019001800	Low-Income Community	2011–2015
California	Fresno	06019001900	Low-Income Community	2011–2015
California	Fresno	06019002000	Low-Income Community	2011–2015
California	Fresno	06019002300	Low-Income Community	2011–2015
California	Fresno	06019002400	Low-Income Community	2011–2015
California	Fresno	06019002501	Low-Income Community	2011–2015
California	Fresno	06019002602	Low-Income Community	2011–2015
California	Fresno	06019002702	Low-Income Community	2011–2015
California	Fresno	06019002800	Low-Income Community	2011–2015
California	Fresno	06019002903	Low-Income Community	2011–2015
California	Fresno	06019003500	Low-Income Community	2011–2015
California	Fresno	06019004505	Low-Income Community	2011–2015
California	Fresno	06019004901	Low-Income Community	2011–2015
California	Fresno	06019005000	Low-Income Community	2011–2015
California	Fresno	06019005100	Low-Income Community	2011–2015
California	Fresno	06019005403	Low-Income Community	2011–2015
California	Fresno	06019005408	Low-Income Community	2011–2015
California	Fresno	06019006201	Low-Income Community	2011–2015
California	Fresno	06019006202	Low-Income Community	2011–2015
California	Fresno	06019006501	Low-Income Community	2011–2015
California	Fresno	06019006602	Low-Income Community	2011–2015
California	Fresno	06019007802	Low-Income Community	2011–2015
California	Fresno	06019008200	Low-Income Community	2011–2015
California	Fresno	06019008302	Low-Income Community	2011–2015
California	Fresno	06019008501	Low-Income Community	2011–2015
California	Glenn	06021010100	Low-Income Community	2011–2015
California	Glenn	06021010200	Low-Income Community	2011–2015
California	Humboldt	06023000100	Low-Income Community	2011–2015
California	Humboldt	06023000300	Low-Income Community	2011–2015
California	Humboldt	06023000500	Low-Income Community	2011–2015
California	Humboldt	06023001300	Low-Income Community	2011–2015
California	Humboldt	06023010102	Low-Income Community	2011–2015
California	Humboldt	06023010501	Low-Income Community	2011–2015
California	Humboldt	06023940000	Low-Income Community	2011–2015
California	Imperial	06025010400	Low-Income Community	2011–2015
California	Imperial	06025010900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Imperial	06025011300	Low-Income Community	2011–2015
California	Imperial	06025011400	Low-Income Community	2011–2015
California	Imperial	06025011900	Low-Income Community	2011–2015
California	Imperial	06025012100	Low-Income Community	2011–2015
California	Imperial	06025012200	Low-Income Community	2011–2015
California	Inyo	06027000400	Low-Income Community	2011–2015
California	Inyo	06027000800	Low-Income Community	2011–2015
California	Kern	06029000200	Low-Income Community	2011–2015
California	Kern	06029000300	Low-Income Community	2011–2015
California	Kern	06029000400	Low-Income Community	2011–2015
California	Kern	06029000600	Low-Income Community	2011–2015
California	Kern	06029001202	Low-Income Community	2011–2015
California	Kern	06029001400	Low-Income Community	2011–2015
California	Kern	06029001600	Low-Income Community	2011–2015
California	Kern	06029001902	Low-Income Community	2011–2015
California	Kern	06029002000	Low-Income Community	2011–2015
California	Kern	06029002100	Low-Income Community	2011–2015
California	Kern	06029002200	Low-Income Community	2011–2015
California	Kern	06029002301	Low-Income Community	2011–2015
California	Kern	06029002302	Low-Income Community	2011–2015
California	Kern	06029002400	Low-Income Community	2011–2015
California	Kern	06029002500	Low-Income Community	2011–2015
California	Kern	06029002600	Low-Income Community	2011–2015
California	Kern	06029003103	Low-Income Community	2011–2015
California	Kern	06029003121	Low-Income Community	2011–2015
California	Kern	06029003303	Low-Income Community	2011–2015
California	Kern	06029003500	Low-Income Community	2011–2015
California	Kern	06029004101	Low-Income Community	2011–2015
California	Kern	06029004401	Low-Income Community	2011–2015
California	Kern	06029004402	Low-Income Community	2011–2015
California	Kern	06029004701	Low-Income Community	2011–2015
California	Kern	06029004800	Low-Income Community	2011–2015
California	Kern	06029005003	Low-Income Community	2011–2015
California	Kern	06029005300	Low-Income Community	2011–2015
California	Kern	06029005507	Low-Income Community	2011–2015
California	Kern	06029005600	Low-Income Community	2011–2015
California	Kern	06029005802	Low-Income Community	2011–2015
California	Kern	06029005900	Low-Income Community	2011–2015
California	Kern	06029006100	Low-Income Community	2011–2015
California	Kern	06029006303	Low-Income Community	2011–2015
California	Kern	06029006304	Low-Income Community	2011–2015
California	Kern	06029006401	Low-Income Community	2011–2015
California	Kings	06031001100	Low-Income Community	2011–2015
California	Kings	06031001300	Low-Income Community	2011–2015
California	Kings	06031001402	Low-Income Community	2011–2015
California	Kings	06031001601	Low-Income Community	2011–2015
California	Kings	06031001701	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Lake	06033000702	Low-Income Community	2011–2015
California	Lake	06033000801	Low-Income Community	2011–2015
California	Lake	06033000802	Low-Income Community	2011–2015
California	Lassen	06035040303	Low-Income Community	2011–2015
California	Lassen	06035040304	Low-Income Community	2011–2015
California	Los Angeles	06037102105	Low-Income Community	2011–2015
California	Los Angeles	06037104201	Low-Income Community	2011–2015
California	Los Angeles	06037104203	Low-Income Community	2011–2015
California	Los Angeles	06037104310	Low-Income Community	2011–2015
California	Los Angeles	06037104320	Low-Income Community	2011–2015
California	Los Angeles	06037104404	Low-Income Community	2011–2015
California	Los Angeles	06037104701	Low-Income Community	2011–2015
California	Los Angeles	06037104703	Low-Income Community	2011–2015
California	Los Angeles	06037104704	Low-Income Community	2011–2015
California	Los Angeles	06037106520	Low-Income Community	2011–2015
California	Los Angeles	06037106604	Low-Income Community	2011–2015
California	Los Angeles	06037113233	Low-Income Community	2011–2015
California	Los Angeles	06037113234	Low-Income Community	2011–2015
California	Los Angeles	06037113421	Low-Income Community	2011–2015
California	Los Angeles	06037115103	Low-Income Community	2011–2015
California	Los Angeles	06037115201	Low-Income Community	2011–2015
California	Los Angeles	06037120010	Low-Income Community	2011–2015
California	Los Angeles	06037120020	Low-Income Community	2011–2015
California	Los Angeles	06037120030	Low-Income Community	2011–2015
California	Los Angeles	06037120103	Low-Income Community	2011–2015
California	Los Angeles	06037121101	Low-Income Community	2011–2015
California	Los Angeles	06037121801	Low-Income Community	2011–2015
California	Los Angeles	06037121900	Low-Income Community	2011–2015
California	Los Angeles	06037122120	Low-Income Community	2011–2015
California	Los Angeles	06037122121	Low-Income Community	2011–2015
California	Los Angeles	06037122122	Low-Income Community	2011–2015
California	Los Angeles	06037122200	Non-LIC Contiguous	2011–2015
California	Los Angeles	06037122410	Low-Income Community	2011–2015
California	Los Angeles	06037123020	Low-Income Community	2011–2015
California	Los Angeles	06037123103	Low-Income Community	2011–2015
California	Los Angeles	06037123203	Low-Income Community	2011–2015
California	Los Angeles	06037123205	Low-Income Community	2011–2015
California	Los Angeles	06037123206	Low-Income Community	2011–2015
California	Los Angeles	06037123303	Low-Income Community	2011–2015
California	Los Angeles	06037123420	Low-Income Community	2011–2015
California	Los Angeles	06037123901	Low-Income Community	2011–2015
California	Los Angeles	06037124102	Low-Income Community	2011–2015
California	Los Angeles	06037124103	Low-Income Community	2011–2015
California	Los Angeles	06037124104	Low-Income Community	2011–2015
California	Los Angeles	06037124105	Low-Income Community	2011–2015
California	Los Angeles	06037124204	Low-Income Community	2011–2015
California	Los Angeles	06037125310	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037125320	Low-Income Community	2011–2015
California	Los Angeles	06037127210	Low-Income Community	2011–2015
California	Los Angeles	06037127300	Low-Income Community	2011–2015
California	Los Angeles	06037127400	Low-Income Community	2011–2015
California	Los Angeles	06037127520	Low-Income Community	2011–2015
California	Los Angeles	06037127712	Low-Income Community	2011–2015
California	Los Angeles	06037127803	Low-Income Community	2011–2015
California	Los Angeles	06037127804	Low-Income Community	2011–2015
California	Los Angeles	06037127805	Low-Income Community	2011–2015
California	Los Angeles	06037127806	Low-Income Community	2011–2015
California	Los Angeles	06037127910	Low-Income Community	2011–2015
California	Los Angeles	06037128210	Low-Income Community	2011–2015
California	Los Angeles	06037128302	Low-Income Community	2011–2015
California	Los Angeles	06037128303	Low-Income Community	2011–2015
California	Los Angeles	06037132300	Low-Income Community	2011–2015
California	Los Angeles	06037134305	Low-Income Community	2011–2015
California	Los Angeles	06037134520	Low-Income Community	2011–2015
California	Los Angeles	06037134521	Low-Income Community	2011–2015
California	Los Angeles	06037134522	Low-Income Community	2011–2015
California	Los Angeles	06037134903	Low-Income Community	2011–2015
California	Los Angeles	06037135114	Low-Income Community	2012–2016
California	Los Angeles	06037185203	Low-Income Community	2011–2015
California	Los Angeles	06037185320	Low-Income Community	2011–2015
California	Los Angeles	06037186401	Low-Income Community	2011–2015
California	Los Angeles	06037186404	Low-Income Community	2011–2015
California	Los Angeles	06037187102	Low-Income Community	2011–2015
California	Los Angeles	06037187200	Low-Income Community	2011–2015
California	Los Angeles	06037190100	Low-Income Community	2011–2015
California	Los Angeles	06037190201	Low-Income Community	2011–2015
California	Los Angeles	06037190202	Low-Income Community	2011–2015
California	Los Angeles	06037190510	Low-Income Community	2011–2015
California	Los Angeles	06037190700	Low-Income Community	2011–2015
California	Los Angeles	06037190801	Low-Income Community	2011–2015
California	Los Angeles	06037190802	Low-Income Community	2011–2015
California	Los Angeles	06037190901	Low-Income Community	2011–2015
California	Los Angeles	06037190902	Low-Income Community	2011–2015
California	Los Angeles	06037191000	Low-Income Community	2011–2015
California	Los Angeles	06037191110	Low-Income Community	2011–2015
California	Los Angeles	06037191120	Low-Income Community	2011–2015
California	Los Angeles	06037191201	Low-Income Community	2011–2015
California	Los Angeles	06037191203	Low-Income Community	2011–2015
California	Los Angeles	06037191204	Low-Income Community	2011–2015
California	Los Angeles	06037191410	Low-Income Community	2011–2015
California	Los Angeles	06037191420	Low-Income Community	2011–2015
California	Los Angeles	06037191500	Low-Income Community	2011–2015
California	Los Angeles	06037191710	Low-Income Community	2011–2015
California	Los Angeles	06037191720	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037191810	Low-Income Community	2011–2015
California	Los Angeles	06037191820	Low-Income Community	2011–2015
California	Los Angeles	06037192610	Low-Income Community	2011–2015
California	Los Angeles	06037192620	Low-Income Community	2011–2015
California	Los Angeles	06037192700	Low-Income Community	2011–2015
California	Los Angeles	06037199000	Low-Income Community	2011–2015
California	Los Angeles	06037199120	Low-Income Community	2011–2015
California	Los Angeles	06037199201	Low-Income Community	2011–2015
California	Los Angeles	06037199202	Low-Income Community	2011–2015
California	Los Angeles	06037199700	Low-Income Community	2011–2015
California	Los Angeles	06037199800	Low-Income Community	2011–2015
California	Los Angeles	06037199900	Low-Income Community	2011–2015
California	Los Angeles	06037201402	Low-Income Community	2011–2015
California	Los Angeles	06037201700	Low-Income Community	2011–2015
California	Los Angeles	06037203300	Low-Income Community	2011–2015
California	Los Angeles	06037203500	Low-Income Community	2011–2015
California	Los Angeles	06037204920	Low-Income Community	2011–2015
California	Los Angeles	06037205120	Low-Income Community	2011–2015
California	Los Angeles	06037206020	Low-Income Community	2011–2015
California	Los Angeles	06037206031	Non-LIC Contiguous	2011–2015
California	Los Angeles	06037206032	Low-Income Community	2011–2015
California	Los Angeles	06037206200	Low-Income Community	2011–2015
California	Los Angeles	06037206300	Low-Income Community	2011–2015
California	Los Angeles	06037208801	Low-Income Community	2011–2015
California	Los Angeles	06037208902	Low-Income Community	2011–2015
California	Los Angeles	06037208903	Low-Income Community	2011–2015
California	Los Angeles	06037209401	Low-Income Community	2011–2015
California	Los Angeles	06037211120	Low-Income Community	2011–2015
California	Los Angeles	06037211122	Low-Income Community	2011–2015
California	Los Angeles	06037211201	Low-Income Community	2011–2015
California	Los Angeles	06037211202	Low-Income Community	2011–2015
California	Los Angeles	06037211310	Low-Income Community	2011–2015
California	Los Angeles	06037211320	Low-Income Community	2011–2015
California	Los Angeles	06037211802	Low-Income Community	2011–2015
California	Los Angeles	06037212101	Low-Income Community	2011–2015
California	Los Angeles	06037212102	Low-Income Community	2011–2015
California	Los Angeles	06037212203	Low-Income Community	2011–2015
California	Los Angeles	06037212204	Low-Income Community	2011–2015
California	Los Angeles	06037212303	Low-Income Community	2011–2015
California	Los Angeles	06037212304	Low-Income Community	2011–2015
California	Los Angeles	06037212410	Low-Income Community	2011–2015
California	Los Angeles	06037213201	Low-Income Community	2011–2015
California	Los Angeles	06037213310	Low-Income Community	2011–2015
California	Los Angeles	06037213320	Low-Income Community	2011–2015
California	Los Angeles	06037213402	Low-Income Community	2011–2015
California	Los Angeles	06037218300	Low-Income Community	2011–2015
California	Los Angeles	06037218400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037218500	Low-Income Community	2011–2015
California	Los Angeles	06037218702	Low-Income Community	2011–2015
California	Los Angeles	06037219300	Low-Income Community	2011–2015
California	Los Angeles	06037219800	Low-Income Community	2011–2015
California	Los Angeles	06037219901	Low-Income Community	2011–2015
California	Los Angeles	06037219902	Low-Income Community	2011–2015
California	Los Angeles	06037220000	Low-Income Community	2011–2015
California	Los Angeles	06037220100	Low-Income Community	2011–2015
California	Los Angeles	06037222700	Low-Income Community	2011–2015
California	Los Angeles	06037224010	Low-Income Community	2011–2015
California	Los Angeles	06037224020	Low-Income Community	2011–2015
California	Los Angeles	06037224200	Low-Income Community	2011–2015
California	Los Angeles	06037224600	Low-Income Community	2011–2015
California	Los Angeles	06037224700	Low-Income Community	2011–2015
California	Los Angeles	06037226001	Low-Income Community	2011–2015
California	Los Angeles	06037226002	Low-Income Community	2011–2015
California	Los Angeles	06037226410	Low-Income Community	2011–2015
California	Los Angeles	06037226420	Low-Income Community	2011–2015
California	Los Angeles	06037227010	Low-Income Community	2011–2015
California	Los Angeles	06037228600	Low-Income Community	2011–2015
California	Los Angeles	06037231100	Low-Income Community	2011–2015
California	Los Angeles	06037231210	Low-Income Community	2011–2015
California	Los Angeles	06037231220	Low-Income Community	2011–2015
California	Los Angeles	06037231300	Low-Income Community	2011–2015
California	Los Angeles	06037231400	Low-Income Community	2011–2015
California	Los Angeles	06037231500	Low-Income Community	2011–2015
California	Los Angeles	06037231600	Low-Income Community	2011–2015
California	Los Angeles	06037231800	Low-Income Community	2011–2015
California	Los Angeles	06037232400	Low-Income Community	2011–2015
California	Los Angeles	06037232500	Low-Income Community	2011–2015
California	Los Angeles	06037234501	Low-Income Community	2011–2015
California	Los Angeles	06037234502	Low-Income Community	2011–2015
California	Los Angeles	06037234600	Low-Income Community	2011–2015
California	Los Angeles	06037236100	Low-Income Community	2011–2015
California	Los Angeles	06037237202	Low-Income Community	2011–2015
California	Los Angeles	06037239202	Low-Income Community	2011–2015
California	Los Angeles	06037239330	Low-Income Community	2011–2015
California	Los Angeles	06037241001	Low-Income Community	2011–2015
California	Los Angeles	06037242000	Low-Income Community	2011–2015
California	Los Angeles	06037242100	Low-Income Community	2011–2015
California	Los Angeles	06037242200	Low-Income Community	2011–2015
California	Los Angeles	06037242300	Low-Income Community	2011–2015
California	Los Angeles	06037242600	Low-Income Community	2011–2015
California	Los Angeles	06037243000	Low-Income Community	2011–2015
California	Los Angeles	06037243100	Low-Income Community	2011–2015
California	Los Angeles	06037292000	Low-Income Community	2011–2015
California	Los Angeles	06037293201	Low-Income Community	2012–2016

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037294120	Low-Income Community	2011–2015
California	Los Angeles	06037294620	Low-Income Community	2011–2015
California	Los Angeles	06037294701	Low-Income Community	2011–2015
California	Los Angeles	06037294820	Low-Income Community	2011–2015
California	Los Angeles	06037294830	Low-Income Community	2011–2015
California	Los Angeles	06037296210	Low-Income Community	2011–2015
California	Los Angeles	06037296220	Low-Income Community	2011–2015
California	Los Angeles	06037296500	Low-Income Community	2011–2015
California	Los Angeles	06037296600	Low-Income Community	2011–2015
California	Los Angeles	06037402304	Low-Income Community	2011–2015
California	Los Angeles	06037402702	Low-Income Community	2011–2015
California	Los Angeles	06037403200	Low-Income Community	2011–2015
California	Los Angeles	06037404201	Low-Income Community	2011–2015
California	Los Angeles	06037408138	Low-Income Community	2011–2015
California	Los Angeles	06037408800	Low-Income Community	2011–2015
California	Los Angeles	06037433302	Low-Income Community	2011–2015
California	Los Angeles	06037433403	Low-Income Community	2011–2015
California	Los Angeles	06037433501	Low-Income Community	2011–2015
California	Los Angeles	06037433901	Low-Income Community	2011–2015
California	Los Angeles	06037501803	Low-Income Community	2011–2015
California	Los Angeles	06037530902	Low-Income Community	2011–2015
California	Los Angeles	06037531301	Low-Income Community	2011–2015
California	Los Angeles	06037532304	Low-Income Community	2011–2015
California	Los Angeles	06037532606	Low-Income Community	2011–2015
California	Los Angeles	06037532800	Low-Income Community	2011–2015
California	Los Angeles	06037532900	Low-Income Community	2011–2015
California	Los Angeles	06037533103	Low-Income Community	2011–2015
California	Los Angeles	06037533104	Low-Income Community	2011–2015
California	Los Angeles	06037533105	Low-Income Community	2011–2015
California	Los Angeles	06037533403	Low-Income Community	2011–2015
California	Los Angeles	06037533701	Low-Income Community	2011–2015
California	Los Angeles	06037534202	Low-Income Community	2011–2015
California	Los Angeles	06037534301	Low-Income Community	2011–2015
California	Los Angeles	06037534404	Low-Income Community	2011–2015
California	Los Angeles	06037535002	Low-Income Community	2011–2015
California	Los Angeles	06037535101	Low-Income Community	2011–2015
California	Los Angeles	06037535102	Low-Income Community	2011–2015
California	Los Angeles	06037540201	Low-Income Community	2011–2015
California	Los Angeles	06037540202	Low-Income Community	2011–2015
California	Los Angeles	06037540400	Low-Income Community	2011–2015
California	Los Angeles	06037541400	Low-Income Community	2011–2015
California	Los Angeles	06037541603	Low-Income Community	2011–2015
California	Los Angeles	06037541604	Low-Income Community	2011–2015
California	Los Angeles	06037542105	Low-Income Community	2011–2015
California	Los Angeles	06037542106	Low-Income Community	2011–2015
California	Los Angeles	06037542501	Low-Income Community	2011–2015
California	Los Angeles	06037542502	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037542601	Low-Income Community	2011–2015
California	Los Angeles	06037550000	Low-Income Community	2011–2015
California	Los Angeles	06037570603	Low-Income Community	2011–2015
California	Los Angeles	06037571600	Low-Income Community	2011–2015
California	Los Angeles	06037571704	Low-Income Community	2011–2015
California	Los Angeles	06037572500	Low-Income Community	2011–2015
California	Los Angeles	06037572800	Low-Income Community	2011–2015
California	Los Angeles	06037573002	Low-Income Community	2011–2015
California	Los Angeles	06037573004	Low-Income Community	2011–2015
California	Los Angeles	06037573300	Low-Income Community	2011–2015
California	Los Angeles	06037575102	Low-Income Community	2011–2015
California	Los Angeles	06037575202	Low-Income Community	2011–2015
California	Los Angeles	06037575401	Low-Income Community	2011–2015
California	Los Angeles	06037575801	Low-Income Community	2011–2015
California	Los Angeles	06037575802	Low-Income Community	2011–2015
California	Los Angeles	06037575803	Low-Income Community	2011–2015
California	Los Angeles	06037575901	Low-Income Community	2011–2015
California	Los Angeles	06037576200	Low-Income Community	2011–2015
California	Los Angeles	06037576401	Low-Income Community	2011–2015
California	Los Angeles	06037576403	Low-Income Community	2011–2015
California	Los Angeles	06037576901	Low-Income Community	2011–2015
California	Los Angeles	06037600100	Low-Income Community	2011–2015
California	Los Angeles	06037600202	Low-Income Community	2011–2015
California	Los Angeles	06037600303	Low-Income Community	2011–2015
California	Los Angeles	06037600304	Low-Income Community	2011–2015
California	Los Angeles	06037601202	Low-Income Community	2011–2015
California	Los Angeles	06037601700	Low-Income Community	2011–2015
California	Los Angeles	06037601801	Low-Income Community	2011–2015
California	Los Angeles	06037602505	Low-Income Community	2011–2015
California	Los Angeles	06037602801	Low-Income Community	2011–2015
California	Los Angeles	06037604100	Low-Income Community	2011–2015
California	Los Angeles	06037900501	Low-Income Community	2011–2015
California	Los Angeles	06037900606	Low-Income Community	2011–2015
California	Los Angeles	06037900607	Low-Income Community	2011–2015
California	Los Angeles	06037900703	Low-Income Community	2011–2015
California	Los Angeles	06037900704	Low-Income Community	2011–2015
California	Los Angeles	06037900806	Low-Income Community	2011–2015
California	Los Angeles	06037910402	Low-Income Community	2011–2015
California	Los Angeles	06037910403	Low-Income Community	2011–2015
California	Los Angeles	06037910501	Low-Income Community	2011–2015
California	Los Angeles	06037910504	Low-Income Community	2011–2015
California	Los Angeles	06037910601	Low-Income Community	2011–2015
California	Los Angeles	06037910602	Low-Income Community	2011–2015
California	Los Angeles	06037980014	Low-Income Community	2011–2015
California	Madera	06039000103	Low-Income Community	2011–2015
California	Madera	06039000202	Non-LIC Contiguous	2011–2015
California	Madera	06039000503	Non-LIC Contiguous	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Madera	06039000506	Low-Income Community	2011–2015
California	Madera	06039000800	Low-Income Community	2011–2015
California	Marin	06041112201	Low-Income Community	2011–2015
California	Mariposa	06043000101	Low-Income Community	2011–2015
California	Mariposa	06043000102	Low-Income Community	2011–2015
California	Mendocino	06045010100	Low-Income Community	2011–2015
California	Mendocino	06045011300	Low-Income Community	2011–2015
California	Mendocino	06045011500	Low-Income Community	2011–2015
California	Merced	06047000503	Low-Income Community	2011–2015
California	Merced	06047000602	Low-Income Community	2011–2015
California	Merced	06047000603	Low-Income Community	2011–2015
California	Merced	06047001301	Low-Income Community	2011–2015
California	Merced	06047001302	Low-Income Community	2011–2015
California	Merced	06047001401	Low-Income Community	2011–2015
California	Merced	06047001501	Low-Income Community	2011–2015
California	Merced	06047001601	Low-Income Community	2011–2015
California	Merced	06047001602	Low-Income Community	2011–2015
California	Merced	06047001700	Low-Income Community	2011–2015
California	Merced	06047002201	Low-Income Community	2011–2015
California	Modoc	06049000100	Low-Income Community	2011–2015
California	Modoc	06049000300	Low-Income Community	2011–2015
California	Monterey	06053000400	Low-Income Community	2011–2015
California	Monterey	06053000502	Low-Income Community	2011–2015
California	Monterey	06053001300	Low-Income Community	2011–2015
California	Monterey	06053001802	Low-Income Community	2011–2015
California	Monterey	06053011302	Low-Income Community	2011–2015
California	Monterey	06053013500	Low-Income Community	2011–2015
California	Monterey	06053013700	Low-Income Community	2011–2015
California	Monterey	06053014102	Low-Income Community	2011–2015
California	Monterey	06053014500	Low-Income Community	2011–2015
California	Napa	06055200202	Low-Income Community	2011–2015
California	Napa	06055200804	Low-Income Community	2011–2015
California	Nevada	06057000600	Low-Income Community	2011–2015
California	Nevada	06057000900	Low-Income Community	2011–2015
California	Orange	06059001801	Low-Income Community	2011–2015
California	Orange	06059011601	Low-Income Community	2011–2015
California	Orange	06059011602	Low-Income Community	2011–2015
California	Orange	06059011720	Low-Income Community	2011–2015
California	Orange	06059011721	Low-Income Community	2011–2015
California	Orange	06059042107	Low-Income Community	2011–2015
California	Orange	06059042312	Low-Income Community	2011–2015
California	Orange	06059063605	Low-Income Community	2011–2015
California	Orange	06059063701	Low-Income Community	2011–2015
California	Orange	06059074403	Low-Income Community	2011–2015
California	Orange	06059074405	Low-Income Community	2011–2015
California	Orange	06059074406	Low-Income Community	2011–2015
California	Orange	06059074602	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Orange	06059074802	Low-Income Community	2011–2015
California	Orange	06059075002	Low-Income Community	2011–2015
California	Orange	06059075003	Low-Income Community	2011–2015
California	Orange	06059075100	Low-Income Community	2011–2015
California	Orange	06059075201	Low-Income Community	2011–2015
California	Orange	06059086405	Low-Income Community	2011–2015
California	Orange	06059087403	Low-Income Community	2011–2015
California	Orange	06059087405	Low-Income Community	2011–2015
California	Orange	06059087505	Low-Income Community	2011–2015
California	Orange	06059087803	Low-Income Community	2011–2015
California	Orange	06059088201	Low-Income Community	2011–2015
California	Orange	06059089104	Low-Income Community	2011–2015
California	Orange	06059089105	Low-Income Community	2011–2015
California	Orange	06059099402	Low-Income Community	2011–2015
California	Placer	06061020401	Low-Income Community	2011–2015
California	Placer	06061020901	Low-Income Community	2011–2015
California	Placer	06061021603	Low-Income Community	2011–2015
California	Plumas	06063000202	Low-Income Community	2011–2015
California	Plumas	06063000400	Low-Income Community	2011–2015
California	Riverside	06065030103	Low-Income Community	2011–2015
California	Riverside	06065030300	Low-Income Community	2011–2015
California	Riverside	06065030400	Low-Income Community	2011–2015
California	Riverside	06065030501	Low-Income Community	2011–2015
California	Riverside	06065030502	Low-Income Community	2011–2015
California	Riverside	06065031300	Low-Income Community	2011–2015
California	Riverside	06065040203	Low-Income Community	2011–2015
California	Riverside	06065041101	Low-Income Community	2011–2015
California	Riverside	06065041410	Low-Income Community	2011–2015
California	Riverside	06065041703	Low-Income Community	2011–2015
California	Riverside	06065042010	Low-Income Community	2011–2015
California	Riverside	06065042209	Low-Income Community	2011–2015
California	Riverside	06065042210	Low-Income Community	2011–2015
California	Riverside	06065042404	Low-Income Community	2011–2015
California	Riverside	06065042505	Low-Income Community	2011–2015
California	Riverside	06065042506	Low-Income Community	2011–2015
California	Riverside	06065042514	Low-Income Community	2011–2015
California	Riverside	06065042515	Low-Income Community	2011–2015
California	Riverside	06065042723	Low-Income Community	2011–2015
California	Riverside	06065042800	Low-Income Community	2011–2015
California	Riverside	06065042903	Low-Income Community	2011–2015
California	Riverside	06065042904	Low-Income Community	2011–2015
California	Riverside	06065043307	Low-Income Community	2011–2015
California	Riverside	06065043310	Low-Income Community	2011–2015
California	Riverside	06065043401	Low-Income Community	2011–2015
California	Riverside	06065043403	Low-Income Community	2011–2015
California	Riverside	06065043405	Low-Income Community	2011–2015
California	Riverside	06065043601	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Riverside	06065043602	Low-Income Community	2011–2015
California	Riverside	06065044101	Low-Income Community	2011–2015
California	Riverside	06065044200	Low-Income Community	2011–2015
California	Riverside	06065044507	Low-Income Community	2011–2015
California	Riverside	06065044509	Low-Income Community	2011–2015
California	Riverside	06065044510	Low-Income Community	2011–2015
California	Riverside	06065044702	Low-Income Community	2011–2015
California	Riverside	06065044915	Low-Income Community	2011–2015
California	Riverside	06065045000	Low-Income Community	2011–2015
California	Riverside	06065045303	Low-Income Community	2011–2015
California	Riverside	06065045502	Low-Income Community	2011–2015
California	Riverside	06065045604	Low-Income Community	2011–2015
California	Riverside	06065045605	Low-Income Community	2011–2015
California	Riverside	06065045609	Low-Income Community	2011–2015
California	Riverside	06065045703	Low-Income Community	2011–2015
California	Riverside	06065045705	Low-Income Community	2011–2015
California	Riverside	06065045706	Low-Income Community	2011–2015
California	Riverside	06065046102	Low-Income Community	2011–2015
California	Riverside	06065046200	Low-Income Community	2011–2015
California	Riverside	06065046500	Low-Income Community	2011–2015
California	Riverside	06065051100	Low-Income Community	2011–2015
California	Sacramento	06067000500	Low-Income Community	2011–2015
California	Sacramento	06067000700	Low-Income Community	2011–2015
California	Sacramento	06067001101	Low-Income Community	2011–2015
California	Sacramento	06067002100	Low-Income Community	2011–2015
California	Sacramento	06067002200	Low-Income Community	2011–2015
California	Sacramento	06067002800	Low-Income Community	2011–2015
California	Sacramento	06067003700	Low-Income Community	2011–2015
California	Sacramento	06067004100	Low-Income Community	2011–2015
California	Sacramento	06067004203	Low-Income Community	2011–2015
California	Sacramento	06067004402	Low-Income Community	2011–2015
California	Sacramento	06067004501	Low-Income Community	2011–2015
California	Sacramento	06067004502	Low-Income Community	2011–2015
California	Sacramento	06067004601	Low-Income Community	2011–2015
California	Sacramento	06067004701	Low-Income Community	2011–2015
California	Sacramento	06067004802	Low-Income Community	2011–2015
California	Sacramento	06067004903	Low-Income Community	2011–2015
California	Sacramento	06067004905	Low-Income Community	2011–2015
California	Sacramento	06067005101	Low-Income Community	2011–2015
California	Sacramento	06067005205	Low-Income Community	2011–2015
California	Sacramento	06067005301	Low-Income Community	2011–2015
California	Sacramento	06067005502	Low-Income Community	2011–2015
California	Sacramento	06067005505	Low-Income Community	2011–2015
California	Sacramento	06067005601	Low-Income Community	2011–2015
California	Sacramento	06067005605	Low-Income Community	2011–2015
California	Sacramento	06067006201	Low-Income Community	2011–2015
California	Sacramento	06067006202	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Sacramento	06067006300	Low-Income Community	2011–2015
California	Sacramento	06067006500	Low-Income Community	2011–2015
California	Sacramento	06067006600	Low-Income Community	2011–2015
California	Sacramento	06067006702	Low-Income Community	2011–2015
California	Sacramento	06067006900	Low-Income Community	2011–2015
California	Sacramento	06067007004	Low-Income Community	2011–2015
California	Sacramento	06067007019	Low-Income Community	2011–2015
California	Sacramento	06067007204	Low-Income Community	2011–2015
California	Sacramento	06067007301	Low-Income Community	2011–2015
California	Sacramento	06067007423	Low-Income Community	2011–2015
California	Sacramento	06067008909	Low-Income Community	2011–2015
California	Sacramento	06067008910	Low-Income Community	2011–2015
California	Sacramento	06067008911	Low-Income Community	2011–2015
California	Sacramento	06067009006	Low-Income Community	2011–2015
California	Sacramento	06067009201	Low-Income Community	2011–2015
California	Sacramento	06067009634	Low-Income Community	2011–2015
California	Sacramento	06067009800	Low-Income Community	2011–2015
California	San Benito	06069000200	Low-Income Community	2011–2015
California	San Benito	06069000701	Low-Income Community	2011–2015
California	San Bernardino	06071000823	Low-Income Community	2011–2015
California	San Bernardino	06071001400	Low-Income Community	2011–2015
California	San Bernardino	06071001503	Low-Income Community	2011–2015
California	San Bernardino	06071001504	Low-Income Community	2011–2015
California	San Bernardino	06071001600	Low-Income Community	2011–2015
California	San Bernardino	06071002804	Low-Income Community	2011–2015
California	San Bernardino	06071003000	Low-Income Community	2011–2015
California	San Bernardino	06071003102	Low-Income Community	2011–2015
California	San Bernardino	06071003510	Low-Income Community	2011–2015
California	San Bernardino	06071003606	Low-Income Community	2011–2015
California	San Bernardino	06071003609	Low-Income Community	2011–2015
California	San Bernardino	06071003612	Low-Income Community	2011–2015
California	San Bernardino	06071003700	Low-Income Community	2011–2015
California	San Bernardino	06071004201	Low-Income Community	2011–2015
California	San Bernardino	06071004202	Low-Income Community	2011–2015
California	San Bernardino	06071004302	Low-Income Community	2011–2015
California	San Bernardino	06071004404	Low-Income Community	2011–2015
California	San Bernardino	06071004507	Low-Income Community	2011–2015
California	San Bernardino	06071004604	Low-Income Community	2011–2015
California	San Bernardino	06071004700	Low-Income Community	2011–2015
California	San Bernardino	06071004800	Low-Income Community	2011–2015
California	San Bernardino	06071004900	Low-Income Community	2011–2015
California	San Bernardino	06071005400	Low-Income Community	2011–2015
California	San Bernardino	06071005500	Low-Income Community	2011–2015
California	San Bernardino	06071005600	Low-Income Community	2011–2015
California	San Bernardino	06071005701	Low-Income Community	2011–2015
California	San Bernardino	06071005800	Low-Income Community	2011–2015
California	San Bernardino	06071006203	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Bernardino	06071006204	Low-Income Community	2011–2015
California	San Bernardino	06071006301	Low-Income Community	2011–2015
California	San Bernardino	06071006302	Low-Income Community	2011–2015
California	San Bernardino	06071006401	Low-Income Community	2011–2015
California	San Bernardino	06071006402	Low-Income Community	2011–2015
California	San Bernardino	06071006500	Low-Income Community	2011–2015
California	San Bernardino	06071007107	Low-Income Community	2011–2015
California	San Bernardino	06071007200	Low-Income Community	2011–2015
California	San Bernardino	06071007303	Low-Income Community	2011–2015
California	San Bernardino	06071007407	Low-Income Community	2011–2015
California	San Bernardino	06071007601	Low-Income Community	2011–2015
California	San Bernardino	06071008002	Low-Income Community	2011–2015
California	San Bernardino	06071008710	Low-Income Community	2011–2015
California	San Bernardino	06071009112	Low-Income Community	2011–2015
California	San Bernardino	06071009116	Low-Income Community	2011–2015
California	San Bernardino	06071009117	Low-Income Community	2011–2015
California	San Bernardino	06071009400	Low-Income Community	2011–2015
California	San Bernardino	06071009500	Low-Income Community	2011–2015
California	San Bernardino	06071009716	Low-Income Community	2011–2015
California	San Bernardino	06071009800	Low-Income Community	2011–2015
California	San Bernardino	06071009904	Low-Income Community	2011–2015
California	San Bernardino	06071009905	Low-Income Community	2011–2015
California	San Bernardino	06071009912	Low-Income Community	2011–2015
California	San Bernardino	06071009913	Low-Income Community	2011–2015
California	San Bernardino	06071010014	Low-Income Community	2011–2015
California	San Bernardino	06071010423	Low-Income Community	2011–2015
California	San Bernardino	06071010700	Low-Income Community	2011–2015
California	San Bernardino	06071012400	Low-Income Community	2011–2015
California	San Bernardino	06071012500	Low-Income Community	2011–2015
California	San Diego	06073000900	Low-Income Community	2011–2015
California	San Diego	06073001600	Low-Income Community	2011–2015
California	San Diego	06073002201	Low-Income Community	2011–2015
California	San Diego	06073002202	Low-Income Community	2011–2015
California	San Diego	06073002301	Low-Income Community	2011–2015
California	San Diego	06073002302	Low-Income Community	2011–2015
California	San Diego	06073002401	Low-Income Community	2011–2015
California	San Diego	06073002601	Low-Income Community	2011–2015
California	San Diego	06073002707	Low-Income Community	2011–2015
California	San Diego	06073002708	Low-Income Community	2011–2015
California	San Diego	06073002709	Low-Income Community	2011–2015
California	San Diego	06073002710	Low-Income Community	2011–2015
California	San Diego	06073003001	Non-LIC Contiguous	2011–2015
California	San Diego	06073003004	Low-Income Community	2011–2015
California	San Diego	06073003101	Low-Income Community	2011–2015
California	San Diego	06073003111	Low-Income Community	2011–2015
California	San Diego	06073003303	Low-Income Community	2011–2015
California	San Diego	06073003304	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Diego	06073003305	Low-Income Community	2011–2015
California	San Diego	06073003401	Low-Income Community	2011–2015
California	San Diego	06073003404	Low-Income Community	2011–2015
California	San Diego	06073003501	Low-Income Community	2011–2015
California	San Diego	06073003502	Low-Income Community	2011–2015
California	San Diego	06073003601	Low-Income Community	2011–2015
California	San Diego	06073003602	Low-Income Community	2011–2015
California	San Diego	06073003901	Low-Income Community	2011–2015
California	San Diego	06073003902	Low-Income Community	2011–2015
California	San Diego	06073004000	Low-Income Community	2011–2015
California	San Diego	06073004100	Low-Income Community	2011–2015
California	San Diego	06073004700	Low-Income Community	2011–2015
California	San Diego	06073004800	Low-Income Community	2011–2015
California	San Diego	06073004900	Low-Income Community	2011–2015
California	San Diego	06073005000	Low-Income Community	2011–2015
California	San Diego	06073005100	Low-Income Community	2011–2015
California	San Diego	06073010013	Low-Income Community	2011–2015
California	San Diego	06073011700	Low-Income Community	2011–2015
California	San Diego	06073011801	Low-Income Community	2011–2015
California	San Diego	06073013104	Low-Income Community	2011–2015
California	San Diego	06073013205	Low-Income Community	2011–2015
California	San Diego	06073013206	Low-Income Community	2011–2015
California	San Diego	06073015701	Low-Income Community	2011–2015
California	San Diego	06073015703	Low-Income Community	2011–2015
California	San Diego	06073015801	Low-Income Community	2011–2015
California	San Diego	06073015802	Low-Income Community	2011–2015
California	San Diego	06073015901	Low-Income Community	2011–2015
California	San Diego	06073019503	Low-Income Community	2011–2015
California	San Diego	06073020214	Low-Income Community	2011–2015
California	San Francisco	06075017902	Low-Income Community	2011–2015
California	San Francisco	06075023103	Low-Income Community	2011–2015
California	San Francisco	06075023400	Low-Income Community	2011–2015
California	San Francisco	06075026001	Low-Income Community	2011–2015
California	San Francisco	06075026004	Low-Income Community	2011–2015
California	San Francisco	06075026100	Low-Income Community	2011–2015
California	San Francisco	06075026301	Low-Income Community	2011–2015
California	San Francisco	06075026404	Low-Income Community	2011–2015
California	San Francisco	06075060502	Low-Income Community	2011–2015
California	San Francisco	06075061200	Low-Income Community	2011–2015
California	San Francisco	06075980600	Low-Income Community	2011–2015
California	San Joaquin	06077000100	Low-Income Community	2011–2015
California	San Joaquin	06077000300	Low-Income Community	2011–2015
California	San Joaquin	06077000402	Low-Income Community	2011–2015
California	San Joaquin	06077000500	Low-Income Community	2011–2015
California	San Joaquin	06077000600	Low-Income Community	2011–2015
California	San Joaquin	06077000700	Low-Income Community	2011–2015
California	San Joaquin	06077000801	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Joaquin	06077000900	Low-Income Community	2011–2015
California	San Joaquin	06077001200	Low-Income Community	2011–2015
California	San Joaquin	06077001500	Low-Income Community	2011–2015
California	San Joaquin	06077001600	Low-Income Community	2011–2015
California	San Joaquin	06077001900	Low-Income Community	2011–2015
California	San Joaquin	06077002100	Low-Income Community	2011–2015
California	San Joaquin	06077002201	Low-Income Community	2011–2015
California	San Joaquin	06077002202	Low-Income Community	2011–2015
California	San Joaquin	06077002800	Low-Income Community	2011–2015
California	San Joaquin	06077003307	Low-Income Community	2011–2015
California	San Joaquin	06077003700	Low-Income Community	2011–2015
California	San Joaquin	06077003803	Low-Income Community	2011–2015
California	San Joaquin	06077004403	Low-Income Community	2011–2015
California	San Luis Obispo	06079010102	Low-Income Community	2011–2015
California	San Luis Obispo	06079010902	Low-Income Community	2011–2015
California	San Luis Obispo	06079012200	Low-Income Community	2011–2015
California	San Mateo	06081600200	Low-Income Community	2011–2015
California	San Mateo	06081610201	Low-Income Community	2011–2015
California	San Mateo	06081610500	Low-Income Community	2011–2015
California	San Mateo	06081612100	Low-Income Community	2011–2015
California	Santa Barbara	06083002101	Low-Income Community	2011–2015
California	Santa Barbara	06083002403	Low-Income Community	2011–2015
California	Santa Barbara	06083002404	Low-Income Community	2011–2015
California	Santa Barbara	06083002502	Low-Income Community	2011–2015
California	Santa Barbara	06083002702	Low-Income Community	2011–2015
California	Santa Barbara	06083002705	Low-Income Community	2011–2015
California	Santa Barbara	06083002706	Low-Income Community	2011–2015
California	Santa Clara	06085500800	Low-Income Community	2011–2015
California	Santa Clara	06085500901	Low-Income Community	2011–2015
California	Santa Clara	06085501000	Low-Income Community	2011–2015
California	Santa Clara	06085501401	Low-Income Community	2011–2015
California	Santa Clara	06085501600	Low-Income Community	2011–2015
California	Santa Clara	06085503110	Low-Income Community	2011–2015
California	Santa Clara	06085503122	Low-Income Community	2011–2015
California	Santa Clara	06085503305	Low-Income Community	2011–2015
California	Santa Clara	06085503401	Low-Income Community	2011–2015
California	Santa Clara	06085503601	Low-Income Community	2011–2015
California	Santa Clara	06085505100	Low-Income Community	2011–2015
California	Santa Clara	06085512603	Low-Income Community	2011–2015
California	Santa Clara	06085512604	Low-Income Community	2011–2015
California	Santa Cruz	06087100800	Low-Income Community	2011–2015
California	Santa Cruz	06087101000	Low-Income Community	2011–2015
California	Santa Cruz	06087121402	Low-Income Community	2011–2015
California	Santa Cruz	06087121600	Low-Income Community	2011–2015
California	Shasta	06089010100	Low-Income Community	2011–2015
California	Shasta	06089010200	Low-Income Community	2011–2015
California	Shasta	06089010704	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Shasta	06089011209	Low-Income Community	2011–2015
California	Shasta	06089012000	Low-Income Community	2011–2015
California	Shasta	06089012500	Low-Income Community	2011–2015
California	Sierra	06091010000	Non-LIC Contiguous	2011–2015
California	Siskiyou	06093000500	Low-Income Community	2011–2015
California	Siskiyou	06093000702	Low-Income Community	2011–2015
California	Siskiyou	06093000703	Low-Income Community	2011–2015
California	Solano	06095250801	Low-Income Community	2011–2015
California	Solano	06095250900	Low-Income Community	2011–2015
California	Solano	06095251100	Low-Income Community	2011–2015
California	Solano	06095251500	Low-Income Community	2011–2015
California	Solano	06095251600	Low-Income Community	2011–2015
California	Solano	06095251802	Low-Income Community	2011–2015
California	Solano	06095252605	Low-Income Community	2011–2015
California	Solano	06095252606	Low-Income Community	2011–2015
California	Solano	06095252607	Low-Income Community	2011–2015
California	Sonoma	06097150305	Low-Income Community	2011–2015
California	Sonoma	06097152000	Low-Income Community	2011–2015
California	Sonoma	06097153104	Low-Income Community	2011–2015
California	Stanislaus	06099001400	Low-Income Community	2011–2015
California	Stanislaus	06099001603	Low-Income Community	2011–2015
California	Stanislaus	06099001604	Low-Income Community	2011–2015
California	Stanislaus	06099001700	Low-Income Community	2011–2015
California	Stanislaus	06099001800	Low-Income Community	2011–2015
California	Stanislaus	06099002002	Low-Income Community	2011–2015
California	Stanislaus	06099002100	Low-Income Community	2011–2015
California	Stanislaus	06099002200	Low-Income Community	2011–2015
California	Stanislaus	06099002301	Low-Income Community	2011–2015
California	Stanislaus	06099002402	Low-Income Community	2011–2015
California	Stanislaus	06099002501	Low-Income Community	2011–2015
California	Stanislaus	06099002602	Low-Income Community	2011–2015
California	Stanislaus	06099003002	Low-Income Community	2011–2015
California	Stanislaus	06099003201	Low-Income Community	2011–2015
California	Stanislaus	06099003400	Low-Income Community	2011–2015
California	Stanislaus	06099003802	Low-Income Community	2011–2015
California	Stanislaus	06099003803	Low-Income Community	2011–2015
California	Sutter	06101050102	Low-Income Community	2011–2015
California	Sutter	06101050201	Low-Income Community	2011–2015
California	Sutter	06101050202	Low-Income Community	2011–2015
California	Sutter	06101050302	Low-Income Community	2011–2015
California	Tehama	06103001100	Low-Income Community	2011–2015
California	Trinity	06105000101	Low-Income Community	2011–2015
California	Trinity	06105000300	Low-Income Community	2011–2015
California	Tulare	06107000201	Low-Income Community	2011–2015
California	Tulare	06107000302	Low-Income Community	2011–2015
California	Tulare	06107000502	Low-Income Community	2011–2015
California	Tulare	06107000900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Tulare	06107001003	Low-Income Community	2012–2016
California	Tulare	06107001100	Low-Income Community	2011–2015
California	Tulare	06107001400	Low-Income Community	2011–2015
California	Tulare	06107002202	Low-Income Community	2011–2015
California	Tulare	06107002800	Low-Income Community	2011–2015
California	Tulare	06107002901	Low-Income Community	2011–2015
California	Tulare	06107003200	Low-Income Community	2011–2015
California	Tulare	06107003400	Low-Income Community	2011–2015
California	Tulare	06107003802	Low-Income Community	2011–2015
California	Tulare	06107004101	Low-Income Community	2011–2015
California	Tulare	06107004102	Low-Income Community	2011–2015
California	Tulare	06107004200	Low-Income Community	2011–2015
California	Tulare	06107004300	Low-Income Community	2011–2015
California	Tuolumne	06109001200	Low-Income Community	2011–2015
California	Tuolumne	06109004200	Low-Income Community	2011–2015
California	Ventura	06111000304	Low-Income Community	2011–2015
California	Ventura	06111000600	Low-Income Community	2011–2015
California	Ventura	06111001302	Low-Income Community	2011–2015
California	Ventura	06111003201	Low-Income Community	2011–2015
California	Ventura	06111004305	Low-Income Community	2011–2015
California	Ventura	06111004715	Low-Income Community	2011–2015
California	Ventura	06111004902	Low-Income Community	2011–2015
California	Ventura	06111009100	Low-Income Community	2011–2015
California	Yolo	06113010101	Low-Income Community	2011–2015
California	Yolo	06113010201	Low-Income Community	2011–2015
California	Yolo	06113010203	Low-Income Community	2011–2015
California	Yolo	06113010204	Low-Income Community	2011–2015
California	Yolo	06113010602	Low-Income Community	2011–2015
California	Yolo	06113010800	Low-Income Community	2011–2015
California	Yolo	06113011102	Low-Income Community	2011–2015
California	Yuba	06115040301	Low-Income Community	2011–2015
California	Yuba	06115040302	Low-Income Community	2011–2015
California	Yuba	06115040400	Low-Income Community	2011–2015
Colorado	Adams	08001008100	Low-Income Community	2011–2015
Colorado	Adams	08001008353	Low-Income Community	2011–2015
Colorado	Adams	08001008606	Low-Income Community	2011–2015
Colorado	Adams	08001008901	Low-Income Community	2011–2015
Colorado	Adams	08001009202	Low-Income Community	2011–2015
Colorado	Adams	08001009321	Low-Income Community	2011–2015
Colorado	Adams	08001009604	Low-Income Community	2011–2015
Colorado	Adams	08001009606	Low-Income Community	2011–2015
Colorado	Adams	08001015000	Low-Income Community	2011–2015
Colorado	Alamosa	08003960000	Low-Income Community	2011–2015
Colorado	Alamosa	08003960200	Low-Income Community	2011–2015
Colorado	Alamosa	08003960300	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005551	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005552	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Arapahoe	08005005700	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005951	Low-Income Community	2011–2015
Colorado	Arapahoe	08005006000	Low-Income Community	2011–2015
Colorado	Arapahoe	08005006200	Low-Income Community	2011–2015
Colorado	Arapahoe	08005007301	Low-Income Community	2011–2015
Colorado	Arapahoe	08005007302	Low-Income Community	2011–2015
Colorado	Arapahoe	08005081100	Low-Income Community	2011–2015
Colorado	Archuleta	08007974400	Low-Income Community	2011–2015
Colorado	Baca	08009964700	Low-Income Community	2011–2015
Colorado	Bent	08011966700	Low-Income Community	2011–2015
Colorado	Boulder	08013012203	Low-Income Community	2011–2015
Colorado	Boulder	08013013302	Low-Income Community	2011–2015
Colorado	Boulder	08013013401	Low-Income Community	2011–2015
Colorado	Boulder	08013060800	Low-Income Community	2011–2015
Colorado	Chaffee	08015000401	Non-LIC Contiguous	2011–2015
Colorado	Chaffee	08015000402	Low-Income Community	2011–2015
Colorado	Cheyenne	08017960600	Low-Income Community	2011–2015
Colorado	Clear Creek	08019014800	Low-Income Community	2011–2015
Colorado	Costilla	08023972600	Low-Income Community	2011–2015
Colorado	Crowley	08025969600	Low-Income Community	2011–2015
Colorado	Delta	08029964600	Low-Income Community	2011–2015
Colorado	Delta	08029964800	Low-Income Community	2012–2016
Colorado	Delta	08029965100	Low-Income Community	2011–2015
Colorado	Denver	08031000702	Low-Income Community	2011–2015
Colorado	Denver	08031000800	Low-Income Community	2011–2015
Colorado	Denver	08031003500	Low-Income Community	2011–2015
Colorado	Denver	08031003602	Low-Income Community	2011–2015
Colorado	Denver	08031004101	Low-Income Community	2011–2015
Colorado	Denver	08031004102	Low-Income Community	2011–2015
Colorado	Denver	08031004403	Low-Income Community	2011–2015
Colorado	Denver	08031004404	Low-Income Community	2011–2015
Colorado	Denver	08031004505	Low-Income Community	2011–2015
Colorado	Denver	08031008312	Low-Income Community	2011–2015
Colorado	Dolores	08033000100	Low-Income Community	2011–2015
Colorado	Eagle	08037000503	Low-Income Community	2011–2015
Colorado	El Paso	08041000302	Low-Income Community	2011–2015
Colorado	El Paso	08041002000	Low-Income Community	2011–2015
Colorado	El Paso	08041002200	Low-Income Community	2011–2015
Colorado	El Paso	08041002300	Low-Income Community	2011–2015
Colorado	El Paso	08041004008	Low-Income Community	2011–2015
Colorado	El Paso	08041004501	Low-Income Community	2011–2015
Colorado	El Paso	08041005000	Low-Income Community	2011–2015
Colorado	El Paso	08041006302	Low-Income Community	2011–2015
Colorado	Fremont	08043978200	Low-Income Community	2011–2015
Colorado	Fremont	08043978300	Low-Income Community	2011–2015
Colorado	Fremont	08043978800	Low-Income Community	2011–2015
Colorado	Garfield	08045951600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Garfield	08045951702	Low-Income Community	2012–2016
Colorado	Garfield	08045951901	Low-Income Community	2011–2015
Colorado	Gunnison	08051963700	Low-Income Community	2011–2015
Colorado	Huerfano	08055960600	Low-Income Community	2011–2015
Colorado	Jefferson	08059009831	Low-Income Community	2011–2015
Colorado	Jefferson	08059010100	Low-Income Community	2011–2015
Colorado	Jefferson	08059010402	Low-Income Community	2011–2015
Colorado	Jefferson	08059010902	Low-Income Community	2011–2015
Colorado	Jefferson	08059011550	Low-Income Community	2011–2015
Colorado	Kit Carson	08063962100	Low-Income Community	2011–2015
Colorado	Lake	08065961900	Non-LIC Contiguous	2011–2015
Colorado	La Plata	08067940400	Non-LIC Contiguous	2011–2015
Colorado	La Plata	08067971100	Low-Income Community	2011–2015
Colorado	Larimer	08069001305	Low-Income Community	2011–2015
Colorado	Larimer	08069001306	Low-Income Community	2011–2015
Colorado	Larimer	08069002007	Low-Income Community	2011–2015
Colorado	Larimer	08069002802	Low-Income Community	2011–2015
Colorado	Las Animas	08071000200	Non-LIC Contiguous	2011–2015
Colorado	Las Animas	08071000500	Low-Income Community	2011–2015
Colorado	Las Animas	08071000800	Non-LIC Contiguous	2011–2015
Colorado	Lincoln	08073961700	Low-Income Community	2011–2015
Colorado	Logan	08075966100	Low-Income Community	2011–2015
Colorado	Logan	08075966300	Low-Income Community	2012–2016
Colorado	Logan	08075966400	Low-Income Community	2011–2015
Colorado	Mesa	08077000200	Low-Income Community	2011–2015
Colorado	Mesa	08077000400	Low-Income Community	2011–2015
Colorado	Mesa	08077000500	Low-Income Community	2011–2015
Colorado	Mesa	08077000700	Low-Income Community	2011–2015
Colorado	Mesa	08077000800	Low-Income Community	2011–2015
Colorado	Mesa	08077000900	Low-Income Community	2011–2015
Colorado	Mesa	08077001800	Non-LIC Contiguous	2011–2015
Colorado	Moffat	08081000400	Low-Income Community	2011–2015
Colorado	Montezuma	08083941100	Low-Income Community	2011–2015
Colorado	Montrose	08085966100	Low-Income Community	2011–2015
Colorado	Montrose	08085966202	Low-Income Community	2011–2015
Colorado	Montrose	08085966300	Low-Income Community	2011–2015
Colorado	Montrose	08085966503	Low-Income Community	2011–2015
Colorado	Morgan	08087000500	Low-Income Community	2011–2015
Colorado	Morgan	08087000700	Low-Income Community	2011–2015
Colorado	Otero	08089968300	Low-Income Community	2011–2015
Colorado	Otero	08089968600	Low-Income Community	2011–2015
Colorado	Phillips	08095967600	Low-Income Community	2011–2015
Colorado	Prowers	08099000200	Low-Income Community	2011–2015
Colorado	Prowers	08099000300	Low-Income Community	2011–2015
Colorado	Prowers	08099000700	Low-Income Community	2011–2015
Colorado	Pueblo	08101001400	Low-Income Community	2011–2015
Colorado	Pueblo	08101001900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Pueblo	08101002000	Low-Income Community	2011–2015
Colorado	Pueblo	08101002300	Low-Income Community	2011–2015
Colorado	Pueblo	08101002600	Low-Income Community	2011–2015
Colorado	Pueblo	08101002901	Low-Income Community	2011–2015
Colorado	Pueblo	08101003103	Low-Income Community	2011–2015
Colorado	Pueblo	08101003106	Low-Income Community	2011–2015
Colorado	Pueblo	08101003500	Low-Income Community	2011–2015
Colorado	Rio Blanco	08103951100	Low-Income Community	2011–2015
Colorado	Rio Grande	08105976700	Low-Income Community	2011–2015
Colorado	Saguache	08109977700	Low-Income Community	2011–2015
Colorado	San Juan	08111972600	Low-Income Community	2011–2015
Colorado	San Miguel	08113968200	Non-LIC Contiguous	2011–2015
Colorado	Washington	08121924200	Low-Income Community	2011–2015
Colorado	Weld	08123000100	Low-Income Community	2011–2015
Colorado	Weld	08123001004	Low-Income Community	2011–2015
Colorado	Weld	08123001902	Low-Income Community	2011–2015
Colorado	Weld	08123002004	Low-Income Community	2011–2015
Colorado	Yuma	08125963100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001020100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001021400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001021802	Low-Income Community	2011–2015
Connecticut	Fairfield	09001022200	Low-Income Community	2011–2015
Connecticut	Fairfield	09001022300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001043400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001043700	Low-Income Community	2011–2015
Connecticut	Fairfield	09001044100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070500	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070600	Low-Income Community	2011–2015
Connecticut	Fairfield	09001073800	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074000	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001080400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001210100	Low-Income Community	2011–2015
Connecticut	Hartford	09003406100	Low-Income Community	2011–2015
Connecticut	Hartford	09003415300	Low-Income Community	2011–2015
Connecticut	Hartford	09003415900	Low-Income Community	2011–2015
Connecticut	Hartford	09003417100	Low-Income Community	2011–2015
Connecticut	Hartford	09003473800	Low-Income Community	2011–2015
Connecticut	Hartford	09003496100	Low-Income Community	2011–2015
Connecticut	Hartford	09003500300	Low-Income Community	2011–2015
Connecticut	Hartford	09003500400	Low-Income Community	2011–2015
Connecticut	Hartford	09003502500	Low-Income Community	2011–2015
Connecticut	Hartford	09003502700	Low-Income Community	2011–2015
Connecticut	Hartford	09003502800	Low-Income Community	2011–2015
Connecticut	Hartford	09003503700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Connecticut	Hartford	09003503800	Low-Income Community	2011–2015
Connecticut	Hartford	09003504900	Low-Income Community	2011–2015
Connecticut	Hartford	09003510200	Low-Income Community	2011–2015
Connecticut	Hartford	09003510400	Low-Income Community	2011–2015
Connecticut	Hartford	09003510500	Low-Income Community	2011–2015
Connecticut	Hartford	09003510600	Low-Income Community	2011–2015
Connecticut	Hartford	09003510800	Low-Income Community	2011–2015
Connecticut	Hartford	09003514500	Low-Income Community	2011–2015
Connecticut	Hartford	09003514700	Low-Income Community	2011–2015
Connecticut	Hartford	09003524400	Low-Income Community	2011–2015
Connecticut	Hartford	09003524600	Low-Income Community	2011–2015
Connecticut	Litchfield	09005310300	Low-Income Community	2011–2015
Connecticut	Middlesex	09007541100	Low-Income Community	2011–2015
Connecticut	Middlesex	09007541600	Low-Income Community	2011–2015
Connecticut	New Haven	09009125200	Low-Income Community	2011–2015
Connecticut	New Haven	09009140200	Low-Income Community	2011–2015
Connecticut	New Haven	09009140300	Low-Income Community	2011–2015
Connecticut	New Haven	09009141500	Low-Income Community	2011–2015
Connecticut	New Haven	09009141600	Low-Income Community	2011–2015
Connecticut	New Haven	09009142200	Low-Income Community	2011–2015
Connecticut	New Haven	09009142300	Low-Income Community	2011–2015
Connecticut	New Haven	09009142400	Low-Income Community	2011–2015
Connecticut	New Haven	09009154100	Low-Income Community	2011–2015
Connecticut	New Haven	09009154500	Low-Income Community	2011–2015
Connecticut	New Haven	09009165500	Low-Income Community	2011–2015
Connecticut	New Haven	09009170100	Low-Income Community	2011–2015
Connecticut	New Haven	09009170200	Low-Income Community	2011–2015
Connecticut	New Haven	09009170900	Low-Income Community	2011–2015
Connecticut	New Haven	09009345100	Non-LIC Contiguous	2011–2015
Connecticut	New Haven	09009350100	Low-Income Community	2011–2015
Connecticut	New Haven	09009350500	Low-Income Community	2011–2015
Connecticut	New Haven	09009351500	Low-Income Community	2011–2015
Connecticut	New Haven	09009351700	Low-Income Community	2011–2015
Connecticut	New London	09011690500	Low-Income Community	2011–2015
Connecticut	New London	09011690700	Low-Income Community	2011–2015
Connecticut	New London	09011696700	Low-Income Community	2011–2015
Connecticut	New London	09011696800	Low-Income Community	2011–2015
Connecticut	New London	09011697000	Low-Income Community	2011–2015
Connecticut	New London	09011870200	Low-Income Community	2011–2015
Connecticut	New London	09011870300	Low-Income Community	2011–2015
Connecticut	Tolland	09013881300	Low-Income Community	2011–2015
Connecticut	Windham	09015800600	Low-Income Community	2011–2015
Connecticut	Windham	09015903100	Low-Income Community	2011–2015
Delaware	Kent	10001040201	Low-Income Community	2011–2015
Delaware	Kent	10001041300	Low-Income Community	2011–2015
Delaware	Kent	10001041400	Low-Income Community	2011–2015
Delaware	Kent	10001042500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Delaware	Kent	10001043300	Low-Income Community	2011–2015
Delaware	New Castle	10003000601	Low-Income Community	2011–2015
Delaware	New Castle	10003000602	Low-Income Community	2011–2015
Delaware	New Castle	10003001902	Low-Income Community	2011–2015
Delaware	New Castle	10003002100	Low-Income Community	2011–2015
Delaware	New Castle	10003002700	Low-Income Community	2011–2015
Delaware	New Castle	10003002800	Low-Income Community	2011–2015
Delaware	New Castle	10003002900	Low-Income Community	2011–2015
Delaware	New Castle	10003003002	Low-Income Community	2011–2015
Delaware	New Castle	10003010101	Low-Income Community	2011–2015
Delaware	New Castle	10003010104	Low-Income Community	2011–2015
Delaware	New Castle	10003010702	Low-Income Community	2011–2015
Delaware	New Castle	10003012900	Low-Income Community	2011–2015
Delaware	New Castle	10003014402	Low-Income Community	2011–2015
Delaware	New Castle	10003015502	Low-Income Community	2011–2015
Delaware	New Castle	10003015802	Low-Income Community	2011–2015
Delaware	Sussex	10005050401	Non-LIC Contiguous	2011–2015
Delaware	Sussex	10005050405	Low-Income Community	2011–2015
Delaware	Sussex	10005050406	Low-Income Community	2011–2015
Delaware	Sussex	10005050503	Low-Income Community	2011–2015
Delaware	Sussex	10005051802	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001002101	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001003400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001006400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001006804	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007304	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007401	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007407	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007503	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007601	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007603	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007604	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007709	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007803	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007804	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007806	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007808	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001008904	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009102	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009204	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009601	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009602	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009603	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010300	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010900	Low-Income Community	2011–2015
Florida	Alachua	12001000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Alachua	12001000302	Low-Income Community	2011–2015
Florida	Alachua	12001000400	Low-Income Community	2011–2015
Florida	Alachua	12001000500	Low-Income Community	2011–2015
Florida	Alachua	12001000600	Low-Income Community	2011–2015
Florida	Alachua	12001000700	Low-Income Community	2011–2015
Florida	Alachua	12001001400	Low-Income Community	2011–2015
Florida	Alachua	12001002000	Low-Income Community	2011–2015
Florida	Baker	12003040201	Low-Income Community	2011–2015
Florida	Bay	12005001600	Low-Income Community	2011–2015
Florida	Bay	12005001800	Low-Income Community	2011–2015
Florida	Bay	12005002000	Low-Income Community	2011–2015
Florida	Bradford	12007000400	Low-Income Community	2011–2015
Florida	Brevard	12009060700	Low-Income Community	2011–2015
Florida	Brevard	12009062106	Low-Income Community	2011–2015
Florida	Brevard	12009062302	Low-Income Community	2011–2015
Florida	Brevard	12009062400	Low-Income Community	2011–2015
Florida	Brevard	12009062600	Low-Income Community	2011–2015
Florida	Brevard	12009064700	Low-Income Community	2011–2015
Florida	Brevard	12009064902	Low-Income Community	2011–2015
Florida	Brevard	12009065124	Low-Income Community	2011–2015
Florida	Brevard	12009065234	Low-Income Community	2011–2015
Florida	Broward	12011010304	Low-Income Community	2011–2015
Florida	Broward	12011020412	Low-Income Community	2011–2015
Florida	Broward	12011030402	Low-Income Community	2011–2015
Florida	Broward	12011030600	Low-Income Community	2011–2015
Florida	Broward	12011040801	Low-Income Community	2011–2015
Florida	Broward	12011040901	Low-Income Community	2011–2015
Florida	Broward	12011041000	Low-Income Community	2011–2015
Florida	Broward	12011041100	Low-Income Community	2011–2015
Florida	Broward	12011041200	Low-Income Community	2011–2015
Florida	Broward	12011041300	Low-Income Community	2011–2015
Florida	Broward	12011041400	Low-Income Community	2011–2015
Florida	Broward	12011041500	Low-Income Community	2011–2015
Florida	Broward	12011041600	Low-Income Community	2011–2015
Florida	Broward	12011041700	Low-Income Community	2011–2015
Florida	Broward	12011050207	Low-Income Community	2011–2015
Florida	Broward	12011050301	Low-Income Community	2011–2015
Florida	Broward	12011050308	Low-Income Community	2011–2015
Florida	Broward	12011050310	Low-Income Community	2011–2015
Florida	Broward	12011050311	Low-Income Community	2011–2015
Florida	Broward	12011050312	Low-Income Community	2011–2015
Florida	Broward	12011050702	Low-Income Community	2011–2015
Florida	Broward	12011060303	Low-Income Community	2011–2015
Florida	Broward	12011080500	Low-Income Community	2011–2015
Florida	Broward	12011091902	Low-Income Community	2011–2015
Florida	Broward	12011100201	Low-Income Community	2011–2015
Florida	Broward	12011100300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Broward	12011100502	Low-Income Community	2011–2015
Florida	Broward	12011100700	Low-Income Community	2011–2015
Florida	Broward	12011100801	Low-Income Community	2011–2015
Florida	Broward	12011110501	Low-Income Community	2011–2015
Florida	Calhoun	12013010300	Low-Income Community	2011–2015
Florida	Charlotte	12015010100	Low-Income Community	2011–2015
Florida	Charlotte	12015020700	Low-Income Community	2011–2015
Florida	Charlotte	12015030401	Low-Income Community	2011–2015
Florida	Citrus	12017450202	Low-Income Community	2011–2015
Florida	Citrus	12017450800	Low-Income Community	2011–2015
Florida	Citrus	12017451502	Low-Income Community	2011–2015
Florida	Clay	12019030102	Low-Income Community	2011–2015
Florida	Clay	12019030104	Low-Income Community	2011–2015
Florida	Collier	12021010411	Low-Income Community	2011–2015
Florida	Collier	12021010802	Low-Income Community	2011–2015
Florida	Collier	12021011205	Low-Income Community	2011–2015
Florida	Collier	12021011301	Low-Income Community	2011–2015
Florida	Collier	12021011400	Low-Income Community	2011–2015
Florida	Columbia	12023110300	Low-Income Community	2011–2015
Florida	DeSoto	12027010200	Low-Income Community	2011–2015
Florida	DeSoto	12027010301	Low-Income Community	2011–2015
Florida	Dixie	12029970101	Low-Income Community	2011–2015
Florida	Duval	12031000600	Low-Income Community	2011–2015
Florida	Duval	12031001000	Low-Income Community	2011–2015
Florida	Duval	12031001300	Low-Income Community	2011–2015
Florida	Duval	12031001400	Low-Income Community	2011–2015
Florida	Duval	12031001600	Low-Income Community	2011–2015
Florida	Duval	12031002600	Low-Income Community	2011–2015
Florida	Duval	12031002901	Low-Income Community	2011–2015
Florida	Duval	12031010700	Low-Income Community	2011–2015
Florida	Duval	12031011000	Low-Income Community	2011–2015
Florida	Duval	12031011300	Low-Income Community	2011–2015
Florida	Duval	12031011500	Low-Income Community	2011–2015
Florida	Duval	12031011600	Low-Income Community	2011–2015
Florida	Duval	12031011800	Low-Income Community	2011–2015
Florida	Duval	12031012200	Low-Income Community	2011–2015
Florida	Duval	12031012400	Low-Income Community	2011–2015
Florida	Duval	12031012601	Low-Income Community	2011–2015
Florida	Duval	12031012602	Low-Income Community	2011–2015
Florida	Duval	12031013800	Low-Income Community	2011–2015
Florida	Duval	12031013901	Low-Income Community	2011–2015
Florida	Duval	12031015502	Low-Income Community	2011–2015
Florida	Duval	12031017400	Low-Income Community	2011–2015
Florida	Escambia	12033000400	Low-Income Community	2011–2015
Florida	Escambia	12033001300	Low-Income Community	2011–2015
Florida	Escambia	12033001600	Low-Income Community	2011–2015
Florida	Escambia	12033001700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Escambia	12033001900	Low-Income Community	2011–2015
Florida	Escambia	12033002803	Low-Income Community	2011–2015
Florida	Escambia	12033004000	Low-Income Community	2011–2015
Florida	Flagler	12035060213	Low-Income Community	2011–2015
Florida	Franklin	12037970200	Low-Income Community	2011–2015
Florida	Gadsden	12039020102	Low-Income Community	2011–2015
Florida	Gilchrist	12041950100	Low-Income Community	2011–2015
Florida	Gilchrist	12041950201	Low-Income Community	2011–2015
Florida	Glades	12043000200	Low-Income Community	2011–2015
Florida	Glades	12043000300	Low-Income Community	2011–2015
Florida	Gulf	12045960200	Low-Income Community	2011–2015
Florida	Hamilton	12047960100	Low-Income Community	2011–2015
Florida	Hamilton	12047960300	Low-Income Community	2011–2015
Florida	Hardee	12049970102	Low-Income Community	2011–2015
Florida	Hendry	12051000200	Low-Income Community	2011–2015
Florida	Hernando	12053040400	Low-Income Community	2011–2015
Florida	Hernando	12053040502	Low-Income Community	2011–2015
Florida	Hernando	12053041104	Low-Income Community	2011–2015
Florida	Hernando	12053041204	Low-Income Community	2011–2015
Florida	Hernando	12053041302	Low-Income Community	2011–2015
Florida	Highlands	12055960103	Low-Income Community	2011–2015
Florida	Highlands	12055960300	Low-Income Community	2011–2015
Florida	Highlands	12055961200	Low-Income Community	2011–2015
Florida	Highlands	12055961700	Low-Income Community	2011–2015
Florida	Hillsborough	12057000102	Low-Income Community	2011–2015
Florida	Hillsborough	12057000201	Low-Income Community	2011–2015
Florida	Hillsborough	12057000202	Low-Income Community	2011–2015
Florida	Hillsborough	12057000300	Low-Income Community	2011–2015
Florida	Hillsborough	12057000700	Low-Income Community	2011–2015
Florida	Hillsborough	12057001002	Low-Income Community	2011–2015
Florida	Hillsborough	12057001800	Low-Income Community	2011–2015
Florida	Hillsborough	12057002600	Low-Income Community	2011–2015
Florida	Hillsborough	12057002900	Low-Income Community	2011–2015
Florida	Hillsborough	12057003000	Low-Income Community	2011–2015
Florida	Hillsborough	12057003100	Low-Income Community	2011–2015
Florida	Hillsborough	12057003200	Low-Income Community	2011–2015
Florida	Hillsborough	12057003300	Low-Income Community	2011–2015
Florida	Hillsborough	12057003400	Low-Income Community	2011–2015
Florida	Hillsborough	12057003500	Low-Income Community	2011–2015
Florida	Hillsborough	12057003600	Low-Income Community	2011–2015
Florida	Hillsborough	12057003900	Low-Income Community	2011–2015
Florida	Hillsborough	12057004000	Low-Income Community	2011–2015
Florida	Hillsborough	12057004200	Low-Income Community	2011–2015
Florida	Hillsborough	12057004300	Low-Income Community	2011–2015
Florida	Hillsborough	12057004500	Low-Income Community	2011–2015
Florida	Hillsborough	12057005101	Low-Income Community	2011–2015
Florida	Hillsborough	12057010203	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Hillsborough	12057010805	Low-Income Community	2011–2015
Florida	Hillsborough	12057010815	Low-Income Community	2011–2015
Florida	Hillsborough	12057010816	Low-Income Community	2011–2015
Florida	Hillsborough	12057010818	Low-Income Community	2011–2015
Florida	Hillsborough	12057012002	Low-Income Community	2011–2015
Florida	Hillsborough	12057013503	Low-Income Community	2011–2015
Florida	Hillsborough	12057013504	Low-Income Community	2011–2015
Florida	Hillsborough	12057013505	Low-Income Community	2011–2015
Florida	Hillsborough	12057013604	Low-Income Community	2011–2015
Florida	Holmes	12059960200	Low-Income Community	2011–2015
Florida	Indian River	12061050904	Low-Income Community	2011–2015
Florida	Jackson	12063210200	Low-Income Community	2011–2015
Florida	Jackson	12063210500	Low-Income Community	2011–2015
Florida	Jefferson	12065250101	Low-Income Community	2011–2015
Florida	Lafayette	12067960100	Low-Income Community	2011–2015
Florida	Lake	12069030102	Low-Income Community	2011–2015
Florida	Lake	12069030107	Low-Income Community	2011–2015
Florida	Lake	12069030206	Low-Income Community	2011–2015
Florida	Lake	12069030502	Low-Income Community	2011–2015
Florida	Lake	12069030504	Low-Income Community	2011–2015
Florida	Lake	12069031205	Low-Income Community	2011–2015
Florida	Lee	12071000502	Low-Income Community	2011–2015
Florida	Lee	12071000503	Low-Income Community	2011–2015
Florida	Lee	12071000600	Low-Income Community	2011–2015
Florida	Lee	12071001910	Low-Income Community	2011–2015
Florida	Lee	12071010201	Low-Income Community	2011–2015
Florida	Lee	12071010302	Low-Income Community	2011–2015
Florida	Lee	12071010307	Low-Income Community	2011–2015
Florida	Lee	12071020201	Low-Income Community	2011–2015
Florida	Lee	12071020300	Low-Income Community	2011–2015
Florida	Lee	12071020502	Low-Income Community	2011–2015
Florida	Lee	12071040122	Low-Income Community	2011–2015
Florida	Lee	12071040308	Low-Income Community	2011–2015
Florida	Lee	12071040313	Low-Income Community	2011–2015
Florida	Lee	12071040314	Low-Income Community	2011–2015
Florida	Lee	12071050103	Low-Income Community	2011–2015
Florida	Leon	12073000400	Low-Income Community	2011–2015
Florida	Leon	12073000500	Low-Income Community	2011–2015
Florida	Leon	12073000600	Low-Income Community	2011–2015
Florida	Leon	12073001002	Low-Income Community	2011–2015
Florida	Leon	12073001101	Low-Income Community	2011–2015
Florida	Leon	12073001401	Low-Income Community	2011–2015
Florida	Leon	12073002003	Low-Income Community	2011–2015
Florida	Leon	12073002005	Low-Income Community	2011–2015
Florida	Levy	12075970101	Low-Income Community	2011–2015
Florida	Levy	12075970102	Low-Income Community	2011–2015
Florida	Liberty	12077950200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Madison	12079110302	Low-Income Community	2011–2015
Florida	Manatee	12081000103	Low-Income Community	2011–2015
Florida	Manatee	12081000105	Low-Income Community	2011–2015
Florida	Manatee	12081000106	Low-Income Community	2011–2015
Florida	Manatee	12081000306	Low-Income Community	2011–2015
Florida	Manatee	12081000601	Low-Income Community	2011–2015
Florida	Manatee	12081000703	Low-Income Community	2011–2015
Florida	Marion	12083000401	Low-Income Community	2011–2015
Florida	Marion	12083000601	Low-Income Community	2011–2015
Florida	Marion	12083001204	Low-Income Community	2011–2015
Florida	Marion	12083001401	Low-Income Community	2011–2015
Florida	Marion	12083001500	Low-Income Community	2011–2015
Florida	Marion	12083001800	Low-Income Community	2011–2015
Florida	Marion	12083001900	Low-Income Community	2011–2015
Florida	Marion	12083002002	Low-Income Community	2011–2015
Florida	Marion	12083002602	Low-Income Community	2011–2015
Florida	Martin	12085000501	Low-Income Community	2011–2015
Florida	Martin	12085001801	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000109	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000134	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000206	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000209	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000404	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000405	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000408	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000409	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000807	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000903	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001002	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001004	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001005	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001006	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001401	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001402	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001605	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001606	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001701	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001702	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001801	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001802	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001803	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001901	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001903	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001904	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Miami-Dade	12086002001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002003	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002004	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002201	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002300	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002402	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002404	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002702	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003100	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003601	Low-Income Community	2011–2015
Florida	Miami-Dade	12086005502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086005701	Low-Income Community	2011–2015
Florida	Miami-Dade	12086007200	Low-Income Community	2011–2015
Florida	Miami-Dade	12086007603	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008208	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008304	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008309	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009100	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009307	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009308	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009807	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009904	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010011	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010015	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010016	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010609	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011005	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011101	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011300	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011403	Low-Income Community	2011–2015
Florida	Miami-Dade	12086013400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086980800	Low-Income Community	2011–2015
Florida	Monroe	12087971100	Low-Income Community	2011–2015
Florida	Nassau	12089050302	Low-Income Community	2011–2015
Florida	Nassau	12089050303	Low-Income Community	2011–2015
Florida	Okaloosa	12091021900	Low-Income Community	2011–2015
Florida	Okeechobee	12093910300	Low-Income Community	2011–2015
Florida	Okeechobee	12093910401	Low-Income Community	2011–2015
Florida	Orange	12095010400	Low-Income Community	2011–2015
Florida	Orange	12095010500	Low-Income Community	2011–2015
Florida	Orange	12095011701	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Orange	12095011702	Low-Income Community	2011–2015
Florida	Orange	12095012000	Low-Income Community	2011–2015
Florida	Orange	12095012100	Low-Income Community	2011–2015
Florida	Orange	12095012202	Low-Income Community	2011–2015
Florida	Orange	12095012304	Low-Income Community	2011–2015
Florida	Orange	12095012305	Low-Income Community	2011–2015
Florida	Orange	12095012307	Low-Income Community	2011–2015
Florida	Orange	12095012402	Low-Income Community	2011–2015
Florida	Orange	12095013402	Low-Income Community	2011–2015
Florida	Orange	12095013406	Low-Income Community	2011–2015
Florida	Orange	12095014605	Low-Income Community	2011–2015
Florida	Orange	12095014608	Low-Income Community	2011–2015
Florida	Orange	12095014904	Low-Income Community	2011–2015
Florida	Orange	12095015202	Low-Income Community	2011–2015
Florida	Orange	12095016724	Low-Income Community	2011–2015
Florida	Orange	12095017600	Low-Income Community	2011–2015
Florida	Orange	12095018000	Low-Income Community	2011–2015
Florida	Orange	12095018300	Low-Income Community	2011–2015
Florida	Orange	12095018400	Low-Income Community	2011–2015
Florida	Orange	12095018500	Low-Income Community	2011–2015
Florida	Orange	12095018700	Low-Income Community	2011–2015
Florida	Osceola	12097041100	Low-Income Community	2011–2015
Florida	Osceola	12097042300	Low-Income Community	2011–2015
Florida	Osceola	12097042701	Low-Income Community	2011–2015
Florida	Osceola	12097042900	Low-Income Community	2011–2015
Florida	Osceola	12097043500	Low-Income Community	2011–2015
Florida	Palm Beach	12099001302	Low-Income Community	2011–2015
Florida	Palm Beach	12099001402	Low-Income Community	2011–2015
Florida	Palm Beach	12099001403	Low-Income Community	2011–2015
Florida	Palm Beach	12099001404	Low-Income Community	2011–2015
Florida	Palm Beach	12099001600	Low-Income Community	2011–2015
Florida	Palm Beach	12099001700	Low-Income Community	2011–2015
Florida	Palm Beach	12099001801	Low-Income Community	2011–2015
Florida	Palm Beach	12099001911	Low-Income Community	2011–2015
Florida	Palm Beach	12099002200	Low-Income Community	2011–2015
Florida	Palm Beach	12099003102	Low-Income Community	2011–2015
Florida	Palm Beach	12099004009	Low-Income Community	2011–2015
Florida	Palm Beach	12099004201	Low-Income Community	2011–2015
Florida	Palm Beach	12099005102	Low-Income Community	2011–2015
Florida	Palm Beach	12099005701	Low-Income Community	2011–2015
Florida	Palm Beach	12099006100	Low-Income Community	2011–2015
Florida	Palm Beach	12099006700	Low-Income Community	2011–2015
Florida	Palm Beach	12099006801	Low-Income Community	2011–2015
Florida	Palm Beach	12099006802	Low-Income Community	2011–2015
Florida	Palm Beach	12099007746	Low-Income Community	2011–2015
Florida	Palm Beach	12099007833	Low-Income Community	2011–2015
Florida	Palm Beach	12099008001	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Palm Beach	12099008002	Low-Income Community	2011–2015
Florida	Palm Beach	12099008201	Low-Income Community	2011–2015
Florida	Palm Beach	12099008202	Low-Income Community	2011–2015
Florida	Palm Beach	12099008301	Low-Income Community	2011–2015
Florida	Palm Beach	12099008302	Low-Income Community	2011–2015
Florida	Pasco	12101030102	Low-Income Community	2011–2015
Florida	Pasco	12101030407	Low-Income Community	2011–2015
Florida	Pasco	12101030410	Low-Income Community	2011–2015
Florida	Pasco	12101030903	Low-Income Community	2011–2015
Florida	Pasco	12101031013	Low-Income Community	2011–2015
Florida	Pasco	12101031102	Low-Income Community	2011–2015
Florida	Pasco	12101031206	Low-Income Community	2011–2015
Florida	Pasco	12101031405	Low-Income Community	2011–2015
Florida	Pasco	12101031406	Low-Income Community	2011–2015
Florida	Pasco	12101031408	Low-Income Community	2011–2015
Florida	Pasco	12101031807	Low-Income Community	2011–2015
Florida	Pasco	12101031809	Low-Income Community	2011–2015
Florida	Pasco	12101032803	Low-Income Community	2011–2015
Florida	Pasco	12101032904	Low-Income Community	2011–2015
Florida	Pasco	12101033007	Low-Income Community	2011–2015
Florida	Pasco	12101033008	Low-Income Community	2011–2015
Florida	Pasco	12101033011	Low-Income Community	2011–2015
Florida	Pinellas	12103020500	Low-Income Community	2011–2015
Florida	Pinellas	12103020600	Low-Income Community	2011–2015
Florida	Pinellas	12103020800	Low-Income Community	2011–2015
Florida	Pinellas	12103021200	Low-Income Community	2011–2015
Florida	Pinellas	12103021600	Low-Income Community	2011–2015
Florida	Pinellas	12103021900	Low-Income Community	2011–2015
Florida	Pinellas	12103024510	Low-Income Community	2011–2015
Florida	Pinellas	12103024602	Low-Income Community	2011–2015
Florida	Pinellas	12103025115	Low-Income Community	2011–2015
Florida	Pinellas	12103025305	Low-Income Community	2011–2015
Florida	Pinellas	12103025417	Low-Income Community	2011–2015
Florida	Pinellas	12103025602	Low-Income Community	2011–2015
Florida	Pinellas	12103025603	Low-Income Community	2011–2015
Florida	Pinellas	12103025900	Low-Income Community	2011–2015
Florida	Pinellas	12103027402	Low-Income Community	2011–2015
Florida	Pinellas	12103028700	Low-Income Community	2011–2015
Florida	Polk	12105010900	Low-Income Community	2011–2015
Florida	Polk	12105011000	Low-Income Community	2011–2015
Florida	Polk	12105011100	Low-Income Community	2011–2015
Florida	Polk	12105011202	Low-Income Community	2011–2015
Florida	Polk	12105011204	Low-Income Community	2011–2015
Florida	Polk	12105011501	Low-Income Community	2011–2015
Florida	Polk	12105011721	Low-Income Community	2011–2015
Florida	Polk	12105012305	Low-Income Community	2011–2015
Florida	Polk	12105012804	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Polk	12105013002	Low-Income Community	2011–2015
Florida	Polk	12105013300	Low-Income Community	2011–2015
Florida	Polk	12105013500	Low-Income Community	2011–2015
Florida	Polk	12105013701	Low-Income Community	2011–2015
Florida	Polk	12105014301	Low-Income Community	2011–2015
Florida	Polk	12105014501	Low-Income Community	2011–2015
Florida	Polk	12105015702	Low-Income Community	2011–2015
Florida	Polk	12105016002	Low-Income Community	2011–2015
Florida	Polk	12105016100	Low-Income Community	2011–2015
Florida	Polk	12105016400	Low-Income Community	2011–2015
Florida	Putnam	12107950800	Low-Income Community	2011–2015
Florida	Putnam	12107950900	Low-Income Community	2011–2015
Florida	Putnam	12107951401	Low-Income Community	2011–2015
Florida	St. Johns	12109020400	Low-Income Community	2011–2015
Florida	St. Johns	12109021003	Low-Income Community	2011–2015
Florida	St. Lucie	12111380200	Low-Income Community	2011–2015
Florida	St. Lucie	12111380300	Low-Income Community	2011–2015
Florida	St. Lucie	12111380901	Low-Income Community	2011–2015
Florida	St. Lucie	12111382009	Low-Income Community	2011–2015
Florida	Santa Rosa	12113010600	Low-Income Community	2011–2015
Florida	Sarasota	12115000102	Low-Income Community	2011–2015
Florida	Sarasota	12115000200	Low-Income Community	2011–2015
Florida	Sarasota	12115000300	Low-Income Community	2011–2015
Florida	Sarasota	12115000406	Low-Income Community	2011–2015
Florida	Sarasota	12115002721	Low-Income Community	2011–2015
Florida	Seminole	12117020102	Low-Income Community	2011–2015
Florida	Seminole	12117020401	Low-Income Community	2011–2015
Florida	Seminole	12117020901	Low-Income Community	2011–2015
Florida	Seminole	12117022001	Low-Income Community	2011–2015
Florida	Sumter	12119910602	Low-Income Community	2011–2015
Florida	Sumter	12119911000	Low-Income Community	2011–2015
Florida	Suwannee	12121970301	Low-Income Community	2011–2015
Florida	Suwannee	12121970500	Low-Income Community	2011–2015
Florida	Taylor	12123950300	Low-Income Community	2011–2015
Florida	Union	12125960200	Low-Income Community	2011–2015
Florida	Volusia	12127081000	Low-Income Community	2011–2015
Florida	Volusia	12127081700	Low-Income Community	2011–2015
Florida	Volusia	12127081800	Low-Income Community	2011–2015
Florida	Volusia	12127082000	Low-Income Community	2011–2015
Florida	Volusia	12127082100	Low-Income Community	2011–2015
Florida	Volusia	12127082301	Low-Income Community	2011–2015
Florida	Volusia	12127082401	Low-Income Community	2011–2015
Florida	Volusia	12127082415	Low-Income Community	2011–2015
Florida	Volusia	12127082511	Low-Income Community	2011–2015
Florida	Volusia	12127083008	Low-Income Community	2011–2015
Florida	Volusia	12127090500	Low-Income Community	2011–2015
Florida	Volusia	12127090600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Wakulla	12129010202	Low-Income Community	2011–2015
Florida	Walton	12131950301	Low-Income Community	2011–2015
Florida	Washington	12133970104	Low-Income Community	2011–2015
Georgia	Atkinson	13003960100	Low-Income Community	2011–2015
Georgia	Baldwin	13009970200	Low-Income Community	2011–2015
Georgia	Baldwin	13009970400	Low-Income Community	2011–2015
Georgia	Baldwin	13009970500	Low-Income Community	2011–2015
Georgia	Baldwin	13009970600	Low-Income Community	2011–2015
Georgia	Baldwin	13009970701	Low-Income Community	2011–2015
Georgia	Baldwin	13009970702	Low-Income Community	2011–2015
Georgia	Barrow	13013180205	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960100	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960300	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960400	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960500	Low-Income Community	2011–2015
Georgia	Berrien	13019970400	Low-Income Community	2011–2015
Georgia	Bibb	13021010100	Low-Income Community	2011–2015
Georgia	Bibb	13021010400	Low-Income Community	2011–2015
Georgia	Bibb	13021010500	Low-Income Community	2011–2015
Georgia	Bibb	13021011000	Low-Income Community	2011–2015
Georgia	Bibb	13021011100	Low-Income Community	2011–2015
Georgia	Bibb	13021011500	Low-Income Community	2011–2015
Georgia	Bibb	13021012300	Low-Income Community	2011–2015
Georgia	Bibb	13021012400	Low-Income Community	2011–2015
Georgia	Bibb	13021012500	Low-Income Community	2011–2015
Georgia	Bibb	13021012600	Low-Income Community	2011–2015
Georgia	Bibb	13021012700	Low-Income Community	2011–2015
Georgia	Bibb	13021012800	Low-Income Community	2011–2015
Georgia	Bibb	13021012900	Low-Income Community	2011–2015
Georgia	Bibb	13021013800	Low-Income Community	2011–2015
Georgia	Bibb	13021013900	Low-Income Community	2011–2015
Georgia	Bleckley	13023790200	Low-Income Community	2011–2015
Georgia	Brooks	13027960300	Low-Income Community	2011–2015
Georgia	Brooks	13027960400	Low-Income Community	2011–2015
Georgia	Bulloch	13031110200	Low-Income Community	2011–2015
Georgia	Bulloch	13031110401	Low-Income Community	2011–2015
Georgia	Bulloch	13031110403	Low-Income Community	2011–2015
Georgia	Bulloch	13031110404	Low-Income Community	2011–2015
Georgia	Bulloch	13031110500	Low-Income Community	2011–2015
Georgia	Bulloch	13031110602	Low-Income Community	2011–2015
Georgia	Burke	13033950100	Low-Income Community	2011–2015
Georgia	Burke	13033950200	Low-Income Community	2011–2015
Georgia	Burke	13033950400	Low-Income Community	2011–2015
Georgia	Calhoun	13037950100	Low-Income Community	2011–2015
Georgia	Calhoun	13037950200	Low-Income Community	2011–2015
Georgia	Candler	13043950100	Low-Income Community	2011–2015
Georgia	Candler	13043950300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Carroll	13045910501	Low-Income Community	2011–2015
Georgia	Carroll	13045910502	Low-Income Community	2011–2015
Georgia	Chatham	13051000100	Low-Income Community	2011–2015
Georgia	Chatham	13051000601	Low-Income Community	2011–2015
Georgia	Chatham	13051001100	Low-Income Community	2011–2015
Georgia	Chatham	13051001200	Low-Income Community	2011–2015
Georgia	Chatham	13051002100	Low-Income Community	2011–2015
Georgia	Chatham	13051002700	Low-Income Community	2011–2015
Georgia	Chatham	13051003301	Low-Income Community	2011–2015
Georgia	Chatham	13051010101	Low-Income Community	2011–2015
Georgia	Chatham	13051010901	Low-Income Community	2011–2015
Georgia	Clay	13061960300	Low-Income Community	2011–2015
Georgia	Clayton	13063040303	Low-Income Community	2011–2015
Georgia	Clayton	13063040306	Low-Income Community	2011–2015
Georgia	Clayton	13063040415	Low-Income Community	2011–2015
Georgia	Clinch	13065970100	Low-Income Community	2011–2015
Georgia	Cobb	13067030411	Low-Income Community	2011–2015
Georgia	Cobb	13067030412	Low-Income Community	2011–2015
Georgia	Cobb	13067030800	Low-Income Community	2011–2015
Georgia	Cobb	13067031001	Low-Income Community	2011–2015
Georgia	Cobb	13067031113	Low-Income Community	2011–2015
Georgia	Coffee	13069010500	Low-Income Community	2011–2015
Georgia	Coffee	13069010700	Low-Income Community	2011–2015
Georgia	Coffee	13069010802	Low-Income Community	2011–2015
Georgia	Colquitt	13071970300	Low-Income Community	2011–2015
Georgia	Colquitt	13071970400	Low-Income Community	2011–2015
Georgia	Colquitt	13071970702	Low-Income Community	2011–2015
Georgia	Colquitt	13071970800	Low-Income Community	2011–2015
Georgia	Cook	13075960200	Low-Income Community	2011–2015
Georgia	Coweta	13077170305	Low-Income Community	2011–2015
Georgia	Coweta	13077170601	Low-Income Community	2011–2015
Georgia	Crisp	13081010100	Low-Income Community	2011–2015
Georgia	Crisp	13081010201	Low-Income Community	2011–2015
Georgia	Crisp	13081010202	Low-Income Community	2011–2015
Georgia	Decatur	13087970400	Low-Income Community	2011–2015
Georgia	DeKalb	13089020600	Low-Income Community	2011–2015
Georgia	DeKalb	13089021204	Low-Income Community	2011–2015
Georgia	DeKalb	13089021409	Low-Income Community	2011–2015
Georgia	DeKalb	13089021908	Low-Income Community	2011–2015
Georgia	DeKalb	13089021911	Low-Income Community	2011–2015
Georgia	DeKalb	13089022007	Low-Income Community	2011–2015
Georgia	DeKalb	13089022008	Low-Income Community	2011–2015
Georgia	DeKalb	13089022010	Low-Income Community	2011–2015
Georgia	DeKalb	13089023108	Low-Income Community	2011–2015
Georgia	DeKalb	13089023112	Low-Income Community	2011–2015
Georgia	DeKalb	13089023504	Low-Income Community	2011–2015
Georgia	DeKalb	13089023700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Dodge	13091960200	Low-Income Community	2011–2015
Georgia	Dooly	13093970100	Low-Income Community	2011–2015
Georgia	Dooly	13093970300	Low-Income Community	2011–2015
Georgia	Dougherty	13095000200	Low-Income Community	2011–2015
Georgia	Dougherty	13095000800	Low-Income Community	2011–2015
Georgia	Dougherty	13095001000	Low-Income Community	2011–2015
Georgia	Dougherty	13095001100	Low-Income Community	2011–2015
Georgia	Dougherty	13095001403	Low-Income Community	2011–2015
Georgia	Dougherty	13095001500	Low-Income Community	2011–2015
Georgia	Dougherty	13095010302	Low-Income Community	2011–2015
Georgia	Dougherty	13095010601	Low-Income Community	2011–2015
Georgia	Dougherty	13095010700	Low-Income Community	2011–2015
Georgia	Dougherty	13095011400	Low-Income Community	2011–2015
Georgia	Douglas	13097080201	Low-Income Community	2011–2015
Georgia	Douglas	13097080202	Low-Income Community	2011–2015
Georgia	Early	13099090400	Low-Income Community	2011–2015
Georgia	Early	13099090500	Low-Income Community	2011–2015
Georgia	Echols	13101880100	Low-Income Community	2011–2015
Georgia	Elbert	13105000400	Low-Income Community	2011–2015
Georgia	Emanuel	13107970100	Low-Income Community	2011–2015
Georgia	Emanuel	13107970300	Low-Income Community	2011–2015
Georgia	Emanuel	13107970400	Low-Income Community	2011–2015
Georgia	Emanuel	13107970600	Low-Income Community	2011–2015
Georgia	Evans	13109970300	Low-Income Community	2011–2015
Georgia	Floyd	13115001100	Low-Income Community	2011–2015
Georgia	Floyd	13115001600	Low-Income Community	2011–2015
Georgia	Fulton	13121002500	Low-Income Community	2011–2015
Georgia	Fulton	13121002600	Low-Income Community	2011–2015
Georgia	Fulton	13121004200	Low-Income Community	2011–2015
Georgia	Fulton	13121004300	Low-Income Community	2011–2015
Georgia	Fulton	13121005502	Low-Income Community	2011–2015
Georgia	Fulton	13121006300	Low-Income Community	2011–2015
Georgia	Fulton	13121006400	Low-Income Community	2011–2015
Georgia	Fulton	13121006601	Low-Income Community	2011–2015
Georgia	Fulton	13121007200	Low-Income Community	2011–2015
Georgia	Fulton	13121007400	Low-Income Community	2011–2015
Georgia	Fulton	13121007500	Low-Income Community	2011–2015
Georgia	Fulton	13121007602	Low-Income Community	2011–2015
Georgia	Fulton	13121007603	Low-Income Community	2011–2015
Georgia	Fulton	13121007704	Low-Income Community	2011–2015
Georgia	Fulton	13121007705	Low-Income Community	2011–2015
Georgia	Fulton	13121007807	Low-Income Community	2011–2015
Georgia	Fulton	13121008000	Low-Income Community	2011–2015
Georgia	Fulton	13121008102	Low-Income Community	2011–2015
Georgia	Fulton	13121008201	Low-Income Community	2011–2015
Georgia	Fulton	13121008400	Low-Income Community	2011–2015
Georgia	Fulton	13121008500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Fulton	13121008601	Low-Income Community	2011–2015
Georgia	Fulton	13121010603	Low-Income Community	2011–2015
Georgia	Fulton	13121011000	Low-Income Community	2011–2015
Georgia	Fulton	13121011800	Low-Income Community	2011–2015
Georgia	Fulton	13121011900	Low-Income Community	2011–2015
Georgia	Fulton	13121012000	Low-Income Community	2011–2015
Georgia	Gilmer	13123080300	Low-Income Community	2011–2015
Georgia	Glynn	13127000504	Low-Income Community	2011–2015
Georgia	Glynn	13127000700	Low-Income Community	2011–2015
Georgia	Glynn	13127000800	Low-Income Community	2011–2015
Georgia	Grady	13131950300	Low-Income Community	2011–2015
Georgia	Grady	13131950500	Low-Income Community	2011–2015
Georgia	Greene	13133950200	Low-Income Community	2011–2015
Georgia	Greene	13133950303	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050306	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050319	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050320	Low-Income Community	2011–2015
Georgia	Hall	13139000800	Low-Income Community	2011–2015
Georgia	Hall	13139001003	Low-Income Community	2011–2015
Georgia	Hall	13139001101	Low-Income Community	2011–2015
Georgia	Hancock	13141480400	Low-Income Community	2011–2015
Georgia	Jefferson	13163960300	Low-Income Community	2011–2015
Georgia	Jefferson	13163960400	Low-Income Community	2011–2015
Georgia	Jenkins	13165960100	Low-Income Community	2011–2015
Georgia	Laurens	13175950300	Low-Income Community	2011–2015
Georgia	Laurens	13175950400	Low-Income Community	2011–2015
Georgia	Laurens	13175950800	Low-Income Community	2011–2015
Georgia	Laurens	13175950900	Low-Income Community	2011–2015
Georgia	Lincoln	13181970100	Low-Income Community	2011–2015
Georgia	Lowndes	13185010500	Low-Income Community	2011–2015
Georgia	Lowndes	13185010800	Low-Income Community	2011–2015
Georgia	Lowndes	13185010900	Low-Income Community	2011–2015
Georgia	Lowndes	13185011000	Low-Income Community	2011–2015
Georgia	Lowndes	13185011301	Low-Income Community	2011–2015
Georgia	Lowndes	13185011302	Low-Income Community	2011–2015
Georgia	McDuffie	13189950200	Low-Income Community	2011–2015
Georgia	McDuffie	13189950400	Low-Income Community	2011–2015
Georgia	Macon	13193000300	Low-Income Community	2011–2015
Georgia	Macon	13193000400	Low-Income Community	2011–2015
Georgia	Miller	13201950100	Low-Income Community	2011–2015
Georgia	Miller	13201950200	Low-Income Community	2011–2015
Georgia	Mitchell	13205090100	Low-Income Community	2011–2015
Georgia	Mitchell	13205090200	Low-Income Community	2011–2015
Georgia	Mitchell	13205090300	Low-Income Community	2011–2015
Georgia	Muscogee	13215000300	Low-Income Community	2011–2015
Georgia	Muscogee	13215001400	Low-Income Community	2011–2015
Georgia	Muscogee	13215001600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Muscogee	13215001800	Low-Income Community	2011–2015
Georgia	Muscogee	13215002200	Low-Income Community	2011–2015
Georgia	Muscogee	13215002500	Low-Income Community	2011–2015
Georgia	Muscogee	13215002700	Low-Income Community	2011–2015
Georgia	Muscogee	13215002800	Low-Income Community	2011–2015
Georgia	Muscogee	13215002902	Low-Income Community	2011–2015
Georgia	Muscogee	13215003000	Low-Income Community	2011–2015
Georgia	Muscogee	13215003200	Low-Income Community	2011–2015
Georgia	Muscogee	13215003302	Low-Income Community	2011–2015
Georgia	Muscogee	13215003400	Low-Income Community	2011–2015
Georgia	Muscogee	13215011100	Low-Income Community	2011–2015
Georgia	Muscogee	13215011200	Low-Income Community	2011–2015
Georgia	Muscogee	13215011400	Low-Income Community	2011–2015
Georgia	Newton	13217100700	Low-Income Community	2011–2015
Georgia	Peach	13225040200	Low-Income Community	2011–2015
Georgia	Peach	13225040302	Low-Income Community	2011–2015
Georgia	Peach	13225040400	Low-Income Community	2011–2015
Georgia	Pierce	13229960300	Low-Income Community	2011–2015
Georgia	Polk	13233010400	Low-Income Community	2011–2015
Georgia	Randolph	13243790200	Low-Income Community	2011–2015
Georgia	Richmond	13245000200	Low-Income Community	2011–2015
Georgia	Richmond	13245000300	Low-Income Community	2011–2015
Georgia	Richmond	13245000600	Low-Income Community	2011–2015
Georgia	Richmond	13245000700	Low-Income Community	2011–2015
Georgia	Richmond	13245000900	Low-Income Community	2011–2015
Georgia	Richmond	13245001000	Low-Income Community	2011–2015
Georgia	Richmond	13245001400	Low-Income Community	2011–2015
Georgia	Richmond	13245001500	Low-Income Community	2011–2015
Georgia	Richmond	13245010400	Low-Income Community	2011–2015
Georgia	Richmond	13245010504	Low-Income Community	2011–2015
Georgia	Richmond	13245010600	Low-Income Community	2011–2015
Georgia	Richmond	13245010710	Low-Income Community	2011–2015
Georgia	Richmond	13245011000	Low-Income Community	2011–2015
Georgia	Screven	13251970400	Low-Income Community	2011–2015
Georgia	Spalding	13255160300	Low-Income Community	2011–2015
Georgia	Spalding	13255160400	Low-Income Community	2011–2015
Georgia	Spalding	13255160700	Low-Income Community	2011–2015
Georgia	Spalding	13255160800	Low-Income Community	2011–2015
Georgia	Spalding	13255160900	Low-Income Community	2011–2015
Georgia	Stewart	13259950100	Low-Income Community	2011–2015
Georgia	Stewart	13259950400	Low-Income Community	2011–2015
Georgia	Sumter	13261950200	Low-Income Community	2011–2015
Georgia	Sumter	13261950300	Low-Income Community	2011–2015
Georgia	Sumter	13261950600	Low-Income Community	2011–2015
Georgia	Sumter	13261950700	Low-Income Community	2011–2015
Georgia	Taliaferro	13265010200	Low-Income Community	2011–2015
Georgia	Tattnall	13267950201	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Tattnall	13267950202	Low-Income Community	2011–2015
Georgia	Taylor	13269950300	Low-Income Community	2011–2015
Georgia	Telfair	13271950100	Low-Income Community	2011–2015
Georgia	Terrell	13273120300	Low-Income Community	2011–2015
Georgia	Terrell	13273120400	Low-Income Community	2011–2015
Georgia	Thomas	13275960100	Low-Income Community	2011–2015
Georgia	Thomas	13275960700	Low-Income Community	2011–2015
Georgia	Tift	13277960600	Low-Income Community	2011–2015
Georgia	Tift	13277960700	Low-Income Community	2011–2015
Georgia	Tift	13277960800	Low-Income Community	2011–2015
Georgia	Toombs	13279970100	Low-Income Community	2011–2015
Georgia	Troup	13285960501	Low-Income Community	2011–2015
Georgia	Troup	13285960600	Low-Income Community	2011–2015
Georgia	Troup	13285960800	Low-Income Community	2011–2015
Georgia	Troup	13285960901	Low-Income Community	2011–2015
Georgia	Upson	13293010201	Low-Income Community	2011–2015
Georgia	Upson	13293010500	Low-Income Community	2011–2015
Georgia	Walker	13295020200	Low-Income Community	2011–2015
Georgia	Walton	13297110400	Low-Income Community	2011–2015
Georgia	Ware	13299950400	Low-Income Community	2011–2015
Georgia	Ware	13299950500	Low-Income Community	2011–2015
Georgia	Ware	13299950700	Low-Income Community	2011–2015
Georgia	Ware	13299950800	Low-Income Community	2011–2015
Georgia	Ware	13299950900	Low-Income Community	2011–2015
Georgia	Warren	13301970400	Low-Income Community	2011–2015
Georgia	Washington	13303950400	Low-Income Community	2011–2015
Georgia	Washington	13303950700	Low-Income Community	2011–2015
Georgia	Wayne	13305970500	Low-Income Community	2011–2015
Guam	Guam	66010950300	Non-LIC Contiguous	2011–2015
Guam	Guam	66010950401	Low-Income Community	2011–2015
Guam	Guam	66010950402	Low-Income Community	2011–2015
Guam	Guam	66010950501	Low-Income Community	2011–2015
Guam	Guam	66010950502	Low-Income Community	2011–2015
Guam	Guam	66010950900	Non-LIC Contiguous	2011–2015
Guam	Guam	66010951000	Low-Income Community	2011–2015
Guam	Guam	66010951600	Low-Income Community	2011–2015
Guam	Guam	66010951800	Low-Income Community	2011–2015
Guam	Guam	66010951901	Low-Income Community	2011–2015
Guam	Guam	66010951902	Low-Income Community	2011–2015
Guam	Guam	66010952400	Low-Income Community	2011–2015
Guam	Guam	66010952800	Low-Income Community	2011–2015
Guam	Guam	66010952900	Low-Income Community	2011–2015
Guam	Guam	66010953000	Low-Income Community	2011–2015
Guam	Guam	66010953300	Low-Income Community	2011–2015
Guam	Guam	66010953400	Low-Income Community	2011–2015
Guam	Guam	66010953900	Low-Income Community	2011–2015
Guam	Guam	66010954400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Guam	Guam	66010954800	Low-Income Community	2011–2015
Guam	Guam	66010955300	Low-Income Community	2011–2015
Guam	Guam	66010955400	Low-Income Community	2011–2015
Guam	Guam	66010955600	Low-Income Community	2011–2015
Guam	Guam	66010955700	Low-Income Community	2011–2015
Guam	Guam	66010956000	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020300	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020400	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020500	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020600	Low-Income Community	2011–2015
Hawaii	Hawaii	15001021504	Low-Income Community	2011–2015
Hawaii	Hawaii	15001021601	Non-LIC Contiguous	2011–2015
Hawaii	Honolulu	15003005200	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005300	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005500	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005700	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005800	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005900	Low-Income Community	2011–2015
Hawaii	Honolulu	15003007504	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008001	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008003	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008502	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008702	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008703	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008914	Low-Income Community	2011–2015
Hawaii	Kauai	15007040104	Low-Income Community	2011–2015
Hawaii	Kauai	15007040604	Low-Income Community	2011–2015
Hawaii	Maui	15009030404	Low-Income Community	2011–2015
Hawaii	Maui	15009030901	Low-Income Community	2011–2015
Hawaii	Maui	15009031700	Low-Income Community	2011–2015
Hawaii	Maui	15009031900	Non-LIC Contiguous	2011–2015
Idaho	Ada	16001002000	Low-Income Community	2011–2015
Idaho	Ada	16001010321	Low-Income Community	2011–2015
Idaho	Adams	16003950100	Non-LIC Contiguous	2011–2015
Idaho	Bannock	16005001601	Low-Income Community	2011–2015
Idaho	Benewah	16009950100	Low-Income Community	2011–2015
Idaho	Bonner	16017950300	Low-Income Community	2011–2015
Idaho	Boundary	16021970200	Low-Income Community	2011–2015
Idaho	Canyon	16027020200	Low-Income Community	2011–2015
Idaho	Canyon	16027022100	Low-Income Community	2011–2015
Idaho	Canyon	16027022200	Low-Income Community	2011–2015
Idaho	Clearwater	16035940000	Non-LIC Contiguous	2011–2015
Idaho	Clearwater	16035970100	Low-Income Community	2011–2015
Idaho	Elmore	16039960300	Low-Income Community	2011–2015
Idaho	Gooding	16047960100	Low-Income Community	2011–2015
Idaho	Idaho	16049940000	Low-Income Community	2011–2015
Idaho	Idaho	16049960400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Idaho	Jerome	16053970400	Low-Income Community	2011–2015
Idaho	Kootenai	16055000602	Low-Income Community	2011–2015
Idaho	Latah	16057005100	Low-Income Community	2011–2015
Idaho	Latah	16057005400	Low-Income Community	2011–2015
Idaho	Lewis	16061940001	Low-Income Community	2011–2015
Idaho	Minidoka	16067970500	Low-Income Community	2011–2015
Idaho	Nez Perce	16069960300	Low-Income Community	2011–2015
Idaho	Payette	16075960200	Low-Income Community	2011–2015
Idaho	Shoshone	16079960300	Low-Income Community	2011–2015
Idaho	Twin Falls	16083000400	Low-Income Community	2011–2015
Idaho	Twin Falls	16083001100	Low-Income Community	2011–2015
Idaho	Valley	16085970300	Low-Income Community	2011–2015
Illinois	Adams	17001000800	Low-Income Community	2011–2015
Illinois	Alexander	17003957900	Low-Income Community	2011–2015
Illinois	Bond	17005951300	Low-Income Community	2011–2015
Illinois	Boone	17007010100	Low-Income Community	2011–2015
Illinois	Bureau	17011965600	Low-Income Community	2011–2015
Illinois	Carroll	17015960300	Low-Income Community	2011–2015
Illinois	Cass	17017960500	Low-Income Community	2011–2015
Illinois	Champaign	17019000301	Low-Income Community	2011–2015
Illinois	Champaign	17019000401	Low-Income Community	2011–2015
Illinois	Champaign	17019000402	Low-Income Community	2011–2015
Illinois	Champaign	17019000901	Low-Income Community	2011–2015
Illinois	Champaign	17019005300	Low-Income Community	2011–2015
Illinois	Champaign	17019005900	Low-Income Community	2011–2015
Illinois	Christian	17021958900	Low-Income Community	2011–2015
Illinois	Clark	17023060200	Low-Income Community	2011–2015
Illinois	Clay	17025972100	Low-Income Community	2011–2015
Illinois	Clinton	17027900401	Low-Income Community	2011–2015
Illinois	Coles	17029000500	Low-Income Community	2011–2015
Illinois	Cook	17031230600	Low-Income Community	2011–2015
Illinois	Cook	17031231200	Low-Income Community	2011–2015
Illinois	Cook	17031231500	Low-Income Community	2011–2015
Illinois	Cook	17031251300	Low-Income Community	2011–2015
Illinois	Cook	17031251500	Low-Income Community	2011–2015
Illinois	Cook	17031251800	Low-Income Community	2011–2015
Illinois	Cook	17031251900	Low-Income Community	2011–2015
Illinois	Cook	17031260200	Low-Income Community	2011–2015
Illinois	Cook	17031260600	Low-Income Community	2011–2015
Illinois	Cook	17031270500	Low-Income Community	2011–2015
Illinois	Cook	17031271200	Low-Income Community	2011–2015
Illinois	Cook	17031271300	Low-Income Community	2011–2015
Illinois	Cook	17031271800	Low-Income Community	2011–2015
Illinois	Cook	17031280400	Low-Income Community	2011–2015
Illinois	Cook	17031280900	Low-Income Community	2011–2015
Illinois	Cook	17031290900	Low-Income Community	2011–2015
Illinois	Cook	17031291200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031292200	Low-Income Community	2011–2015
Illinois	Cook	17031292500	Low-Income Community	2011–2015
Illinois	Cook	17031301200	Low-Income Community	2011–2015
Illinois	Cook	17031340600	Low-Income Community	2011–2015
Illinois	Cook	17031350100	Low-Income Community	2011–2015
Illinois	Cook	17031351100	Low-Income Community	2011–2015
Illinois	Cook	17031351400	Low-Income Community	2011–2015
Illinois	Cook	17031351500	Low-Income Community	2011–2015
Illinois	Cook	17031380100	Low-Income Community	2011–2015
Illinois	Cook	17031380500	Low-Income Community	2011–2015
Illinois	Cook	17031381400	Low-Income Community	2011–2015
Illinois	Cook	17031390300	Low-Income Community	2011–2015
Illinois	Cook	17031400300	Low-Income Community	2011–2015
Illinois	Cook	17031400400	Low-Income Community	2011–2015
Illinois	Cook	17031400500	Low-Income Community	2011–2015
Illinois	Cook	17031400800	Low-Income Community	2011–2015
Illinois	Cook	17031420500	Low-Income Community	2011–2015
Illinois	Cook	17031420600	Low-Income Community	2011–2015
Illinois	Cook	17031420700	Low-Income Community	2011–2015
Illinois	Cook	17031420800	Low-Income Community	2011–2015
Illinois	Cook	17031430101	Low-Income Community	2011–2015
Illinois	Cook	17031430200	Low-Income Community	2011–2015
Illinois	Cook	17031430300	Low-Income Community	2011–2015
Illinois	Cook	17031430400	Low-Income Community	2011–2015
Illinois	Cook	17031430600	Low-Income Community	2011–2015
Illinois	Cook	17031430900	Low-Income Community	2011–2015
Illinois	Cook	17031431301	Low-Income Community	2011–2015
Illinois	Cook	17031431302	Low-Income Community	2011–2015
Illinois	Cook	17031440201	Low-Income Community	2011–2015
Illinois	Cook	17031460100	Low-Income Community	2011–2015
Illinois	Cook	17031460200	Low-Income Community	2011–2015
Illinois	Cook	17031460301	Low-Income Community	2011–2015
Illinois	Cook	17031460302	Low-Income Community	2011–2015
Illinois	Cook	17031460400	Low-Income Community	2011–2015
Illinois	Cook	17031460500	Low-Income Community	2011–2015
Illinois	Cook	17031470100	Low-Income Community	2011–2015
Illinois	Cook	17031490901	Low-Income Community	2011–2015
Illinois	Cook	17031491300	Low-Income Community	2011–2015
Illinois	Cook	17031491400	Low-Income Community	2011–2015
Illinois	Cook	17031500100	Low-Income Community	2011–2015
Illinois	Cook	17031500200	Low-Income Community	2011–2015
Illinois	Cook	17031500300	Low-Income Community	2011–2015
Illinois	Cook	17031520200	Low-Income Community	2011–2015
Illinois	Cook	17031530200	Low-Income Community	2011–2015
Illinois	Cook	17031530502	Low-Income Community	2011–2015
Illinois	Cook	17031540101	Low-Income Community	2011–2015
Illinois	Cook	17031611000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031611100	Low-Income Community	2011–2015
Illinois	Cook	17031611200	Low-Income Community	2011–2015
Illinois	Cook	17031611600	Low-Income Community	2011–2015
Illinois	Cook	17031611700	Low-Income Community	2011–2015
Illinois	Cook	17031611800	Low-Income Community	2011–2015
Illinois	Cook	17031611900	Low-Income Community	2011–2015
Illinois	Cook	17031660301	Low-Income Community	2011–2015
Illinois	Cook	17031660600	Low-Income Community	2011–2015
Illinois	Cook	17031660700	Low-Income Community	2011–2015
Illinois	Cook	17031660800	Low-Income Community	2011–2015
Illinois	Cook	17031660900	Low-Income Community	2011–2015
Illinois	Cook	17031670100	Low-Income Community	2011–2015
Illinois	Cook	17031670200	Low-Income Community	2011–2015
Illinois	Cook	17031670400	Low-Income Community	2011–2015
Illinois	Cook	17031670500	Low-Income Community	2011–2015
Illinois	Cook	17031670600	Low-Income Community	2011–2015
Illinois	Cook	17031670700	Low-Income Community	2011–2015
Illinois	Cook	17031670800	Low-Income Community	2011–2015
Illinois	Cook	17031671100	Low-Income Community	2011–2015
Illinois	Cook	17031671200	Low-Income Community	2011–2015
Illinois	Cook	17031671400	Low-Income Community	2011–2015
Illinois	Cook	17031671500	Low-Income Community	2011–2015
Illinois	Cook	17031671600	Low-Income Community	2011–2015
Illinois	Cook	17031671800	Low-Income Community	2011–2015
Illinois	Cook	17031680500	Low-Income Community	2011–2015
Illinois	Cook	17031680600	Low-Income Community	2011–2015
Illinois	Cook	17031680900	Low-Income Community	2011–2015
Illinois	Cook	17031681000	Low-Income Community	2011–2015
Illinois	Cook	17031681200	Low-Income Community	2011–2015
Illinois	Cook	17031681300	Low-Income Community	2011–2015
Illinois	Cook	17031690300	Low-Income Community	2011–2015
Illinois	Cook	17031691000	Low-Income Community	2011–2015
Illinois	Cook	17031691100	Low-Income Community	2011–2015
Illinois	Cook	17031691300	Low-Income Community	2011–2015
Illinois	Cook	17031691400	Low-Income Community	2011–2015
Illinois	Cook	17031691500	Low-Income Community	2011–2015
Illinois	Cook	17031710100	Low-Income Community	2011–2015
Illinois	Cook	17031710200	Low-Income Community	2011–2015
Illinois	Cook	17031710300	Low-Income Community	2011–2015
Illinois	Cook	17031710500	Low-Income Community	2011–2015
Illinois	Cook	17031711000	Low-Income Community	2011–2015
Illinois	Cook	17031711400	Low-Income Community	2011–2015
Illinois	Cook	17031750600	Low-Income Community	2011–2015
Illinois	Cook	17031803606	Low-Income Community	2011–2015
Illinois	Cook	17031811600	Low-Income Community	2011–2015
Illinois	Cook	17031813400	Low-Income Community	2011–2015
Illinois	Cook	17031813900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031814200	Low-Income Community	2011–2015
Illinois	Cook	17031814400	Low-Income Community	2011–2015
Illinois	Cook	17031814900	Low-Income Community	2011–2015
Illinois	Cook	17031817200	Low-Income Community	2011–2015
Illinois	Cook	17031817300	Low-Income Community	2011–2015
Illinois	Cook	17031817500	Low-Income Community	2011–2015
Illinois	Cook	17031817700	Low-Income Community	2011–2015
Illinois	Cook	17031820400	Low-Income Community	2011–2015
Illinois	Cook	17031820605	Low-Income Community	2011–2015
Illinois	Cook	17031821200	Low-Income Community	2011–2015
Illinois	Cook	17031821401	Low-Income Community	2011–2015
Illinois	Cook	17031821500	Low-Income Community	2011–2015
Illinois	Cook	17031822400	Low-Income Community	2011–2015
Illinois	Cook	17031823703	Low-Income Community	2011–2015
Illinois	Cook	17031823705	Low-Income Community	2011–2015
Illinois	Cook	17031824800	Low-Income Community	2011–2015
Illinois	Cook	17031825501	Low-Income Community	2011–2015
Illinois	Cook	17031825600	Low-Income Community	2011–2015
Illinois	Cook	17031825801	Low-Income Community	2011–2015
Illinois	Cook	17031825900	Low-Income Community	2011–2015
Illinois	Cook	17031826000	Low-Income Community	2011–2015
Illinois	Cook	17031826100	Low-Income Community	2011–2015
Illinois	Cook	17031826202	Low-Income Community	2011–2015
Illinois	Cook	17031826303	Low-Income Community	2011–2015
Illinois	Cook	17031826402	Low-Income Community	2011–2015
Illinois	Cook	17031826500	Low-Income Community	2011–2015
Illinois	Cook	17031826600	Low-Income Community	2011–2015
Illinois	Cook	17031826700	Low-Income Community	2011–2015
Illinois	Cook	17031826800	Low-Income Community	2011–2015
Illinois	Cook	17031826901	Low-Income Community	2011–2015
Illinois	Cook	17031827000	Low-Income Community	2011–2015
Illinois	Cook	17031827100	Low-Income Community	2011–2015
Illinois	Cook	17031827400	Low-Income Community	2011–2015
Illinois	Cook	17031827500	Low-Income Community	2011–2015
Illinois	Cook	17031827600	Low-Income Community	2011–2015
Illinois	Cook	17031828504	Low-Income Community	2011–2015
Illinois	Cook	17031829000	Low-Income Community	2011–2015
Illinois	Cook	17031829302	Low-Income Community	2011–2015
Illinois	Cook	17031829401	Low-Income Community	2011–2015
Illinois	Cook	17031829700	Low-Income Community	2011–2015
Illinois	Cook	17031830007	Low-Income Community	2011–2015
Illinois	Cook	17031830300	Low-Income Community	2011–2015
Illinois	Cook	17031834000	Low-Income Community	2011–2015
Illinois	Cook	17031834200	Low-Income Community	2011–2015
Illinois	Cook	17031834300	Low-Income Community	2011–2015
Illinois	Cook	17031834400	Low-Income Community	2011–2015
Illinois	Cook	17031834500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031834600	Low-Income Community	2011–2015
Illinois	Cook	17031834700	Low-Income Community	2011–2015
Illinois	Cook	17031834800	Low-Income Community	2011–2015
Illinois	Cook	17031834900	Low-Income Community	2011–2015
Illinois	Cook	17031835000	Low-Income Community	2011–2015
Illinois	Cook	17031835500	Low-Income Community	2011–2015
Illinois	Cook	17031835900	Low-Income Community	2011–2015
Illinois	Cook	17031836000	Low-Income Community	2011–2015
Illinois	Cook	17031836100	Low-Income Community	2011–2015
Illinois	Cook	17031836900	Low-Income Community	2011–2015
Illinois	Cook	17031837000	Low-Income Community	2011–2015
Illinois	Cook	17031838600	Low-Income Community	2011–2015
Illinois	Cook	17031838700	Low-Income Community	2011–2015
Illinois	Cook	17031838800	Low-Income Community	2011–2015
Illinois	Cook	17031841000	Low-Income Community	2012–2016
Illinois	Cook	17031841400	Low-Income Community	2011–2015
Illinois	Cook	17031841500	Low-Income Community	2011–2015
Illinois	Cook	17031841800	Low-Income Community	2011–2015
Illinois	Cook	17031842100	Low-Income Community	2011–2015
Illinois	Cook	17031842900	Low-Income Community	2011–2015
Illinois	Cook	17031843000	Low-Income Community	2011–2015
Illinois	Cook	17031843300	Low-Income Community	2011–2015
Illinois	Cook	17031843600	Low-Income Community	2011–2015
Illinois	Crawford	17033880400	Low-Income Community	2011–2015
Illinois	Cumberland	17035972400	Low-Income Community	2011–2015
Illinois	DeKalb	17037001001	Low-Income Community	2011–2015
Illinois	DeKalb	17037001002	Low-Income Community	2011–2015
Illinois	DeKalb	17037002200	Low-Income Community	2011–2015
Illinois	De Witt	17039971800	Low-Income Community	2011–2015
Illinois	Douglas	17041952000	Low-Income Community	2011–2015
Illinois	DuPage	17043840104	Low-Income Community	2011–2015
Illinois	Edgar	17045070300	Low-Income Community	2011–2015
Illinois	Edwards	17047957100	Low-Income Community	2011–2015
Illinois	Effingham	17049950800	Low-Income Community	2011–2015
Illinois	Fayette	17051950900	Low-Income Community	2011–2015
Illinois	Franklin	17055040600	Low-Income Community	2011–2015
Illinois	Fulton	17057953500	Low-Income Community	2011–2015
Illinois	Gallatin	17059972800	Low-Income Community	2011–2015
Illinois	Greene	17061973900	Low-Income Community	2011–2015
Illinois	Hamilton	17065973200	Low-Income Community	2011–2015
Illinois	Hancock	17067954100	Low-Income Community	2011–2015
Illinois	Hardin	17069970900	Low-Income Community	2011–2015
Illinois	Henderson	17071973500	Low-Income Community	2011–2015
Illinois	Henry	17073030800	Low-Income Community	2011–2015
Illinois	Iroquois	17075950400	Low-Income Community	2011–2015
Illinois	Jackson	17077011200	Low-Income Community	2011–2015
Illinois	Jackson	17077011400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Jackson	17077011700	Low-Income Community	2011–2015
Illinois	Jasper	17079977400	Low-Income Community	2011–2015
Illinois	Jefferson	17081051000	Low-Income Community	2011–2015
Illinois	Jersey	17083010402	Low-Income Community	2011–2015
Illinois	Jo Daviess	17085020500	Low-Income Community	2011–2015
Illinois	Johnson	17087977800	Low-Income Community	2011–2015
Illinois	Kane	17089850202	Low-Income Community	2011–2015
Illinois	Kane	17089850301	Low-Income Community	2011–2015
Illinois	Kane	17089851400	Low-Income Community	2011–2015
Illinois	Kane	17089851600	Low-Income Community	2011–2015
Illinois	Kane	17089851904	Low-Income Community	2011–2015
Illinois	Kane	17089853200	Low-Income Community	2011–2015
Illinois	Kane	17089853400	Low-Income Community	2011–2015
Illinois	Kane	17089853600	Low-Income Community	2011–2015
Illinois	Kane	17089854301	Low-Income Community	2011–2015
Illinois	Kane	17089854400	Low-Income Community	2011–2015
Illinois	Kankakee	17091011500	Low-Income Community	2011–2015
Illinois	Kankakee	17091011600	Low-Income Community	2011–2015
Illinois	Kankakee	17091011700	Low-Income Community	2011–2015
Illinois	Kankakee	17091012300	Low-Income Community	2011–2015
Illinois	Knox	17095001100	Low-Income Community	2011–2015
Illinois	Lake	17097860302	Low-Income Community	2011–2015
Illinois	Lake	17097862300	Low-Income Community	2011–2015
Illinois	Lake	17097862605	Low-Income Community	2011–2015
Illinois	Lake	17097862700	Low-Income Community	2011–2015
Illinois	Lake	17097862901	Low-Income Community	2011–2015
Illinois	LaSalle	17099964300	Low-Income Community	2011–2015
Illinois	Lawrence	17101880800	Low-Income Community	2011–2015
Illinois	Lee	17103000600	Low-Income Community	2011–2015
Illinois	Livingston	17105960500	Low-Income Community	2011–2015
Illinois	Logan	17107953100	Low-Income Community	2011–2015
Illinois	McDonough	17109010500	Low-Income Community	2011–2015
Illinois	McHenry	17111870301	Low-Income Community	2011–2015
Illinois	McLean	17113000200	Low-Income Community	2011–2015
Illinois	Macon	17115000200	Low-Income Community	2011–2015
Illinois	Macon	17115000300	Low-Income Community	2011–2015
Illinois	Macon	17115000500	Low-Income Community	2011–2015
Illinois	Macon	17115000900	Low-Income Community	2011–2015
Illinois	Macon	17115003100	Low-Income Community	2011–2015
Illinois	Macoupin	17117956900	Low-Income Community	2011–2015
Illinois	Madison	17119400200	Low-Income Community	2011–2015
Illinois	Madison	17119400600	Low-Income Community	2011–2015
Illinois	Madison	17119400700	Low-Income Community	2011–2015
Illinois	Madison	17119402200	Low-Income Community	2011–2015
Illinois	Madison	17119404000	Low-Income Community	2011–2015
Illinois	Marion	17121952700	Low-Income Community	2011–2015
Illinois	Marshall	17123961500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Mason	17125956500	Low-Income Community	2011–2015
Illinois	Massac	17127970200	Low-Income Community	2011–2015
Illinois	Montgomery	17135958000	Low-Income Community	2011–2015
Illinois	Morgan	17137952000	Low-Income Community	2011–2015
Illinois	Moultrie	17139977200	Low-Income Community	2011–2015
Illinois	Ogle	17141961100	Low-Income Community	2011–2015
Illinois	Peoria	17143000300	Low-Income Community	2011–2015
Illinois	Peoria	17143000900	Low-Income Community	2011–2015
Illinois	Peoria	17143001200	Low-Income Community	2011–2015
Illinois	Peoria	17143002100	Low-Income Community	2011–2015
Illinois	Peoria	17143005000	Low-Income Community	2011–2015
Illinois	Perry	17145030400	Low-Income Community	2011–2015
Illinois	Pike	17149952700	Low-Income Community	2011–2015
Illinois	Pope	17151971300	Low-Income Community	2011–2015
Illinois	Pulaski	17153971100	Low-Income Community	2011–2015
Illinois	Randolph	17157950600	Low-Income Community	2011–2015
Illinois	Richland	17159978000	Low-Income Community	2011–2015
Illinois	Rock Island	17161023500	Low-Income Community	2011–2015
Illinois	Rock Island	17161023600	Low-Income Community	2011–2015
Illinois	St. Clair	17163500500	Low-Income Community	2011–2015
Illinois	St. Clair	17163500900	Low-Income Community	2011–2015
Illinois	St. Clair	17163501300	Low-Income Community	2011–2015
Illinois	St. Clair	17163501603	Low-Income Community	2011–2015
Illinois	St. Clair	17163502700	Low-Income Community	2011–2015
Illinois	St. Clair	17163504500	Low-Income Community	2011–2015
Illinois	St. Clair	17163504600	Low-Income Community	2011–2015
Illinois	Saline	17165955900	Low-Income Community	2011–2015
Illinois	Sangamon	17167000800	Low-Income Community	2011–2015
Illinois	Sangamon	17167000900	Low-Income Community	2011–2015
Illinois	Sangamon	17167001600	Low-Income Community	2011–2015
Illinois	Sangamon	17167001700	Low-Income Community	2011–2015
Illinois	Sangamon	17167002400	Low-Income Community	2011–2015
Illinois	Schuyler	17169970100	Low-Income Community	2011–2015
Illinois	Shelby	17173959300	Low-Income Community	2011–2015
Illinois	Stephenson	17177000800	Low-Income Community	2011–2015
Illinois	Stephenson	17177001300	Low-Income Community	2011–2015
Illinois	Tazewell	17179021101	Low-Income Community	2011–2015
Illinois	Union	17181950400	Low-Income Community	2011–2015
Illinois	Vermilion	17183000200	Low-Income Community	2011–2015
Illinois	Vermilion	17183000400	Low-Income Community	2011–2015
Illinois	Vermilion	17183011200	Low-Income Community	2011–2015
Illinois	Warren	17187870500	Low-Income Community	2011–2015
Illinois	Washington	17189950300	Low-Income Community	2011–2015
Illinois	Wayne	17191955000	Low-Income Community	2011–2015
Illinois	White	17193958000	Low-Income Community	2011–2015
Illinois	Whiteside	17195001500	Low-Income Community	2011–2015
Illinois	Will	17197881200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Will	17197881900	Low-Income Community	2011–2015
Illinois	Will	17197882000	Low-Income Community	2011–2015
Illinois	Will	17197882400	Low-Income Community	2011–2015
Illinois	Will	17197882500	Low-Income Community	2011–2015
Illinois	Williamson	17199020400	Low-Income Community	2011–2015
Illinois	Winnebago	17201001000	Low-Income Community	2011–2015
Illinois	Winnebago	17201002100	Low-Income Community	2011–2015
Illinois	Winnebago	17201002500	Low-Income Community	2011–2015
Illinois	Winnebago	17201002600	Low-Income Community	2011–2015
Illinois	Winnebago	17201003200	Low-Income Community	2011–2015
Indiana	Adams	18001030700	Low-Income Community	2011–2015
Indiana	Allen	18003000500	Low-Income Community	2011–2015
Indiana	Allen	18003000600	Low-Income Community	2011–2015
Indiana	Allen	18003000701	Low-Income Community	2011–2015
Indiana	Allen	18003001100	Low-Income Community	2011–2015
Indiana	Allen	18003001200	Low-Income Community	2011–2015
Indiana	Allen	18003001300	Low-Income Community	2011–2015
Indiana	Allen	18003002000	Low-Income Community	2011–2015
Indiana	Allen	18003002100	Low-Income Community	2011–2015
Indiana	Allen	18003004000	Low-Income Community	2011–2015
Indiana	Allen	18003980001	Low-Income Community	2011–2015
Indiana	Bartholomew	18005010800	Low-Income Community	2011–2015
Indiana	Blackford	18009975100	Low-Income Community	2011–2015
Indiana	Boone	18011810400	Low-Income Community	2011–2015
Indiana	Carroll	18015959600	Low-Income Community	2011–2015
Indiana	Clark	18019050100	Low-Income Community	2011–2015
Indiana	Clark	18019050401	Low-Income Community	2011–2015
Indiana	Clark	18019050903	Low-Income Community	2011–2015
Indiana	Crawford	18025952100	Low-Income Community	2011–2015
Indiana	Daviess	18027954700	Low-Income Community	2011–2015
Indiana	DeKalb	18033020500	Low-Income Community	2011–2015
Indiana	DeKalb	18033020602	Non-LIC Contiguous	2011–2015
Indiana	Delaware	18035000600	Low-Income Community	2011–2015
Indiana	Delaware	18035000700	Low-Income Community	2011–2015
Indiana	Delaware	18035001300	Low-Income Community	2011–2015
Indiana	Delaware	18035002800	Low-Income Community	2011–2015
Indiana	Dubois	18037953800	Low-Income Community	2011–2015
Indiana	Elkhart	18039000100	Low-Income Community	2011–2015
Indiana	Elkhart	18039000302	Low-Income Community	2011–2015
Indiana	Elkhart	18039001601	Low-Income Community	2011–2015
Indiana	Elkhart	18039002300	Low-Income Community	2011–2015
Indiana	Elkhart	18039002900	Non-LIC Contiguous	2011–2015
Indiana	Fayette	18041954100	Low-Income Community	2011–2015
Indiana	Floyd	18043070400	Low-Income Community	2011–2015
Indiana	Floyd	18043070500	Low-Income Community	2011–2015
Indiana	Franklin	18047969700	Low-Income Community	2011–2015
Indiana	Gibson	18051050502	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Grant	18053000100	Low-Income Community	2011–2015
Indiana	Hendricks	18063210607	Low-Income Community	2011–2015
Indiana	Henry	18065976100	Low-Income Community	2011–2015
Indiana	Howard	18067000200	Low-Income Community	2011–2015
Indiana	Huntington	18069961600	Low-Income Community	2011–2015
Indiana	Jackson	18071967901	Low-Income Community	2011–2015
Indiana	Jennings	18079960302	Low-Income Community	2011–2015
Indiana	Johnson	18081610802	Low-Income Community	2011–2015
Indiana	Knox	18083955300	Low-Income Community	2011–2015
Indiana	Knox	18083955400	Low-Income Community	2011–2015
Indiana	Lake	18089010201	Low-Income Community	2011–2015
Indiana	Lake	18089010203	Low-Income Community	2011–2015
Indiana	Lake	18089010205	Low-Income Community	2011–2015
Indiana	Lake	18089010304	Low-Income Community	2011–2015
Indiana	Lake	18089010500	Low-Income Community	2011–2015
Indiana	Lake	18089011000	Low-Income Community	2011–2015
Indiana	Lake	18089011500	Low-Income Community	2011–2015
Indiana	Lake	18089012300	Low-Income Community	2011–2015
Indiana	Lake	18089020200	Low-Income Community	2011–2015
Indiana	Lake	18089020400	Low-Income Community	2011–2015
Indiana	Lake	18089020600	Low-Income Community	2011–2015
Indiana	Lake	18089030300	Low-Income Community	2011–2015
Indiana	Lake	18089030400	Low-Income Community	2011–2015
Indiana	Lake	18089030600	Low-Income Community	2011–2015
Indiana	Lake	18089030700	Low-Income Community	2011–2015
Indiana	LaPorte	18091040300	Low-Income Community	2011–2015
Indiana	LaPorte	18091040800	Low-Income Community	2011–2015
Indiana	LaPorte	18091042100	Low-Income Community	2011–2015
Indiana	LaPorte	18091043000	Low-Income Community	2011–2015
Indiana	Lawrence	18093950900	Low-Income Community	2011–2015
Indiana	Madison	18095000500	Low-Income Community	2011–2015
Indiana	Madison	18095001000	Low-Income Community	2011–2015
Indiana	Madison	18095001700	Low-Income Community	2011–2015
Indiana	Madison	18095011900	Low-Income Community	2011–2015
Indiana	Marion	18097310306	Low-Income Community	2011–2015
Indiana	Marion	18097322000	Low-Income Community	2011–2015
Indiana	Marion	18097322600	Low-Income Community	2011–2015
Indiana	Marion	18097330805	Low-Income Community	2011–2015
Indiana	Marion	18097340102	Low-Income Community	2011–2015
Indiana	Marion	18097340108	Low-Income Community	2011–2015
Indiana	Marion	18097340400	Low-Income Community	2011–2015
Indiana	Marion	18097341600	Low-Income Community	2011–2015
Indiana	Marion	18097342101	Low-Income Community	2011–2015
Indiana	Marion	18097342400	Low-Income Community	2011–2015
Indiana	Marion	18097351200	Low-Income Community	2011–2015
Indiana	Marion	18097351700	Low-Income Community	2011–2015
Indiana	Marion	18097352600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Marion	18097352700	Low-Income Community	2011–2015
Indiana	Marion	18097352800	Low-Income Community	2011–2015
Indiana	Marion	18097353300	Low-Income Community	2011–2015
Indiana	Marion	18097353500	Low-Income Community	2011–2015
Indiana	Marion	18097353600	Low-Income Community	2011–2015
Indiana	Marion	18097354200	Low-Income Community	2011–2015
Indiana	Marion	18097354400	Low-Income Community	2011–2015
Indiana	Marion	18097354500	Low-Income Community	2011–2015
Indiana	Marion	18097354900	Low-Income Community	2011–2015
Indiana	Marion	18097355000	Low-Income Community	2011–2015
Indiana	Marion	18097355600	Low-Income Community	2011–2015
Indiana	Marion	18097355700	Low-Income Community	2011–2015
Indiana	Marion	18097356200	Non-LIC Contiguous	2011–2015
Indiana	Marion	18097356400	Low-Income Community	2011–2015
Indiana	Marion	18097361200	Low-Income Community	2011–2015
Indiana	Marion	18097361300	Low-Income Community	2011–2015
Indiana	Marion	18097380200	Low-Income Community	2011–2015
Indiana	Marion	18097380300	Low-Income Community	2011–2015
Indiana	Marion	18097390600	Low-Income Community	2011–2015
Indiana	Marion	18097390700	Low-Income Community	2011–2015
Indiana	Marion	18097390800	Low-Income Community	2011–2015
Indiana	Marion	18097390900	Low-Income Community	2011–2015
Indiana	Marion	18097391000	Low-Income Community	2011–2015
Indiana	Marshall	18099020500	Low-Income Community	2011–2015
Indiana	Miami	18103952200	Low-Income Community	2011–2015
Indiana	Miami	18103952900	Low-Income Community	2011–2015
Indiana	Monroe	18105000100	Low-Income Community	2011–2015
Indiana	Monroe	18105000401	Low-Income Community	2011–2015
Indiana	Monroe	18105000501	Low-Income Community	2011–2015
Indiana	Monroe	18105001101	Low-Income Community	2011–2015
Indiana	Montgomery	18107957000	Low-Income Community	2011–2015
Indiana	Morgan	18109510701	Low-Income Community	2011–2015
Indiana	Newton	18111100700	Low-Income Community	2011–2015
Indiana	Orange	18117951500	Low-Income Community	2011–2015
Indiana	Perry	18123952600	Low-Income Community	2011–2015
Indiana	Pike	18125954000	Low-Income Community	2011–2015
Indiana	Porter	18127050900	Low-Income Community	2011–2015
Indiana	Putnam	18133956500	Low-Income Community	2011–2015
Indiana	Randolph	18135951600	Low-Income Community	2011–2015
Indiana	Rush	18139974400	Low-Income Community	2011–2015
Indiana	St. Joseph	18141000900	Low-Income Community	2011–2015
Indiana	St. Joseph	18141001000	Low-Income Community	2011–2015
Indiana	St. Joseph	18141001700	Low-Income Community	2011–2015
Indiana	St. Joseph	18141002700	Low-Income Community	2011–2015
Indiana	St. Joseph	18141002900	Low-Income Community	2011–2015
Indiana	St. Joseph	18141010200	Low-Income Community	2011–2015
Indiana	St. Joseph	18141011100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Scott	18143967000	Low-Income Community	2011–2015
Indiana	Shelby	18145710400	Low-Income Community	2011–2015
Indiana	Shelby	18145710601	Low-Income Community	2011–2015
Indiana	Starke	18149953700	Low-Income Community	2011–2015
Indiana	Steuben	18151971300	Low-Income Community	2011–2015
Indiana	Switzerland	18155965700	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157000400	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157000700	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157010203	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157010500	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157011100	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001200	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001500	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001800	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001900	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163002000	Low-Income Community	2011–2015
Indiana	Vermillion	18165020500	Low-Income Community	2011–2015
Indiana	Vigo	18167000300	Low-Income Community	2011–2015
Indiana	Vigo	18167010600	Low-Income Community	2011–2015
Indiana	Vigo	18167011100	Low-Income Community	2011–2015
Indiana	Wabash	18169102600	Low-Income Community	2011–2015
Indiana	Washington	18175967500	Low-Income Community	2011–2015
Indiana	Wayne	18177000200	Low-Income Community	2011–2015
Indiana	Wayne	18177000900	Low-Income Community	2011–2015
Indiana	Wells	18179040600	Low-Income Community	2011–2015
Iowa	Appanoose	19007950100	Low-Income Community	2011–2015
Iowa	Appanoose	19007950300	Low-Income Community	2011–2015
Iowa	Benton	19011960300	Low-Income Community	2011–2015
Iowa	Black Hawk	19013000100	Low-Income Community	2011–2015
Iowa	Black Hawk	19013000700	Low-Income Community	2011–2015
Iowa	Black Hawk	19013001000	Low-Income Community	2011–2015
Iowa	Buena Vista	19021960400	Low-Income Community	2011–2015
Iowa	Calhoun	19025950200	Low-Income Community	2011–2015
Iowa	Cass	19029190200	Low-Income Community	2011–2015
Iowa	Cass	19029190500	Low-Income Community	2011–2015
Iowa	Cerro Gordo	19033950300	Low-Income Community	2011–2015
Iowa	Cherokee	19035080100	Low-Income Community	2011–2015
Iowa	Clinton	19045000100	Low-Income Community	2011–2015
Iowa	Clinton	19045000300	Low-Income Community	2011–2015
Iowa	Crawford	19047070400	Low-Income Community	2011–2015
Iowa	Dallas	19049050400	Low-Income Community	2011–2015
Iowa	Davis	19051080200	Low-Income Community	2011–2015
Iowa	Decatur	19053960200	Low-Income Community	2011–2015
Iowa	Decatur	19053960300	Low-Income Community	2011–2015
Iowa	Des Moines	19057000200	Low-Income Community	2011–2015
Iowa	Des Moines	19057000300	Low-Income Community	2011–2015
Iowa	Des Moines	19057000400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Iowa	Dubuque	19061000100	Low-Income Community	2011–2015
Iowa	Dubuque	19061000500	Low-Income Community	2011–2015
Iowa	Emmet	19063070300	Low-Income Community	2011–2015
Iowa	Floyd	19067480400	Low-Income Community	2011–2015
Iowa	Hamilton	19079960300	Low-Income Community	2011–2015
Iowa	Ida	19093090300	Low-Income Community	2011–2015
Iowa	Jackson	19097950600	Low-Income Community	2011–2015
Iowa	Johnson	19103000200	Low-Income Community	2011–2015
Iowa	Johnson	19103000302	Low-Income Community	2011–2015
Iowa	Johnson	19103001400	Non-LIC Contiguous	2011–2015
Iowa	Johnson	19103001700	Low-Income Community	2011–2015
Iowa	Lee	19111490200	Low-Income Community	2011–2015
Iowa	Lee	19111490800	Low-Income Community	2011–2015
Iowa	Lee	19111490900	Low-Income Community	2011–2015
Iowa	Linn	19113001900	Low-Income Community	2011–2015
Iowa	Linn	19113002200	Low-Income Community	2011–2015
Iowa	Linn	19113002700	Low-Income Community	2011–2015
Iowa	Lucas	19117950300	Low-Income Community	2011–2015
Iowa	Madison	19121060200	Low-Income Community	2011–2015
Iowa	Marshall	19127950900	Low-Income Community	2011–2015
Iowa	Muscatine	19139050700	Low-Income Community	2011–2015
Iowa	Muscatine	19139051000	Low-Income Community	2011–2015
Iowa	Page	19145490200	Low-Income Community	2011–2015
Iowa	Plymouth	19149970200	Low-Income Community	2011–2015
Iowa	Pocahontas	19151780100	Low-Income Community	2011–2015
Iowa	Polk	19153001100	Low-Income Community	2011–2015
Iowa	Polk	19153002600	Low-Income Community	2011–2015
Iowa	Polk	19153011001	Low-Income Community	2011–2015
Iowa	Pottawattamie	19155030900	Low-Income Community	2011–2015
Iowa	Pottawattamie	19155031300	Low-Income Community	2011–2015
Iowa	Poweshiek	19157370400	Low-Income Community	2011–2015
Iowa	Scott	19163010600	Low-Income Community	2011–2015
Iowa	Scott	19163010900	Low-Income Community	2011–2015
Iowa	Shelby	19165960400	Low-Income Community	2011–2015
Iowa	Union	19175190200	Low-Income Community	2011–2015
Iowa	Webster	19187000700	Low-Income Community	2011–2015
Iowa	Woodbury	19193000100	Low-Income Community	2011–2015
Iowa	Woodbury	19193001500	Low-Income Community	2011–2015
Iowa	Woodbury	19193003600	Low-Income Community	2011–2015
Iowa	Worth	19195690100	Low-Income Community	2011–2015
Kansas	Allen	20001952900	Low-Income Community	2011–2015
Kansas	Anderson	20003953600	Low-Income Community	2011–2015
Kansas	Atchison	20005081900	Low-Income Community	2011–2015
Kansas	Barton	20009971400	Low-Income Community	2011–2015
Kansas	Barton	20009971700	Low-Income Community	2011–2015
Kansas	Butler	20015020400	Low-Income Community	2011–2015
Kansas	Cloud	20029977200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kansas	Cowley	20035493700	Low-Income Community	2011–2015
Kansas	Cowley	20035493800	Low-Income Community	2011–2015
Kansas	Crawford	20037956600	Low-Income Community	2011–2015
Kansas	Crawford	20037956900	Non-LIC Contiguous	2011–2015
Kansas	Crawford	20037957500	Low-Income Community	2011–2015
Kansas	Crawford	20037957600	Low-Income Community	2011–2015
Kansas	Douglas	20045000200	Low-Income Community	2011–2015
Kansas	Douglas	20045000400	Low-Income Community	2011–2015
Kansas	Finney	20055960501	Low-Income Community	2011–2015
Kansas	Finney	20055960600	Low-Income Community	2011–2015
Kansas	Ford	20057961800	Low-Income Community	2011–2015
Kansas	Ford	20057962101	Low-Income Community	2011–2015
Kansas	Franklin	20059954200	Low-Income Community	2011–2015
Kansas	Franklin	20059954400	Low-Income Community	2011–2015
Kansas	Gove	20063955100	Low-Income Community	2011–2015
Kansas	Gove	20063955200	Low-Income Community	2011–2015
Kansas	Graham	20065952100	Low-Income Community	2011–2015
Kansas	Greeley	20071958100	Low-Income Community	2011–2015
Kansas	Jewell	20089576100	Low-Income Community	2011–2015
Kansas	Jewell	20089576200	Low-Income Community	2011–2015
Kansas	Johnson	20091052102	Low-Income Community	2011–2015
Kansas	Johnson	20091052417	Low-Income Community	2011–2015
Kansas	Johnson	20091053555	Low-Income Community	2011–2015
Kansas	Johnson	20091053557	Low-Income Community	2011–2015
Kansas	Johnson	20091053601	Low-Income Community	2011–2015
Kansas	Labette	20099950400	Low-Income Community	2011–2015
Kansas	Lane	20101956600	Non-LIC Contiguous	2011–2015
Kansas	Leavenworth	20103070100	Low-Income Community	2011–2015
Kansas	Lyon	20111000500	Low-Income Community	2011–2015
Kansas	Miami	20121100700	Low-Income Community	2011–2015
Kansas	Montgomery	20125950200	Low-Income Community	2011–2015
Kansas	Montgomery	20125951200	Low-Income Community	2011–2015
Kansas	Montgomery	20125951300	Low-Income Community	2011–2015
Kansas	Norton	20137951700	Non-LIC Contiguous	2011–2015
Kansas	Osage	20139010400	Low-Income Community	2011–2015
Kansas	Reno	20155000600	Low-Income Community	2011–2015
Kansas	Reno	20155000700	Low-Income Community	2011–2015
Kansas	Reno	20155001000	Low-Income Community	2011–2015
Kansas	Reno	20155001300	Low-Income Community	2011–2015
Kansas	Republic	20157978300	Low-Income Community	2011–2015
Kansas	Riley	20161000500	Low-Income Community	2011–2015
Kansas	Riley	20161000801	Low-Income Community	2011–2015
Kansas	Riley	20161001100	Low-Income Community	2011–2015
Kansas	Rooks	20163974600	Low-Income Community	2011–2015
Kansas	Rooks	20163974700	Non-LIC Contiguous	2011–2015
Kansas	Saline	20169000100	Low-Income Community	2011–2015
Kansas	Saline	20169000600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kansas	Sedgwick	20173000400	Low-Income Community	2011–2015
Kansas	Sedgwick	20173000900	Low-Income Community	2011–2015
Kansas	Sedgwick	20173001100	Low-Income Community	2011–2015
Kansas	Sedgwick	20173002600	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003200	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003700	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003800	Low-Income Community	2011–2015
Kansas	Sedgwick	20173004300	Low-Income Community	2011–2015
Kansas	Sedgwick	20173006300	Low-Income Community	2011–2015
Kansas	Shawnee	20177000700	Low-Income Community	2011–2015
Kansas	Shawnee	20177000800	Low-Income Community	2011–2015
Kansas	Shawnee	20177004000	Low-Income Community	2011–2015
Kansas	Sherman	20181453700	Low-Income Community	2011–2015
Kansas	Stafford	20185470600	Low-Income Community	2011–2015
Kansas	Wyandotte	20209041800	Low-Income Community	2011–2015
Kansas	Wyandotte	20209042200	Low-Income Community	2011–2015
Kansas	Wyandotte	20209043905	Low-Income Community	2011–2015
Kansas	Wyandotte	20209044101	Low-Income Community	2011–2015
Kansas	Wyandotte	20209045100	Low-Income Community	2011–2015
Kansas	Wyandotte	20209045200	Low-Income Community	2011–2015
Kentucky	Adair	21001970500	Low-Income Community	2011–2015
Kentucky	Ballard	21007950200	Low-Income Community	2011–2015
Kentucky	Ballard	21007950300	Non-LIC Contiguous	2011–2015
Kentucky	Barren	21009950200	Low-Income Community	2011–2015
Kentucky	Bath	21011970200	Low-Income Community	2011–2015
Kentucky	Bell	21013960600	Low-Income Community	2011–2015
Kentucky	Boone	21015070311	Low-Income Community	2011–2015
Kentucky	Boyd	21019030200	Low-Income Community	2011–2015
Kentucky	Boyd	21019031001	Low-Income Community	2011–2015
Kentucky	Boyle	21021930300	Low-Income Community	2011–2015
Kentucky	Bracken	21023950100	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920100	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920300	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920500	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920600	Low-Income Community	2011–2015
Kentucky	Bullitt	21029020701	Low-Income Community	2011–2015
Kentucky	Bullitt	21029020800	Non-LIC Contiguous	2011–2015
Kentucky	Butler	21031930300	Low-Income Community	2011–2015
Kentucky	Calloway	21035010400	Low-Income Community	2011–2015
Kentucky	Campbell	21037050500	Low-Income Community	2011–2015
Kentucky	Carlisle	21039960200	Low-Income Community	2011–2015
Kentucky	Carroll	21041950200	Low-Income Community	2011–2015
Kentucky	Carter	21043960100	Low-Income Community	2011–2015
Kentucky	Casey	21045950300	Low-Income Community	2011–2015
Kentucky	Christian	21047200300	Low-Income Community	2011–2015
Kentucky	Clark	21049020106	Low-Income Community	2011–2015
Kentucky	Clay	21051950300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Clay	21051950400	Low-Income Community	2011–2015
Kentucky	Clinton	21053970202	Low-Income Community	2011–2015
Kentucky	Cumberland	21057950100	Low-Income Community	2011–2015
Kentucky	Daviess	21059000200	Low-Income Community	2011–2015
Kentucky	Daviess	21059000300	Low-Income Community	2011–2015
Kentucky	Edmonson	21061980100	Low-Income Community	2011–2015
Kentucky	Estill	21065920200	Low-Income Community	2011–2015
Kentucky	Estill	21065920300	Low-Income Community	2011–2015
Kentucky	Fayette	21067000101	Low-Income Community	2011–2015
Kentucky	Fayette	21067000102	Low-Income Community	2011–2015
Kentucky	Fayette	21067000200	Low-Income Community	2011–2015
Kentucky	Fayette	21067000300	Low-Income Community	2011–2015
Kentucky	Fayette	21067000900	Low-Income Community	2011–2015
Kentucky	Fayette	21067001100	Low-Income Community	2011–2015
Kentucky	Fayette	21067001300	Low-Income Community	2011–2015
Kentucky	Fleming	21069920100	Low-Income Community	2011–2015
Kentucky	Floyd	21071920100	Low-Income Community	2011–2015
Kentucky	Franklin	21073071200	Low-Income Community	2011–2015
Kentucky	Fulton	21075960100	Low-Income Community	2011–2015
Kentucky	Gallatin	21077960101	Low-Income Community	2011–2015
Kentucky	Grant	21081920300	Low-Income Community	2011–2015
Kentucky	Graves	21083020100	Low-Income Community	2011–2015
Kentucky	Green	21087930200	Low-Income Community	2011–2015
Kentucky	Greenup	21089040501	Non-LIC Contiguous	2011–2015
Kentucky	Greenup	21089040502	Low-Income Community	2011–2015
Kentucky	Harlan	21095970100	Low-Income Community	2011–2015
Kentucky	Hart	21099970400	Low-Income Community	2011–2015
Kentucky	Henderson	21101020602	Low-Income Community	2011–2015
Kentucky	Hopkins	21107971100	Low-Income Community	2011–2015
Kentucky	Jackson	21109960100	Low-Income Community	2011–2015
Kentucky	Jefferson	21111000200	Low-Income Community	2011–2015
Kentucky	Jefferson	21111000600	Low-Income Community	2011–2015
Kentucky	Jefferson	21111001500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111001800	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002300	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002400	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002700	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002800	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003000	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003700	Low-Income Community	2011–2015
Kentucky	Jefferson	21111004900	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005000	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005100	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005300	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005900	Low-Income Community	2011–2015
Kentucky	Jefferson	21111006200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Jefferson	21111006500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111007100	Low-Income Community	2011–2015
Kentucky	Jessamine	21113060504	Low-Income Community	2011–2015
Kentucky	Johnson	21115960400	Low-Income Community	2011–2015
Kentucky	Kenton	21117060700	Low-Income Community	2011–2015
Kentucky	Kenton	21117060900	Low-Income Community	2011–2015
Kentucky	Kenton	21117063800	Low-Income Community	2011–2015
Kentucky	Kenton	21117067000	Low-Income Community	2011–2015
Kentucky	Kenton	21117067100	Low-Income Community	2011–2015
Kentucky	Knott	21119960100	Low-Income Community	2011–2015
Kentucky	Knox	21121930500	Low-Income Community	2011–2015
Kentucky	Larue	21123960102	Low-Income Community	2011–2015
Kentucky	Leslie	21131920100	Low-Income Community	2011–2015
Kentucky	Letcher	21133950100	Low-Income Community	2011–2015
Kentucky	Lewis	21135930300	Low-Income Community	2011–2015
Kentucky	Lincoln	21137920101	Low-Income Community	2011–2015
Kentucky	Lincoln	21137920103	Low-Income Community	2011–2015
Kentucky	Logan	21141960500	Low-Income Community	2011–2015
Kentucky	McCracken	21145030300	Low-Income Community	2011–2015
Kentucky	McCracken	21145030400	Low-Income Community	2011–2015
Kentucky	McCreary	21147960300	Low-Income Community	2011–2015
Kentucky	Madison	21151010701	Low-Income Community	2011–2015
Kentucky	Madison	21151010800	Non-LIC Contiguous	2011–2015
Kentucky	Madison	21151010903	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970100	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970200	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970400	Low-Income Community	2011–2015
Kentucky	Martin	21159950100	Low-Income Community	2011–2015
Kentucky	Martin	21159950200	Low-Income Community	2011–2015
Kentucky	Mason	21161960100	Low-Income Community	2011–2015
Kentucky	Menifee	21165960100	Low-Income Community	2011–2015
Kentucky	Metcalfe	21169960300	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920200	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920302	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920400	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920500	Low-Income Community	2011–2015
Kentucky	Morgan	21175950300	Low-Income Community	2011–2015
Kentucky	Muhlenberg	21177960200	Low-Income Community	2011–2015
Kentucky	Muhlenberg	21177960400	Non-LIC Contiguous	2011–2015
Kentucky	Nicholas	21181960200	Low-Income Community	2011–2015
Kentucky	Ohio	21183920300	Low-Income Community	2011–2015
Kentucky	Ohio	21183920500	Low-Income Community	2011–2015
Kentucky	Owen	21187970200	Low-Income Community	2011–2015
Kentucky	Owsley	21189930100	Low-Income Community	2011–2015
Kentucky	Perry	21193970500	Low-Income Community	2011–2015
Kentucky	Perry	21193970600	Low-Income Community	2011–2015
Kentucky	Perry	21193971000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Pike	21195930100	Low-Income Community	2011–2015
Kentucky	Pike	21195930300	Low-Income Community	2011–2015
Kentucky	Pike	21195930400	Low-Income Community	2011–2015
Kentucky	Pike	21195930500	Low-Income Community	2011–2015
Kentucky	Pike	21195931100	Low-Income Community	2011–2015
Kentucky	Pike	21195931800	Low-Income Community	2011–2015
Kentucky	Pike	21195931900	Low-Income Community	2011–2015
Kentucky	Powell	21197970200	Low-Income Community	2011–2015
Kentucky	Pulaski	21199930100	Low-Income Community	2011–2015
Kentucky	Pulaski	21199931102	Low-Income Community	2011–2015
Kentucky	Robertson	21201970100	Low-Income Community	2011–2015
Kentucky	Rowan	21205950200	Low-Income Community	2011–2015
Kentucky	Russell	21207960102	Low-Income Community	2011–2015
Kentucky	Simpson	21213970400	Low-Income Community	2011–2015
Kentucky	Taylor	21217920500	Low-Income Community	2011–2015
Kentucky	Todd	21219950300	Low-Income Community	2011–2015
Kentucky	Union	21225950201	Low-Income Community	2011–2015
Kentucky	Warren	21227010200	Low-Income Community	2011–2015
Kentucky	Wayne	21231920400	Low-Income Community	2011–2015
Kentucky	Webster	21233960400	Low-Income Community	2011–2015
Kentucky	Whitley	21235920500	Low-Income Community	2011–2015
Kentucky	Whitley	21235920600	Low-Income Community	2011–2015
Kentucky	Wolfe	21237930200	Low-Income Community	2011–2015
Louisiana	Acadia	22001960100	Low-Income Community	2011–2015
Louisiana	Allen	22003950300	Low-Income Community	2011–2015
Louisiana	Ascension	22005030900	Low-Income Community	2011–2015
Louisiana	Ascension	22005031000	Low-Income Community	2011–2015
Louisiana	Assumption	22007050100	Low-Income Community	2011–2015
Louisiana	Avoyelles	22009030600	Low-Income Community	2011–2015
Louisiana	Avoyelles	22009030900	Low-Income Community	2011–2015
Louisiana	Beauregard	22011960300	Low-Income Community	2011–2015
Louisiana	Bienville	22013970100	Low-Income Community	2011–2015
Louisiana	Bienville	22013970200	Low-Income Community	2011–2015
Louisiana	Bossier	22015010601	Low-Income Community	2011–2015
Louisiana	Caddo	22017023400	Low-Income Community	2011–2015
Louisiana	Caddo	22017023800	Low-Income Community	2011–2015
Louisiana	Caddo	22017024303	Low-Income Community	2011–2015
Louisiana	Caddo	22017024601	Low-Income Community	2011–2015
Louisiana	Caddo	22017024900	Non-LIC Contiguous	2011–2015
Louisiana	Caddo	22017025100	Low-Income Community	2011–2015
Louisiana	Caddo	22017025300	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000100	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000200	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000400	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019001500	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019001600	Low-Income Community	2011–2015
Louisiana	Concordia	22029000300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	De Soto	22031950300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000100	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000500	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000602	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000900	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033001000	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033001104	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002200	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002500	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003000	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003101	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003103	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004011	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004201	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004203	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005100	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005200	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005300	Low-Income Community	2011–2015
Louisiana	East Carroll	22035000200	Low-Income Community	2011–2015
Louisiana	East Feliciana	22037951502	Low-Income Community	2011–2015
Louisiana	Evangeline	22039950500	Low-Income Community	2011–2015
Louisiana	Evangeline	22039950600	Low-Income Community	2011–2015
Louisiana	Iberia	22045030500	Low-Income Community	2011–2015
Louisiana	Iberia	22045030900	Low-Income Community	2011–2015
Louisiana	Iberia	22045031000	Low-Income Community	2011–2015
Louisiana	Iberia	22045031100	Low-Income Community	2011–2015
Louisiana	Iberville	22047953000	Low-Income Community	2011–2015
Louisiana	Jackson	22049970300	Non-LIC Contiguous	2011–2015
Louisiana	Jefferson	22051020201	Low-Income Community	2011–2015
Louisiana	Jefferson	22051020202	Low-Income Community	2011–2015
Louisiana	Jefferson	22051020600	Low-Income Community	2011–2015
Louisiana	Jefferson	22051024600	Low-Income Community	2011–2015
Louisiana	Jefferson	22051025900	Low-Income Community	2011–2015
Louisiana	Jefferson	22051026900	Low-Income Community	2011–2015
Louisiana	Jefferson	22051028200	Low-Income Community	2011–2015
Louisiana	Jefferson Davis	22053000500	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000100	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000700	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000800	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000900	Low-Income Community	2011–2015
Louisiana	Lafayette	22055001001	Low-Income Community	2011–2015
Louisiana	Lafayette	22055001100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	Lafayette	22055002200	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020400	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020702	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020900	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960300	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960400	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960900	Low-Income Community	2011–2015
Louisiana	Livingston	22063040401	Low-Income Community	2011–2015
Louisiana	Livingston	22063040402	Non-LIC Contiguous	2011–2015
Louisiana	Livingston	22063040700	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950400	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950500	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950600	Low-Income Community	2011–2015
Louisiana	Natchitoches	22069000600	Low-Income Community	2011–2015
Louisiana	Natchitoches	22069000700	Low-Income Community	2011–2015
Louisiana	Orleans	22071000200	Low-Income Community	2011–2015
Louisiana	Orleans	22071000605	Low-Income Community	2011–2015
Louisiana	Orleans	22071000904	Low-Income Community	2011–2015
Louisiana	Orleans	22071001730	Low-Income Community	2011–2015
Louisiana	Orleans	22071001736	Low-Income Community	2011–2015
Louisiana	Orleans	22071001751	Low-Income Community	2011–2015
Louisiana	Orleans	22071002700	Low-Income Community	2011–2015
Louisiana	Orleans	22071002900	Low-Income Community	2011–2015
Louisiana	Orleans	22071003307	Low-Income Community	2011–2015
Louisiana	Orleans	22071003400	Low-Income Community	2011–2015
Louisiana	Orleans	22071004000	Low-Income Community	2011–2015
Louisiana	Orleans	22071004401	Low-Income Community	2011–2015
Louisiana	Orleans	22071004900	Low-Income Community	2011–2015
Louisiana	Orleans	22071006000	Low-Income Community	2011–2015
Louisiana	Orleans	22071006300	Low-Income Community	2011–2015
Louisiana	Orleans	22071007101	Low-Income Community	2011–2015
Louisiana	Orleans	22071007200	Low-Income Community	2011–2015
Louisiana	Orleans	22071007700	Non-LIC Contiguous	2011–2015
Louisiana	Orleans	22071008400	Low-Income Community	2011–2015
Louisiana	Orleans	22071009400	Low-Income Community	2011–2015
Louisiana	Orleans	22071011100	Low-Income Community	2011–2015
Louisiana	Orleans	22071013400	Low-Income Community	2011–2015
Louisiana	Orleans	22071013700	Low-Income Community	2011–2015
Louisiana	Orleans	22071014000	Low-Income Community	2011–2015
Louisiana	Orleans	22071014300	Low-Income Community	2011–2015
Louisiana	Ouachita	22073000600	Low-Income Community	2011–2015
Louisiana	Ouachita	22073001400	Low-Income Community	2011–2015
Louisiana	Ouachita	22073010603	Low-Income Community	2011–2015
Louisiana	Ouachita	22073010900	Low-Income Community	2011–2015
Louisiana	Pointe Coupee	22077951900	Low-Income Community	2011–2015
Louisiana	Pointe Coupee	22077952300	Low-Income Community	2011–2015
Louisiana	Rapides	22079010500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	Rapides	22079011300	Low-Income Community	2011–2015
Louisiana	Rapides	22079013900	Low-Income Community	2011–2015
Louisiana	Richland	22083970500	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030300	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030400	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030800	Low-Income Community	2011–2015
Louisiana	St. Charles	22089062700	Low-Income Community	2011–2015
Louisiana	St. Helena	22091951100	Low-Income Community	2011–2015
Louisiana	St. James	22093040400	Low-Income Community	2011–2015
Louisiana	St. James	22093040500	Low-Income Community	2011–2015
Louisiana	St. John the Baptist	22095071100	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961100	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961300	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961400	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961600	Low-Income Community	2011–2015
Louisiana	St. Martin	22099020501	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040300	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040400	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040500	Low-Income Community	2011–2015
Louisiana	St. Mary	22101041200	Low-Income Community	2011–2015
Louisiana	St. Tammany	22103040704	Low-Income Community	2011–2015
Louisiana	Tangipahoa	22105953600	Low-Income Community	2011–2015
Louisiana	Tangipahoa	22105953800	Low-Income Community	2011–2015
Louisiana	Terrebonne	22109000101	Non-LIC Contiguous	2011–2015
Louisiana	Terrebonne	22109000500	Low-Income Community	2011–2015
Louisiana	Vermilion	22113950700	Low-Income Community	2011–2015
Louisiana	Vernon	22115950400	Low-Income Community	2011–2015
Louisiana	Washington	22117950500	Low-Income Community	2011–2015
Louisiana	Washington	22117951000	Low-Income Community	2011–2015
Louisiana	Webster	22119031200	Low-Income Community	2011–2015
Louisiana	West Baton Rouge	22121020200	Low-Income Community	2011–2015
Louisiana	Winn	22127960200	Low-Income Community	2011–2015
Maine	Androscoggin	23001010500	Low-Income Community	2011–2015
Maine	Androscoggin	23001020300	Low-Income Community	2011–2015
Maine	Aroostook	23003950100	Low-Income Community	2011–2015
Maine	Aroostook	23003950300	Non-LIC Contiguous	2011–2015
Maine	Aroostook	23003951000	Low-Income Community	2011–2015
Maine	Aroostook	23003951600	Low-Income Community	2011–2015
Maine	Cumberland	23005000300	Low-Income Community	2011–2015
Maine	Cumberland	23005002800	Low-Income Community	2011–2015
Maine	Cumberland	23005003000	Low-Income Community	2011–2015
Maine	Cumberland	23005011100	Low-Income Community	2011–2015
Maine	Hancock	23009965503	Low-Income Community	2011–2015
Maine	Kennebec	23011010300	Low-Income Community	2011–2015
Maine	Kennebec	23011024102	Low-Income Community	2011–2015
Maine	Oxford	23017965500	Low-Income Community	2011–2015
Maine	Oxford	23017965600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maine	Oxford	23017966200	Low-Income Community	2011–2015
Maine	Penobscot	23019000300	Low-Income Community	2011–2015
Maine	Penobscot	23019004100	Low-Income Community	2011–2015
Maine	Penobscot	23019007100	Low-Income Community	2011–2015
Maine	Penobscot	23019027000	Low-Income Community	2011–2015
Maine	Penobscot	23019028000	Low-Income Community	2011–2015
Maine	Penobscot	23019030000	Low-Income Community	2011–2015
Maine	Penobscot	23019031000	Low-Income Community	2011–2015
Maine	Piscataquis	23021960301	Low-Income Community	2011–2015
Maine	Sagadahoc	23023970600	Low-Income Community	2011–2015
Maine	Somerset	23025965900	Low-Income Community	2011–2015
Maine	Somerset	23025966500	Low-Income Community	2011–2015
Maine	Waldo	23027043000	Low-Income Community	2011–2015
Maine	Washington	23029955400	Non-LIC Contiguous	2011–2015
Maine	Washington	23029955500	Low-Income Community	2011–2015
Maine	Washington	23029955900	Low-Income Community	2011–2015
Maine	York	23031005200	Low-Income Community	2011–2015
Maryland	Allegany	24001000800	Low-Income Community	2011–2015
Maryland	Allegany	24001001000	Low-Income Community	2011–2015
Maryland	Allegany	24001001100	Low-Income Community	2011–2015
Maryland	Allegany	24001001800	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003740603	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750101	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750102	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750201	Low-Income Community	2011–2015
Maryland	Baltimore	24005401507	Low-Income Community	2011–2015
Maryland	Baltimore	24005402406	Low-Income Community	2011–2015
Maryland	Baltimore	24005404102	Low-Income Community	2011–2015
Maryland	Baltimore	24005404202	Low-Income Community	2011–2015
Maryland	Baltimore	24005421102	Low-Income Community	2011–2015
Maryland	Baltimore	24005421300	Low-Income Community	2011–2015
Maryland	Baltimore	24005450501	Low-Income Community	2011–2015
Maryland	Baltimore	24005450800	Low-Income Community	2011–2015
Maryland	Baltimore	24005451600	Low-Income Community	2011–2015
Maryland	Baltimore	24005492500	Low-Income Community	2011–2015
Maryland	Calvert	24009860703	Low-Income Community	2011–2015
Maryland	Calvert	24009861003	Non-LIC Contiguous	2011–2015
Maryland	Calvert	24009861004	Low-Income Community	2011–2015
Maryland	Caroline	24011955302	Low-Income Community	2011–2015
Maryland	Caroline	24011955600	Low-Income Community	2011–2015
Maryland	Carroll	24013507601	Low-Income Community	2011–2015
Maryland	Cecil	24015030400	Low-Income Community	2011–2015
Maryland	Cecil	24015030505	Low-Income Community	2011–2015
Maryland	Cecil	24015030906	Low-Income Community	2011–2015
Maryland	Charles	24017850202	Low-Income Community	2011–2015
Maryland	Charles	24017850709	Non-LIC Contiguous	2011–2015
Maryland	Charles	24017850802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Dorchester	24019970400	Low-Income Community	2011–2015
Maryland	Dorchester	24019970600	Low-Income Community	2011–2015
Maryland	Frederick	24021750300	Low-Income Community	2011–2015
Maryland	Frederick	24021751003	Low-Income Community	2011–2015
Maryland	Frederick	24021765100	Low-Income Community	2011–2015
Maryland	Frederick	24021772200	Low-Income Community	2011–2015
Maryland	Frederick	24021775400	Low-Income Community	2011–2015
Maryland	Garrett	24023000200	Low-Income Community	2011–2015
Maryland	Garrett	24023000600	Low-Income Community	2011–2015
Maryland	Garrett	24023000700	Low-Income Community	2011–2015
Maryland	Harford	24025301302	Low-Income Community	2011–2015
Maryland	Harford	24025302902	Low-Income Community	2011–2015
Maryland	Harford	24025306100	Low-Income Community	2011–2015
Maryland	Harford	24025306200	Low-Income Community	2011–2015
Maryland	Howard	24027601107	Low-Income Community	2011–2015
Maryland	Kent	24029950300	Low-Income Community	2011–2015
Maryland	Montgomery	24031700713	Low-Income Community	2011–2015
Maryland	Montgomery	24031700723	Low-Income Community	2011–2015
Maryland	Montgomery	24031700724	Low-Income Community	2011–2015
Maryland	Montgomery	24031700813	Low-Income Community	2011–2015
Maryland	Montgomery	24031700830	Low-Income Community	2011–2015
Maryland	Montgomery	24031700904	Low-Income Community	2011–2015
Maryland	Montgomery	24031701421	Low-Income Community	2011–2015
Maryland	Montgomery	24031701509	Low-Income Community	2011–2015
Maryland	Montgomery	24031701703	Low-Income Community	2011–2015
Maryland	Montgomery	24031702000	Low-Income Community	2011–2015
Maryland	Montgomery	24031702301	Low-Income Community	2011–2015
Maryland	Montgomery	24031702500	Low-Income Community	2011–2015
Maryland	Montgomery	24031702601	Low-Income Community	2011–2015
Maryland	Montgomery	24031703800	Low-Income Community	2011–2015
Maryland	Prince George's	24033801500	Low-Income Community	2011–2015
Maryland	Prince George's	24033801600	Low-Income Community	2011–2015
Maryland	Prince George's	24033801802	Low-Income Community	2011–2015
Maryland	Prince George's	24033801807	Low-Income Community	2011–2015
Maryland	Prince George's	24033802204	Non-LIC Contiguous	2011–2015
Maryland	Prince George's	24033802405	Low-Income Community	2011–2015
Maryland	Prince George's	24033802700	Low-Income Community	2011–2015
Maryland	Prince George's	24033802803	Low-Income Community	2011–2015
Maryland	Prince George's	24033802804	Low-Income Community	2011–2015
Maryland	Prince George's	24033802901	Low-Income Community	2011–2015
Maryland	Prince George's	24033803508	Low-Income Community	2011–2015
Maryland	Prince George's	24033803514	Low-Income Community	2011–2015
Maryland	Prince George's	24033803519	Non-LIC Contiguous	2011–2015
Maryland	Prince George's	24033803525	Low-Income Community	2011–2015
Maryland	Prince George's	24033803602	Low-Income Community	2011–2015
Maryland	Prince George's	24033803605	Low-Income Community	2011–2015
Maryland	Prince George's	24033803612	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Prince George's	24033804102	Low-Income Community	2011–2015
Maryland	Prince George's	24033804600	Low-Income Community	2011–2015
Maryland	Prince George's	24033805601	Low-Income Community	2011–2015
Maryland	Prince George's	24033805908	Low-Income Community	2011–2015
Maryland	Prince George's	24033806000	Low-Income Community	2011–2015
Maryland	Prince George's	24033806601	Low-Income Community	2011–2015
Maryland	Prince George's	24033807000	Low-Income Community	2011–2015
Maryland	Prince George's	24033807200	Low-Income Community	2011–2015
Maryland	Queen Anne's	24035810300	Low-Income Community	2011–2015
Maryland	St. Mary's	24037876001	Low-Income Community	2011–2015
Maryland	Somerset	24039930101	Low-Income Community	2011–2015
Maryland	Somerset	24039930500	Low-Income Community	2011–2015
Maryland	Somerset	24039930600	Low-Income Community	2011–2015
Maryland	Talbot	24041960300	Low-Income Community	2011–2015
Maryland	Talbot	24041960400	Low-Income Community	2011–2015
Maryland	Washington	24043000400	Low-Income Community	2011–2015
Maryland	Washington	24043000500	Low-Income Community	2011–2015
Maryland	Washington	24043000700	Low-Income Community	2011–2015
Maryland	Washington	24043000800	Low-Income Community	2011–2015
Maryland	Washington	24043010802	Low-Income Community	2011–2015
Maryland	Wicomico	24045000100	Low-Income Community	2011–2015
Maryland	Wicomico	24045000200	Low-Income Community	2011–2015
Maryland	Wicomico	24045000500	Low-Income Community	2011–2015
Maryland	Wicomico	24045010101	Low-Income Community	2011–2015
Maryland	Wicomico	24045010102	Low-Income Community	2011–2015
Maryland	Wicomico	24045010502	Low-Income Community	2011–2015
Maryland	Wicomico	24045010603	Low-Income Community	2011–2015
Maryland	Worcester	24047950000	Low-Income Community	2011–2015
Maryland	Worcester	24047951000	Low-Income Community	2011–2015
Maryland	Worcester	24047951300	Low-Income Community	2011–2015
Maryland	Baltimore	24510030100	Low-Income Community	2011–2015
Maryland	Baltimore	24510040100	Low-Income Community	2011–2015
Maryland	Baltimore	24510070400	Low-Income Community	2011–2015
Maryland	Baltimore	24510080200	Low-Income Community	2011–2015
Maryland	Baltimore	24510080400	Low-Income Community	2011–2015
Maryland	Baltimore	24510080700	Low-Income Community	2011–2015
Maryland	Baltimore	24510080800	Low-Income Community	2011–2015
Maryland	Baltimore	24510090800	Low-Income Community	2011–2015
Maryland	Baltimore	24510100100	Low-Income Community	2011–2015
Maryland	Baltimore	24510120500	Low-Income Community	2011–2015
Maryland	Baltimore	24510130200	Low-Income Community	2011–2015
Maryland	Baltimore	24510130300	Low-Income Community	2011–2015
Maryland	Baltimore	24510140200	Low-Income Community	2011–2015
Maryland	Baltimore	24510140300	Low-Income Community	2011–2015
Maryland	Baltimore	24510150100	Low-Income Community	2011–2015
Maryland	Baltimore	24510150400	Low-Income Community	2011–2015
Maryland	Baltimore	24510150500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Baltimore	24510150600	Low-Income Community	2011–2015
Maryland	Baltimore	24510160400	Low-Income Community	2011–2015
Maryland	Baltimore	24510160500	Low-Income Community	2011–2015
Maryland	Baltimore	24510170200	Low-Income Community	2011–2015
Maryland	Baltimore	24510180100	Low-Income Community	2011–2015
Maryland	Baltimore	24510180300	Low-Income Community	2011–2015
Maryland	Baltimore	24510200100	Low-Income Community	2011–2015
Maryland	Baltimore	24510200200	Low-Income Community	2011–2015
Maryland	Baltimore	24510210100	Low-Income Community	2011–2015
Maryland	Baltimore	24510230300	Low-Income Community	2011–2015
Maryland	Baltimore	24510250203	Low-Income Community	2011–2015
Maryland	Baltimore	24510250204	Low-Income Community	2011–2015
Maryland	Baltimore	24510250205	Low-Income Community	2011–2015
Maryland	Baltimore	24510250207	Low-Income Community	2011–2015
Maryland	Baltimore	24510250301	Low-Income Community	2011–2015
Maryland	Baltimore	24510250401	Low-Income Community	2011–2015
Maryland	Baltimore	24510250500	Low-Income Community	2011–2015
Maryland	Baltimore	24510260404	Low-Income Community	2011–2015
Maryland	Baltimore	24510260501	Low-Income Community	2011–2015
Maryland	Baltimore	24510260605	Low-Income Community	2011–2015
Maryland	Baltimore	24510260700	Low-Income Community	2011–2015
Maryland	Baltimore	24510270903	Low-Income Community	2011–2015
Maryland	Baltimore	24510271600	Low-Income Community	2011–2015
Maryland	Baltimore	24510271700	Low-Income Community	2011–2015
Maryland	Baltimore	24510280500	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001010100	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001011600	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001012002	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001014100	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001014500	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001015300	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003900100	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003900200	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003921400	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003922100	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003922300	Low-Income Community	2012–2016
Massachusetts	Berkshire	25003935300	Low-Income Community	2011–2015
Massachusetts	Bristol	25005613800	Low-Income Community	2011–2015
Massachusetts	Bristol	25005630101	Low-Income Community	2011–2015
Massachusetts	Bristol	25005630102	Low-Income Community	2011–2015
Massachusetts	Bristol	25005641101	Low-Income Community	2011–2015
Massachusetts	Bristol	25005641200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005642000	Low-Income Community	2011–2015
Massachusetts	Bristol	25005644200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651300	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Bristol	25005651900	Low-Income Community	2011–2015
Massachusetts	Bristol	25005655300	Low-Income Community	2012–2016
Massachusetts	Essex	25009204200	Low-Income Community	2011–2015
Massachusetts	Essex	25009204701	Low-Income Community	2011–2015
Massachusetts	Essex	25009206100	Low-Income Community	2011–2015
Massachusetts	Essex	25009206800	Low-Income Community	2011–2015
Massachusetts	Essex	25009207000	Low-Income Community	2011–2015
Massachusetts	Essex	25009207200	Low-Income Community	2011–2015
Massachusetts	Essex	25009208102	Low-Income Community	2011–2015
Massachusetts	Essex	25009210700	Low-Income Community	2011–2015
Massachusetts	Essex	25009210800	Low-Income Community	2011–2015
Massachusetts	Essex	25009217400	Low-Income Community	2012–2016
Massachusetts	Essex	25009221400	Low-Income Community	2011–2015
Massachusetts	Essex	25009221500	Low-Income Community	2011–2015
Massachusetts	Essex	25009250100	Low-Income Community	2011–2015
Massachusetts	Essex	25009250300	Low-Income Community	2011–2015
Massachusetts	Essex	25009250800	Low-Income Community	2011–2015
Massachusetts	Essex	25009251600	Low-Income Community	2011–2015
Massachusetts	Essex	25009252300	Low-Income Community	2011–2015
Massachusetts	Essex	25009252400	Low-Income Community	2011–2015
Massachusetts	Essex	25009260200	Low-Income Community	2011–2015
Massachusetts	Essex	25009260800	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040100	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040400	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040501	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040502	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040701	Low-Income Community	2011–2015
Massachusetts	Franklin	25011041300	Low-Income Community	2011–2015
Massachusetts	Franklin	25011041400	Low-Income Community	2011–2015
Massachusetts	Hampden	25013800600	Low-Income Community	2011–2015
Massachusetts	Hampden	25013800900	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801101	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801200	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801700	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801800	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801902	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810300	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810403	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810800	Low-Income Community	2011–2015
Massachusetts	Hampden	25013811400	Low-Income Community	2011–2015
Massachusetts	Hampden	25013811700	Low-Income Community	2011–2015
Massachusetts	Hampden	25013812300	Low-Income Community	2011–2015
Massachusetts	Hampden	25013812702	Low-Income Community	2011–2015
Massachusetts	Hampden	25013813207	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015820102	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015820300	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015821100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Hampshire	25015821602	Low-Income Community	2012–2016
Massachusetts	Hampshire	25015821903	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015822402	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017310100	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311600	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311700	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311800	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311900	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017321200	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017321300	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017339700	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017341200	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017341300	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017342400	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017350103	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017351500	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017354900	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017383101	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017383102	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021417701	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021417901	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021420202	Non-LIC Contiguous	2011–2015
Massachusetts	Norfolk	25021420301	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021422502	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023502200	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510503	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510700	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510900	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023511000	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023545400	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023561200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040300	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040801	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025060700	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025061000	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025061101	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025080500	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025080601	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025081200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025090901	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025160200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025160400	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025170501	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025170702	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025180500	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025980101	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Suffolk	25025980300	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025981100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027703100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027703200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027707200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027707300	Low-Income Community	2011–2015
Massachusetts	Worcester	25027709400	Low-Income Community	2011–2015
Massachusetts	Worcester	25027709600	Low-Income Community	2011–2015
Massachusetts	Worcester	25027710600	Low-Income Community	2011–2015
Massachusetts	Worcester	25027710700	Low-Income Community	2011–2015
Massachusetts	Worcester	25027716200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027716300	Low-Income Community	2012–2016
Massachusetts	Worcester	25027726200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027730500	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731300	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731400	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731700	Low-Income Community	2011–2015
Massachusetts	Worcester	25027732500	Low-Income Community	2011–2015
Massachusetts	Worcester	25027732801	Low-Income Community	2011–2015
Massachusetts	Worcester	25027754200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027757100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027757300	Low-Income Community	2011–2015
Michigan	Alcona	26001970400	Low-Income Community	2011–2015
Michigan	Alger	26003000100	Low-Income Community	2011–2015
Michigan	Allegan	26005032401	Low-Income Community	2011–2015
Michigan	Alpena	26007000400	Low-Income Community	2011–2015
Michigan	Antrim	26009960700	Low-Income Community	2011–2015
Michigan	Arenac	26011970500	Low-Income Community	2011–2015
Michigan	Baraga	26013000100	Low-Income Community	2011–2015
Michigan	Barry	26015011300	Low-Income Community	2011–2015
Michigan	Bay	26017286500	Low-Income Community	2011–2015
Michigan	Bay	26017286600	Low-Income Community	2011–2015
Michigan	Berrien	26021000400	Low-Income Community	2011–2015
Michigan	Berrien	26021002100	Low-Income Community	2011–2015
Michigan	Berrien	26021002500	Low-Income Community	2011–2015
Michigan	Berrien	26021010300	Low-Income Community	2011–2015
Michigan	Berrien	26021020500	Low-Income Community	2011–2015
Michigan	Branch	26023951600	Low-Income Community	2011–2015
Michigan	Calhoun	26025000200	Low-Income Community	2011–2015
Michigan	Calhoun	26025003400	Low-Income Community	2011–2015
Michigan	Calhoun	26025004000	Low-Income Community	2011–2015
Michigan	Calhoun	26025004100	Low-Income Community	2011–2015
Michigan	Cass	26027002100	Low-Income Community	2011–2015
Michigan	Charlevoix	26029001100	Low-Income Community	2011–2015
Michigan	Cheboygan	26031960200	Low-Income Community	2011–2015
Michigan	Chippewa	26033970200	Low-Income Community	2011–2015
Michigan	Chippewa	26033970500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Clare	26035000600	Low-Income Community	2011–2015
Michigan	Clare	26035001300	Low-Income Community	2011–2015
Michigan	Clinton	26037010801	Low-Income Community	2011–2015
Michigan	Crawford	26039960200	Non-LIC Contiguous	2011–2015
Michigan	Delta	26041970800	Low-Income Community	2011–2015
Michigan	Dickinson	26043950400	Low-Income Community	2011–2015
Michigan	Eaton	26045020901	Low-Income Community	2011–2015
Michigan	Emmet	26047970100	Low-Income Community	2011–2015
Michigan	Genesee	26049000300	Low-Income Community	2011–2015
Michigan	Genesee	26049000500	Low-Income Community	2011–2015
Michigan	Genesee	26049001500	Low-Income Community	2011–2015
Michigan	Genesee	26049001600	Low-Income Community	2011–2015
Michigan	Genesee	26049001700	Low-Income Community	2011–2015
Michigan	Genesee	26049002200	Low-Income Community	2011–2015
Michigan	Genesee	26049002800	Low-Income Community	2011–2015
Michigan	Genesee	26049003700	Low-Income Community	2011–2015
Michigan	Genesee	26049010501	Low-Income Community	2011–2015
Michigan	Genesee	26049010502	Low-Income Community	2011–2015
Michigan	Genesee	26049010912	Low-Income Community	2011–2015
Michigan	Genesee	26049011210	Low-Income Community	2011–2015
Michigan	Genesee	26049011212	Low-Income Community	2011–2015
Michigan	Genesee	26049011508	Low-Income Community	2011–2015
Michigan	Genesee	26049012202	Low-Income Community	2011–2015
Michigan	Genesee	26049013600	Low-Income Community	2011–2015
Michigan	Gladwin	26051000700	Low-Income Community	2011–2015
Michigan	Gladwin	26051000800	Low-Income Community	2011–2015
Michigan	Gogebic	26053950600	Low-Income Community	2011–2015
Michigan	Grand Traverse	26055551300	Low-Income Community	2011–2015
Michigan	Gratiot	26057000500	Low-Income Community	2011–2015
Michigan	Hillsdale	26059050700	Low-Income Community	2011–2015
Michigan	Hillsdale	26059050800	Low-Income Community	2011–2015
Michigan	Houghton	26061000800	Low-Income Community	2011–2015
Michigan	Huron	26063951000	Low-Income Community	2011–2015
Michigan	Ingham	26065003301	Low-Income Community	2011–2015
Michigan	Ingham	26065003602	Low-Income Community	2011–2015
Michigan	Ingham	26065003700	Low-Income Community	2011–2015
Michigan	Ingham	26065004301	Low-Income Community	2011–2015
Michigan	Ingham	26065005100	Low-Income Community	2011–2015
Michigan	Ingham	26065005303	Low-Income Community	2011–2015
Michigan	Ingham	26065005402	Low-Income Community	2011–2015
Michigan	Ingham	26065006600	Low-Income Community	2011–2015
Michigan	Ingham	26065006700	Low-Income Community	2011–2015
Michigan	Ionia	26067031700	Low-Income Community	2011–2015
Michigan	Iosco	26069000400	Low-Income Community	2011–2015
Michigan	Iosco	26069000500	Low-Income Community	2011–2015
Michigan	Iron	26071000300	Low-Income Community	2011–2015
Michigan	Isabella	26073940400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Isabella	26073940500	Low-Income Community	2011–2015
Michigan	Jackson	26075000600	Low-Income Community	2011–2015
Michigan	Jackson	26075001000	Low-Income Community	2011–2015
Michigan	Jackson	26075001200	Low-Income Community	2011–2015
Michigan	Jackson	26075005500	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000201	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000202	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000900	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077001000	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077001905	Low-Income Community	2011–2015
Michigan	Kalkaska	26079950400	Low-Income Community	2011–2015
Michigan	Kent	26081002600	Low-Income Community	2011–2015
Michigan	Kent	26081002800	Low-Income Community	2011–2015
Michigan	Kent	26081003000	Low-Income Community	2011–2015
Michigan	Kent	26081003200	Low-Income Community	2011–2015
Michigan	Kent	26081003500	Low-Income Community	2011–2015
Michigan	Kent	26081003600	Low-Income Community	2011–2015
Michigan	Kent	26081003700	Low-Income Community	2011–2015
Michigan	Kent	26081003800	Low-Income Community	2011–2015
Michigan	Kent	26081013500	Low-Income Community	2011–2015
Michigan	Kent	26081014200	Low-Income Community	2011–2015
Michigan	Keweenaw	26083000100	Low-Income Community	2011–2015
Michigan	Lake	26085961100	Low-Income Community	2011–2015
Michigan	Lapeer	26087337500	Low-Income Community	2011–2015
Michigan	Lenawee	26091061600	Low-Income Community	2011–2015
Michigan	Livingston	26093722300	Low-Income Community	2011–2015
Michigan	Luce	26095960100	Low-Income Community	2011–2015
Michigan	Mackinac	26097950500	Low-Income Community	2011–2015
Michigan	Macomb	26099230300	Low-Income Community	2011–2015
Michigan	Macomb	26099230500	Low-Income Community	2011–2015
Michigan	Macomb	26099240000	Low-Income Community	2011–2015
Michigan	Macomb	26099241600	Low-Income Community	2011–2015
Michigan	Macomb	26099241700	Low-Income Community	2011–2015
Michigan	Macomb	26099245000	Low-Income Community	2011–2015
Michigan	Macomb	26099256200	Low-Income Community	2011–2015
Michigan	Macomb	26099256300	Low-Income Community	2011–2015
Michigan	Macomb	26099256600	Low-Income Community	2011–2015
Michigan	Macomb	26099256700	Low-Income Community	2011–2015
Michigan	Macomb	26099258300	Low-Income Community	2011–2015
Michigan	Macomb	26099258900	Low-Income Community	2011–2015
Michigan	Macomb	26099262800	Low-Income Community	2011–2015
Michigan	Macomb	26099262900	Low-Income Community	2011–2015
Michigan	Macomb	26099264000	Low-Income Community	2011–2015
Michigan	Macomb	26099268400	Low-Income Community	2011–2015
Michigan	Macomb	26099982200	Low-Income Community	2011–2015
Michigan	Manistee	26101000900	Low-Income Community	2011–2015
Michigan	Marquette	26103000600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Marquette	26103000700	Low-Income Community	2011–2015
Michigan	Mason	26105950500	Low-Income Community	2011–2015
Michigan	Mecosta	26107960500	Low-Income Community	2011–2015
Michigan	Mecosta	26107960600	Low-Income Community	2011–2015
Michigan	Menominee	26109960200	Low-Income Community	2011–2015
Michigan	Midland	26111290100	Low-Income Community	2011–2015
Michigan	Midland	26111290200	Low-Income Community	2011–2015
Michigan	Missaukee	26113960200	Low-Income Community	2011–2015
Michigan	Monroe	26115831400	Low-Income Community	2011–2015
Michigan	Monroe	26115831800	Low-Income Community	2011–2015
Michigan	Montcalm	26117970800	Low-Income Community	2011–2015
Michigan	Montcalm	26117971200	Low-Income Community	2011–2015
Michigan	Montmorency	26119910200	Low-Income Community	2011–2015
Michigan	Muskegon	26121000800	Low-Income Community	2011–2015
Michigan	Muskegon	26121000900	Low-Income Community	2011–2015
Michigan	Muskegon	26121001300	Low-Income Community	2011–2015
Michigan	Muskegon	26121004200	Low-Income Community	2011–2015
Michigan	Muskegon	26121004300	Low-Income Community	2011–2015
Michigan	Newaygo	26123971200	Low-Income Community	2011–2015
Michigan	Oakland	26125133100	Low-Income Community	2011–2015
Michigan	Oakland	26125141500	Low-Income Community	2011–2015
Michigan	Oakland	26125141600	Low-Income Community	2011–2015
Michigan	Oakland	26125142200	Low-Income Community	2011–2015
Michigan	Oakland	26125142400	Low-Income Community	2011–2015
Michigan	Oakland	26125145900	Low-Income Community	2011–2015
Michigan	Oakland	26125160400	Low-Income Community	2011–2015
Michigan	Oakland	26125160900	Low-Income Community	2011–2015
Michigan	Oakland	26125162200	Low-Income Community	2011–2015
Michigan	Oakland	26125171500	Low-Income Community	2011–2015
Michigan	Oakland	26125173400	Low-Income Community	2011–2015
Michigan	Oakland	26125175000	Low-Income Community	2011–2015
Michigan	Oakland	26125181000	Low-Income Community	2011–2015
Michigan	Oakland	26125194500	Low-Income Community	2011–2015
Michigan	Oakland	26125197600	Low-Income Community	2011–2015
Michigan	Oceana	26127010400	Low-Income Community	2011–2015
Michigan	Ogemaw	26129950100	Low-Income Community	2011–2015
Michigan	Ogemaw	26129950500	Low-Income Community	2011–2015
Michigan	Ontonagon	26131970200	Low-Income Community	2011–2015
Michigan	Osceola	26133970400	Low-Income Community	2011–2015
Michigan	Oscoda	26135970300	Low-Income Community	2011–2015
Michigan	Otsego	26137950300	Low-Income Community	2011–2015
Michigan	Ottawa	26139024900	Low-Income Community	2011–2015
Michigan	Presque Isle	26141950200	Low-Income Community	2011–2015
Michigan	Roscommon	26143970300	Low-Income Community	2011–2015
Michigan	Roscommon	26143971200	Low-Income Community	2011–2015
Michigan	Saginaw	26145000100	Low-Income Community	2011–2015
Michigan	Saginaw	26145000400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Saginaw	26145000600	Low-Income Community	2011–2015
Michigan	Saginaw	26145001700	Low-Income Community	2011–2015
Michigan	Saginaw	26145001800	Low-Income Community	2011–2015
Michigan	Saginaw	26145010200	Low-Income Community	2011–2015
Michigan	Saginaw	26145011000	Low-Income Community	2011–2015
Michigan	St. Clair	26147620000	Low-Income Community	2011–2015
Michigan	St. Clair	26147624000	Low-Income Community	2011–2015
Michigan	St. Clair	26147625000	Low-Income Community	2011–2015
Michigan	St. Joseph	26149040300	Low-Income Community	2011–2015
Michigan	St. Joseph	26149040700	Low-Income Community	2011–2015
Michigan	Sanilac	26151970400	Low-Income Community	2011–2015
Michigan	Schoolcraft	26153000300	Low-Income Community	2011–2015
Michigan	Shiawassee	26155030600	Low-Income Community	2011–2015
Michigan	Tuscola	26157000600	Low-Income Community	2011–2015
Michigan	Van Buren	26159011300	Low-Income Community	2011–2015
Michigan	Van Buren	26159011800	Low-Income Community	2011–2015
Michigan	Washtenaw	26161405600	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410300	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410500	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410600	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410800	Low-Income Community	2011–2015
Michigan	Washtenaw	26161411700	Low-Income Community	2011–2015
Michigan	Washtenaw	26161411900	Low-Income Community	2011–2015
Michigan	Washtenaw	26161412000	Low-Income Community	2011–2015
Michigan	Washtenaw	26161414000	Low-Income Community	2011–2015
Michigan	Washtenaw	26161446200	Low-Income Community	2011–2015
Michigan	Washtenaw	26161984000	Low-Income Community	2011–2015
Michigan	Wayne	26163501400	Low-Income Community	2011–2015
Michigan	Wayne	26163501800	Low-Income Community	2011–2015
Michigan	Wayne	26163504700	Low-Income Community	2011–2015
Michigan	Wayne	26163504800	Low-Income Community	2011–2015
Michigan	Wayne	26163505500	Low-Income Community	2011–2015
Michigan	Wayne	26163508000	Low-Income Community	2011–2015
Michigan	Wayne	26163510500	Low-Income Community	2011–2015
Michigan	Wayne	26163511000	Low-Income Community	2011–2015
Michigan	Wayne	26163511200	Low-Income Community	2011–2015
Michigan	Wayne	26163511900	Low-Income Community	2011–2015
Michigan	Wayne	26163512900	Low-Income Community	2011–2015
Michigan	Wayne	26163513200	Low-Income Community	2011–2015
Michigan	Wayne	26163513700	Low-Income Community	2011–2015
Michigan	Wayne	26163515200	Low-Income Community	2011–2015
Michigan	Wayne	26163515300	Low-Income Community	2011–2015
Michigan	Wayne	26163515400	Low-Income Community	2011–2015
Michigan	Wayne	26163515600	Low-Income Community	2011–2015
Michigan	Wayne	26163515700	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163516100	Low-Income Community	2011–2015
Michigan	Wayne	26163516200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Wayne	26163516400	Low-Income Community	2011–2015
Michigan	Wayne	26163516500	Low-Income Community	2011–2015
Michigan	Wayne	26163516600	Low-Income Community	2011–2015
Michigan	Wayne	26163516900	Low-Income Community	2011–2015
Michigan	Wayne	26163517000	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163517100	Low-Income Community	2011–2015
Michigan	Wayne	26163517200	Low-Income Community	2011–2015
Michigan	Wayne	26163517300	Low-Income Community	2011–2015
Michigan	Wayne	26163517500	Low-Income Community	2011–2015
Michigan	Wayne	26163518000	Low-Income Community	2011–2015
Michigan	Wayne	26163518400	Low-Income Community	2011–2015
Michigan	Wayne	26163518800	Low-Income Community	2011–2015
Michigan	Wayne	26163518900	Low-Income Community	2011–2015
Michigan	Wayne	26163520200	Low-Income Community	2011–2015
Michigan	Wayne	26163520300	Low-Income Community	2011–2015
Michigan	Wayne	26163520400	Low-Income Community	2011–2015
Michigan	Wayne	26163520700	Low-Income Community	2011–2015
Michigan	Wayne	26163520800	Low-Income Community	2011–2015
Michigan	Wayne	26163521100	Low-Income Community	2011–2015
Michigan	Wayne	26163521400	Low-Income Community	2011–2015
Michigan	Wayne	26163521500	Low-Income Community	2011–2015
Michigan	Wayne	26163522400	Low-Income Community	2011–2015
Michigan	Wayne	26163522500	Low-Income Community	2011–2015
Michigan	Wayne	26163523100	Low-Income Community	2011–2015
Michigan	Wayne	26163523300	Low-Income Community	2011–2015
Michigan	Wayne	26163523400	Low-Income Community	2011–2015
Michigan	Wayne	26163524000	Low-Income Community	2011–2015
Michigan	Wayne	26163524900	Low-Income Community	2011–2015
Michigan	Wayne	26163525000	Low-Income Community	2011–2015
Michigan	Wayne	26163527300	Low-Income Community	2011–2015
Michigan	Wayne	26163530300	Low-Income Community	2011–2015
Michigan	Wayne	26163532400	Low-Income Community	2011–2015
Michigan	Wayne	26163532600	Low-Income Community	2011–2015
Michigan	Wayne	26163532700	Low-Income Community	2011–2015
Michigan	Wayne	26163533900	Low-Income Community	2011–2015
Michigan	Wayne	26163535300	Low-Income Community	2011–2015
Michigan	Wayne	26163536100	Low-Income Community	2011–2015
Michigan	Wayne	26163538500	Low-Income Community	2011–2015
Michigan	Wayne	26163538600	Low-Income Community	2011–2015
Michigan	Wayne	26163538900	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163541200	Low-Income Community	2011–2015
Michigan	Wayne	26163541400	Low-Income Community	2011–2015
Michigan	Wayne	26163542700	Low-Income Community	2011–2015
Michigan	Wayne	26163542900	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163543000	Low-Income Community	2011–2015
Michigan	Wayne	26163543400	Low-Income Community	2011–2015
Michigan	Wayne	26163546900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Wayne	26163552300	Low-Income Community	2011–2015
Michigan	Wayne	26163553600	Low-Income Community	2011–2015
Michigan	Wayne	26163554100	Low-Income Community	2011–2015
Michigan	Wayne	26163555100	Low-Income Community	2011–2015
Michigan	Wayne	26163555300	Low-Income Community	2011–2015
Michigan	Wayne	26163565300	Low-Income Community	2011–2015
Michigan	Wayne	26163566500	Low-Income Community	2011–2015
Michigan	Wayne	26163568800	Low-Income Community	2011–2015
Michigan	Wayne	26163570400	Low-Income Community	2011–2015
Michigan	Wayne	26163571600	Low-Income Community	2011–2015
Michigan	Wayne	26163572100	Low-Income Community	2011–2015
Michigan	Wayne	26163572600	Low-Income Community	2011–2015
Michigan	Wayne	26163573400	Low-Income Community	2011–2015
Michigan	Wayne	26163573500	Low-Income Community	2011–2015
Michigan	Wayne	26163574100	Low-Income Community	2011–2015
Michigan	Wayne	26163577000	Low-Income Community	2011–2015
Michigan	Wayne	26163577500	Low-Income Community	2011–2015
Michigan	Wayne	26163579100	Low-Income Community	2011–2015
Michigan	Wayne	26163583000	Low-Income Community	2011–2015
Michigan	Wayne	26163583200	Low-Income Community	2011–2015
Michigan	Wayne	26163584500	Low-Income Community	2011–2015
Michigan	Wayne	26163585900	Low-Income Community	2011–2015
Michigan	Wayne	26163586200	Low-Income Community	2011–2015
Michigan	Wayne	26163588100	Low-Income Community	2011–2015
Michigan	Wayne	26163985100	Low-Income Community	2011–2015
Michigan	Wayne	26163985300	Low-Income Community	2011–2015
Michigan	Wayne	26163985900	Low-Income Community	2011–2015
Michigan	Wexford	26165380700	Low-Income Community	2011–2015
Minnesota	Aitkin	27001770300	Low-Income Community	2011–2015
Minnesota	Aitkin	27001770400	Low-Income Community	2011–2015
Minnesota	Anoka	27003050402	Low-Income Community	2011–2015
Minnesota	Anoka	27003050606	Low-Income Community	2011–2015
Minnesota	Anoka	27003051501	Low-Income Community	2011–2015
Minnesota	Becker	27005450500	Low-Income Community	2011–2015
Minnesota	Beltrami	27007450702	Low-Income Community	2011–2015
Minnesota	Beltrami	27007940001	Low-Income Community	2011–2015
Minnesota	Benton	27009021200	Low-Income Community	2011–2015
Minnesota	Big Stone	27011950300	Low-Income Community	2011–2015
Minnesota	Blue Earth	27013170300	Low-Income Community	2011–2015
Minnesota	Blue Earth	27013170700	Low-Income Community	2011–2015
Minnesota	Carlton	27017940000	Low-Income Community	2011–2015
Minnesota	Cass	27021940002	Low-Income Community	2011–2015
Minnesota	Chippewa	27023950600	Low-Income Community	2011–2015
Minnesota	Chisago	27025110301	Low-Income Community	2011–2015
Minnesota	Clay	27027020300	Low-Income Community	2011–2015
Minnesota	Clearwater	27029000100	Low-Income Community	2011–2015
Minnesota	Cook	27031480100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	Cottonwood	27033270400	Low-Income Community	2011–2015
Minnesota	Crow Wing	27035951100	Low-Income Community	2011–2015
Minnesota	Crow Wing	27035951200	Low-Income Community	2011–2015
Minnesota	Dakota	27037060104	Low-Income Community	2011–2015
Minnesota	Dakota	27037060105	Low-Income Community	2011–2015
Minnesota	Dakota	27037060301	Low-Income Community	2011–2015
Minnesota	Douglas	27041450600	Low-Income Community	2011–2015
Minnesota	Faribault	27043460400	Low-Income Community	2011–2015
Minnesota	Fillmore	27045960500	Low-Income Community	2011–2015
Minnesota	Freeborn	27047180600	Low-Income Community	2011–2015
Minnesota	Goodhue	27049080200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053005902	Low-Income Community	2011–2015
Minnesota	Hennepin	27053007700	Low-Income Community	2011–2015
Minnesota	Hennepin	27053009500	Low-Income Community	2011–2015
Minnesota	Hennepin	27053020200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053020804	Low-Income Community	2011–2015
Minnesota	Hennepin	27053021300	Low-Income Community	2011–2015
Minnesota	Hennepin	27053023400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053025100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053026810	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100500	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053103400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104000	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053106000	Low-Income Community	2011–2015
Minnesota	Hennepin	27053106200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053107400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053125800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053125900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053126000	Low-Income Community	2011–2015
Minnesota	Hubbard	27057070600	Low-Income Community	2011–2015
Minnesota	Isanti	27059130301	Low-Income Community	2011–2015
Minnesota	Itasca	27061480300	Low-Income Community	2011–2015
Minnesota	Itasca	27061480500	Low-Income Community	2011–2015
Minnesota	Jackson	27063480400	Low-Income Community	2011–2015
Minnesota	Kanabec	27065480300	Low-Income Community	2011–2015
Minnesota	Kandiyohi	27067780800	Low-Income Community	2011–2015
Minnesota	Koochiching	27071790100	Low-Income Community	2011–2015
Minnesota	Lake	27075370300	Low-Income Community	2011–2015
Minnesota	Lake of the Woods	27077460300	Low-Income Community	2011–2015
Minnesota	Lyon	27083360500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	Mahnomen	27087940100	Low-Income Community	2011–2015
Minnesota	Martin	27091790600	Low-Income Community	2011–2015
Minnesota	Meeker	27093560300	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095170500	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095970100	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095970200	Low-Income Community	2011–2015
Minnesota	Morrison	27097780600	Low-Income Community	2011–2015
Minnesota	Mower	27099000410	Low-Income Community	2011–2015
Minnesota	Nobles	27105105400	Low-Income Community	2011–2015
Minnesota	Olmsted	27109000100	Low-Income Community	2011–2015
Minnesota	Olmsted	27109000600	Low-Income Community	2011–2015
Minnesota	Otter Tail	27111960300	Low-Income Community	2011–2015
Minnesota	Pennington	27113090200	Low-Income Community	2011–2015
Minnesota	Pennington	27113090400	Low-Income Community	2011–2015
Minnesota	Pine	27115950400	Low-Income Community	2011–2015
Minnesota	Pine	27115950500	Low-Income Community	2011–2015
Minnesota	Pine	27115950700	Low-Income Community	2011–2015
Minnesota	Pipestone	27117460200	Low-Income Community	2011–2015
Minnesota	Polk	27119021000	Low-Income Community	2011–2015
Minnesota	Ramsey	27123030400	Low-Income Community	2011–2015
Minnesota	Ramsey	27123030500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031600	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031701	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031702	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031900	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032700	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033400	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033700	Low-Income Community	2011–2015
Minnesota	Ramsey	27123034201	Low-Income Community	2011–2015
Minnesota	Ramsey	27123034701	Low-Income Community	2011–2015
Minnesota	Ramsey	27123036000	Non-LIC Contiguous	2011–2015
Minnesota	Ramsey	27123037100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123041602	Low-Income Community	2011–2015
Minnesota	Redwood	27127750300	Low-Income Community	2011–2015
Minnesota	Renville	27129790500	Low-Income Community	2011–2015
Minnesota	Rice	27131070700	Low-Income Community	2011–2015
Minnesota	Rock	27133570300	Low-Income Community	2011–2015
Minnesota	St. Louis	27137001700	Low-Income Community	2011–2015
Minnesota	St. Louis	27137001900	Low-Income Community	2011–2015
Minnesota	St. Louis	27137002000	Low-Income Community	2011–2015
Minnesota	St. Louis	27137012400	Low-Income Community	2011–2015
Minnesota	St. Louis	27137013100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	St. Louis	27137015300	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015500	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015600	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015800	Low-Income Community	2011–2015
Minnesota	Sherburne	27141031500	Low-Income Community	2011–2015
Minnesota	Stearns	27145011600	Low-Income Community	2011–2015
Minnesota	Steele	27147960400	Low-Income Community	2011–2015
Minnesota	Stevens	27149480200	Low-Income Community	2011–2015
Minnesota	Swift	27151960400	Low-Income Community	2011–2015
Minnesota	Todd	27153790600	Low-Income Community	2011–2015
Minnesota	Wabasha	27157490300	Low-Income Community	2011–2015
Minnesota	Wadena	27159480300	Low-Income Community	2011–2015
Minnesota	Waseca	27161790500	Low-Income Community	2011–2015
Minnesota	Winona	27169670500	Low-Income Community	2011–2015
Minnesota	Yellow Medicine	27173970100	Low-Income Community	2011–2015
Mississippi	Adams	28001000200	Low-Income Community	2011–2015
Mississippi	Adams	28001000700	Low-Income Community	2011–2015
Mississippi	Adams	28001000800	Low-Income Community	2011–2015
Mississippi	Alcorn	28003950500	Low-Income Community	2011–2015
Mississippi	Alcorn	28003950600	Low-Income Community	2011–2015
Mississippi	Attala	28007060600	Low-Income Community	2011–2015
Mississippi	Bolivar	28011950701	Low-Income Community	2011–2015
Mississippi	Chickasaw	28017950300	Low-Income Community	2011–2015
Mississippi	Choctaw	28019950200	Low-Income Community	2011–2015
Mississippi	Claiborne	28021950300	Low-Income Community	2011–2015
Mississippi	Coahoma	28027950300	Low-Income Community	2011–2015
Mississippi	Covington	28031950200	Low-Income Community	2011–2015
Mississippi	DeSoto	28033070101	Low-Income Community	2011–2015
Mississippi	DeSoto	28033070610	Low-Income Community	2011–2015
Mississippi	Forrest	28035000600	Low-Income Community	2011–2015
Mississippi	Forrest	28035000800	Low-Income Community	2011–2015
Mississippi	Forrest	28035010200	Low-Income Community	2011–2015
Mississippi	Forrest	28035010500	Low-Income Community	2011–2015
Mississippi	Forrest	28035010600	Low-Income Community	2011–2015
Mississippi	Forrest	28035010700	Low-Income Community	2011–2015
Mississippi	Hancock	28045030100	Low-Income Community	2011–2015
Mississippi	Hancock	28045030300	Low-Income Community	2011–2015
Mississippi	Harrison	28047000100	Low-Income Community	2011–2015
Mississippi	Harrison	28047001400	Low-Income Community	2011–2015
Mississippi	Harrison	28047003206	Low-Income Community	2011–2015
Mississippi	Harrison	28047003301	Non-LIC Contiguous	2011–2015
Mississippi	Harrison	28047003404	Non-LIC Contiguous	2011–2015
Mississippi	Harrison	28047003600	Low-Income Community	2011–2015
Mississippi	Harrison	28047003800	Low-Income Community	2012–2016
Mississippi	Harrison	28047003900	Low-Income Community	2011–2015
Mississippi	Hinds	28049001100	Low-Income Community	2011–2015
Mississippi	Hinds	28049001300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Mississippi	Hinds	28049001600	Low-Income Community	2011–2015
Mississippi	Hinds	28049002100	Low-Income Community	2011–2015
Mississippi	Hinds	28049002700	Low-Income Community	2011–2015
Mississippi	Hinds	28049003000	Low-Income Community	2011–2015
Mississippi	Hinds	28049010500	Low-Income Community	2011–2015
Mississippi	Hinds	28049010902	Low-Income Community	2011–2015
Mississippi	Hinds	28049011001	Low-Income Community	2011–2015
Mississippi	Hinds	28049011500	Low-Income Community	2011–2015
Mississippi	Jackson	28059041300	Low-Income Community	2011–2015
Mississippi	Jackson	28059042900	Low-Income Community	2011–2015
Mississippi	Jones	28067950500	Low-Income Community	2011–2015
Mississippi	Jones	28067950600	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950201	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950202	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950401	Low-Income Community	2011–2015
Mississippi	Lamar	28073020600	Low-Income Community	2011–2015
Mississippi	Lauderdale	28075000700	Low-Income Community	2011–2015
Mississippi	Lauderdale	28075010700	Low-Income Community	2011–2015
Mississippi	Lee	28081950401	Low-Income Community	2011–2015
Mississippi	Lee	28081950500	Low-Income Community	2011–2015
Mississippi	Lee	28081950602	Low-Income Community	2011–2015
Mississippi	Lee	28081950700	Low-Income Community	2011–2015
Mississippi	Lee	28081951002	Low-Income Community	2011–2015
Mississippi	Leflore	28083950400	Low-Income Community	2011–2015
Mississippi	Leflore	28083950800	Low-Income Community	2011–2015
Mississippi	Lincoln	28085950200	Low-Income Community	2011–2015
Mississippi	Lincoln	28085950600	Low-Income Community	2011–2015
Mississippi	Lowndes	28087000900	Low-Income Community	2011–2015
Mississippi	Lowndes	28087001000	Non-LIC Contiguous	2011–2015
Mississippi	Madison	28089030106	Low-Income Community	2011–2015
Mississippi	Madison	28089030500	Low-Income Community	2011–2015
Mississippi	Madison	28089030600	Low-Income Community	2011–2015
Mississippi	Marion	28091950200	Low-Income Community	2011–2015
Mississippi	Marion	28091950400	Low-Income Community	2011–2015
Mississippi	Marion	28091950500	Low-Income Community	2011–2015
Mississippi	Marshall	28093950100	Non-LIC Contiguous	2011–2015
Mississippi	Marshall	28093950300	Low-Income Community	2011–2015
Mississippi	Monroe	28095950400	Low-Income Community	2011–2015
Mississippi	Neshoba	28099940100	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950100	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950500	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950602	Low-Income Community	2011–2015
Mississippi	Panola	28107950300	Low-Income Community	2011–2015
Mississippi	Pearl River	28109950600	Low-Income Community	2011–2015
Mississippi	Pike	28113950500	Low-Income Community	2011–2015
Mississippi	Pike	28113950600	Low-Income Community	2011–2015
Mississippi	Pike	28113950700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Mississippi	Rankin	28121020207	Non-LIC Contiguous	2011–2015
Mississippi	Rankin	28121020401	Low-Income Community	2011–2015
Mississippi	Rankin	28121020701	Low-Income Community	2011–2015
Mississippi	Simpson	28127950200	Low-Income Community	2011–2015
Mississippi	Simpson	28127950500	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950300	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950402	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950500	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950600	Low-Income Community	2011–2015
Mississippi	Tate	28137950400	Low-Income Community	2011–2015
Mississippi	Tishomingo	28141950300	Low-Income Community	2011–2015
Mississippi	Tunica	28143950100	Low-Income Community	2011–2015
Mississippi	Union	28145950500	Low-Income Community	2011–2015
Mississippi	Warren	28149950100	Low-Income Community	2012–2016
Mississippi	Warren	28149950300	Low-Income Community	2011–2015
Mississippi	Warren	28149950500	Low-Income Community	2011–2015
Mississippi	Washington	28151000300	Low-Income Community	2011–2015
Mississippi	Washington	28151000600	Low-Income Community	2011–2015
Mississippi	Wayne	28153950200	Low-Income Community	2011–2015
Mississippi	Winston	28159950300	Low-Income Community	2011–2015
Mississippi	Winston	28159950400	Low-Income Community	2011–2015
Missouri	Adair	29001950300	Low-Income Community	2011–2015
Missouri	Adair	29001950400	Non-LIC Contiguous	2011–2015
Missouri	Adair	29001950500	Low-Income Community	2011–2015
Missouri	Adair	29001950900	Low-Income Community	2011–2015
Missouri	Audrain	29007950400	Low-Income Community	2011–2015
Missouri	Barry	29009960300	Low-Income Community	2011–2015
Missouri	Benton	29015460300	Low-Income Community	2011–2015
Missouri	Benton	29015460700	Low-Income Community	2011–2015
Missouri	Boone	29019001502	Low-Income Community	2011–2015
Missouri	Buchanan	29021001200	Low-Income Community	2011–2015
Missouri	Buchanan	29021003000	Low-Income Community	2011–2015
Missouri	Butler	29023950400	Low-Income Community	2011–2015
Missouri	Butler	29023950500	Low-Income Community	2011–2015
Missouri	Butler	29023950800	Low-Income Community	2011–2015
Missouri	Caldwell	29025950200	Low-Income Community	2011–2015
Missouri	Camden	29029951200	Low-Income Community	2011–2015
Missouri	Cape Girardeau	29031881400	Low-Income Community	2011–2015
Missouri	Cape Girardeau	29031881600	Low-Income Community	2011–2015
Missouri	Clay	29047021701	Low-Income Community	2011–2015
Missouri	Clay	29047021702	Low-Income Community	2011–2015
Missouri	Clay	29047022100	Low-Income Community	2011–2015
Missouri	Cole	29051010500	Low-Income Community	2011–2015
Missouri	Cole	29051010600	Low-Income Community	2011–2015
Missouri	Cole	29051020700	Low-Income Community	2011–2015
Missouri	Dallas	29059480200	Low-Income Community	2011–2015
Missouri	Dunklin	29069360500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	Dunklin	29069360600	Low-Income Community	2011–2015
Missouri	Greene	29077000100	Low-Income Community	2011–2015
Missouri	Greene	29077000600	Low-Income Community	2011–2015
Missouri	Greene	29077000700	Low-Income Community	2011–2015
Missouri	Greene	29077001200	Non-LIC Contiguous	2011–2015
Missouri	Greene	29077001500	Low-Income Community	2011–2015
Missouri	Greene	29077002200	Low-Income Community	2011–2015
Missouri	Greene	29077003600	Low-Income Community	2011–2015
Missouri	Greene	29077004302	Non-LIC Contiguous	2011–2015
Missouri	Greene	29077004400	Low-Income Community	2011–2015
Missouri	Greene	29077005600	Low-Income Community	2011–2015
Missouri	Howell	29091090300	Low-Income Community	2011–2015
Missouri	Howell	29091090700	Low-Income Community	2011–2015
Missouri	Jackson	29095000900	Low-Income Community	2011–2015
Missouri	Jackson	29095001000	Low-Income Community	2011–2015
Missouri	Jackson	29095001800	Low-Income Community	2011–2015
Missouri	Jackson	29095001900	Low-Income Community	2011–2015
Missouri	Jackson	29095002100	Low-Income Community	2011–2015
Missouri	Jackson	29095003700	Low-Income Community	2011–2015
Missouri	Jackson	29095003800	Low-Income Community	2011–2015
Missouri	Jackson	29095004300	Low-Income Community	2011–2015
Missouri	Jackson	29095005200	Low-Income Community	2011–2015
Missouri	Jackson	29095005400	Low-Income Community	2011–2015
Missouri	Jackson	29095005500	Low-Income Community	2011–2015
Missouri	Jackson	29095005601	Low-Income Community	2011–2015
Missouri	Jackson	29095005602	Low-Income Community	2011–2015
Missouri	Jackson	29095006100	Low-Income Community	2011–2015
Missouri	Jackson	29095006300	Low-Income Community	2011–2015
Missouri	Jackson	29095007700	Low-Income Community	2011–2015
Missouri	Jackson	29095007802	Low-Income Community	2011–2015
Missouri	Jackson	29095008000	Low-Income Community	2011–2015
Missouri	Jackson	29095011000	Low-Income Community	2011–2015
Missouri	Jackson	29095011100	Low-Income Community	2011–2015
Missouri	Jackson	29095011200	Low-Income Community	2011–2015
Missouri	Jackson	29095011600	Low-Income Community	2011–2015
Missouri	Jackson	29095011700	Low-Income Community	2011–2015
Missouri	Jackson	29095011800	Low-Income Community	2011–2015
Missouri	Jackson	29095012501	Low-Income Community	2011–2015
Missouri	Jackson	29095012600	Low-Income Community	2011–2015
Missouri	Jackson	29095013401	Low-Income Community	2011–2015
Missouri	Jackson	29095013405	Low-Income Community	2011–2015
Missouri	Jackson	29095015100	Non-LIC Contiguous	2011–2015
Missouri	Jackson	29095015300	Low-Income Community	2011–2015
Missouri	Jackson	29095015400	Low-Income Community	2011–2015
Missouri	Jackson	29095015500	Low-Income Community	2011–2015
Missouri	Jackson	29095015600	Low-Income Community	2011–2015
Missouri	Jackson	29095015900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	Jackson	29095016000	Low-Income Community	2011–2015
Missouri	Jackson	29095016100	Low-Income Community	2011–2015
Missouri	Jackson	29095016200	Low-Income Community	2011–2015
Missouri	Jackson	29095016300	Low-Income Community	2011–2015
Missouri	Jackson	29095016600	Low-Income Community	2011–2015
Missouri	Jackson	29095016900	Low-Income Community	2011–2015
Missouri	Jackson	29095017200	Low-Income Community	2011–2015
Missouri	Jackson	29095017400	Low-Income Community	2011–2015
Missouri	Jasper	29097010100	Low-Income Community	2011–2015
Missouri	Johnson	29101960400	Low-Income Community	2011–2015
Missouri	Johnson	29101960600	Low-Income Community	2011–2015
Missouri	Laclede	29105960100	Low-Income Community	2011–2015
Missouri	Laclede	29105960400	Low-Income Community	2011–2015
Missouri	Laclede	29105960500	Low-Income Community	2011–2015
Missouri	Laclede	29105960600	Low-Income Community	2011–2015
Missouri	Lafayette	29107090100	Low-Income Community	2011–2015
Missouri	Lafayette	29107090300	Low-Income Community	2011–2015
Missouri	Marion	29127960800	Low-Income Community	2011–2015
Missouri	Montgomery	29139970200	Low-Income Community	2011–2015
Missouri	Montgomery	29139970300	Non-LIC Contiguous	2011–2015
Missouri	New Madrid	29143960100	Non-LIC Contiguous	2011–2015
Missouri	New Madrid	29143960200	Low-Income Community	2011–2015
Missouri	New Madrid	29143960300	Low-Income Community	2011–2015
Missouri	New Madrid	29143960400	Low-Income Community	2011–2015
Missouri	New Madrid	29143960600	Low-Income Community	2011–2015
Missouri	Newton	29145020200	Non-LIC Contiguous	2011–2015
Missouri	Newton	29145020800	Low-Income Community	2011–2015
Missouri	Nodaway	29147470300	Low-Income Community	2011–2015
Missouri	Nodaway	29147470400	Low-Income Community	2011–2015
Missouri	Pemiscot	29155470400	Low-Income Community	2011–2015
Missouri	Polk	29167960100	Low-Income Community	2011–2015
Missouri	Polk	29167960400	Non-LIC Contiguous	2011–2015
Missouri	Pulaski	29169470101	Low-Income Community	2011–2015
Missouri	Pulaski	29169470102	Low-Income Community	2011–2015
Missouri	Randolph	29175490300	Low-Income Community	2011–2015
Missouri	Ripley	29181870300	Low-Income Community	2011–2015
Missouri	St. Louis	29189211402	Low-Income Community	2011–2015
Missouri	St. Louis	29189211500	Low-Income Community	2011–2015
Missouri	St. Louis	29189212001	Low-Income Community	2011–2015
Missouri	St. Louis	29189212002	Low-Income Community	2011–2015
Missouri	St. Louis	29189212101	Low-Income Community	2011–2015
Missouri	St. Louis	29189212400	Low-Income Community	2011–2015
Missouri	St. Louis	29189212700	Low-Income Community	2011–2015
Missouri	St. Louis	29189213700	Low-Income Community	2011–2015
Missouri	St. Louis	29189213900	Low-Income Community	2011–2015
Missouri	St. Louis	29189214100	Low-Income Community	2011–2015
Missouri	St. Louis	29189215600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	St. Louis	29189215700	Low-Income Community	2011–2015
Missouri	St. Louis	29189220200	Low-Income Community	2011–2015
Missouri	St. Louis	29189221800	Low-Income Community	2011–2015
Missouri	Saline	29195090100	Low-Income Community	2011–2015
Missouri	Saline	29195090400	Low-Income Community	2011–2015
Missouri	Scott	29201780600	Low-Income Community	2011–2015
Missouri	Sullivan	29211480100	Low-Income Community	2011–2015
Missouri	Sullivan	29211480300	Low-Income Community	2011–2015
Missouri	Taney	29213480105	Low-Income Community	2011–2015
Missouri	Warren	29219820101	Low-Income Community	2011–2015
Missouri	Warren	29219820102	Low-Income Community	2011–2015
Missouri	Washington	29221460300	Low-Income Community	2011–2015
Missouri	Washington	29221460400	Low-Income Community	2011–2015
Missouri	Wayne	29223690300	Low-Income Community	2011–2015
Missouri	St. Louis	29510101800	Low-Income Community	2011–2015
Missouri	St. Louis	29510106100	Low-Income Community	2011–2015
Missouri	St. Louis	29510106200	Low-Income Community	2011–2015
Missouri	St. Louis	29510106300	Low-Income Community	2011–2015
Missouri	St. Louis	29510106600	Low-Income Community	2011–2015
Missouri	St. Louis	29510109600	Low-Income Community	2011–2015
Missouri	St. Louis	29510109700	Low-Income Community	2011–2015
Missouri	St. Louis	29510111100	Low-Income Community	2011–2015
Missouri	St. Louis	29510111200	Low-Income Community	2011–2015
Missouri	St. Louis	29510112200	Low-Income Community	2011–2015
Missouri	St. Louis	29510112300	Low-Income Community	2011–2015
Missouri	St. Louis	29510115300	Low-Income Community	2011–2015
Missouri	St. Louis	29510115500	Low-Income Community	2011–2015
Missouri	St. Louis	29510118100	Low-Income Community	2011–2015
Missouri	St. Louis	29510118600	Low-Income Community	2011–2015
Missouri	St. Louis	29510119300	Low-Income Community	2011–2015
Missouri	St. Louis	29510121100	Low-Income Community	2011–2015
Missouri	St. Louis	29510124600	Low-Income Community	2011–2015
Missouri	St. Louis	29510125600	Low-Income Community	2011–2015
Missouri	St. Louis	29510125700	Low-Income Community	2011–2015
Missouri	St. Louis	29510126600	Low-Income Community	2011–2015
Missouri	St. Louis	29510126700	Low-Income Community	2011–2015
Missouri	St. Louis	29510126900	Low-Income Community	2011–2015
Missouri	St. Louis	29510127000	Low-Income Community	2011–2015
Missouri	St. Louis	29510127100	Low-Income Community	2011–2015
Missouri	St. Louis	29510127400	Low-Income Community	2011–2015
Missouri	St. Louis	29510127500	Low-Income Community	2011–2015
Montana	Big Horn	30003940600	Low-Income Community	2011–2015
Montana	Blaine	30005940100	Low-Income Community	2011–2015
Montana	Carbon	30009000300	Low-Income Community	2011–2015
Montana	Cascade	30013010800	Low-Income Community	2011–2015
Montana	Custer	30017962000	Low-Income Community	2011–2015
Montana	Deer Lodge	30023000300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Montana	Fergus	30027030200	Low-Income Community	2011–2015
Montana	Flathead	30029001100	Low-Income Community	2011–2015
Montana	Gallatin	30031001102	Low-Income Community	2011–2015
Montana	Glacier	30035940400	Low-Income Community	2011–2015
Montana	Hill	30041940300	Low-Income Community	2011–2015
Montana	Lewis and Clark	30049000800	Low-Income Community	2011–2015
Montana	Lincoln	30053000200	Low-Income Community	2011–2015
Montana	Meagher	30059000100	Low-Income Community	2011–2015
Montana	Mineral	30061964600	Low-Income Community	2011–2015
Montana	Missoula	30063000201	Low-Income Community	2011–2015
Montana	Ravalli	30081000600	Low-Income Community	2011–2015
Montana	Roosevelt	30085940002	Low-Income Community	2011–2015
Montana	Rosebud	30087940400	Low-Income Community	2011–2015
Montana	Sanders	30089000200	Low-Income Community	2011–2015
Montana	Sanders	30089940300	Low-Income Community	2011–2015
Montana	Silver Bow	30093000100	Low-Income Community	2011–2015
Montana	Toole	30101000200	Low-Income Community	2011–2015
Montana	Wheatland	30107000100	Low-Income Community	2011–2015
Montana	Yellowstone	30111000402	Low-Income Community	2011–2015
Nebraska	Adams	31001966000	Low-Income Community	2011–2015
Nebraska	Buffalo	31019969300	Low-Income Community	2011–2015
Nebraska	Buffalo	31019969600	Low-Income Community	2011–2015
Nebraska	Colfax	31037964800	Low-Income Community	2011–2015
Nebraska	Dakota	31043010100	Low-Income Community	2011–2015
Nebraska	Dawson	31047968300	Low-Income Community	2011–2015
Nebraska	Dawson	31047968400	Low-Income Community	2011–2015
Nebraska	Dodge	31053963800	Low-Income Community	2011–2015
Nebraska	Dodge	31053964400	Low-Income Community	2011–2015
Nebraska	Douglas	31055000500	Low-Income Community	2011–2015
Nebraska	Douglas	31055000700	Low-Income Community	2011–2015
Nebraska	Douglas	31055000800	Low-Income Community	2011–2015
Nebraska	Douglas	31055001100	Low-Income Community	2011–2015
Nebraska	Douglas	31055001600	Low-Income Community	2011–2015
Nebraska	Douglas	31055001800	Non-LIC Contiguous	2011–2015
Nebraska	Douglas	31055001900	Low-Income Community	2011–2015
Nebraska	Douglas	31055003900	Low-Income Community	2011–2015
Nebraska	Douglas	31055004000	Low-Income Community	2011–2015
Nebraska	Douglas	31055004300	Low-Income Community	2011–2015
Nebraska	Douglas	31055004400	Low-Income Community	2012–2016
Nebraska	Douglas	31055005200	Low-Income Community	2011–2015
Nebraska	Douglas	31055005902	Low-Income Community	2011–2015
Nebraska	Douglas	31055007001	Low-Income Community	2011–2015
Nebraska	Douglas	31055007459	Low-Income Community	2011–2015
Nebraska	Garfield	31071973200	Low-Income Community	2011–2015
Nebraska	Hall	31079000400	Low-Income Community	2011–2015
Nebraska	Hall	31079000900	Low-Income Community	2011–2015
Nebraska	Lancaster	31109000500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Nebraska	Lancaster	31109000700	Low-Income Community	2011–2015
Nebraska	Lancaster	31109001800	Low-Income Community	2011–2015
Nebraska	Lancaster	31109001900	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002001	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002002	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002100	Low-Income Community	2011–2015
Nebraska	Lancaster	31109003003	Low-Income Community	2011–2015
Nebraska	Lincoln	31111960200	Low-Income Community	2011–2015
Nebraska	Madison	31119960700	Low-Income Community	2011–2015
Nebraska	Madison	31119961100	Low-Income Community	2012–2016
Nebraska	Merrick	31121966800	Low-Income Community	2011–2015
Nebraska	Red Willow	31145963300	Low-Income Community	2011–2015
Nebraska	Scotts Bluff	31157953700	Low-Income Community	2011–2015
Nebraska	Thurston	31173940200	Low-Income Community	2011–2015
Nebraska	Valley	31175971400	Low-Income Community	2011–2015
Nebraska	York	31185969700	Low-Income Community	2011–2015
Nevada	Churchill	32001950500	Low-Income Community	2011–2015
Nevada	Clark	32003000103	Low-Income Community	2011–2015
Nevada	Clark	32003000105	Low-Income Community	2011–2015
Nevada	Clark	32003000106	Low-Income Community	2011–2015
Nevada	Clark	32003000201	Low-Income Community	2011–2015
Nevada	Clark	32003000203	Low-Income Community	2011–2015
Nevada	Clark	32003000301	Low-Income Community	2011–2015
Nevada	Clark	32003000401	Low-Income Community	2011–2015
Nevada	Clark	32003000402	Low-Income Community	2011–2015
Nevada	Clark	32003000403	Low-Income Community	2011–2015
Nevada	Clark	32003000510	Low-Income Community	2011–2015
Nevada	Clark	32003000520	Low-Income Community	2011–2015
Nevada	Clark	32003000521	Low-Income Community	2011–2015
Nevada	Clark	32003000522	Low-Income Community	2011–2015
Nevada	Clark	32003000523	Low-Income Community	2011–2015
Nevada	Clark	32003000600	Low-Income Community	2011–2015
Nevada	Clark	32003000700	Low-Income Community	2011–2015
Nevada	Clark	32003000800	Low-Income Community	2011–2015
Nevada	Clark	32003001100	Low-Income Community	2011–2015
Nevada	Clark	32003001300	Low-Income Community	2011–2015
Nevada	Clark	32003001501	Low-Income Community	2011–2015
Nevada	Clark	32003001607	Low-Income Community	2011–2015
Nevada	Clark	32003001801	Low-Income Community	2011–2015
Nevada	Clark	32003001901	Low-Income Community	2011–2015
Nevada	Clark	32003002201	Low-Income Community	2011–2015
Nevada	Clark	32003002403	Low-Income Community	2011–2015
Nevada	Clark	32003002404	Low-Income Community	2011–2015
Nevada	Clark	32003002405	Low-Income Community	2011–2015
Nevada	Clark	32003002506	Low-Income Community	2011–2015
Nevada	Clark	32003002603	Low-Income Community	2011–2015
Nevada	Clark	32003002847	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Nevada	Clark	32003002905	Low-Income Community	2011–2015
Nevada	Clark	32003002962	Low-Income Community	2011–2015
Nevada	Clark	32003003006	Low-Income Community	2011–2015
Nevada	Clark	32003003616	Low-Income Community	2011–2015
Nevada	Clark	32003003700	Low-Income Community	2011–2015
Nevada	Clark	32003003800	Low-Income Community	2011–2015
Nevada	Clark	32003004000	Low-Income Community	2011–2015
Nevada	Clark	32003004302	Low-Income Community	2011–2015
Nevada	Clark	32003005005	Low-Income Community	2011–2015
Nevada	Clark	32003005200	Low-Income Community	2011–2015
Nevada	Clark	32003005421	Low-Income Community	2011–2015
Nevada	Clark	32003005422	Low-Income Community	2011–2015
Nevada	Clark	32003005438	Low-Income Community	2011–2015
Nevada	Clark	32003006800	Low-Income Community	2011–2015
Nevada	Clark	32003007800	Low-Income Community	2011–2015
Nevada	Elko	32007951500	Low-Income Community	2011–2015
Nevada	Lyon	32019960103	Low-Income Community	2011–2015
Nevada	Lyon	32019960201	Low-Income Community	2011–2015
Nevada	Nye	32023960401	Low-Income Community	2011–2015
Nevada	Washoe	32031000101	Low-Income Community	2011–2015
Nevada	Washoe	32031000102	Low-Income Community	2011–2015
Nevada	Washoe	32031000201	Low-Income Community	2011–2015
Nevada	Washoe	32031000202	Low-Income Community	2011–2015
Nevada	Washoe	32031000900	Low-Income Community	2011–2015
Nevada	Washoe	32031001009	Low-Income Community	2011–2015
Nevada	Washoe	32031001502	Low-Income Community	2011–2015
Nevada	Washoe	32031003101	Low-Income Community	2011–2015
Nevada	Washoe	32031940200	Low-Income Community	2011–2015
Nevada	Carson City	32510000600	Low-Income Community	2011–2015
Nevada	Storey	32029970200	Non-LIC Contiguous	2012–2016
New Hampshire	Belknap	33001966000	Low-Income Community	2011–2015
New Hampshire	Carroll	33003955300	Low-Income Community	2011–2015
New Hampshire	Carroll	33003955400	Low-Income Community	2011–2015
New Hampshire	Cheshire	33005971401	Low-Income Community	2011–2015
New Hampshire	Coos	33007950200	Low-Income Community	2011–2015
New Hampshire	Coos	33007950300	Low-Income Community	2011–2015
New Hampshire	Coos	33007950400	Low-Income Community	2011–2015
New Hampshire	Coos	33007950500	Low-Income Community	2011–2015
New Hampshire	Coos	33007950600	Low-Income Community	2011–2015
New Hampshire	Grafton	33009960100	Low-Income Community	2011–2015
New Hampshire	Grafton	33009960400	Low-Income Community	2011–2015
New Hampshire	Grafton	33009961000	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011010700	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011010800	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011200400	Low-Income Community	2011–2015
New Hampshire	Merrimack	33013043001	Low-Income Community	2011–2015
New Hampshire	Merrimack	33013043002	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Hampshire	Rockingham	33015003500	Low-Income Community	2011–2015
New Hampshire	Rockingham	33015055002	Low-Income Community	2011–2015
New Hampshire	Rockingham	33015063001	Low-Income Community	2011–2015
New Hampshire	Strafford	33017080203	Low-Income Community	2011–2015
New Hampshire	Strafford	33017081400	Low-Income Community	2011–2015
New Hampshire	Strafford	33017083001	Low-Income Community	2011–2015
New Hampshire	Strafford	33017084300	Low-Income Community	2011–2015
New Hampshire	Strafford	33017084400	Low-Income Community	2011–2015
New Hampshire	Sullivan	33019975400	Low-Income Community	2011–2015
New Hampshire	Sullivan	33019975800	Low-Income Community	2011–2015
New Jersey	Atlantic	34001000400	Low-Income Community	2011–2015
New Jersey	Atlantic	34001001900	Low-Income Community	2011–2015
New Jersey	Atlantic	34001002300	Low-Income Community	2011–2015
New Jersey	Atlantic	34001002400	Low-Income Community	2011–2015
New Jersey	Atlantic	34001010600	Low-Income Community	2011–2015
New Jersey	Atlantic	34001011702	Low-Income Community	2011–2015
New Jersey	Atlantic	34001012100	Low-Income Community	2011–2015
New Jersey	Atlantic	34001012702	Low-Income Community	2011–2015
New Jersey	Bergen	34003006300	Low-Income Community	2011–2015
New Jersey	Bergen	34003015400	Low-Income Community	2011–2015
New Jersey	Bergen	34003018200	Low-Income Community	2011–2015
New Jersey	Bergen	34003021200	Low-Income Community	2011–2015
New Jersey	Bergen	34003021500	Low-Income Community	2011–2015
New Jersey	Bergen	34003021600	Low-Income Community	2011–2015
New Jersey	Bergen	34003023100	Low-Income Community	2011–2015
New Jersey	Bergen	34003023200	Low-Income Community	2012–2016
New Jersey	Bergen	34003023402	Low-Income Community	2011–2015
New Jersey	Bergen	34003030100	Low-Income Community	2011–2015
New Jersey	Bergen	34003030300	Low-Income Community	2011–2015
New Jersey	Bergen	34003036100	Low-Income Community	2011–2015
New Jersey	Burlington	34005700104	Low-Income Community	2011–2015
New Jersey	Burlington	34005700703	Low-Income Community	2011–2015
New Jersey	Burlington	34005701204	Low-Income Community	2011–2015
New Jersey	Burlington	34005702207	Low-Income Community	2011–2015
New Jersey	Burlington	34005702807	Low-Income Community	2011–2015
New Jersey	Camden	34007600200	Low-Income Community	2011–2015
New Jersey	Camden	34007600700	Low-Income Community	2011–2015
New Jersey	Camden	34007601300	Low-Income Community	2011–2015
New Jersey	Camden	34007601500	Low-Income Community	2011–2015
New Jersey	Camden	34007601800	Low-Income Community	2011–2015
New Jersey	Camden	34007607702	Low-Income Community	2011–2015
New Jersey	Camden	34007608504	Low-Income Community	2011–2015
New Jersey	Camden	34007610300	Low-Income Community	2011–2015
New Jersey	Camden	34007610400	Low-Income Community	2011–2015
New Jersey	Camden	34007610600	Low-Income Community	2011–2015
New Jersey	Camden	34007610800	Low-Income Community	2011–2015
New Jersey	Cape May	34009021400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Cape May	34009021804	Low-Income Community	2011–2015
New Jersey	Cumberland	34011020100	Low-Income Community	2011–2015
New Jersey	Cumberland	34011020503	Low-Income Community	2011–2015
New Jersey	Cumberland	34011030100	Low-Income Community	2011–2015
New Jersey	Cumberland	34011040500	Low-Income Community	2011–2015
New Jersey	Cumberland	34011041100	Low-Income Community	2011–2015
New Jersey	Essex	34013001400	Low-Income Community	2011–2015
New Jersey	Essex	34013004100	Low-Income Community	2011–2015
New Jersey	Essex	34013004802	Low-Income Community	2011–2015
New Jersey	Essex	34013005000	Low-Income Community	2011–2015
New Jersey	Essex	34013006800	Low-Income Community	2011–2015
New Jersey	Essex	34013007400	Low-Income Community	2011–2015
New Jersey	Essex	34013007501	Low-Income Community	2011–2015
New Jersey	Essex	34013007502	Low-Income Community	2011–2015
New Jersey	Essex	34013008000	Low-Income Community	2011–2015
New Jersey	Essex	34013008100	Low-Income Community	2011–2015
New Jersey	Essex	34013009600	Low-Income Community	2011–2015
New Jersey	Essex	34013010600	Low-Income Community	2011–2015
New Jersey	Essex	34013010900	Low-Income Community	2011–2015
New Jersey	Essex	34013011300	Low-Income Community	2011–2015
New Jersey	Essex	34013013100	Low-Income Community	2011–2015
New Jersey	Essex	34013013200	Low-Income Community	2011–2015
New Jersey	Essex	34013013300	Low-Income Community	2011–2015
New Jersey	Essex	34013018300	Low-Income Community	2011–2015
New Jersey	Essex	34013018600	Low-Income Community	2011–2015
New Jersey	Essex	34013018700	Low-Income Community	2011–2015
New Jersey	Essex	34013018900	Low-Income Community	2011–2015
New Jersey	Essex	34013022900	Low-Income Community	2011–2015
New Jersey	Essex	34013023100	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501001	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501101	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501402	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501406	Low-Income Community	2011–2015
New Jersey	Hudson	34017001900	Low-Income Community	2011–2015
New Jersey	Hudson	34017002000	Low-Income Community	2011–2015
New Jersey	Hudson	34017002900	Low-Income Community	2011–2015
New Jersey	Hudson	34017004102	Low-Income Community	2011–2015
New Jersey	Hudson	34017004600	Low-Income Community	2011–2015
New Jersey	Hudson	34017004700	Low-Income Community	2011–2015
New Jersey	Hudson	34017004800	Low-Income Community	2011–2015
New Jersey	Hudson	34017005200	Low-Income Community	2011–2015
New Jersey	Hudson	34017006000	Low-Income Community	2011–2015
New Jersey	Hudson	34017006300	Low-Income Community	2011–2015
New Jersey	Hudson	34017006800	Low-Income Community	2011–2015
New Jersey	Hudson	34017010300	Low-Income Community	2011–2015
New Jersey	Hudson	34017010800	Low-Income Community	2012–2016
New Jersey	Hudson	34017012700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Hudson	34017014600	Low-Income Community	2011–2015
New Jersey	Hudson	34017014800	Low-Income Community	2011–2015
New Jersey	Hudson	34017015500	Low-Income Community	2011–2015
New Jersey	Hudson	34017016200	Low-Income Community	2011–2015
New Jersey	Hudson	34017016400	Low-Income Community	2011–2015
New Jersey	Hudson	34017016900	Low-Income Community	2011–2015
New Jersey	Hudson	34017017800	Low-Income Community	2011–2015
New Jersey	Hunterdon	34019011400	Low-Income Community	2011–2015
New Jersey	Mercer	34021000100	Low-Income Community	2011–2015
New Jersey	Mercer	34021000200	Low-Income Community	2011–2015
New Jersey	Mercer	34021000800	Low-Income Community	2011–2015
New Jersey	Mercer	34021000900	Low-Income Community	2011–2015
New Jersey	Mercer	34021001000	Low-Income Community	2011–2015
New Jersey	Mercer	34021002000	Low-Income Community	2011–2015
New Jersey	Mercer	34021002100	Low-Income Community	2011–2015
New Jersey	Mercer	34021002902	Low-Income Community	2011–2015
New Jersey	Middlesex	34023003600	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004500	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004600	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004900	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005300	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005500	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005602	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005700	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023006800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023008300	Low-Income Community	2011–2015
New Jersey	Middlesex	34023009300	Low-Income Community	2011–2015
New Jersey	Monmouth	34025803400	Low-Income Community	2011–2015
New Jersey	Monmouth	34025805800	Low-Income Community	2011–2015
New Jersey	Monmouth	34025806000	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807003	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807300	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807600	Low-Income Community	2011–2015
New Jersey	Monmouth	34025808100	Low-Income Community	2011–2015
New Jersey	Monmouth	34025810900	Low-Income Community	2011–2015
New Jersey	Morris	34027044800	Low-Income Community	2011–2015
New Jersey	Morris	34027044900	Low-Income Community	2011–2015
New Jersey	Morris	34027045000	Low-Income Community	2011–2015
New Jersey	Morris	34027045100	Low-Income Community	2012–2016
New Jersey	Ocean	34029715000	Low-Income Community	2011–2015
New Jersey	Ocean	34029715200	Low-Income Community	2011–2015
New Jersey	Ocean	34029715402	Low-Income Community	2011–2015
New Jersey	Ocean	34029715500	Low-Income Community	2011–2015
New Jersey	Ocean	34029715600	Low-Income Community	2011–2015
New Jersey	Ocean	34029715800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Ocean	34029720101	Low-Income Community	2011–2015
New Jersey	Ocean	34029720102	Low-Income Community	2011–2015
New Jersey	Ocean	34029720202	Low-Income Community	2011–2015
New Jersey	Ocean	34029731101	Low-Income Community	2011–2015
New Jersey	Ocean	34029731205	Low-Income Community	2011–2015
New Jersey	Passaic	34031124601	Low-Income Community	2011–2015
New Jersey	Passaic	34031125100	Low-Income Community	2011–2015
New Jersey	Passaic	34031175200	Low-Income Community	2011–2015
New Jersey	Passaic	34031175301	Low-Income Community	2011–2015
New Jersey	Passaic	34031175402	Low-Income Community	2011–2015
New Jersey	Passaic	34031175900	Low-Income Community	2011–2015
New Jersey	Passaic	34031181500	Low-Income Community	2011–2015
New Jersey	Passaic	34031181800	Low-Income Community	2011–2015
New Jersey	Passaic	34031182302	Low-Income Community	2011–2015
New Jersey	Passaic	34031182500	Low-Income Community	2011–2015
New Jersey	Passaic	34031182800	Low-Income Community	2011–2015
New Jersey	Passaic	34031182900	Low-Income Community	2011–2015
New Jersey	Passaic	34031183200	Low-Income Community	2011–2015
New Jersey	Passaic	34031203600	Low-Income Community	2011–2015
New Jersey	Passaic	34031264200	Low-Income Community	2011–2015
New Jersey	Salem	34033020600	Low-Income Community	2011–2015
New Jersey	Salem	34033022100	Low-Income Community	2011–2015
New Jersey	Somerset	34035051100	Low-Income Community	2011–2015
New Jersey	Somerset	34035051200	Low-Income Community	2011–2015
New Jersey	Somerset	34035051700	Low-Income Community	2011–2015
New Jersey	Sussex	34037371200	Low-Income Community	2011–2015
New Jersey	Union	34039031100	Low-Income Community	2011–2015
New Jersey	Union	34039031200	Low-Income Community	2011–2015
New Jersey	Union	34039031602	Low-Income Community	2011–2015
New Jersey	Union	34039032400	Low-Income Community	2011–2015
New Jersey	Union	34039035300	Low-Income Community	2011–2015
New Jersey	Union	34039035400	Low-Income Community	2011–2015
New Jersey	Union	34039036000	Low-Income Community	2011–2015
New Jersey	Union	34039039000	Low-Income Community	2011–2015
New Jersey	Union	34039039300	Low-Income Community	2011–2015
New Jersey	Union	34039039800	Low-Income Community	2011–2015
New Jersey	Union	34039039900	Low-Income Community	2011–2015
New Jersey	Warren	34041030700	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001000124	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001001200	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001001600	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002100	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002500	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002700	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001003400	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001003736	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004001	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Mexico	Bernalillo	35001004300	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004736	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004741	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004744	Non-LIC Contiguous	2011–2015
New Mexico	Bernalillo	35001940600	Low-Income Community	2011–2015
New Mexico	Chaves	35005000700	Low-Income Community	2011–2015
New Mexico	Chaves	35005001101	Low-Income Community	2011–2015
New Mexico	Chaves	35005001300	Low-Income Community	2011–2015
New Mexico	Cibola	35006946100	Low-Income Community	2011–2015
New Mexico	Cibola	35006974400	Low-Income Community	2011–2015
New Mexico	Colfax	35007950500	Low-Income Community	2011–2015
New Mexico	Curry	35009000400	Low-Income Community	2011–2015
New Mexico	Curry	35009000603	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013000102	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013000500	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001000	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001303	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001500	Non-LIC Contiguous	2011–2015
New Mexico	Doña Ana	35013001701	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001705	Low-Income Community	2011–2015
New Mexico	Eddy	35015000100	Low-Income Community	2011–2015
New Mexico	Eddy	35015000800	Low-Income Community	2011–2015
New Mexico	Grant	35017964400	Low-Income Community	2011–2015
New Mexico	Hidalgo	35023970200	Low-Income Community	2011–2015
New Mexico	Lea	35025000300	Low-Income Community	2011–2015
New Mexico	Luna	35029000500	Low-Income Community	2011–2015
New Mexico	McKinley	35031943902	Low-Income Community	2011–2015
New Mexico	McKinley	35031945200	Low-Income Community	2011–2015
New Mexico	McKinley	35031946000	Low-Income Community	2011–2015
New Mexico	Quay	35037958601	Low-Income Community	2011–2015
New Mexico	Rio Arriba	35039000300	Low-Income Community	2011–2015
New Mexico	Rio Arriba	35039941000	Low-Income Community	2011–2015
New Mexico	Roosevelt	35041000300	Low-Income Community	2011–2015
New Mexico	Sandoval	35043940500	Low-Income Community	2011–2015
New Mexico	Sandoval	35043940900	Low-Income Community	2011–2015
New Mexico	San Juan	35045000401	Low-Income Community	2011–2015
New Mexico	San Juan	35045000402	Low-Income Community	2011–2015
New Mexico	San Juan	35045000705	Low-Income Community	2011–2015
New Mexico	San Juan	35045943000	Low-Income Community	2011–2015
New Mexico	San Juan	35045943201	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001002	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001103	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001202	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001302	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001304	Low-Income Community	2011–2015
New Mexico	Sierra	35051962300	Low-Income Community	2011–2015
New Mexico	Sierra	35051962401	Non-LIC Contiguous	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Mexico	Taos	35055952300	Low-Income Community	2011–2015
New Mexico	Torrance	35057963202	Low-Income Community	2011–2015
New Mexico	Torrance	35057963600	Low-Income Community	2011–2015
New Mexico	Valencia	35061970401	Low-Income Community	2011–2015
New Mexico	Valencia	35061971000	Low-Income Community	2011–2015
New Mexico	Valencia	35061971300	Low-Income Community	2011–2015
New Mexico	Valencia	35061971400	Non-LIC Contiguous	2011–2015
New York	Albany	36001000200	Low-Income Community	2011–2015
New York	Albany	36001001100	Low-Income Community	2011–2015
New York	Albany	36001002100	Low-Income Community	2011–2015
New York	Albany	36001002300	Low-Income Community	2011–2015
New York	Albany	36001002500	Low-Income Community	2011–2015
New York	Albany	36001002600	Low-Income Community	2011–2015
New York	Allegany	36003950700	Low-Income Community	2011–2015
New York	Allegany	36003950800	Low-Income Community	2011–2015
New York	Bronx	36005001900	Low-Income Community	2011–2015
New York	Bronx	36005002300	Low-Income Community	2011–2015
New York	Bronx	36005002500	Low-Income Community	2011–2015
New York	Bronx	36005002701	Low-Income Community	2011–2015
New York	Bronx	36005002702	Low-Income Community	2011–2015
New York	Bronx	36005002800	Low-Income Community	2011–2015
New York	Bronx	36005003500	Low-Income Community	2011–2015
New York	Bronx	36005003900	Low-Income Community	2011–2015
New York	Bronx	36005004100	Low-Income Community	2011–2015
New York	Bronx	36005004300	Low-Income Community	2011–2015
New York	Bronx	36005005001	Low-Income Community	2011–2015
New York	Bronx	36005005100	Low-Income Community	2011–2015
New York	Bronx	36005005200	Low-Income Community	2011–2015
New York	Bronx	36005005902	Low-Income Community	2011–2015
New York	Bronx	36005006100	Low-Income Community	2011–2015
New York	Bronx	36005006300	Low-Income Community	2011–2015
New York	Bronx	36005006500	Low-Income Community	2011–2015
New York	Bronx	36005006700	Low-Income Community	2011–2015
New York	Bronx	36005007100	Low-Income Community	2011–2015
New York	Bronx	36005007500	Low-Income Community	2011–2015
New York	Bronx	36005008700	Low-Income Community	2011–2015
New York	Bronx	36005008900	Low-Income Community	2011–2015
New York	Bronx	36005009000	Low-Income Community	2011–2015
New York	Bronx	36005009300	Low-Income Community	2011–2015
New York	Bronx	36005009600	Low-Income Community	2011–2015
New York	Bronx	36005011502	Low-Income Community	2011–2015
New York	Bronx	36005011700	Low-Income Community	2011–2015
New York	Bronx	36005011900	Low-Income Community	2011–2015
New York	Bronx	36005012101	Low-Income Community	2011–2015
New York	Bronx	36005012102	Low-Income Community	2011–2015
New York	Bronx	36005012300	Low-Income Community	2011–2015
New York	Bronx	36005012701	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Bronx	36005012901	Low-Income Community	2011–2015
New York	Bronx	36005013100	Low-Income Community	2011–2015
New York	Bronx	36005014100	Low-Income Community	2011–2015
New York	Bronx	36005014500	Low-Income Community	2011–2015
New York	Bronx	36005014900	Low-Income Community	2011–2015
New York	Bronx	36005015700	Low-Income Community	2011–2015
New York	Bronx	36005016100	Low-Income Community	2011–2015
New York	Bronx	36005016500	Low-Income Community	2011–2015
New York	Bronx	36005016700	Low-Income Community	2011–2015
New York	Bronx	36005017500	Low-Income Community	2011–2015
New York	Bronx	36005017701	Low-Income Community	2011–2015
New York	Bronx	36005018102	Low-Income Community	2011–2015
New York	Bronx	36005018301	Low-Income Community	2011–2015
New York	Bronx	36005018900	Low-Income Community	2011–2015
New York	Bronx	36005019300	Low-Income Community	2011–2015
New York	Bronx	36005019500	Low-Income Community	2011–2015
New York	Bronx	36005019700	Low-Income Community	2011–2015
New York	Bronx	36005019900	Low-Income Community	2011–2015
New York	Bronx	36005020100	Low-Income Community	2011–2015
New York	Bronx	36005020501	Low-Income Community	2011–2015
New York	Bronx	36005020502	Low-Income Community	2011–2015
New York	Bronx	36005021502	Low-Income Community	2011–2015
New York	Bronx	36005023100	Low-Income Community	2011–2015
New York	Bronx	36005024300	Low-Income Community	2011–2015
New York	Bronx	36005024501	Low-Income Community	2011–2015
New York	Bronx	36005024502	Low-Income Community	2011–2015
New York	Bronx	36005024700	Low-Income Community	2011–2015
New York	Bronx	36005025100	Low-Income Community	2011–2015
New York	Bronx	36005025500	Low-Income Community	2011–2015
New York	Bronx	36005025700	Low-Income Community	2011–2015
New York	Bronx	36005028400	Low-Income Community	2011–2015
New York	Bronx	36005036100	Low-Income Community	2011–2015
New York	Bronx	36005036502	Low-Income Community	2011–2015
New York	Bronx	36005037504	Low-Income Community	2011–2015
New York	Bronx	36005038302	Low-Income Community	2011–2015
New York	Bronx	36005038500	Low-Income Community	2011–2015
New York	Bronx	36005038900	Low-Income Community	2011–2015
New York	Bronx	36005039100	Low-Income Community	2011–2015
New York	Bronx	36005039300	Low-Income Community	2011–2015
New York	Bronx	36005039500	Low-Income Community	2011–2015
New York	Bronx	36005043100	Low-Income Community	2011–2015
New York	Bronx	36005046201	Low-Income Community	2011–2015
New York	Bronx	36005046202	Low-Income Community	2011–2015
New York	Broome	36007000200	Low-Income Community	2011–2015
New York	Broome	36007000400	Low-Income Community	2011–2015
New York	Broome	36007000500	Low-Income Community	2011–2015
New York	Broome	36007013400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Broome	36007013500	Low-Income Community	2011–2015
New York	Broome	36007013900	Low-Income Community	2011–2015
New York	Cattaraugus	36009960600	Low-Income Community	2011–2015
New York	Cattaraugus	36009961600	Low-Income Community	2011–2015
New York	Cattaraugus	36009961700	Low-Income Community	2011–2015
New York	Cayuga	36011041300	Low-Income Community	2011–2015
New York	Chautauqua	36013030500	Low-Income Community	2011–2015
New York	Chautauqua	36013035400	Low-Income Community	2011–2015
New York	Chautauqua	36013035500	Low-Income Community	2011–2015
New York	Chautauqua	36013035600	Low-Income Community	2011–2015
New York	Chautauqua	36013035700	Low-Income Community	2011–2015
New York	Chautauqua	36013035800	Low-Income Community	2011–2015
New York	Chautauqua	36013037300	Low-Income Community	2011–2015
New York	Chemung	36015000600	Low-Income Community	2011–2015
New York	Chemung	36015000700	Low-Income Community	2011–2015
New York	Chemung	36015001000	Low-Income Community	2011–2015
New York	Chenango	36017970400	Low-Income Community	2011–2015
New York	Clinton	36019101300	Low-Income Community	2011–2015
New York	Clinton	36019101600	Low-Income Community	2011–2015
New York	Columbia	36021001200	Low-Income Community	2011–2015
New York	Columbia	36021001300	Low-Income Community	2011–2015
New York	Cortland	36023970600	Low-Income Community	2011–2015
New York	Cortland	36023970900	Low-Income Community	2011–2015
New York	Delaware	36025970400	Low-Income Community	2011–2015
New York	Delaware	36025970500	Low-Income Community	2011–2015
New York	Delaware	36025970600	Low-Income Community	2011–2015
New York	Dutchess	36027210101	Low-Income Community	2011–2015
New York	Dutchess	36027220100	Low-Income Community	2011–2015
New York	Dutchess	36027221100	Low-Income Community	2011–2015
New York	Dutchess	36027640002	Low-Income Community	2011–2015
New York	Erie	36029000110	Low-Income Community	2011–2015
New York	Erie	36029000500	Low-Income Community	2011–2015
New York	Erie	36029001600	Low-Income Community	2011–2015
New York	Erie	36029002502	Low-Income Community	2011–2015
New York	Erie	36029003100	Low-Income Community	2011–2015
New York	Erie	36029003400	Low-Income Community	2011–2015
New York	Erie	36029004001	Low-Income Community	2011–2015
New York	Erie	36029004700	Low-Income Community	2011–2015
New York	Erie	36029005600	Low-Income Community	2011–2015
New York	Erie	36029006100	Low-Income Community	2011–2015
New York	Erie	36029006702	Low-Income Community	2011–2015
New York	Erie	36029008300	Low-Income Community	2011–2015
New York	Erie	36029008400	Low-Income Community	2011–2015
New York	Erie	36029009200	Low-Income Community	2011–2015
New York	Erie	36029012300	Low-Income Community	2011–2015
New York	Erie	36029016300	Low-Income Community	2011–2015
New York	Erie	36029016400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Erie	36029016500	Low-Income Community	2011–2015
New York	Erie	36029016800	Low-Income Community	2011–2015
New York	Erie	36029017000	Low-Income Community	2011–2015
New York	Erie	36029017100	Low-Income Community	2011–2015
New York	Erie	36029017200	Low-Income Community	2011–2015
New York	Erie	36029017400	Low-Income Community	2011–2015
New York	Franklin	36033950501	Low-Income Community	2011–2015
New York	Fulton	36035970700	Low-Income Community	2011–2015
New York	Fulton	36035970800	Low-Income Community	2011–2015
New York	Fulton	36035971200	Low-Income Community	2011–2015
New York	Genesee	36037950600	Low-Income Community	2011–2015
New York	Genesee	36037951000	Low-Income Community	2011–2015
New York	Greene	36039081000	Low-Income Community	2011–2015
New York	Herkimer	36043010702	Low-Income Community	2011–2015
New York	Herkimer	36043011200	Low-Income Community	2011–2015
New York	Jefferson	36045061300	Low-Income Community	2011–2015
New York	Jefferson	36045061400	Low-Income Community	2011–2015
New York	Jefferson	36045062100	Low-Income Community	2011–2015
New York	Kings	36047000100	Non-LIC Contiguous	2011–2015
New York	Kings	36047000200	Low-Income Community	2011–2015
New York	Kings	36047000502	Non-LIC Contiguous	2011–2015
New York	Kings	36047001100	Non-LIC Contiguous	2011–2015
New York	Kings	36047001300	Low-Income Community	2011–2015
New York	Kings	36047001500	Low-Income Community	2011–2015
New York	Kings	36047002000	Low-Income Community	2011–2015
New York	Kings	36047002200	Low-Income Community	2011–2015
New York	Kings	36047002300	Low-Income Community	2011–2015
New York	Kings	36047002901	Low-Income Community	2011–2015
New York	Kings	36047003400	Low-Income Community	2011–2015
New York	Kings	36047005300	Low-Income Community	2011–2015
New York	Kings	36047007000	Low-Income Community	2011–2015
New York	Kings	36047007100	Low-Income Community	2011–2015
New York	Kings	36047007400	Low-Income Community	2011–2015
New York	Kings	36047008200	Low-Income Community	2011–2015
New York	Kings	36047008400	Low-Income Community	2011–2015
New York	Kings	36047008500	Low-Income Community	2011–2015
New York	Kings	36047009800	Low-Income Community	2011–2015
New York	Kings	36047010100	Low-Income Community	2011–2015
New York	Kings	36047010400	Low-Income Community	2011–2015
New York	Kings	36047011600	Low-Income Community	2011–2015
New York	Kings	36047011700	Low-Income Community	2011–2015
New York	Kings	36047011800	Low-Income Community	2011–2015
New York	Kings	36047011900	Non-LIC Contiguous	2011–2015
New York	Kings	36047012700	Low-Income Community	2011–2015
New York	Kings	36047018501	Low-Income Community	2011–2015
New York	Kings	36047019100	Low-Income Community	2011–2015
New York	Kings	36047021100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047021300	Low-Income Community	2011–2015
New York	Kings	36047021500	Non-LIC Contiguous	2011–2015
New York	Kings	36047021700	Low-Income Community	2011–2015
New York	Kings	36047024100	Low-Income Community	2011–2015
New York	Kings	36047024300	Non-LIC Contiguous	2011–2015
New York	Kings	36047025100	Low-Income Community	2011–2015
New York	Kings	36047026300	Low-Income Community	2011–2015
New York	Kings	36047026500	Low-Income Community	2011–2015
New York	Kings	36047028100	Low-Income Community	2011–2015
New York	Kings	36047028300	Low-Income Community	2011–2015
New York	Kings	36047028900	Low-Income Community	2011–2015
New York	Kings	36047029300	Low-Income Community	2011–2015
New York	Kings	36047029400	Low-Income Community	2011–2015
New York	Kings	36047030300	Low-Income Community	2011–2015
New York	Kings	36047030400	Low-Income Community	2011–2015
New York	Kings	36047030700	Low-Income Community	2011–2015
New York	Kings	36047030900	Low-Income Community	2011–2015
New York	Kings	36047031400	Low-Income Community	2011–2015
New York	Kings	36047031900	Low-Income Community	2011–2015
New York	Kings	36047032300	Low-Income Community	2011–2015
New York	Kings	36047032600	Low-Income Community	2011–2015
New York	Kings	36047033000	Low-Income Community	2011–2015
New York	Kings	36047033100	Low-Income Community	2011–2015
New York	Kings	36047033900	Low-Income Community	2011–2015
New York	Kings	36047034200	Low-Income Community	2011–2015
New York	Kings	36047034700	Low-Income Community	2011–2015
New York	Kings	36047034800	Low-Income Community	2011–2015
New York	Kings	36047034900	Low-Income Community	2011–2015
New York	Kings	36047035000	Low-Income Community	2011–2015
New York	Kings	36047035200	Low-Income Community	2011–2015
New York	Kings	36047035700	Low-Income Community	2011–2015
New York	Kings	36047035900	Low-Income Community	2011–2015
New York	Kings	36047036001	Low-Income Community	2011–2015
New York	Kings	36047036100	Low-Income Community	2011–2015
New York	Kings	36047036200	Low-Income Community	2011–2015
New York	Kings	36047036300	Low-Income Community	2011–2015
New York	Kings	36047036501	Low-Income Community	2011–2015
New York	Kings	36047036502	Low-Income Community	2011–2015
New York	Kings	36047036700	Low-Income Community	2011–2015
New York	Kings	36047036900	Low-Income Community	2011–2015
New York	Kings	36047037300	Low-Income Community	2011–2015
New York	Kings	36047039700	Low-Income Community	2011–2015
New York	Kings	36047039900	Low-Income Community	2011–2015
New York	Kings	36047040100	Low-Income Community	2011–2015
New York	Kings	36047040500	Low-Income Community	2011–2015
New York	Kings	36047041300	Low-Income Community	2011–2015
New York	Kings	36047041500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047041700	Low-Income Community	2011–2015
New York	Kings	36047041900	Low-Income Community	2011–2015
New York	Kings	36047042100	Low-Income Community	2011–2015
New York	Kings	36047042300	Low-Income Community	2011–2015
New York	Kings	36047042900	Low-Income Community	2011–2015
New York	Kings	36047043300	Low-Income Community	2011–2015
New York	Kings	36047044700	Low-Income Community	2011–2015
New York	Kings	36047044900	Low-Income Community	2011–2015
New York	Kings	36047045300	Low-Income Community	2011–2015
New York	Kings	36047051300	Low-Income Community	2011–2015
New York	Kings	36047053200	Non-LIC Contiguous	2011–2015
New York	Kings	36047054300	Non-LIC Contiguous	2011–2015
New York	Kings	36047054700	Low-Income Community	2011–2015
New York	Kings	36047054900	Low-Income Community	2011–2015
New York	Kings	36047056300	Low-Income Community	2011–2015
New York	Kings	36047057900	Non-LIC Contiguous	2011–2015
New York	Kings	36047061004	Low-Income Community	2011–2015
New York	Kings	36047076200	Low-Income Community	2011–2015
New York	Kings	36047077400	Low-Income Community	2011–2015
New York	Kings	36047078200	Low-Income Community	2011–2015
New York	Kings	36047080400	Low-Income Community	2011–2015
New York	Kings	36047080600	Low-Income Community	2011–2015
New York	Kings	36047081000	Low-Income Community	2011–2015
New York	Kings	36047081600	Low-Income Community	2011–2015
New York	Kings	36047081800	Low-Income Community	2011–2015
New York	Kings	36047082000	Low-Income Community	2011–2015
New York	Kings	36047082400	Low-Income Community	2011–2015
New York	Kings	36047082800	Low-Income Community	2011–2015
New York	Kings	36047083000	Low-Income Community	2011–2015
New York	Kings	36047087401	Low-Income Community	2011–2015
New York	Kings	36047087600	Low-Income Community	2011–2015
New York	Kings	36047088200	Low-Income Community	2011–2015
New York	Kings	36047089000	Low-Income Community	2011–2015
New York	Kings	36047089200	Low-Income Community	2011–2015
New York	Kings	36047090000	Low-Income Community	2011–2015
New York	Kings	36047090600	Low-Income Community	2011–2015
New York	Kings	36047090800	Low-Income Community	2011–2015
New York	Kings	36047111600	Low-Income Community	2011–2015
New York	Kings	36047111800	Low-Income Community	2011–2015
New York	Kings	36047113400	Low-Income Community	2011–2015
New York	Kings	36047114201	Low-Income Community	2011–2015
New York	Kings	36047114400	Low-Income Community	2011–2015
New York	Kings	36047114600	Low-Income Community	2011–2015
New York	Kings	36047115000	Low-Income Community	2011–2015
New York	Kings	36047115200	Low-Income Community	2011–2015
New York	Kings	36047115600	Low-Income Community	2011–2015
New York	Kings	36047116200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047119400	Low-Income Community	2011–2015
New York	Kings	36047119800	Low-Income Community	2011–2015
New York	Livingston	36051030900	Low-Income Community	2011–2015
New York	Monroe	36055000200	Low-Income Community	2011–2015
New York	Monroe	36055000700	Low-Income Community	2011–2015
New York	Monroe	36055001800	Low-Income Community	2011–2015
New York	Monroe	36055001900	Low-Income Community	2011–2015
New York	Monroe	36055004702	Low-Income Community	2011–2015
New York	Monroe	36055005600	Low-Income Community	2011–2015
New York	Monroe	36055005700	Low-Income Community	2011–2015
New York	Monroe	36055005900	Low-Income Community	2011–2015
New York	Monroe	36055006400	Low-Income Community	2011–2015
New York	Monroe	36055006900	Low-Income Community	2011–2015
New York	Monroe	36055008500	Low-Income Community	2011–2015
New York	Monroe	36055009200	Low-Income Community	2011–2015
New York	Monroe	36055009301	Low-Income Community	2011–2015
New York	Monroe	36055009302	Low-Income Community	2011–2015
New York	Monroe	36055009400	Low-Income Community	2011–2015
New York	Monroe	36055009601	Low-Income Community	2011–2015
New York	Monroe	36055009602	Low-Income Community	2011–2015
New York	Monroe	36055009603	Low-Income Community	2011–2015
New York	Monroe	36055010601	Low-Income Community	2011–2015
New York	Monroe	36055011400	Low-Income Community	2011–2015
New York	Montgomery	36057070200	Low-Income Community	2011–2015
New York	Montgomery	36057070900	Low-Income Community	2011–2015
New York	Montgomery	36057072600	Low-Income Community	2011–2015
New York	Nassau	36059406801	Low-Income Community	2011–2015
New York	Nassau	36059406802	Low-Income Community	2011–2015
New York	Nassau	36059416500	Low-Income Community	2011–2015
New York	Nassau	36059517200	Low-Income Community	2011–2015
New York	New York	36061000202	Low-Income Community	2011–2015
New York	New York	36061002201	Low-Income Community	2011–2015
New York	New York	36061002601	Low-Income Community	2011–2015
New York	New York	36061006200	Low-Income Community	2011–2015
New York	New York	36061013500	Low-Income Community	2011–2015
New York	New York	36061016800	Low-Income Community	2011–2015
New York	New York	36061018000	Low-Income Community	2011–2015
New York	New York	36061019200	Low-Income Community	2011–2015
New York	New York	36061019400	Low-Income Community	2011–2015
New York	New York	36061019600	Low-Income Community	2011–2015
New York	New York	36061020600	Low-Income Community	2011–2015
New York	New York	36061020800	Low-Income Community	2011–2015
New York	New York	36061020901	Low-Income Community	2011–2015
New York	New York	36061021303	Low-Income Community	2011–2015
New York	New York	36061021500	Low-Income Community	2011–2015
New York	New York	36061021600	Low-Income Community	2011–2015
New York	New York	36061021800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	New York	36061021900	Low-Income Community	2011–2015
New York	New York	36061022200	Low-Income Community	2011–2015
New York	New York	36061022301	Low-Income Community	2011–2015
New York	New York	36061022302	Low-Income Community	2011–2015
New York	New York	36061022400	Low-Income Community	2011–2015
New York	New York	36061023000	Low-Income Community	2011–2015
New York	New York	36061023200	Low-Income Community	2011–2015
New York	New York	36061024100	Low-Income Community	2011–2015
New York	New York	36061024200	Low-Income Community	2011–2015
New York	New York	36061024301	Low-Income Community	2011–2015
New York	New York	36061026100	Low-Income Community	2011–2015
New York	New York	36061026900	Low-Income Community	2011–2015
New York	New York	36061027700	Low-Income Community	2011–2015
New York	New York	36061027900	Low-Income Community	2011–2015
New York	New York	36061028700	Low-Income Community	2011–2015
New York	New York	36061029100	Low-Income Community	2011–2015
New York	New York	36061029300	Low-Income Community	2011–2015
New York	New York	36061029900	Low-Income Community	2011–2015
New York	New York	36061030300	Low-Income Community	2011–2015
New York	Niagara	36063020200	Low-Income Community	2011–2015
New York	Niagara	36063020500	Low-Income Community	2011–2015
New York	Niagara	36063021100	Low-Income Community	2011–2015
New York	Niagara	36063021200	Low-Income Community	2011–2015
New York	Niagara	36063021700	Low-Income Community	2011–2015
New York	Niagara	36063023100	Low-Income Community	2011–2015
New York	Niagara	36063023200	Low-Income Community	2011–2015
New York	Niagara	36063023700	Low-Income Community	2011–2015
New York	Oneida	36065020102	Low-Income Community	2011–2015
New York	Oneida	36065020300	Low-Income Community	2011–2015
New York	Oneida	36065020900	Low-Income Community	2011–2015
New York	Oneida	36065021900	Low-Income Community	2011–2015
New York	Oneida	36065022500	Low-Income Community	2011–2015
New York	Oneida	36065026300	Low-Income Community	2011–2015
New York	Oneida	36065026400	Low-Income Community	2011–2015
New York	Onondaga	36067000501	Low-Income Community	2011–2015
New York	Onondaga	36067001600	Low-Income Community	2011–2015
New York	Onondaga	36067002101	Low-Income Community	2011–2015
New York	Onondaga	36067002300	Low-Income Community	2011–2015
New York	Onondaga	36067003000	Low-Income Community	2011–2015
New York	Onondaga	36067003200	Low-Income Community	2011–2015
New York	Onondaga	36067003400	Low-Income Community	2011–2015
New York	Onondaga	36067003500	Low-Income Community	2011–2015
New York	Onondaga	36067003900	Low-Income Community	2011–2015
New York	Onondaga	36067004000	Low-Income Community	2011–2015
New York	Onondaga	36067004200	Low-Income Community	2011–2015
New York	Onondaga	36067005200	Low-Income Community	2011–2015
New York	Onondaga	36067005300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Onondaga	36067005400	Low-Income Community	2011–2015
New York	Ontario	36069051000	Low-Income Community	2011–2015
New York	Ontario	36069051100	Low-Income Community	2011–2015
New York	Ontario	36069051800	Low-Income Community	2011–2015
New York	Orange	36071000300	Low-Income Community	2011–2015
New York	Orange	36071000400	Low-Income Community	2011–2015
New York	Orange	36071001500	Low-Income Community	2011–2015
New York	Orange	36071002200	Low-Income Community	2011–2015
New York	Orange	36071002300	Low-Income Community	2011–2015
New York	Orange	36071015100	Low-Income Community	2011–2015
New York	Orleans	36073040700	Low-Income Community	2011–2015
New York	Oswego	36075020301	Low-Income Community	2011–2015
New York	Oswego	36075020302	Low-Income Community	2011–2015
New York	Oswego	36075021102	Low-Income Community	2011–2015
New York	Oswego	36075021605	Low-Income Community	2011–2015
New York	Otsego	36077591100	Low-Income Community	2011–2015
New York	Queens	36081000100	Non-LIC Contiguous	2011–2015
New York	Queens	36081002500	Low-Income Community	2011–2015
New York	Queens	36081003100	Low-Income Community	2011–2015
New York	Queens	36081003300	Low-Income Community	2011–2015
New York	Queens	36081003900	Low-Income Community	2011–2015
New York	Queens	36081005100	Low-Income Community	2011–2015
New York	Queens	36081005500	Low-Income Community	2011–2015
New York	Queens	36081005700	Low-Income Community	2011–2015
New York	Queens	36081007900	Low-Income Community	2011–2015
New York	Queens	36081008500	Low-Income Community	2011–2015
New York	Queens	36081008700	Low-Income Community	2011–2015
New York	Queens	36081011300	Low-Income Community	2011–2015
New York	Queens	36081011400	Low-Income Community	2011–2015
New York	Queens	36081011600	Low-Income Community	2011–2015
New York	Queens	36081011900	Low-Income Community	2011–2015
New York	Queens	36081014202	Low-Income Community	2011–2015
New York	Queens	36081014400	Low-Income Community	2011–2015
New York	Queens	36081015700	Low-Income Community	2011–2015
New York	Queens	36081015900	Low-Income Community	2011–2015
New York	Queens	36081017900	Low-Income Community	2011–2015
New York	Queens	36081018101	Low-Income Community	2011–2015
New York	Queens	36081018900	Low-Income Community	2011–2015
New York	Queens	36081019600	Low-Income Community	2011–2015
New York	Queens	36081019900	Non-LIC Contiguous	2011–2015
New York	Queens	36081020400	Low-Income Community	2011–2015
New York	Queens	36081020500	Low-Income Community	2011–2015
New York	Queens	36081020800	Low-Income Community	2011–2015
New York	Queens	36081021200	Low-Income Community	2011–2015
New York	Queens	36081024000	Low-Income Community	2011–2015
New York	Queens	36081025400	Low-Income Community	2011–2015
New York	Queens	36081026000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Queens	36081026901	Low-Income Community	2011–2015
New York	Queens	36081028300	Low-Income Community	2011–2015
New York	Queens	36081030600	Non-LIC Contiguous	2011–2015
New York	Queens	36081032000	Low-Income Community	2011–2015
New York	Queens	36081041400	Low-Income Community	2011–2015
New York	Queens	36081041500	Low-Income Community	2011–2015
New York	Queens	36081044000	Low-Income Community	2011–2015
New York	Queens	36081044400	Low-Income Community	2011–2015
New York	Queens	36081044601	Low-Income Community	2011–2015
New York	Queens	36081044602	Low-Income Community	2011–2015
New York	Queens	36081066400	Non-LIC Contiguous	2011–2015
New York	Queens	36081069300	Low-Income Community	2011–2015
New York	Queens	36081071100	Low-Income Community	2011–2015
New York	Queens	36081071304	Low-Income Community	2011–2015
New York	Queens	36081071702	Low-Income Community	2011–2015
New York	Queens	36081079200	Low-Income Community	2011–2015
New York	Queens	36081084602	Low-Income Community	2011–2015
New York	Queens	36081086900	Low-Income Community	2011–2015
New York	Queens	36081087100	Low-Income Community	2011–2015
New York	Queens	36081088901	Low-Income Community	2011–2015
New York	Queens	36081092500	Low-Income Community	2011–2015
New York	Queens	36081094201	Low-Income Community	2011–2015
New York	Queens	36081097203	Low-Income Community	2011–2015
New York	Queens	36081099200	Low-Income Community	2011–2015
New York	Queens	36081099802	Low-Income Community	2011–2015
New York	Queens	36081100802	Low-Income Community	2011–2015
New York	Queens	36081101001	Low-Income Community	2011–2015
New York	Queens	36081101002	Low-Income Community	2011–2015
New York	Queens	36081103201	Low-Income Community	2011–2015
New York	Queens	36081103202	Low-Income Community	2011–2015
New York	Queens	36081117100	Low-Income Community	2011–2015
New York	Rensselaer	36083040400	Low-Income Community	2011–2015
New York	Rensselaer	36083040700	Low-Income Community	2011–2015
New York	Rensselaer	36083040800	Low-Income Community	2011–2015
New York	Rensselaer	36083051500	Low-Income Community	2011–2015
New York	Richmond	36085000300	Non-LIC Contiguous	2011–2015
New York	Richmond	36085000700	Low-Income Community	2011–2015
New York	Richmond	36085001100	Low-Income Community	2011–2015
New York	Richmond	36085002100	Low-Income Community	2011–2015
New York	Richmond	36085013301	Low-Income Community	2011–2015
New York	Richmond	36085020700	Low-Income Community	2011–2015
New York	Richmond	36085022300	Low-Income Community	2011–2015
New York	Richmond	36085031902	Low-Income Community	2011–2015
New York	Rockland	36087010702	Low-Income Community	2011–2015
New York	Rockland	36087010703	Low-Income Community	2011–2015
New York	St. Lawrence	36089490100	Low-Income Community	2011–2015
New York	St. Lawrence	36089490200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	St. Lawrence	36089490300	Low-Income Community	2011–2015
New York	St. Lawrence	36089490900	Low-Income Community	2011–2015
New York	St. Lawrence	36089491400	Low-Income Community	2011–2015
New York	St. Lawrence	36089491500	Low-Income Community	2011–2015
New York	St. Lawrence	36089491600	Low-Income Community	2011–2015
New York	Saratoga	36091060400	Low-Income Community	2011–2015
New York	Schenectady	36093020200	Low-Income Community	2011–2015
New York	Schenectady	36093021001	Low-Income Community	2011–2015
New York	Schenectady	36093033500	Low-Income Community	2011–2015
New York	Schoharie	36095740200	Non-LIC Contiguous	2011–2015
New York	Schoharie	36095740400	Low-Income Community	2011–2015
New York	Schuyler	36097950300	Low-Income Community	2011–2015
New York	Schuyler	36097950500	Low-Income Community	2011–2015
New York	Seneca	36099950600	Low-Income Community	2011–2015
New York	Steuben	36101960700	Low-Income Community	2011–2015
New York	Steuben	36101960800	Low-Income Community	2011–2015
New York	Suffolk	36103110902	Low-Income Community	2011–2015
New York	Suffolk	36103122501	Low-Income Community	2011–2015
New York	Suffolk	36103146203	Low-Income Community	2011–2015
New York	Suffolk	36103159103	Low-Income Community	2011–2015
New York	Suffolk	36103169704	Non-LIC Contiguous	2011–2015
New York	Suffolk	36103169800	Low-Income Community	2011–2015
New York	Sullivan	36105950700	Low-Income Community	2011–2015
New York	Sullivan	36105951500	Low-Income Community	2011–2015
New York	Sullivan	36105951800	Low-Income Community	2011–2015
New York	Tioga	36107020600	Non-LIC Contiguous	2011–2015
New York	Tioga	36107020701	Low-Income Community	2011–2015
New York	Tompkins	36109000800	Low-Income Community	2011–2015
New York	Tompkins	36109001100	Low-Income Community	2011–2015
New York	Ulster	36111951700	Low-Income Community	2011–2015
New York	Ulster	36111952100	Low-Income Community	2011–2015
New York	Ulster	36111952400	Low-Income Community	2011–2015
New York	Ulster	36111954800	Low-Income Community	2011–2015
New York	Warren	36113070200	Low-Income Community	2011–2015
New York	Warren	36113074000	Low-Income Community	2011–2015
New York	Washington	36115088000	Low-Income Community	2011–2015
New York	Wayne	36117021100	Low-Income Community	2011–2015
New York	Wayne	36117021200	Low-Income Community	2011–2015
New York	Westchester	36119000300	Low-Income Community	2011–2015
New York	Westchester	36119000401	Low-Income Community	2011–2015
New York	Westchester	36119000600	Low-Income Community	2011–2015
New York	Westchester	36119003100	Low-Income Community	2011–2015
New York	Westchester	36119005800	Low-Income Community	2011–2015
New York	Westchester	36119006100	Low-Income Community	2011–2015
New York	Westchester	36119007900	Low-Income Community	2011–2015
New York	Westchester	36119008000	Low-Income Community	2011–2015
New York	Westchester	36119009300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Westchester	36119014300	Low-Income Community	2011–2015
New York	Westchester	36119981000	Low-Income Community	2011–2015
New York	Westchester	36119984000	Low-Income Community	2011–2015
New York	Wyoming	36121970500	Low-Income Community	2011–2015
North Carolina	Alamance	37001020300	Low-Income Community	2011–2015
North Carolina	Alamance	37001020801	Low-Income Community	2011–2015
North Carolina	Alamance	37001021000	Low-Income Community	2011–2015
North Carolina	Alamance	37001021201	Low-Income Community	2011–2015
North Carolina	Alexander	37003040400	Low-Income Community	2011–2015
North Carolina	Alleghany	37005950200	Low-Income Community	2011–2015
North Carolina	Anson	37007920500	Low-Income Community	2011–2015
North Carolina	Ashe	37009970400	Low-Income Community	2011–2015
North Carolina	Avery	37011930302	Low-Income Community	2011–2015
North Carolina	Beaufort	37013930400	Low-Income Community	2011–2015
North Carolina	Bertie	37015960200	Low-Income Community	2011–2015
North Carolina	Bladen	37017950400	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020101	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020104	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020602	Non-LIC Contiguous	2011–2015
North Carolina	Buncombe	37021000200	Low-Income Community	2011–2015
North Carolina	Buncombe	37021000700	Low-Income Community	2011–2015
North Carolina	Buncombe	37021000900	Low-Income Community	2011–2015
North Carolina	Buncombe	37021001400	Low-Income Community	2011–2015
North Carolina	Buncombe	37021002000	Low-Income Community	2011–2015
North Carolina	Burke	37023020301	Non-LIC Contiguous	2011–2015
North Carolina	Burke	37023021100	Low-Income Community	2011–2015
North Carolina	Burke	37023021400	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025041000	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025041902	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025042300	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030100	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030300	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030800	Low-Income Community	2011–2015
North Carolina	Caldwell	37027031100	Low-Income Community	2011–2015
North Carolina	Camden	37029950102	Non-LIC Contiguous	2011–2015
North Carolina	Carteret	37031970304	Low-Income Community	2011–2015
North Carolina	Carteret	37031970501	Low-Income Community	2011–2015
North Carolina	Caswell	37033930300	Low-Income Community	2011–2015
North Carolina	Catawba	37035010900	Low-Income Community	2011–2015
North Carolina	Catawba	37035011300	Low-Income Community	2011–2015
North Carolina	Chatham	37037020300	Low-Income Community	2011–2015
North Carolina	Chatham	37037020600	Low-Income Community	2011–2015
North Carolina	Chatham	37037020702	Non-LIC Contiguous	2011–2015
North Carolina	Cherokee	37039930200	Low-Income Community	2011–2015
North Carolina	Chowan	37041930200	Low-Income Community	2011–2015
North Carolina	Clay	37043950200	Low-Income Community	2011–2015
North Carolina	Cleveland	37045950500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Cleveland	37045951000	Low-Income Community	2011–2015
North Carolina	Columbus	37047930600	Low-Income Community	2011–2015
North Carolina	Columbus	37047930900	Low-Income Community	2011–2015
North Carolina	Columbus	37047931200	Low-Income Community	2011–2015
North Carolina	Craven	37049960900	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000200	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000500	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000702	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000800	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001000	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001100	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001604	Low-Income Community	2011–2015
North Carolina	Cumberland	37051003203	Low-Income Community	2011–2015
North Carolina	Cumberland	37051003800	Low-Income Community	2011–2015
North Carolina	Currituck	37053110302	Low-Income Community	2011–2015
North Carolina	Dare	37055970501	Low-Income Community	2011–2015
North Carolina	Davidson	37057060700	Low-Income Community	2011–2015
North Carolina	Davidson	37057061400	Low-Income Community	2011–2015
North Carolina	Davie	37059080500	Low-Income Community	2011–2015
North Carolina	Duplin	37061090300	Low-Income Community	2011–2015
North Carolina	Duplin	37061090702	Low-Income Community	2011–2015
North Carolina	Durham	37063001001	Low-Income Community	2011–2015
North Carolina	Durham	37063001100	Low-Income Community	2011–2015
North Carolina	Durham	37063001304	Low-Income Community	2011–2015
North Carolina	Durham	37063001400	Low-Income Community	2011–2015
North Carolina	Durham	37063001502	Low-Income Community	2011–2015
North Carolina	Durham	37063002016	Low-Income Community	2011–2015
North Carolina	Durham	37063002300	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020200	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020400	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020900	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065021000	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065021300	Non-LIC Contiguous	2011–2015
North Carolina	Forsyth	37067000100	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000200	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000301	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000302	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000700	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000801	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000802	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001400	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001602	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001700	Low-Income Community	2011–2015
North Carolina	Forsyth	37067003313	Low-Income Community	2011–2015
North Carolina	Franklin	37069060600	Non-LIC Contiguous	2011–2015
North Carolina	Franklin	37069060802	Low-Income Community	2011–2015
North Carolina	Gaston	37071030601	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Gaston	37071031302	Low-Income Community	2011–2015
North Carolina	Gaston	37071031401	Low-Income Community	2011–2015
North Carolina	Gaston	37071031500	Low-Income Community	2011–2015
North Carolina	Gaston	37071031600	Low-Income Community	2011–2015
North Carolina	Gaston	37071031900	Low-Income Community	2011–2015
North Carolina	Gaston	37071032000	Low-Income Community	2011–2015
North Carolina	Gaston	37071032200	Low-Income Community	2011–2015
North Carolina	Gaston	37071033400	Low-Income Community	2011–2015
North Carolina	Gates	37073970200	Non-LIC Contiguous	2011–2015
North Carolina	Graham	37075920300	Low-Income Community	2011–2015
North Carolina	Granville	37077970300	Low-Income Community	2011–2015
North Carolina	Greene	37079950101	Low-Income Community	2011–2015
North Carolina	Guilford	37081010200	Low-Income Community	2011–2015
North Carolina	Guilford	37081010300	Low-Income Community	2011–2015
North Carolina	Guilford	37081010800	Low-Income Community	2011–2015
North Carolina	Guilford	37081011000	Low-Income Community	2011–2015
North Carolina	Guilford	37081011101	Low-Income Community	2011–2015
North Carolina	Guilford	37081011102	Low-Income Community	2011–2015
North Carolina	Guilford	37081011200	Low-Income Community	2011–2015
North Carolina	Guilford	37081011300	Low-Income Community	2011–2015
North Carolina	Guilford	37081011400	Low-Income Community	2011–2015
North Carolina	Guilford	37081012803	Low-Income Community	2011–2015
North Carolina	Guilford	37081013800	Low-Income Community	2011–2015
North Carolina	Guilford	37081014300	Low-Income Community	2011–2015
North Carolina	Halifax	37083930400	Low-Income Community	2011–2015
North Carolina	Halifax	37083930900	Low-Income Community	2011–2015
North Carolina	Harnett	37085070100	Low-Income Community	2011–2015
North Carolina	Harnett	37085070200	Low-Income Community	2011–2015
North Carolina	Harnett	37085070801	Low-Income Community	2011–2015
North Carolina	Haywood	37087920300	Low-Income Community	2011–2015
North Carolina	Henderson	37089931000	Low-Income Community	2011–2015
North Carolina	Hertford	37091950100	Low-Income Community	2011–2015
North Carolina	Hoke	37093970300	Low-Income Community	2011–2015
North Carolina	Hyde	37095920100	Low-Income Community	2011–2015
North Carolina	Iredell	37097060100	Low-Income Community	2011–2015
North Carolina	Iredell	37097060200	Low-Income Community	2011–2015
North Carolina	Iredell	37097061301	Low-Income Community	2011–2015
North Carolina	Jackson	37099950600	Low-Income Community	2011–2015
North Carolina	Johnston	37101040301	Low-Income Community	2011–2015
North Carolina	Johnston	37101040400	Low-Income Community	2011–2015
North Carolina	Johnston	37101040901	Low-Income Community	2011–2015
North Carolina	Johnston	37101041001	Low-Income Community	2011–2015
North Carolina	Jones	37103920100	Low-Income Community	2011–2015
North Carolina	Lee	37105030200	Low-Income Community	2011–2015
North Carolina	Lenoir	37107010100	Low-Income Community	2011–2015
North Carolina	Lenoir	37107010800	Non-LIC Contiguous	2011–2015
North Carolina	Lenoir	37107010900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Lincoln	37109070800	Low-Income Community	2011–2015
North Carolina	McDowell	37111970500	Low-Income Community	2011–2015
North Carolina	McDowell	37111970700	Low-Income Community	2011–2015
North Carolina	Macon	37113970301	Low-Income Community	2011–2015
North Carolina	Madison	37115010200	Low-Income Community	2011–2015
North Carolina	Martin	37117970200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001606	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001607	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001702	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119003902	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119003903	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004000	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004100	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004500	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004600	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004700	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004800	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005100	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005301	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005305	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005306	Low-Income Community	2011–2015
North Carolina	Mitchell	37121950300	Low-Income Community	2011–2015
North Carolina	Montgomery	37123960100	Low-Income Community	2011–2015
North Carolina	Moore	37125950200	Low-Income Community	2011–2015
North Carolina	Nash	37127010400	Low-Income Community	2011–2015
North Carolina	Nash	37127011500	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011000	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011100	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011200	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011903	Low-Income Community	2011–2015
North Carolina	Northampton	37131920401	Low-Income Community	2011–2015
North Carolina	Onslow	37133001101	Low-Income Community	2011–2015
North Carolina	Onslow	37133002600	Low-Income Community	2011–2015
North Carolina	Orange	37135011400	Low-Income Community	2011–2015
North Carolina	Pamlico	37137950102	Low-Income Community	2011–2015
North Carolina	Pasquotank	37139960100	Low-Income Community	2011–2015
North Carolina	Pasquotank	37139960200	Low-Income Community	2011–2015
North Carolina	Pender	37141920601	Low-Income Community	2011–2015
North Carolina	Pender	37141920602	Low-Income Community	2011–2015
North Carolina	Perquimans	37143920201	Low-Income Community	2011–2015
North Carolina	Person	37145920100	Low-Income Community	2011–2015
North Carolina	Person	37145920200	Low-Income Community	2011–2015
North Carolina	Pitt	37147000701	Low-Income Community	2011–2015
North Carolina	Pitt	37147000702	Low-Income Community	2011–2015
North Carolina	Pitt	37147000800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Pitt	37147000900	Low-Income Community	2011–2015
North Carolina	Pitt	37147001800	Low-Income Community	2011–2015
North Carolina	Polk	37149920200	Non-LIC Contiguous	2011–2015
North Carolina	Randolph	37151031000	Low-Income Community	2011–2015
North Carolina	Randolph	37151031200	Low-Income Community	2011–2015
North Carolina	Randolph	37151031400	Low-Income Community	2011–2015
North Carolina	Richmond	37153970300	Low-Income Community	2011–2015
North Carolina	Richmond	37153971100	Low-Income Community	2011–2015
North Carolina	Robeson	37155960101	Low-Income Community	2011–2015
North Carolina	Robeson	37155960102	Low-Income Community	2011–2015
North Carolina	Robeson	37155960201	Low-Income Community	2011–2015
North Carolina	Robeson	37155960401	Low-Income Community	2011–2015
North Carolina	Robeson	37155960502	Low-Income Community	2011–2015
North Carolina	Robeson	37155960600	Low-Income Community	2011–2015
North Carolina	Robeson	37155960801	Low-Income Community	2011–2015
North Carolina	Rockingham	37157040200	Low-Income Community	2011–2015
North Carolina	Rockingham	37157040900	Low-Income Community	2011–2015
North Carolina	Rockingham	37157041300	Low-Income Community	2011–2015
North Carolina	Rowan	37159050201	Low-Income Community	2011–2015
North Carolina	Rowan	37159050202	Low-Income Community	2011–2015
North Carolina	Rowan	37159050800	Low-Income Community	2011–2015
North Carolina	Rowan	37159051700	Low-Income Community	2011–2015
North Carolina	Rowan	37159052000	Low-Income Community	2011–2015
North Carolina	Rutherford	37161960200	Low-Income Community	2011–2015
North Carolina	Rutherford	37161960900	Low-Income Community	2011–2015
North Carolina	Rutherford	37161961101	Low-Income Community	2011–2015
North Carolina	Sampson	37163970100	Low-Income Community	2011–2015
North Carolina	Sampson	37163970600	Low-Income Community	2011–2015
North Carolina	Scotland	37165010400	Low-Income Community	2011–2015
North Carolina	Stanly	37167931000	Low-Income Community	2011–2015
North Carolina	Stokes	37169070501	Low-Income Community	2011–2015
North Carolina	Surry	37171930400	Low-Income Community	2011–2015
North Carolina	Surry	37171930600	Low-Income Community	2011–2015
North Carolina	Surry	37171931002	Low-Income Community	2011–2015
North Carolina	Swain	37173960200	Low-Income Community	2011–2015
North Carolina	Transylvania	37175960100	Low-Income Community	2011–2015
North Carolina	Tyrrell	37177960100	Low-Income Community	2011–2015
North Carolina	Union	37179020601	Low-Income Community	2011–2015
North Carolina	Union	37179020602	Low-Income Community	2011–2015
North Carolina	Vance	37181960500	Low-Income Community	2011–2015
North Carolina	Wake	37183050900	Low-Income Community	2011–2015
North Carolina	Wake	37183052407	Low-Income Community	2011–2015
North Carolina	Wake	37183052704	Low-Income Community	2011–2015
North Carolina	Wake	37183052706	Low-Income Community	2011–2015
North Carolina	Wake	37183052803	Low-Income Community	2011–2015
North Carolina	Wake	37183052807	Low-Income Community	2011–2015
North Carolina	Wake	37183053009	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Wake	37183053519	Low-Income Community	2011–2015
North Carolina	Wake	37183054008	Low-Income Community	2011–2015
North Carolina	Wake	37183054018	Low-Income Community	2011–2015
North Carolina	Wake	37183054108	Low-Income Community	2011–2015
North Carolina	Wake	37183054112	Low-Income Community	2011–2015
North Carolina	Wake	37183054500	Low-Income Community	2011–2015
North Carolina	Warren	37185950200	Low-Income Community	2011–2015
North Carolina	Washington	37187950200	Low-Income Community	2011–2015
North Carolina	Watauga	37189920601	Low-Income Community	2011–2015
North Carolina	Wayne	37191000901	Low-Income Community	2011–2015
North Carolina	Wayne	37191001500	Low-Income Community	2011–2015
North Carolina	Wayne	37191001800	Low-Income Community	2011–2015
North Carolina	Wayne	37191001900	Low-Income Community	2011–2015
North Carolina	Wilkes	37193960600	Low-Income Community	2011–2015
North Carolina	Wilkes	37193961001	Non-LIC Contiguous	2011–2015
North Carolina	Wilkes	37193961100	Low-Income Community	2011–2015
North Carolina	Wilson	37195000100	Low-Income Community	2011–2015
North Carolina	Wilson	37195000801	Low-Income Community	2011–2015
North Carolina	Wilson	37195001100	Non-LIC Contiguous	2011–2015
North Carolina	Yadkin	37197050501	Low-Income Community	2011–2015
North Carolina	Yancey	37199960300	Low-Income Community	2011–2015
North Dakota	Barnes	38003968200	Low-Income Community	2011–2015
North Dakota	Benson	38005940100	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010100	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010200	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010800	Low-Income Community	2011–2015
North Dakota	Cass	38017000501	Low-Income Community	2011–2015
North Dakota	Cass	38017000502	Low-Income Community	2011–2015
North Dakota	Cass	38017000600	Low-Income Community	2011–2015
North Dakota	Cass	38017000700	Low-Income Community	2011–2015
North Dakota	Cass	38017010107	Low-Income Community	2011–2015
North Dakota	Dickey	38021973400	Low-Income Community	2011–2015
North Dakota	Emmons	38029966500	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010100	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010200	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010600	Low-Income Community	2012–2016
North Dakota	McKenzie	38053940100	Low-Income Community	2011–2015
North Dakota	Morton	38059020500	Low-Income Community	2011–2015
North Dakota	Rolette	38079941800	Low-Income Community	2011–2015
North Dakota	Rolette	38079951600	Low-Income Community	2011–2015
North Dakota	Rolette	38079951700	Low-Income Community	2011–2015
North Dakota	Sioux	38085940900	Low-Income Community	2011–2015
North Dakota	Stutsman	38093967800	Low-Income Community	2011–2015
North Dakota	Walsh	38099958000	Low-Income Community	2011–2015
North Dakota	Ward	38101010100	Low-Income Community	2012–2016
North Dakota	Wells	38103959800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Northern Mariana Islands	Rota	69100950100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000200	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000300	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000400	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000500	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000600	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000700	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000800	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000900	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001000	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001200	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001300	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001400	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001500	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001600	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001700	Low-Income Community	2011–2015
Northern Mariana Islands	Tinian	69120950101	Low-Income Community	2011–2015
Northern Mariana Islands	Tinian	69120950200	Low-Income Community	2011–2015
Ohio	Adams	39001770200	Low-Income Community	2011–2015
Ohio	Allen	39003012600	Low-Income Community	2011–2015
Ohio	Allen	39003012900	Low-Income Community	2011–2015
Ohio	Allen	39003014100	Low-Income Community	2011–2015
Ohio	Ashtabula	39007000103	Low-Income Community	2011–2015
Ohio	Ashtabula	39007000400	Low-Income Community	2011–2015
Ohio	Athens	39009972800	Low-Income Community	2011–2015
Ohio	Athens	39009973400	Low-Income Community	2011–2015
Ohio	Athens	39009973800	Low-Income Community	2011–2015
Ohio	Athens	39009973902	Low-Income Community	2011–2015
Ohio	Belmont	39013010802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Belmont	39013011700	Low-Income Community	2011–2015
Ohio	Brown	39015951202	Low-Income Community	2011–2015
Ohio	Brown	39015951300	Low-Income Community	2011–2015
Ohio	Butler	39017000300	Low-Income Community	2011–2015
Ohio	Butler	39017010906	Low-Income Community	2011–2015
Ohio	Butler	39017010909	Low-Income Community	2011–2015
Ohio	Butler	39017012200	Low-Income Community	2011–2015
Ohio	Butler	39017014700	Low-Income Community	2011–2015
Ohio	Carroll	39019720500	Low-Income Community	2011–2015
Ohio	Champaign	39021010500	Low-Income Community	2011–2015
Ohio	Clark	39023000200	Low-Income Community	2011–2015
Ohio	Clark	39023000300	Low-Income Community	2011–2015
Ohio	Clark	39023000901	Low-Income Community	2011–2015
Ohio	Clark	39023003400	Low-Income Community	2011–2015
Ohio	Clermont	39025040900	Low-Income Community	2011–2015
Ohio	Clermont	39025041306	Low-Income Community	2011–2015
Ohio	Clinton	39027964700	Low-Income Community	2011–2015
Ohio	Columbiana	39029951800	Low-Income Community	2011–2015
Ohio	Crawford	39033974400	Low-Income Community	2011–2015
Ohio	Crawford	39033974900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103602	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035105500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107802	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035108301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035108701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035111202	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035112301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035112800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113801	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114501	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Cuyahoga	39035114700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118602	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119202	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035133103	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035133104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035138105	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035140301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152303	Low-Income Community	2012–2016
Ohio	Cuyahoga	39035152502	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152603	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035154501	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035171102	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035180104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188105	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188107	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035193800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035196200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035196500	Low-Income Community	2011–2015
Ohio	Defiance	39039958500	Low-Income Community	2011–2015
Ohio	Defiance	39039958600	Low-Income Community	2011–2015
Ohio	Erie	39043040500	Low-Income Community	2011–2015
Ohio	Erie	39043040800	Low-Income Community	2011–2015
Ohio	Fairfield	39045031700	Low-Income Community	2011–2015
Ohio	Fairfield	39045032200	Low-Income Community	2011–2015
Ohio	Fayette	39047926200	Low-Income Community	2011–2015
Ohio	Franklin	39049000720	Low-Income Community	2011–2015
Ohio	Franklin	39049001122	Low-Income Community	2011–2015
Ohio	Franklin	39049001400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Franklin	39049001600	Low-Income Community	2011–2015
Ohio	Franklin	39049001700	Low-Income Community	2011–2015
Ohio	Franklin	39049002300	Low-Income Community	2011–2015
Ohio	Franklin	39049002800	Low-Income Community	2011–2015
Ohio	Franklin	39049002900	Low-Income Community	2011–2015
Ohio	Franklin	39049003600	Low-Income Community	2011–2015
Ohio	Franklin	39049003700	Low-Income Community	2011–2015
Ohio	Franklin	39049003800	Low-Income Community	2011–2015
Ohio	Franklin	39049004200	Low-Income Community	2011–2015
Ohio	Franklin	39049004300	Low-Income Community	2011–2015
Ohio	Franklin	39049004900	Low-Income Community	2011–2015
Ohio	Franklin	39049005000	Low-Income Community	2011–2015
Ohio	Franklin	39049005100	Low-Income Community	2011–2015
Ohio	Franklin	39049005300	Low-Income Community	2011–2015
Ohio	Franklin	39049005500	Low-Income Community	2011–2015
Ohio	Franklin	39049005610	Low-Income Community	2011–2015
Ohio	Franklin	39049005620	Low-Income Community	2011–2015
Ohio	Franklin	39049006000	Low-Income Community	2011–2015
Ohio	Franklin	39049006933	Low-Income Community	2011–2015
Ohio	Franklin	39049007043	Low-Income Community	2011–2015
Ohio	Franklin	39049007531	Low-Income Community	2011–2015
Ohio	Franklin	39049007534	Low-Income Community	2011–2015
Ohio	Franklin	39049007550	Low-Income Community	2011–2015
Ohio	Franklin	39049007710	Low-Income Community	2011–2015
Ohio	Franklin	39049007721	Low-Income Community	2011–2015
Ohio	Franklin	39049007812	Low-Income Community	2011–2015
Ohio	Franklin	39049007820	Low-Income Community	2011–2015
Ohio	Franklin	39049008110	Low-Income Community	2011–2015
Ohio	Franklin	39049008210	Low-Income Community	2011–2015
Ohio	Franklin	39049008230	Low-Income Community	2011–2015
Ohio	Franklin	39049008811	Low-Income Community	2011–2015
Ohio	Franklin	39049008812	Low-Income Community	2011–2015
Ohio	Franklin	39049008821	Low-Income Community	2011–2015
Ohio	Franklin	39049009210	Low-Income Community	2011–2015
Ohio	Franklin	39049009325	Low-Income Community	2011–2015
Ohio	Franklin	39049009383	Low-Income Community	2011–2015
Ohio	Franklin	39049009590	Low-Income Community	2011–2015
Ohio	Franklin	39049009600	Low-Income Community	2011–2015
Ohio	Franklin	39049009900	Low-Income Community	2011–2015
Ohio	Franklin	39049010300	Low-Income Community	2011–2015
Ohio	Gallia	39053953600	Low-Income Community	2011–2015
Ohio	Geauga	39055312400	Low-Income Community	2011–2015
Ohio	Greene	39057240200	Low-Income Community	2011–2015
Ohio	Greene	39057240600	Low-Income Community	2011–2015
Ohio	Guernsey	39059977900	Low-Income Community	2011–2015
Ohio	Hamilton	39061000200	Low-Income Community	2011–2015
Ohio	Hamilton	39061000900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Hamilton	39061001000	Low-Income Community	2011–2015
Ohio	Hamilton	39061001100	Low-Income Community	2011–2015
Ohio	Hamilton	39061001600	Low-Income Community	2011–2015
Ohio	Hamilton	39061001700	Low-Income Community	2011–2015
Ohio	Hamilton	39061002800	Low-Income Community	2011–2015
Ohio	Hamilton	39061003800	Low-Income Community	2011–2015
Ohio	Hamilton	39061005500	Low-Income Community	2011–2015
Ohio	Hamilton	39061006300	Low-Income Community	2011–2015
Ohio	Hamilton	39061006400	Low-Income Community	2011–2015
Ohio	Hamilton	39061006800	Low-Income Community	2011–2015
Ohio	Hamilton	39061006900	Low-Income Community	2011–2015
Ohio	Hamilton	39061007400	Low-Income Community	2011–2015
Ohio	Hamilton	39061007700	Low-Income Community	2011–2015
Ohio	Hamilton	39061007800	Low-Income Community	2011–2015
Ohio	Hamilton	39061008202	Low-Income Community	2011–2015
Ohio	Hamilton	39061008601	Low-Income Community	2011–2015
Ohio	Hamilton	39061009200	Low-Income Community	2011–2015
Ohio	Hamilton	39061009400	Low-Income Community	2011–2015
Ohio	Hamilton	39061021504	Low-Income Community	2011–2015
Ohio	Hamilton	39061022700	Low-Income Community	2011–2015
Ohio	Hamilton	39061025600	Low-Income Community	2011–2015
Ohio	Hamilton	39061026300	Low-Income Community	2011–2015
Ohio	Hamilton	39061026400	Low-Income Community	2011–2015
Ohio	Hamilton	39061026500	Low-Income Community	2011–2015
Ohio	Hamilton	39061027000	Low-Income Community	2011–2015
Ohio	Hamilton	39061027100	Low-Income Community	2011–2015
Ohio	Hamilton	39061027200	Low-Income Community	2011–2015
Ohio	Hamilton	39061027400	Low-Income Community	2011–2015
Ohio	Hancock	39063000100	Low-Income Community	2011–2015
Ohio	Harrison	39067975600	Low-Income Community	2011–2015
Ohio	Henry	39069000400	Low-Income Community	2011–2015
Ohio	Highland	39071954400	Low-Income Community	2011–2015
Ohio	Highland	39071954800	Low-Income Community	2011–2015
Ohio	Hocking	39073965200	Low-Income Community	2011–2015
Ohio	Holmes	39075976600	Low-Income Community	2011–2015
Ohio	Jackson	39079957200	Low-Income Community	2011–2015
Ohio	Jackson	39079957700	Low-Income Community	2011–2015
Ohio	Jefferson	39081000800	Low-Income Community	2011–2015
Ohio	Jefferson	39081011800	Low-Income Community	2011–2015
Ohio	Jefferson	39081012300	Low-Income Community	2011–2015
Ohio	Knox	39083007100	Low-Income Community	2011–2015
Ohio	Lake	39085204000	Low-Income Community	2011–2015
Ohio	Lake	39085204500	Low-Income Community	2011–2015
Ohio	Lawrence	39087050200	Low-Income Community	2011–2015
Ohio	Lawrence	39087050700	Low-Income Community	2011–2015
Ohio	Licking	39089753100	Low-Income Community	2011–2015
Ohio	Licking	39089758300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Logan	39091004500	Low-Income Community	2011–2015
Ohio	Lorain	39093022400	Low-Income Community	2011–2015
Ohio	Lorain	39093023000	Low-Income Community	2011–2015
Ohio	Lorain	39093023100	Low-Income Community	2011–2015
Ohio	Lorain	39093070800	Low-Income Community	2011–2015
Ohio	Lorain	39093097300	Low-Income Community	2011–2015
Ohio	Lucas	39095000800	Low-Income Community	2011–2015
Ohio	Lucas	39095001303	Low-Income Community	2012–2016
Ohio	Lucas	39095001400	Low-Income Community	2011–2015
Ohio	Lucas	39095001500	Low-Income Community	2011–2015
Ohio	Lucas	39095001600	Low-Income Community	2011–2015
Ohio	Lucas	39095001700	Low-Income Community	2011–2015
Ohio	Lucas	39095002200	Low-Income Community	2011–2015
Ohio	Lucas	39095002300	Low-Income Community	2011–2015
Ohio	Lucas	39095002600	Low-Income Community	2011–2015
Ohio	Lucas	39095002700	Low-Income Community	2011–2015
Ohio	Lucas	39095002800	Low-Income Community	2011–2015
Ohio	Lucas	39095002900	Low-Income Community	2011–2015
Ohio	Lucas	39095003300	Low-Income Community	2011–2015
Ohio	Lucas	39095003700	Low-Income Community	2011–2015
Ohio	Lucas	39095004600	Low-Income Community	2011–2015
Ohio	Lucas	39095004701	Low-Income Community	2011–2015
Ohio	Lucas	39095005400	Low-Income Community	2011–2015
Ohio	Mahoning	39099800600	Low-Income Community	2011–2015
Ohio	Mahoning	39099801300	Low-Income Community	2011–2015
Ohio	Mahoning	39099804000	Low-Income Community	2011–2015
Ohio	Mahoning	39099810200	Low-Income Community	2011–2015
Ohio	Mahoning	39099810800	Low-Income Community	2011–2015
Ohio	Mahoning	39099811100	Non-LIC Contiguous	2011–2015
Ohio	Mahoning	39099812400	Low-Income Community	2011–2015
Ohio	Mahoning	39099813700	Low-Income Community	2011–2015
Ohio	Mahoning	39099814000	Low-Income Community	2011–2015
Ohio	Mahoning	39099814100	Low-Income Community	2011–2015
Ohio	Marion	39101000100	Low-Income Community	2011–2015
Ohio	Medina	39103408201	Low-Income Community	2011–2015
Ohio	Medina	39103411002	Low-Income Community	2011–2015
Ohio	Meigs	39105964400	Low-Income Community	2011–2015
Ohio	Mercer	39107967400	Low-Income Community	2011–2015
Ohio	Miami	39109315300	Low-Income Community	2011–2015
Ohio	Monroe	39111966600	Low-Income Community	2011–2015
Ohio	Montgomery	39113000400	Low-Income Community	2011–2015
Ohio	Montgomery	39113000500	Low-Income Community	2011–2015
Ohio	Montgomery	39113000900	Low-Income Community	2011–2015
Ohio	Montgomery	39113001501	Low-Income Community	2011–2015
Ohio	Montgomery	39113001700	Low-Income Community	2011–2015
Ohio	Montgomery	39113001800	Low-Income Community	2011–2015
Ohio	Montgomery	39113001900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Montgomery	39113002000	Low-Income Community	2011–2015
Ohio	Montgomery	39113003402	Low-Income Community	2011–2015
Ohio	Montgomery	39113003404	Low-Income Community	2011–2015
Ohio	Montgomery	39113003500	Low-Income Community	2011–2015
Ohio	Montgomery	39113004100	Low-Income Community	2011–2015
Ohio	Montgomery	39113004200	Low-Income Community	2011–2015
Ohio	Montgomery	39113004600	Low-Income Community	2011–2015
Ohio	Montgomery	39113070300	Low-Income Community	2011–2015
Ohio	Montgomery	39113080400	Low-Income Community	2011–2015
Ohio	Montgomery	39113165100	Low-Income Community	2011–2015
Ohio	Montgomery	39113165200	Low-Income Community	2011–2015
Ohio	Morgan	39115968900	Low-Income Community	2011–2015
Ohio	Muskingum	39119911800	Low-Income Community	2011–2015
Ohio	Muskingum	39119912100	Low-Income Community	2011–2015
Ohio	Noble	39121968500	Low-Income Community	2011–2015
Ohio	Perry	39127965900	Non-LIC Contiguous	2011–2015
Ohio	Perry	39127966200	Low-Income Community	2011–2015
Ohio	Pickaway	39129020400	Low-Income Community	2011–2015
Ohio	Pike	39131952300	Low-Income Community	2011–2015
Ohio	Portage	39133600603	Low-Income Community	2011–2015
Ohio	Richland	39139000500	Low-Income Community	2011–2015
Ohio	Richland	39139000600	Low-Income Community	2011–2015
Ohio	Richland	39139003100	Low-Income Community	2011–2015
Ohio	Ross	39141955603	Low-Income Community	2011–2015
Ohio	Ross	39141956300	Low-Income Community	2011–2015
Ohio	Ross	39141956500	Low-Income Community	2011–2015
Ohio	Sandusky	39143961600	Low-Income Community	2011–2015
Ohio	Scioto	39145002600	Low-Income Community	2011–2015
Ohio	Scioto	39145003100	Low-Income Community	2011–2015
Ohio	Scioto	39145003500	Low-Income Community	2011–2015
Ohio	Scioto	39145003600	Low-Income Community	2011–2015
Ohio	Seneca	39147963200	Low-Income Community	2011–2015
Ohio	Stark	39151700100	Low-Income Community	2011–2015
Ohio	Stark	39151700800	Low-Income Community	2011–2015
Ohio	Stark	39151701100	Low-Income Community	2011–2015
Ohio	Stark	39151701300	Low-Income Community	2011–2015
Ohio	Stark	39151710400	Low-Income Community	2011–2015
Ohio	Stark	39151711600	Non-LIC Contiguous	2011–2015
Ohio	Stark	39151714200	Low-Income Community	2011–2015
Ohio	Stark	39151715000	Low-Income Community	2011–2015
Ohio	Summit	39153502101	Low-Income Community	2011–2015
Ohio	Summit	39153502102	Low-Income Community	2011–2015
Ohio	Summit	39153502200	Low-Income Community	2011–2015
Ohio	Summit	39153503600	Low-Income Community	2011–2015
Ohio	Summit	39153503800	Low-Income Community	2011–2015
Ohio	Summit	39153505400	Low-Income Community	2011–2015
Ohio	Summit	39153505600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Summit	39153505700	Low-Income Community	2011–2015
Ohio	Summit	39153505900	Low-Income Community	2011–2015
Ohio	Summit	39153506800	Low-Income Community	2011–2015
Ohio	Summit	39153508301	Low-Income Community	2011–2015
Ohio	Summit	39153508399	Low-Income Community	2011–2015
Ohio	Summit	39153508900	Low-Income Community	2011–2015
Ohio	Summit	39153510100	Low-Income Community	2011–2015
Ohio	Summit	39153510301	Low-Income Community	2011–2015
Ohio	Summit	39153520400	Low-Income Community	2011–2015
Ohio	Trumbull	39155920500	Low-Income Community	2011–2015
Ohio	Trumbull	39155921100	Low-Income Community	2011–2015
Ohio	Trumbull	39155921200	Low-Income Community	2011–2015
Ohio	Trumbull	39155933800	Low-Income Community	2011–2015
Ohio	Trumbull	39155933900	Low-Income Community	2011–2015
Ohio	Tuscarawas	39157021100	Low-Income Community	2011–2015
Ohio	Tuscarawas	39157022001	Low-Income Community	2011–2015
Ohio	Union	39159050500	Low-Income Community	2011–2015
Ohio	Van Wert	39161020600	Low-Income Community	2011–2015
Ohio	Van Wert	39161020700	Low-Income Community	2011–2015
Ohio	Vinton	39163953100	Low-Income Community	2011–2015
Ohio	Warren	39165030200	Low-Income Community	2011–2015
Ohio	Washington	39167020500	Low-Income Community	2011–2015
Ohio	Wayne	39169001200	Low-Income Community	2011–2015
Ohio	Wayne	39169003400	Low-Income Community	2011–2015
Ohio	Williams	39171950600	Low-Income Community	2011–2015
Ohio	Wood	39173021701	Low-Income Community	2011–2015
Ohio	Wyandot	39175938400	Low-Income Community	2011–2015
Oklahoma	Adair	40001376900	Low-Income Community	2011–2015
Oklahoma	Atoka	40005587700	Low-Income Community	2011–2015
Oklahoma	Blaine	40011958800	Low-Income Community	2012–2016
Oklahoma	Bryan	40013796300	Low-Income Community	2011–2015
Oklahoma	Bryan	40013796500	Low-Income Community	2011–2015
Oklahoma	Caddo	40015162100	Low-Income Community	2011–2015
Oklahoma	Carter	40019892800	Low-Income Community	2011–2015
Oklahoma	Cherokee	40021978100	Low-Income Community	2011–2015
Oklahoma	Choctaw	40023967200	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027200700	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027201203	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027201404	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027202402	Non-LIC Contiguous	2011–2015
Oklahoma	Comanche	40031001902	Low-Income Community	2011–2015
Oklahoma	Comanche	40031002500	Low-Income Community	2011–2015
Oklahoma	Craig	40035373300	Low-Income Community	2011–2015
Oklahoma	Creek	40037020102	Low-Income Community	2011–2015
Oklahoma	Creek	40037021000	Low-Income Community	2011–2015
Oklahoma	Custer	40039950800	Low-Income Community	2011–2015
Oklahoma	Custer	40039960600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Delaware	40041376000	Low-Income Community	2011–2015
Oklahoma	Garfield	40047000100	Low-Income Community	2011–2015
Oklahoma	Garfield	40047001500	Low-Income Community	2011–2015
Oklahoma	Garvin	40049681400	Low-Income Community	2011–2015
Oklahoma	Grady	40051000100	Low-Income Community	2011–2015
Oklahoma	Jackson	40065968700	Low-Income Community	2011–2015
Oklahoma	Johnston	40069660200	Low-Income Community	2011–2015
Oklahoma	Kay	40071000100	Low-Income Community	2011–2015
Oklahoma	Kay	40071001301	Low-Income Community	2011–2015
Oklahoma	Kiowa	40075963700	Low-Income Community	2011–2015
Oklahoma	Latimer	40077087200	Low-Income Community	2011–2015
Oklahoma	Le Flore	40079040302	Low-Income Community	2011–2015
Oklahoma	Le Flore	40079040303	Non-LIC Contiguous	2011–2015
Oklahoma	Le Flore	40079040402	Low-Income Community	2011–2015
Oklahoma	Logan	40083600300	Low-Income Community	2011–2015
Oklahoma	Logan	40083600600	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098200	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098500	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098600	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098700	Low-Income Community	2011–2015
Oklahoma	McIntosh	40091779700	Low-Income Community	2011–2015
Oklahoma	McIntosh	40091780200	Low-Income Community	2011–2015
Oklahoma	Marshall	40095094801	Low-Income Community	2011–2015
Oklahoma	Marshall	40095094802	Non-LIC Contiguous	2011–2015
Oklahoma	Mayes	40097040400	Low-Income Community	2011–2015
Oklahoma	Muskogee	40101000400	Low-Income Community	2011–2015
Oklahoma	Muskogee	40101000600	Low-Income Community	2011–2015
Oklahoma	Okfuskee	40107080900	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109100400	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109101300	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109101500	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102500	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102600	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102700	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103000	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103200	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103601	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103602	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103700	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103800	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109105100	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109105300	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106100	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106912	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106913	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109107303	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109108003	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Oklahoma	40109108207	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109109100	Low-Income Community	2011–2015
Oklahoma	Okmulgee	40111000100	Low-Income Community	2011–2015
Oklahoma	Okmulgee	40111000200	Low-Income Community	2011–2015
Oklahoma	Osage	40113940002	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574100	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574600	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574900	Low-Income Community	2011–2015
Oklahoma	Pawnee	40117957500	Low-Income Community	2011–2015
Oklahoma	Payne	40119010200	Low-Income Community	2011–2015
Oklahoma	Payne	40119010700	Low-Income Community	2011–2015
Oklahoma	Payne	40119011301	Low-Income Community	2012–2016
Oklahoma	Payne	40119011302	Low-Income Community	2011–2015
Oklahoma	Pittsburg	40121486400	Low-Income Community	2011–2015
Oklahoma	Pontotoc	40123089000	Low-Income Community	2011–2015
Oklahoma	Pontotoc	40123089100	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125500200	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125501001	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125501300	Low-Income Community	2011–2015
Oklahoma	Rogers	40131050101	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583300	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583400	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583500	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583600	Low-Income Community	2011–2015
Oklahoma	Sequoyah	40135030302	Low-Income Community	2011–2015
Oklahoma	Stephens	40137000600	Low-Income Community	2011–2015
Oklahoma	Tillman	40141070400	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000100	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143001000	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143001200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002100	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002301	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002500	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143003400	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143004600	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143004900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143005900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006600	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006801	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143007402	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143007608	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143008001	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143008002	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143009300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Tulsa	40143011100	Low-Income Community	2011–2015
Oklahoma	Wagoner	40145030102	Low-Income Community	2011–2015
Oklahoma	Washington	40147000300	Low-Income Community	2011–2015
Oregon	Baker	41001950500	Low-Income Community	2011–2015
Oregon	Benton	41003000100	Low-Income Community	2011–2015
Oregon	Benton	41003010600	Low-Income Community	2011–2015
Oregon	Clackamas	41005022107	Low-Income Community	2011–2015
Oregon	Clackamas	41005022108	Low-Income Community	2011–2015
Oregon	Clackamas	41005022201	Low-Income Community	2011–2015
Oregon	Clackamas	41005022400	Non-LIC Contiguous	2011–2015
Oregon	Clackamas	41005022500	Low-Income Community	2011–2015
Oregon	Clackamas	41005024400	Low-Income Community	2012–2016
Oregon	Clatsop	41007950300	Low-Income Community	2011–2015
Oregon	Columbia	41009970700	Low-Income Community	2011–2015
Oregon	Coos	41011000300	Low-Income Community	2011–2015
Oregon	Coos	41011000504	Low-Income Community	2011–2015
Oregon	Crook	41013950300	Low-Income Community	2011–2015
Oregon	Curry	41015950100	Low-Income Community	2011–2015
Oregon	Deschutes	41017000900	Low-Income Community	2011–2015
Oregon	Deschutes	41017001500	Low-Income Community	2011–2015
Oregon	Deschutes	41017001600	Low-Income Community	2011–2015
Oregon	Deschutes	41017001800	Low-Income Community	2011–2015
Oregon	Douglas	41019010000	Low-Income Community	2011–2015
Oregon	Douglas	41019130000	Low-Income Community	2011–2015
Oregon	Harney	41025960100	Low-Income Community	2011–2015
Oregon	Hood River	41027950100	Non-LIC Contiguous	2011–2015
Oregon	Hood River	41027950300	Low-Income Community	2011–2015
Oregon	Jackson	41029000100	Low-Income Community	2011–2015
Oregon	Jackson	41029001200	Low-Income Community	2011–2015
Oregon	Jackson	41029001301	Low-Income Community	2011–2015
Oregon	Jefferson	41031940000	Low-Income Community	2011–2015
Oregon	Jefferson	41031960202	Low-Income Community	2011–2015
Oregon	Josephine	41033360500	Low-Income Community	2011–2015
Oregon	Klamath	41035970200	Low-Income Community	2011–2015
Oregon	Klamath	41035971800	Low-Income Community	2011–2015
Oregon	Lake	41037960200	Low-Income Community	2011–2015
Oregon	Lane	41039003302	Low-Income Community	2011–2015
Oregon	Lane	41039003600	Non-LIC Contiguous	2011–2015
Oregon	Lane	41039003700	Low-Income Community	2011–2015
Oregon	Lane	41039003900	Low-Income Community	2011–2015
Oregon	Lane	41039004300	Low-Income Community	2011–2015
Oregon	Lincoln	41041950304	Low-Income Community	2012–2016
Oregon	Linn	41043020100	Low-Income Community	2011–2015
Oregon	Linn	41043020400	Low-Income Community	2011–2015
Oregon	Malheur	41045970300	Low-Income Community	2011–2015
Oregon	Malheur	41045970500	Low-Income Community	2011–2015
Oregon	Marion	41047000200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Oregon	Marion	41047000300	Low-Income Community	2011–2015
Oregon	Marion	41047001000	Low-Income Community	2011–2015
Oregon	Marion	41047010303	Non-LIC Contiguous	2011–2015
Oregon	Marion	41047010305	Low-Income Community	2011–2015
Oregon	Multnomah	41051001101	Low-Income Community	2011–2015
Oregon	Multnomah	41051002100	Low-Income Community	2011–2015
Oregon	Multnomah	41051002303	Low-Income Community	2011–2015
Oregon	Multnomah	41051005100	Low-Income Community	2011–2015
Oregon	Multnomah	41051005600	Low-Income Community	2011–2015
Oregon	Multnomah	41051005700	Non-LIC Contiguous	2011–2015
Oregon	Multnomah	41051007300	Low-Income Community	2011–2015
Oregon	Multnomah	41051008100	Low-Income Community	2011–2015
Oregon	Multnomah	41051008201	Low-Income Community	2011–2015
Oregon	Multnomah	41051009603	Low-Income Community	2011–2015
Oregon	Multnomah	41051009604	Low-Income Community	2011–2015
Oregon	Multnomah	41051009701	Low-Income Community	2011–2015
Oregon	Multnomah	41051009801	Low-Income Community	2011–2015
Oregon	Multnomah	41051010001	Low-Income Community	2011–2015
Oregon	Multnomah	41051010100	Low-Income Community	2011–2015
Oregon	Multnomah	41051010304	Low-Income Community	2011–2015
Oregon	Multnomah	41051010600	Low-Income Community	2011–2015
Oregon	Polk	41053005100	Low-Income Community	2011–2015
Oregon	Polk	41053020202	Low-Income Community	2011–2015
Oregon	Sherman	41055950100	Low-Income Community	2011–2015
Oregon	Tillamook	41057960200	Low-Income Community	2011–2015
Oregon	Umatilla	41059940000	Low-Income Community	2011–2015
Oregon	Umatilla	41059950200	Low-Income Community	2011–2015
Oregon	Umatilla	41059951000	Low-Income Community	2011–2015
Oregon	Union	41061970800	Low-Income Community	2011–2015
Oregon	Wasco	41065970400	Low-Income Community	2011–2015
Oregon	Wasco	41065970500	Low-Income Community	2011–2015
Oregon	Washington	41067030700	Low-Income Community	2011–2015
Oregon	Washington	41067030900	Low-Income Community	2011–2015
Oregon	Washington	41067031300	Low-Income Community	2011–2015
Oregon	Washington	41067031402	Low-Income Community	2011–2015
Oregon	Washington	41067032003	Low-Income Community	2011–2015
Oregon	Washington	41067032005	Low-Income Community	2011–2015
Oregon	Washington	41067032501	Low-Income Community	2011–2015
Oregon	Washington	41067033200	Low-Income Community	2011–2015
Oregon	Yamhill	41071030202	Low-Income Community	2011–2015
Oregon	Yamhill	41071030502	Low-Income Community	2011–2015
Oregon	Yamhill	41071030601	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003010300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003030500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003050100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003050900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003051100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Allegheny	42003120700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003202200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003250700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003250900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003261400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003261500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003270400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003271500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003290100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003290200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003300100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003401200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003403500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003424000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003462100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003462600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003463900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003464400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003481000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003499300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003499400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003504100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003508000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003509400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003513800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003514000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003515200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003515300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003523100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003523200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003524000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003551900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003552100	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Allegheny	42003552200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003560600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562900	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007601200	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007601300	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007602800	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007605700	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000100	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000400	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000900	Low-Income Community	2011–2015
Pennsylvania	Berks	42011001300	Low-Income Community	2011–2015
Pennsylvania	Berks	42011002500	Low-Income Community	2011–2015
Pennsylvania	Berks	42011011200	Low-Income Community	2011–2015
Pennsylvania	Blair	42013100300	Low-Income Community	2011–2015
Pennsylvania	Blair	42013100700	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101700	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101800	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101900	Low-Income Community	2011–2015
Pennsylvania	Bradford	42015951000	Low-Income Community	2011–2015
Pennsylvania	Bucks	42017100302	Low-Income Community	2011–2015
Pennsylvania	Bucks	42017100600	Low-Income Community	2011–2015
Pennsylvania	Butler	42019902400	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000100	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000200	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000300	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021013400	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021013500	Low-Income Community	2011–2015
Pennsylvania	Cameron	42023960100	Low-Income Community	2011–2015
Pennsylvania	Centre	42027010300	Low-Income Community	2011–2015
Pennsylvania	Centre	42027011100	Low-Income Community	2011–2015
Pennsylvania	Centre	42027012500	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305400	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305500	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305600	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305700	Low-Income Community	2011–2015
Pennsylvania	Clarion	42031160102	Low-Income Community	2011–2015
Pennsylvania	Clarion	42031160600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Clearfield	42033330200	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033330300	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033331100	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033331200	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030100	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030600	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030700	Low-Income Community	2011–2015
Pennsylvania	Columbia	42037050600	Low-Income Community	2011–2015
Pennsylvania	Columbia	42037051200	Low-Income Community	2011–2015
Pennsylvania	Cumberland	42041012000	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020100	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020300	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020600	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021100	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021300	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021400	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045402000	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045403300	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045405000	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045406500	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045406600	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045410700	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000100	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000300	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000400	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000600	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000800	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001000	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001200	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001500	Low-Income Community	2011–2015
Pennsylvania	Fayette	42051260700	Low-Income Community	2011–2015
Pennsylvania	Fayette	42051260800	Low-Income Community	2011–2015
Pennsylvania	Greene	42059970100	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961000	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961101	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961102	Low-Income Community	2011–2015
Pennsylvania	Jefferson	42065950200	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100200	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100300	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100400	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100600	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069102500	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069102600	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069111200	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071000800	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071000900	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071001000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Lancaster	42071001400	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071011200	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071011300	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000400	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000700	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000800	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000900	Low-Income Community	2011–2015
Pennsylvania	Lebanon	42075000100	Low-Income Community	2011–2015
Pennsylvania	Lebanon	42075000200	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001000	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001401	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001501	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001800	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077009700	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079200100	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079215200	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217001	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217400	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217500	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000400	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000600	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000900	Low-Income Community	2011–2015
Pennsylvania	McKean	42083420200	Low-Income Community	2011–2015
Pennsylvania	McKean	42083420300	Low-Income Community	2011–2015
Pennsylvania	Mercer	42085030300	Low-Income Community	2011–2015
Pennsylvania	Mercer	42085033200	Low-Income Community	2011–2015
Pennsylvania	Monroe	42089300800	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091203902	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091208801	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091208904	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091209000	Low-Income Community	2011–2015
Pennsylvania	Montour	42093050300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095010700	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095010800	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095011000	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095011300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014200	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014400	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014600	Low-Income Community	2011–2015
Pennsylvania	Northumberland	42097081500	Low-Income Community	2011–2015
Pennsylvania	Northumberland	42097082000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101000200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101003001	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Philadelphia	42101003300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101003901	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101005600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101006900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008302	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008602	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101011100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016701	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016702	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017601	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017602	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Philadelphia	42101017701	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017702	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101018300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101018400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020101	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020102	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026302	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101029100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101033400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101036900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101038100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101980000	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107001300	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107002600	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107002700	Low-Income Community	2011–2015
Pennsylvania	Somerset	42111021100	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200500	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200700	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200900	Low-Income Community	2011–2015
Pennsylvania	Warren	42123970800	Low-Income Community	2011–2015
Pennsylvania	Warren	42123970900	Low-Income Community	2011–2015
Pennsylvania	Washington	42125783200	Low-Income Community	2011–2015
Pennsylvania	Washington	42125783300	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129800100	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129800700	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129802800	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129803600	Low-Income Community	2011–2015
Pennsylvania	York	42133000300	Low-Income Community	2011–2015
Pennsylvania	York	42133000600	Low-Income Community	2011–2015
Pennsylvania	York	42133001000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	York	42133001200	Low-Income Community	2011–2015
Pennsylvania	York	42133001600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003425000	Non-LIC Contiguous	2011–2015
Pennsylvania	Allegheny	42003461000	Non-LIC Contiguous	2011–2015
Pennsylvania	Allegheny	42003564400	Non-LIC Contiguous	2011–2015
Pennsylvania	Centre	42027010400	Non-LIC Contiguous	2011–2015
Pennsylvania	Clearfield	42033330100	Non-LIC Contiguous	2011–2015
Pennsylvania	Clearfield	42033330400	Non-LIC Contiguous	2011–2015
Pennsylvania	Jefferson	42065950100	Non-LIC Contiguous	2011–2015
Pennsylvania	Lackawanna	42069111300	Non-LIC Contiguous	2011–2015
Pennsylvania	Lehigh	42077009100	Non-LIC Contiguous	2011–2015
Pennsylvania	Luzerne	42079217300	Non-LIC Contiguous	2011–2015
Pennsylvania	Philadelphia	42101014300	Non-LIC Contiguous	2011–2015
Puerto Rico	Adjuntas	72001956300	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956400	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956500	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956600	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956700	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956800	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430100	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430200	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430300	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430401	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430402	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430501	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430502	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430601	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430602	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400100	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400300	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400400	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400501	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400502	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400600	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400700	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400800	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400900	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401000	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401100	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401200	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401301	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401302	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401401	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401402	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230100	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230200	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Aguas Buenas	72007230400	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230501	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230502	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250100	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250200	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250300	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250400	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250500	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250600	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810100	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810200	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810300	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810400	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810500	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810600	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300101	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300102	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300200	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300301	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300302	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300400	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300500	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300800	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301000	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301100	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301200	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301300	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301400	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301500	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301600	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301800	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301900	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302000	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302100	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302201	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302202	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302300	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280101	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280102	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280201	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280202	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590100	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590200	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Barceloneta	72017590400	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952201	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952202	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952301	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952302	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952400	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952500	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030101	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030103	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030104	Non-LIC Contiguous	2011–2015
Puerto Rico	Bayamón	72021030105	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030200	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030300	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030700	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030800	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030901	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030902	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030903	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030904	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031004	Non-LIC Contiguous	2011–2015
Puerto Rico	Bayamón	72021031005	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031013	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031021	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031023	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031031	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031033	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031101	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031113	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031114	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031121	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031122	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031123	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031124	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031125	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031201	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031202	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031203	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031301	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031304	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031305	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031306	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031307	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031401	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031402	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031403	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031501	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031502	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Bayamón	72021031503	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031611	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031612	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031621	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031622	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031631	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031632	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031641	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031651	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031701	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031702	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031703	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031704	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031800	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031900	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032000	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032100	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032200	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032301	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032302	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830101	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830102	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830200	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830300	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830400	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830502	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830503	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830504	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830603	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830604	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200100	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200302	Non-LIC Contiguous	2011–2015
Puerto Rico	Caguas	72025200304	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200400	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200600	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200700	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200800	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200900	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201000	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201300	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201400	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201600	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Caguas	72025201800	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201900	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202000	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202100	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202300	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202402	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202403	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202404	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202601	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202602	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202701	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202702	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202800	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320100	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320200	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320300	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320401	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320402	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320500	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320600	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100101	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100103	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100104	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100200	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100400	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100502	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100503	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100504	Non-LIC Contiguous	2011–2015
Puerto Rico	Canóvanas	72029100601	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100602	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100700	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100800	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050105	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050110	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050211	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050212	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050221	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050222	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050231	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050232	Non-LIC Contiguous	2011–2015
Puerto Rico	Carolina	72031050241	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050242	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050302	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050311	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050321	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Carolina	72031050331	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050341	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050401	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050402	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050501	Non-LIC Contiguous	2011–2015
Puerto Rico	Carolina	72031050503	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050504	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050600	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050700	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050803	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050811	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050812	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050821	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050822	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050831	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050841	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050901	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050902	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051001	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051002	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051102	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020200	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020302	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020403	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020422	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020423	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020425	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020426	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020427	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033980003	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260100	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260201	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260202	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260300	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260400	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260500	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260600	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260700	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260800	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260901	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260902	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160201	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160202	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160300	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955600	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955700	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Ciales	72039955900	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240101	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240102	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240201	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240202	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240300	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240401	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240402	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240500	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240601	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240602	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043953900	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954000	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954100	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954200	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954300	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954400	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954500	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954600	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954700	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951700	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951800	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951900	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045952000	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045952100	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530100	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530200	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530300	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530400	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530500	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530600	Low-Income Community	2011–2015
Puerto Rico	Culebra	72049950500	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540100	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540200	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540300	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540400	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540500	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540600	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540700	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150102	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150104	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150200	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150301	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150302	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150400	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150500	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150601	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Fajardo	72053150602	Low-Income Community	2011–2015
Puerto Rico	Florida	72054580100	Low-Income Community	2011–2015
Puerto Rico	Florida	72054580200	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055960900	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961000	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961100	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961200	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961300	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961400	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961500	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270100	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270201	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270202	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270300	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270400	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270500	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270600	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270700	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270800	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740101	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740102	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740200	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740300	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740400	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040101	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040102	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040103	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040200	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040302	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040303	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040304	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040403	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040411	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040421	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040422	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040432	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040442	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040500	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040601	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040700	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040800	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040900	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061041000	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061041100	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210100	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210201	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210202	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Gurabo	72063210300	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210400	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210502	Non-LIC Contiguous	2011–2015
Puerto Rico	Gurabo	72063210503	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210504	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310100	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310200	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310300	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310400	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310500	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310600	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820100	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820300	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820400	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820500	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180100	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180201	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180202	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180301	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180302	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180400	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180500	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180600	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180700	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180800	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180901	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180902	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410100	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410200	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410300	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410401	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410402	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410500	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410600	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410701	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410702	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956000	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956100	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956200	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710102	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710200	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710301	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710302	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710400	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710500	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710600	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Juana Díaz	72075710800	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710901	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710902	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075711002	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500100	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500200	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500301	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500302	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500401	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500402	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850101	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850102	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850200	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850300	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850400	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957700	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957800	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957900	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958000	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958100	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958200	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958300	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958400	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959700	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959800	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959900	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190101	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190102	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190201	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190202	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190301	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190302	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110101	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110102	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110200	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110301	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110302	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110303	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110304	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110400	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110500	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110600	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140101	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140102	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140201	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140202	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Manatí	72091570100	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570201	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570202	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570300	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570400	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570500	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570600	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570700	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570800	Low-Income Community	2011–2015
Puerto Rico	Maricao	72093960100	Low-Income Community	2011–2015
Puerto Rico	Maricao	72093960200	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951400	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951500	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951600	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080100	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080200	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080300	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080400	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080500	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080600	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080800	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080900	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081000	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081100	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081200	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081300	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081501	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081512	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081522	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081601	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081602	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081700	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081800	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081900	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082001	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082012	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082022	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082102	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082103	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082104	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420100	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420200	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420301	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420302	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420401	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420402	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Morovis	72101955201	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955202	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955300	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955401	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955402	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955500	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170100	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170200	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170300	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170400	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520100	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520200	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520300	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520400	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520500	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954801	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954802	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954901	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954902	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955001	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955002	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955100	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290100	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290200	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290300	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290400	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730100	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730200	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730300	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730400	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730700	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070100	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070201	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070202	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070300	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070400	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070502	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070503	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070513	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070514	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070522	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071000	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071200	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Ponce	72113071401	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071402	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071500	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071601	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071602	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071700	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072000	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072101	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072102	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072201	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072202	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072300	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072400	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072500	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072600	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072701	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072703	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072704	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073001	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073002	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073003	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073004	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073005	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073006	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073009	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073010	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330100	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330200	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330300	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330400	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959400	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959500	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959600	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130101	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130200	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130300	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130401	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130402	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130500	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130601	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130602	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130701	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130702	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Sabana Grande	72121960400	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960500	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960600	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960700	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960800	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952600	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952700	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952800	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952900	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953000	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953100	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953200	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840100	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840200	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840300	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840400	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840500	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840600	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000506	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001000	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001200	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001301	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001302	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001600	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002002	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003501	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Juan	72127003502	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003902	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004306	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005101	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005102	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005103	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005201	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005202	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005204	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005214	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005215	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005401	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005402	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005403	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005601	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006101	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006102	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007004	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Juan	72127007700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008001	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008002	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008100	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127008201	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008202	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008601	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127008602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008603	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009111	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009112	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009121	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009122	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009123	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009601	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009603	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009624	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009901	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009902	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009903	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127010001	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010012	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010022	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127010032	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010042	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980103	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980200	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220100	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220200	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220300	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220401	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Lorenzo	72129220402	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220501	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220502	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220600	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220700	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131009200	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958500	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958700	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958800	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958900	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959000	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959200	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959300	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959500	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953300	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953500	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953600	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953700	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953800	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510102	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510200	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510300	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510400	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510502	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510503	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510504	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510601	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510602	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510701	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510702	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120200	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120300	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120400	Non-LIC Contiguous	2011–2015
Puerto Rico	Toa Baja	72137120500	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120600	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120700	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120800	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120900	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121001	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121002	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121100	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121200	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121300	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121400	Non-LIC Contiguous	2011–2015
Puerto Rico	Toa Baja	72137121701	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121702	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121801	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Toa Baja	72137121802	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121900	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122001	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122100	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122201	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122202	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122400	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060102	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060103	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060104	Non-LIC Contiguous	2011–2015
Puerto Rico	Trujillo Alto	72139060211	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060212	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060222	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060223	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060301	Non-LIC Contiguous	2011–2015
Puerto Rico	Trujillo Alto	72139060302	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060401	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060403	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060501	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060502	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141956900	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957000	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957100	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957200	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957300	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957400	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957500	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957600	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550100	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550200	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550300	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550400	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550500	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550601	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550602	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560100	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560201	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560204	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560300	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560401	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560402	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560500	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560600	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560701	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560702	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560801	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Vega Baja	72145560900	Low-Income Community	2011–2015
Puerto Rico	Vieques	72147950500	Low-Income Community	2011–2015
Puerto Rico	Vieques	72147950600	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720100	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720300	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720400	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720502	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720503	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720504	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950600	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950700	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950800	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950900	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951000	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951100	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951200	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951300	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750101	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750102	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750201	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750202	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750300	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750400	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750501	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750502	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750503	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750601	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750602	Low-Income Community	2011–2015
Rhode Island	Bristol	44001030500	Low-Income Community	2011–2015
Rhode Island	Bristol	44001030700	Low-Income Community	2011–2015
Rhode Island	Kent	44003020200	Low-Income Community	2011–2015
Rhode Island	Newport	44005040500	Low-Income Community	2011–2015
Rhode Island	Providence	44007000101	Low-Income Community	2011–2015
Rhode Island	Providence	44007000200	Low-Income Community	2011–2015
Rhode Island	Providence	44007000600	Low-Income Community	2011–2015
Rhode Island	Providence	44007000800	Low-Income Community	2011–2015
Rhode Island	Providence	44007001900	Low-Income Community	2011–2015
Rhode Island	Providence	44007002500	Low-Income Community	2011–2015
Rhode Island	Providence	44007010400	Low-Income Community	2011–2015
Rhode Island	Providence	44007011100	Low-Income Community	2011–2015
Rhode Island	Providence	44007011200	Low-Income Community	2011–2015
Rhode Island	Providence	44007011800	Low-Income Community	2012–2016
Rhode Island	Providence	44007014700	Low-Income Community	2011–2015
Rhode Island	Providence	44007015100	Low-Income Community	2011–2015
Rhode Island	Providence	44007015200	Low-Income Community	2011–2015
Rhode Island	Providence	44007016100	Low-Income Community	2011–2015
Rhode Island	Providence	44007016700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Rhode Island	Providence	44007017900	Low-Income Community	2011–2015
Rhode Island	Providence	44007018000	Low-Income Community	2011–2015
Rhode Island	Providence	44007018500	Low-Income Community	2011–2015
Rhode Island	Washington	44009050801	Low-Income Community	2011–2015
Rhode Island	Washington	44009051400	Low-Income Community	2011–2015
Rhode Island	Washington	44009051504	Low-Income Community	2011–2015
South Carolina	Abbeville	45001950400	Low-Income Community	2011–2015
South Carolina	Aiken	45003020802	Non-LIC Contiguous	2011–2015
South Carolina	Aiken	45003020902	Low-Income Community	2011–2015
South Carolina	Aiken	45003021400	Low-Income Community	2011–2015
South Carolina	Allendale	45005970200	Low-Income Community	2011–2015
South Carolina	Anderson	45007000800	Low-Income Community	2011–2015
South Carolina	Anderson	45007011901	Low-Income Community	2011–2015
South Carolina	Anderson	45007012002	Low-Income Community	2011–2015
South Carolina	Anderson	45007012300	Low-Income Community	2011–2015
South Carolina	Bamberg	45009960100	Low-Income Community	2011–2015
South Carolina	Bamberg	45009960200	Low-Income Community	2011–2015
South Carolina	Barnwell	45011970500	Low-Income Community	2011–2015
South Carolina	Beaufort	45013000200	Low-Income Community	2011–2015
South Carolina	Beaufort	45013000600	Low-Income Community	2011–2015
South Carolina	Beaufort	45013010800	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020102	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020201	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020302	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020506	Non-LIC Contiguous	2011–2015
South Carolina	Calhoun	45017950200	Low-Income Community	2011–2015
South Carolina	Charleston	45019000700	Low-Income Community	2011–2015
South Carolina	Charleston	45019002400	Low-Income Community	2011–2015
South Carolina	Charleston	45019004000	Low-Income Community	2011–2015
South Carolina	Charleston	45019004300	Low-Income Community	2011–2015
South Carolina	Charleston	45019004400	Low-Income Community	2011–2015
South Carolina	Charleston	45019005300	Low-Income Community	2011–2015
South Carolina	Charleston	45019005400	Low-Income Community	2011–2015
South Carolina	Charleston	45019005500	Low-Income Community	2011–2015
South Carolina	Cherokee	45021970201	Low-Income Community	2011–2015
South Carolina	Cherokee	45021970401	Low-Income Community	2011–2015
South Carolina	Chester	45023020200	Low-Income Community	2011–2015
South Carolina	Chester	45023020300	Low-Income Community	2011–2015
South Carolina	Chesterfield	45025950101	Low-Income Community	2011–2015
South Carolina	Chesterfield	45025950502	Low-Income Community	2011–2015
South Carolina	Clarendon	45027960300	Low-Income Community	2011–2015
South Carolina	Clarendon	45027960500	Low-Income Community	2011–2015
South Carolina	Colleton	45029970401	Low-Income Community	2011–2015
South Carolina	Colleton	45029970402	Non-LIC Contiguous	2011–2015
South Carolina	Darlington	45031010600	Low-Income Community	2011–2015
South Carolina	Darlington	45031011500	Low-Income Community	2011–2015
South Carolina	Dillon	45033970300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
South Carolina	Dillon	45033970400	Low-Income Community	2011–2015
South Carolina	Dillon	45033970600	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010200	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010400	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010700	Low-Income Community	2011–2015
South Carolina	Edgefield	45037970400	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960100	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960300	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960400	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960500	Low-Income Community	2011–2015
South Carolina	Florence	45041000700	Low-Income Community	2011–2015
South Carolina	Florence	45041001000	Low-Income Community	2011–2015
South Carolina	Florence	45041002000	Low-Income Community	2011–2015
South Carolina	Florence	45041002201	Low-Income Community	2011–2015
South Carolina	Florence	45041002500	Low-Income Community	2011–2015
South Carolina	Georgetown	45043920201	Low-Income Community	2011–2015
South Carolina	Georgetown	45043920302	Non-LIC Contiguous	2011–2015
South Carolina	Georgetown	45043920700	Low-Income Community	2011–2015
South Carolina	Greenville	45045000500	Low-Income Community	2011–2015
South Carolina	Greenville	45045000700	Low-Income Community	2011–2015
South Carolina	Greenville	45045000800	Low-Income Community	2011–2015
South Carolina	Greenville	45045002005	Low-Income Community	2011–2015
South Carolina	Greenville	45045002303	Low-Income Community	2011–2015
South Carolina	Greenville	45045002505	Low-Income Community	2011–2015
South Carolina	Greenville	45045003401	Low-Income Community	2011–2015
South Carolina	Greenville	45045003904	Low-Income Community	2011–2015
South Carolina	Greenville	45045004300	Low-Income Community	2011–2015
South Carolina	Greenwood	45047970600	Low-Income Community	2011–2015
South Carolina	Greenwood	45047970702	Low-Income Community	2011–2015
South Carolina	Hampton	45049920300	Low-Income Community	2011–2015
South Carolina	Horry	45051020200	Low-Income Community	2011–2015
South Carolina	Horry	45051050600	Low-Income Community	2011–2015
South Carolina	Horry	45051050700	Low-Income Community	2011–2015
South Carolina	Horry	45051070200	Low-Income Community	2011–2015
South Carolina	Horry	45051070300	Low-Income Community	2011–2015
South Carolina	Horry	45051080102	Low-Income Community	2011–2015
South Carolina	Jasper	45053950300	Low-Income Community	2011–2015
South Carolina	Kershaw	45055970601	Low-Income Community	2011–2015
South Carolina	Kershaw	45055970800	Low-Income Community	2011–2015
South Carolina	Lancaster	45057010700	Low-Income Community	2011–2015
South Carolina	Lancaster	45057010800	Low-Income Community	2011–2015
South Carolina	Laurens	45059920301	Non-LIC Contiguous	2011–2015
South Carolina	Laurens	45059920400	Low-Income Community	2011–2015
South Carolina	Laurens	45059920700	Low-Income Community	2011–2015
South Carolina	Lee	45061920200	Low-Income Community	2011–2015
South Carolina	Lee	45061920302	Low-Income Community	2011–2015
South Carolina	Lexington	45063020201	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
South Carolina	Lexington	45063020300	Low-Income Community	2011–2015
South Carolina	Lexington	45063020505	Low-Income Community	2011–2015
South Carolina	Lexington	45063020509	Low-Income Community	2011–2015
South Carolina	Lexington	45063020706	Low-Income Community	2011–2015
South Carolina	Lexington	45063021402	Low-Income Community	2011–2015
South Carolina	McCormick	45065920200	Low-Income Community	2011–2015
South Carolina	Marion	45067950300	Low-Income Community	2011–2015
South Carolina	Marion	45067950600	Low-Income Community	2011–2015
South Carolina	Marlboro	45069960100	Low-Income Community	2011–2015
South Carolina	Marlboro	45069960302	Low-Income Community	2011–2015
South Carolina	Newberry	45071950502	Low-Income Community	2011–2015
South Carolina	Oconee	45073030602	Low-Income Community	2011–2015
South Carolina	Oconee	45073030701	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075010200	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075010600	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075011300	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075011400	Low-Income Community	2011–2015
South Carolina	Pickens	45077010700	Non-LIC Contiguous	2011–2015
South Carolina	Pickens	45077010801	Low-Income Community	2011–2015
South Carolina	Pickens	45077011001	Low-Income Community	2011–2015
South Carolina	Richland	45079000100	Low-Income Community	2011–2015
South Carolina	Richland	45079000200	Low-Income Community	2011–2015
South Carolina	Richland	45079000500	Low-Income Community	2011–2015
South Carolina	Richland	45079000700	Low-Income Community	2011–2015
South Carolina	Richland	45079010600	Low-Income Community	2011–2015
South Carolina	Richland	45079010703	Low-Income Community	2011–2015
South Carolina	Richland	45079010803	Low-Income Community	2011–2015
South Carolina	Richland	45079010900	Low-Income Community	2011–2015
South Carolina	Richland	45079011800	Low-Income Community	2011–2015
South Carolina	Saluda	45081960400	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020301	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020400	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020500	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020702	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020800	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083023202	Non-LIC Contiguous	2011–2015
South Carolina	Sumter	45085000600	Low-Income Community	2011–2015
South Carolina	Sumter	45085001100	Low-Income Community	2011–2015
South Carolina	Sumter	45085001300	Low-Income Community	2011–2015
South Carolina	Union	45087030100	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970501	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970502	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970600	Low-Income Community	2011–2015
South Carolina	York	45091060200	Low-Income Community	2011–2015
South Carolina	York	45091060300	Low-Income Community	2011–2015
South Carolina	York	45091060401	Low-Income Community	2011–2015
South Carolina	York	45091060501	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
South Dakota	Beadle	46005956900	Low-Income Community	2011–2015
South Dakota	Beadle	46005957000	Low-Income Community	2011–2015
South Dakota	Brookings	46011958900	Low-Income Community	2011–2015
South Dakota	Brown	46013951500	Low-Income Community	2011–2015
South Dakota	Brule	46015973100	Low-Income Community	2011–2015
South Dakota	Charles Mix	46023940300	Low-Income Community	2011–2015
South Dakota	Clay	46027965700	Low-Income Community	2011–2015
South Dakota	Codington	46029954400	Low-Income Community	2011–2015
South Dakota	Dewey	46041941500	Low-Income Community	2011–2015
South Dakota	Lake	46079960200	Low-Income Community	2011–2015
South Dakota	Lyman	46085940100	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099000500	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099000700	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099001001	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099010405	Non-LIC Contiguous	2011–2015
South Dakota	Pennington	46103010200	Low-Income Community	2011–2015
South Dakota	Pennington	46103010400	Low-Income Community	2011–2015
South Dakota	Pennington	46103010500	Low-Income Community	2011–2015
South Dakota	Pennington	46103011500	Low-Income Community	2011–2015
South Dakota	Roberts	46109940400	Low-Income Community	2011–2015
South Dakota	Oglala Lakota County/ Shannon	46113940500	Low-Income Community	2011–2015
South Dakota	Todd	46121940200	Low-Income Community	2011–2015
South Dakota	Tripp	46123971700	Low-Income Community	2011–2015
South Dakota	Yankton	46135966301	Non-LIC Contiguous	2011–2015
South Dakota	Yankton	46135966302	Low-Income Community	2011–2015
Tennessee	Anderson	47001020500	Low-Income Community	2011–2015
Tennessee	Anderson	47001021000	Low-Income Community	2011–2015
Tennessee	Bedford	47003950500	Low-Income Community	2011–2015
Tennessee	Benton	47005963200	Low-Income Community	2011–2015
Tennessee	Bledsoe	47007953100	Low-Income Community	2011–2015
Tennessee	Blount	47009010100	Low-Income Community	2011–2015
Tennessee	Blount	47009010200	Low-Income Community	2011–2015
Tennessee	Blount	47009010301	Low-Income Community	2012–2016
Tennessee	Blount	47009010302	Low-Income Community	2011–2015
Tennessee	Bradley	47011010700	Low-Income Community	2011–2015
Tennessee	Cannon	47015960200	Low-Income Community	2011–2015
Tennessee	Carroll	47017962100	Low-Income Community	2011–2015
Tennessee	Carter	47019071200	Low-Income Community	2011–2015
Tennessee	Cheatham	47021070104	Low-Income Community	2012–2016
Tennessee	Claiborne	47025970300	Low-Income Community	2011–2015
Tennessee	Clay	47027955000	Low-Income Community	2011–2015
Tennessee	Cocke	47029920200	Low-Income Community	2011–2015
Tennessee	Cocke	47029920700	Low-Income Community	2011–2015
Tennessee	Crockett	47033961100	Low-Income Community	2011–2015
Tennessee	Cumberland	47035970400	Low-Income Community	2011–2015
Tennessee	Cumberland	47035970800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Davidson	47037010401	Low-Income Community	2011–2015
Tennessee	Davidson	47037012600	Low-Income Community	2011–2015
Tennessee	Davidson	47037013601	Low-Income Community	2011–2015
Tennessee	Davidson	47037013602	Low-Income Community	2011–2015
Tennessee	Davidson	47037013700	Low-Income Community	2011–2015
Tennessee	Davidson	47037013800	Low-Income Community	2011–2015
Tennessee	Davidson	47037013900	Low-Income Community	2011–2015
Tennessee	Davidson	47037014200	Low-Income Community	2011–2015
Tennessee	Davidson	47037014800	Low-Income Community	2011–2015
Tennessee	Davidson	47037015628	Low-Income Community	2011–2015
Tennessee	Davidson	47037015900	Low-Income Community	2011–2015
Tennessee	Davidson	47037016000	Low-Income Community	2011–2015
Tennessee	Davidson	47037016100	Low-Income Community	2011–2015
Tennessee	Davidson	47037016200	Low-Income Community	2011–2015
Tennessee	Davidson	47037016300	Low-Income Community	2011–2015
Tennessee	Davidson	47037017300	Low-Income Community	2011–2015
Tennessee	Davidson	47037019200	Low-Income Community	2011–2015
Tennessee	Davidson	47037019300	Low-Income Community	2011–2015
Tennessee	DeKalb	47041920200	Low-Income Community	2011–2015
Tennessee	Dickson	47043060602	Low-Income Community	2011–2015
Tennessee	Dyer	47045964300	Low-Income Community	2011–2015
Tennessee	Fayette	47047060300	Low-Income Community	2011–2015
Tennessee	Fentress	47049965300	Low-Income Community	2011–2015
Tennessee	Gibson	47053966900	Low-Income Community	2011–2015
Tennessee	Gibson	47053967000	Low-Income Community	2011–2015
Tennessee	Greene	47059090100	Low-Income Community	2011–2015
Tennessee	Greene	47059091200	Low-Income Community	2011–2015
Tennessee	Grundy	47061955300	Low-Income Community	2011–2015
Tennessee	Hamblen	47063100300	Low-Income Community	2011–2015
Tennessee	Hamblen	47063100800	Low-Income Community	2011–2015
Tennessee	Hamilton	47065000400	Low-Income Community	2011–2015
Tennessee	Hamilton	47065001600	Low-Income Community	2011–2015
Tennessee	Hamilton	47065001900	Low-Income Community	2011–2015
Tennessee	Hamilton	47065002000	Low-Income Community	2011–2015
Tennessee	Hamilton	47065003100	Low-Income Community	2011–2015
Tennessee	Hamilton	47065012300	Low-Income Community	2011–2015
Tennessee	Hamilton	47065012400	Low-Income Community	2011–2015
Tennessee	Hancock	47067960600	Low-Income Community	2011–2015
Tennessee	Hardeman	47069950300	Low-Income Community	2011–2015
Tennessee	Hawkins	47073050400	Low-Income Community	2012–2016
Tennessee	Hawkins	47073050601	Low-Income Community	2011–2015
Tennessee	Haywood	47075930500	Non-LIC Contiguous	2011–2015
Tennessee	Henderson	47077975400	Low-Income Community	2011–2015
Tennessee	Henry	47079969000	Low-Income Community	2012–2016
Tennessee	Hickman	47081950302	Low-Income Community	2011–2015
Tennessee	Houston	47083120200	Low-Income Community	2011–2015
Tennessee	Jackson	47087960400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Johnson	47091956300	Low-Income Community	2011–2015
Tennessee	Knox	47093000100	Low-Income Community	2011–2015
Tennessee	Knox	47093000800	Low-Income Community	2011–2015
Tennessee	Knox	47093001900	Low-Income Community	2011–2015
Tennessee	Knox	47093002400	Low-Income Community	2011–2015
Tennessee	Knox	47093003500	Low-Income Community	2011–2015
Tennessee	Knox	47093006502	Low-Income Community	2011–2015
Tennessee	Knox	47093006700	Low-Income Community	2011–2015
Tennessee	Knox	47093006800	Low-Income Community	2011–2015
Tennessee	Lake	47095960100	Low-Income Community	2011–2015
Tennessee	Lauderdale	47097050504	Low-Income Community	2011–2015
Tennessee	Lauderdale	47097050505	Low-Income Community	2011–2015
Tennessee	Lawrence	47099960300	Low-Income Community	2011–2015
Tennessee	Lawrence	47099960501	Low-Income Community	2011–2015
Tennessee	Lincoln	47103975300	Low-Income Community	2011–2015
Tennessee	Lincoln	47103975400	Low-Income Community	2012–2016
Tennessee	Loudon	47105060202	Low-Income Community	2011–2015
Tennessee	Loudon	47105060600	Low-Income Community	2011–2015
Tennessee	McMinn	47107970101	Non-LIC Contiguous	2011–2015
Tennessee	McMinn	47107970600	Low-Income Community	2011–2015
Tennessee	Macon	47111970300	Low-Income Community	2011–2015
Tennessee	Madison	47113000200	Low-Income Community	2011–2015
Tennessee	Madison	47113000500	Low-Income Community	2011–2015
Tennessee	Madison	47113000600	Low-Income Community	2011–2015
Tennessee	Madison	47113000700	Low-Income Community	2011–2015
Tennessee	Madison	47113000800	Low-Income Community	2011–2015
Tennessee	Madison	47113000900	Low-Income Community	2011–2015
Tennessee	Marion	47115050301	Low-Income Community	2011–2015
Tennessee	Marshall	47117955300	Low-Income Community	2011–2015
Tennessee	Meigs	47121960200	Low-Income Community	2011–2015
Tennessee	Monroe	47123925000	Non-LIC Contiguous	2011–2015
Tennessee	Monroe	47123925501	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100100	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100200	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100800	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100900	Low-Income Community	2011–2015
Tennessee	Obion	47131965400	Low-Income Community	2012–2016
Tennessee	Obion	47131965500	Low-Income Community	2011–2015
Tennessee	Overton	47133950302	Low-Income Community	2011–2015
Tennessee	Pickett	47137925100	Low-Income Community	2011–2015
Tennessee	Polk	47139950400	Low-Income Community	2011–2015
Tennessee	Putnam	47141000600	Low-Income Community	2011–2015
Tennessee	Putnam	47141000800	Low-Income Community	2011–2015
Tennessee	Putnam	47141001100	Low-Income Community	2011–2015
Tennessee	Rhea	47143975401	Low-Income Community	2011–2015
Tennessee	Roane	47145030600	Low-Income Community	2011–2015
Tennessee	Rutherford	47149041800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Rutherford	47149041900	Low-Income Community	2011–2015
Tennessee	Rutherford	47149042100	Low-Income Community	2011–2015
Tennessee	Scott	47151975200	Low-Income Community	2011–2015
Tennessee	Sequatchie	47153060101	Non-LIC Contiguous	2011–2015
Tennessee	Sevier	47155080101	Low-Income Community	2011–2015
Tennessee	Sevier	47155080400	Low-Income Community	2011–2015
Tennessee	Shelby	47157000200	Low-Income Community	2011–2015
Tennessee	Shelby	47157000300	Low-Income Community	2011–2015
Tennessee	Shelby	47157000400	Low-Income Community	2011–2015
Tennessee	Shelby	47157001900	Low-Income Community	2011–2015
Tennessee	Shelby	47157002000	Low-Income Community	2011–2015
Tennessee	Shelby	47157002100	Low-Income Community	2011–2015
Tennessee	Shelby	47157002400	Low-Income Community	2011–2015
Tennessee	Shelby	47157002500	Low-Income Community	2011–2015
Tennessee	Shelby	47157002700	Low-Income Community	2011–2015
Tennessee	Shelby	47157002800	Low-Income Community	2011–2015
Tennessee	Shelby	47157003000	Low-Income Community	2011–2015
Tennessee	Shelby	47157003600	Low-Income Community	2011–2015
Tennessee	Shelby	47157003700	Low-Income Community	2011–2015
Tennessee	Shelby	47157003800	Low-Income Community	2011–2015
Tennessee	Shelby	47157003900	Low-Income Community	2011–2015
Tennessee	Shelby	47157004500	Low-Income Community	2011–2015
Tennessee	Shelby	47157004600	Low-Income Community	2011–2015
Tennessee	Shelby	47157005000	Low-Income Community	2011–2015
Tennessee	Shelby	47157005900	Low-Income Community	2011–2015
Tennessee	Shelby	47157006600	Low-Income Community	2011–2015
Tennessee	Shelby	47157006700	Low-Income Community	2011–2015
Tennessee	Shelby	47157007000	Low-Income Community	2011–2015
Tennessee	Shelby	47157007300	Low-Income Community	2011–2015
Tennessee	Shelby	47157007400	Low-Income Community	2011–2015
Tennessee	Shelby	47157011200	Low-Income Community	2011–2015
Tennessee	Shelby	47157011300	Low-Income Community	2011–2015
Tennessee	Shelby	47157011400	Low-Income Community	2011–2015
Tennessee	Shelby	47157011600	Low-Income Community	2011–2015
Tennessee	Shelby	47157020210	Non-LIC Contiguous	2011–2015
Tennessee	Shelby	47157020300	Low-Income Community	2011–2015
Tennessee	Shelby	47157022111	Low-Income Community	2011–2015
Tennessee	Shelby	47157022500	Low-Income Community	2011–2015
Tennessee	Smith	47159975300	Low-Income Community	2011–2015
Tennessee	Smith	47159975400	Non-LIC Contiguous	2011–2015
Tennessee	Stewart	47161110600	Low-Income Community	2011–2015
Tennessee	Sullivan	47163040200	Low-Income Community	2011–2015
Tennessee	Sullivan	47163042701	Low-Income Community	2011–2015
Tennessee	Sullivan	47163043000	Low-Income Community	2011–2015
Tennessee	Sullivan	47163043302	Low-Income Community	2011–2015
Tennessee	Sumner	47165020300	Low-Income Community	2011–2015
Tennessee	Sumner	47165020700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Tipton	47167040700	Low-Income Community	2011–2015
Tennessee	Tipton	47167041000	Low-Income Community	2011–2015
Tennessee	Unicoi	47171080100	Low-Income Community	2011–2015
Tennessee	Unicoi	47171080200	Low-Income Community	2011–2015
Tennessee	Union	47173040201	Low-Income Community	2011–2015
Tennessee	Van Buren	47175925200	Low-Income Community	2011–2015
Tennessee	Warren	47177930800	Low-Income Community	2011–2015
Tennessee	Washington	47179060100	Low-Income Community	2011–2015
Tennessee	Washington	47179060800	Low-Income Community	2011–2015
Tennessee	Washington	47179060900	Low-Income Community	2011–2015
Tennessee	Washington	47179062000	Low-Income Community	2011–2015
Tennessee	Wayne	47181950200	Low-Income Community	2011–2015
Tennessee	Weakley	47183968101	Low-Income Community	2011–2015
Tennessee	White	47185935300	Low-Income Community	2012–2016
Texas	Anderson	48001950401	Low-Income Community	2011–2015
Texas	Anderson	48001950901	Low-Income Community	2011–2015
Texas	Angelina	48005000200	Low-Income Community	2011–2015
Texas	Angelina	48005000500	Low-Income Community	2011–2015
Texas	Angelina	48005000600	Low-Income Community	2011–2015
Texas	Angelina	48005000700	Low-Income Community	2011–2015
Texas	Angelina	48005001001	Low-Income Community	2011–2015
Texas	Angelina	48005001300	Low-Income Community	2011–2015
Texas	Aransas	48007950100	Low-Income Community	2011–2015
Texas	Aransas	48007950400	Low-Income Community	2011–2015
Texas	Aransas	48007950500	Low-Income Community	2011–2015
Texas	Atascosa	48013960300	Low-Income Community	2011–2015
Texas	Atascosa	48013960401	Low-Income Community	2011–2015
Texas	Bastrop	48021950200	Low-Income Community	2011–2015
Texas	Bastrop	48021950600	Low-Income Community	2011–2015
Texas	Bastrop	48021950801	Low-Income Community	2011–2015
Texas	Bee	48025950600	Low-Income Community	2011–2015
Texas	Bell	48027020800	Low-Income Community	2011–2015
Texas	Bell	48027020900	Low-Income Community	2011–2015
Texas	Bell	48027021601	Low-Income Community	2011–2015
Texas	Bell	48027021602	Low-Income Community	2011–2015
Texas	Bell	48027022000	Low-Income Community	2011–2015
Texas	Bell	48027023204	Low-Income Community	2011–2015
Texas	Bexar	48029110100	Low-Income Community	2011–2015
Texas	Bexar	48029110500	Low-Income Community	2011–2015
Texas	Bexar	48029110600	Low-Income Community	2011–2015
Texas	Bexar	48029121203	Low-Income Community	2011–2015
Texas	Bexar	48029121204	Low-Income Community	2011–2015
Texas	Bexar	48029121205	Low-Income Community	2011–2015
Texas	Bexar	48029130600	Low-Income Community	2011–2015
Texas	Bexar	48029130700	Low-Income Community	2011–2015
Texas	Bexar	48029130800	Low-Income Community	2011–2015
Texas	Bexar	48029141800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Bexar	48029150600	Low-Income Community	2011–2015
Texas	Bexar	48029150800	Low-Income Community	2011–2015
Texas	Bexar	48029152000	Low-Income Community	2011–2015
Texas	Bexar	48029152100	Low-Income Community	2011–2015
Texas	Bexar	48029160901	Low-Income Community	2011–2015
Texas	Bexar	48029160902	Low-Income Community	2011–2015
Texas	Bexar	48029161100	Low-Income Community	2011–2015
Texas	Bexar	48029161200	Low-Income Community	2011–2015
Texas	Bexar	48029162001	Low-Income Community	2011–2015
Texas	Bexar	48029170102	Low-Income Community	2011–2015
Texas	Bexar	48029171802	Low-Income Community	2011–2015
Texas	Bexar	48029192200	Low-Income Community	2011–2015
Texas	Bexar	48029980002	Low-Income Community	2011–2015
Texas	Bexar	48029980100	Low-Income Community	2011–2015
Texas	Bosque	48035950200	Low-Income Community	2011–2015
Texas	Bowie	48037010400	Low-Income Community	2011–2015
Texas	Bowie	48037010500	Low-Income Community	2011–2015
Texas	Bowie	48037010800	Low-Income Community	2011–2015
Texas	Bowie	48037011300	Low-Income Community	2011–2015
Texas	Bowie	48037011401	Low-Income Community	2011–2015
Texas	Bowie	48037011402	Low-Income Community	2011–2015
Texas	Bowie	48037011502	Low-Income Community	2011–2015
Texas	Brazoria	48039661200	Low-Income Community	2011–2015
Texas	Brazoria	48039661400	Low-Income Community	2011–2015
Texas	Brazoria	48039662800	Low-Income Community	2011–2015
Texas	Brazoria	48039664100	Low-Income Community	2011–2015
Texas	Brazoria	48039664200	Low-Income Community	2011–2015
Texas	Brazoria	48039664300	Low-Income Community	2011–2015
Texas	Brazos	48041000201	Low-Income Community	2011–2015
Texas	Brazos	48041000202	Low-Income Community	2011–2015
Texas	Brazos	48041000400	Low-Income Community	2011–2015
Texas	Brazos	48041000500	Low-Income Community	2011–2015
Texas	Brazos	48041000603	Low-Income Community	2011–2015
Texas	Brazos	48041001301	Low-Income Community	2011–2015
Texas	Brazos	48041001303	Low-Income Community	2011–2015
Texas	Brazos	48041001702	Low-Income Community	2011–2015
Texas	Brazos	48041002012	Low-Income Community	2011–2015
Texas	Brazos	48041002014	Low-Income Community	2011–2015
Texas	Brewster	48043950400	Low-Income Community	2011–2015
Texas	Brooks	48047950200	Low-Income Community	2011–2015
Texas	Brown	48049950700	Low-Income Community	2011–2015
Texas	Burleson	48051970500	Low-Income Community	2011–2015
Texas	Burnet	48053960300	Low-Income Community	2011–2015
Texas	Caldwell	48055960200	Low-Income Community	2011–2015
Texas	Caldwell	48055960400	Low-Income Community	2011–2015
Texas	Caldwell	48055960500	Low-Income Community	2011–2015
Texas	Calhoun	48057000500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Cameron	48061010100	Low-Income Community	2011–2015
Texas	Cameron	48061010201	Low-Income Community	2011–2015
Texas	Cameron	48061010203	Low-Income Community	2011–2015
Texas	Cameron	48061010301	Low-Income Community	2011–2015
Texas	Cameron	48061010402	Low-Income Community	2011–2015
Texas	Cameron	48061010800	Low-Income Community	2011–2015
Texas	Cameron	48061011700	Low-Income Community	2011–2015
Texas	Cameron	48061012102	Low-Income Community	2011–2015
Texas	Cameron	48061012301	Low-Income Community	2011–2015
Texas	Cameron	48061012304	Low-Income Community	2011–2015
Texas	Cameron	48061012305	Low-Income Community	2011–2015
Texas	Cameron	48061012700	Low-Income Community	2011–2015
Texas	Cameron	48061013307	Low-Income Community	2011–2015
Texas	Cameron	48061013802	Low-Income Community	2011–2015
Texas	Cameron	48061014001	Low-Income Community	2011–2015
Texas	Cameron	48061014200	Low-Income Community	2011–2015
Texas	Camp	48063950101	Low-Income Community	2011–2015
Texas	Camp	48063950102	Low-Income Community	2011–2015
Texas	Cass	48067950200	Low-Income Community	2011–2015
Texas	Cass	48067950400	Low-Income Community	2011–2015
Texas	Cass	48067950600	Low-Income Community	2011–2015
Texas	Cass	48067950700	Low-Income Community	2011–2015
Texas	Castro	48069950200	Low-Income Community	2011–2015
Texas	Chambers	48071710300	Low-Income Community	2011–2015
Texas	Chambers	48071710401	Low-Income Community	2011–2015
Texas	Chambers	48071710500	Low-Income Community	2011–2015
Texas	Cherokee	48073950300	Low-Income Community	2011–2015
Texas	Cherokee	48073950400	Low-Income Community	2011–2015
Texas	Cherokee	48073951100	Low-Income Community	2011–2015
Texas	Coleman	48083950300	Low-Income Community	2011–2015
Texas	Collin	48085032013	Low-Income Community	2011–2015
Texas	Comal	48091310608	Low-Income Community	2011–2015
Texas	Cooke	48097000400	Low-Income Community	2011–2015
Texas	Cooke	48097001100	Low-Income Community	2011–2015
Texas	Coryell	48099010300	Low-Income Community	2011–2015
Texas	Coryell	48099010501	Low-Income Community	2011–2015
Texas	Coryell	48099010502	Low-Income Community	2011–2015
Texas	Coryell	48099010504	Low-Income Community	2011–2015
Texas	Coryell	48099010601	Low-Income Community	2011–2015
Texas	Cottle	48101950100	Low-Income Community	2011–2015
Texas	Crosby	48107950100	Low-Income Community	2011–2015
Texas	Crosby	48107950200	Low-Income Community	2011–2015
Texas	Dallas	48113002000	Low-Income Community	2011–2015
Texas	Dallas	48113004100	Low-Income Community	2011–2015
Texas	Dallas	48113005400	Low-Income Community	2011–2015
Texas	Dallas	48113005700	Low-Income Community	2011–2015
Texas	Dallas	48113008704	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Dallas	48113009301	Low-Income Community	2011–2015
Texas	Dallas	48113010101	Low-Income Community	2011–2015
Texas	Dallas	48113012207	Low-Income Community	2011–2015
Texas	Dallas	48113012302	Low-Income Community	2011–2015
Texas	Dallas	48113012701	Low-Income Community	2011–2015
Texas	Dallas	48113015304	Low-Income Community	2011–2015
Texas	Dallas	48113015900	Low-Income Community	2011–2015
Texas	Dallas	48113016621	Low-Income Community	2011–2015
Texas	Dallas	48113018111	Low-Income Community	2011–2015
Texas	Dallas	48113018505	Low-Income Community	2011–2015
Texas	Dallas	48113020300	Low-Income Community	2011–2015
Texas	Dallas	48113020400	Low-Income Community	2011–2015
Texas	Dallas	48113020500	Low-Income Community	2011–2015
Texas	Dawson	48115950402	Low-Income Community	2011–2015
Texas	Delta	48119950200	Low-Income Community	2011–2015
Texas	Denton	48121020602	Low-Income Community	2011–2015
Texas	Denton	48121021618	Low-Income Community	2011–2015
Texas	Denton	48121021739	Low-Income Community	2011–2015
Texas	DeWitt	48123970200	Low-Income Community	2011–2015
Texas	Dickens	48125950300	Low-Income Community	2011–2015
Texas	Donley	48129950200	Low-Income Community	2011–2015
Texas	Eastland	48133950100	Low-Income Community	2011–2015
Texas	Eastland	48133950200	Low-Income Community	2011–2015
Texas	Ector	48135002700	Low-Income Community	2011–2015
Texas	Ellis	48139060400	Low-Income Community	2011–2015
Texas	Ellis	48139061000	Low-Income Community	2011–2015
Texas	Ellis	48139061200	Low-Income Community	2011–2015
Texas	Ellis	48139061300	Low-Income Community	2011–2015
Texas	Ellis	48139061600	Low-Income Community	2011–2015
Texas	El Paso	48141001203	Low-Income Community	2011–2015
Texas	El Paso	48141001900	Low-Income Community	2011–2015
Texas	El Paso	48141003000	Low-Income Community	2011–2015
Texas	El Paso	48141003200	Low-Income Community	2011–2015
Texas	El Paso	48141003501	Low-Income Community	2011–2015
Texas	El Paso	48141003804	Low-Income Community	2011–2015
Texas	El Paso	48141010102	Low-Income Community	2011–2015
Texas	El Paso	48141010220	Low-Income Community	2011–2015
Texas	El Paso	48141010334	Low-Income Community	2011–2015
Texas	El Paso	48141010335	Low-Income Community	2011–2015
Texas	El Paso	48141010340	Low-Income Community	2011–2015
Texas	El Paso	48141010344	Low-Income Community	2011–2015
Texas	El Paso	48141010347	Low-Income Community	2011–2015
Texas	El Paso	48141010501	Low-Income Community	2011–2015
Texas	El Paso	48141010504	Low-Income Community	2011–2015
Texas	El Paso	48141010506	Low-Income Community	2011–2015
Texas	Erath	48143950201	Low-Income Community	2011–2015
Texas	Erath	48143950202	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Erath	48143950300	Low-Income Community	2011–2015
Texas	Falls	48145000400	Low-Income Community	2011–2015
Texas	Fannin	48147950402	Low-Income Community	2011–2015
Texas	Fisher	48151950400	Low-Income Community	2011–2015
Texas	Fort Bend	48157670200	Low-Income Community	2011–2015
Texas	Fort Bend	48157670400	Low-Income Community	2011–2015
Texas	Fort Bend	48157673700	Low-Income Community	2011–2015
Texas	Fort Bend	48157674900	Low-Income Community	2011–2015
Texas	Fort Bend	48157675400	Low-Income Community	2011–2015
Texas	Franklin	48159950300	Low-Income Community	2011–2015
Texas	Galveston	48167722200	Low-Income Community	2011–2015
Texas	Galveston	48167722800	Low-Income Community	2011–2015
Texas	Galveston	48167722900	Low-Income Community	2011–2015
Texas	Galveston	48167723000	Low-Income Community	2011–2015
Texas	Galveston	48167723700	Low-Income Community	2011–2015
Texas	Galveston	48167724101	Low-Income Community	2011–2015
Texas	Galveston	48167724800	Low-Income Community	2011–2015
Texas	Galveston	48167726200	Low-Income Community	2011–2015
Texas	Gonzales	48177000300	Low-Income Community	2011–2015
Texas	Gonzales	48177000500	Low-Income Community	2011–2015
Texas	Gray	48179950600	Low-Income Community	2011–2015
Texas	Grayson	48181000200	Low-Income Community	2011–2015
Texas	Grayson	48181000502	Low-Income Community	2011–2015
Texas	Grayson	48181000902	Low-Income Community	2011–2015
Texas	Grayson	48181002000	Low-Income Community	2011–2015
Texas	Gregg	48183000800	Low-Income Community	2011–2015
Texas	Gregg	48183001100	Low-Income Community	2011–2015
Texas	Gregg	48183001400	Low-Income Community	2011–2015
Texas	Gregg	48183010200	Low-Income Community	2011–2015
Texas	Gregg	48183010500	Low-Income Community	2011–2015
Texas	Gregg	48183010700	Low-Income Community	2011–2015
Texas	Grimes	48185180101	Low-Income Community	2011–2015
Texas	Grimes	48185180102	Low-Income Community	2011–2015
Texas	Grimes	48185180200	Low-Income Community	2011–2015
Texas	Hale	48189950100	Low-Income Community	2011–2015
Texas	Hall	48191950500	Low-Income Community	2011–2015
Texas	Hardin	48199030100	Low-Income Community	2011–2015
Texas	Hardin	48199030700	Low-Income Community	2011–2015
Texas	Hardin	48199030800	Low-Income Community	2011–2015
Texas	Harris	48201100000	Low-Income Community	2011–2015
Texas	Harris	48201210400	Low-Income Community	2011–2015
Texas	Harris	48201210500	Low-Income Community	2011–2015
Texas	Harris	48201210600	Low-Income Community	2011–2015
Texas	Harris	48201210700	Low-Income Community	2011–2015
Texas	Harris	48201210800	Low-Income Community	2011–2015
Texas	Harris	48201211000	Low-Income Community	2011–2015
Texas	Harris	48201211300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201211400	Low-Income Community	2011–2015
Texas	Harris	48201211500	Low-Income Community	2011–2015
Texas	Harris	48201211600	Low-Income Community	2011–2015
Texas	Harris	48201212300	Low-Income Community	2011–2015
Texas	Harris	48201220100	Low-Income Community	2011–2015
Texas	Harris	48201220200	Low-Income Community	2011–2015
Texas	Harris	48201220800	Low-Income Community	2011–2015
Texas	Harris	48201222501	Low-Income Community	2011–2015
Texas	Harris	48201222503	Low-Income Community	2011–2015
Texas	Harris	48201222600	Low-Income Community	2011–2015
Texas	Harris	48201222700	Low-Income Community	2011–2015
Texas	Harris	48201230200	Low-Income Community	2011–2015
Texas	Harris	48201230600	Low-Income Community	2011–2015
Texas	Harris	48201230700	Low-Income Community	2011–2015
Texas	Harris	48201231000	Low-Income Community	2011–2015
Texas	Harris	48201231100	Low-Income Community	2011–2015
Texas	Harris	48201231200	Low-Income Community	2011–2015
Texas	Harris	48201231400	Low-Income Community	2011–2015
Texas	Harris	48201231500	Low-Income Community	2011–2015
Texas	Harris	48201233500	Low-Income Community	2011–2015
Texas	Harris	48201240100	Low-Income Community	2011–2015
Texas	Harris	48201240501	Low-Income Community	2011–2015
Texas	Harris	48201240502	Low-Income Community	2011–2015
Texas	Harris	48201240600	Low-Income Community	2011–2015
Texas	Harris	48201253800	Low-Income Community	2011–2015
Texas	Harris	48201254300	Low-Income Community	2011–2015
Texas	Harris	48201254600	Low-Income Community	2011–2015
Texas	Harris	48201310100	Low-Income Community	2011–2015
Texas	Harris	48201310300	Low-Income Community	2011–2015
Texas	Harris	48201310400	Low-Income Community	2011–2015
Texas	Harris	48201310500	Low-Income Community	2011–2015
Texas	Harris	48201310600	Low-Income Community	2011–2015
Texas	Harris	48201310800	Low-Income Community	2011–2015
Texas	Harris	48201310900	Low-Income Community	2011–2015
Texas	Harris	48201311000	Low-Income Community	2011–2015
Texas	Harris	48201311600	Low-Income Community	2011–2015
Texas	Harris	48201311700	Low-Income Community	2011–2015
Texas	Harris	48201312000	Low-Income Community	2011–2015
Texas	Harris	48201312200	Low-Income Community	2011–2015
Texas	Harris	48201312300	Low-Income Community	2011–2015
Texas	Harris	48201312400	Low-Income Community	2011–2015
Texas	Harris	48201312500	Low-Income Community	2011–2015
Texas	Harris	48201312700	Low-Income Community	2011–2015
Texas	Harris	48201312800	Low-Income Community	2011–2015
Texas	Harris	48201312900	Low-Income Community	2011–2015
Texas	Harris	48201313000	Low-Income Community	2011–2015
Texas	Harris	48201313200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201313300	Low-Income Community	2011–2015
Texas	Harris	48201313400	Low-Income Community	2011–2015
Texas	Harris	48201313500	Low-Income Community	2011–2015
Texas	Harris	48201313600	Low-Income Community	2011–2015
Texas	Harris	48201313700	Low-Income Community	2011–2015
Texas	Harris	48201313800	Low-Income Community	2011–2015
Texas	Harris	48201314001	Low-Income Community	2011–2015
Texas	Harris	48201314002	Low-Income Community	2011–2015
Texas	Harris	48201314300	Low-Income Community	2011–2015
Texas	Harris	48201314400	Low-Income Community	2011–2015
Texas	Harris	48201321900	Low-Income Community	2011–2015
Texas	Harris	48201322100	Low-Income Community	2011–2015
Texas	Harris	48201322200	Low-Income Community	2011–2015
Texas	Harris	48201323702	Low-Income Community	2011–2015
Texas	Harris	48201324100	Low-Income Community	2011–2015
Texas	Harris	48201331100	Low-Income Community	2011–2015
Texas	Harris	48201331200	Low-Income Community	2011–2015
Texas	Harris	48201331300	Low-Income Community	2011–2015
Texas	Harris	48201331400	Low-Income Community	2011–2015
Texas	Harris	48201331700	Low-Income Community	2011–2015
Texas	Harris	48201331800	Low-Income Community	2011–2015
Texas	Harris	48201332000	Low-Income Community	2011–2015
Texas	Harris	48201342300	Low-Income Community	2011–2015
Texas	Harris	48201421101	Low-Income Community	2011–2015
Texas	Harris	48201421102	Low-Income Community	2011–2015
Texas	Harris	48201421201	Low-Income Community	2011–2015
Texas	Harris	48201421202	Low-Income Community	2011–2015
Texas	Harris	48201421300	Low-Income Community	2011–2015
Texas	Harris	48201421401	Low-Income Community	2011–2015
Texas	Harris	48201421402	Low-Income Community	2011–2015
Texas	Harris	48201421403	Low-Income Community	2011–2015
Texas	Harris	48201421500	Low-Income Community	2011–2015
Texas	Harris	48201421600	Low-Income Community	2011–2015
Texas	Harris	48201422302	Low-Income Community	2011–2015
Texas	Harris	48201422701	Low-Income Community	2011–2015
Texas	Harris	48201433600	Low-Income Community	2011–2015
Texas	Harris	48201452500	Low-Income Community	2011–2015
Texas	Harris	48201453200	Low-Income Community	2011–2015
Texas	Harris	48201453300	Low-Income Community	2011–2015
Texas	Harris	48201453401	Low-Income Community	2011–2015
Texas	Harris	48201530800	Low-Income Community	2011–2015
Texas	Harris	48201531800	Low-Income Community	2011–2015
Texas	Harris	48201531900	Low-Income Community	2011–2015
Texas	Harris	48201532001	Low-Income Community	2011–2015
Texas	Harris	48201532700	Low-Income Community	2011–2015
Texas	Harris	48201532800	Low-Income Community	2011–2015
Texas	Harris	48201533000	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201533300	Low-Income Community	2011–2015
Texas	Harris	48201533400	Low-Income Community	2011–2015
Texas	Harris	48201533702	Low-Income Community	2011–2015
Texas	Harrison	48203020102	Low-Income Community	2011–2015
Texas	Harrison	48203020103	Low-Income Community	2011–2015
Texas	Harrison	48203020302	Low-Income Community	2011–2015
Texas	Harrison	48203020401	Low-Income Community	2011–2015
Texas	Harrison	48203020402	Low-Income Community	2011–2015
Texas	Haskell	48207950300	Low-Income Community	2011–2015
Texas	Hays	48209010200	Low-Income Community	2011–2015
Texas	Hays	48209010303	Low-Income Community	2011–2015
Texas	Hays	48209010701	Low-Income Community	2011–2015
Texas	Hays	48209010702	Low-Income Community	2011–2015
Texas	Henderson	48213950602	Low-Income Community	2011–2015
Texas	Henderson	48213950700	Low-Income Community	2011–2015
Texas	Henderson	48213950901	Low-Income Community	2011–2015
Texas	Henderson	48213950902	Low-Income Community	2011–2015
Texas	Henderson	48213951000	Low-Income Community	2011–2015
Texas	Henderson	48213951200	Low-Income Community	2011–2015
Texas	Hidalgo	48215020102	Low-Income Community	2011–2015
Texas	Hidalgo	48215020201	Low-Income Community	2011–2015
Texas	Hidalgo	48215020503	Low-Income Community	2011–2015
Texas	Hidalgo	48215021302	Low-Income Community	2011–2015
Texas	Hidalgo	48215021303	Low-Income Community	2011–2015
Texas	Hidalgo	48215021304	Low-Income Community	2011–2015
Texas	Hidalgo	48215021305	Low-Income Community	2011–2015
Texas	Hidalgo	48215021401	Low-Income Community	2011–2015
Texas	Hidalgo	48215021701	Low-Income Community	2011–2015
Texas	Hidalgo	48215021702	Low-Income Community	2011–2015
Texas	Hidalgo	48215022103	Low-Income Community	2011–2015
Texas	Hidalgo	48215022106	Low-Income Community	2011–2015
Texas	Hidalgo	48215022401	Low-Income Community	2011–2015
Texas	Hidalgo	48215022402	Low-Income Community	2011–2015
Texas	Hidalgo	48215023103	Low-Income Community	2011–2015
Texas	Hidalgo	48215023104	Low-Income Community	2011–2015
Texas	Hidalgo	48215023503	Low-Income Community	2011–2015
Texas	Hidalgo	48215024108	Low-Income Community	2011–2015
Texas	Hidalgo	48215024114	Low-Income Community	2011–2015
Texas	Hidalgo	48215024201	Low-Income Community	2011–2015
Texas	Hidalgo	48215024203	Low-Income Community	2011–2015
Texas	Hidalgo	48215024204	Low-Income Community	2011–2015
Texas	Hidalgo	48215024205	Low-Income Community	2011–2015
Texas	Hill	48217960100	Low-Income Community	2011–2015
Texas	Hill	48217960900	Low-Income Community	2011–2015
Texas	Hockley	48219950100	Low-Income Community	2011–2015
Texas	Hockley	48219950400	Low-Income Community	2011–2015
Texas	Hopkins	48223950600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Hopkins	48223950700	Low-Income Community	2011–2015
Texas	Hopkins	48223950800	Low-Income Community	2011–2015
Texas	Howard	48227950500	Low-Income Community	2011–2015
Texas	Hunt	48231960200	Low-Income Community	2011–2015
Texas	Hunt	48231960500	Low-Income Community	2011–2015
Texas	Hunt	48231960600	Low-Income Community	2011–2015
Texas	Hunt	48231960700	Low-Income Community	2011–2015
Texas	Hunt	48231960800	Low-Income Community	2011–2015
Texas	Hunt	48231961300	Low-Income Community	2011–2015
Texas	Hunt	48231961503	Low-Income Community	2011–2015
Texas	Hunt	48231961600	Low-Income Community	2011–2015
Texas	Jasper	48241950200	Low-Income Community	2011–2015
Texas	Jasper	48241950300	Low-Income Community	2011–2015
Texas	Jefferson	48245002500	Low-Income Community	2011–2015
Texas	Jefferson	48245005400	Low-Income Community	2011–2015
Texas	Jefferson	48245005900	Low-Income Community	2011–2015
Texas	Jefferson	48245006100	Low-Income Community	2011–2015
Texas	Jefferson	48245006300	Low-Income Community	2011–2015
Texas	Jefferson	48245010100	Low-Income Community	2011–2015
Texas	Jefferson	48245011700	Low-Income Community	2011–2015
Texas	Jefferson	48245011800	Low-Income Community	2011–2015
Texas	Jim Hogg	48247950200	Low-Income Community	2011–2015
Texas	Jim Hogg	48247950400	Low-Income Community	2011–2015
Texas	Johnson	48251130212	Low-Income Community	2011–2015
Texas	Johnson	48251130302	Low-Income Community	2011–2015
Texas	Jones	48253020400	Low-Income Community	2011–2015
Texas	Karnes	48255970200	Low-Income Community	2011–2015
Texas	Karnes	48255970300	Low-Income Community	2011–2015
Texas	Kaufman	48257050300	Low-Income Community	2011–2015
Texas	Kaufman	48257050400	Low-Income Community	2011–2015
Texas	Kaufman	48257050500	Low-Income Community	2011–2015
Texas	Kaufman	48257050704	Low-Income Community	2011–2015
Texas	Kaufman	48257051201	Low-Income Community	2011–2015
Texas	Kaufman	48257051300	Low-Income Community	2011–2015
Texas	Kerr	48265960500	Low-Income Community	2011–2015
Texas	Kerr	48265960800	Low-Income Community	2011–2015
Texas	Kleberg	48273020200	Low-Income Community	2011–2015
Texas	Kleberg	48273020300	Low-Income Community	2011–2015
Texas	Lamar	48277000300	Low-Income Community	2011–2015
Texas	Lamar	48277000500	Low-Income Community	2011–2015
Texas	Lamar	48277000600	Low-Income Community	2011–2015
Texas	Lamar	48277000700	Low-Income Community	2011–2015
Texas	Lamar	48277000800	Low-Income Community	2011–2015
Texas	Lamb	48279950500	Low-Income Community	2011–2015
Texas	Lamb	48279950600	Low-Income Community	2011–2015
Texas	La Salle	48283950300	Low-Income Community	2011–2015
Texas	Lavaca	48285000600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Lee	48287000400	Low-Income Community	2011–2015
Texas	Liberty	48291700100	Low-Income Community	2011–2015
Texas	Liberty	48291700200	Low-Income Community	2011–2015
Texas	Liberty	48291700300	Low-Income Community	2011–2015
Texas	Liberty	48291700400	Low-Income Community	2011–2015
Texas	Liberty	48291700600	Low-Income Community	2011–2015
Texas	Liberty	48291701200	Low-Income Community	2011–2015
Texas	Liberty	48291701300	Low-Income Community	2011–2015
Texas	Limestone	48293970400	Low-Income Community	2011–2015
Texas	Limestone	48293970600	Low-Income Community	2011–2015
Texas	Llano	48299970200	Low-Income Community	2011–2015
Texas	Llano	48299970500	Low-Income Community	2011–2015
Texas	Llano	48299970600	Low-Income Community	2011–2015
Texas	Loving	48301950100	Low-Income Community	2011–2015
Texas	Lubbock	48303000100	Low-Income Community	2011–2015
Texas	Lubbock	48303000201	Low-Income Community	2011–2015
Texas	Lubbock	48303000301	Low-Income Community	2011–2015
Texas	Lubbock	48303000302	Low-Income Community	2011–2015
Texas	Lubbock	48303000700	Low-Income Community	2011–2015
Texas	Lubbock	48303000900	Low-Income Community	2011–2015
Texas	Lubbock	48303001000	Low-Income Community	2011–2015
Texas	Lubbock	48303010200	Low-Income Community	2011–2015
Texas	McLennan	48309000100	Low-Income Community	2011–2015
Texas	McLennan	48309001200	Low-Income Community	2011–2015
Texas	McLennan	48309001500	Low-Income Community	2011–2015
Texas	McLennan	48309003602	Low-Income Community	2011–2015
Texas	McLennan	48309004201	Low-Income Community	2011–2015
Texas	Madison	48313000100	Low-Income Community	2011–2015
Texas	Marion	48315950300	Low-Income Community	2011–2015
Texas	Matagorda	48321730201	Low-Income Community	2011–2015
Texas	Matagorda	48321730501	Low-Income Community	2011–2015
Texas	Matagorda	48321730600	Low-Income Community	2011–2015
Texas	Matagorda	48321730700	Low-Income Community	2011–2015
Texas	Maverick	48323950201	Low-Income Community	2011–2015
Texas	Maverick	48323950601	Low-Income Community	2011–2015
Texas	Medina	48325000402	Low-Income Community	2011–2015
Texas	Medina	48325000500	Low-Income Community	2011–2015
Texas	Milam	48331950402	Low-Income Community	2011–2015
Texas	Milam	48331950700	Low-Income Community	2011–2015
Texas	Montgomery	48339692200	Low-Income Community	2011–2015
Texas	Montgomery	48339692500	Low-Income Community	2011–2015
Texas	Montgomery	48339692601	Low-Income Community	2011–2015
Texas	Montgomery	48339692602	Low-Income Community	2011–2015
Texas	Montgomery	48339692700	Low-Income Community	2011–2015
Texas	Montgomery	48339692802	Low-Income Community	2011–2015
Texas	Montgomery	48339693000	Low-Income Community	2011–2015
Texas	Montgomery	48339693400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Montgomery	48339693500	Low-Income Community	2011–2015
Texas	Montgomery	48339694000	Low-Income Community	2011–2015
Texas	Montgomery	48339694101	Low-Income Community	2011–2015
Texas	Morris	48343950100	Low-Income Community	2011–2015
Texas	Morris	48343950200	Low-Income Community	2011–2015
Texas	Morris	48343950300	Low-Income Community	2011–2015
Texas	Motley	48345950100	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950301	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950302	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950700	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950800	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950900	Low-Income Community	2011–2015
Texas	Nacogdoches	48347951000	Low-Income Community	2011–2015
Texas	Navarro	48349970100	Low-Income Community	2011–2015
Texas	Navarro	48349970200	Low-Income Community	2011–2015
Texas	Navarro	48349970500	Low-Income Community	2011–2015
Texas	Navarro	48349970600	Low-Income Community	2011–2015
Texas	Navarro	48349970700	Low-Income Community	2011–2015
Texas	Navarro	48349970800	Low-Income Community	2011–2015
Texas	Navarro	48349970900	Low-Income Community	2011–2015
Texas	Newton	48351950200	Low-Income Community	2011–2015
Texas	Newton	48351950300	Low-Income Community	2011–2015
Texas	Nueces	48355001000	Low-Income Community	2011–2015
Texas	Nueces	48355001602	Low-Income Community	2011–2015
Texas	Nueces	48355002001	Low-Income Community	2011–2015
Texas	Nueces	48355002200	Low-Income Community	2011–2015
Texas	Nueces	48355002704	Low-Income Community	2011–2015
Texas	Nueces	48355002900	Low-Income Community	2011–2015
Texas	Nueces	48355005602	Low-Income Community	2011–2015
Texas	Nueces	48355006300	Low-Income Community	2011–2015
Texas	Nueces	48355006400	Low-Income Community	2011–2015
Texas	Orange	48361020200	Low-Income Community	2011–2015
Texas	Orange	48361020300	Low-Income Community	2011–2015
Texas	Orange	48361020500	Low-Income Community	2011–2015
Texas	Orange	48361020700	Low-Income Community	2011–2015
Texas	Orange	48361020900	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000500	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000600	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000800	Low-Income Community	2011–2015
Texas	Polk	48373210101	Low-Income Community	2011–2015
Texas	Polk	48373210102	Low-Income Community	2011–2015
Texas	Polk	48373210203	Low-Income Community	2011–2015
Texas	Polk	48373210204	Low-Income Community	2011–2015
Texas	Polk	48373210301	Low-Income Community	2011–2015
Texas	Polk	48373210400	Low-Income Community	2011–2015
Texas	Potter	48375015400	Low-Income Community	2011–2015
Texas	Presidio	48377950200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Reeves	48389950100	Low-Income Community	2011–2015
Texas	Robertson	48395960200	Low-Income Community	2011–2015
Texas	Rusk	48401950501	Low-Income Community	2011–2015
Texas	Rusk	48401950502	Low-Income Community	2011–2015
Texas	Rusk	48401951000	Low-Income Community	2011–2015
Texas	Sabine	48403950300	Low-Income Community	2011–2015
Texas	San Augustine	48405950100	Low-Income Community	2011–2015
Texas	San Augustine	48405950300	Low-Income Community	2011–2015
Texas	San Jacinto	48407200101	Low-Income Community	2011–2015
Texas	San Patricio	48409010800	Low-Income Community	2011–2015
Texas	San Saba	48411950100	Low-Income Community	2011–2015
Texas	Shelby	48419950100	Low-Income Community	2011–2015
Texas	Shelby	48419950200	Low-Income Community	2011–2015
Texas	Shelby	48419950300	Low-Income Community	2011–2015
Texas	Shelby	48419950400	Low-Income Community	2011–2015
Texas	Smith	48423000100	Low-Income Community	2011–2015
Texas	Smith	48423000201	Low-Income Community	2011–2015
Texas	Smith	48423000202	Low-Income Community	2011–2015
Texas	Smith	48423000400	Low-Income Community	2011–2015
Texas	Smith	48423000500	Low-Income Community	2011–2015
Texas	Smith	48423000900	Low-Income Community	2011–2015
Texas	Smith	48423001500	Low-Income Community	2011–2015
Texas	Smith	48423001601	Low-Income Community	2011–2015
Texas	Smith	48423001700	Low-Income Community	2011–2015
Texas	Smith	48423001801	Low-Income Community	2011–2015
Texas	Smith	48423001802	Low-Income Community	2011–2015
Texas	Smith	48423002101	Low-Income Community	2011–2015
Texas	Somervell	48425000200	Low-Income Community	2011–2015
Texas	Starr	48427950104	Low-Income Community	2011–2015
Texas	Starr	48427950105	Low-Income Community	2011–2015
Texas	Starr	48427950106	Low-Income Community	2011–2015
Texas	Starr	48427950107	Low-Income Community	2011–2015
Texas	Starr	48427950202	Low-Income Community	2011–2015
Texas	Starr	48427950204	Low-Income Community	2011–2015
Texas	Starr	48427950401	Low-Income Community	2011–2015
Texas	Starr	48427950402	Low-Income Community	2011–2015
Texas	Stephens	48429950300	Low-Income Community	2011–2015
Texas	Tarrant	48439100201	Low-Income Community	2011–2015
Texas	Tarrant	48439100202	Low-Income Community	2011–2015
Texas	Tarrant	48439100300	Low-Income Community	2011–2015
Texas	Tarrant	48439103800	Low-Income Community	2011–2015
Texas	Tarrant	48439106201	Low-Income Community	2011–2015
Texas	Tarrant	48439122900	Low-Income Community	2011–2015
Texas	Tarrant	48439123500	Low-Income Community	2011–2015
Texas	Taylor	48441011700	Low-Income Community	2011–2015
Texas	Taylor	48441013000	Low-Income Community	2011–2015
Texas	Terry	48445950400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Titus	48449950300	Low-Income Community	2011–2015
Texas	Tom Green	48451001702	Low-Income Community	2011–2015
Texas	Travis	48453001712	Low-Income Community	2011–2015
Texas	Travis	48453001804	Low-Income Community	2011–2015
Texas	Travis	48453001832	Low-Income Community	2011–2015
Texas	Travis	48453001842	Low-Income Community	2011–2015
Texas	Travis	48453002106	Low-Income Community	2011–2015
Texas	Travis	48453002109	Low-Income Community	2011–2015
Texas	Travis	48453002111	Low-Income Community	2011–2015
Texas	Travis	48453002112	Low-Income Community	2011–2015
Texas	Travis	48453002209	Low-Income Community	2011–2015
Texas	Travis	48453002307	Low-Income Community	2011–2015
Texas	Travis	48453002312	Low-Income Community	2011–2015
Texas	Travis	48453002313	Low-Income Community	2011–2015
Texas	Travis	48453002319	Low-Income Community	2011–2015
Texas	Travis	48453002410	Low-Income Community	2011–2015
Texas	Travis	48453002411	Low-Income Community	2011–2015
Texas	Travis	48453002413	Low-Income Community	2011–2015
Texas	Travis	48453002427	Low-Income Community	2011–2015
Texas	Travis	48453002432	Low-Income Community	2011–2015
Texas	Travis	48453002433	Low-Income Community	2011–2015
Texas	Travis	48453002435	Low-Income Community	2011–2015
Texas	Travis	48453002436	Low-Income Community	2011–2015
Texas	Trinity	48455950200	Low-Income Community	2011–2015
Texas	Trinity	48455950400	Low-Income Community	2011–2015
Texas	Trinity	48455950500	Low-Income Community	2011–2015
Texas	Tyler	48457950200	Low-Income Community	2011–2015
Texas	Tyler	48457950300	Low-Income Community	2011–2015
Texas	Val Verde	48465950400	Low-Income Community	2011–2015
Texas	Van Zandt	48467950500	Low-Income Community	2011–2015
Texas	Victoria	48469000100	Low-Income Community	2011–2015
Texas	Victoria	48469000201	Low-Income Community	2011–2015
Texas	Victoria	48469000202	Low-Income Community	2011–2015
Texas	Victoria	48469000301	Low-Income Community	2011–2015
Texas	Victoria	48469000302	Low-Income Community	2011–2015
Texas	Victoria	48469000700	Low-Income Community	2011–2015
Texas	Victoria	48469001601	Low-Income Community	2011–2015
Texas	Walker	48471790102	Low-Income Community	2011–2015
Texas	Walker	48471790400	Low-Income Community	2011–2015
Texas	Walker	48471790500	Low-Income Community	2011–2015
Texas	Walker	48471790600	Low-Income Community	2011–2015
Texas	Waller	48473680200	Low-Income Community	2011–2015
Texas	Waller	48473680500	Low-Income Community	2011–2015
Texas	Washington	48477170100	Low-Income Community	2011–2015
Texas	Webb	48479000105	Low-Income Community	2011–2015
Texas	Webb	48479000106	Low-Income Community	2011–2015
Texas	Webb	48479001816	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Webb	48479001818	Low-Income Community	2011–2015
Texas	Wharton	48481740200	Low-Income Community	2011–2015
Texas	Wharton	48481740300	Low-Income Community	2011–2015
Texas	Wharton	48481740500	Low-Income Community	2011–2015
Texas	Wharton	48481740700	Low-Income Community	2011–2015
Texas	Wharton	48481740800	Low-Income Community	2011–2015
Texas	Wharton	48481741000	Low-Income Community	2011–2015
Texas	Wichita	48485011200	Low-Income Community	2011–2015
Texas	Wichita	48485011300	Low-Income Community	2011–2015
Texas	Wichita	48485011500	Low-Income Community	2011–2015
Texas	Wilbarger	48487950500	Low-Income Community	2011–2015
Texas	Wilbarger	48487950700	Low-Income Community	2011–2015
Texas	Willacy	48489950300	Low-Income Community	2011–2015
Texas	Willacy	48489950400	Low-Income Community	2011–2015
Texas	Willacy	48489950500	Low-Income Community	2011–2015
Texas	Willacy	48489950600	Low-Income Community	2011–2015
Texas	Willacy	48489950700	Low-Income Community	2011–2015
Texas	Williamson	48491020201	Low-Income Community	2011–2015
Texas	Williamson	48491020808	Low-Income Community	2011–2015
Texas	Williamson	48491021300	Low-Income Community	2011–2015
Texas	Williamson	48491021602	Low-Income Community	2011–2015
Texas	Wilson	48493000201	Low-Income Community	2011–2015
Texas	Wise	48497150200	Low-Income Community	2011–2015
Texas	Wood	48499950200	Low-Income Community	2011–2015
Texas	Wood	48499950400	Low-Income Community	2011–2015
Texas	Wood	48499950601	Low-Income Community	2011–2015
Texas	Wood	48499950700	Low-Income Community	2011–2015
Texas	Zapata	48505950400	Low-Income Community	2011–2015
Texas	Zavala	48507950100	Low-Income Community	2011–2015
Texas	Zavala	48507950200	Low-Income Community	2011–2015
Texas	Zavala	48507950302	Low-Income Community	2011–2015
Utah	Beaver	49001100100	Low-Income Community	2011–2015
Utah	Box Elder	49003960300	Low-Income Community	2011–2015
Utah	Box Elder	49003960601	Low-Income Community	2011–2015
Utah	Cache	49005000900	Low-Income Community	2011–2015
Utah	Cache	49005001002	Low-Income Community	2011–2015
Utah	Carbon	49007000600	Low-Income Community	2011–2015
Utah	Davis	49011125701	Low-Income Community	2011–2015
Utah	Davis	49011125702	Low-Income Community	2011–2015
Utah	Davis	49011126001	Low-Income Community	2011–2015
Utah	Duchesne	49013940300	Low-Income Community	2011–2015
Utah	Garfield	49017000300	Low-Income Community	2011–2015
Utah	Grand	49019000300	Low-Income Community	2011–2015
Utah	Iron	49021110300	Low-Income Community	2011–2015
Utah	Iron	49021110600	Low-Income Community	2011–2015
Utah	Millard	49027974300	Low-Income Community	2011–2015
Utah	Salt Lake	49035100600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Utah	Salt Lake	49035102500	Low-Income Community	2011–2015
Utah	Salt Lake	49035102600	Low-Income Community	2011–2015
Utah	Salt Lake	49035102702	Low-Income Community	2011–2015
Utah	Salt Lake	49035111500	Low-Income Community	2011–2015
Utah	Salt Lake	49035111600	Low-Income Community	2011–2015
Utah	Salt Lake	49035111802	Low-Income Community	2011–2015
Utah	Salt Lake	49035112403	Low-Income Community	2011–2015
Utah	Salt Lake	49035112907	Low-Income Community	2011–2015
Utah	Salt Lake	49035113305	Low-Income Community	2011–2015
Utah	Salt Lake	49035113513	Low-Income Community	2011–2015
Utah	Salt Lake	49035113802	Low-Income Community	2011–2015
Utah	Salt Lake	49035113906	Low-Income Community	2011–2015
Utah	Salt Lake	49035114000	Low-Income Community	2011–2015
Utah	Salt Lake	49035114500	Low-Income Community	2011–2015
Utah	San Juan	49037942100	Low-Income Community	2011–2015
Utah	Sanpete	49039972400	Low-Income Community	2011–2015
Utah	Sevier	49041975300	Low-Income Community	2011–2015
Utah	Tooele	49045130900	Low-Income Community	2011–2015
Utah	Utah	49049000400	Low-Income Community	2011–2015
Utah	Utah	49049002400	Low-Income Community	2011–2015
Utah	Utah	49049002500	Low-Income Community	2011–2015
Utah	Utah	49049002801	Low-Income Community	2011–2015
Utah	Utah	49049002802	Low-Income Community	2011–2015
Utah	Washington	49053270300	Low-Income Community	2011–2015
Utah	Washington	49053271300	Low-Income Community	2011–2015
Utah	Weber	49057200400	Low-Income Community	2011–2015
Utah	Weber	49057200800	Low-Income Community	2011–2015
Utah	Weber	49057200900	Low-Income Community	2011–2015
Utah	Weber	49057201100	Low-Income Community	2011–2015
Utah	Weber	49057210800	Low-Income Community	2011–2015
Vermont	Addison	50001960300	Low-Income Community	2011–2015
Vermont	Bennington	50003970900	Low-Income Community	2011–2015
Vermont	Bennington	50003971200	Low-Income Community	2011–2015
Vermont	Caledonia	50005957200	Low-Income Community	2011–2015
Vermont	Caledonia	50005957400	Low-Income Community	2012–2016
Vermont	Caledonia	50005957500	Low-Income Community	2011–2015
Vermont	Chittenden	50007000500	Low-Income Community	2011–2015
Vermont	Chittenden	50007001000	Low-Income Community	2011–2015
Vermont	Chittenden	50007002400	Low-Income Community	2011–2015
Vermont	Chittenden	50007002500	Low-Income Community	2011–2015
Vermont	Chittenden	50007003600	Low-Income Community	2011–2015
Vermont	Franklin	50011010700	Low-Income Community	2011–2015
Vermont	Lamoille	50015953200	Low-Income Community	2011–2015
Vermont	Orange	50017959400	Non-LIC Contiguous	2011–2015
Vermont	Orleans	50019951400	Low-Income Community	2011–2015
Vermont	Orleans	50019951500	Low-Income Community	2011–2015
Vermont	Rutland	50021963100	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Vermont	Rutland	50021963200	Low-Income Community	2011–2015
Vermont	Rutland	50021963300	Low-Income Community	2011–2015
Vermont	Washington	50023955200	Low-Income Community	2011–2015
Vermont	Windham	50025967000	Low-Income Community	2011–2015
Vermont	Windham	50025968500	Low-Income Community	2011–2015
Vermont	Windsor	50027965100	Low-Income Community	2011–2015
Vermont	Windsor	50027966600	Low-Income Community	2011–2015
Vermont	Windsor	50027966700	Non-LIC Contiguous	2011–2015
Virgin Islands	St. Croix	78010970200	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970300	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970800	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970900	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971000	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971100	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971200	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971300	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971400	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030960800	Non-LIC Contiguous	2011–2015
Virgin Islands	St. Thomas	78030960900	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961000	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961100	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961200	Low-Income Community	2011–2015
Virginia	Accomack	51001090100	Low-Income Community	2012–2016
Virginia	Accomack	51001090200	Low-Income Community	2011–2015
Virginia	Albemarle	51003010700	Low-Income Community	2011–2015
Virginia	Albemarle	51003011302	Low-Income Community	2011–2015
Virginia	Alleghany	51005080202	Low-Income Community	2011–2015
Virginia	Amherst	51009010502	Low-Income Community	2011–2015
Virginia	Appomattox	51011040100	Low-Income Community	2011–2015
Virginia	Arlington	51013102701	Low-Income Community	2011–2015
Virginia	Arlington	51013103100	Low-Income Community	2011–2015
Virginia	Augusta	51015071200	Low-Income Community	2011–2015
Virginia	Bedford	51019030605	Low-Income Community	2011–2015
Virginia	Bedford	51019050100	Low-Income Community	2011–2015
Virginia	Brunswick	51025930203	Low-Income Community	2011–2015
Virginia	Buchanan	51027010300	Low-Income Community	2011–2015
Virginia	Campbell	51031020500	Low-Income Community	2011–2015
Virginia	Campbell	51031020900	Low-Income Community	2011–2015
Virginia	Caroline	51033030100	Low-Income Community	2012–2016
Virginia	Carroll	51035080200	Low-Income Community	2011–2015
Virginia	Charlotte	51037930100	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100107	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100210	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100407	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100600	Low-Income Community	2011–2015
Virginia	Culpeper	51047930400	Low-Income Community	2011–2015
Virginia	Cumberland	51049930200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Dickenson	51051040300	Low-Income Community	2011–2015
Virginia	Dinwiddie	51053840500	Low-Income Community	2011–2015
Virginia	Essex	51057950700	Low-Income Community	2011–2015
Virginia	Fairfax	51059415401	Low-Income Community	2011–2015
Virginia	Fairfax	51059421500	Low-Income Community	2011–2015
Virginia	Fairfax	51059421600	Low-Income Community	2011–2015
Virginia	Fairfax	51059421800	Low-Income Community	2011–2015
Virginia	Fairfax	51059451400	Low-Income Community	2011–2015
Virginia	Fairfax	51059451502	Low-Income Community	2011–2015
Virginia	Fairfax	51059452801	Low-Income Community	2011–2015
Virginia	Fairfax	51059481000	Low-Income Community	2011–2015
Virginia	Fairfax	51059482100	Low-Income Community	2011–2015
Virginia	Fauquier	51061930706	Low-Income Community	2011–2015
Virginia	Franklin	51067020500	Low-Income Community	2011–2015
Virginia	Frederick	51069051102	Low-Income Community	2011–2015
Virginia	Giles	51071930100	Low-Income Community	2011–2015
Virginia	Gloucester	51073100301	Low-Income Community	2012–2016
Virginia	Grayson	51077060201	Low-Income Community	2011–2015
Virginia	Greensville	51081880101	Low-Income Community	2011–2015
Virginia	Halifax	51083930301	Low-Income Community	2011–2015
Virginia	Halifax	51083930600	Low-Income Community	2011–2015
Virginia	Halifax	51083930800	Low-Income Community	2011–2015
Virginia	Henrico	51087200105	Low-Income Community	2011–2015
Virginia	Henrico	51087200106	Non-LIC Contiguous	2011–2015
Virginia	Henrico	51087200303	Low-Income Community	2011–2015
Virginia	Henrico	51087200501	Low-Income Community	2011–2015
Virginia	Henrico	51087200805	Low-Income Community	2011–2015
Virginia	Henrico	51087201501	Low-Income Community	2011–2015
Virginia	Henrico	51087201502	Non-LIC Contiguous	2011–2015
Virginia	Henry	51089010100	Low-Income Community	2011–2015
Virginia	Henry	51089010300	Low-Income Community	2011–2015
Virginia	Henry	51089010602	Low-Income Community	2011–2015
Virginia	Henry	51089010700	Low-Income Community	2011–2015
Virginia	Henry	51089010800	Low-Income Community	2011–2015
Virginia	James City	51095080102	Low-Income Community	2011–2015
Virginia	King and Queen	51097950500	Low-Income Community	2011–2015
Virginia	Lancaster	51103030200	Low-Income Community	2012–2016
Virginia	Lee	51105950500	Low-Income Community	2011–2015
Virginia	Loudoun	51107611501	Low-Income Community	2011–2015
Virginia	Loudoun	51107611700	Low-Income Community	2011–2015
Virginia	Mecklenburg	51117930101	Low-Income Community	2011–2015
Virginia	Mecklenburg	51117930200	Low-Income Community	2011–2015
Virginia	Montgomery	51121020700	Low-Income Community	2011–2015
Virginia	Montgomery	51121020900	Low-Income Community	2011–2015
Virginia	Northampton	51131930300	Low-Income Community	2011–2015
Virginia	Orange	51137110200	Low-Income Community	2011–2015
Virginia	Page	51139030100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Pittsylvania	51143010200	Low-Income Community	2011–2015
Virginia	Pittsylvania	51143011100	Low-Income Community	2011–2015
Virginia	Pittsylvania	51143011400	Low-Income Community	2011–2015
Virginia	Prince Edward	51147930201	Low-Income Community	2011–2015
Virginia	Prince George	51149850200	Low-Income Community	2011–2015
Virginia	Prince William	51153900201	Low-Income Community	2011–2015
Virginia	Prince William	51153900203	Low-Income Community	2011–2015
Virginia	Prince William	51153900300	Low-Income Community	2011–2015
Virginia	Prince William	51153900600	Low-Income Community	2011–2015
Virginia	Prince William	51153901008	Low-Income Community	2012–2016
Virginia	Prince William	51153901900	Low-Income Community	2011–2015
Virginia	Pulaski	51155210300	Low-Income Community	2011–2015
Virginia	Richmond	51159040100	Low-Income Community	2011–2015
Virginia	Roanoke	51161030201	Non-LIC Contiguous	2011–2015
Virginia	Rockingham	51165010500	Low-Income Community	2011–2015
Virginia	Rockingham	51165011700	Low-Income Community	2011–2015
Virginia	Russell	51167030401	Low-Income Community	2011–2015
Virginia	Scott	51169030600	Low-Income Community	2011–2015
Virginia	Shenandoah	51171040700	Low-Income Community	2011–2015
Virginia	Smyth	51173030301	Low-Income Community	2011–2015
Virginia	Smyth	51173030701	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020202	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020304	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020305	Low-Income Community	2011–2015
Virginia	Sussex	51183870300	Low-Income Community	2011–2015
Virginia	Tazewell	51185020200	Low-Income Community	2011–2015
Virginia	Tazewell	51185020600	Low-Income Community	2011–2015
Virginia	Warren	51187020601	Low-Income Community	2011–2015
Virginia	Washington	51191010100	Low-Income Community	2011–2015
Virginia	Wise	51195930900	Low-Income Community	2011–2015
Virginia	Wise	51195931300	Low-Income Community	2011–2015
Virginia	Wise	51195931400	Non-LIC Contiguous	2011–2015
Virginia	Wise	51195931700	Low-Income Community	2011–2015
Virginia	Wythe	51197050100	Low-Income Community	2011–2015
Virginia	Alexandria	51510200102	Low-Income Community	2011–2015
Virginia	Alexandria	51510200104	Low-Income Community	2011–2015
Virginia	Alexandria	51510200303	Low-Income Community	2011–2015
Virginia	Alexandria	51510201203	Low-Income Community	2011–2015
Virginia	Bristol	51520020100	Low-Income Community	2011–2015
Virginia	Bristol	51520020400	Low-Income Community	2011–2015
Virginia	Buena Vista	51530930600	Low-Income Community	2011–2015
Virginia	Charlottesville	51540000401	Low-Income Community	2011–2015
Virginia	Charlottesville	51540000501	Low-Income Community	2011–2015
Virginia	Chesapeake	51550020300	Low-Income Community	2011–2015
Virginia	Chesapeake	51550020500	Low-Income Community	2011–2015
Virginia	Chesapeake	51550021403	Low-Income Community	2011–2015
Virginia	Covington	51580060200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Danville	51590000300	Low-Income Community	2011–2015
Virginia	Danville	51590000400	Low-Income Community	2011–2015
Virginia	Danville	51590000500	Low-Income Community	2011–2015
Virginia	Danville	51590000600	Low-Income Community	2011–2015
Virginia	Emporia	51595890100	Low-Income Community	2011–2015
Virginia	Franklin	51620090200	Low-Income Community	2011–2015
Virginia	Fredericksburg	51630000200	Low-Income Community	2011–2015
Virginia	Fredericksburg	51630000500	Low-Income Community	2011–2015
Virginia	Galax	51640070101	Low-Income Community	2011–2015
Virginia	Galax	51640070102	Low-Income Community	2011–2015
Virginia	Hampton	51650010313	Low-Income Community	2011–2015
Virginia	Hampton	51650010314	Low-Income Community	2011–2015
Virginia	Hampton	51650010502	Low-Income Community	2011–2015
Virginia	Hampton	51650010601	Low-Income Community	2011–2015
Virginia	Harrisonburg	51660000101	Low-Income Community	2011–2015
Virginia	Harrisonburg	51660000302	Low-Income Community	2011–2015
Virginia	Hopewell	51670820300	Low-Income Community	2011–2015
Virginia	Hopewell	51670820600	Low-Income Community	2011–2015
Virginia	Lexington	51678930500	Low-Income Community	2011–2015
Virginia	Lynchburg	51680000500	Low-Income Community	2011–2015
Virginia	Lynchburg	51680000600	Low-Income Community	2011–2015
Virginia	Lynchburg	51680001400	Low-Income Community	2011–2015
Virginia	Lynchburg	51680001600	Low-Income Community	2011–2015
Virginia	Manassas	51683910201	Low-Income Community	2011–2015
Virginia	Martinsville	51690000100	Low-Income Community	2011–2015
Virginia	Martinsville	51690000200	Low-Income Community	2011–2015
Virginia	Newport News	51700030100	Low-Income Community	2011–2015
Virginia	Newport News	51700030400	Low-Income Community	2011–2015
Virginia	Newport News	51700030800	Low-Income Community	2011–2015
Virginia	Newport News	51700032113	Low-Income Community	2011–2015
Virginia	Newport News	51700032128	Low-Income Community	2011–2015
Virginia	Newport News	51700032225	Low-Income Community	2011–2015
Virginia	Newport News	51700032400	Low-Income Community	2011–2015
Virginia	Norfolk	51710001100	Low-Income Community	2011–2015
Virginia	Norfolk	51710002500	Low-Income Community	2011–2015
Virginia	Norfolk	51710002600	Low-Income Community	2011–2015
Virginia	Norfolk	51710002700	Low-Income Community	2011–2015
Virginia	Norfolk	51710002900	Low-Income Community	2011–2015
Virginia	Norfolk	51710003501	Low-Income Community	2011–2015
Virginia	Norfolk	51710004100	Low-Income Community	2011–2015
Virginia	Norfolk	51710004200	Low-Income Community	2011–2015
Virginia	Norfolk	51710004700	Low-Income Community	2011–2015
Virginia	Norfolk	51710004800	Low-Income Community	2011–2015
Virginia	Norfolk	51710005000	Low-Income Community	2011–2015
Virginia	Norfolk	51710005701	Low-Income Community	2011–2015
Virginia	Norfolk	51710006502	Low-Income Community	2011–2015
Virginia	Norfolk	51710006800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Norfolk	51710006901	Low-Income Community	2011–2015
Virginia	Norfolk	51710007001	Low-Income Community	2011–2015
Virginia	Norton	51720960100	Low-Income Community	2011–2015
Virginia	Petersburg	51730810100	Low-Income Community	2011–2015
Virginia	Petersburg	51730811200	Low-Income Community	2011–2015
Virginia	Petersburg	51730811300	Low-Income Community	2011–2015
Virginia	Portsmouth	51740210200	Low-Income Community	2011–2015
Virginia	Portsmouth	51740210500	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211400	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211700	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211800	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211900	Low-Income Community	2011–2015
Virginia	Portsmouth	51740212000	Low-Income Community	2011–2015
Virginia	Portsmouth	51740212100	Low-Income Community	2011–2015
Virginia	Radford	51750010102	Low-Income Community	2011–2015
Virginia	Radford	51750010200	Low-Income Community	2011–2015
Virginia	Richmond	51760020200	Low-Income Community	2011–2015
Virginia	Richmond	51760020300	Low-Income Community	2011–2015
Virginia	Richmond	51760020500	Low-Income Community	2011–2015
Virginia	Richmond	51760021100	Low-Income Community	2011–2015
Virginia	Richmond	51760030200	Low-Income Community	2011–2015
Virginia	Richmond	51760040200	Low-Income Community	2011–2015
Virginia	Richmond	51760060200	Low-Income Community	2011–2015
Virginia	Richmond	51760060700	Low-Income Community	2011–2015
Virginia	Richmond	51760060800	Low-Income Community	2011–2015
Virginia	Richmond	51760060900	Low-Income Community	2011–2015
Virginia	Richmond	51760061000	Low-Income Community	2011–2015
Virginia	Roanoke	51770000601	Low-Income Community	2011–2015
Virginia	Roanoke	51770000602	Low-Income Community	2011–2015
Virginia	Roanoke	51770001100	Non-LIC Contiguous	2011–2015
Virginia	Roanoke	51770001200	Low-Income Community	2011–2015
Virginia	Salem	51775010100	Low-Income Community	2011–2015
Virginia	Staunton	51790000200	Low-Income Community	2011–2015
Virginia	Staunton	51790000300	Low-Income Community	2012–2016
Virginia	Suffolk	51800065400	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810040200	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810041002	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044200	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044805	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044806	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045407	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045408	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045604	Low-Income Community	2011–2015
Virginia	Waynesboro	51820003200	Low-Income Community	2011–2015
Virginia	Williamsburg	51830370200	Low-Income Community	2011–2015
Virginia	Winchester	51840000100	Low-Income Community	2011–2015
Washington	Adams	53001950200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	Asotin	53003960300	Low-Income Community	2011–2015
Washington	Benton	53005010901	Low-Income Community	2011–2015
Washington	Benton	53005011300	Low-Income Community	2011–2015
Washington	Chelan	53007961000	Low-Income Community	2011–2015
Washington	Chelan	53007961100	Low-Income Community	2011–2015
Washington	Chelan	53007961200	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009000200	Low-Income Community	2011–2015
Washington	Clallam	53009000300	Low-Income Community	2011–2015
Washington	Clallam	53009000400	Low-Income Community	2011–2015
Washington	Clallam	53009000700	Low-Income Community	2011–2015
Washington	Clallam	53009000800	Low-Income Community	2011–2015
Washington	Clallam	53009000900	Low-Income Community	2011–2015
Washington	Clallam	53009001500	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009002100	Low-Income Community	2011–2015
Washington	Clallam	53009002300	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009940000	Low-Income Community	2011–2015
Washington	Clark	53011040507	Low-Income Community	2011–2015
Washington	Clark	53011040509	Low-Income Community	2011–2015
Washington	Clark	53011041009	Low-Income Community	2011–2015
Washington	Clark	53011041600	Low-Income Community	2011–2015
Washington	Clark	53011042400	Low-Income Community	2011–2015
Washington	Clark	53011042500	Non-LIC Contiguous	2011–2015
Washington	Clark	53011042600	Low-Income Community	2011–2015
Washington	Columbia	53013960200	Low-Income Community	2011–2015
Washington	Cowlitz	53015000300	Low-Income Community	2011–2015
Washington	Cowlitz	53015001100	Low-Income Community	2011–2015
Washington	Douglas	53017950300	Low-Income Community	2011–2015
Washington	Ferry	53019940000	Low-Income Community	2011–2015
Washington	Ferry	53019970100	Low-Income Community	2011–2015
Washington	Ferry	53019970200	Low-Income Community	2011–2015
Washington	Franklin	53021020100	Low-Income Community	2011–2015
Washington	Garfield	53023970300	Low-Income Community	2011–2015
Washington	Grant	53025010800	Low-Income Community	2011–2015
Washington	Grays Harbor	53027000200	Low-Income Community	2011–2015
Washington	Grays Harbor	53027001000	Low-Income Community	2011–2015
Washington	Grays Harbor	53027001500	Low-Income Community	2011–2015
Washington	Island	53029970700	Low-Income Community	2011–2015
Washington	Jefferson	53031950202	Low-Income Community	2011–2015
Washington	Jefferson	53031950400	Low-Income Community	2011–2015
Washington	Jefferson	53031950601	Non-LIC Contiguous	2011–2015
Washington	Jefferson	53031950702	Low-Income Community	2011–2015
Washington	King	53033008600	Low-Income Community	2011–2015
Washington	King	53033008700	Low-Income Community	2011–2015
Washington	King	53033009000	Low-Income Community	2011–2015
Washington	King	53033009100	Low-Income Community	2011–2015
Washington	King	53033009200	Low-Income Community	2011–2015
Washington	King	53033009300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	King	53033009400	Low-Income Community	2011–2015
Washington	King	53033011001	Low-Income Community	2011–2015
Washington	King	53033011101	Low-Income Community	2011–2015
Washington	King	53033011800	Low-Income Community	2011–2015
Washington	King	53033026100	Low-Income Community	2011–2015
Washington	King	53033026801	Low-Income Community	2011–2015
Washington	King	53033026802	Low-Income Community	2011–2015
Washington	King	53033027200	Low-Income Community	2011–2015
Washington	King	53033027300	Low-Income Community	2011–2015
Washington	King	53033027900	Low-Income Community	2011–2015
Washington	King	53033028000	Low-Income Community	2011–2015
Washington	King	53033028100	Low-Income Community	2011–2015
Washington	King	53033028200	Low-Income Community	2011–2015
Washington	King	53033028402	Low-Income Community	2011–2015
Washington	King	53033028403	Low-Income Community	2011–2015
Washington	King	53033028802	Low-Income Community	2011–2015
Washington	King	53033030006	Low-Income Community	2011–2015
Washington	Kitsap	53035080500	Low-Income Community	2011–2015
Washington	Kitsap	53035092200	Low-Income Community	2011–2015
Washington	Kitsap	53035092300	Low-Income Community	2011–2015
Washington	Kittitas	53037975500	Low-Income Community	2011–2015
Washington	Kittitas	53037975600	Low-Income Community	2011–2015
Washington	Klickitat	53039950100	Low-Income Community	2011–2015
Washington	Klickitat	53039950200	Low-Income Community	2011–2015
Washington	Lewis	53041971000	Low-Income Community	2011–2015
Washington	Lewis	53041971100	Non-LIC Contiguous	2011–2015
Washington	Lincoln	53043960400	Low-Income Community	2011–2015
Washington	Mason	53045960600	Low-Income Community	2011–2015
Washington	Mason	53045961300	Low-Income Community	2011–2015
Washington	Okanogan	53047940100	Low-Income Community	2011–2015
Washington	Okanogan	53047940200	Low-Income Community	2011–2015
Washington	Okanogan	53047970400	Low-Income Community	2011–2015
Washington	Okanogan	53047970800	Low-Income Community	2011–2015
Washington	Pacific	53049950200	Low-Income Community	2011–2015
Washington	Pacific	53049950300	Low-Income Community	2011–2015
Washington	Pacific	53049950800	Low-Income Community	2011–2015
Washington	Pend Oreille	53051970200	Low-Income Community	2011–2015
Washington	Pend Oreille	53051970500	Low-Income Community	2011–2015
Washington	Pierce	53053061400	Low-Income Community	2011–2015
Washington	Pierce	53053061601	Low-Income Community	2011–2015
Washington	Pierce	53053061602	Low-Income Community	2011–2015
Washington	Pierce	53053062400	Low-Income Community	2011–2015
Washington	Pierce	53053062600	Low-Income Community	2011–2015
Washington	Pierce	53053071408	Low-Income Community	2011–2015
Washington	Pierce	53053071409	Low-Income Community	2011–2015
Washington	Pierce	53053071503	Low-Income Community	2011–2015
Washington	Pierce	53053071805	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	Pierce	53053071806	Low-Income Community	2011–2015
Washington	Pierce	53053072000	Low-Income Community	2011–2015
Washington	Pierce	53053940007	Low-Income Community	2011–2015
Washington	Skagit	53057940500	Low-Income Community	2011–2015
Washington	Skagit	53057951500	Low-Income Community	2011–2015
Washington	Skagit	53057952200	Low-Income Community	2011–2015
Washington	Skagit	53057952401	Low-Income Community	2011–2015
Washington	Skagit	53057952500	Non-LIC Contiguous	2011–2015
Washington	Skamania	53059950300	Low-Income Community	2011–2015
Washington	Skamania	53059950400	Low-Income Community	2011–2015
Washington	Skamania	53059950500	Low-Income Community	2011–2015
Washington	Snohomish	53061040200	Low-Income Community	2011–2015
Washington	Snohomish	53061040700	Low-Income Community	2011–2015
Washington	Snohomish	53061041901	Low-Income Community	2011–2015
Washington	Snohomish	53061051400	Low-Income Community	2011–2015
Washington	Snohomish	53061052803	Low-Income Community	2011–2015
Washington	Snohomish	53061053509	Low-Income Community	2011–2015
Washington	Snohomish	53061053700	Low-Income Community	2011–2015
Washington	Spokane	53063000200	Low-Income Community	2011–2015
Washington	Spokane	53063001600	Low-Income Community	2011–2015
Washington	Spokane	53063002300	Low-Income Community	2011–2015
Washington	Spokane	53063002400	Low-Income Community	2011–2015
Washington	Spokane	53063003100	Low-Income Community	2011–2015
Washington	Spokane	53063003200	Low-Income Community	2011–2015
Washington	Spokane	53063003500	Low-Income Community	2011–2015
Washington	Spokane	53063004000	Low-Income Community	2011–2015
Washington	Spokane	53063010401	Low-Income Community	2011–2015
Washington	Spokane	53063014400	Low-Income Community	2011–2015
Washington	Spokane	53063014500	Low-Income Community	2011–2015
Washington	Stevens	53065941000	Low-Income Community	2011–2015
Washington	Stevens	53065950800	Low-Income Community	2011–2015
Washington	Thurston	53067010100	Low-Income Community	2011–2015
Washington	Thurston	53067011200	Low-Income Community	2011–2015
Washington	Thurston	53067012320	Low-Income Community	2011–2015
Washington	Thurston	53067012720	Low-Income Community	2011–2015
Washington	Walla Walla	53071920300	Low-Income Community	2011–2015
Washington	Walla Walla	53071920500	Low-Income Community	2011–2015
Washington	Whatcom	53073000600	Low-Income Community	2011–2015
Washington	Whatcom	53073001000	Low-Income Community	2011–2015
Washington	Whatcom	53073940000	Low-Income Community	2011–2015
Washington	Yakima	53077000100	Low-Income Community	2011–2015
Washington	Yakima	53077000200	Low-Income Community	2011–2015
Washington	Yakima	53077001300	Low-Income Community	2011–2015
Washington	Yakima	53077001501	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971500	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971600	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
West Virginia	Boone	54005958300	Low-Income Community	2011–2015
West Virginia	Cabell	54011000600	Low-Income Community	2011–2015
West Virginia	Cabell	54011010900	Low-Income Community	2011–2015
West Virginia	Greenbrier	54025950100	Low-Income Community	2011–2015
West Virginia	Greenbrier	54025950700	Low-Income Community	2011–2015
West Virginia	Hampshire	54027968200	Low-Income Community	2011–2015
West Virginia	Hancock	54029021300	Low-Income Community	2011–2015
West Virginia	Harrison	54033030100	Low-Income Community	2011–2015
West Virginia	Jackson	54035963300	Low-Income Community	2011–2015
West Virginia	Jackson	54035963400	Non-LIC Contiguous	2011–2015
West Virginia	Jefferson	54037972300	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972401	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972402	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972505	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972506	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972800	Low-Income Community	2011–2015
West Virginia	Kanawha	54039000800	Low-Income Community	2011–2015
West Virginia	Kanawha	54039000900	Low-Income Community	2011–2015
West Virginia	Kanawha	54039001200	Low-Income Community	2011–2015
West Virginia	Kanawha	54039001700	Low-Income Community	2011–2015
West Virginia	Kanawha	54039013000	Low-Income Community	2011–2015
West Virginia	Kanawha	54039013100	Low-Income Community	2011–2015
West Virginia	Marion	54049020100	Low-Income Community	2011–2015
West Virginia	Marion	54049020700	Low-Income Community	2011–2015
West Virginia	Marshall	54051020200	Low-Income Community	2011–2015
West Virginia	Mason	54053955102	Low-Income Community	2011–2015
West Virginia	Mercer	54055001300	Low-Income Community	2011–2015
West Virginia	Mercer	54055002300	Low-Income Community	2011–2015
West Virginia	Mercer	54055002400	Low-Income Community	2011–2015
West Virginia	Mingo	54059957400	Low-Income Community	2011–2015
West Virginia	Mingo	54059957700	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010102	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010201	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010600	Low-Income Community	2011–2015
West Virginia	Monroe	54063950200	Low-Income Community	2011–2015
West Virginia	Morgan	54065970800	Low-Income Community	2011–2015
West Virginia	Nicholas	54067950100	Non-LIC Contiguous	2011–2015
West Virginia	Nicholas	54067950200	Low-Income Community	2011–2015
West Virginia	Ohio	54069002700	Low-Income Community	2011–2015
West Virginia	Raleigh	54081000200	Low-Income Community	2011–2015
West Virginia	Raleigh	54081000400	Low-Income Community	2011–2015
West Virginia	Randolph	54083966100	Low-Income Community	2011–2015
West Virginia	Summers	54089000700	Low-Income Community	2011–2015
West Virginia	Taylor	54091964600	Low-Income Community	2011–2015
West Virginia	Tyler	54095961800	Low-Income Community	2011–2015
West Virginia	Upshur	54097966700	Low-Income Community	2011–2015
West Virginia	Upshur	54097966800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
West Virginia	Wayne	54099005200	Low-Income Community	2011–2015
West Virginia	Wetzel	54103030400	Low-Income Community	2011–2015
West Virginia	Wood	54107000701	Low-Income Community	2011–2015
West Virginia	Wood	54107011000	Non-LIC Contiguous	2011–2015
West Virginia	Wyoming	54109003100	Low-Income Community	2011–2015
Wisconsin	Ashland	55003950300	Low-Income Community	2011–2015
Wisconsin	Barron	55005000500	Low-Income Community	2011–2015
Wisconsin	Barron	55005000600	Low-Income Community	2011–2015
Wisconsin	Brown	55009000100	Low-Income Community	2011–2015
Wisconsin	Brown	55009000800	Low-Income Community	2011–2015
Wisconsin	Brown	55009001702	Low-Income Community	2011–2015
Wisconsin	Brown	55009021303	Low-Income Community	2011–2015
Wisconsin	Chippewa	55017010500	Low-Income Community	2011–2015
Wisconsin	Columbia	55021970400	Low-Income Community	2011–2015
Wisconsin	Crawford	55023960500	Low-Income Community	2011–2015
Wisconsin	Dane	55025000407	Low-Income Community	2011–2015
Wisconsin	Dane	55025000408	Low-Income Community	2011–2015
Wisconsin	Dane	55025000600	Low-Income Community	2011–2015
Wisconsin	Dane	55025001401	Low-Income Community	2011–2015
Wisconsin	Dane	55025001402	Low-Income Community	2011–2015
Wisconsin	Dane	55025001502	Low-Income Community	2011–2015
Wisconsin	Dane	55025001804	Low-Income Community	2011–2015
Wisconsin	Dane	55025002100	Low-Income Community	2011–2015
Wisconsin	Dane	55025002402	Low-Income Community	2011–2015
Wisconsin	Dane	55025002500	Low-Income Community	2011–2015
Wisconsin	Dane	55025011505	Low-Income Community	2011–2015
Wisconsin	Dodge	55027960900	Low-Income Community	2011–2015
Wisconsin	Douglas	55031020300	Low-Income Community	2011–2015
Wisconsin	Douglas	55031021100	Low-Income Community	2011–2015
Wisconsin	Dunn	55033970800	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035000600	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035001101	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035001200	Low-Income Community	2011–2015
Wisconsin	Fond du Lac	55039040500	Low-Income Community	2011–2015
Wisconsin	Grant	55043960900	Low-Income Community	2011–2015
Wisconsin	Green	55045960500	Low-Income Community	2011–2015
Wisconsin	Green Lake	55047100100	Low-Income Community	2011–2015
Wisconsin	Jefferson	55055100200	Low-Income Community	2011–2015
Wisconsin	Jefferson	55055101100	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059000700	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059001000	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059001200	Low-Income Community	2011–2015
Wisconsin	La Crosse	55063000200	Low-Income Community	2011–2015
Wisconsin	La Crosse	55063000400	Low-Income Community	2011–2015
Wisconsin	Langlade	55067960600	Low-Income Community	2011–2015
Wisconsin	Lincoln	55069960800	Low-Income Community	2011–2015
Wisconsin	Manitowoc	55071000800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wisconsin	Manitowoc	55071005400	Low-Income Community	2011–2015
Wisconsin	Marathon	55073000100	Low-Income Community	2011–2015
Wisconsin	Marathon	55073000500	Low-Income Community	2011–2015
Wisconsin	Marinette	55075960800	Low-Income Community	2011–2015
Wisconsin	Marinette	55075961400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000101	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000102	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000201	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079001200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079001300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079004100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079004700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079008900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079009800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079009900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079011300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079013500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079013700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079014100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079014900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079021600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079100200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079110100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079170600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079185400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079185600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186000	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186800	Low-Income Community	2011–2015
Wisconsin	Oneida	55085971500	Low-Income Community	2011–2015
Wisconsin	Outagamie	55087010100	Low-Income Community	2011–2015
Wisconsin	Pierce	55093960400	Low-Income Community	2011–2015
Wisconsin	Portage	55097960400	Low-Income Community	2011–2015
Wisconsin	Portage	55097961000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wisconsin	Price	55099970200	Low-Income Community	2011–2015
Wisconsin	Racine	55101000100	Low-Income Community	2011–2015
Wisconsin	Racine	55101000400	Low-Income Community	2011–2015
Wisconsin	Racine	55101000500	Low-Income Community	2011–2015
Wisconsin	Richland	55103970400	Low-Income Community	2011–2015
Wisconsin	Rock	55105000100	Low-Income Community	2011–2015
Wisconsin	Rock	55105001000	Low-Income Community	2011–2015
Wisconsin	Rock	55105001400	Low-Income Community	2011–2015
Wisconsin	Rock	55105001500	Low-Income Community	2011–2015
Wisconsin	Rock	55105001700	Low-Income Community	2011–2015
Wisconsin	Rusk	55107960500	Low-Income Community	2011–2015
Wisconsin	Sauk	55111000300	Low-Income Community	2011–2015
Wisconsin	Sawyer	55113100300	Low-Income Community	2011–2015
Wisconsin	Sawyer	55113940000	Low-Income Community	2011–2015
Wisconsin	Shawano	55115100500	Low-Income Community	2011–2015
Wisconsin	Sheboygan	55117000800	Low-Income Community	2011–2015
Wisconsin	Sheboygan	55117011400	Low-Income Community	2011–2015
Wisconsin	Vernon	55123960100	Low-Income Community	2011–2015
Wisconsin	Vilas	55125940000	Low-Income Community	2011–2015
Wisconsin	Vilas	55125950500	Low-Income Community	2011–2015
Wisconsin	Walworth	55127000400	Low-Income Community	2011–2015
Wisconsin	Walworth	55127000501	Low-Income Community	2011–2015
Wisconsin	Washburn	55129950500	Low-Income Community	2011–2015
Wisconsin	Waukesha	55133202600	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139000500	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139001500	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139002900	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139003300	Low-Income Community	2011–2015
Wisconsin	Wood	55141010400	Low-Income Community	2011–2015
Wisconsin	Wood	55141011200	Low-Income Community	2011–2015
Wisconsin	Wood	55141011700	Low-Income Community	2011–2015
Wyoming	Albany	56001962800	Low-Income Community	2011–2015
Wyoming	Albany	56001963100	Low-Income Community	2011–2015
Wyoming	Albany	56001963400	Low-Income Community	2011–2015
Wyoming	Albany	56001963500	Low-Income Community	2011–2015
Wyoming	Albany	56001963700	Low-Income Community	2011–2015
Wyoming	Carbon	56007967700	Low-Income Community	2011–2015
Wyoming	Converse	56009956600	Non-LIC Contiguous	2011–2015
Wyoming	Fremont	56013000100	Low-Income Community	2011–2015
Wyoming	Fremont	56013940100	Low-Income Community	2011–2015
Wyoming	Fremont	56013940300	Low-Income Community	2011–2015
Wyoming	Goshen	56015957800	Low-Income Community	2011–2015
Wyoming	Goshen	56015958000	Low-Income Community	2011–2015
Wyoming	Hot Springs	56017967800	Low-Income Community	2011–2015
Wyoming	Laramie	56021000402	Low-Income Community	2011–2015
Wyoming	Laramie	56021001502	Low-Income Community	2011–2015
Wyoming	Natrona	56025000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wyoming	Natrona	56025000800	Low-Income Community	2011–2015
Wyoming	Natrona	56025001100	Low-Income Community	2011–2015
Wyoming	Natrona	56025001200	Low-Income Community	2011–2015
Wyoming	Park	56029965400	Low-Income Community	2011–2015
Wyoming	Platte	56031959100	Low-Income Community	2011–2015
Wyoming	Platte	56031959400	Low-Income Community	2011–2015
Wyoming	Sweetwater	56037970903	Low-Income Community	2011–2015
Wyoming	Uinta	56041975400	Low-Income Community	2011–2015
Wyoming	Washakie	56043000301	Low-Income Community	2011–2015

DRAFTING INFORMATION

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Beginning of Construction for the Investment Tax Credit under Section 48

Notice 2018–59

SECTION 1. PURPOSE

On December 18, 2015, the Consolidated Appropriations Act, 2016, Pub. L. No. 114–113, Div. P, Title III, § 303, 129 Stat. 2242, extended and modified the investment tax credit (ITC) under § 48 of the Internal Revenue Code (Code). As modified, § 48 phases down the ITC for solar energy property the construction of which begins after December 31, 2019, and before January 1, 2022, and further limits the amount of the § 48 credit available for solar energy property that is not placed in service before January 1, 2024.

On February 9, 2018, the Bipartisan Budget Act of 2018, Pub. L. 115–123, Div. D, Title I, § 40411, 132 Stat. 150 (BBA 2018), modified the ITC under § 48 by replacing the requirement to place energy property in service by a certain date with a requirement to begin construction by a certain later date. Prior to the modification, energy property was required to be placed in service by a certain date (before January 1, 2016, or January 1, 2017, depending on the type of energy property). As modified, construction of energy property must begin before January 1, 2022. This modification has the effect of retroactively extending by five years the ITC for fiber-optic solar, qualified fuel cell, qualified microturbine, combined heat and power system (CHP), qualified small wind, and geothermal heat pump property the construction of which begins before January 1, 2022. The amendments also phase out the ITC for fiber-optic solar, qualified fuel cell, and qualified small wind energy property over five years. For these energy properties, regardless of when construction begins, the projects must be placed in service before January 1, 2024.

This notice provides guidance to determine when construction has begun on energy property that is eligible for the § 48 credit. It provides two methods for taxpayers to establish the beginning of construction (Physical Work Test and Five Percent Safe Harbor), a Continuity Requirement for both methods, rules for transferring energy property, and additional rules applicable to the beginning of construction requirement of § 48.

The Internal Revenue Service (Service) will not issue private letter rulings or determination letters to taxpayers regarding the application of this notice or the beginning of construction requirement of § 48.

SECTION 2. BACKGROUND

.01 *In general*. Section 48 provides that the ITC for any taxable year is the energy percentage of the basis of each energy property placed in service during such taxable year. For most types of energy property, eligibility for the ITC, and in some cases the amount of the ITC for which energy property is eligible, are dependent upon meeting certain deadlines for beginning construction on the energy property and placing the energy property in service. The table below summarizes these requirements, which are set forth in more detail in section 2.03 of this notice.

Type of Energy Property	Date Construction Begins	Placed in Service Date	ITC Amount
Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	10%
	On or after 1/1/22	Any	10%
Fiber-Optic Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%

EAS000317

MICROGRID KNOWLEDGE SPECIAL REPORT

Think Like a Financier to Win Funding for Your Microgrid Project

Written by Peter Maloney, Real Energy Writers



Photo: NicoElNino/Shutterstock.com

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Because power outages are sporadic and unpredictable, financiers do not always know how to assign a financial value to resilience, although a great deal of analytical work on the concept has been conducted recently.

Mind the Gap

It's far easier to finance a microgrid today than it was just a few years ago thanks to new financing mechanisms and a greater understanding of the technology by investors. Still, some great microgrid projects do not see the light of day because of the gap between a developer's vision and a financier's scrutiny.

Developers, sponsors and engineers who work on microgrid projects think in terms of equipment, configurations and benefits, such as resiliency and sustainability. As much as they may agree with the policy goals and beneficial aspects of a microgrid, financiers bring a different point of view to a project. They look at the bottom line and think in terms such as internal rate of return, risk-reward ratios and debt-service coverage ratios. The gap between the two points of view often creates a gulf into which a microgrid project can fall and never reappear into the light of day.

It is possible to bridge the gap, however, by taking the time to understand what financiers look for in a microgrid project.

This white paper lays out how investors and other financiers think about energy projects. The aim is to help move a microgrid from the drawing board to reality by preparing engineering firms, developers and project sponsors to think like those in the lending community.

For the purposes of this paper, we can define a microgrid as an electric power system that generates enough energy to meet or exceed loads within a defined geographical boundary. A microgrid may or may not operate within a utility grid, but if it does, it has the ability to "island," i.e., to disconnect from the surrounding grid and operate autonomously to ride out a blackout or other adverse conditions.

The ability to operate as an island is a distinguishing characteristic of a microgrid. It is also often the source of some of a microgrid's chief benefits. Being able to island during a storm or an emergency enables a microgrid to keep the electricity flowing to critical municipal facilities, hospitals, data centers, grocery stores, gas stations and others that provide services society depends upon. The reliable power offered by microgrids is also important to businesses that lose products, manufacturing capabilities or sales during power outages.

As laudable and valuable as microgrid benefits may be, from the perspective of some financiers, they also present challenges. In their view, islanding requires complicated technology that is unfamiliar to them compared to conventional energy equipment, such as gas turbines, which have long track records both in terms of operations and as part of successfully financed deals.

So, while the ability to island enables a microgrid to provide resilience, not all financiers understand how to turn energy resilience into a source of cash flow. Because power outages are sporadic and unpredictable, financiers do not always know how to assign a financial value to resilience, although a great deal of **analytical work** on the concept has been conducted recently.

That is one of the reasons government grants helped fund several early microgrid projects. Among the early backers were the U.S. Department of Energy, the U.S. Department of Defense and state agencies, such the Connecticut Department of Energy and Environmental Protection, the New York State Energy Research and Development Authority, and the California Energy Commission's Electric Program Investment Charge.

Today, state governments continue to provide backing, but microgrids also are tapping into private sources. Many projects are financed on the balance sheet of a vendor, usually a company that specializes in microgrids or the equipment used in microgrids. Private capital, too, has come into play. For instance, Warburg Pincus teamed up with Scale Microgrid bringing an equity commitment of up to **$300 million**.

While microgrids have more avenues for financing than ever before, the problem remains that microgrid developers and the financial world don't always speak the same language. What do project sponsors need to know—and do—to create a proposal that will get a nod from investors?

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Getting to Bankable

In order to have a "bankable" microgrid, developers must first understand the obstacles they face. Microgrids are complex and have many moving parts. A single microgrid could include one or two generators, such as solar panels and a gas turbine, an energy storage device, and a variety of controls to monitor grid conditions, balance loads, and connect and disconnect from the grid. This technological complexity may add complexity from a financing point of view.

Over the past several decades, financiers have developed financial mechanisms as the power market has undergone changes brought about by deregulation, decentralization and the proliferation of renewable energy resources. The key project financing technique for independent power plants (IPPs) is the power purchase agreement (PPA) in which a utility or other creditworthy party anchors a development project by agreeing to purchase the electrical—and/or the environmental benefits—of a power generation project. The PPA was later augmented to facilitate the use of the federal production tax credit (PTC) for wind power projects by implementing a partnership-flip structure. Financiers also devised lease arrangements for solar installations that are eligible for the federal investment tax credit (ITC).

Compared with a microgrid, however, those projects require relatively simple financing structures because they are anchored by a stream of payments for energy and green attributes produced. A microgrid could be financed the same way, but that would not account for, or value, many of the abilities and benefits of a microgrid.

Developers and financiers alike face the challenge of attaching monetary values to microgrid attributes in order to create value streams. If the costs of a microgrid are not offset by a predictable value stream on the revenue side of the ledger, it will be more difficult to finance and could become unbankable. Microgrid sponsors should review these obstacles before they approach financiers for financing.

In addition to matching a microgrid's technological attributes and operational benefits with monetary value streams, sponsors should be aware that financiers view microgrids as relatively untested. Many in the microgrid industry may argue this point, but nonetheless, it's a reality they may face when seeking financing. There are several aspects of this status that need to be considered.

> Government agencies and industry players, in an effort to stimulate emerging technologies, have often promoted efforts to standardize project design as well as contractual arrangements so as to attract financing.

Financiers lend money based on projections into the future.
The more certainty that can be associated with those projections, the higher the likelihood of securing funding and securing it at better terms.

Financiers may see microgrids as new technology.
Individual components, such as solar panels or gas turbines, may not be new but when configured into a single project they constitute a new entity. Financiers may require additional data to support the operational claims of microgrids. In addition, some of the components, such as microgrid controllers, are, indeed, new technology and financiers may seek more operational history to demonstrate their viability.

These track record concerns are compounded by the fact that microgrids to date have been built to meet specific requirements. A microgrid project at an urban university that is designed to provide power and heat for campus buildings and be a test bed for electric vehicle charging stations will have a very different configuration than a microgrid in a rural setting designed to provide backup generation for public safety and health functions during emergencies.

The unique design characteristics of microgrids may be beneficial for the clients they are intended to serve, but they pose an informational hindrance when it comes to financing. Financiers want to have data that not only forecasts operational and financial performance, but also compares data across several microgrid projects. In fact, government agencies and industry players, in an effort to stimulate emerging technologies, have often promoted efforts to standardize project design as well as contractual arrangements so as to attract financing. From a financier's perspective, standardized projects lead to efficient financing.

Another key consideration for financiers is the creditworthiness of project participants.
This applies across the board from technology to off-takers. Financiers look for projects with equipment from known and trusted vendors that will be in business if a warranty needs to be invoked. In the same vein, financiers prefer to deal with developers and sponsors with a proven track record in moving projects from conception to fruition, demonstrating the developer/sponsor's ability to successfully negotiate with vendors and to navigate regulatory requirements. And, finally, financiers look for creditworthy counterparties or off-takers; that is, they want to know that the party making payments for the microgrid's energy has the financial wherewithal to meet its obligations.

In addition to track record and creditworthiness, microgrid sponsors also need to consider at least four other factors when approaching a financier or financial institution: revenue streams, capital stack, ownership and risk allocation.

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Revenue streams

The greater number of moving parts in a microgrid can be viewed as a liability by financiers, especially those not familiar with the asset class, but the complexity of a microgrid also creates opportunities for a wider variety of potential revenue streams.

In some locations and jurisdictions, a microgrid can create value for the sponsor or host by reducing demand charges or time shifting load. Innovative financial structures can incorporate those savings into revenue streams for microgrids.

In addition to being able to supply energy under a PPA, a microgrid's ability to multitask can make it eligible to receive payments from wholesale power markets for ancillary services, such as capacity, voltage control or frequency regulation.

Microgrids, especially those that incorporate energy storage, can also provide benefits by reducing demand. In some locations and jurisdictions, a microgrid can create value for the sponsor or host by reducing demand charges or time shifting load. Innovative financial structures can incorporate those savings into revenue streams for microgrids.

Tax credits are an important revenue stream for wind and solar projects, specifically the production tax credit (PTC) and the investment tax credit (ITC), offered by the U.S. government. But not all parties can take advantage of tax credits. Nonprofits, municipal utilities and even some for-profit companies do not have sufficient tax appetite to benefit from tax credits. Additionally, some components of a microgrid are eligible for accelerated depreciation and, until 2023, 100% of the system can be depreciated in the year it is placed in service.

Capital stack

That is important for a sponsor to understand when considering ownership structures and different tiers of capital—what financiers call the capital stack. Financiers have devised structures that allow tax credits to flow to other entities within the project structure. In many solar projects, financial institutions that can use, or monetize, tax credits share ownership of the project until the tax credits expire, or a target return is met, at which point ownership reverts from the tax equity investor back to the sponsor.

Both tax considerations and ownership are important considerations when structuring the capital stack. Some parties may not have a lot of tax appetite. Potential owners of microgrid projects have varying degrees of tax appetite. Strategic players like utilities often can take a hefty equity stake in a project. Most developers, on the other hand, prefer to retain their capital and, instead, rely on leverage to earn their required returns.

Generally speaking, the capital stack of most projects is structured to take advantage of the lowest cost capital. So, a typical deal would place the lowest cost capital, tax equity investors with a preferential interest, ahead of sponsor equity and lenders.

Risk allocation

The appetites of the various parties in any financial arrangement are largely a function of risk appetite, which determines the risk allocation of a project. One of the largest risks in any energy project is fuel supply and price risk. Financiers have devised a number of tools to hedge the risk, such as options and swaps to offset the volatility of fuel costs. In many cases, the best financial outcome requires the customer to procure and take the risk of fuel costs. Because the marginal cost of grid delivered electricity is often highly correlated to natural gas prices, the customer should be indifferent to taking this risk.

Other risks to be considered include:

- **Regulatory**
  Can developers secure needed permits?
- **Construction**
  Will construction be completed on time and on budget?
- **Operational**
  Will the project operate as planned?
- **Counterparty credit**
  Will counterparties, such as PPA counterparties, uphold their obligations?

Developers need to carefully consider what risks they will take. Developers often take regulatory risk. For example, construction companies have been known to share construction risk, or even guarantee timely completion. Financiers are keenly focused on which party will assume what risk, and the assignment of risk plays a key role in determining the pricing of a deal. As a general rule, the less risk the financier takes, the better deal they are willing to offer the sponsor. Risk allocation is also a key factor in choosing the right financier. Financiers have varying risk appetite and different practices. Some are willing to lend to or acquire a project anywhere in the development process. Others are unlikely to lend to or acquire a project until construction is complete.

Ownership

Ownership has a tight function with the already mentioned factors. If a party does not have tax appetite, they are less likely to take ownership of a project in which an ITC plays a key role in financing. Developers often shy away from a large ownership stake. They prefer to "keep their powder dry," that is, preserve their capital to develop the next project. That said, financiers often prefer to see a developer show they have "skin in the game" by retaining an equity stake in a project. Strategic investors, on the other hand, often prefer an equity stake.

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Third Party Ownership Models

The interlocking, and sometimes conflicting, interests and risks associated with revenue streams, ownership and capital requirements are the key drivers in drawing up the financial structure of an energy project.

Because advanced microgrids—those that use sophisticated controls with multiple generation resources—are relatively new, financiers look for characteristics in the projects that are familiar to them.

> Solar power firms have made wide use of lease arrangements as a way of attracting residential customers wary of making a large upfront payment.

Such investors are likely to be familiar with the financial structures used for asset classes that are similar to microgrids, such as stand-alone independent power plants that use PPAs. Or, more recently, project financing backed by hedges. PPAs for microgrids can cover energy sales and green, or environmental, attributes, but they do not necessarily cover other potential revenue streams such as sales of ancillary services or the benefits of meeting reliability or sustainability goals.

Microgrid financing is evolving, however, and as investors become more familiar with the market and the asset class, they have adopted tried and true structures created to remove financial risk from the microgrid host. One financial tool is leasing.

This isn't a new approach—solar power firms have made wide use of lease arrangements as a way of attracting residential customers wary of making a large upfront payment. Instead, they lease the equipment from a solar company that pays the installation costs and, in turn, receives regular payments from the homeowner for the energy.

There are a couple of different varieties of lease arrangements, including sale-lease back arrangements, but, overall, lease arrangements have been one of the largest contributors to the rapid growth of rooftop solar installations.

Energy-as-a-Service

Another tool that is becoming very popular for microgrids is the energy-as-a-service (EaaS) model. Although it was introduced only a couple of years ago, almost 44% of microgrids use the EaaS model, according to Guidehouse Insights. (Graphic below.)

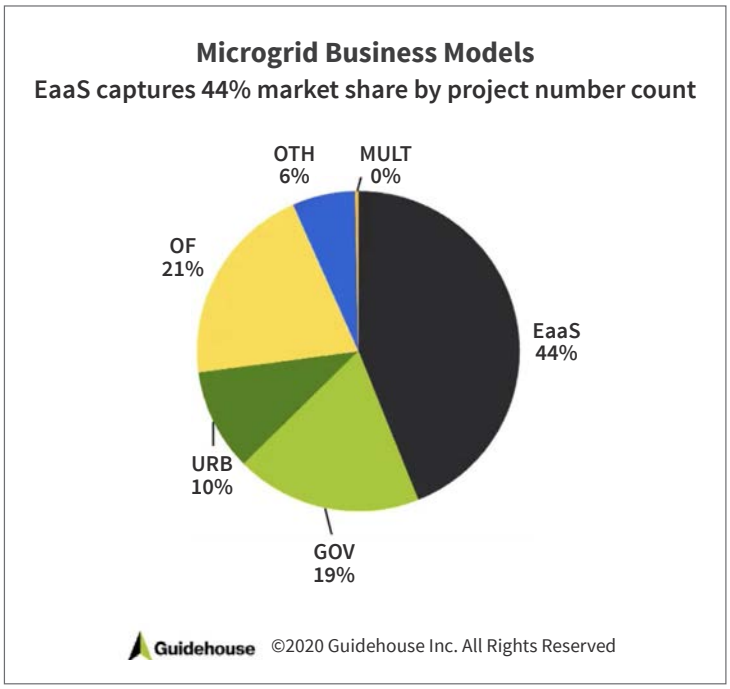
In some ways, the EaaS model resembles the leasing or sale-lease back model. The microgrid host makes regular, recurring payments structured as payments for system use.

For the host, an EaaS arrangement is very similar to paying a utility for energy, except that the host can contract with the developer for additional services that capture the broader range of a microgrid's capabilities, such as resilience—i.e., the host will receive energy even if the surrounding grid suffers an outage.

Often an EaaS agreement is structured so that the client's payments are competitive with what they ordinarily pay for utility services. In some cases, the EaaS payments are lower than utility payments because there are other income streams or incentives available to the EaaS provider, such as sales of ancillary services to the utility or grid operator.

Another advantage of the EaaS model is the flexibility that can be built into the contract. The agreement can be written so that the project can be scaled up in size over time. The EaaS model can also allow for the upgrading of technology over time as microgrid equipment improves.

Guidehouse Insights is forecasting that EaaS will become the preferred model for structuring microgrid deals.



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Finding the Right Fit: Profiles of Financial Advisors

In addition to understanding how financiers look at microgrid projects, developers and sponsors should also spend time understanding what kind of financial institution best suits their needs.

Sapling Financial Consultants

The financing needs of energy industry projects require deep, industry-specific knowledge. That makes it even more important to have an advisor that can present the economics of your project(s) in the best possible light while advising you on what investors are looking for. As a boutique financial modelling and data analytics consulting firm with industry-focused expertise in microgrids and electricity, Sapling Financial Consultants is such an advisor.

Microgrids can include components ranging from solar panels and energy storage devices to gas turbines and demand response mechanisms.

> Sapling provided a detailed financial model for the rollout of several wind farms that incorporated analysis of capital needs and workload changes that resulted in staffing changes and recognition of the need for additional investing rounds.

Sapling Financial Consultants has a track record that includes several clients in the energy sector and several types of energy projects, including high voltage direct current (HVDC) transmission systems, wind farms, solar farms, residential solar projects, vertical wind turbines and peaking plants.

Sapling Financial is well suited to the needs of a burgeoning industry such as microgrids. Many microgrid development companies are still in the early years of their growth curve, making it difficult for them to support in-house capabilities such as a full range of financial analysts. For those companies, Sapling can act as their financial development department, providing the expertise to move a project across the finish line.

For instance, working with an independent alternative energy company that installs on-site power units at industrial sites, Sapling developed a tool to determine the appropriate price the company should charge its clients.

Sapling was then able to build a collection of unique models specific to each customer and adaptable to the requirements of both the customer and the product sold. Sapling took the concept even further, aggregating the test models into a single model the company could use to forecast its business outlook and determine its financing requirements.

In another case, Sapling worked with a power management organization to evaluate the integrity of their financial modelling in the alternative energy space, including the general costs required in the construction and maintenance of solar farms and windmill farms.

Sapling also provided a detailed financial model for the rollout of several wind farms that incorporated analysis of capital needs and workload changes that resulted in staffing changes and recognition of the need for additional investing rounds. The company used the model to support its valuation in discussions with a strategic investor as well as hiring plans and product pricing, as well as a tool to support a more realistic and reasonable offer from the investor.

In addition, Sapling has worked with a transmission operator that needed capital for a project to move electricity from a low-cost to a high-cost jurisdiction. Sapling built a model to assist with pricing the transmission service and obtaining financing. The model provided detailed calculations of the debt/equity split, interest during construction, among other considerations, and it was able to show that a reasonable debt/equity split was likely to generate a satisfactory internal rate of return over 30 years.

Sapling's size and temperament is well suited to the entrepreneurial approach of many microgrid developers, allowing them to expand their capabilities to reach the next level of operation and success.

Sapling's Toronto-based professionals are entrepreneurs advising entrepreneurs.

Checklist for Meeting with a Financier

Having gained an understanding of how financiers think about microgrid development, what should project sponsors do to prepare for a meeting with a potential investor?

Microgrid sponsors should be ready to address the following risk-related items with their financiers:

- ✓ Technology risk
- ✓ Off-taker creditworthiness
- ✓ Operating risks
- ✓ Fuel volatility risk
- ✓ Revenue risks (wholesale price risk)

Microgrid sponsors should also have a game plan for key items that financiers are likely to ask about, such as:

- ✓ Does the project lend itself to a replicable, standardized format?
- ✓ Are there multiple revenue streams available to the project?
- ✓ Who will take on which risks? What is their financial wherewithal?

Armed with this knowledge, sponsors can approach financiers with greater confidence that they will reach a deal to make their microgrid a reality.

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Scale Microgrid Solutions

Most financial services providers aren't experts in distributed energy technology and microgrids and let's face it, these are complex projects. Developers spend countless hours explaining their technology in order to receive financing, all while hoping the financier accurately understands where the real risks and value exist. The consistent message throughout the industry is that it's too difficult to get financing for complicated distributed energy projects.

In addition to their turnkey solutions for full-service microgrids, Scale is investing millions of dollars into distributed energy resources, providing asset-based financing for projects under development, as well as capital to developers or companies seeking to efficiently build out distributed energy and energy infrastructure project pipelines. These projects can include distributed energy such as solar, energy storage, dispatchable generation, microgrids and more or energy infrastructure such as EVs and charging assets.

Scale is backed by the institutional power and capital of Warburg Pincus, which has $62 billion under management and is one of the leading investors in the energy industry.

Scale is investing millions of dollars into distributed energy resources, providing asset-based financing for projects under development, as well as capital to developers or companies seeking to efficiently build out distributed energy and energy infrastructure project pipelines.

What differentiates Scale from the next financing provider? They have actual boots on the ground for these types of projects and not only know how they work but are the top experts in the technology. Scale offers first-hand knowledge of the inherent project risks and value.

By eliminating upfront capital costs and monetizing tax incentives, Scale's customers and partners can save hundreds of thousands, if not millions, of dollars in the first year alone.

Scale can deploy its capital in projects at any stage—from early development to engineering, procurement and construction, to asset management—and move a project across the finish line. The company can also support customers with tax equity, growth or working capital by direct acquisition or long-term ownership. Scale uses its balance sheet as a one-stop-shop for developers. Their partners benefit from the institutional size and scale of its capital, yet they retain the freedom to respond quickly and effectively to their needs.

Scale's business model is designed to eliminate the complexity of designing, building and financing distributed energy systems. By providing the capital needed to enable transformation and creating on-site solutions, Scale is paving the way to the infrastructure revolution. They are breaking down the barriers to deliver a more reliable, sustainable and cost-effective future that's accessible to all.

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Internal Revenue Service

New Markets Tax Credit

Under no circumstances should the contents of this guide be used or cited as authority for setting or sustaining a technical position.



Department of the Treasury
Internal Revenue Service
LMSB-04-0510-016 (May 2010)

Internal
Revenue
Service

Mission

Provide America’s taxpayers top quality service by helping them understand and meet their tax responsibilities and by applying the tax law with integrity and fairness to all.



Department of the Treasury
Internal Revenue Service
Document
Catalog Number

Ten Core Ethical Principles *

Honesty
Integrity/Principled
Promise-Keeping
Loyalty
Fairness
Caring and Concern for Others
Respect for Others
Civic Duty
Pursuit of Excellence
Personal Responsibility/Accountability

The Five Principles of Public Service Ethics *

Public Interest
Objective Judgment
Accountability
Democratic Leadership
Respectability

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Chapter 1
Introduction to the New Markets Tax Credit

Introduction

This chapter provides a brief overview of the New Markets Tax Credit (NMTC) under IRC §45D.

Congressional Intent

The New Markets Tax Credit (NMTC) Program, enacted by Congress as part of the Community Renewal Tax Relief Act of 2000, is incorporated as section 45D of the Internal Revenue Code. This Code section permits individual and corporate taxpayers to receive a credit against federal income taxes for making Qualified Equity Investments (QEIs) in qualified community development entities (CDEs).

These investments are expected to result in the creation of jobs and material improvement in the lives of residents of low-income communities. Examples of expected projects include financing small businesses, improving community facilities such as daycare centers, and increasing home ownership opportunities.

> A "low-income community" is defined as any population census tract where the poverty rate for such tract is at least 20% or in the case of a tract not located within a metropolitan area, median family income for such tract does not exceed 80 of statewide median family income, or in the case of a tract located within a metropolitan area, the median family income for such tract does not exceed 80% of the greater of statewide median family income or the metropolitan area median family income.

As part of the American Jobs Creation Act of 2004, IRC §45D(e)(2) was amended to provide that targeted *populations* may be treated as low-income communities. A "targeted population" means individuals, or an identifiable group of individuals, including an Indian tribe, who are low-income persons or otherwise lack adequate access to loans or equity investments.

"Targeted population" also includes the Hurricane Katrina Gulf Opportunity (GO) Zone, where individuals' principal residences or principal sources of income were located in areas that were flooded, sustained heavy damage, or sustained catastrophic damage as a result of Hurricane Katrina.

See Notice 2006-60, [2006], 2006-2 C.B. 82, for additional guidance on targeted populations.

Taxpayers' Qualified Equity Investment (QEI)

Qualified Equity Investment (QEI) Defined

The actual cash investment made by the investor to the CDE, which is referred to as the equity investment, is the first step in defining a QEI. This cash investment eventually qualifies for the NMTC provided that the CDE makes qualified low-income community investments (QLICIs).

A QEI is, in general, any equity investment in a CDE if:

1. Such investment is acquired by the investor at its original issue (directly or through an underwriter) solely in exchange for cash,

2. Substantially all (at least 85%) of the cash is used by the CDE to make qualified low-income community investments (QLICI), and

3. The investment is designated by the CDE as a QEI on its books and records using any reasonable method.

The term equity investment means any stock in an entity which is a corporation, and any capital interest in an entity which is a partnership.

Amount Paid at Original Issue

Under IRC §45D(b)(1)(A) and Treas. Reg. §1.45D-1(b)(4), the amount paid by the investor to the CDE for a QEI at its original issue consists of all amounts paid by the taxpayer to, or on behalf of, the CDE and includes any underwriter fees to purchase the investment at its original issue.

Time of Investment

In general, an equity investment in a CDE is not eligible to be designated as a QEI if it is made before the CDE enters into an allocation agreement with the Community Development Financial Institutions Fund (CDFI). The allocation agreement specifies the terms of the NMTC allocation under IRC §45D(f)(2). However, for exceptions to the rule, see Treas. Reg. §1.45D-1(c)(3)(ii).

Reporting Requirements

A CDE must provide notice to any investor who acquires a QEI in the CDE at its original issue that the equity investment is a QEI entitling the investor to claim the NMTC. The notice is made using Form 8874-A, Notice of Qualified Equity Investment for New Markets Credit, or for periods before March 2007, a written notification prepared by the CDE. The notice must be provided by the CDE to the taxpayer *no later than 60 days* after the date the investor makes the equity investment in the CDE. The notice must contain the amount paid to the CDE for the QEI at its original issue and the CDE's taxpayer identification number. (Treas. Reg. §1.45D-1(g)(2)(A).)

Allocation Limitation

The amount of QEIs designated by a CDE may not exceed the amount allocated to the CDE by the CDFI Fund. The term QEI *does not include:*

1. Any equity investment issued by a CDE more than 5 years after the CDE enters into an allocation agreement with the CDFI Fund, and

2. Any equity investment by a CDE in another CDE, if the CDE making the investment has received an allocation under IRC §45D(f)(2). This prevents a CDE with an allocation from investing in another CDE with an allocation, and

thereby doubling up credits on a single investment.

Allowance of Credit

The NMTC is included under IRC §38(a)(13) as part of the General Business Credit. The credit equals 39% of the investment and is claimed during a seven-year credit period. Investors may not redeem or otherwise case out their investments in the CDEs prior to the conclusion of the seven-year credit period.

Credit Allowance Date

A taxpayer holding a qualified equity investment (QEI) on a credit allowance date occurring during the taxable year may claim the NMTC for such taxable year in an amount equal to the applicable percentage of the amount paid to a qualified community development entity (CDE) for such investment at its original issue. Under IRC §45D(a)(3), the term credit allowance date means, with respect to any QEI:

1. The date on which the investment is initially made; and

2. Each of the six anniversary dates of such date thereafter.

In other words, the credit period is the seven-year period beginning on the date a QEI is initially made, even though the credit is allowable on the first day of each credit year.

Applicable Percentage

The credit provided to the investor equals 39% of the QEI and is claimed over the seven-year credit period. Under IRC §45D(a)(2), the applicable percentage is 5 percent for the first three credit allowance dates and 6 percent for the last four credit allowance dates.

Example 1:

A CDE receives a $2 million NMTC allocation. Investors make $2 million of equity investments in the CDE. Assuming all other requirements are met, the investors would be entitled to claim NMTC equal to 39% of $2 million or $780,000 as follows:

Year One:	5% of $2 million	= $100,000
Year Two:	5% of $2 million	= $100,000
Year Three:	5% of $2 million	= $100,000
Year Four:	6% of $2 million	= $120,000
Year Five:	6% of $2 million	= $120,000
Year Six:	6% of $2 million	= $120,000
Year Seven:	6% of $2 million	= $120,000
Total:		$780,000

Although the CDE has the authority to designate up to $ 2 million in QEI, its investors can only claim the NMTC on the actual cash invested in the CDE.

Example 2:

Assuming the same facts in Example 1, except the CDE raises $1 million for investments in qualified active low-income businesses. Assuming all other requirements are met, the investors would be entitled to claim $150,000 in NMTC for the first three years and $240,000 in NMTC for the last four years computed as follows:

(5% of $1 million) x 3 years =	$150,000
(6% of $1 million) x 4 years =	$240,000
Total:	$390,000

In essence, an investor in the NMTC program gets 39 cents in tax credits during the seven-year credit period for every dollar invested and designated as a QEI.

Manner of Claiming the New Markets Tax Credit

A taxpayer may claim the NMTC for each applicable year by completing Form 8874, New Markets Credit, and filing the form with the taxpayer's federal income tax return.

Subsequent Purchasers

Under Treas. Reg. §1.45D-1(c)(7), a QEI includes any equity investment that would be a QEI in the hands of the taxpayer (but for the requirement that the investment be acquired by the taxpayer at its original issue) if the investment was a QEI in the hands of a prior holder.

Credit Recapture

If, at any time during the 7 years beginning on the date of the original issue of a QEI in a CDE, there is a recapture event with respect to the investment, then the tax imposed for the taxable year in which the recapture event occurs is increased by the credit recapture amount. A recapture event requires recapture of credits allowed to the taxpayer who purchased the equity investment from the CDE at its original issue and to all subsequent holders of that investment.

Under IRC §45D(g)(3), there is a recapture event with respect to any equity investment in a CDE if one of the following three events occurs:

1. The CDE ceases to be a CDE,

2. The taxpayer's investment ceases to meet the substantially-all requirement, which involves investments in qualified low-income community investments (QLICIs), or

3. The investment is redeemed or otherwise cashed out by the CDE.

Relationship to Other Federal Tax Benefits

Interaction with Other Federal Tax Benefits

The availability of other federal tax benefits does not limit the availability of the NMTC. Under Treas. Reg, §1.45D-1(g)(3), examples include:

1. The Rehabilitation Credit under IRC §47.

2. All deductions under IRC §§167 and 168, including first year depreciation under IRC §168(k), and the expense deduction for certain depreciable property under IRC §179.

3. All tax benefits relating to certain designated areas such as empowerment zones and enterprise communities under IRC §1391 through IRC §1397D, the District of Columbia Enterprise Zone under IRC §1400 through IRC §1400B, renewal communities under IRC §1400E through IRC §1400J, and the New York Liberty Zone under IRC §1400L.

4. A CDE is not prohibited from purchasing tax-exempt bonds because tax-exempt financing provides a subsidy to borrowers and not bondholders. See T.D. 9171, 69 FR 77627, for discussion of Tax Exempt Bonds under IRC §103.

Exception for Low-Income Housing Credit

If a CDE makes a capital or equity investment or a loan with respect to a qualified low-income building under IRC §42, the investment or loan is not a QLICI to the extent the building's eligible basis under IRC §42(d) is financed by the proceeds of the investment or loan. See Treas. Reg. §1.45D-1(g)(3)(C)(ii).

Anti Abuse Rules

If a principal purpose of a transaction, or a series or transactions, is to achieve a result that is inconsistent with the purpose of IRC §45D and the regulations thereunder, the Commissioner may treat the transaction or series of transactions as causing a recapture event. IRC §45D(i)(1) and Treas. Reg. §1.45D-1(g)(1).

Qualified Community Development Entity (CDE)

Qualified Community Development Entity (CDE) Defined

Under IRC §45D(c)(1), a CDE is any domestic corporation or partnership:

1. Whose primary mission is serving or providing investment capital for low-income communities or low-income persons,

2. That maintains accountability to residents of low-income communities through their representation on any governing board or advisory board of the CDE, and

3. Has been certified as a CDE by the CDFI Fund. See www.cdfifund.gov for more information.

Under IRC §45D(c)(2), any specialized small business investment company as defined in IRC §1044(c)(3) and CDFI as defined in §103 of the Community Development Banking and Financial Institutions Act of 1994 are treated as having met these requirements.

A CDE certification lasts for the life of the organization unless it is revoked or terminated by the CDFI Fund. To maintain its CDE certification, a CDE must certify annually during this period that the CDE has continued to meet the CDE certification requirements.

Both for-profit and non-profit CDEs may apply to the CDFI Fund for an allocation of NMTC, but only a for-profit CDE is permitted to provide the NMTC to its investors. Thus, if a non-profit CDE receives an allocation of NMTC, it must "sub-allocate" its NMTC allocation to one or more for-profit CDEs.

Qualified Low-Income Community Investments (QLICI)

The investor's cash investment received by a CDE is treated as invested in a QLICI only to the extent that the cash is so invested no later than 12 months after the date the cash is paid by the investor (directly or through an underwriter) to the CDE. The cash investment can be one of the four following types of QLICIs under IRC §45D(d)(1):

1. Any capital or equity investment in, or loan to, any qualified active low-income community business.

2. A loan purchased by a CDE from another CDE which is a QLICI.

3. Financial counseling and other services to any qualified active low-income community business, or to any residents of a low-income community.

4. Any equity investment in, or loan to, other CDEs. See Treas. Reg. §1.45D-1(d)(1)(iv).

Community Development Financial Institutions Fund's Responsibilities

The CDFI Fund is responsible for establishing the credit application process, eligibility guidelines, and a scoring model for ranking applicants requesting allocations of NMTC. The CDFI Fund grants credit authority to the CDE; i.e., the ability to issue a specific amount of NMTC in exchange for equity investments.

Throughout the life of the NMTC Program (2001-2009), the CDFI Fund has been authorized to allocate to CDEs the authority to issue credit to their investors up to the aggregate amount of $21.5 billion in equity. Under the Gulf Opportunity Zone Act of 2005, the CDFI Fund allocated an additional $1 billion from 2005 to 2007 for QLICIs in the Hurricane Katrina GO Zone.

Internal Revenue Service's Responsibility

The Internal Revenue Service (IRS) is responsible for the tax administration aspects of IRC §45D, including responsibility for ensuring taxpayer compliance. The IRS has developed a comprehensive compliance program that focuses on both filing and reporting compliance by CDEs that received credit allocations, as well as taxpayers making investments and claiming the credit.

The IRS has developed this audit technique guide as part of its compliance program. The remaining chapters of this guide will focus on key terminology used in the NMTC arena, tax law, entity structures, examination issues at the CDE and investor levels, disclosure concerns, and report writing.

The Complete Picture

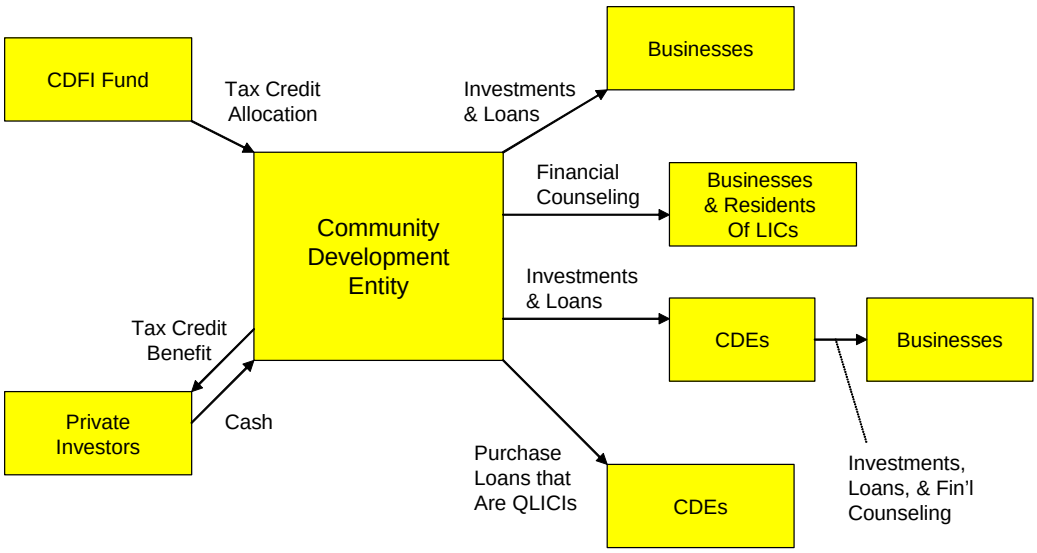
To conclude this chapter, the following diagram demonstrates the relationship between the organizations involved with the New Markets Tax Credit (NMTC) program.

In the upper left hand corner is the CDFI Fund, which has authority to allocate a portion of the NMTC limitation to the CDE, which means that the CDFI Fund allocates equity eligible for the NMTC.

Private investors (lower left hand corner) make cash investments in the CDE and claim the NMTC on their federal income tax returns. Although not demonstrated here, the investor may leverage the investment by investing funds borrowed from another source, thereby increasing the amount of the investment and credit.

The CDE must then invest substantially all of the cash in low-income communities within 12 months of receiving the funds.

On the right-hand side of the chart are the types of investments the CDE can make.



Summary

1. The NMTC was enacted on December 21, 2000, as part of the Community Renewal Tax Relief Act of 2000. As part of the American Jobs creation Act of 2004, IRC §45D(e)(2) was amended to provide for investment in targeted populations, in addition to investments in low-income areas where there is at least a 20% poverty level or where the median family income does not exceed 80% of the median family income. The Hurricane Katrina GO Zone has also been identified as an area where low-income persons lack adequate access to loans or equity investments.

2. IRC §45D creates a tax credit for equity investments in CDEs. QEIs are made as stock or capital interest purchases in a for-profit corporation or partnership, respectively. QEIs must remain with the CDE for the entire 7-year credit period.

3. The NMTC is 39% of the QEI during a 7-year credit period. The investor may claim 5% in each of the first 3 years and 6% in each of the final 4 years.

4. The NMTC is recaptured if the substantially-all requirement is not met and is not corrected within the one-time 6 month cure period, the CDE ceases to be a CDE, or the CDE redeems or otherwise cashes out the investment.

5. A CDE's primary mission is to provide investment capital for low-income communities. A CDE can be a corporation or partnership.

6. The CDFI Fund is responsible for determining which CDEs will be granted authority to issue NMTC. The CDFI Fund has created an application process, eligibility guidelines, and a scoring model for ranking applicants. The CDFI Fund also certifies entities as CDEs and monitors CDEs for compliance.

7. Throughout the life of the NMTC Program, the CDFI Fund is authorized to allocate to CDEs the authority to issue to investors up to the aggregate amount of $21.5 billion in equity for which the NMTC can be claimed. In addition, under the Gulf Opportunity Zone Act of 2005, the CDFI Fund allocated an additional $1 billion from 2005 to 2007 for QLICIs in the Hurricane Katrina Gulf Opportunity Zone. The American Recovery and Reinvestment Tax Act of 2009 provides the CDFI Fund with an additional $3 billion of NMTC authority to be divided equally between 2008 and 2009.

8. The IRS is responsible for establishing procedures and processes to ensure taxpayers are in compliance with IRC §45D.

Chapter 2
Issues at the CDE Level

Introduction

This chapter outlines the basic issues and audit techniques for reviewing a qualified Community Development Entity's (CDE's) New Markets Tax Credit (NMTC) activities.

References

- IRC §45D
- Treas. Reg. §1.45D-1
- Notice 2006-60, 2006-2, C.B. 82
- Chief Counsel Advice (CCA) POSTS-101102-09

Pre-Contact Analysis of Tax Returns

As part of the pre-contact analysis, the tax return should be reviewed, including line items, credits, balance sheet, elections and schedules, and any documents related to the NMTC that the taxpayer included with the tax return. Common NMTC items, and their significance, are discussed here. See IRM 4.10.2.3, In-depth Pre-contact Analysis, for more information.

Balance Sheet

The balance sheet analysis is a useful technique for reviewing a taxpayer's financial position.

1. Cash at the beginning of the year will include equity investments received in exchange for the NMTC. These investments will be designated as qualified equity investments (QEI) in the taxpayer's books and records.

2. Cash at the end of the year should decrease and assets such as mortgages, real estate loans and other investments should increase, indicating that the CDE has used the equity investments to make qualified low-income community investments (QLICIs). A schedule of investments may be attached to the tax return.

3. The paid-in capital accounts for CDEs that are partnerships for federal tax purposes should also indicate the amount of each equity investment.

During the audit, these account balances should be verified, adjusting entries reviewed and transactions tested. See IRM 4.10.3.8.4, which provides techniques for examining specific balance sheet accounts.

Income Statement

The income statement will reflect activities associated with qualified investments, such as amortization of start-up costs and interest income earned from qualifying investments.

Form 851, Affiliations Schedule (Corporations)

If a CDE is a corporation that is a member of an affiliated group that files a consolidated return, it will include Form 851. This form identifies the subsidiary corporations and provides information such as business activities and stock holdings. The form will indicate:

1. The number of shares in the CDE.

2. The number of shares the parent corporation or related subsidiary has in the subsidiary CDE, suggesting that Form 8874, New Markets Credit, will be filed by the parent corporation or related subsidiary to claim the credit.

3. The number of shares may equal the investment amount. For example, $1 per share x 5 million shares equals an investment of $5,000,000.

Form 8874, New Markets Credit

The Form 8874 may identify transactions between related parties. For example, a parent corporation invests $4,000,000 in a CDE on December 31, 2005. Form 8874 will identify the CDE by name and EIN, as well as the amount of credit that will be included on Form 3800.

Schedule K, Partners' Distributive Share (Partnerships)

If the CDE is a partnership, the tax return will include Schedule K. For the first year, the investor's investment and capital account may be equal. The partners file Form 8874 to directly claim the NMTC.

Preliminary Analysis

Purpose

The purpose of the preliminary analysis is to determine what information is needed for evaluating the CDE's compliance with the requirements of IRC §45D.

It will be necessary to review the CDE's books and records, as well as documentation associated with the NMTC application and allocation process. It will also be necessary to interview the CDE and analyze the CDE's internal controls.

Review Documents Associated with the NMTC Allocation

The following documents will need to be reviewed.

1. CDE Certification Application and Approval
2. Notice of Allocation Availability
3. Notice of Allocation and the Allocation Agreement

<u>CDE Certification Application and Approval</u>

To qualify as a CDE, an entity must be a domestic corporation or partnership that has a primary mission of serving, or providing investment capital for low-income communities or low-income persons. The CDE must maintain accountability to residents of low-income communities through their representation on a governing or advisory board to the entity, and must be certified as a CDE by the Community Development Financial Institutions (CDFI) Fund. Any organization seeking CDE designation must apply to the CDFI Fund. The CDE application documents are insightful in understanding how the CDE is organized, its mission, how it intends to

operate, and the type of investments the organization intends to make.

- Confirmation that the CDE is certified and has current CDE status can be obtained at www.cdfifund.gov.

Failure to maintain certification or revocation of the certification is an NMTC recapture event under IRC §45D(g)(3)(A). Under Treas. Reg. §1.45D-1(e)(4), bankruptcy of a CDE is not a recapture event. NMTC recapture is discussed in Chapter 4.

Notice of Allocation Availability (NOAA)

The Notice of Allocation Availability is published by the CDFI Fund for each allocation round. The document describes program priorities, discloses criteria for selecting allocates, and provides information related to the allocation process. Key dates are also identified.

Notice of Allocation and Allocation Agreement

Each CDE applying for the NMTC will be notified of the CDFI Fund's decision through a Notice of Allocation or a declination letter. There is no right to appeal the decision.

The Notice of Allocation will contain the general terms and conditions underlying the CDFI Fund's allocation of the NMTC. The CDE executes the Notice of Allocation and returns it to the CDFI Fund.

A CDE selected to receive an NMTC allocation must enter into an allocation agreement with the CDFI Fund. The agreement sets forth certain terms and conditions of the allocation, such as the amount of the NMTC allocation and approved uses, locations of the low-income communities to be served, the time period by which the CDE must receive QEIs and reporting requirements. The CDE must also provide an opinion from its legal counsel, the content of which is specified in the allocation agreement.

Review Commitments & Agreements Between CDE and Investors

When a QEI is made, the investor and CDE will enter into an agreement defining the terms of the investment, including the amount of the investment, when the investment is made, and the circumstances under which an investment may be withdrawn (penalties or fees). The commitment will also outline the CDE's responsibilities. Remedies should either party fail to perform according to the agreement may also be identified.

If the CDE is a partnership, the partnership agreement should also be reviewed. The agreement may outline exit strategies available to the investor.

Review Commitments & Agreements Between CDE and QALICBs

When a QLICI is made, the CDE and business will enter into an agreement regarding the use of the funds (except for situations involving multiple CDEs and counseling and other services specified in the regulation). Agreements, commitments and loan documents should be reviewed. The purpose of this review will be discussed later in this chapter.

Interview the Taxpayer (IRM 4.10.3.2)

As directed in IRM 4.10.3.2, a representative of the CDE should be interviewed to provide information about the CDE that will not be apparent when reviewing the books and records. The interview should be held with the person most knowledgeable about the CDE's activities.

Evaluate Internal Controls (IRM 4.10.3.4)

As directed in IRM 4.10.3.4, evaluate the existence and effectiveness of the CDE's internal controls to determine the accuracy and reliability of the books and records. For CDEs, it will be particularly important to determine how:

1. QEIs are identified in the books and records, segregated, and applied to qualified low-income community investments (QLICIs),

2. the substantially-all percentage is calculated, and

3. the taxpayer ensures that the substantially-all requirement is met.

Qualified Equity Investment (QEI)

QEI Defined

An investor with a QEI is entitled to claim the NMTC, if a credit allowance date occurs during the investor's taxable year. For each equity investment in the CDE, examiners should determine whether the investment is a QEI for purposes of IRC §45D.

Step One: Analyze Equity Investments

To be considered a QEI, the investment must meet the following criteria:

1. The equity investment is acquired by the investor at its original issue (directly or through an underwriter) solely in exchange for cash to the CDE or on behalf of the CDE. The equity investment can be for any stock in a CDE that is a corporation for federal tax purposes (other than nonqualified preferred stock under IRC §351(g)(2)) and any capital interest in a CDE that is a partnership for federal tax purposes.

2. The equity investment must be designated as a QEI under IRC §45D by the CDE in its books and records using any reasonable method.

   Generally, an equity investment is not eligible to be designated as a QEI if it is made before the CDE enters into an allocation agreement with the CDFI Fund. However, there are exceptions as listed in Treas. Reg. §1.45D-1(c)(3)(ii) for investments made after April 20, 2001, and allocation applications submitted by August 29, 2002, or for investments made after the date of the Notice of Allocation Availability is published in the Federal Register.

3. Substantially all of the cash is used by the CDE to make QLICIs. This test will be discussed later in this chapter.
   Equity investments issued more than 5 years after the CDE enters into an allocation agreement are not QEIs. A CDE that has received an allocation cannot make a QEI in another CDE. A CDE cannot issue more QEIs than the NMTC awarded under the allocation agreement.

Qualified Low-Income Community Investment (QLICI)

QLICI Defined

The CDE must invest the QEIs in QLICIs. The investments can be:

a. A capital or equity investment in, or loan to, any qualified active low-income community business.

b. The purchase from another CDE of any loan that was a QLICI either at the time the loan was made or at the time the CDE purchases it. It is not necessary for the CDE from which the loan is purchased to have received an NMTC allocation. See Treas. Reg. §1.45D-1(d)(1)(ii)(B) if the original loan was made before the CDE was certified. See Treas. Reg. §1.45D-1(d)(ii)(1)(C) regarding multiple purchases of a loan, and Treas. Reg. §1.45D-1(d)(1)(ii)(D) for examples.

c. Providing financial counseling or other services to qualified active low-income community businesses located in, or residents of, a low-income community.

d. An equity investment in, or loan to, another CDE, but only to the extent that the second, third or fourth CDE uses the investment or loan to make a QLICI. See Treas. Reg. §1.45D-1(d)(1)(iv) for complete discussion and examples of investments by CDEs in other CDEs.

Step 2: Review CDE's Investments In QLICIs

Once the amount of equity available for investment in QLICIs is identified, the next step is to determine whether the CDE timely invested the funds in QLICIs. This requires an investment-by-investment evaluation of the CDE's investment activities.

Low-Income Community Defined

Under IRC §45D(e)(1), a low-income community is identified by population census tract.

a. The poverty rate for the tract is at least 20%, or

b. The tract is not located within a metropolitan area and the median family income does not exceed 80% of the statewide median family income, or

c. The tract is located within a metropolitan area and the median family income for such tract does not exceed 80% of the greater of statewide median family income or the metropolitan area median family income.

d. In the case of census tracts located in a possession of the United States, possession-wide median family income is used for (b) and (c) above.

A census tract with a population of less than 2,000 is treated as a low-income community if it is within a empowerment zone under IRC §1391and is contiguous to one or more low-income communities.

For census tracts within high migration rural counties, the median family income cannot exceed 85% of the statewide median family income. A high migration county is any county which, during the 20-year period ending with the year the most recent census was conducted, has a net out-migration of inhabitants from the county of at least 10% of the population of the county at the beginning of the 20-year period.

In the event that an area is not tracted for population census tracts, equivalent county divisions can be used. The county divisions must be those used by the Bureau of Census to determine poverty areas.

Prior to October 23, 2004, IRC §45D(e)(2) provided that the Secretary may designate any areas within any census tract as a low-income community if:

a. The boundary of the areas is continuous,

b. The area would be a low-income community if it were a census tract, and

c. An inadequate access to investment capital exists in the area.

This provision was repealed and areas within census tracts cannot be designated as low-income communities after October 22, 2004.

Confirmation that the CDE's investments were in low-income communities can be obtained at www.cdfifund.gov.

Targeted Populations

After October 22, 2004, IRC §45D(e)(2) instructs the Secretary to provide regulations under which targeted *populations* may be treated as low-income communities. No regulations have been issued to date, but the IRS has issued Notice 2006-60, 2006-2 C.B. 82, which can be relied upon until Treas. Reg. 1.45D-1 is revised.

A "targeted population" means individuals or an identifiable group of individuals, including an Indian tribe, who are *low-income* persons or otherwise *lack adequate access to loans or equity investments.* The term "low-income" means having an income, adjusted for family size, of not more than:

1. For metropolitan areas, 80 percent of the area median family income.

2. For non-metropolitan areas, the greater of 80 percent of the area median family income or 80 percent of the statewide nonmetropolitan area median family income.

A "targeted population" includes individuals in the Hurricane Katrina Gulf Opportunity (GO) Zone if the individual was displaced from his or her principal residence as a result of Hurricane Katrina and/or the individual lost his or her principal source of employment as a result of Hurricane Katrina. In order to meet this definition, the individual's principal residence or principal source of employment must have been located in a population census tract within the GO Zone that contains one or more areas designated by FEMA as flooded, having sustained extensive damage, or having sustained catastrophic damage as a result of Hurricane Katrina.

Time of Investment in a Low-Income Community

Under Treas. Reg. §1.45D-1(c)(5)(iv), the CDE's investments in low-income communities must be made within 12 months of receiving the taxpayer's cash investment beginning on the date the cash is paid by the taxpayer (directly or through an underwriter).

Special Rules for Loans

Periodic amounts received during a calendar year as repayment of principal on a loan that is a QLICI are treated as continuously invested in a QLICI if reinvested by the end of the following year. See Treas. Reg. §1.45D-1(d)(2)(iii).

Special Rule for Reserves

Reserves (not more than 5% of the taxpayer's cash investment) maintained by the CDE for loan losses or for additional investments in existing low-income community investments are treated as invested in a qualified low-income community investment. Reserves include fees paid to third parties to protect against loss of all or a portion of the principal of, or interest on, a loan. See Treas. Reg. §1.45D-1(d)(3).

Requirements for Subsequent Reinvestments

Since the original investment in a QLICI may be returned to the CDE at some point during the 7-year credit period, it is also important to evaluate whether these funds were reinvested in QLICIs within a 12-month period. See Treas. Reg. §1.45D-1(d)(2)(i).

1. If the amount received by the CDE is equal to or greater than the cost basis of the original QLICI (or applicable portion thereof), and the CDE reinvests an amount at least equal to the original investment in another QLICI within 12 months, then an amount equal to the original amount will be treated as continuously invested in a QLICI.

2. If the amount received by the CDE is equal to or greater than the cost basis of the original QLICI (or applicable portion thereof), and the CDE reinvests an amount less than the original investment in another QLICI within 12 months, then only the amount reinvested will be treated as continuously invested in a QLICI.

3. If the amount received by the CDE is less than the cost basis of the original QLICI (or applicable portion thereof), and the CDE reinvests an amount of funds, then the amount treated as continuously invested in a QLICI is equal to the excess (if any) of the original cost basis over the amounts received by the CDE that are not reinvested.

   Example (Treas. Reg. 1.45D-1(d)(2)(iv)):

   On April 1, 2003, A, B, and C each pay $100,000 to acquire a capital interest in X, a partnership. X is a CDE that has received an NMTC allocation. X treats the 3 partnership interests as one QEI under Treas. Reg. §1.45D-1(c)(6).

   - In August 2003, X uses the $300,000 to make a QLICI in Business 1
   - In August 2005, the QLICI in Business 1 is redeemed for $250,000.
   - In February 2006, X reinvests $230,000 of the $250,000 in a second QLICI, Business 2, and uses the remaining $20,000 for operating expenses.

   Under Treas. Reg. §1.45D-1(d)(2)(i), $280,000 is treated as continuously invested in QLICIs ($300,000 minus $20,000). In other words, $50,000 remains invested

in Business 1and $230,000 is invested in Business 2.

- In December 2008, X sells the February 2006 investment in Business 2 and receives $400,000.

- In March 2009, X reinvests $320,000 of the $400,000 in a third QLICI, Business 3.

Under Treas. Reg. §1.45D-1(d)(2)(i) and (ii), $280,000 of the proceeds of the QLICI treated as continuously invested in a QLICI. ($50,000 from Business 1 and $230,000 from Business 2.) The remaining $40,000 ($320,000 - $280,000) is treated as invested in a new QLICI in March 2009.

4. Amounts received by the CDE during the seventh year of the 7-year credit period do not need to be reinvested by the CDE in order to be treated as continuously invested in a QLICI.

Loans Must Be Bona Fide Debt

Under IRC §45D(d)(2), a QLICI includes any loan to a qualified active low-income business (QALICB). Therefore, the loan documents should be reviewed to determine whether the loan is bona fide debt. Supporting documents also include, but are not limited to, appraisal reports, historical and forecasted statements of operations and cash flows, and guarantee agreements and balance sheets for guarantors.

Notice 94-47, 1994-1 C.B. 357, provides that the characterization of an instrument for federal income tax purposes depends on the terms of the instrument and all the surrounding facts and circumstances. Among the factors that may be considered when making such a determination are:

1. whether there is an unconditional promise on the part of the QALICB to pay a fixed sum on demand or at a fixed maturity date that is in the reasonable foreseeable future,

2. whether the CDE has the right to enforce the payment of principal and interest,

3. whether the CDE's rights are subordinate to rights of general creditors,

4. whether the instruments give the CDE the right to participate in the management of the QALICB,

5. whether the QALICB is thinly capitalized,

6. whether the stockholders or partners of the CDE are related to the QALICB's owners,

7. the label placed upon the instrument by the parties, and

8. whether the instrument is intended to be treated as debt or equity for non-tax purposes, including regulatory, rating agency, or financial accounting purposes.

The weight given to any factor depends upon all the facts and circumstances. No particular factor is conclusive in making the determination of whether an instrument constitutes debt or equity. There is no fixed or precise standard. As noted in Goldstein v. Commissioner, T.C. Memo 1980-273, 40 TCM 752 (1980), among the common factors considered when making this determination are whether:

1. a note or other evidence of indebtedness exists,

2. interest is charged,

3. there is a fixed schedule for repayments,

4. any security or collateral is requested,

5. there is any written loan agreement,

6. a demand for repayment has been made,

7. the parties' records, if any, reflect the transaction as a loan

8. any repayments have been made, and

9. the borrower was solvent at the time of the loan.

The key inquiry is not whether certain indicators of a bona fide loan exist or do not exist, but whether the parties actually intended and regarded the transaction to be a loan. There is a direct consequence for the NMTC investor if loans made by the CDE to the QALICI are not bona fide debt. Under IRC §45D(i)(2) and Treas. Reg. §1.45D-1(g)(1), if a principal purpose of a transaction or a series of transactions is to achieve a result that is inconsistent with the purposes of IRC §45D, the Commissioner may treat the transaction or series of transactions as causing a recapture event.

Intent to Forgive or Otherwise Not Collect Debt

An essential element of bona fide debt is whether there exists a good-faith intent on the part of the recipient of the funds to make repayment and a good-faith intent on the part of the person advancing the funds to enforce repayment. (See Fisher v. Commissioner, 54 TC 905 (1970).)

In Story v. Commissioner, 38 TC 936 (1962), the Court held that the mere fact that the original payee indicated he might or might not attempt to collect on the notes, or that he might forgive all or portions of them in the future, makes the notes no less binding obligations until the events occurred which would relieve the obligation. However, the Commissioner, in C.B. 1965-1, 4, limited his acquiescence in this case to the factual nature of that particular case. Furthermore, the Commissioner stated that such acquiescence would not be considered the basis for issuing rulings in advance of the consummation of the transaction. See Rev. Proc. 65-4, C.B. 1965-1, 720.

The Court relied upon Story v. Commissioner, supra, in Haygood v. Commissioner, 42 TC 936 (1964) in concluding that notes created enforceable indebtedness even though petitioner had no intention of collecting the debts but did intend to forgive each payment as it became due. In an Action on Decision, the Commissioner stated that it will "continue to challenge transfers of property where the vendor had no intention of enforcing the notes given in exchange for the interest transferred but instead intended to forgive them as they became due. The [Commissioner] believes the intent to forgive the notes is the determinative factor…..where the facts indicate that the vendor as part of a prearranged scheme or plan intended to forgive the notes he received for the transfer of his land, so valuable consideration will be deemed received…" Action on Decision, 1976 A.O.D. LEXIS 364

In some instances, as an exit strategy, the CDE may intend to eventually forgive or otherwise not collect on the debt after the end of the 7-year credit period. If such an intention is reflected in a pre-arranged feature; i.e., a statement in the loan documents that the lender will forgive the loan, the loan is not bona fide debt for federal income tax purposes.

Transfer of Funds is Considered a Capital or Equity Investment

If a loan is not bona fide debt, it may be appropriate to treat what appears to be a loan as an equity investment (either in whole or in part). However, the CDE must demonstrate that (1) it held a partnership interest (capital investment) in a partnership or stock (equity investment) in a corporation that is a QALICB, and (2) all requirements for such investment were timely met. As noted in Internal Revenue Manual (IRM) 4.10.7.3.9, Documentary Evidence, "… writings made contemporaneously with the happenings of an event generally reflect the actual facts and show what was on the minds of the parties…While documentary evidence has great value, it should not be relied upon to the exclusion of other facts."

Discharge of Bona Fide Indebtedness/Income to QALICB

If the loan does represent bona fide debt, then the loan amount is considered for purposes of the substantially-all requirement under IRC §45D(b)(1)(B). Should the loan be forgiven, the CDE would have an ordinary loss (deduction) in the amount of the discharged debt under IRC §165.

If the debt is forgiven, the QALICB may be subject to IRC §§ 61(a)(12), 108, and 1017:

- The discharged indebtedness may be included gross income. IRC §61(a) defines gross income to mean all income from whatever source derived except as otherwise provided by law. IRC §61(a)(12) specifically includes income from the discharge of indebtedness in gross income. See also Treas. Reg. 1.61-12(a).

- IRC §108 provides that gross income does not include any amount which would be includible in gross income by reason of the discharge of a taxpayer's indebtedness if (1) the discharge occurs in a title 11 bankruptcy case, (2) the discharge occurs when the taxpayer is insolvent, (3) the indebtedness discharged is qualified farm indebtedness, or (4) in the case of a taxpayer other than a C corporation, the indebtedness is qualified real property business indebtedness.

- IRC §1017 provides that if an amount is excluded from gross income under IRC §108, and any portion of such amount is to be applied to reduce basis, then such portion shall be applied in reduction of the basis of the property held by the taxpayer at the beginning of the taxable year following the taxable year in which the discharge occurs.

Loan is Not Bona Fide Debt or Equity

If it is determined that the loan does not represent bona fide debt or equity**,** then the loan is treated as a grant. The grant does not qualify as a QLICI under IRC §45D(d)(1) and the loan amount will not be considered for purposes of the substantially-all requirement under IRC §45D(b)(1)(B), which will be discussed later.

Transfer of Funds Not Considered a Gift

The QALICB may wish to treat the discharged loan amount or contribution of equity as a gift since IRC §102(a) provides that gross income does not include the value of property acquired by gift, bequest, devise, or inheritance. However, neither the Code nor the legislative history accompanying IRC §102 defines "gift." In Commissioner v. Duberstein, 363 U.S. 278 (1960), 1960-2 C.B. 428, the Supreme Court ruled that a gift proceeds from a "detached and disinterested generosity …out of affection, respect, admiration, charity or like impulses." In this respect, the most critical consideration is the transferor's intent. If a payment proceeds primarily from "the constraining force of any moral or legal duty" or from "the incentive of anticipated benefit" of an economic nature, it is not a gift. However, the mere absence of a legal or moral obligation to make the payment is not sufficient to render it a gift.

The Court further stated that the determination of whether a specific transfer is a gift for income tax purposes is one that must be reached on consideration of all factors. In this case, since the loan was made with the expressed purpose of making a QLICI under IRC §45D that would qualify to the NMTC, the transfer of funds would not be considered a gift.

Transfer of Funds Not Considered a Charitable Contribution

The CDE may wish to treat the discharged loan amount or contribution of equity as a deductible charitable contribution. IRC §170 generally allows as a deduction, subject to certain limitations and restrictions, any charitable contribution (as defined in IRC §170(c)), payment of which is made within the taxable year. To be deductible as a charitable contribution under IRC §170, a transfer must be a gift to, or for the use of, an organization described in IRC §170(c). A gift for purposes of IRC §170 is a voluntary transfer of money or property *without receipt or expectation of receipt of adequate consideration*. See United States v. American Bar Endowment, 477 U.S. 105, 117-18 (1986) and Treas. Reg. §1.70A-1(h).

As there are many requirements that must be met in order for a deduction to be allowable under IRC §170, whether and to what extent a deduction is allowable under IRC §170 will depend on the specific facts of a particular case. Addition

technical guidance should be requested if it is discovered that a CDE has forgiven a loan and claimed a charitable contribution deduction for the amount of the discharged indebtedness.

Qualified Active Low-Income Community Businesses (QALICB)

Qualified Active Low-Income Community Business Defined

Under IRC §45D(d)(1)(A), a CDE may invest in a QALICB as defined in IRC §45(d)(2). See also Treas. Reg. §1.45D-1(d)(4)(i) and Notice 2006-60.

Step 3: Evaluate CDE's Investments in Qualified Active Low-Income Community Businesses

Now that the amount of equity available for investment in qualified investments has been identified and traced to investments in low-income communities, the next step is to determine whether the investments were made to QALICBs. Again, this will require an investment-by-investment evaluation. There are four issues to consider:

1. Whether the investment was made to an *entity* that qualifies,
2. Whether the *business activity* qualifies,
3. Whether the entity is engaged in the *active conduct* of a qualified business, and
4. Whether the entity's *income*, *activities*, and *assets* qualify.

Issue 1: Qualifying Business Entities

The business entity can be a corporation (including a nonprofit corporation) or a partnership. A sole proprietorship can also qualify if the business would otherwise meet the requirements if it were incorporated. See Treas. Reg. §1.45D-1(d)(4)(ii).

A CDE can treat any trade or business (or portion thereof) as a qualified active low-income business if the entity would otherwise meet all the requirements if it were separately incorporated and a separate set of books and records are maintained for that trade or business (or portion thereof). The CDE's equity investment (or loan) is a QLICI to the extent that the proceeds are used by the trade or business (or portion thereof) that is treated as a qualified active low-income community business.

Generally, an entity is treated as a qualified active low-income community business for the duration of the CDE's investment in the entity if the CDE reasonably expects, *at the time of the investment or loan,* that the entity will satisfy all the requirements to be a qualified active low-income community business throughout the entire period of the investment or loan. In other words, the ultimate failure of a qualified active low-income community business will not require recapture of the NMTC if the CDE uses the reasonable expectation test. See Treas. Reg. §1.45(D)-1(d)(6)(i).

If the CDE controls or obtains control of the entity at any time during the 7-year credit period, then the entity will be treated as a qualified active low-income community business only if the requirements of Treas. Reg. §1.45D-1(d)(4)(i) are met throughout the entire period the CDE controls the entity.

- Control is defined as direct or indirect ownership (based on value) or control (based on voting or management rights) of more than 50 percent of the entity.

- Management rights are defined as the power to influence the management policies

or investment decisions of the entity. See Treas. Reg §1.45D-1(d)(6)(ii).

There is an exception under Treas. Reg. §1.45D-1(d)(6)(ii)(C) for the first 12 months after acquiring control if the CDE acquires control due to financial difficulties that were unforeseen at the time of the investment and the acquisition of control occurs before the seventh year of the 7-year period; i.e., the CDE can step in to assist the entity. However, by the end of the 12-month period, the entity must again meet the requirements for QALICBs, or the CDE must sell or redeems the entire amount of the investment and reinvest the proceeds in a QLICI by the end of the 12-month period.

Issue 2: Qualifying Business Activities

Generally, all business activities are acceptable, with the following qualifications and exceptions.

Rental of Real Property

The rental to others of real property located in a low-income community is acceptable if and only if:

1. The property is not residential rental property under IRC §168(e)(2)(A), and

2. There are substantial improvements on the property.

Further, the CDE's investment or loan is not a QLICI to the extent that a lessee of the real property is an excluded business as described in 2 below.

Excluded Businesses

Specific business activities are excluded under Treas. Reg. §1.45D-1(d)(5)(ii) and are listed here:

1. Trades or businesses consisting predominantly of the development or holding of intangibles for sale or license.

2. Trades or businesses consisting of the operation of any private or commercial golf course, country club, massage parlor, hot tub facility, suntan facility, race track or other facility used for gambling, or any store the principal business of which is the sale of alcoholic beverages for consumption off the premises.

3. Farming (within the meaning of IRC §2032A(e)(5)(A) or (B)) if, as of the close of the taxable year of the taxpayer conducting such trade or business, the sum of the aggregate unadjusted basis (or, if greater, the fair market value) of the assets owned by the taxpayer that are used in such trade or business, and the aggregate value of the assets leased by the taxpayer that are used in such trade or business, exceeds $500,000. Two or more trades or businesses will be treated as a single trade or business under rules similar to the rules of IRC §52(a) and (b).

Issue 3: Active Conduct of a Qualified Business

The entity must be engaged in the active conduct of a qualified business, as defined in Treas. Reg. §1.45D-1(d)(4)(i). The entity will be treated as engaged in the active conduct of a trade or business if, at the time the CDE makes the investment or loan, the CDE reasonably expects the entity to generate revenues within 3 years after the

investment or loan is made. In the case of a nonprofit corporation, the CDE expects the entity to engage in an activity that furthers its purposes as a nonprofit entity. (See Treas. Reg. §1.45D-1(d)(4)(iv).)

Issue 4: Business Located in Low-Income Community

An entity must meet the following requirements to be a qualified active low-income community business. Different standards, as discussed later, are applied if the business is serving a targeted population.

A. Gross-income requirement – at least 50% of the total gross income of the entity is derived from the active conduct of a qualified business within a low-income community. Alternatively, this requirement is considered met if the requirement under B or C below is met when 40% is replaced with 50%. The requirement may be met based on consideration of all the facts and circumstances.

B. Use of tangible property requirement – at least 40% of the use of the tangible property of such entity (whether owned or leased) is within any low-income community. The percentage is determined based on the average value of the tangible property owned or leased by the entity that is used in a low-income community divided by the average value of all the property owned or leased by the entity and used during the year. Property owned by the entity is valued at its cost basis under IRC §1012 and property leased by the entity is valued at a reasonable amount established by the entity. See Treas. Reg. §1.45D-1(d)(4)(B)(2) for an example.

C. Services performed requirement – at least 40% of the services performed for such entity by its employees are performed in a low-income community. The percentage is determined based on the amount paid to employees; i.e., the amount for services performed in low-income communities divided by the total amount paid. Note: employees need not live in the low-income community.

   If the business has no employees, this requirement and the gross-income requirement are considered met if the use of tangible property requirement in B above is met using 85% instead of 40%.

D. Collectibles – Less than 5% of the average of the aggregate unadjusted basis of the entity's property is attributable to collectibles (defined under IRC § 408(m)(2)) other than collectibles that are held primarily for resale to customers in the ordinary course of business.

E. Nonqualifying financial property – Less than 5% of the average of the aggregate unadjusted bases of the entity's property is attributable to nonqualified financial property. The term nonqualified financial property means debt, stock, partnership interests, options, futures contracts, forward contracts, warrants, notional principal contracts, annuities and other similar property.

   The definition does not include reasonable amounts of working capital held as cash, cash equivalents, or debt instruments with a term of 18 months or less. Further, proceeds of a capital or equity investment or loan by a CDE that will be expended for construction of real property within 12 months after the date the

investment or loan is made are treated as a reasonable amount of working capital.

Note: this requirement essentially eliminates banks, credit unions, and other financial institutions from the definition of a QALICB because debt instruments with a term longer than 18 months are nonqualified financial property.

Entity Serving Low-Income Targeted Population

An entity serving a low-income targeted population is considered to be engaged in the active conduct of a qualified business as defined in §1.45D-1(d)(5) if any one of the following standards is met:

1. At least 50 percent of the entity's total gross income for any taxable year is derived from sales, rentals, services, or other transactions with individuals who are low-income persons.

2. At least 40 percent of the entity's employees are individuals who are low-income persons. The determination of whether an employee is a low-income person must be made at the time the employee is hired. If the employee is a low-income person at the time of hire, that employee is considered a low-income person throughout the time of employment without regard to any increase in the employee's income after the time of hire.

3. At least 50 percent of the entity is owned by individuals who are low-income persons. The determination of whether an owner is a low-income person must be made at the time the QLICI is made. If an owner is a low-income person at the time the QLICI is made, that owner is considered a low-income person for purposes of §45D(e)(2) throughout the time the ownership interest is held by that owner.

See Notice 2006-60.

In addition, the rental to others of real property that otherwise satisfies the requirements to be a qualified business will be treated as located in a low-income community if at least 50 percent of the entity's total gross income is derived from rentals to individuals who are low-income persons for purposes of IRC §45D(e)(2) and/or to a QALICB that meets the requirements for low-income targeted populations.

Notwithstanding meeting one of the above standards, an entity will not be treated as a QALICB if the entity is located in a population census tract for which the median family income exceeds 120 percent of:

1. in the case of a tract not located within a metropolitan area, the statewide median family income, or

2. in the case of a tract located within a metropolitan area, the greater of statewide median family income or metropolitan area median family income.

An entity will also be considered to be located in a population census tract for which the median family income exceeds 120 percent of the applicable median family

income if all three of the following conditions are met:

1. At least 50 percent of the total gross income of the entity is derived from the active conduct of a qualified business within one or more non-qualifying population census tracts (non-qualifying gross income amount);

2. At least 40 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more non-qualifying population census tracts (non-qualifying tangible property usage); and

3. At least 40 percent of the services performed for the entity by its employees are performed in one or more non-qualifying population census tracts (non-qualifying services performance).

There are two possible modifications:

1. The entity is considered to have the non-qualifying gross income amount if the entity has non-qualifying tangible property usage or non-qualifying services performance of at least 50 percent instead of 40 percent.

2. If the entity has no employees, the entity is considered to have the non-qualifying gross income amount as well as non-qualifying services performance if at least 85 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more non-qualifying population census tracts.

The 120-percent-income restriction shall not apply to an entity located within a population census tract with a population of less than 2,000 if such tract is not located in a metropolitan area. Nor will it apply to an entity located within a population census tract with a population of less than 2,000 if such tract is located in a metropolitan area and more than 75 percent of the tract is zoned for commercial or industrial use.

Inadequate Access to Loans or Equity Investments

The Hurricane Katrina GO Zone targeted population rules only apply to New Markets Credit allocations under IRC §1400N(m)(2). An entity serving the Hurricane Katrina GO Zone targeted population is considered engaged in the active conduct of a qualified business if:

1. at least 50 percent of the entity's total gross income for any taxable year is derived from sales, rentals, services, or other transactions with the Hurricane Katrina GO Zone targeted population, low-income persons , or some combination thereof;

2. at least 40 percent of the entity's employees consist of the Hurricane Katrina GO Zone targeted population, low-income persons, or some combination thereof; or

3. at least 50 percent of the entity is owned by the Hurricane Katrina GO Zone targeted population, low-income persons, or some combination thereof.

See Section 3.04 of Notice 2006-60.

In addition, the rental to others of real property for the Hurricane Katrina GO Zone

targeted population that otherwise satisfies the requirements to be a qualified business will be treated as located in a low-income community if at least 50 percent of the entity's total gross income is derived from rentals to the Hurricane Katrina GO Zone targeted population, low-income persons, or some combination thereof and/or to a QALICB that meets the requirements for the Hurricane Katrina GO Zone targeted population.

To be a QALICB, the entity must be located in a population census tract within the Hurricane Katrina GO Zone that contains one or more areas designated by FEMA as flooded, having sustained extensive damage, or having sustained catastrophic damage as a result of Hurricane Katrina (qualifying population census tract). An entity will be considered to be located in a qualifying population census tract if:

1. at least 50 percent of the total gross income of the entity is derived from the active conduct of a qualified business within one or more qualifying population census tracts (gross income requirement);

2. at least 40 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more qualifying population census tracts (use of tangible property requirement); and

3. at least 40 percent of the services performed for the entity by its employees are performed in one or more qualifying population census tracts (services performed requirement). If the entity has no employees, the entity is deemed to satisfy the services performed requirement as well as the gross income requirement if at least 85 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more qualifying population census tracts.

The entity is deemed to satisfy the gross income requirement if the entity meets either the use of tangible property requirement or the services performed requirement of at least 50 percent instead of 40 percent.

Notwithstanding meeting the requirements above, an entity will not be treated as a QALICB if the entity is located in a population census tract for which the median family income exceeds 200 percent of:

1. in the case of a tract not located within a metropolitan area, the statewide median family income, or

2. in the case of a tract located within a metropolitan area, the greater of statewide median family income or metropolitan area median family income (200-percent-income restriction).

The 200-percent-income restriction shall not apply to an entity located within a population census tract with a population of less than 2,000 if such tract is not located in a metropolitan area. Neither will the 200-percent income restriction apply to an entity located within a population census tract with a population of less than 2,000 if such tract is located in a metropolitan area and more than 75 percent of the tract is zoned for commercial or industrial use.

For purposes of the 200-percent-income restriction, an entity will be considered to be located in a population census tract for which the median family income exceeds 200 percent of the applicable median family income (non-qualifying population census tract) if:

1. at least 50 percent of the total gross income of the entity is derived from the active conduct of a qualified business within one or more nonqualifying population census tracts (non-qualifying gross income amount);

2. at least 40 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more nonqualifying population census tracts (non-qualifying tangible property usage); and

3. at least 40 percent of the services performed for the entity by its employees are performed in one or more non-qualifying population census tracts (non-qualifying services performance). If the entity has no employees, the entity is considered to have the non-qualifying gross income amount as well as non-qualifying services performance if at least 85 percent of the use of the tangible property of the entity (whether owned or leased) is within one or more non-qualifying population census tracts.

For 1, 2, and 3 above, the entity is considered to have the non-qualifying gross income amount if the entity has nonqualifying tangible property usage or non-qualifying services performance of at least 50 percent instead of 40 percent.

Rental of Real Property for the GO Zone Targeted Population.

In addition, the rental to others of real property for the GO Zone Targeted Population that otherwise satisfies the requirements to be a qualified business will be treated as located in a low-income community if at least 50 percent of the entity's total gross income is derived from rentals to the GO Zone Targeted Population, low-income persons, or some combination thereof and/or to a QALICB that meets the requirements for the GO Zone Targeted Population.

Substantially-All Requirement under Treas. Reg. §1.45D-1(c)(5)

Substantially-All Requirement

Substantially all the investors' equity investment in a CDE must be invested by the CDE in QLICIs. Treas. Reg. §1.45D-1(c)(5)(i), defines substantially all to mean at least 85 percent and provides two alternative methods for meeting the substantially-all requirement. The next step of the review will be to determine whether the CDE has complied with this requirement.

Step 4: Determine Whether the CDE Satisfied the Substantially-All Requirement

The substantially-all requirement must be satisfied for each annual period in the 7-year credit period. For the first annual period, the requirement is considered met if the calculation is performed on a single testing date and the result is at least 85%. For all subsequent annual periods, the substantially-all requirement is considered met if the calculation is performed every six months and the average of the two computations for the annual period is at least 85%. In the seventh year of the 7-year credit period, 85% is reduced to 75%.

The CDE may choose the same testing date for all QEIs without regard to the actual date of investment, providing the testing dates are six months apart.
The two methods for determining compliance with the substantially-all requirement are:

- Direct-Tracing Calculation
- Safe Harbor Calculation

The CDE can use either method for any annual period.

Direct Tracing Calculation

The substantially-all requirement is satisfied if at least 85% of the investor's investment in the CDE is directly traceable to QLICIs. The fraction is the CDE's aggregate cost basis in QLICIs directly traceable to the investor's cash investment divided by the investor's qualified equity investment. For purposes of this computation, cost basis includes the cost basis in any QLICI that becomes worthless.

Safe Harbor Calculation

The safe harbor is satisfied if the CDE's aggregate cost basis in all of its QLICIs divided by the CDE's aggregate cost basis of all its assets is at least 85 percent. For purposes of this computation, cost basis includes the cost basis in any QLICI that becomes worthless.

Failure to Satisfy the Substantially-All Requirement

Under Treas. Reg. §1.45D-1(e)(6), if a QEI fails the substantially-all requirement, the failure is not a recapture event if the CDE corrects the failure within 6 months after the date the CDE becomes aware (or reasonably should have become aware) of the failure (the cure period). "Reasonably should have become aware" is limited because the CDE should have been aware of the failure on at least one of the two 6-month testing dates for each annual period other than the first annual period. For the first annual period, the 6-month cure period begins when the CDE becomes aware (or reasonably should have become aware) of the failure to invest the investor's cash in order to satisfy the substantially-all requirement. See Treas. Reg. §1.45D-1(c)(5)(iv). Only one correction is permitted per qualified equity investment during the 7-year credit period. See Treas. Reg. §1.45D-1(e)(6).

Failure to satisfy the substantially-all requirement is a recapture event under IRC §45D(g)(3)(B). NMTC recapture is discussed in Chapter 3.

Redemption of an Equity Investment by the CDE

The Investment is Redeemed or Cashed Out by the CDE

There is a recapture event with respect to an equity investment in a CDE if the investment is redeemed or otherwise cashed out by the CDE. See Treas. Reg. §1.45D-1(e)(2)(iii).

Step 5: Analyze Distributions to Equity Holders

The final step of the audit is an analysis of the distributions made by the CDE to its equity investors. Redemptions and distributions can be identified through a review of the balance sheet equity accounts. Key accounts that should be reviewed include:

1. Investments – Obtain a schedule of investments on hand at the beginning of the year and the end of the year and analyze credit entries to identify dispositions of investments.

2. Loans to Shareholders – Determine whether the amounts advanced to the shareholder or partner are bona fide loans or distributions of a different character. (See IRM 4.10.3.8.4.5)

3. Capital Stock – Verify all debit entries to determine the nature of the transaction. (See IRM 4.10.3.8.4.19)

4. Treasury Stock – Review any changes in the account, particularly increases, which indicate redemptions of stock.

CDE is a Corporation (C or S)

If the CDE is a C or S corporation for Federal tax purposes, an equity investment is *redeemed* when IRC §302(a) applies to amounts *received by the equity holder from the CDE*. Under IRC §302(a), if a corporation redeems its stock within the meaning of IRC §317(b) and if IRC §302(b)(1), (b)(2), (b)(3), or (b)(4) applies, the redemption will be treated as a distribution in part or full payment in exchange for the stock. Paragraph (b)(1) through (b)(4) of IRC §302 are outlined below.

1. The redemption is not essentially equivalent to a dividend,

2. The distribution is substantially disproportionate,

3. The redemption is in complete redemption, with respect to the shareholder, of all stock of the corporation owned by the shareholder, or

4. The distribution is in redemption of stock held by a shareholder who is not a corporation and the distribution is in partial liquidation of the distributing corporation.

For a C corporation, an equity investment is treated as *cashed out* if IRC §301(c)(2) or (3) applies to amounts received by the equity holder. Under these sections, the distribution amount that is not a dividend is applied against the adjusted basis of the stock. In general, that portion of the distribution which is not a dividend, to the extent that it exceeds the adjusted basis of the stock, is treated as a gain on the sale or exchange of property. The equity investment is not considered cashed out if only IRC §301(c)(1) applies; i.e., the distribution is treated as a dividend as defined in IRC §316.

For an S corporation, an equity investment is treated as *cashed out* when a distribution to a shareholder described in IRC §1368(a) exceeds the accumulated adjustments account determined under Treas. Reg. §1.1368-2 and any accumulated earnings and profits of the S corporation.

CDE is a Partnership

Under Treas. Reg. §1.45D-1(e)((3)(iii), if the CDE is a partnership for federal tax purposes, a pro rata cash distribution by the CDE to its partners based on each partner's capital interest in the CDE during the taxable year will not be treated as a

redemption if the distribution does not exceed the "operating income" for the year. Operating income is calculated as the sum of:

1. The CDE's taxable income as determined under IRC §703, except that:

   - The items described in IRC §703(a)(1) shall be aggregated with the nonseparately stated tax items of the partnership, and

   - Any gain resulting for the sale of a capital asset under IRC §1221(a) or IRC §1231 property shall be excluded.

2. Loss deductions under IRC §165, but only to the extent the losses were realized from QLICIs under Treas. Reg. §1.45D-(d)(1),

3. Deductions under IRC §§167 and 168, including the additional first year depreciation under IRC §168(k),

4. Start-up expenditures amortized under IRC §195, and

5. Organizational expenses amortized under IRC §709.

A non-pro rata *de minimis* cash distribution by the CDE to one or more partners during the taxable year will not be treated as a redemption. A non-pro rata *de minimis* distribution is the lesser of 5 percent of the CDE's operating income for that taxable year (as defined above) or 10 percent of the partner's capital interest in the CDE.

Conclusion

Once a determination of whether the CDE's investments are QLICIs, a final report will be prepared reflecting the results. See chapter 6 for instructions.

If an adjustment to the NMTC has been identified, an audit of the investor's tax return will be required. The adjustment will be made as a flow-through adjustment if the CDE is a partnership. If the CDE is a corporation, procedures outlined in IRM 4.10.5.4 for Related Returns should be followed to make adjustments to the investor's tax return. See chapter 3 for details.

Summary

1. CDEs can make investments (equity or loans) directly to QALICBs, purchase any loan that is a QLICI from another CDE, provide loans to or investments in other CDEs, or provide financial counseling and other services to businesses or residents of low-income communities.

2. For purposes of determining the amount of allowable NMTC at the CDE level, there are three basic issues to address:

   - Whether the investors' cash investments were properly handled by the CDE. Substantially all (85%) of an investor's cash must be invested in QLICIs by the CDE within 12 months. In year 7 the percentage drops to 75%.

   - Whether the cash investments were timely invested in low-income communities (including targeted populations) throughout the 7-year credit period. If the investment is returned to the CDE, it must be reinvested within 12 months. If the CDE is receiving periodic loan repayments, the payments must be reinvested in another QLICI by the end of the following calendar year. No reinvestment is required in year 7.

   - Whether the entities in which the CDE invested in were QALICBs. QALICBs must meet the requirements for gross income generated from conducting business in a low-income community, the use of tangible property in a low-income community, and performing services within a low-income community. Targeted populations are also treated as low-income communities, but have different QALICB requirements as outlined in Notice 2006-60. Not all business activities are qualified businesses; e.g., residential rental property, the development or holding of intangibles, golf courses, race tracks, gambling facilities, certain farming businesses, liquor stores, and suntan or hot tub facilities.

3. Three events will trigger the recapture of the NMTC under IRC §45D(g):

   - The CDE ceases to qualify as a CDE,

   - The substantially-all requirement is not satisfied, or

   - The equity investment is redeemed or otherwise cashed out by the CDE.

4. Adjustments to the NMTC at the investor level are discussed in chapter 3.

Chapter 3
Issues at the Investor Level

Introduction

This chapter outlines the issues and audit techniques for determining whether the investor has correctly computed the allowable New Markets Tax Credit (NMTC), made the required adjustments to the basis of the investment, and if a recapture event has occurred, correctly computed the NMTC recapture amount. Report writing will be addressed in chapter 6.

Background

The NMTC is claimed using Form 8874, New Markets Credit. The credit results from an investment made directly with a qualified community development entity (CDE) or from an investment made through a pass-through entity. If the taxpayer can claim more than one credit under IRC §38, the credit will be included on Form 3800, General Business Credit.

An investor's return may be audited as a related return under IRM 4.10.5.3, because an adjustment was identified at the CDE level. In addition, the NMTC may be independently classified as an audit issue of the investor's tax return.

References

- IRC §45D
- Treas. Reg. §1.45D-1

Current Year NMTC Adjustments

Adjustment to the Current Year NMTC

Adjustment to the current year NMTC will be needed if the taxpayer has incorrectly computed the credit amount.

- The amount of the investment is incorrect – the amount paid to the CDE for the investment at the *original* issue that is designated as a qualified equity investment is the basis for computing the credit.
- The Credit Allowance date is incorrect – the date the investment with the CDE was originally made, and each of the six anniversary dates thereafter.
- The Applicable Percentage is incorrect – 5 percent for the first 3 credit allowance dates, and 6 percent for the remaining 4 credit allowance dates.

Adjustment Limited to Open Tax Years

Adjustment can be made to the current year credit on any tax return open by statute. However, an adjustment to the current year credit is not a recapture event (discussed later in this chapter), and the recapture provisions cannot be used to correct errors on tax returns otherwise closed by statute.

Audit Techniques

As a starting point, the original documentation for the original investment should be reviewed to determine whether the credit was correctly computed.

- Review the documentation for the transfer of funds (check, wire transfer, etc.). IRC §45D does not prohibit a taxpayer (including any taxpayer who is a person

as defined under IRC §7701(a)(1)) from using cash derived from a borrowing, including nonrecourse borrowing, to make a qualified equity investment in a qualified CDE if (1) the loan is from an unrelated third party, (2) the loan is not secured by any assets of the CDE, and (3) the loan is not convertible into an equity interest in the investor (partnership or corporation). See Rev. Rul. 2003-20, 2003-1 C.B. 465, for complete discussion.

- Review the notice provided by the CDE on Form 8874-A, Notice of Qualified Equity Investment for New Markets Credit or, for periods before March 2007, the written notification prepared by the CDE. Under Treas. Reg. §1.45D-1(g)(2)(i)(A), the CDE must provide the investor notice that the equity investment is a qualified equity investment entitling the investor to claim the NMTC. The notice must be provided within 60 day of the investment, and identify both the amount of the investment and the CDE's taxpayer identification number (TIN).

Annual Adjustment to Basis

Introduction

Under IRC §45D(h), the basis of any qualified equity investment shall be reduced by the amount of any NMTC associated with the investment.

For investments made as ownership interests in partnerships and S corporations, this reduction may affect the amount of loss the taxpayer may claim in any one given year. This reduction will also impact the computation of the gain or loss at the time the taxpayer disposes of the investment. See Treas. Reg. §1.45D-1(f).

Partnerships

- Under IRC §752, a partner's share of liabilities is included in the adjusted basis of the partner's interest in the partnership.
- Under IRC §704(d), a partner's share of partnership loss (including capital loss) shall be allowed only to the extent of the adjusted basis of such partner's interest in the partnership at the end of the partnership year in which such loss occurred. Any excess of such loss over such basis shall be allowed as a deduction at the end of the partnership year in which such excess loss is repaid to the partnership.

S Corporations

- Under IRC §1366(d)(1), a shareholder's share of the S corporation's loss that can be used to determine the shareholder's tax liability cannot exceed the sum of the adjusted basis of the shareholder's stock in the S corporation and the shareholder's adjusted basis of any indebtedness of the S corporation to the shareholder.
- Under IRC §1366(d)(2), any loss or deduction, which is disallowed because it exceeds the shareholder's basis, shall be treated as incurred by the corporation in the succeeding taxable year with respect to that taxpayer. As explained in PLR 9304004, such losses are treated as "suspended loss" until such time as the shareholder has basis against which the loss can be applied.

Disposition of Investor's Holding

Dispositions of Interest

Under IRC §45D(a)(1), an investor is entitled to claim the NMTC if the investor holds a qualified equity investment on the credit allowance date for such investment during the investor's taxable year. Disposition of a holding in a qualified equity investment is not a recapture event under IRC §45D(g). However, the timing of the disposition will determine the tax impact for the investor.

Disposition Before the Credit Allowance Date

If the investor disposes of its qualified equity investment *before* the credit allowance date for the taxable year, the investor will not be entitled to the NMTC for that taxable year and no adjustment under IRC §45D(h) would be required for the year of sale. Gain or loss upon disposition of the qualified equity investment is computed using the adjusted basis of the investment reflecting the annual adjustments required under IRC §45D(h) for all prior years.

Disposition After the Credit Allowance Date

If the investor disposes of its qualified equity investment *after* the credit allowance date for the taxable year, the investor will be entitled to the NMTC for the taxable year and the adjusted basis of the qualified equity investment would be reduced as required under IRC §45D(h). Gain or loss upon disposition of the qualified equity investment is computed using the adjusted basis of the investment reflecting the annual adjustments required under IRC §45D(h) for all years, including the current year adjustment.

Treatment of Carry Forwards of Unused NMTC

The investor is entitled to claim carryforwards of unused NMTC from prior tax years to reduce federal income tax liabilities in years subsequent to the disposition. The investor cannot transfer the unused NMTC to the new owner of the qualified equity investment.

Treatment of Subsequent Holders

Under IRC §45D(b)(4), the subsequent holder of the qualified equity investment is entitled to claim the NMTC for the remainder of the seven-year credit period; i.e., the new holder steps into the former owner's position. The credit allowance date continues to be the date of the original investment (not the date the subsequent holder purchased the investment).

NMTC Recapture Events

NMTC Recapture Events Defined

As discussed in Chapter 1, Under IRC §45D(g)(3), there are three events that can result in the recapture of NMTC at the investor level.

- The CDE ceases to qualify as a community development entity,
- The substantially-all requirement is not satisfied, or
- The investment is redeemed or otherwise cashed out by the CDE and the CDE distributes the funds to the equity holder. Both conditions must be met.

The above recapture events are discussed in detail in Chapter 2. Further, while it is anticipated that redemptions will be identified at the CDE level, a review of the investor's accounts and records may also result in the identification of investment redemptions. Review schedules and documents related to investments on hand at both the beginning of the year and the end of the year. Analyze credit entries to identify dispositions of investments. See Chapter 2 for complete discussion.

If there is a recapture event at any time during the 7-year credit period, all holders of the qualified equity investment (both prior and current holders) are subject to recapture in the year of the recapture event. Further, the annual basis adjustment under IRC §45D(h) is *not* reversed when an NMTC recapture amount is determined.

Notification of Recapture Event

If, at any time during the 7-year credit period, there is a recapture event with respect to a qualified equity investment (QEI), the CDE must provide notice to each investor, including all prior investors, that a recapture event has occurred. This notice must be provided by the CDE using Form 8874-B, Notice of Recapture Event for New Markets Credit, or, for periods before March 2007, a written notification prepared by the CDE, no later than 60 days after the date the CDE becomes aware of the recapture event. Treas. Reg. § 1.45D-1(g)(2)(i)(B).

Recapture Amount

The credit recapture amount is the sum of:

1. The aggregate decrease in the credits allowed to the taxpayer under IRC §38 for all prior taxable years which would have resulted if no credit had been determined with respect to such investment, plus

2. Interest at the underpayment rate established under IRC §6621on the amount determined in 1. above for each prior taxable year for the period beginning on the due date for filing the tax return for the prior taxable year involved.

Tax Benefit Rule

The tax for the taxable year of the recapture event shall be increased only with respect to credits allowed which were used to reduce tax liability. In the case of credits not used to reduce tax liability, the carryforwards and carrybacks under IRC §39 shall be appropriately adjusted.

Computing the Recapture Amount

NMTC Recapture Amount Defined

The recapture amount is defined in IRC §45D(g)(2) as the decrease in NMTC allowed to the taxpayer, as if no credit had been allowable for the investment, plus interest (at the underpayment rate) beginning on the due date (without extensions) for the filing of the tax return on which the NMTC was originally claimed. Three issues must be considered:

- Application of the tax benefit rule,

- The General Business Credit ordering rules under IRC §38(d) if the taxpayer is claiming more than one credit under the General Business Credit, and

- The General Business Credit limitation under IRC §38(c). This limitation is noted here, but will not be discussed in depth.

The best method for consideration of these limitations is to work through the computation as presented on Form 8874 (claiming only NMTC) or Form 3800 if the taxpayer is claiming more than one credit under the General Business Credit.

Step 1: Determine the Amount of NMTC Subject to Recapture

IRC §45D(g)(4)(A) provides for the application of the tax benefit rule, which is explained in Regulation §1.1016-3(e)(1).

> [T]here are situations in which it is necessary to determine…the extent to which the amount allowed…resulted in a reduction for any taxable year of the taxpayer's taxes….This amount, (amount allowed which resulted in a reduction of the taxpayer's taxes) is hereinafter referred to as the "***tax benefit amount allowed***."
> For purposes of determining whether the tax-benefit amount allowed exceeded the amount allowable, a determination must be made of that portion of the *excess of the amount allowed over the amount allowable* which, if disallowed, would not have resulted in an increase in any such tax previously determined. If the entire excess of the amount allowed over the amount allowable could be disallowed without any such increase in tax, the tax benefit amount shall not be considered to have exceeded the amount allowable.

Therefore, the first step in determining the recapture amount is identifying the actual amount of NMTC used to reduce the investor's tax liability which, when disallowed, will result in additional tax. At the same time, the carryforwards of unused NMTC will be identified.

Example 1: Applying the Tax Benefit Rule

An investor makes a valid $1,000,000 qualified equity investment on July 2, 2004. The investor is a calendar year taxpayer and used NMTC equal to $30,000, $50,000, $25,000 and $52,000 to reduce federal income tax liabilities for tax years 2004, 2005, 2006, and 2007, respectively. An NMTC recapture event occurred in 2008.

The following table shows how the investor applied the credit against its tax liabilities. The allowable credit is determined as a percentage of the investment. The available credit is computed as the sum of the current year allowable credit and the carryforward of credit from the previous year. The credit claimed is the amount used to reduce the taxpayer's tax liability. The carryforward is the difference between the amount of credit available and the amount of credit claimed.

(a) Credit Period Year	(b) Allowable NMTC	(c) Available NMTC	(d) Tax Liability	(e) NMTC Claimed	(f) Carry Forward
2004	$50,000	$50,000	$30,000	$30,000	$20,000
2005	$50,000	$70,000	$50,000	$50,000	$20,000
2006	$50,000	$70,000	$25,000	$25,000	$45,000
2007	$60,000	$105,000	$52,000	$52,000	$53,000
Total	$210,000			$157,000	

The amount of NMTC subject to recapture under IRC §45D(g)(2)(A) is $157,000. In addition, the carryforward of $53,000 at the end of 2007 is reduced to zero.

Example 2: Applying the Ordering Rules under IRC §38(d)

The NMTC is included under IRC §38 as a general business credit. Therefore, the ordering rules under IRC §38(d) must also be applied. This is important because taxpayers who invest in low-income communities through the NMTC are likely to invest in low-income communities through the Rehabilitation Credit (IRC §47) and the Low-Income Housing Credit (IRC §42). Both of these credits must be exhausted before the NMTC is applied against the investor's tax liability (see IRC §§46(a) and 38(b)).

The facts are the same as in Example 1, except that the taxpayer has $15,000 of low-income housing credits under IRC §42 for tax years 2004 and 2005.

The following table shows how the investor applied the credit against its tax liabilities. In this case, the LIHC must be applied to the liability before the NMTC is considered. This is accomplished in columns (b)-(e), with column (e) indicating the tax liability against which the NMTC is to be applied.

(a) Credit Period Year	(b) Allowable LIHC	(c) Tax Liability	(d) LIHC Claimed	(e) Reduced Tax Liability	(f) NMTC Allowable	(g) NMTC Available	(h) NMTC Claimed	(i) NMTC C/F
2004	$15,000	$30,000	$15,000	$15,000	$50,000	$50,000	$15,000	$35,000
2005	$15,000	$50,000	$15,000	$35,000	$50,000	$85,000	$35,000	$50,000
2006		$25,000		$25,000	$50,000	$100,000	$25,000	$75,000
2007		$52,000		$52,000	$60,000	$135,000	$52,000	$83,000
Total					$210,000		$127,000	

The amount of NMTC subject to recapture IRC §45D(g)(2)(A) is $127,000. In addition, the carryforward of $83,000 at the end of 2007 is reduced to zero.

Step 2: Determine the Amount of Interest

IRC §45D(g)(2)(B) states that the recapture amount will include the interest on the amount of NMTC used to reduce the tax liability for each prior taxable year. Interest will be calculated using the underpayment rate established under IRC §6621, beginning on the due date for filing the return for the prior taxable year involved and ending (though not stated in the statute) on the due date for filing the return for the taxable year in which the recapture amount occurs.

Example 3: Computing Interest under IRC §6621

Continuing with the fact pattern in Example 2, the following chart shows the interest computed based on the NMTC used to reduce the tax liability.

(a) Credit Period Year	(b) NMTC Claimed	(c) Interest Computation Dates	(d) Interest under IRC §45D(g)(2)(B)
2004	$15,000	April 15, 2005 to April 15, 2009	$4,469
2005	$35,000	April 15, 2006 to April 15, 2009	$6,544
2006	$25,000	April 15, 2007 to April 15, 2009	$2,690
2007	$52,000	April 15, 2008 to April 15, 2009	$2,398
Total	$127,000		$16,101

The amount of interest under IRC §45D(g)(2)(B) to be included in the recapture amount is $16,101.

Step 3: Compute the NMTC Recapture Amount

The final step is adding the aggregate decrease in NMTC identified in Step 1 and the total interest calculated in Step 2. The resulting recapture amount is an indivisible amount, and is neither tax credit nor interest. As a result:

- Under IRC § 45D(g)(2)(B), no deduction is allowable for the interest portion of the recapture amount, and

- The recapture amount cannot be reduced by any remaining General Business Credit generated from another source. Under IRC §38(a), the General Business Credit can only be applied against federal income tax liabilities.

Example 4: Computing the Recapture Amount

Following the fact pattern in Examples 2 and 3, the recapture amount is

$$\$127,000 + \$16,101 = \$143,101$$

Generally, the credit recapture amount reported on a tax return will be included on the line for "other taxes" or "total taxes" if the taxpayer correctly reports the credit recapture.

Chapter 6 will provide instructions for preparing the audit report reflecting an adjustment to the NMTC.

Summary

1. Adjustment to the current year credit is required if an investor incorrectly computed the credit.

2. An investor must reduce the adjusted basis of the investment each year for the NMTC amount. This adjustment is important for determining the amount of allowable loss from flow-through entities and calculating the gain or loss upon disposition.

3. There are three events that will trigger a recapture event at the investor level:

   - The CDE ceases to qualify as a community development entity,
   - The substantially-all requirement is not satisfied, or
   - The investment is redeemed or otherwise cashed out by the CDE and the CDE distributes the funds to the equity holder.

4. The NMTC recapture must be made for the year of the recapture event. The entire credit claimed in the years prior to the recapture event is recaptured, which requires consideration of the tax benefit rule, and both the General Business Credit ordering rules and limitations.

Chapter 4
Issues at the Exempt Organization Level

Introduction

The New Markets Tax Credit (NMTC) Program includes nonprofit organizations as possible recipients of credit allocations and cash proceeds from qualified equity investments. Although Congress did not require these organizations to be exempt from tax pursuant to IRC §501(a), there are nonprofit organizations that are tax-exempt under IRC §501(c)(3), who have applied for, and received, a credit allocation from the Community Development Financial Institutions (CDFI) Fund or receive the cash proceeds from qualified equity investments. While not all nonprofit organizations are tax-exempt, all tax-exempt organizations are nonprofit. It should be noted that IRC §501(c)(4) organizations could also receive allocations**.**

Background

The IRS is responsible for the tax administration aspects of IRC §45D. This includes establishing procedures and processes to ensure taxpayers are in compliance with the Code.

The procedures in this chapter will assist Exempt Organization (EO) examiners in determining whether an exempt organization is in compliance with the provisions of IRC §45D and ensuring that the funds allocated to the exempt organization are used for exempt purposes as contemplated under IRC §501(a).

EO's Role in the NMTC Program

Exempt organizations must operate under the subsection for which they were recognized as tax-exempt. Whether it is organized for charitable or social welfare purposes, the NMTC program's focus is to encourage investment in low-income communities by working primarily with for-profit entities. While the involvement of exempt organizations in this program may seem to be contradictory, the NMTC program actually carries out an exempt purpose; namely, relieving the distress of the poor and lessening the burdens of government by promoting investment in low-income communities and businesses.

An exempt organization can apply for and receive a credit allocation from the CDFI Fund. Subsequently, an exempt organization may:

1. Set up a for-profit subsidiary (sub-allocatee) and sub-allocate the NMTC allocation to the sub-allocatee, which can raise money from investors;

2. The sub-allocatee can, in turn, set up portfolios that it can sell to raise money; and

3. The exempt organization can become the general partner in a partnership (or the managing member in a limited liability company) which can have agreements that determine how the credits will be used by partners in the partnership.

EO Issues with Regard to the NMTC

Because exempt organizations will work closely with for-profit organizations, the possibility for private benefit/inurement must be considered. These benefits can be derived from:

1. Favorable loans to for-profit subsidiaries or partners;

2. Loans to a for-profit entity owned by a member of the governing board of a CDE (an exempt organization) at less than fair market value;

3. Grants allocated specifically for a for-profit which is owned by an exempt organization governing board member; or

4. Excessive compensation granted to officers of the exempt organization. An officer or board member who receives an excess benefit from his position on the board of a CDE may be liable for taxes pursuant to IRC §4958.

There can also be issues with regard to the investments made to the sub-allocatees, or through nonprofit CDEs. Examiners should be alert to investments that do not accomplish the purpose of the NMTC Program. Specifically, examiners should be alert to investments which enrich the investor more than the community.

Examination Procedures

Articles of Incorporation and By-Laws

Review the incorporation documents and by-laws of the organization in order to determine the structure of the board of directors and the relationships between officers.

1. Review the annual minutes of the organization to determine if investments have been made to qualified active low-income businesses and how investments are selected.

2. Determine if there are any family or business relationships between the governing boards of the exempt organization and allocatee organizations.

    a. Determine the reasonableness of total compensation paid or accrued to principal officers. Take into consideration any compensation claimed under a heading other than “Officers' Salaries,” such as contributions to pension plans, payments of personal expenses, year-end bonuses, use of company car, etc.

    b. Look for organization structures that include multiple entities, in which compensation can be split between two or more related corporations, making the aggregate amount paid excessive.

    c. Review the minutes to determine if loans were made to any board members or officers. If so, secure a copy of the loan documents for review. Loans to officers, while not prohibited, could result in an excess benefit transaction pursuant to IRC §4958.

d. Analyze any business relationships or other dealings between the aforementioned individuals to determine if these individuals provided or received inappropriate benefits. This is particularly important if the organization has invested in qualified active low-income community businesses in which these individuals have a financial interest.

Examination of Investments

Examine each investment to determine if the funds were used for exempt purposes; e.g., financial counseling to low income persons or businesses.

1. Review leases and other contracts, particularly transactions with officers or other related parties. Determine whether private individuals are receiving any form of inurement or whether the organization has executed any agreements not in furtherance of its exempt purpose.

2. Review copies of mortgages, contracts, agreements, etc. to determine if payments represent fair rental value and whether the agreements are at arm's length.

Exempt Organization Communication and Letters

Review correspondence files, which usually fall into four categories:

1. Letters soliciting funds that identify the nature of projects to be financed or supported;

2. Correspondence relating to use of funds which identify the type of organizations or activities being supported;

3. General correspondence which identify other activities carried on for, or on behalf of, the organization or related parties; and

4. Correspondence with the IRS.

Financial Records

Review financial information to identify important information about the organization's activities. Additionally, verify that the information reported on the return is correct. Examiners should complete the following audit techniques:

1. Reconcile the books to the return;
2. Compare prior and subsequent year income, expenses, assets, and liabilities;
3. Review chart of accounts;
4. Review year-end trial balance;
5. Review auditor's report;
6. Review audited financial statements and management reports;
7. Analyze income and expenses; and
8. Analyze the balance sheet.

Incomplete or Unorganized Records

When a taxpayer submits unorganized records, the burden is on the taxpayer to organize them and prepare summaries and reconciliations.

Referral Procedures

Requesting Assistance

When needed, revenue agents conducting examination of a qualified CDE can request EO assistance. A referral to EO Examination may be needed in the following situations:

1. The tax entity under examination has a salaried exempt organization officer on its governing board.

2. An exempt organization is a general partner of a partnership under audit.

3. There are written agreements between the taxpayer under audit and an exempt organization's officer, and the officer received compensation.

4. The exempt organization officer is compensated as an employee by the entity under audit.

5. In a partnership arrangement, the investors have a larger percentage of ownership in the partnership than the exempt organization.

If any of the above stated scenarios are present in a case, the examiner should refer the organization to the EO Examination function at the following address:

Internal Revenue Service
EO Classification MC 4980
1100 Commerce Street
Dallas, TX 75242

Summary

This chapter has discussed four topics:

1. EO Examination's role in the NMTC Program;
2. Issues specific to CDEs that are exempt organizations;
3. Examination procedures and audit techniques; and
4. Criteria for making referrals to EO Examination when the taxpayer is an exempt organization.

Chapter 5
Disclosure of Tax Information

Introduction

One of the most critical and sensitive responsibilities of every IRS employee is the proper handling of a taxpayer's confidential federal tax information. All tax returns and return information must be kept confidential. Except as noted in the Internal Revenue Code (IRC), IRS employees are prohibited from disclosing returns or return information to unauthorized persons. The term "disclosure" means making known to any person, in any manner whatsoever, a return or return information. Revealing tax information to persons who are not authorized to receive it is an unauthorized disclosure.

Persons who make unauthorized disclosures are subject to severe criminal penalties under IRC §7213 - a fine of as much as $5,000 and/or up to 5 years in prison. In addition, they may be subject to disciplinary action by the Service. The government may also be subject to civil liability for unauthorized disclosure. All unauthorized disclosures should be reported promptly to the employee's manager.

This lesson is narrowly focused to awareness of disclosure topics associated with New Markets Tax Credit (NMTC) examinations and the disclosure of qualified community development entity (CDE) return and return information to related investors. Specifically, this lesson covers disclosure exceptions per IRC §6103(e) and IRC §6103(h) (4). Examiners needing additional information should refer to IRM 11.3, Disclosure of Official Information, or contact their local Disclosure Officer or staff.

Authorized Disclosures

Material Interest

Examiners may disclose tax returns and, unless otherwise instructed, return information to any person having a proper material interest in such information. IRC §6103(e) lists those individuals and/or entities that are entitled to such disclosure. The following apply to CDEs:

In general – The return of a person, upon written request, shall be open to inspection by or disclosure to -

> in the case of the return of a partnership, any person who was a member of such partnership during any part of the period covered by the return; in the case of the return of a corporation or a subsidiary thereof--
>
> (a) any person designated by resolution of its board of directors or other similar governing body,
>
> (b) any officer or employee of such corporation upon written request signed by any principal officer and attested to by the secretary or other officer,

(c) any bona fide shareholder of record owning 1% or more of the outstanding stock of such corporation,

(d) if the corporation was an S corporation, any person who was a shareholder during any part of the period covered by such return during which an election under IRC §1362(a) was in effect, or

(e) if the corporation has been dissolved, any person authorized by applicable State law to act for the corporation or any person who the Secretary finds to have a material interest which will be affected by information contained therein.

Example 1: Capital Interest

Upon formation of a CDE, an entity made a $100,000 equity investment in the CDE. The CDE generated a total of $1,000,000 cash in initial equity investments.

a) If the CDE is a partnership and the investor entity is an individual, then return and return information can be disclosed to the individual upon written request if that person was a member of the CDE during any part of the period covered by the return.

b) If the CDE was a subsidiary of a corporation and the investor entity is an individual, then the return and return information can be disclosed to the individual upon written request, since the investor was a bona fide shareholder of record owning 1% or more of the outstanding stock of such subsidiary.

c) If the CDE was a corporation and the investor entity is a corporation, then the return and return information can be disclosed to the corporation upon written request, since the investor was a bona fide shareholder of record owning 1% or more of the outstanding stock of such subsidiary. However, the return information could not be disclosed to the shareholders of the investor, because there is not a direct ownership relationship to the CDE.

See IRM 11.3.2 for additional guidance on disclosures to persons with material interest.

Disclosures of Third Party Tax Information in Administrative Proceedings

IRC §6103(h)(4) permits the disclosure of returns and return information in federal and state judicial or administrative tax proceedings under specific conditions.

- IRC §6103(h) (4)(B)—permits the disclosure of items on a return where the treatment of an item reflected on such return is directly related to the resolution of an issue in the proceeding.

- IRC §6103(h) (4)(C) — permits the disclosure of items on a return where such return or return information directly relates to a transactional relationship

between a person who is a party to the proceeding and the taxpayer which directly affects the resolution of an issue in the proceeding.

"Return information" is very broad term that includes any information that the IRS has obtained from any source, or developed through any means in connection with determining a liability or potential liability under the Code. The statute does not define "administrative proceeding." However, the term generally includes any proceedings regarding proposed or actual actions against a person(s) that are enforceable under agency laws or regulations.

The following is an example of disclosures of third party tax information in administrative proceedings which satisfy the conditions of IRC §6103(h)(4)(B) or (C).

Example 1: Disclosure in an Administrative Procedure

It was determined in an IRS examination that Corporation XYZ's subsidiary, a CDE, failed to invest substantially all of its equity investment into a qualified active low-income community business. The CDE was aware of the problem and attempted to correct the error, but failed to do so within six months after the date of discovery.

IRC §6103(h)(4)(B) and IRC §6103(h)(4)(C) apply. In an examination of the investors returns (an administrative proceeding) the IRS can disclose the fact that the investor's equity investment in the CDE does not qualify for the NMTC because the CDE had failed to invest substantially all of its equity investment into a qualified active low-income community business. The equity investment transaction between the CDE and the investors has an effect in the resolution of investor's examination.

See IRM 11.3.32 for additional guidance on disclosures in judicial and administrative tax proceedings.

CDFI Fund Authorization

IRC §6103 provides that returns and return information may also be disclosed to officers and employees of Treasury, attorneys of the Department of Justice (including United States Attorneys), and state tax officials pursuant to IRC §6103(h)(1), (h)(2) and (d), respectively, in connection with tax administration, provided the requirements for disclosure under such provisions are met. See IRM 11.3.22 for disclosure to Treasury and Department of Justice for tax administration purposes and IRM 11.3.32 for tax administration purposes.

Field examiners will not make any inquiries or disclosures to federal or state officials. Any requests for information to or from federal or state agencies are to be referred to the SBSE or LMSB program analysts assigned to the NMTC program. The program analyst is the liaison between the CDFI Fund and IRS personnel.

Summary

1. IRS employees are prohibited from disclosing returns or return information to unauthorized persons or in an unauthorized manner. Persons who make unauthorized disclosures are subject to severe penalties under IRC §7213 - a fine of as much as $5,000 and/or up to 5 years in prison.

2. "Return information" is very broad term that includes any information that the IRS has obtained from any source, or developed through any means in connection with determining liabilities or potential liabilities under the Code.

3. The statute does not define "administrative proceeding." However, the term generally includes any proceedings regarding proposed or actual actions against a person(s) that are enforceable under agency laws or regulations.

4. Examiners may disclose tax returns and, in the absence of specific instructions, return information to any person having a proper material interest in such information. IRC §6103(e).

5. IRC §6103(h)(4)(B) authorizes disclosure of items on a return where the treatment of an item reflected on such return is directly related to the resolution of an issue in a judicial administrative tax proceeding.

6. IRC §6103(h)(4)(C) authorizes disclosure of items on a return information where such return or return information directly relates to a transactional relationship between a person who is a party to the proceeding and the taxpayer which directly affects the resolution of an issue in a judicial administrative tax proceeding.

7. Contact the LMSB or SBSE program analysts if contact with the CDFI Fund, or other federal and state agencies is needed.

IRC §6103 Quick Reference Guide

6103(a) General rule of confidentiality

6103(b) Definitions of key terms

6103(c) Taxpayer authorizations to third parties

6103(d) Disclosures to State tax agencies

6103(e) Material interest specifications
- Individuals
- Corporations
- Trusts
- Bankruptcy
- Attorney in Fact
- Etc.

6103(f) Disclosures to committees of Congress

6103(g) Disclosures to the President and certain other persons (as described in this section)

6103(h) Disclosures to certain Federal officers and employees for purposes of *tax administration.*

6103(i) Disclosures to certain Federal officers and employees for administration of Federal criminal laws *NOT relating to tax administration.*
- (i)(1) & (i)(2) Criminal investigations
- (i)(3) Criminal or terrorist activities or emergency circumstances
- (i)(4) Judicial or administration proceedings
- (i)(5) Locating fugitives from justice
- (i)(6) Impairment provisions
- (i)(7) Terrorist activities
- (i)(8) Comptroller General issues

6103(j) Statistical use

6103(k) Disclosures for tax administration purposes — e.g., disclosure of:
- Accepted offers in compromise
- Amounts of outstanding liens
- State agencies regulating tax return preparers
- (k)(6) Investigative disclosures to third parties

6103(l) Disclosure for purposes other than tax administration — e.g., disclosures to/for:
- SSA — Social Security Administration
- DOL — Department of Labor
- Delinquent Federal loan accounts
- Personnel or Claimant Representative Matters
- Federal, state, local child support enforcement agencies
- Certain Welfare agencies
- Student loan verifications

6103(m) Disclosure of taxpayer identity information — e.g., for use of or in:
- Tax refund notification to media
- Certain Federal claims • NIOSH — National Institute for Occupational Safety and Health
- Pell Grants
- Default of student loans

6103(n) Disclosure to certain other persons (mostly to contractors)

6103(o) Disclosure with respect to wagering taxes and taxes on alcohol, tobacco, and firearms.

6103(p) Procedures and record keeping — e.g., safeguarding tax information

Chapter 6
Audit Reports

Introduction

Examination reports (unlike workpapers) are legally binding documents and, when executed, serve as the basis for assessment and collection action. Based on this importance, examiners should take all necessary steps to ensure report accuracy.

The key to this chapter is to remember that the New Market Tax Credit (NMTC) does not change the report writing requirements or procedures for agreed, unagreed, survey, or no-change reports or for any type of entity, i.e. individual, corporation, partnership, or trust. The audit report will document how the tax liability was computed and contain all the information necessary to ensure a clear understanding of the adjustments.

Background

Common scenarios that will be encountered in NMTC audits are that the qualified community development entity (CDE) will be a C corporation, S corporation, Limited Liability Company (LLC), or partnership with multiple investors (partnerships, corporations, trusts, individuals). The scope of the audit may be expanded to include additional issues warranting examination or limited to consideration of the NMTC only. The audit of a CDE may be expanded to include related investor returns and/or subsequent year tax returns.

Example: An examiner determined that a CDE failed to meet the substantially-all requirement and a NMTC recapture event has occurred. The audit will include the CDE's tax return for the year in which the equity investment was disqualified and all affected investor returns will be examined concurrently with the CDE to address the recapture issue in the year of disqualification. (See IRM 4.10.5.4, Related Returns.) In addition, any subsequent year returns on which the NMTC was claimed will be audited to disallow the credit in that year.

References

- IRM 4.10.5, Required Filing Checks
- IRM 4.10.8, Report Writing
- IRM 4.31.2, TEFRA Examinations-Field Office Procedures TEFRA

CDE (Corporation)

No-Change Audits

If the examination of the CDE's return does not result in a change to the CDE's tax liability, the allowable NMTC, or the identification of a credit recapture event, then a no-change report will be issued to the CDE upon the completion of the examination.

On Form 4549, Income Tax Examination Changes, the column for the no-change year should have zero on lines 2, 14 and 17. Refer to IRM 4.10.8.2.3 for detailed procedures.

Issuing No-Change Reports

Issue a Letter 3401, No-Change Report Transmittal Letter, and one copy of the no-change report to the taxpayer and the taxpayer's representative (if the representative is authorized to receive notices and communications). Letter 3401 advises the taxpayer that a no-change is proposed but is subject to review.

Letter 590 will be issued after the case is officially closed. Letter 590 (undated) should be prepared and signed by the examiner and included in the case file when closed from the group.

No-Change with Adjustments

CDE Report

The CDE will receive a no-change with adjustment report. In cases where the audit result in a disqualification of an equity investment, but no change to the tax liability of the CDE, it is important to notify the CDE and secure an agreement to the audit adjustment. A report with supporting schedules will be issued to the CDE at the conclusion of the examination. Although it is not necessary to secure the CDE's agreement since there is no additional tax liability, securing the agreement will document the CDE's concurrence with the examination results and facilitate completion of the subsequent examination of the investors' returns to recapture the NMTC.

Identifying Investors

The CDE is required to provide investors with notifications on Form 8874-A, Notice of Qualified Equity Investment for New Markets Credit, that their equity investments qualify for the NMTC. Examiners should solicit copies of these notices from the CDE. If the notices are insufficient for report purposes, a list of investors with EINs or SSNs, along with K-1 information submitted to investors for the years in which the NMTC was in effect, should be requested.

Investor Audit Reports

Each investor holding an affected qualified equity investment will be issued an examination report for agreement with the recapture. The examiner will control the returns requiring an adjustment and issue the required reports unless the Partnership Control System (PCS) for controlling returns is used.

CDE (Partnership)

The NMTC, like other tax attributes, will flow through the partnership entity to the partners. If required, the partners or shareholders should be controlled using PCS or TEFRA procedures.

Reports for No-Change Audits

TEFRA Procedures

If the audit is closed no-changed within 45 days from the date the Notice of the Beginning of the Administrative Procedure (NBAP) is issued, follow the procedures

in IRM 4.31.2.2.6.1, No Change Within 45 Days. If the audit is closed more than 45 days after the after the NBAP is issued, the taxpayer will be issued a summary report as described in IRM 4.31.2.2.6.3, Completing the Key Case Examination.

Non-TEFRA Audits

Follow procedures outlined in IRM 4.10.8.2.3, Issuance of No-Change Reports

Reports for Adjustments to NMTC

Three adjustments should be presented on Form 4605, Examination Changes – Partnerships, Fiduciaries, S Corporations, and Interest Charge Domestic International Corporations.

1. The current year adjustment to the NMTC is presented under line 5, Other adjustments.

2. The disallowance of future year credit should be disclosed and explained in the "Remarks" section.

3. The recaptured NMTC is also presented under line 5, Other Adjustments, as a separate line item from the current year adjustment. The entire recapture amount (credit + interest) should be combined as a single dollar amount.

Identifying Partners

Partners for the current year are identified on the Forms K-1 for the year under audit. Form 886-S, Partner's Share of Income, Deductions and Credits, are used to identify adjustments at the partner and shareholder level. Three adjustments should be identified:

1. disallowance of current year NMTC,
2. disallowance of credit in subsequent years, and
3. recaptured NMTC from prior years. However, since the tax benefit rule will be applied at the partner level, the credit and interest portions of the recapture amount should be separately stated.

Investors (Individuals and Corporations)

For examinations of investors claiming the credit (individuals or corporations), Form 4549, Income Tax Examination Changes, is used to document audit results and secure agreement. Form 886-A is used to provide explanations of audit adjustments.

Form 4549, Income Tax Examination Changes

The adjustment to the current year credit will be reflected on line 8, "Less Credits." The recapture amount (recaptured NMTC + interest) is identified on line 10, "Plus Other Taxes." A statement regarding the interest will be shown in the "Other Information" section of the report. The statement will include the years the NMTC was claimed, the interest computation dates and the interest for each period. The following example is for a recapture event in 2008

IRC §45D(g)(2)(B) states that the recapture amount is equal to the decrease in credit plus the interest on the amount of NMTC used to reduce the tax liability for each prior taxable year. Interest will be calculated using the underpayment rate established under IRC §6621, beginning on the due date for filing the return on which the credit was claimed and ending on the due date for the tax return on which the credit recapture is made.

We have also calculated your interest on the recapture amount from the due date of the return under audit to 30 days after the date of this report.

(a) Credit Period Year	(b) NMTC Claimed	(c) Interest Computation Dates	(d) Interest Under IRC §45D(g)(2)(B)	(e) Recapture Amount
2004	$15,000	4/15/2005 to 4/15/2009	$4,469	$19,469
2005	$35,000	4/15/2006 to 4/15/2009	$6,544	$41,544
2006	$25,000	4/15/2007 to 4/15/2009	$2,690	$27,690
2007	$52,000	4/15/2008 to 4/15/2009	$2,398	$54,398
Total	$127,000		$16,101	$143,101

Form 886, Explanation of Items

The explanation will include facts, law, the taxpayer's position, argument, conclusion, and a calculation of the NMTC recapture.

Example: Explanation for Adjustment on Form 886

Facts

It has been determined that you have made a $1,000,000 equity investment in XYZ Corp, a qualified community development entity, on July 2, 2004, which entitled you to the New Markets Tax Credit (NMTC). On your tax returns you used a NMTC equal to $30,000, $50,000, $25,000, and $52,000 to reduce federal income tax liabilities for calendar tax years 2004, 2005, 2006, and 2007, respectively. The following table shows how credits were applied against your tax liabilities.

(a) Credit Period	(b) Allowable NMTC	(c) Available NMTC	(d) Tax Liability	(e) NMTC Claimed (Recaptured)	(f) Carry Forward (Disallowed)
2004	$50,000	$50,000	$30,000	$30,000	$20,000
2005	$50,000	$70,000	$50,000	$50,000	$20,000
2006	$50,000	$70,000	$25,000	$25,000	$45,000
2007	$60,000	$105,000	$52,000	$52,000	$53,000
Total	$210,000			$157,000	

The allowable credit is determined as a percentage of your investment. The available credit is computed as the sum of the current year allowable credit and the carryforward of credit from the previous year. The credit claimed is the amount used to reduce the taxpayer's tax liability. The carry forward is the difference between the

amount of credit available and the amount of credit claimed.

Law

Under IRC §45D(g)(3), there are three events that can result in the recapture of NMTC at the investor level.

- The CDE ceases to qualify as a CDE,
- The substantially-all requirement is not satisfied, or
- The investment is redeemed or otherwise cashed out by the CDE and the CDE distributes the funds to the equity holder.

Under IRC §45D(g)(2)(A), the aggregate NMTC allowed to the taxpayer for all prior years will be recaptured.

Taxpayer's Position

The taxpayer's position, if known, should be included. The legal authority, if any, that the taxpayer is using to support their position should also be cited. If the taxpayer has provided a written position statement, it should be included in its entirety or summarized here and included in its entirety as an exhibit. If the taxpayer's position is not known, include statement: "Taxpayer's position unknown."

Argument

It has been determined that the XYZ corporation did not meet the requirements of IRC §45D(b)(1)(B) by failing to invest substantially all of the taxpayer's equity investment in qualified low-income community investments in 2008. Therefore, your equity investment in XYZ corporation has failed to qualify for the NMTC.

Conclusion

The amount of NMTC subject to recapture is $157,000. In addition, the carry forward of $53,000 at the end of 2007 is reduced to zero and you are not entitled to any NMTC associated with this investment in future years.

Summary

1. The NMTC does not change the report writing requirements or procedures.
2. A NMTC *disallowance* will require a Form 4549 report for the investor in the year of recapture and subsequent years on which the credit was claimed. The examiner will disallow the full amount of the credit taken and no credit will be shown on line 8 of the report, "Less Credits."
3. A NMTC *recapture* event will also require a Form 4549 report for the investor that includes a NMTC recaptured adjustment shown on line 10 of the report, "Plus Other Taxes."
4. The audit report should contain all the information necessary to ensure a clear understanding of the adjustments and document how the tax liability was computed.
5. A statement regarding the interest portion of the recapture amount, and how it was computed, will be shown in the "Other Information" section of the report.
6. The Form 886 will include facts, law, taxpayer's position, argument, conclusion and a calculation of the NMTC recapture.



Solar Lending Practices by Community and Regional Financial Institutions

Paul Schwabe and David Feldman
National Renewable Energy Laboratory

NREL is a national laboratory of the U.S. Department of Energy
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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS000381

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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS000382

NOTICE

This work was authored in part by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the U.S. Department of Energy Office of Energy Efficiency and Renewable Solar Energy Technologies Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.

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EAS000383

Acknowledgments

The authors would like to thank the invaluable contributions from Kelsey Read and Andrew Belden from Massachusetts Clean Energy Center as well as the following individuals and organizations for their insightful perspectives and review comments: Justin Allender of First Green Bank; Sean Baird of Medallion Bank; Carol Chernikoff of Alternatives Credit Union; Ron Felder of Redwood Credit Union; Jasna Filipović and Justin Fuller of Celtic Bank; Phillip Forbert, Lance Griswold, and Danielle Silva of U.S. Eagle Credit Union; Kyle Henderson of FirstBank; Sarah Llewellyn and Chad Tomsich of Elevations Credit Union; David Miller and Pete Yang of Alpine Bank; Scott Pellegrini of Provident Credit Union; Steve Sherman formerly of GreenChoice Bank; Bob Schweigert of Salal Credit Union; and Skyler Webster of New Resource Bank. The authors also thank Jarett Zuboy for his superb editorial support and Eric O'Shaughnessy and Billy Roberts for their help with graphics.

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the Solar Energy Technologies Office of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.

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List of Acronyms

CRFI	community and regional financial institution
FDIC	Federal Deposit Insurance Corporation
FICO	Fair Isaac Corporation (credit score)
HELOC	home equity line of credit
ITC	investment tax credit
MassCEC	Massachusetts Clean Energy Center
NCUA	National Credit Union Administration
NREL	National Renewable Energy Laboratory
PACE	property assessed clean energy
PPA	power-purchase agreement
PV	solar photovoltaic
SREC	Solar Renewable Energy Certificate
TPO	third-party ownership
UCC	Uniform Commercial Code

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Executive Summary

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018). The shift towards PV loans has allowed new, smaller financiers such as CRFIs to enter the PV financing market.

CRFIs typically offer PV financing via loans to small residential and commercial borrowers. A sampling of CRFI perspectives collected from industry interviews indicates positive experiences with the development and evolution of PV loans. Quantitative data on 6,770 loans representing over $186 million in lending also suggest PV loans are performing very well to date—although these results must be put in the context of the high credit quality of borrowers, early state of the loans, and recent robust economy (Table ES-1). The strong performance to date suggests continued expansion of loan offerings by CRFIs already operating in this space and likely attraction of new entrants. Although most CRFI investment has targeted distributed PV without storage, other applications will likely emerge, such as community PV and PV coupled with energy storage. Looking ahead, access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth.

Table ES-1. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan (2018) and individual CRFI contributions

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1 Introduction

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

PV systems installed in the United States vary considerably in terms of size, location, and procurement mechanism. Large, centralized PV systems constitute most of the country's total installed PV capacity, but the greatest number of PV systems are distributed projects located on residential or commercial property (95.4% and 4.5% of U.S. PV systems, respectively) (SEIA and GTM Research 2018). Because each individual project represents a relatively small financial investment, some businesses have aggregated numerous projects to increase the size and attractiveness of distributed PV investments. Over the past 10 years, distributed PV markets have grown considerably; in 2017 alone, investment in U.S. distributed PV systems totaled over $10 billion (SEIA and GTM Research 2018).

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018).

The shift toward host ownership of PV systems has allowed new, smaller financiers—such as CRFIs—to enter the market, including lenders dedicated to small residential and commercial projects. The TPO market presents barriers to many small lenders, particularly as TPO projects often require complex investment structures with outside tax-equity investors to capture the value of the investment tax credit (ITC).[1] Providing loans rather than leases and power-purchase agreements plays to the strengths of many CRFIs as solar loans are like other CRFI products and because complex financial structuring is not required to use the ITC, which remains with the homeowner.

This report therefore examines the experiences and perspectives of CRFIs that have developed and launched PV loan products, including the evolution of the products and their performance.

[1] Given the limited number of tax-equity investors participating in the U.S. market, and the premium they can charge for many projects with limited options, there may be a role for some CRFIs in this space. That said, the federal wind and solar tax credits are scheduled to phase down over the next few years, so institutions may decide not to invest resources into learning how to structure these complex financial transactions with potentially limited availability.

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This information could assist other CRFIs that are considering participating in or expanding their role in PV financing.

The remainder of this report is organized as follows. Section 2 gives an overview of U.S. CRFIs and the financial products they typically offer. Section 3 provides CRFI perspectives about their experiences with PV financing products based on industry interviews. Section 4 presents quantitative data on PV loan performance and borrower credit profiles. Section 5 concludes and identifies future needs related to expansion of PV lending.[2]

[2] The National Renewable Energy Laboratory (NREL) has conducted previous PV-financing research. From 2013–2015, the Solar Access to Public Capital project examined how a securitization market for TPO PV allowed national-level players to increase PV project capital by attracting institutional and retail investors (NREL 2018). NREL also compared PV loans with other TPO products such as PPAs and leases (Feldman and Lowder 2014). This previous research focused on financial products rather than types of financial institutions.

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2 Overview of CRFIs and PV Lending

This section first discusses the importance of CRFIs in facilitating community investments and then briefly describes the characteristics of PV loan types. Here CRFIs include community banks insured by the Federal Deposit Insurance Corporation (FDIC) and credit unions insured by the National Credit Union Administration (NCUA).[3]

2.1 CRFIs

Table 1 shows the sizes and numbers of U.S. banks and credit unions. FDIC-insured community banks and NCUA-insured credit unions account for approximately 19% of all bank assets ($3.6 trillion), 24% of all bank loans ($2.6 trillion), and 96% of U.S. banking institutions (10,911 institutions).

Table 1. Bank Assets, Loans, and Number of Institutions in the United States

	Assets in $ trillions (% of total)	Loans in $ trillions (% of total)	Number of institutions (% of total)
FDIC-insured non-community banks	$15.3 (81.0%)	$8.2 (76.6%)	443 (3.9%)
FDIC-insured community banks	$2.2 (11.6%)	$1.6 (15.0%)	5,227 (46.0%)
NCUA-insured credit unions	$1.4 (7.4%)	$1.0 (9.3%)	5,684 (50.1%)
Total	$18.9	$10.7	11,354

Sources: CUNA (2017), FDIC (2017, 2018)

The FDIC defines community banks as those that "focus on providing traditional banking services in their local communities. They obtain most of their core deposits locally and make most of their loans to local businesses" (FDIC 2012). Further, CRFIs are often considered "relationship" lenders rather than "transaction" lenders. Community banks can be apt to make credit decisions based on local knowledge and unique data obtained through long-term relationships owing to their deep understanding of local market dynamics (FDIC 2012). Small businesses may rely more heavily on this relationship approach, because they may be challenged to qualify for loans based on the more rigid, standardized qualification parameters of non-community banks (FDIC 2012). Community banks are frequently privately owned and locally controlled, which may balance the competing interests of shareholders, customers, employees, and the local community. This is also true for credit unions, which are owned by their members and operate for the sole purpose of servicing their members. Larger banks are more likely to be publicly owned and tend to have stronger associations with the capital markets. They also operate in more places with centralized and model-based loan-approval structures. (FDIC 2012).

Community banks are particularly important and prevalent in certain regions of the country. In 2014, community banks held 72% of deposits in U.S. rural counties and 56% of deposits in

[3] Some CRFIs operate certain business lines, such as direct lending, in more than one market, while other business lines, such as retail banking, can be restricted to a smaller geographic footprint. This report does not exclude CRFIs even if a business line is operated in more than one market.

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micro-counties (FDIC 2015).[4] Many states with a large community banking presence are in the middle of the country, where PV penetration tends to be relatively low (Figure 1).[5] CRFIs could close this gap by providing financial solutions that help make distributed PV economically attractive in their region.

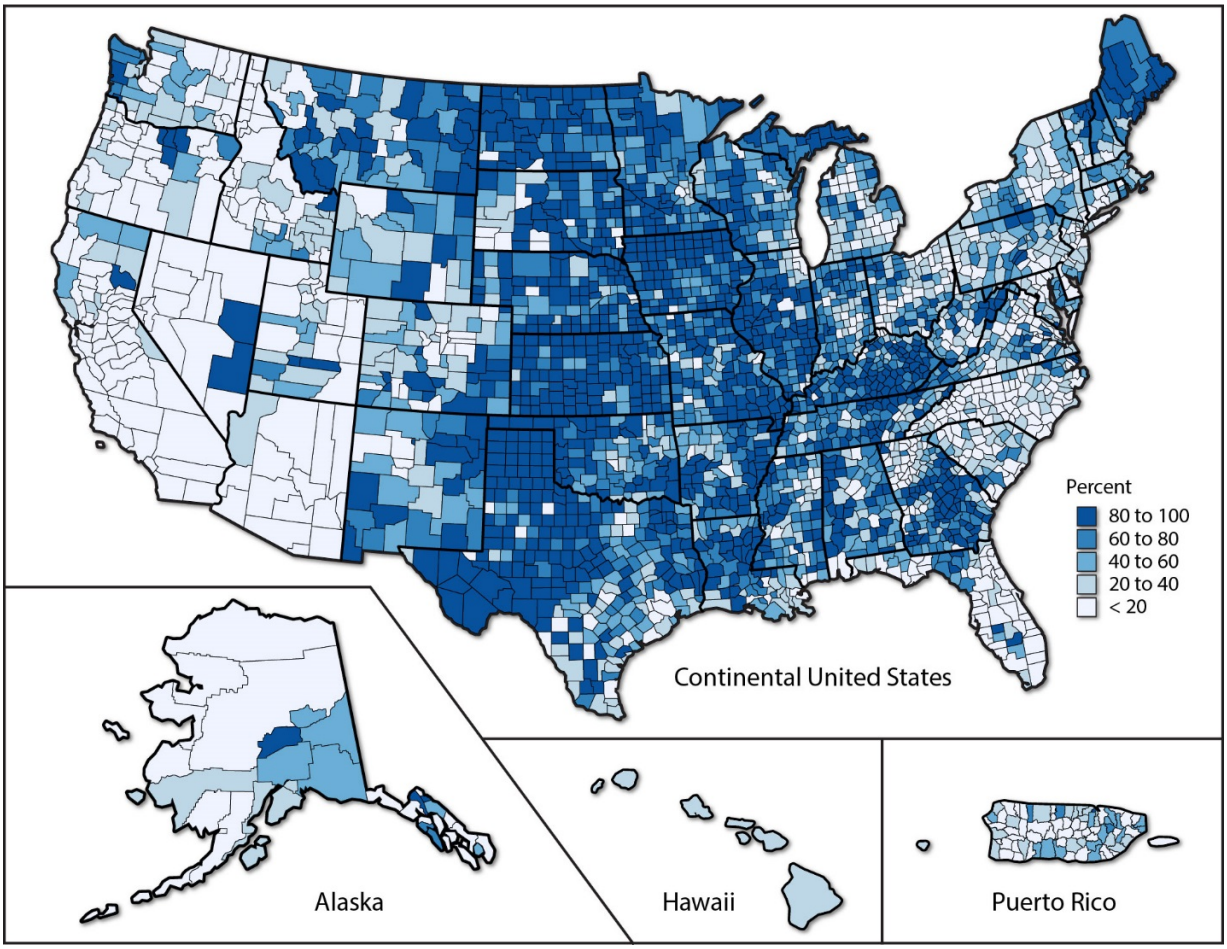


Figure 1. Percentage of total deposits held by community banks in 2017

Source: FDIC (2018)

Because of their size, geographic variation, and local market knowledge, CRFIs are well suited to develop innovative or tailored PV financing products. Relatively few banking institutions currently offer PV loan products, and existing product specifications might not be desirable in every market. However, new PV loan products could be developed for many of the communities served by CRFIs, and the willingness of many CRFIs to collaborate and share could enable rapid dissemination and evolution of the new products.

[4] Rural counties are defined as those with a population of less than 10,000 people. Micro-counties are defined as having between 10,000 and 50,000 people (FDIC 2012).
[5] Data as of June 30, 2017.

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Many CRFI loan types could be adapted for financing PV systems. As shown in Figure 2, most community bank loans are for commercial and residential real estate (70%), followed by commercial and industrial activities (13%), construction and development (7%), and unsecured loans to individuals (4%).[6] Credit unions generally focus more on individual customers and less on commercial activities, with 83% of their loans made for residential real estate or automobiles, 7% for commercial and industrial activities, and 10% for unsecured loans to individuals. Distributed PV systems are usually physically attached to real estate, much like many home-improvement projects (e.g., roof replacements, kitchen remodeling), which are often funded through real estate loans. A 2018 Federal Reserve Bank of New York study found that 56% of home equity lines of credit (HELOCs) and 72% of home equity loans—types of real estate loans—were used to make home improvements (Fuster et al. 2018). In the commercial space, a PV system is like other equipment financings and could be funded by commercial and industrial loans. Finally, because the cost of PV systems has fallen dramatically, loans made to an individual on an unsecured basis may also fund a PV project. Although unsecured loans to individuals represent a relatively small portion of CRFI loan portfolios, they still constituted over $160 billion at the end of 2017 (see Table 1 and Figure 2).

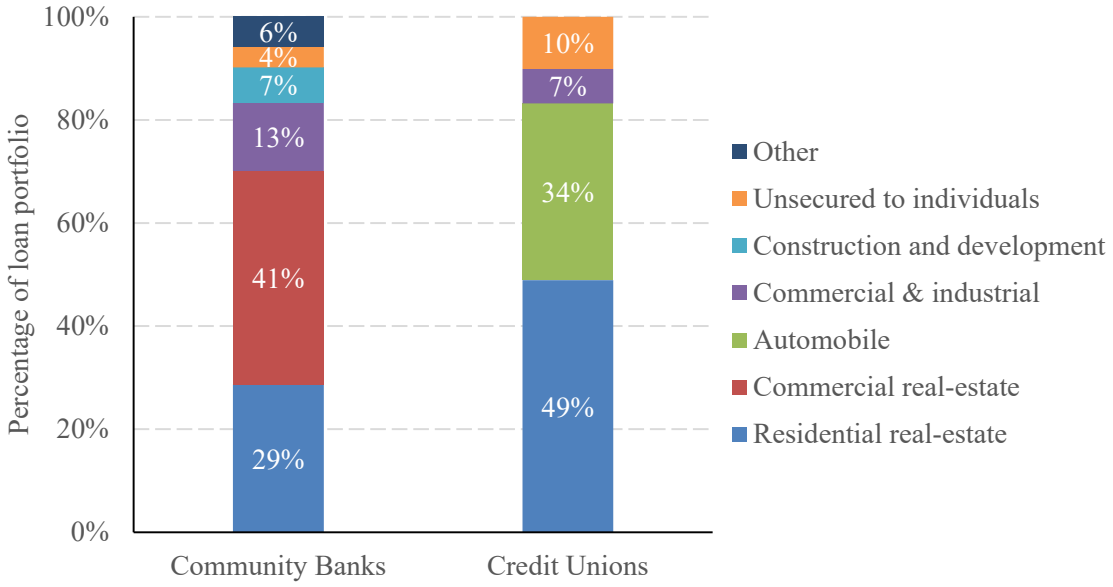


Figure 2. Portfolio breakdown for loans made by community banks and credit unions in 2017

Sources: CUNA (2017), FDIC (2018)

2.2 Primary PV Loan Types

PV loans generally fall into a few categories, with variations. As shown in Figure 3, PV loans can be classified by their level of security, based on what the borrower pledges as collateral for

[6] An unsecured loan is a loan issued based on the creditworthiness of the individual, rather than being based on collateral such as real estate equity.

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the loan. PV loans have typically been secured by real estate, by the equipment itself through a Uniform Commercial Code (UCC)-1 filing,[7] or as an unsecured personal loan.[8]

- **Loan secured on real estate**—PV loans can be secured via the underlying real estate, typically, in the residential space, through a home equity loan (also referred to as a second mortgage) or a HELOC.[9] Like other real estate loans, they require a closing, or settlement, at which all parties sign the necessary loan documents. To get to closing, the real estate typically is appraised to ensure the owner has sufficient equity in the property, the loan is registered with the county clerk, and taxes are evaluated. This is a heavily regulated process, particularly since the recent mortgage crisis. Obtaining a real estate loan requires time and money, but borrowers can often get a relatively low rate compared with the rates of other types of loans.[10] Real estate loans typically carry longer repayment terms, which allows PV system owners to match the loan payments more closely with the energy cost savings from the PV system.
- **Loan secured on equipment**[11]—Many PV loan providers secure the loan through a UCC-1 filing with the county or state (or both) of the borrower, which gives notice of the lender's lien (also referred to as a security interest) on the PV property, but importantly not on the underlying real estate. The UCC-1 filing gives the lender certain rights, such as repossession of the PV system itself until the loan is repaid. UCC-1 filings require less upfront time, money, and paperwork compared with real estate loan processes, but the UCC-1 security interest still comes up in a title search, which is typically conducted when a property is sold or refinanced. That said, the solar lender may have difficulty recouping the value of the PV system in the case of repossession, and the UCC-1 filing must be re-registered periodically. For these reasons, many lenders consider solar loans with UCC-1 filings as not fully secured.
- **Unsecured loan**—With an unsecured loan, the lender holds no collateral but instead makes the loan based on an individual's credit quality, income, and debt level. Such loans can be closed more easily and quickly than other loans, but the interest rate charged is typically higher and with a shorter term than the rate and term of a secured loan. In addition, unsecured loans are usually only available to borrowers with good credit or a high income and with limited outstanding debt.

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[7] UCC-1 refers to Form 1 (UCC Financing Statement) (IACA 2018).

[8] In some instances, banks have also secured loans using incentive streams generated by PV assets, such as Solar Renewable Energy Certificates (SRECs). This option is only available in markets with SRECs of sufficient value and is dependent on the PV asset continuing to generate electricity (to produce SRECs).

[9] HELOCs typically have a drawdown period with a floating interest rate. Funds from second mortgages are received at the beginning of the loan, and the loan is more likely to have a fixed rate.

[10] The interest payments on home equity loans and HELOCs can be tax deductible under certain qualifying uses. Generally, the home equity loan or HELOC is borrowed for home-improvement purposes, and the total of the borrower's first mortgage and their home equity loan or HELOC does not exceed $750,000. The Tax Cut and Jobs Act of December 2017 lowered this interest deduction cap from $1,100,000 to $750,000 and narrowed the allowable uses to primarily home-improvement related. Given these changes, it is possible that demand for home equity loans and HELOCs may fall, particularly in markets with comparatively high home prices and a higher probability of reaching the $750,000 combined interest deduction cap (Harney 2018).

[11] May also be referred to as a chattel loan. Although PV equipment is technically considered collateral, the practicality and cost effectiveness of physically removing the equipment from the property remains an open question (see Section 3.5).

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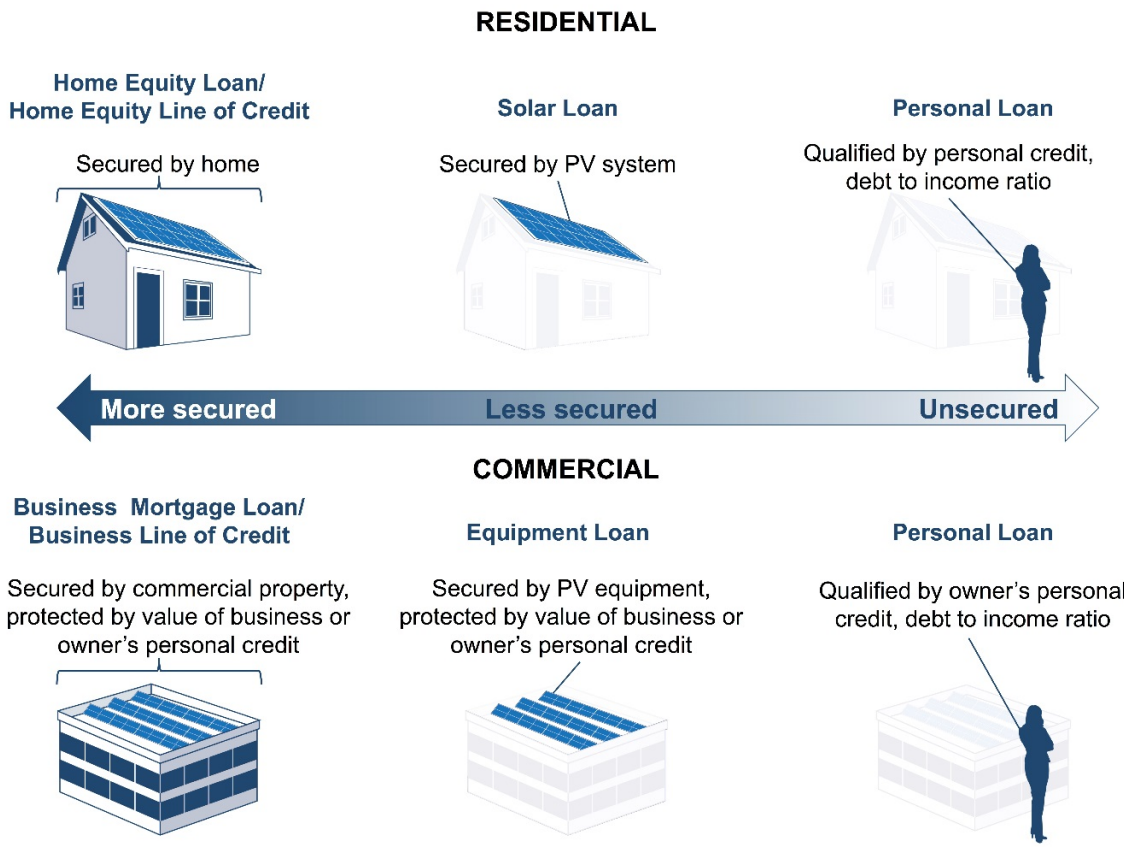


Figure 3. Variations in PV loan types by level of security

In addition to level of security, PV loans can be characterized by several criteria:

- **Tenor (loan length)**—Because PV assets are long-lived, it is often advantageous for a PV loan to have a longer tenor. A longer tenor reduces the amount of each periodic payment, potentially aligning the loan payment more closely with the PV energy savings. Some UCC-1 loans and personal, unsecured loans have relatively short tenors, but some banks have lengthened the tenor as their programs have evolved. For this reason, PV loan tenors can vary from 3–20 years.
- **Prepayment and reamortization**[12]—Some loans have prepayment penalties to compensate lenders for receiving fewer interest payments over the course of the loan. PV systems currently benefit from the 30% federal ITC, typically taken in the first year of operation. Therefore, PV system owners often get 30% of the system cost back very early in the loan. Many PV loans offer a one-time low or no-fee prepayment option, which the borrower can use to buy down the outstanding principal using the ITC, or no prepayment penalty over the life of the loan. Some borrowers also reamortize the loan after the prepayment to reduce monthly debt payments further.

[12] Reamortization is the process of recalculating the monthly loan payment amount while keeping the same original schedule of loan payments (i.e., tenor). A loan is typically reamortized when a significant portion of its principal is paid.

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- **Government involvement**—Many banks have introduced PV loan products based on market conditions without government financial support, but some loan products have benefited from state or federal government programs. Some state agencies have helped banks set up PV loan products and provided technical expertise to get banks comfortable with PV as an asset class. Other programs have subsidized the cost of PV loans by offering credit support (guaranteeing all or some of the loan amount), buying down the interest rate of a loan, or buying down the cost of a PV project (reducing the loan principal, typically through rebates). These programs are often instituted to establish or accelerate a market or to provide loans to customers who may not otherwise qualify (e.g., individuals with low income).[13]

[13] Local governments are also heavily involved in property assessed clean energy (PACE) programs, which offer commercial and residential customers loans that are tied to their property taxes.

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3 Themes about PV Loan Products from CRFI Interviews

This section summarizes the themes from in-depth interviews with 20 PV financing experts from 14 CRFIs or related stakeholder institutions, describing shared and diverse experiences of PV financing products. Themes arising from more than one institution or individual are included, and no approach is presented as favorable. The themes are described loosely in chronological order, starting with product initiation, followed by operational experiences, and concluding with forward-looking perspectives.

3.1 Market Demand, Institutional Philosophy, and Comfort with Home-Improvement Loans Drive PV Loan Product Development

In addition to the shifting PV market trends described earlier, PV loan products are frequently initiated in response to customer or member requests and repeated requests provide strong motivation. One interviewee had at least 10 customer inquiries before committing time and resources to the possibility of a PV-specific product. Conversely, in markets with barriers to PV adoption, CRFIs may be limited in their ability to stimulate PV demand, but they may alleviate a financing barrier by establishing a PV loan product. Commercial PV installations seem to have fewer dedicated lending products compared with the residential sector.

The motivations to offer PV loan products extend beyond requests from potential borrowers. Some CRFIs see promotion of PV as part of their commitment to environmental offerings or a triple-bottom-line (social, environmental, financial) business philosophy. Others see PV loans as an opportunity to grow the institution's lending portfolio or interact with new customers who might also be directed to the institution's other services.

In some cases, home-improvement contractors who banked with a CRFI asked the institution to create a PV loan offering, so they could recommend the product to their customers. Experience lending for similar home-improvement measures also drives PV loan product development or innovation. Several interviewees suggested PV loans complement existing home-improvement products. The interviewees generally reported positive experiences with energy efficiency lending (e.g., new windows, heating, ventilating, and air conditioning) and thought PV has a similar risk and performance profile. Some institutions came to PV lending through other PV-specific products, such as PACE financing or community PV projects. Several institutions entered the market in response to an attractive support policy, such as a state-based loan loss reserve fund for PV lending.

3.2 PV Loan Product Development Benefits from a Thoughtful Research, Approval, and Product-Rollout Period

All interviewees noted the need to devote considerable time and resources to understanding and developing a dedicated PV loan product. The education process typically entails a designated product lead researching the PV industry generally (technology, construction, pricing, risks, and reliability), the financing options available to local borrowers, the risks associated with PV lending, national and local competition, and the types of PV loans. As one banker noted, an overarching rule of banking is to know your product, know your market, and know your

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collateral. This industry research phase typically requires 6 months to 1 year, depending on the financial institution's familiarity with the PV industry.

There are multiple ways to develop a solar loan product. At some institutions, research is driven by an opportunistic, entrepreneurial and environmentally minded staff member (such as a loan officer) who champions the process, secures internal resources, and obtains decision-maker approvals. At other institutions, a management-level product-development officer (i.e., the chief lending officer or chief credit officer) provides the primary market research and justification for the product. In many cases, research and product development is driven by internal personnel. However, in some cases, an outside specialist with experience in the specific product class is hired to develop the product.

The internal champion often uses a concise product brief to secure internal approval, which can include approval by the chief credit officer, chief financial officer, loan and finance committee members, and potentially the board of directors. The brief can include information on local customer interest in the product, an assessment of the competitive lending landscape and market share, information on the technology and asset class, investigations into the local installer base, and a qualitative risk matrix. Decision makers scrutinize the loan tenors, which tend to be longer for PV than for other products, and the typical loan sizes among other criteria.

CRFIs frequently protect themselves against the unknowns of a new asset class by establishing a smaller initial loan product offering or portfolio concentration limits. Thus, they can roll out the program with relatively modest expectations and allow for a testing period, which can be reassessed later in the product-development cycle (often 1 or 2 years after program launch). Finding the right product balance is often part of the initial rollout. Too much volume, and the institution might feel uncomfortable with the portfolio concentration. Too little volume, and the time and setup costs are harder to justify.

3.3 Smaller CRFIs Possess Unique Challenges and Opportunities

It can be challenging for smaller CRFIs to establish a large portfolio of new loan products. Many have no dedicated product-development personnel, so personnel with other job duties must be tasked with establishing new loan products. In addition, because smaller institutions offer relatively few loans and cannot be over-weighted in any area (owing to concentration risk), the number of PV loans they can make may be limited, especially since there is a learning curve associated with a new asset class. Such limitations are particularly relevant for unsecured loans, because CRFIs are required to establish a loan loss reserve in case of default, which represents money not earning a return. A new product at a larger CRFI would represent a much smaller share of the total loan portfolio. Finally, the effort required for any product subject to significant regulations, such as real estate loans, may outweigh the product's benefits for a smaller institution without the dedicated capabilities to manage new requirements.

On the other hand, CRFIs have some advantages related to implementing PV loan products. Product approval processes can be easier at smaller institutions than at larger institutions. Smaller CRFIs may also be subject to less intense regulation compared with larger CRFIs. In addition, smaller CRFIs generally report the ability to be more nimble and adaptable when creating or modifying new products for a specific asset class like PV.

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3.4 PV Loan Products and Processes Vary across Institutions

Section 2.2 provides basic information about PV loan types. This subsection describes additional PV product variations across CRFIs.

CRFIs offer PV loans via direct and indirect lending programs. In the direct model, the lending institution provides capital to the borrower, and the borrower is typically free to choose a PV installer that meets minimum criteria (years in business, acceptable business ratings, applicable experience, etc.). Direct-lending customers are often existing members of the credit union or community bank or join specifically to take advantage of the loan offering. In the indirect model, the lending institution instead prequalifies select PV installers—typically based on requirements set by the institution—who can present the loan product on behalf of the institution. The indirect model gives the institution some control over the installation process and the borrower's experience with it.

PV loan programs evolve over time. Interviewees commonly reported launching a product, receiving customer and installer feedback during rollout, and making product adjustments accordingly. For example, several CRFIs adjusted to longer repayment periods or moved from a secured loan based on a second mortgage to a UCC-1 or unsecured loan.

PV loan products can include one or two loans per transaction. With two loans, the first amount is sized at approximately 30% of the PV purchase price to match the expected ITC amount, and the second funds the balance of the purchase price. The first loan can forego interest payments for the first 12–18 months (or the interest is paid by the installer), and the borrower can use their ITC benefit to pay off the zero-interest loan. The conventional second loan entails a standard amortization schedule (10–20-year term) and market interest rates. With one loan, for the full purchase price (at a set interest rate and term), the lender often offers a one-time reamortization for free or at a reduced rate (e.g., $100), allowing the borrower to use the ITC or other funds to pay down the principal. This prepayment reduces the monthly payments while maintaining the original loan schedule. However, in this model, the borrower pays interest on the full loan amount before the principal paydown, while interest is typically paid on only 70% of the full loan in the two-loan approach.

The other timing element in structuring a solar loan product is the disbursement schedule from the bank to the installer. For example, one program disburses 35% of the loan amount once the loan has been closed and then the final 65% after installation. Installers may prefer a more front-loaded disbursement schedule, while lenders typically prefer holding funds until after installation.

Loan application and closing processes also vary. Some CRFIs primarily handle customer applications over the phone, whereas others allow online applications through a dedicated portal connection. Some banks work with PV installers and developers to integrate the online portal into the PV sales process. Variations in closing processes include fully automated versus manual review and approval as well as online document signing versus finalizing loans in person at a branch and, in some cases, in the presence of an attorney.

Finally, options to improve loan terms vary. Attractive sales pitches can include low interest rates or a "no interest" period (e.g., the first year) that allow borrowers to save money

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immediately instead of waiting for energy savings from PV (e.g., in the winter, when electricity production is lower). The no-interest period is particularly attractive in the first year, before the loan's principal is reduced through an ITC buydown. These practices are done per strict lending regulation. However, borrowers should analyze all loan conditions including interest rates, terms, penalties, and fees—which lenders can charge to the borrower or the PV developer, who may pass the fee on to the PV sales price.

3.5 UCC-1 Fixture Filing Is Useful as a Security Interest, but Repossessing PV Systems Is Impractical

Most CRFIs that offer a dedicated PV loan use a UCC-1 fixture filing, and many institutions have had positive experiences with this process. Interviewees commonly described the usefulness of the UCC-1 fixture filing not in terms of collateral recoverable via repossession, but rather as an indicator that the PV system has an outstanding loan to be paid, which is often revealed at the time of a home sale or refinancing. The UCC-1 fixture filing provides some protection from a loss due to loan default, even if the lender must wait an extended time (sometimes years for a home sale) to potentially recover some portion of the debt. UCC-1 fixture filing is not, however, a one-time process; lenders typically must refile every 5 years to maintain protections.

Lenders can try to repossess PV systems, but most interviewees questioned the practicality of this approach for several reasons. First, CRFIs have little use for a used PV system, and—because there is no established secondary market for used PV equipment—attempting to liquidate a PV system might yield little return. In contrast, when a UCC-1 filing is used to secure a loan for commercial equipment such as heavy machinery or vehicles, the repossession value is relatively high owing to the equipment's mobility and the active secondary market for used equipment. Second, the all-in cost of a PV system (and thus the loan amount) reflects not only the equipment cost, but also various "soft costs" related to system design, installation labor, permitting, customer acquisition, and so forth. Repossessing the PV equipment would not compensate for these soft costs. At the same time, uninstalling, storing, and selling the used PV equipment (while preserving the roof's integrity) would be costly to the lender. Finally, and perhaps most importantly, trying to repossess PV equipment from a distressed borrower's home presents a risk of bad publicity.

3.6 PV Loan Repayment Has Been Strong, but Most Loans Are Young and Were Made to Highly Rated Borrowers

All interviewees reported positive results from their PV loan portfolios, with no portfolio-wide issues or systematic concerns to date and only a few repayment anomalies attributed to events such as divorces, bankruptcies, or deaths of the primary borrowers. Interviewees described their PV loans' performance with phrases such as "pretty good overall," "little to no losses to speak of but a few delinquencies," "charge-offs remaining unbelievably low," and "delinquencies and

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losses lower than expectations."[14] Because of high repayment performance to date, many CRFIs will increase the volume of PV loans offered.

However, the high performance of PV loans must be qualified. First, PV loan recipients were, on average, considered A+ borrowers and thus were expected to pay reliably. Some interviewees questioned whether borrowers with lower credit quality would do as well; some CRFIs are considering expanding their PV loan offerings to borrowers with slightly lower credit quality, but they are limited by the need for such borrowers to own homes. Second, the PV loan programs are generally young, and thus many loans are very early in their tenor. Many interviewees said delinquencies or losses from comparable loan products typically peak later, perhaps between years 2 and 5 of the loan. Finally, because the current economy is extremely robust, the performance of PV loans during a downturn is uncertain. Kroll Bond Rating Agency stated in its rating of a securitized portfolio of residential loans from a large solar provider that, "with no more than 36 months of performance data [typical for most solar loan programs] … these loans have not been through a full loan-cycle and therefore losses could be higher than experience to date suggests" (KBRA 2018).

See Section 4 for a quantitative summary of PV loan performance to date.

3.7 Relationships between PV Installers and CRFIs Can Enhance the Marketing of PV Loan Products

Interviewees consistently described the critical role of PV installers in driving the demand for PV loan products. Because, as one interviewee said, customers typically decide to install PV first and then search for financing products, many potential customer inquiries are directed to installers as opposed to finance providers.

PV installers and CRFIs both market PV loan programs. Product marketing channels include social media, newsletters, direct mailings, farmers markets, movie theater advertisements, coupon books, and home shows. Some interviewees described a shift in the way most loan leads have been generated as PV loan products have evolved. Early in the loan programs, some existing bank and credit union members contacted their CRFIs to finance PV. As new sales channels have been made, CRFIs have developed relationships with installer partners that bring in customers who may not have been CRFI members.

Being comfortable with installer partners is very important. Installers may have exclusive agreements pertaining to a CRFI's financial product and may have online access to the loan-origination system to close the deal. A CRFI can save underwriting time, help installers understand and promote loan products, and mitigate technology and installer risks by pre-vetting PV installers and developing relationships with vetted installers in the CRFI's service territory. The CRFI and installer both benefit from communicating about areas of concern and teaching each other their business languages. Although installers do not qualify borrowers, training enables them to speak with potential borrowers about the financial product, process, and

[14] Charge-offs generally refer to the situation in which a lender records a monetary loss on a loan due to non-repayment.

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relationships. Alternatively, an installer may simply provide the customer with a sample of financial product offerings (loan brochures, etc.) to choose from.

3.8 CRFIs Are Willing to Extend PV Loans to Lower-Rated Borrowers, but Barriers Exist

Although to date PV loan recipients have generally had high financial qualifications, interviewees agreed that offering loans to less highly rated customers, within reason, is desirable. Having a more extensive and detailed national history of PV loan credit performance would help this effort. In addition, having more granular data (e.g., at the county or state level) would likely be required to drive local financing decisions. The automobile industry provides a good example of easy access to credit data, with high regional fidelity and extensive history.

The primacy of the federal ITC as a residential PV incentive may hinder the offering of PV loans to customers with lower financial ratings. In many cases, low- to moderate-income customers may not benefit directly from a tax credit due to insufficient tax liabilities. In such cases, a TPO arrangement rather than direct PV ownership might be more appealing because the TPO provider can monetize the tax credit.

Naturally CRFIs want to extend loans that borrowers can repay with relative ease and consistency. After the recent mortgage crisis and ensuing regulations, lending institutions assumed additional fiduciary and legal responsibility to deny loans to customers who cannot service them. Although many government programs target low- and moderate-income customers, CRFIs are hesitant to push the bar too low for challenged borrowers. In any case, customers living paycheck to paycheck may be less interested in products like PV that offer savings over a 15-year period or longer.

That said, PV loan approval processes are not necessarily determined by hard and fast rules tied to credit scores or debt-to-income ratios. Because CRFIs know their market and customer base well, they can examine customers individually and evaluate loan products that make sense for the borrower and lender. Interviewees, however, did report that they frequently declined customers based on insufficient financial qualifications.

3.9 PV Energy Savings Are Generally Given Little Weight during Loan-Approval Processes

Although PV owners save on utility payments, many CRFIs generally do not factor these savings into PV loan criteria. Most financial institutions use a debt-to-income ratio to assess a borrower's ability to repay debt. Taking out a PV loan increases the debt side of that ratio, while acquiring a PV system increases the income side (through energy savings)—yet the PV income factor is generally not considered during loan qualification.

Because of this practice, government policies that affect PV economics might have a muted impact on CRFI decisions to offer a PV loan. For example, reducing PV's economic value by lowering the net metering rate might reduce the demand for PV loans, but it would not directly change a loan's evaluation criteria. That said, energy bill savings are sometimes factored in to the process of deciding whether to offer a PV loan product, even if they are not formally included as part of the loan-approval process. CRFIs may also be more inclined to include these

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savings in their analysis if they had access to widely accepted third-party guidance on the specifications that determine how much a PV system will reduce a customer's electricity bill. This type of documentation would be particularly beneficial for banks entering the space in markets without significant PV deployment.

3.10 Regulations Have Not Hindered PV Loans, but Educating Regulators about PV May Help

Various entities regulate CRFIs, including the FDIC (which insures deposits for local and regional banks), the NCUA (which insures deposits for credit unions), any number of state-based financial regulators (particularly for CRFIs with a state charter), federal regulators (such as the Office of the Comptroller of the Currency), and more. Some entities may overlap, and a single institution may be regulated or monitored by multiple agencies.

In general, interviewees identified no significant regulatory barriers related to PV loans. Regulators aim to ensure that loans do not harm the safety and soundness of the institution (because these regulators serve as guarantors of institution deposits) and that the consumer is protected against predatory or discriminatory lending practices. Thus, CRFIs must demonstrate how PV loans fit under those requirements, for example, by demonstrating clear and fair lending practices, a satisfactory credit quality of the overall portfolio, appropriate disclosures that are clear and sufficient, and that institutions are not over-weighted in any one market or customer segment (which can introduce portfolio-concentration risk).

Educating regulators about PV loans can facilitate regulatory review of CRFI portfolios. Most interviewees agreed that regulators do not approve PV loan programs before program initiation. Instead, PV loans are established under the same practices and general regulations that are applied to all other loan types. However, regulators might review an institution's entire loan portfolio annually or at other intervals, in which case it can be helpful to educate the regulators about the PV asset class. Some CRFIs work with outside partners to prepare for the audit process, which can last a week or more. In any case, product innovation outside of an industry standard, such as a 15-year equipment loan on PV, can happen if it fully conforms to regulations.

3.11 Challenges Remain for PV Loan Products

There are a few remaining challenges to CRFI development of PV loan products. For example, the term of a PV loan (up to 20 years) presents long-term interest rate risk, because interest rates could change while the loan's rate stays fixed. Some CRFIs are more comfortable assuming this risk than others. Risk-mitigation measures include shorter terms, higher rates, or one-time rate adjustments, but these measures can make the loan less attractive to borrowers.

The lack of an established securitization market for PV loans is another challenge. Although some PV loans from national installers have been sold on the securities market, most CRFIs do not have the size or volume to sell PV loans to the securities markets. Most interviewees said they would prefer to keep PV loans rather than sell them. However, the option to sell a portfolio

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of loans to other investors could lower risks by creating more liquidity, thus putting PV loans on equal footing with loans for more established asset classes such as mortgages and automobiles.[15]

PV loans with UCC-1 fixture filings can also entail challenges. Some lenders cannot offer such loans when the PV-hosting house is held in trust rather than in the borrower's name. In addition, because PV loans with UCC-1 fixture filings are not as widely familiar as secured loans (HELOCs, second mortgages) or unsecured, personal loans, the lender's requirements do not always meet the borrower's expectations.

Finally, the lack of national and local information about PV loans makes it difficult for CRFIs to assess market size and the risks of starting a PV loan program. Whereas market research firms provide robust data for other asset classes, such as automobile loans, the smaller PV market has not yet stimulated the development of detailed, widely available data products.[16]

[15] June 2017 guidance from the NCUA asserts that federal credit unions are authorized to issue and sell assets such as Ginnie Mae home mortgages, auto loans, and other assets (NCUA 2017). The practice, known as securitization, was not explicitly authorized for federal credit unions prior to the 2017 guidance. Securitization of assets by community banks is estimated at more than $28 billion in 2014 though small relative to total assets (Baily and Montalbano 2015). In general, securitization by CRFIs may be limited to larger institutions with asset volumes large enough to justify the transactional costs and expertise required.

[16] Previous NREL efforts targeted this data gap for the TPO market, but not for solar lending (NREL 2018).

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4 Quantitative Indicators of PV Loan Performance

This section provides summary statistics on PV loans made by CRFIs to complement the qualitative insights noted above. The data are anonymized and used to analyze loan and borrower characteristics as well as loan performance.

The data set contains high-level information from 6,770 loans, representing a combined PV loan portfolio exceeding $186 million across 22 different CRFIs. Massachusetts accounts for 57% of the PV loans in the data set and 67% of the loan value. These data were collected by the Massachusetts Clean Energy Center (MassCEC) and the Massachusetts Department of Energy Resources as part of the Mass Solar Loan Program (Mass Solar Loan 2018). NREL collected data for the remaining 43% of PV loans and 33% of loan value from individual CRFIs across the United States. Across the entire combined data set (6,770 loans), banks account for 32% of the PV loans and 38% of the loan value, and credit unions constitute the remaining 68% of PV loans and 62% of loan value. The loan data reflect performance through February 2018.

These data entail several caveats. The PV loan program data were self-reported by the various CRFIs. Although the data were spot checked, a thorough audit to check consistency across institutions or for reporting accuracy was not conducted. The Mass Solar Loan Program data are part of a state incentive program that includes a financially protective loan loss reserve fund, which may impact lending practices such as borrower qualification and the interest rate. The institutions outside the Mass Solar Loan Program reported data through a standardized form, but each institution may collect and process their PV lending data uniquely, which could produce subtle data differences across institutions. Thus, the data are useful for analyzing high-level trends. Future studies could improve the data-collection process and expand the scope of the analyses.

Table 2 categorizes the data by the value of each institution's PV loan portfolio. Out of 6,770 total PV loans, 12 loans (< 0.2%) were reported as charge-offs, indicating the loan is unlikely to be repaid by the borrower. Hypothetically, if an average lender charged-off $15,000 for each of the 12 defaulted loans, the loss would represent about $26 per loan when spread across all 6,770 loans. This estimate is likely high, because some loan charge-off losses could be offset from a claim to a loan loss reserve program or via the UCC-1 process when the home is sold or refinanced.

Table 2. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan 2018 and individual CRFI contributions

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There were 178 loans reported at least 30 days late, representing approximately 2.6% of the overall loan portfolio. Interviewees noted that short-term delinquencies can occur when borrowers are slow to set up automatic loan payments. Delinquencies drop substantially at the 60- and 90-day marks.[17] According to some interviewees, loan delinquency rates may vary by loan "seasoning" (i.e., the time elapsed since loan closing). For example, delinquencies might be expected to peak at 2–5 years of seasoning according to some interviewees. As shown in Table 2 and Figure 4, most PV loans in the data set were substantially younger than 2 years. The lower seasoning of CRFIs with portfolios of $1 million or less compared with the rest of the institutions could indicate smaller institutions or relatively nascent solar loan program offerings.

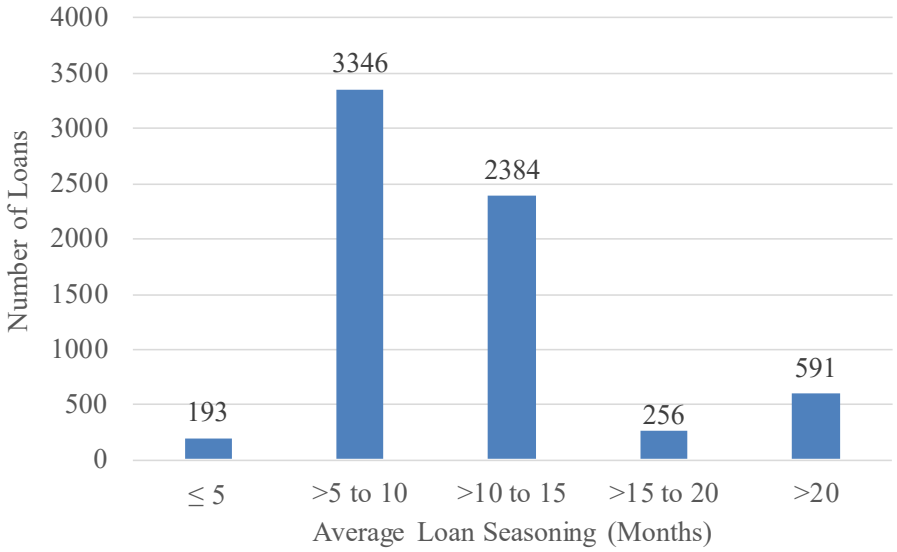


Figure 4. Number of CRFI PV loans by seasoning[18]

Table 2 also summarizes borrower credit profiles, which are consistent across CRFIs of various PV loan portfolio sizes: 76%–88% of borrowers had credit scores of 720 or higher, 9%–14% had scores of 681–720, and 3%–11% had scores of 680 or lower. Even within the lowest credit category, many borrowers likely were still considered "prime"—that is, attractive enough to qualify for approval at relatively low interest rates. The "subprime" level typically starts around a 620-credit score. These statistics agree with interviewees describing typical PV borrowers with overall high credit quality, thus presenting less risk. The high credit quality of PV borrowers is

[17] Some institutions report cumulative delinquency payments (how many loans have ever been late even if they are now current), whereas others report point-in-time delinquency metrics (how many loans are delinquent at any given point in time). Thus, the delinquency data in Table 2 are likely higher than if all the reported delinquencies were based on point-in-time estimates, because many delinquencies are corrected over time. Conversely, the delinquency data in Table 2 are likely lower than they would be if each financial institution reported a cumulative metric showing the number of loans that have ever been delinquent during the loan's operating period.

[18] Loan seasoning for Mass Solar Loan Program data is provided at the individual loan level, which is then averaged for each CRFI. Loan seasoning for CRFIs outside of the Mass Solar Loan Program is provided as a portfolio average for that CRFI. The number of loans shown in Figure 4 represents the total number of loans in each bin including both Mass Solar Loan Program and other CRFI data.

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also expected, because applicants must be homeowners and ideally have enough income to use the ITC effectively. Figure 5 provides a credit score summary of the total sample.

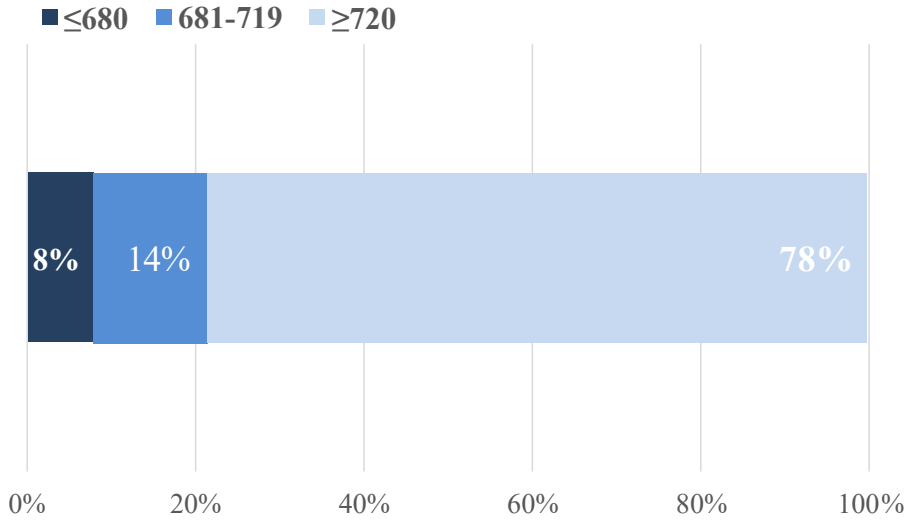


Figure 5. Credit score summary across entire sample of borrowers

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5 Conclusions and Future Needs

CRFIs have demonstrated the willingness and entrepreneurism to provide new loan products for growing distributed PV markets. Early qualitative perspectives and quantitative data suggest PV loans are performing very well, making expansion of loan offerings attractive for CRFIs already operating in this space and potentially attracting new entrants. Although most CRFI investment to date has targeted standalone distributed PV, other applications will likely emerge, such as community PV and PV coupled with battery storage.

Access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth, including the following:

- Higher-fidelity PV loan performance and borrower credit data on par with the data readily available for other assets classes, especially improved geographic, historical, and borrower-classification data.
- Information on the presence of PV financing providers across different markets as well as detailed information on the type of financing products provided.
- Information provided through dedicated PV lending training or educational materials to existing and potential PV lenders, covering areas such as technical evaluation of PV equipment, assessment of industry risk profiles, and characterization of various PV financing products.

Public and private partnerships may be able to collect and disseminate such data throughout the United States. Working together, the industry can help existing providers grow their loan portfolios and reduce risks while enabling new financiers to enter the PV loan space and service areas where distributed PV loans can be offered widely and profitably.

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VALUATION OF SOLAR GENERATION ASSETS

The valuation of solar energy projects is a complex subject and is a source of tension between regulators, developers and debt and equity investors. This paper is intended to highlight best practices, as well as common pitfalls in valuing solar energy projects including the tangible and intangible assets comprising a fully contracted in-place system (a "solar asset").

Solar assets may be valued for many purposes, including:

- Strategic planning
- Acquisition
- Debt and equity financing
- Investment tax credit and Section 1603 grant in lieu of credit
- Buyout options
- Allocation of purchase price for an acquisition

Depending on the purpose of a valuation, there can also be different standards (also referred to as definitions) of value required by regulators, or requested by the users of valuations. These standards include fair market value ("FMV"), market value, fair value, investment value, book value, and value to the holder. However, the most common valuations of solar assets will utilize the FMV standard. Fair market value is required for federal income tax purposes (e.g., investment tax credit, and tax allocation of acquisition purchase price) as well as for Section 1603 grant purposes, and is frequently requested by investors. Accordingly, this paper focuses only on valuations under FMV for new or "as-if fully complete" assets.

Many common errors are made by not adhering to the well-defined standard of FMV. Valuations should clearly state and define the standard of value. FMV is defined in accordance with Revenue Ruling 59-60 as follows:

> *"The price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts."*

It is generally accepted and supported by numerous cases that the term "fair market value" contemplates a hypothetical willing buyer and a hypothetical willing seller. FMV does not consider the unique motivations of a particular buyer or seller, nor does it consider unique synergistic value that a particular buyer may perceive. FMV also considers all risks inherent in ownership including factors related to control and marketability.

It is important to note that FMV contemplates an arm's length transaction whether or not there is an actual or contemplated transaction. Accordingly, the attributes of the current owner/holder (e.g., actual costs incurred and tax attributes) are generally not relevant unless they can be transferred to a hypothetical buyer. This concept is particularly important for solar assets that generate substantial value from tax attributes such as accelerated depreciation and tax credits. For example, a project owner entity's investment tax credits would be based on actual eligible direct and indirect costs, overhead and may include a developer fee paid to a related party, whereas FMV is determined from the buyer's perspective based on the expected price of the system and an allocation of that price to eligible components.

There are many accepted methods for valuing assets that do not have a readily available or quoted market price such as solar assets. These valuation methods can generally be aggregated into the following three categories:

- Asset/Cost Based
- Income Based
- Market Based

In the valuation of solar assets, generally all three approaches should be developed because each provides relevant information to estimating FMV (i.e., the price that would be negotiated between a hypothetical buyer and hypothetical seller). Each approach has its strengths and weaknesses and will be afforded different weight based on the facts and circumstances. Each approach, its strengths and weaknesses, and typical pitfalls are discussed below.

Cost Approach

The cost approach is applied using either the reproduction cost method (costs to replicate an identical asset) or the replacement cost method (costs to develop an asset of similar utility). The cost approach is most applicable in estimating the value of a new or hypothetical "as if complete" solar asset. This method becomes much less reliable for in-service assets because of the difficulty in estimating physical, functional, technological and economic obsolesce/depreciation.

The cost approach is developed by accumulating the market based direct and indirect costs to develop an asset of equivalent utility that would be incurred by a market participant, adding opportunity cost for the cost of capital during the development period, and adding an entrepreneurial profit to compensate for the risk in undertaking the development.

The cost approach has received a tremendous amount of attention in the valuation of solar assets, in part because certain grant applications required a cost certification from an independent certified public accountant ("Cost Certification"). However, from a valuation perspective, the cost approach is generally no more important than income or market approach, and is often the least reliable method in reaching a conclusion of fair market value. The factors causing the limitations of the cost approach mirror its lack of utility in an arm's length negotiation between a willing buyer and willing seller, which is the required standard inherent in FMV analysis.

It is critical to note that the cost method is not a Cost Certification, and actual costs are not utilized because costs must be based on what a hypothetical market participant would incur to replace the asset, not necessarily the costs that the developer incurred in developing the asset. The market participant concept is also applied in estimating opportunity costs. Entrepreneurial profit is difficult to estimate and based on market factors. Entrepreneurial profit should not be based on actual development agreements in place, which are often between related parties and may not be viewed as representative of a market transaction.

The cost approach provides relevant information in estimating FMV under the premise that a market participant would pay no more for an asset than their cost to develop an asset of equivalent utility. The cost approach, however, has significant weaknesses because it does not easily provide for consideration of an actual power purchase agreement ("PPA"), a contract for solar renewable energy certificates ("SREC") sale (and they may be favorable or unfavorable to the value of the solar asset), or substantial differences among state and local incentives in different jurisdictions.

The cost approach often provides the upper bound for the FMV of the solar asset. However, in circumstances where the cost approach provides a higher indication of value than income and market approaches, say because of a below-market PPA, the cost approach should be given little or no weight in reaching a conclusion of FMV to best reflect the expected action of the hypothetical buyer. In situations where the cost approach provides a lower indication of value than the income or market approach, this may justify increasing the entrepreneurial profit (and cost approach value) or relying more heavily on income or market approaches because the seller would demand this additional value.

Accordingly, in estimating FMV and similar to the process when parties negotiate a price, the cost approach is typically no more important than the income or market approach, and is often the least important method in reaching a conclusion. As is evident in many real estate markets that have seen market disruption, replacement cost can be substantially higher than fair market value.

The most common pitfalls using the cost approach include:

- Utilizing actual costs and not considering current market costs particularly when prices have dropped and the project is delayed.
- Utilizing a related party developer fee as entrepreneurial profit when the soalr asset's economics do not justify a large entrepreneurial profit.
- Placing too much reliance on the cost approach when it is a higher indication of value than the income and market approach (i.e., the economics do not support replacement cost).
- Placing too much reliance on the cost approach when it is a lower indication of value than the income and market approach (i.e. the economics support a higher value than represented by replacement costs and a reasonable entrepreneurial profit).

Income Approach

Valuation methods based on the income approach use the expected economic earnings capacity of the solar asset in question to estimate value. This approach is generally used by market participants in pricing solar assets, and is usually the most relevant method to estimate FMV because it considers the specific contracts and incentives applicable to the solar asset. There is also a substantial history of case law and tax authority that indicates that the income approach is most appropriate for determining the fair market value of property that generates income, particularly a consistent income stream over a long period.

For solar assets, the income approach is generally developed using the discounted cash flow ("DCF") method. The DCF method is based on the fundamental financial premise that the value of any investment is the present value of expected future economic benefits. The DCF method considers all of the relevant factors an investor would consider in determining value (i.e., economic benefits, risk, and the liquidation time horizon). In applying the DCF method, the economic benefit stream over the projection period is converted to present value at a discount rate which meets the return requirements of debt and equity investors (i.e., the weighted average cost of capital). A projection of economic benefits (after tax cash flows including tax benefits) covering the expected life of the system is utilized because the timing of significant benefits such as tax credits and depreciation and state and local incentives varies from year to year.

One of the inherent factors and potential weaknesses of the DCF method is the reliance on a projection covering the estimated useful life of the system. However, many solar assets will have a PPA with extensions covering a

substantial portion of the estimated life of the system and statutory provisions or contracts covering SRECs or incentives. Furthermore, the timing and amount of tax credits and depreciation benefits, which represent a significant portion of the economic value, can be estimated once the price/FMV is determined. Accordingly, the uncertainty for solar assets relates principally to merchant sales or un-contracted SREC revenue.

One of the more difficult aspects for some appraisers in applying the DCF method is determining the appropriate unleveraged discount rate or weighted average cost of capital ("WACC"). The WACC should reflect the required market rate of return on equity and the required market rate of return on debt with each weighted based on their respective portion of the long-term capital structure. The market return on equity should be based on current requirements for equity investors and is usually estimated using techniques like the capital asset pricing model used by valuation professionals. The cost of debt should reflect the market interest rate and fees on long-term solar asset debt financing.

Another difficult input to estimate is the long-term equity and debt weighting. Much like real estate and other long-lived tangible assets, solar assets are generally debt financed with amortizing debt with an amortization period and term that is significantly less than the life of the asset utilized in the DCF projection. Accordingly, the debt weight cannot be computed based on the initial loan to value or the WACC will be understated resulting in an overstatement of value. Additionally, the unlevered return or WACC should be referenced to recent studies on unleveraged rates of returns or direct observations from actual transactions in solar assets.

A further challenge in using the DCF method is projecting tax attributes such as depreciation and income tax rates. Many projects are eligible for bonus depreciation. However, if bonus depreciation creates projected losses, care must be taken to consider whether a typical market participant would put value on these benefits at marginal tax rates, and whether bonus depreciation would be considered by a typical market participant in pricing the subject asset.

It is also important to note that projections and the WACC should be determined from the perspective of a market participant, not the current holder of the asset. This is extremely important in estimating the correct amount of tax credits and depreciation that a buyer would obtain upon purchasing at FMV, allocating costs to eligible vs. ineligible items, and segregating components into depreciable lives. Additionally, the financing rates and debt and equity weighting for the current holder/owner are much less important than rates and weighting for a typical market participant.

Common pitfalls in using the income approach include:

- Utilizing the initial loan to value as the long-term debt weighting and understating the WACC.
- Failure to include a risk premium in the WACC for merchant sales or un-contracted SRECs and understating the WACC.

Market Approach

The market approach is typically developed in valuing solar assets when a sufficient number of adequately comparable assets have recently transferred ownership, and valuation metrics for the transactions can be obtained. Given the volume of solar transactions in most jurisdictions and access to reliable data, the market approach is utilized for most solar asset valuations using the comparative transaction method. Using the comparative transaction method, the reported price per capacity unit (e.g. megawatt) for recent comparable systems is

analyzed and a selected cost per capacity unit is then applied to provide an indication of the estimated fair market value for the solar asset.

The first challenge in applying the market approach is finding a sufficient number of recent comparable transactions from which valuation metrics can be obtained. Given the substantial difference for solar assets between jurisdictions for capacity factors, RECs and other incentives, comparable transactions should typically be from the same region and state, and consideration should be given to the size of the system. If these criteria cannot be met, little or no reliance should be placed on the market approach.

Even if an adequate number of comparable transactions are identified, an inherent weakness in the market approach is obtaining specific information on the comparables to quantify adjustments that may be appropriate to properly estimate FMV. The terms of the PPA can obviously have a substantial impact on the value of the solar asset, but it is often not possible to obtain the details to accurately adjust metrics from comparable transactions.

The most common pitfalls in using the market approach include:

- Utilizing price data from transactions that are not reasonably comparable because of location or size
- Utilizing transaction data is not current particularly given market forces over the last several years.
- Failure to consider whether adjustments to reported transactions should be made for factors specific to the system (e.g., terms of a PPA that are above or below market).

A Note Regarding Purchase Price Allocations

The allocation of the purchase price by buyers for both financial reporting and income tax reporting has also been the subject of controversy and wide disparity in practice for solar assets. The rules and approach may be different for financial reporting (using fair value as the required standard of value) than for income tax purposes (using FMV as the required standard for value). While the subject of purchase price allocation is beyond the scope of this article, it is important to note that certain concepts must be considered in estimating the FMV of the solar asset because FMV contemplates an arm's length transaction. For example, the amount of investment tax credit and depreciation considered in the valuation must be based on the perspective of the buyer, applying the concepts that a hypothetical buyer would apply in its purchase price allocation.

This general overview of best practices in fair market value determination and the importance of appraisals does not delve into the details of purchase price allocations, a complex and important process that will be the subject of a subsequent SEIA white paper.

Conclusion

Rigorous, accurate, third-party appraisals are critical to proper evaluation of solar energy generating assets. Even after valuation approaches are applied rigorously with the best available market data, reaching a conclusion is often difficult. In reaching a conclusion, each method should be analyzed for the quality of data obtained, actual and inherent weaknesses, and the importance of the indications from each method to a hypothetical purchaser. There is no basis for relying equally on the three (or fewer) approaches unless each provides the same quality of information. If the indications of value from the three approaches result in a reasonable range of indications, it may be appropriate to weight each equally. However, a wide range of indications may warrant revisiting each method and its inputs and assumptions, and in many circumstances, the cost and market approaches may need to be given less weight in reaching a conclusion.

Disclaimer

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SEIA thanks the members of its Tax Working Group with special appreciation to the lead of CohnReznick LLP. With more than 2,000 employees nationwide, CohnReznick is the eleventh largest accounting, tax and advisory firm in the U.S., providing forward-thinking advice to navigate complex business and financial issues. With a dedicated renewable energy practice, CohnReznick serves as a board-level member company of SEIA.

SITE DEVELOPER:

COMMUNITY DEVELOPMENT ENTERPRISES
1104 WHITEHALL STREET
JACKSON, TN 38301
PHONE: 731-240-5001
CONTACT: DENNIS EMBERLING

BUILDING & CODES:

CITY OF JACKSON
BUILDING & CODES DEPARTMENT
119 EAST MAIN STREET, SUITE 208
JACKSON, TN 38301
PHONE: 731-425-8255
CONTACT: GREG ROWLAND

CIVIL ENGINEER:

L.I. SMITH AND ASSOCIATES
302 N. CALDWELL STREET
PARIS, TN 38242
PHONE: 731-644-1014
CONTACT: PATRICK SMITH

FIRE DEPARTMENT:

CITY OF JACKSON FIRE DEPARTMENT
720 SOUTH HIGHLAND AVENUE
JACKSON, TN 38301
PHONE: 731-425-8350
CONTACT: CHIEF DARRYL SAMUELS

LAND SURVEYOR:

L.I. SMITH AND ASSOCIATES
302 N. CALDWELL STREET
PARIS, TN 38242
PHONE: 731-644-1014
CONTACT: PATRICK SMITH

SANITARY SEWER DEPT.

JACKSON ENERGY AUTHORITY
351 MARTIN LUTHER KING JR. DRIVE
JACKSON, TN 38301
PHONE: 731-422-7371

TELEPHONE:

AT&T
208 SOUTH AKARD STREET
DALLAS, TX 75202
PHONE: 800-288-2020

WATER DEPT.

JACKSON ENERGY AUTHORITY
351 MARTIN LUTHER KING JR. DRIVE
JACKSON, TN 38301
PHONE: 731-422-7371

ELECTRIC:

JACKSON ENERGY AUTHORITY
351 MARTIN LUTHER KING JR. DRIVE
JACKSON, TN 38301
PHONE: 731-422-7371

NATURAL GAS:

JACKSON ENERGY AUTHORITY
351 MARTIN LUTHER KING JR. DRIVE
JACKSON, TN 38301
PHONE: 731-422-7371

TENNESSEE ONE CALL SYSTEM, INC. 1-800-351-1111 STOP - CALL BEFORE YOU DIG!

NOTICE OF COVERAGE HAS BEEN ISSUED FOR A GENERAL CONSTRUCTION PERMIT AND ASSOCIATED GENERAL ARAP PERMIT THROUGH TDEC.

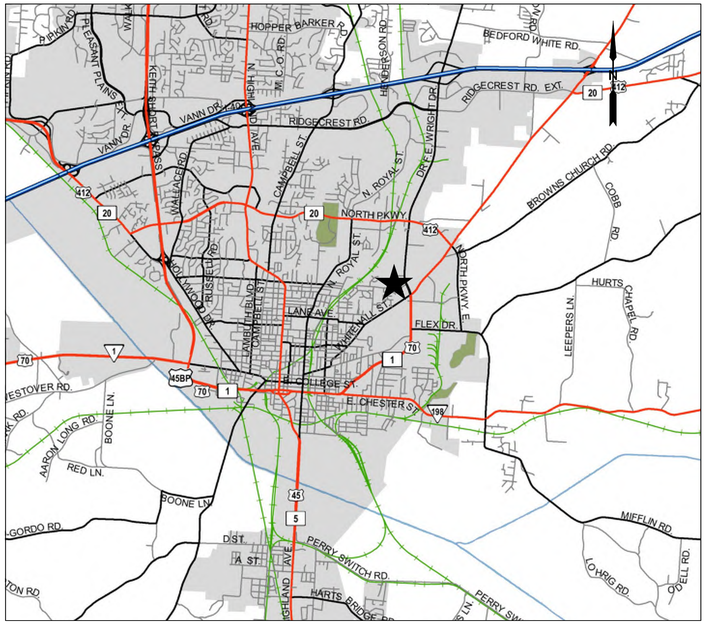
PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014

COMMUNITY DEVELOPMENT ENTERPRISES

JACKSON SOLAR MICROGRID

ROOSEVELT PARKWAY

JACKSON, MADISON COUNTY, TENNESSEE



VICINITY MAP - NOT TO SCALE

SITE DATA

A. OWNERS OF RECORD: HUNT PROPERTIES, 1031 GREYSTONE SQUARE, JACKSON, TN 38305; MORRIS CROCKER, 15 SUTTON PLACE, JACKSON, TN 38305

DEVELOPER: COMMUNITY DEVELOPMENT ENTERPRISES, 1104 WHITEHALL STREET, JACKSON, TN 38301

B. SOURCE OF TITLE: BOOK 733, PAGE 731 AND BOOK 257, PAGE 455
TAX MAP 65, PARCEL 103.00 AND 104.00

CITY OF JACKSON, MADISON COUNTY, TENNESSEE

SITE AREA = +/- 32 ACRES
TOTAL AREA = +/- 34.27 ACRES

C. THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 471130168E, DATED AUGUST 03, 2009.

PLANNING INFORMATION

A. ZONING DESIGNATION: GENERAL RESIDENTIAL DISTRICT
FRONT SETBACK: 25 FEET
SIDE SETBACK: 8 FEET
REAR SETBACK: 10 FEET

B. INTENDEND USE: SOLAR MICROGRID

C. PARKING: NONE REQUIRED FOR INTENDED USE
REQUIRED 0 SPACES
PROPOSED 0 SPACES

SHEET NO.	SHEET NAME	SCALE
C-000	COVER SHEET	
C-001	NOTES	
C-100	EXISTING	1"=100'
C-101	VEGETATIVE IMPACT EVAL.	1"=100'
C-200	LAYOUT	1"=100'
C-201	LANDSCAPING	1"=100'
C-300	GRADING	1"=100'
C-400	E.P.S.C. PHASE 1	1"=100'
C-401	E.P.S.C. PHASE 2	1"=100'
C-402	E.P.S.C. PHASE 3	1"=100'
C-403	A.R.A.P.	1"= 30'
C-404	E.P.S.C. PHASE 4	1"=100'
C-900	DETAILS	
C-901	DETAILS	
C-902	DETAILS	
C-903	DETAILS	
C-904	DETAILS	

Ownership and Quality of Construction

CERTIFICATE OF QUALITY OF CONSTRUCTION

I hereby certify that I will construct the improvements shown hereon and guarantee that they meet the requirements and specifications set forth in the Subdivision and Land Development Regulations and subject to the review and approval of the Jackson Municipal Regional Planning Commission and Subdivision Review Agencies.

Date _____ Owner/Developer _____

Sanitary Sewerage Systems

CERTIFICATE OF APPROVAL OF SANITARY SEWERAGE SYSTEMS

I hereby concur that the sanitary sewerage utility plans depicted within these construction drawings meet the minimum requirements of the Jackson Energy Authority and are hereby recommended for approval for construction as shown herein.

Date _____ Jackson Energy Authority _____

Engineering Certification

CERTIFICATE OF ACCURACY OF DESIGN

I hereby certify that I am a registered engineer, licensed to practice engineering under the laws of the State of Tennessee. I further certify that the plan and accompanying drawings, documents, and statements conform to the standards of good engineering practice, and to all applicable provisions of the Subdivision and Land Development Regulations, except as has been itemized and described in a report files with the Jackson Municipal Regional Planning Commission, if applicable.

Date _____ Registered Engineer _____
Tennessee Certificate No. _____

Streets and Storm Drainage

CERTIFICATE OF APPROVAL OF STREETS AND STORM DRAINAGE

I hereby concur that the street construction and storm drainage plans depicted within these construction drawings meet the minimum requirements of the City of Jackson and are hereby recommended for approval for construction as shown herein.

Date _____ City of Jackson Engineering Department _____

Public Water Systems

CERTIFICATE OF APPROVAL OF WATER SYSTEMS

I hereby concur that the water utility plans depicted within these construction drawings meet the minimum requirements of the Jackson Energy Authority and are hereby recommended for approval for construction as shown herein.

Date _____ Jackson Energy Authority _____

Construction Drawing Approval

CERTIFICATE OF CONSTRUCTION DRAWING APPROVAL

I hereby certify that these construction drawings have been reviewed by all applicable review agencies and has been approved by the Jackson Municipal Regional Planning Commission and therefore are hereby approved for construction as shown herein.

Date _____ Jackson Municipal Regional Planning Commission _____

L.I. Smith and Associates, Inc.
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SURVEYING SERVICES
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475 Metroplex Drive, Suite 212 Nashville, TN 37211 ı 615-256-0290

William P. Smith
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 109387
STATE OF TENNESSEE

SHEET: COVER NUMBER: C-000

REVISIONS

EAS000418

CITY OF JACKSON ENGINEERING DEPARTMENT:

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF JACKSON BEFORE COMMENCING CONSTRUCTION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ANY UTILITY COMPANY, WHICH MAINTAINS A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT BEFORE THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT.

3. BEFORE ANY GRADING IS STARTED, THE DEVELOPER/CONTRACTOR MUST OBTAIN A DEVELOPMENT PERMIT FROM THE CITY OF JACKSON.

4. ALL CONSTRUCTION SHALL MEET THE CITY OF JACKSON STANDARD SPECIFICATIONS CONTAINED WITHIN THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

5. THE CONTRACTOR MUST HAVE WRITTEN APPROVAL FROM THE CITY OF JACKSON ENGINEER AND THE PROJECT ENGINEER BEFORE ANY CHANGE IN DESIGN IS MADE.

6. ALL CONSTRUCTION SHALL BE TESTED BY A LICENSED INDEPENDENT MATERIAL TESTING COMPANY TO ENSURE COMPLIANCE WITH COMPACTION REQUIREMENTS AND TO ENSURE THE MINIMUM THICKNESS OF BASE AND PAVEMENT. A COPY OF THE TEST RESULTS SHALL BE FORWARDED TO THE CITY OF JACKSON AND LABELED AS TEST REPORTS, "SUBDIVISION NAME", JACKSON, TENNESSEE.

7. ALL SOIL FILL AREAS IN THE STREET SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, TESTED PER ASTM D-698. THE TOP SIX INCHES OF ALL FILLS AND CUT AREAS IN THE STREET SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY PER ASTM D-698.

8. FILLS SHALL BE CONSTRUCTED IN LIFTS WITH A MAXIMUM LOOSE LIFT THICKNESS OF EIGHT (8) INCHES.

9. SUBGRADE COMPACTION TESTING MUST BE COMPLETED AFTER INSTALLATION OF ALL UTILITIES IN THE STREET AND IMMEDIATELY PRECEDING BASE MATERIAL APPLICATION. THE SUBGRADE COMPACTION TEST RESULTS MUST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER'S OFFICE PRIOR TO THE APPLICATION OF THE BASE MATERIAL. BASE MATERIAL COMPACTION TESTING MUST BE COMPLETED IMMEDIATELY PRECEDING THE APPLICATION OF THE BINDER COAT. THE BASE MATERIAL TEST RESULTS MUST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER'S OFFICE PRIOR TO THE APPLICATION OF THE BINDER COAT. THE BINDER COAT COMPACTION AND THICKNESS TEST RESULTS MUST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER'S OFFICE PRIOR TO THE APPROVAL OF THE FINAL PLAT. ALL STORM DRAIN AND OTHER UTILITIES LOCATED UNDER THE STREETS SHALL HAVE TRENCHES COMPACTED AT 95% STANDARD PROCTOR DENSITY PER ASTM D-698.

10. THE MINIMUM FREQUENCY OF SOIL TESTS SHALL BE ONE TEST PER 300 FEET OF STREET LENGTH WITH A MINIMUM OF THREE (3) TESTS PER PROJECT PHASE. TESTING SHALL BE PERFORMED AT THE ABOVE FREQUENCY ON EACH TEN (10) INCH LIFT OF FILLS AND ON THE FINAL SUBGRADE WHETHER IN CUT OR FILL.

11. PRIOR TO PLACING GRANULAR BASE ON THE STREET THE SUBGRADE SHALL BE PROOF ROLLED WITH A LOADED DUMP TRUCK WITH A GROSS WEIGHT OF APPROXIMATELY 30 TONS IN THE PRESENCE OF THE CITY

ENGINEER OR HIS DESIGNEE. NOTIFY THE CITY ENGINEER A MINIMUM OF TWO WORKING DAYS IN ADVANCE FOR SCHEDULING.

12. ROADWAY BASE SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% STANDARD PROCTOR DENSITY (ASTM D-698).

13. THE GRANULAR BASE SHALL BE TESTED FOR DENSITY AND THICKNESS EVERY 300 FEET OF STREET LENGTH WITH A MINIMUM OF THREE (3) TESTS PER PROJECT PHASE.

14. PRIOR TO PLACING ASPHALT ON THE STREET THE GRANULAR BASE SHALL BE PROOF ROLLED WITH A LOADED DUMP TRUCK WITH A GROSS WEIGHT OF APPROXIMATELY 30 TONS IN THE PRESENCE OF THE CITY ENGINEER OR HIS DESIGNEE. NOTIFY THE CITY ENGINEER A MINIMUM OF TWO WORKING DAYS IN ADVANCE FOR SCHEDULING.

15. ALL ASPHALTIC COURSES SHALL BE COMPACTED TO A MINIMUM OF 92% OF MAXIMUM THEORETICAL DENSITY.

16. ASPHALT SHALL BE RANDOMLY TESTED FOR DENSITY AND THICKNESS EVERY 300 FEET OF STREET LENGTH WITH A MINIMUM OF THREE (3) TESTS PER PROJECT PHASE.

17. CONCRETE FOR CURB AND GUTTER AND SIDEWALK SHALL BE A MINIMUM 3000 PSI AT 28 DAYS AND SHALL BE TESTED FOR CONSISTENCY AND STRENGTH IN ACCORDANCE WITH AASHTO TEST METHODS T 119, T 22 AND T 23. THE TESTS SHALL BE PERFORMED EVERY 800 FEET OF STREET LENGTH WITH A MINIMUM OF ONE (1) TEST PER DAY.

18. TYPE, USE AND LOCATION OR ORNAMENTAL STREET SIGNS AND SIGNPOSTS MUST BE APPROVED BY THE CITY OF JACKSON ENGINEERING DEPARTMENT PRIOR TO SUBMISSION OF THE FINAL PLAT.

19. ADJUST MANHOLE LIDS TO MATCH GRADE OF CROSS-SLOPE IF OFFSET FROM CENTERLINE. ALL MANHOLE LIDS TO BE FLUSH WITH BASE LAYER OF PAVEMENT THEN ADJUSTED AS REQUIRED BY CONTRACTOR WITH FINAL PAVEMENT LAYER INSTALLATION.

20. ALL STREETS ADJACENT TO THE SITE SHALL BE KEPT CLEAN DURING CONSTRUCTION.

21. TRAFFIC CONTROL SHALL BE PROVIDED AS APPROPRIATE AND SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

GRADING & DRAINAGE NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS PRIOR TO BEGINNING WORK.

2. CONTOUR LINES AND SPOT ELEVATIONS ARE THE RESULT OF A DETAILED ENGINEERING GRADING DESIGN AND REFLECT A PLANNED INTENT WITH REGARD TO DRAINAGE AND MOVEMENT OF MATERIALS. SHOULD THE CONTRACTOR HAVE ANY QUESTION OF THE INTENT OR ANY PROBLEMS WITH CONTINUITY OF GRADES, THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY PRIOR TO BEGINNING WORK.

3. CONTRACTOR SHALL REFER TO AND ADHERE TO THE RECOMMENDATIONS IN THE GEOTECHNICAL ENGINEERING REPORT, IF AVAILABLE.

4. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

5. ANY RETAINING WALLS REQUIRED SHALL BE BY DESIGN/BUILD AND MUST BE DESIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF TENNESSEE AND SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO ISSUANCE OF A PERMIT. REFER TO THE VENDOR'S PLANS FOR RETAINING WALL AND RAILING DETAILS. GUARDS (42" HIGH) SHALL BE PROVIDED FOR ALL RETAINING WALLS WHERE DROPS ARE EQUAL TO OR EXCEED 30 INCHES IN HEIGHT, IN ACCORDANCE WITH APPLICABLE CODES.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN EROSION CONTROL DURING CONSTRUCTION AS REQUIRED BY THE CITY OF JACKSON RULES AND REGULATIONS FOR CONTROL OF EROSION AND STORMWATER AND THE LATEST EDITION OF THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK TO PREVENT SITUATION DOWNSTREAM IN ANY DITCHES, PIPES, DRAINAGE STRUCTURES, STREETS, OR ADJACENT PROPERTIES.

2. ADDITIONAL EROSION CONTROL MEASURES MAY BE NECESSARY AS WORK PROGRESSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND ADJUSTING THE EROSION CONTROL MEASURES AS NECESSARY THROUGHOUT THE LIFE OF CONSTRUCTION AND UNTIL FULL STABILIZATION OF THE AREA IS ACHIEVED.

3. ALL TEMPORARY EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE BEGINNING EARTH-MOVING OPERATIONS. AREAS OF EXPOSED EARTH SHALL BE KEPT TO A MINIMUM. EMBANKMENTS AND EXCAVATED AREAS SHALL BE PROMPTLY STABILIZED TO MINIMIZE EROSION.

4. THE CONTRACTOR OR OWNER SHALL FILE ALL DOCUMENTS NECESSARY FOR RECEIVING A NPDES PERMIT WHEN REQUIRED FOR STORMWATER DISCHARGE (FILING THE N.O.I., INCLUDING PAYMENT OF PERMIT FEES) IMPLEMENT AN EFFECTIVE EROSION PLAN, DOCUMENT THE EFFECTIVENESS OF THE PLAN AND ADJUST THE PLAN AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THE PERMIT. THIS PLAN SHALL BE REVISED AS NECESSARY AND SHALL BE MADE A PART OF THE STORMWATER POLLUTION PREVENTION PLAN. ALL PROPOSED REVISIONS SHALL BE IN CONSULTATION WITH THE DESIGN ENGINEER.

5. ALL EXCAVATION AND FILL ACTIVITIES MUST BE CONDUCTED IN THE DRY.

6. CHECK DAMS SHALL BE INSTALLED IN THE TOE OF ALL FILL SLOPES, IN DITCHES, AND OTHER AREAS AS NECESSARY TO PREVENT SILTS FROM ENTERING ADJACENT PROPERTIES. ALL BALED STRAW SHALL BE REPLACED AT 60-DAY MINIMUM INTERVALS, UNTIL FULL STABILIZATION IS ACHIEVED.

7. ANY STOCKPILED SOILS FOR FILL MATERIAL, SHALL BE LOCATED AND TREATED IN A MANNER TO PREVENT SILT FROM LEAVING THE PROPERTY EITHER THROUGH STORM DRAINS OR OVER LAND.

8. CONTRACTOR SHALL MAINTAIN A RAIN GAGE ON SITE AT ALL TIMES AND RECORD RAINFALL DAILY. CONTRACTOR MUST INSPECT EROSION CONTROL TWICE PER CALENDAR WEEK. INSPECTIONS MUST TAKE PLACE AT LEAST 72 HOURS APART.

9. ALL AREAS SHALL BE SEEDED AND MULCHED AT MINIMUM. STABILIZING MATERIALS SHALL BE APPLIED AS SOON AS POSSIBLE UPON COMPLETION OF FINAL GRADING AND IN NO CASE GREATER THAN 15 DAYS.

10. AFTER FULL STABILIZATION OF ALL DISTURBED AREAS THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL ITEMS. AFTER FULL STABILIZATION THE CONTRACTOR SHALL FILE A "NOTICE OF TERMINATION" WITH THE STATE OF TENNESSEE.

11. WHERE EARTH-DISTURBING ACTIVITY HAS BEEN TEMPORARILY CEASED, TEMPORARY STABILIZATION WILL BE APPLIED WITHIN (7) SEVEN DAYS IF THE ACTIVITY WILL NOT RESUME WITHIN (15) FIFTEEN DAYS.

12. THE DEVELOPER OR ANY DESIGNEE PERFORMING CONSTRUCTION ACTIVITIES ON HIS BEHALF IS RESPONSIBLE FOR COMPLYING WITH APPLICABLE STATE AND FEDERAL REGULATIONS WITH REGARD TO SEDIMENT/EROSION CONTROL.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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SHEET: NOTES

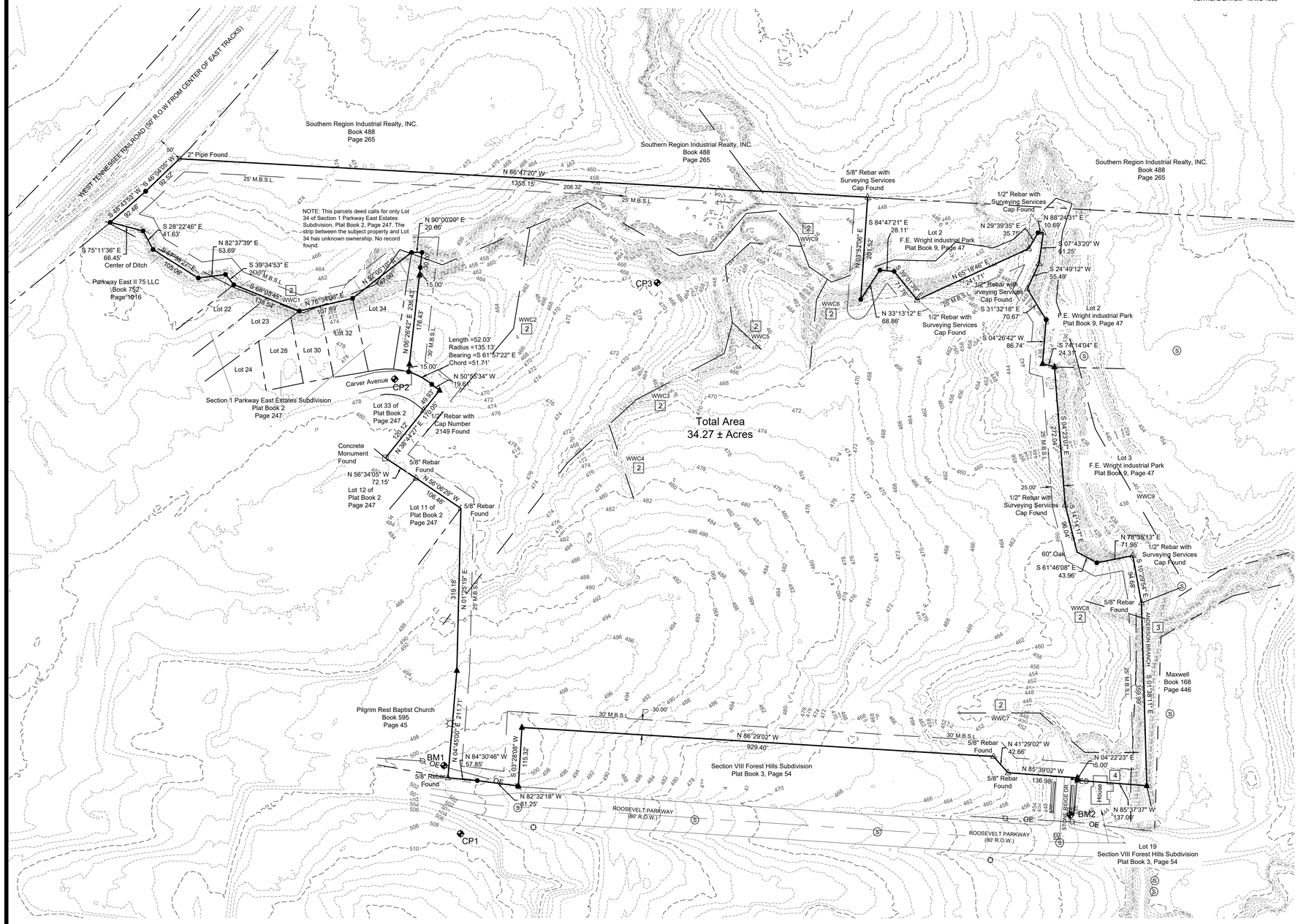
NUMBER: C-001

L.I. Smith and Associates, Inc.
LAND DEVELOPMENT | INFRASTRUCTURE DESIGN
— SURVEYING SERVICES —
302 North Caldwell Street, Paris, TN 38242 / 731-644-1014 / www.lismith.com
475 Metroplex Drive, Suite 212 Nashville, TN 37211 / 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS | SCALE: | DATE:

PROJECT # 200288

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE



SITE DATA

A. OWNERS OF RECORD: HUNT PROPERTIES, 1031 GREYSTONE SQUARE, JACKSON, TN 38305; MORRIS CROCKER, 15 SUTTON PLACE, JACKSON, TN 38305

DEVELOPER: COMMUNITY DEVELOPMENT ENTERPRISES, 1104 WHITEHALL STREET, JACKSON, TN 38301

B. SOURCE OF TITLE: BOOK 733, PAGE 731 AND BOOK 257, PAGE 455
TAX MAP 65, PARCEL 103.00 AND 104.00

CITY OF JACKSON, MADISON COUNTY, TENNESSEE

SITE AREA = +/- 32 ACRES
TOTAL AREA = +/- 34.27 ACRES

C. THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 47113O168E, DATED AUGUST 03, 2009.

SURVEYOR NOTES:

INFORMATION REGARDING THE PRESENCE, SIZE AND LOCATION OF UNDERGROUND UTILITIES IS SHOWN HEREON. THIS INFORMATION HAS BEEN SHOWN BASED ON THE LOCATION OF ABOVE GROUND APPURTENANCES, AVAILABLE DESIGN PLANS, AND FLAGS AND PAINT PLACED BY THE UNDERGROUND PROTECTION SERVICE. NO CERTIFICATION IS MADE AS TO THE ACCURACY OF THOROUGHNESS OF THE INFORMATION CONCERNING UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON. (TENNESSEE ONE CALL SYSTEM, INC. 1-800-351-1111).

CONTACT PROPER AUTHORITIES BEFORE BUILDING NEAR UTILITY LINES, FOR EASEMENT WIDTH AND RESTRICTIONS. UTILITIES ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION.

THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF THE PERSON ENTITIES NAMED HERON. NO EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE INFORMATION SHOWN HEREON IS TO BE EXTENDED TO ANY PERSONS OR ENTITIES OTHER THAN THOSE SHOWN HEREON.

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THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH CHAPTER 0820- 3, STANDARDS OF PRACTICE AS ADOPTED BY THE TENNESSEE STATE BOARD OF EXAMINERS FOR LAND SURVEYORS.

EXISTING CONDITIONS NOTES:

1. EXISTING SITE IS MOSTLY WOODED AND SLOPES FROM THE SOUTHWEST TO THE NORTHEAST AT A 5-8% SLOPE.
2. (9) EXISTING WET WEATHER CONVEYANCES (WWC) HAVE BEEN IDENTIFIED BY A HYDROLOGIC DETERMINATION PERFORMED BY CHRIS GROW OF GROW ENVIRONMENTAL DATED JANUARY 05, 2021.
3. AN EXISTING STREAM, ANDERSON BRANCH, RUNS ALONG THE PROPERTY LINE AT THE SOUTHEAST CORNER OF THE SITE.
4. AN EXISTING ADJOINER HOUSE, LOT 19 FOREST HILLS SUBDIVISION, APPEARS TO ENCROACH ONTO THE SITE.
5. EXCESS TOPSOIL AND TREE STUMPS WILL BE REMOVED OFFSITE.

CONTROL				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	485434.437	1138186.576	507.00	NAIL SET
CP2	486328.707	1138057.117	477.46	NAIL SET
CP3	486517.922	1138573.650	468.05	NAIL SET
BM1	485568.348	1138154.225	502.26	REBAR SET
BM2	485474.214	1139385.985	445.28	REBAR SET
COORDINATE SYSTEM - NAD 1983				
VERTICAL DATUM - NAVD 1988				

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

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L.I. SMITH REGISTERED ENGINEER AGRICULTURE STATE OF TENNESSEE

SHEET: EXISTING
NUMBER: C-100

L.I. Smith and Associates, Inc.
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SURVEYING SERVICES
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475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100' | DATE: 01/15/2021
PROJECT # 201044

EAS000420

TREE #	SPECIES	DIAM. (in)
330	BLACK CHERRY	12
331	ELM	10
332	BLACK CHERRY	14
333	OAK	12
334	BLACK CHERRY	8
335	ASH	15
336	OAK	40
341	ASH	10
342	MAPLE	15
343	ASH	16
344	BLACK CHERRY	8
345	BLACK CHERRY	8
346	BLACK CHERRY	15
347	BLACK CHERRY	10
348	BLACK CHERRY	15
350	CEDAR	6
351	HICKORY	12
352	ASH	12
354	BLACK CHERRY	10
356	BLACK CHERRY	10
358	ASH	10
359	ASH	14
360	BLACK CHERRY	14
361	ASH	26
362	BLACK CHERRY	18
364	OAK	9
365	ASH	10
366	ASH	10
367	BLACK CHERRY	8
368	ELM	10
369	ASH	10
371	CHERRY	15
372	HICK	10
373	OAK	24
374	OAK	10
375	OAK	32
376	BLACK CHERRY	10
377	ASH	18
379	POPLAR	26
380	CEDAR	8
381	ELM	8
382	BLACK CHERRY	12
383	ASH	12
384	ASH	12
387	BLACK CHERRY	24
388	ASH	20
389	ASH	8
390	ASH	12
391	BLACK CHERRY	12
392	OAK	24
395	BLACK CHERRY	14
396	CEDAR	14
397	HICKORY	16
398	CEDAR	8
399	ASH	18
400	ASH	10
401	ASH	18
402	ASH	20
404	ASH	15
405	ASH	20
406	HICKORY	18
407	ELM	20
410	BLACK CHERRY	15
412	MAPLE	16
414	BLACK CHERRY	24
416	BLACK CHERRY	20
418	CHERRY	12
419	ELM	12
420	GUM	12
422	HICKORY	18
423	OAK	24
424	OAK	20
425	OAK	8
426	GUM	10
427	OAK	8
428	ELM	8
429	GUM	10
430	HICKORY	14
431	BLACK CHERRY	8
432	BLACK CHERRY	10
433	BLACK CHERRY	8
434	BLACK CHERRY	14
435	OAK	36
436	OAK	30
437	BLACK CHERRY	36
438	BLACK CHERRY	12
439	HICKORY	24
440	OAK	18
441	BLACK CHERRY	14
442	BLACK CHERRY	14
443	HICKORY	12
444	HICKORY	20
445	OAK	30
446	BLACK CHERRY	10
447	BLACK CHERRY	12

V-2 REQUIRED TREE REMOVAL, TOTAL AREA: 4.08 AC, SAMPLE AREA: 0.23 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	AREA TOTAL BDH REMOVAL
CHERRY	1						6	17.77	107
CEDAR		2					24	17.77	427
ELM		1	1				30	17.77	533
MAPLE		1	1				30	17.77	533
OAK							0	17.77	0
POPLAR		2	3				78	17.77	1386
SWEETGUM							0	17.77	0
PINE		4	2		4		204	17.77	3626

V-3 REQUIRED TREE REMOVAL, TOTAL AREA: 6.21 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	62.10	0
CEDAR							0	62.10	0
ELM							0	62.10	0
MAPLE							0	62.10	0
OAK							0	62.10	0
POPLAR							0	62.10	0
SWEETGUM							0	62.10	0
PINE		8	1	1			138	62.10	8570

V-4 REQUIRED TREE REMOVAL, TOTAL AREA: 3.99 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	39.90	0
CEDAR							0	39.90	0
ELM							0	39.90	0
MAPLE							0	39.90	0
OAK							0	39.90	0
POPLAR							0	39.90	0
SWEETGUM							0	39.90	0
PINE	8	1	1				138	39.90	5506

V-5 REQUIRED TREE REMOVAL, TOTAL AREA: 2.32 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	23.20	0
CEDAR							0	23.20	0
ELM		3					36	23.20	835
MAPLE		6					72	23.20	1670
OAK							0	23.20	0
POPLAR		6					72	23.20	1670
SWEETGUM							0	23.20	0
PINE							0	23.20	0

V-6 REQUIRED TREE REMOVAL, TOTAL AREA: 2.86 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	28.60	0
CEDAR							0	28.60	0
ELM							0	28.60	0
MAPLE							0	28.60	0
OAK		3					36	28.60	1030
POPLAR		5					60	28.60	1716
SWEETGUM							0	28.60	0
PINE		2	2				0	28.60	1716

V-7 REQUIRED TREE REMOVAL, TOTAL AREA: 2.60 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	26.00	0
CEDAR							0	26.00	0
ELM	4						48	26.00	1248
MAPLE	5						60	26.00	1560
OAK							0	26.00	0
POPLAR	6						72	26.00	1872
SWEETGUM							0	26.00	0
PINE							0	26.00	0

V-8 REQUIRED TREE REMOVAL, TOTAL AREA: 5.36 AC, SAMPLE AREA: 0.10 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY							0	53.60	0
CEDAR							0	53.60	0
ELM							0	53.60	0
MAPLE							0	53.60	0
OAK	4						48	53.60	2573
POPLAR	8						96	53.60	5146
SWEETGUM							0	53.60	0
PINE							0	53.60	0

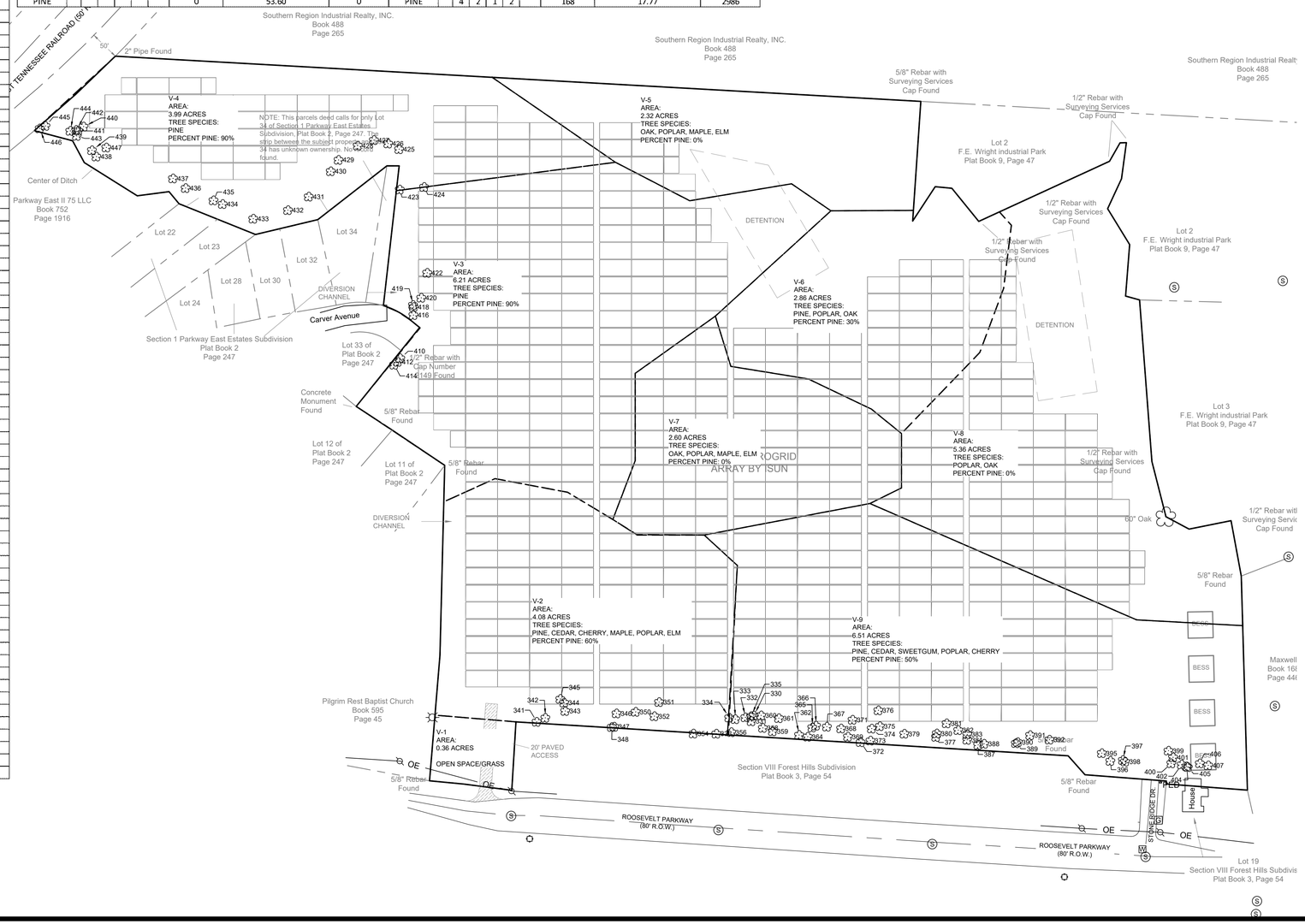
V-9 REQUIRED TREE REMOVAL, TOTAL AREA: 4.08 AC, SAMPLE AREA: 0.23 AC

SPECIES	BDH 6"	12"	18"	24"	30"	>30"	BDH SAMPLE TOTAL (in)	MULTIPLIER (TOTAL AREA/SAMPLE AREA)	BDH AREA TOTAL (in)
CHERRY	1						6	17.77	107
CEDAR		2					24	17.77	427
ELM		1	1				30	17.77	533
MAPLE		1	1				30	17.77	533
OAK							0	17.77	0
POPLAR		5					60	17.77	1066
SWEETGUM		1					12	17.77	213
PINE		4	2	1	2		168	17.77	2986

VIE TOTAL TREE REMOVAL

SPECIES	BDH REMOVAL (in)
CHERRY	213
CEDAR	853
ELM	3150
MAPLE	4297
OAK	3602
POPLAR	12857
SWEETGUM	213
PINE	22403
TOTAL	**47588**

AREA ID	AREA (AC)
V-1	0.36
V-2	4.08
V-3	6.21
V-4	3.99
V-5	2.32
V-6	2.86
V-7	2.60
V-8	5.36
V-9	6.51



N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

LEGEND

PROPERTY LINE	GUY WIRE
PROPERTY ADJOINER LINE	LIGHT POLE
EASEMENT LINE (ESMT)	POWER POLE
CENTERLINE OF ROAD	ELECTRICTRANSFORMER
WATER LINE	WATER METER
GAS LINE	WATER VALVE
OVERHEAD UTILITY LINE	NATURAL GAS METER
SEWER LINE	NATURAL GAS VALVE
STORM DRAIN LINE	STORM MANHOLE
OVERHEAD COMS LINE	CATCH BASIN
FLOW LINE	CLEANOUT
DRAIN AREA LINE	SIGN
REBAR FOUND	TELEPHONE PEDESTAL
5/8" REBAR WITH L.I. SMITH CAP SET	FIRE HYDRANT
UNMARKED POINT	SEWER MANHOLE
BENCHMARK	DECIDUOUS TREE
CONCRETE SURFACE	EVERGREEN TREE
ASPHALT SURFACE	EVERGREEN SHRUB

SITE DATA

A. OWNERS OF RECORD: HUNT PROPERTIES, 1031 GREYSTONE SQUARE, JACKSON, TN 38305; MORRIS CROCKER, 15 SUTTON PLACE, JACKSON, TN 38305

DEVELOPER: COMMUNITY DEVELOPMENT ENTERPRISES, 1104 WHITEHALL STREET, JACKSON, TN 38301

B. SOURCE OF TITLE: BOOK 733, PAGE 731 AND BOOK 257, PAGE 455
TAX MAP 65, PARCEL 103.00 AND 104.00

CITY OF JACKSON, MADISON COUNTY, TENNESSEE

SITE AREA = +/- 32 ACRES
TOTAL AREA = +/- 34.27 ACRES

C. THE PROPERTY DESCRIBED HEREON IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 471130168E, DATED AUGUST 03, 2009.

Landscaping Requirements for
Hunt-Jackson Site

A. Existing Conditions of the 34-acre site:

1. Existing soils - This site had three major soils types, Collins silt, Feliciana silt, and Lexington silt loam.

a. Collins silt series consists of very deep, moderately well drained, moderately permeable soils. They formed in silty alluvium on flood plains of streams in the Southern Mississippi Valley Silty Uplands Major Land Resources Area. Slopes range from 0 - 2 percent.

b. Feliciana silt loam consists of very deep, well drained, moderately permeable soil in the Southern Mississippi Valley Loess Major Land Resources Area (MLRA 134). They formed in Peoria loess deposits more than 48 inches in thickness that overly terraces and uplands of the Southern Coastal Plain. Slopes range from 0 to 40 percent.

c. Lexington silt loam consists of very deep, well drained soils on level to moderately steep uplands. The soil formed in a mantle of loess about 2 to 3 feet thick and in the underlying loamy and sandy marine sediments. Slopes ranges from 0 to 30 percent.

2. Existing vegetation:

a. Existing trees are not ancient in nature. The existing vegetation is recent growth since the land has been cleared and farmed. A 1947 aerial photo shows the majority of the tract in cultivation. As recent as 1980, the heart of the property was still being cultivated. Within the last 10 years, a forest fire consumed the property from the middle over to the eastern boundary.

b. This Site does not show any evidence of past logging. New growth has been established through natural reseeding.

c. Ground cover that has taken over in the open area recently is the invasive weed, kudzu. The rest of the area is native ground cover of briars, ivy and other natural to the area.

3. Significant trees:

a. The accompanying map shows an estimate of the prevalent trees in each area.

b. Trees withing 50 feet of the property line that met the criteria of significant were located and shown on the map.

B. Site Utilization:

1. This Site will be used as a Solar Microgrid. The intended use for this site is to be full utilization of the entire property. The site will be graded to a gentle rolling grade with slopes that do not entice erosion.

2. The project Site will be covered with stone or rock over a membrane to allow for infiltration. No vegetative or tree planting will be undertaken on the site to establish new growth.

3. There is a proposed expansion of the facility to the tract to the north.

C. Vegetative Impact:

1. Solar Panels cannot be blocked by shadows caused by obstructions such as trees. Trees that are currently within 50 feet of the property line can reach heights of 70 to 100 feet. The most critical areas would be to the south and along the western and eastern boundaries. Due to the use and the fixtures on the site, vegetation and weedy plants would be a hindrance to the utilization.

a. All existing vegetation and tree will be removed from this site.

D. Proposed Replacement:

1. The proposed replacement would be evergreen shrubs or short evergreen trees placed in front of a chain link fence with mesh. This will provide an effective visual screen and secure the site. Some canopy trees will be placed along Roosevelt and near the battery storage buildings.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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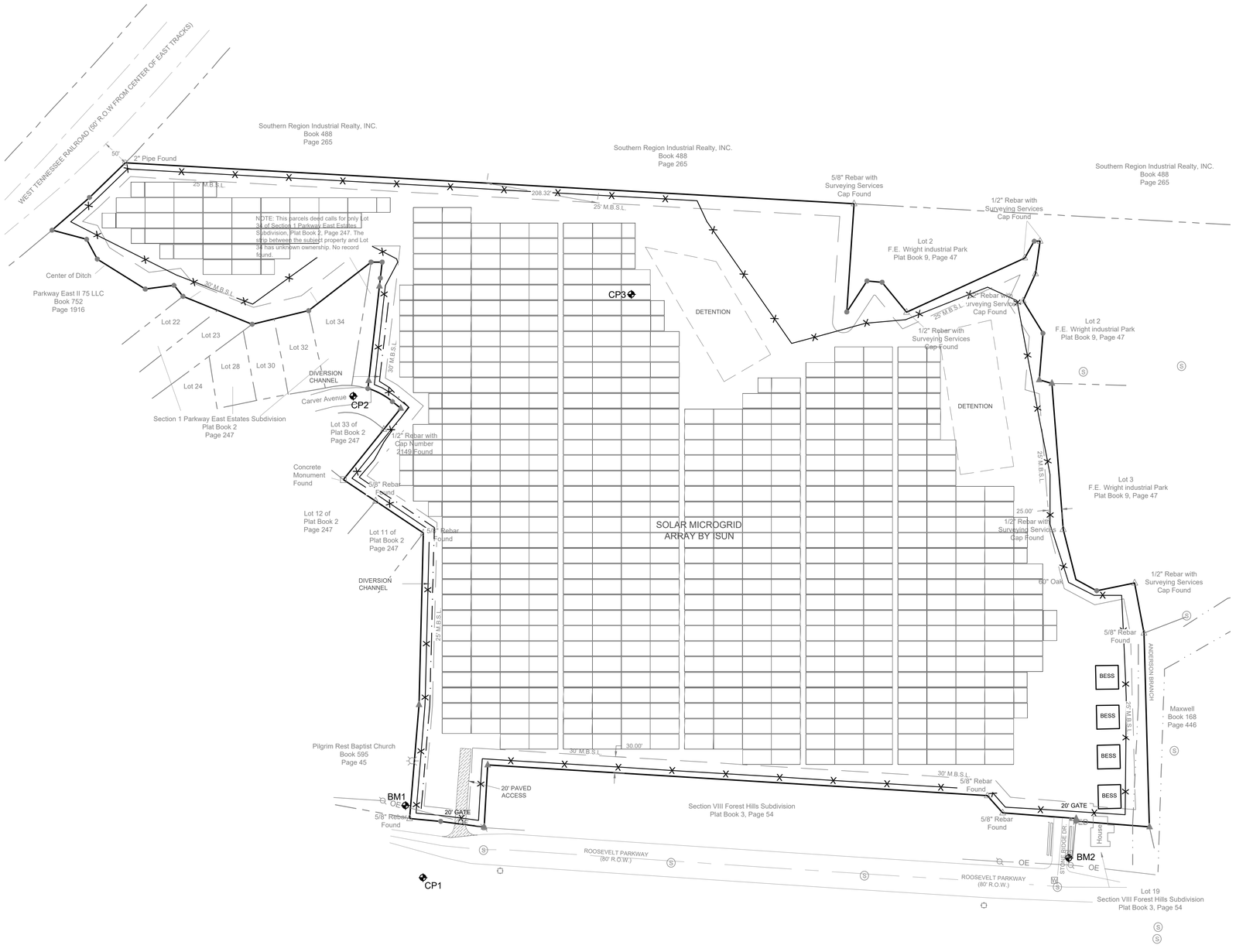
STATE OF TENNESSEE
WILLIAM P. SMITH II
REGISTERED ENGINEER
AGRICULTURE
No. 120,290

L.I. Smith and Associates, Inc.
LAND DEVELOPMENT | INFRASTRUCTURE DESIGN
SURVEYING SERVICES
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475 Metroplex Drive, Suite 212 Nashville, TN 37211 / 615-256-0290

SHEET: VEGETATIVE IMPACT EVALUATION
NUMBER: C-101
DRAWN BY: NTG
CHECKED BY: WPS
SCALE: 1"=100'
DATE: 01/15/2021
PROJECT # 201044

EAS000421

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE



N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

LEGEND

PROPERTY LINE	GUY WIRE
PROPERTY ADJOINER LINE	LIGHT POLE
EASEMENT LINE (ESMT)	POWER POLE
CENTERLINE OF ROAD	ELECTRICTRANSFORMER
WATER LINE	WATER METER
GAS LINE	WATER VALVE
OVERHEAD UTILITY LINE	NATURAL GAS METER
SEWER LINE	NATURAL GAS VALVE
STORM DRAIN LINE	STORM MANHOLE
OVERHEAD COMS LINE	CATCH BASIN
FLOW LINE	CLEANOUT
DRAIN AREA LINE	SIGN
REBAR FOUND	TELEPHONE PEDESTAL
5/8" REBAR WITH L.I. SMITH CAP SET	FIRE HYDRANT
UNMARKED POINT	SEWER MANHOLE
BENCHMARK	DECIDUOUS TREE
CONCRETE SURFACE	EVERGREEN TREE
ASPHALT SURFACE	EVERGREEN SHRUB

SITE SPECIFIC LAYOUT NOTES:

1. A 10' WIDE LANDSCAPING BUFFER WILL BE MAINTAINED AROUND THE PERIMETER OF THE SITE.
2. 6,300 LINEAR FEET OF PERIMETER FENCING WILL BE INSTALLED. (2) 20' GATES WILL BE INSTALLED FOR ACCESS.
3. APPROXIMATELY 595 SOLAR PANEL SHEDS (8.77m x 8.35m) WILL BE INSTALLED AT A 5 DEGREE TILT.
4. (4) 44'x42' BATTERY ENERGY STORAGE COMPOUNDS (BESS) WILL BE CONSTRUCTED AT THE SOUTHEAST CORNER OF THE SITE TO BE ACCESSED BY STONE RIDGE DRIVE.
5. SEE ISUN ENERGY PRESENTATION FOR SOLAR PANEL DETAILS.
6. A DIVERSION CHANNEL WILL BE INSTALLED ALONG THE WESTERN PROPERTY LINE TO DIVERT OFFSITE WATER AROUND THE SITE.
7. (2) DETENTION PONDS WILL BE CONSTRUCTED AT THE REAR OF THE SITE.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 47113O168E, DATED AUGUST 03, 2009.

CONTROL				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	485434.437	1138186.576	507.00	NAIL SET
CP2	486328.707	1138057.117	477.46	NAIL SET
CP3	486517.922	1138573.650	468.05	NAIL SET
BM1	485568.348	1138154.225	502.26	REBAR SET
BM2	485474.214	1139385.985	445.28	REBAR SET
COORDINATE SYSTEM - NAD 1983				
VERTICAL DATUM - NAVD 1988				

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

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P. J. Williams — REGISTERED ENGINEER — AGRICULTURE — STATE OF TENNESSEE

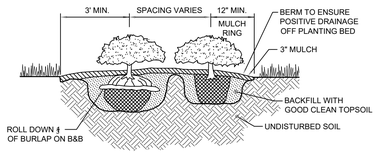
SHEET: LAYOUT
NUMBER: C-200

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DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100' | DATE: 01/15/2021
PROJECT # 201044

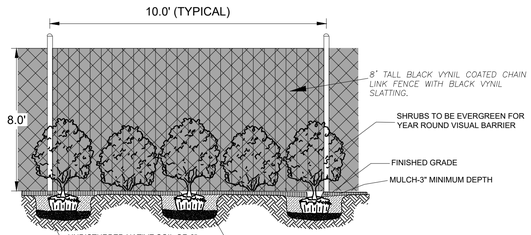
EAS000422



SHRUB / GROUND COVER PLANTING

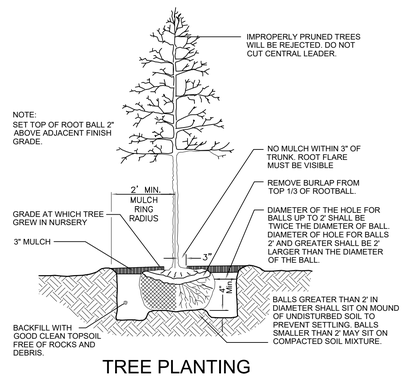
NOTES:

1. PLANT MATERIAL SHALL CONFORM TO "THE AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1; LATEST EDITION) FOR SIZE FORM AND QUALITY
2. MYCORRHIZAL INOCULATES AND SUPER - ABSORBENT MATERIAL ADDED TO TOPSOIL BACKFILL AT THE MANUFACTURER'S RECOMMENDED RATE AS PER SPECIFICATIONS



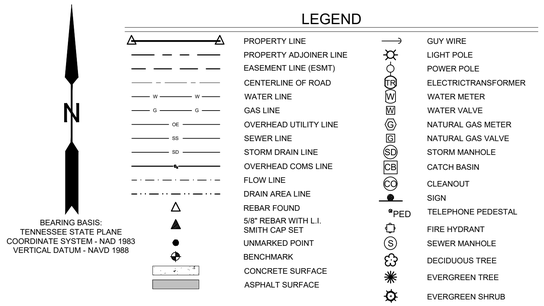
SCREENING ELEVATION VIEW

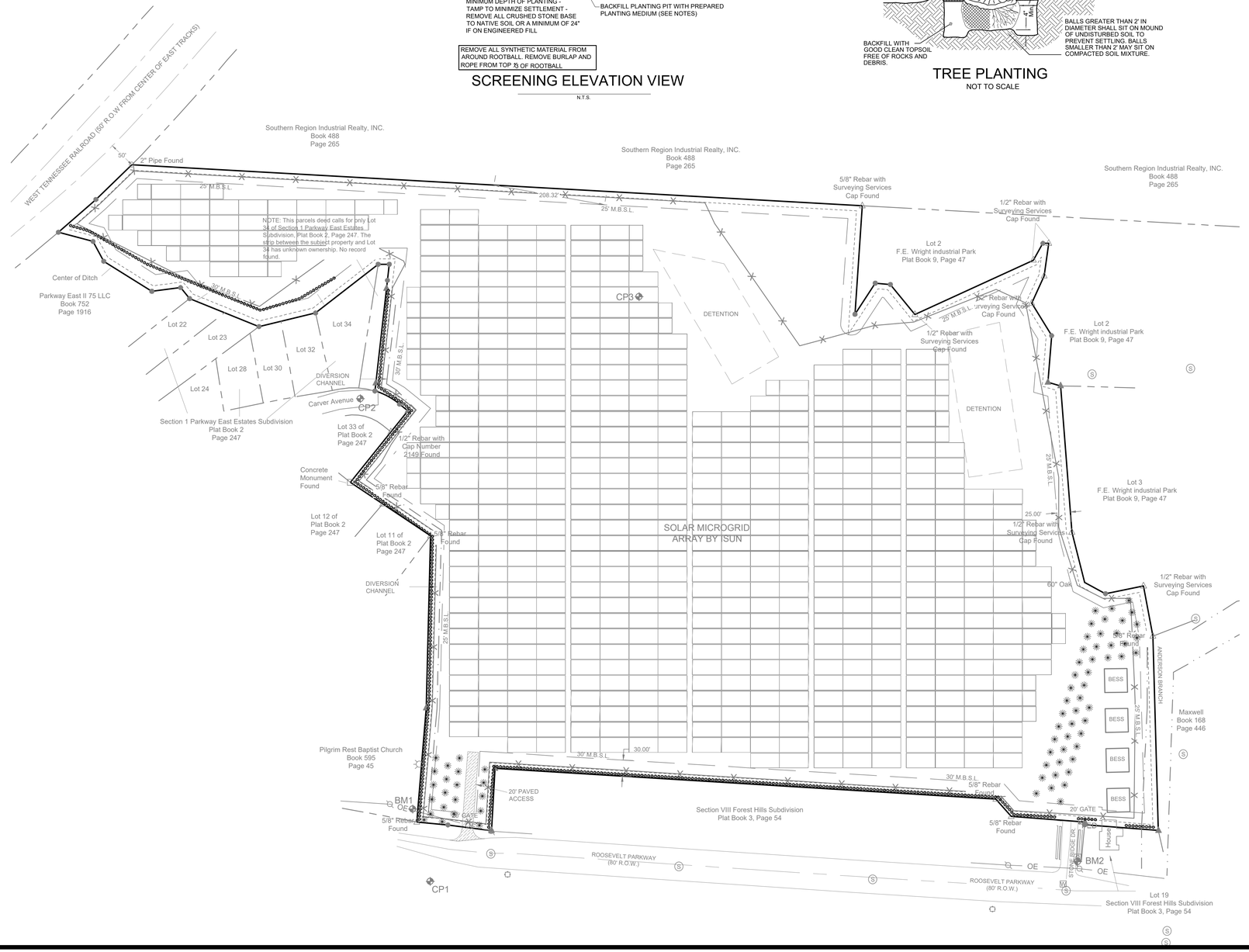
N.T.S.



TREE PLANTING

NOT TO SCALE





LANDSCAPING NOTES:

TOTAL SITE AREA: 34.27 ACRES
TOTAL GREEN SPACE: 11.50 ACRES
GREEN SPACE % OF SITE: 33.5%

1. ALL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE CITY OF JACKSON ZONING ORDINANCE ARTICLE VI SECTION 23 AND CITY OF JACKSON LANDSCAPE STANDARDS AND PRACTICES.
2. A 10' WIDE LANDSCAPING BUFFER WILL BE MAINTAINED AROUND THE PERIMETER OF THE SITE.
3. 343 CANOPY TREES WILL BE PLANTED AROUND THE PERIMETER AND IN THE GREEN SPACES ON THE SITE.
4. MINIMUM TREE SPACING SHALL BE 25'.
5. TREES TO HAVE A MINIMUM CALIPER OF 1 ¾" AND SHALL HAVE A MAXIMUM MATURE HEIGHT OF 30'.
6. ALL TREES TO CONFORM TO ACCEPTABLE TREES UNDER 30 FEET AS LISTED IN THE CITY OF JACKSON LANDSCAPE STANDARDS & PRACTICES.
7. EVERGREEN SHRUBS SHALL BE PLANTED IN ACCORDANCE WITH THE CITY OF JACKSON ZONING ORDINANCE ARTICLE VI SECTION 23 AND CITY OF JACKSON LANDSCAPE STANDARDS AND PRACTICES.
8. EVERGREEN SHRUBS SHALL HAVE A MINIMUM SPACING OF 3'. SHRUBS SHOULD FOR VISUAL BARRIER ADJACENT TO ALL RESIDENTIAL PROPERTIES.
9. A 8' TALL CHAINLINK FENCE WITH SLATS WILL BE ERECTED AROUND THE PERIMETER OF THE SITE.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 471130168E, DATED AUGUST 03, 2009.

CONTROL				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	485434.437	1138186.576	507.00	NAIL SET
CP2	486328.707	1138057.117	477.46	NAIL SET
CP3	486517.922	1138573.650	468.05	NAIL SET
BM1	485568.348	1138154.225	502.26	REBAR SET
BM2	485474.214	1139385.985	445.28	REBAR SET
COORDINATE SYSTEM - NAD 1983				
VERTICAL DATUM - NAVD 1988				

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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Registered Engineer: Clayton P. Smith
Date: 01/15/2021
Associate Partner
STATE OF TENNESSEE

SHEET: LANDSCAPING
NUMBER: C-201

L.I. Smith and Associates, Inc.
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DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100' | DATE: 01/15/2021
PROJECT # 201044

EAS000423

PROPOSED PIPE TABLE											
FROM		TO		PIPE							
STRUCTURE	INV. ELEVATION	STRUCTURE	INV. ELEVATION	MATERIAL	DIAMETER	LENGTH	SLOPE	DRAIN AREA (AC)	FULL PIPE VELOCITY (FPS)	PIPE FLOW CAPACITY (CFS)	10 YR DESIGN FLOW (CFS)
1	448.00	2	446.32	RCP	24"	84	2.00%	12.49	8.83	27.73	19.05
2	435.78	3	435.00	RCP	24"	39	2.00%	12.49	8.83	27.73	19.05
4	449.00	5	448.00	RCP	24"	50	2.00%	13.65	8.83	27.73	18.93
5	442.58	6	442.00	RCP	24"	29	2.00%	13.65	8.83	27.73	18.93
7	441.50	8	441.00	RCP	36"	54	0.93%	9.73	8.18	57.81	38.43

PROPOSED BOX CULVERT													
FROM		TO		SINGLE BARREL CULVERT									
STRUCTURE	INV. ELEVATION	STRUCTURE	INV. ELEVATION	SPAN HEIGHT	SPAN WIDTH	LENGTH	SLOPE	DRAIN AREA (AC)	MAX COVER (FT)	FULL PIPE VELOCITY (FPS)	PIPE FLOW CAPACITY (CFS)	10 YR DESIGN FLOW (CFS)	100 YR DESIGN FLOW (CFS)
9	440.50	10	433.50	72"	96"	720	0.97%	84.20	25.00	13.00	520	326.31	463

PROPOSED STRUCTURE TABLE							
STRUCTURE	TYPE	RIM	INV. IN	INV. OUT	DEPTH	AREA (AC)	10YR (CFS)
1	Detention outlet	454.00	448.00	444.00	10.00	12.49	19.05
2	CB No. 42	451.00	442.32	435.78	15.22	12.49	19.05
3	Headwall	437.75		435.00	2.75	12.49	19.05
4	Detention outlet	455.00	449.00	445.00	10.00	13.65	18.93
5	CB No. 42	454.00	444.00	442.58	11.42	13.65	18.93
6	Headwall	444.75		442.00	2.75	13.65	18.93
7	CB No. 42	467.5		441.50	26.00	0.06	0.46
8	Discharge to WingWall			441.00		0.13	0.67
9	WING WALL 45°		440.50				
10	WING WALL 45°			433.50			

GRADING LEGEND:

1. 2' TALL CONTAINMENT BERM (REF. C-904)
2. DIVERSION CHANNEL/BERM (REF. C-904)
3. 285 LF MSE RETAINING WALL
4. DETENTION POND 1
   DEPTH= 9' VOL= 3.27 AC-FT SPILLWAY ELEV= 456.00'
5. DETENTION POND 2
   DEPTH= 9' VOL= 3.73 AC-FT SPILLWAY ELEV= 457.00'
6. RIP RAP CHANNEL LINING
7. 10'x35' CLASS A-1 RIP RAP 2' MIN ON GEOTEXTILE FABRIC
8. 20' WIDE CONCRETE SPILLWAY
9. SLOPE STABILIZATION CLASS A-1 RIP RAP 2' MIN ON GEOTEXTILE FABRIC
10. ANDERSON BRANCH SLOPE STABILIZATION CLASS A-1 RIP RAP 2.5' MIN ON GEOTEXTILE FABRIC
11. 6'x8' REINFORCED CONCRETE BOX CULVERT (REF C-901)

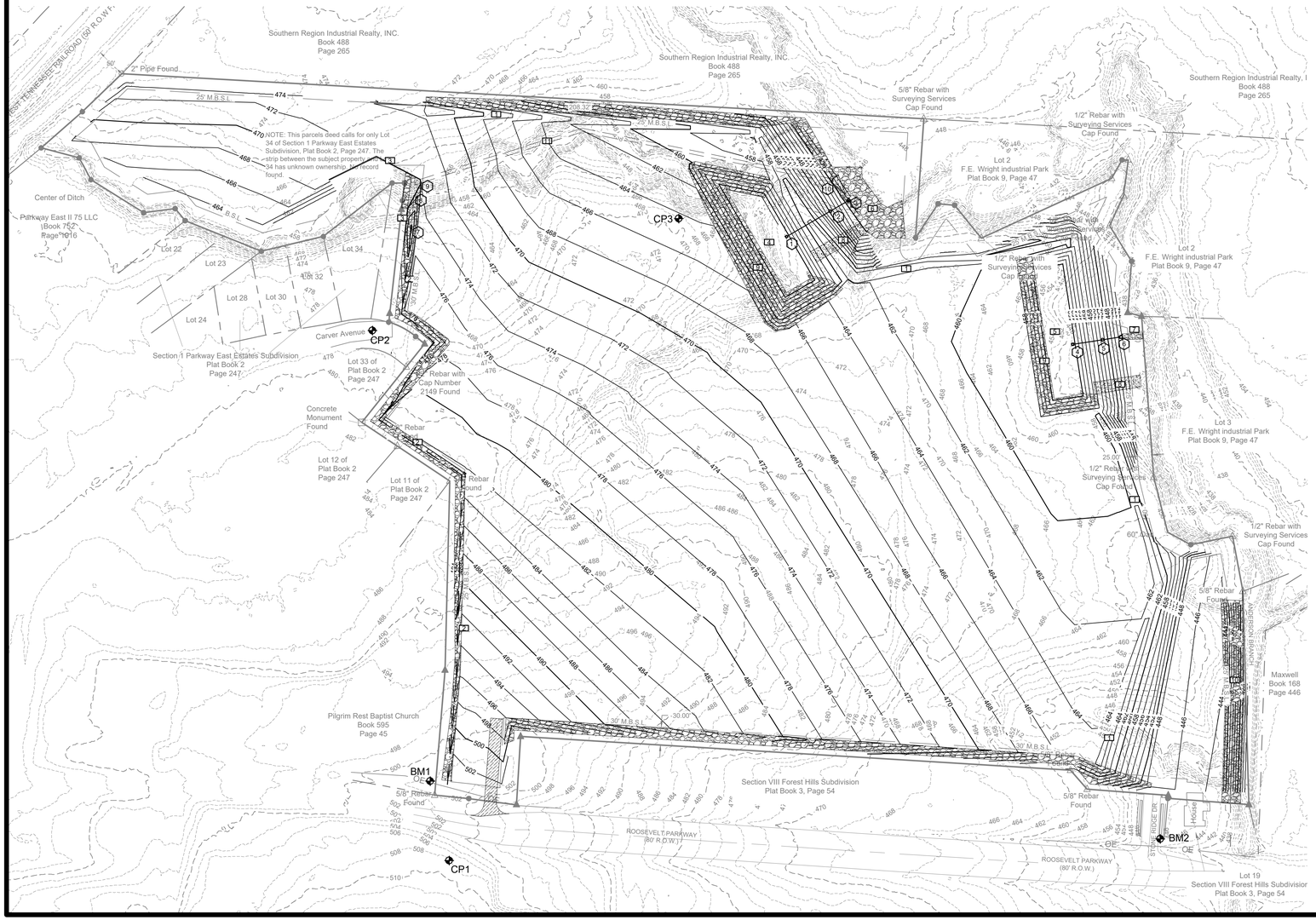
(X) STORMWATER STRUCTURE

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

LEGEND

PROPERTY LINE		GUY WIRE	
PROPERTY ADJOINER LINE		LIGHT POLE	
EASEMENT LINE (ESMT)		POWER POLE	
CENTERLINE OF ROAD		ELECTRICTRANSFORMER	TR
WATER LINE	W	WATER METER	W
GAS LINE	G	WATER VALVE	W
OVERHEAD UTILITY LINE	OE	NATURAL GAS METER	G
SEWER LINE	SS	NATURAL GAS VALVE	G
STORM DRAIN LINE	SD	STORM MANHOLE	SD
OVERHEAD COMS LINE		CATCH BASIN	CB
FLOW LINE		CLEANOUT	CO
DRAIN AREA LINE		SIGN	
REBAR FOUND		TELEPHONE PEDESTAL	PED
5/8" REBAR WITH L.I. SMITH CAP SET		FIRE HYDRANT	
UNMARKED POINT		SEWER MANHOLE	S
BENCHMARK		DECIDUOUS TREE	
CONCRETE SURFACE		EVERGREEN TREE	
ASPHALT SURFACE		EVERGREEN SHRUB	



SITE GRADING NOTES:

1. AN EXISTING WET WEATHER CONVEYANCE (WWC1) WILL BE REPLACED WITH 720' OF 6'x8' REINFORCED CONCRETE BOX CULVERT.
2. EXISTING WWC WILL BE FILLED IN. EXISTING CHANNEL WALLS WILL BE BENCHED BACK AT EACH 6" LIFT TO ENSURE PROPER COMPACTION AND COHESION TO EXISTING SOILS.
3. ALL FILL MATERIAL SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO A 95% STANDARD PROCTOR. (ASTM D698)
4. SITE GRADES WILL SLOPE GENERALLY TOWARDS THE NORTH EAST AT 3-5% SLOPES.
5. A DIVERSION CHANNEL/BERM WILL BE CONSTRUCTED ALONG THE WEST SIDE OF THE SITE. THIS DIVERSION CHANNEL WILL DIRECT OFFSITE WATER AROUND THE SITE TO A DROP INLET THAT WILL DISCHARGE INTO THE WINGWALL OF THE NEW BOX CULVERT. DIVERSION CHANNEL WILL BE STABILIZED WITH CLASS A-1 RIP RAP AT A MIN. DEPTH OF 2 OVER GEOTEXTILE FABRIC'.
6. A 2' TALL CONTAINMENT BERM WILL BE CONSTRUCTED ALONG THE LOWER END OF THE SITE. CONTAINMENT BERM WILL DIVERT STORMWATER RUNOFF FROM THE SITE INTO ONE OF TWO DETENTION PONDS.
7. FILL SLOPES ALONG THE NORTH PROPERTY LINE WILL BE STABILIZED WITH CLASS A-1 RIP RAP AT A MIN DEPTH OF 2' OVER GEOTEXTILE FABRIC.
8. FORE SLOPES OF BOTH DETENTION PONDS WILL BE STABILIZED WITH CLASS A-1 RIP RAP AT A MIN DEPTH OF 2' OVER GEOTEXTILE FABRIC.
9. EXISTING CHANNEL WILL BE LINED FOR 135 BELOW THE OUTLET HEADWALL OF THE NEW BOX CULVERT WITH CLASS A-1 RIP RAP AT A MIN DEPTH OF 3' OVER GEOTEXTILE FABRIC.
10. FINAL GRADED SURFACE WILL BE WHITE POLYMER SEALED AGGREGATE.

POND NOTE:
CONTRACTOR TO ENSURE POST CONSTRUCTION SEDIMENT REMOVAL TO ENSURE FINAL POND ELEVATIONS ARE MAINTAINED AND FUNCTION AS INTENDED.

CONTROL				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	485434.437	1138186.576	507.00	NAIL SET
CP2	486328.707	1138057.117	477.46	NAIL SET
CP3	486517.922	1138573.650	468.05	NAIL SET
BM1	485568.348	1138154.225	502.26	REBAR SET
BM2	485474.214	1139385.985	445.28	REBAR SET
COORDINATE SYSTEM - NAD 1983				
VERTICAL DATUM - NAVD 1988				

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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SHEET: GRADING
NUMBER: C-300

L.I. Smith and Associates, Inc.
LAND DEVELOPMENT | INFRASTRUCTURE DESIGN
SURVEYING SERVICES
302 North Caldwell Street, Paris, TN 38242 | 731-644-1014 | www.lismith.com
475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100'
PROJECT # 201044 | DATE: 01/15/2021

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

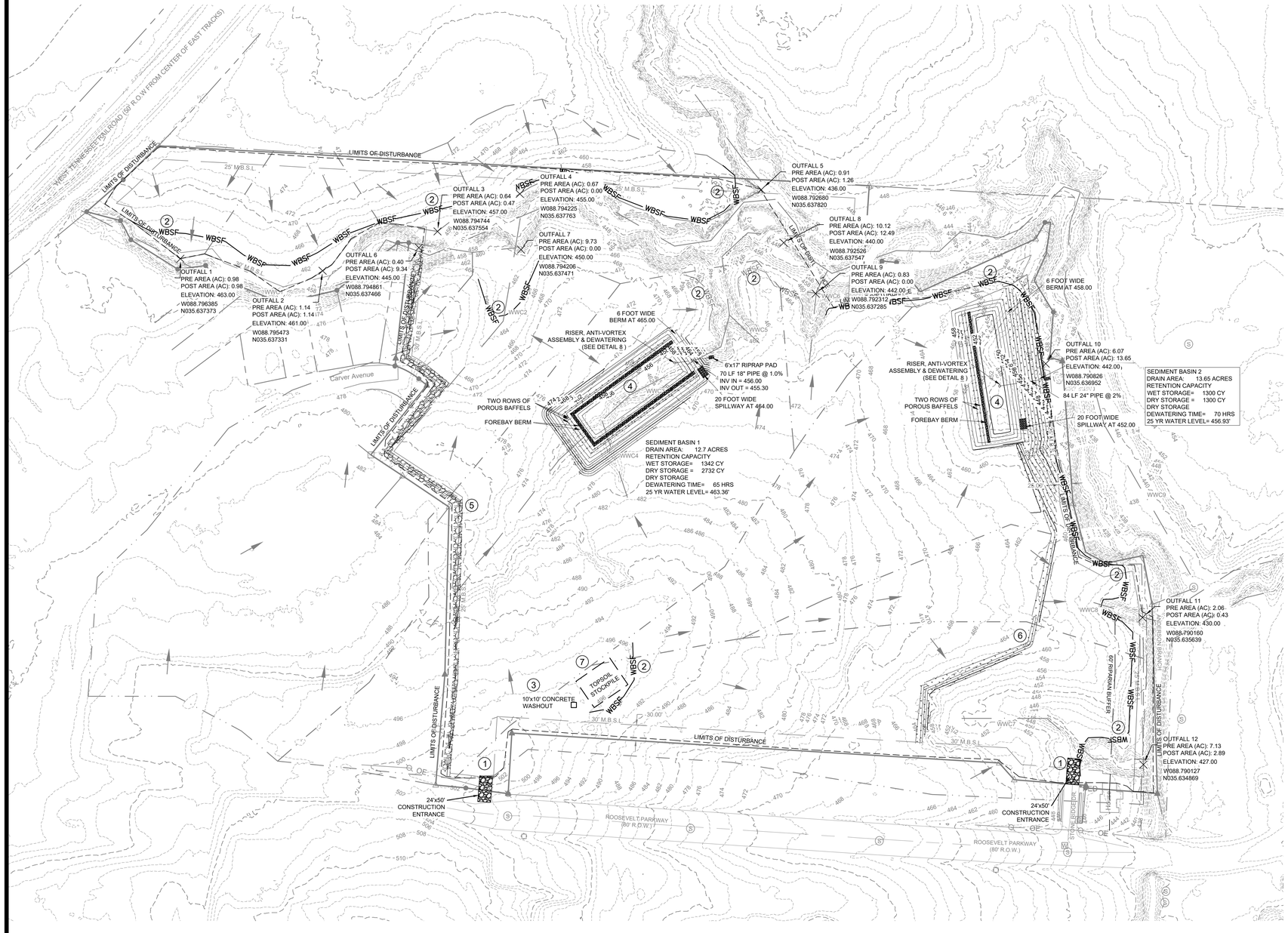
EROSION CONTROL LEGEND

- LIMITS OF CONSTRUCTION
- WBSF — WBSF — WIRE BACKED SILT FENCE
- CHECK DAM
- INLET PROTECTION
- LANDSCAPING/SUITABLE COVER

OUTFALL #	LATITUDE (N)	LONGITUDE (W)	APPROX. ELEV. (FEET)	PRE AREA (ACRES)	POST AREA (ACRES)	RECIEVING WATERS
OUTFALL 1	35.637373	88.796385	463	0.98	0.98	ANDERSON BRANCH
OUTFALL 2	35.637331	88.795473	461	1.14	1.14	ANDERSON BRANCH
OUTFALL 3	35.633755	88.794744	457	0.64	0.47	ANDERSON BRANCH
OUTFALL 4	35.637763	88.794225	455	0.67	0.00	ANDERSON BRANCH
OUTFALL 5	35.637675	88.792950	436	0.91	1.26	ANDERSON BRANCH
OUTFALL 6	35.637470	88.794722	445	0.40	9.34	ANDERSON BRANCH
OUTFALL 7	35.637471	88.794206	450	9.73	0.00	ANDERSON BRANCH
OUTFALL 8	35.637401	88.792955	440	10.12	12.49	ANDERSON BRANCH
OUTFALL 9	35.637285	88.792312	442	0.83	0.00	ANDERSON BRANCH
OUTFALL 10	35.636967	88.790871	442	6.07	13.65	ANDERSON BRANCH
OUTFALL 11	35.635639	88.790160	430	2.06	0.43	ANDERSON BRANCH
OUTFALL 12	35.634869	88.790127	427	7.13	2.89	ANDERSON BRANCH

NOTICE OF COVERAGE HAS BEEN ISSUED FOR A GENERAL CONSTRUCTION PERMIT AND ASSOCIATED GENERAL ARAP PERMIT THROUGH TDEC.

PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014



LEGEND

- PROPERTY LINE
- PROPERTY ADJOINER LINE
- EASEMENT LINE (ESMT)
- CENTERLINE OF ROAD
- WATER LINE
- GAS LINE
- OVERHEAD UTILITY LINE
- SEWER LINE
- STORM DRAIN LINE
- OVERHEAD COMS LINE
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- REBAR FOUND
- 5/8" REBAR WITH L.I. SMITH CAP SET
- UNMARKED POINT
- BENCHMARK
- CONCRETE SURFACE
- ASPHALT SURFACE
- GUY WIRE
- LIGHT POLE
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- ELECTRICTRANSFORMER
- WATER METER
- WATER VALVE
- NATURAL GAS METER
- NATURAL GAS VALVE
- STORM MANHOLE
- CATCH BASIN
- CLEANOUT
- SIGN
- PED TELEPHONE PEDESTAL
- FIRE HYDRANT
- SEWER MANHOLE
- DECIDUOUS TREE
- EVERGREEN TREE
- EVERGREEN SHRUB

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

EROSION CONTROL NOTES:

1. NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES AND ONLY AS APPROVED BY OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
2. TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM OF 6".
3. ALL GRADED AREAS, INCLUDING SLOPES, ARE TO BE STABILIZED AS SOON AS POSSIBLE AFTER GRADING IS COMPLETED, BUT NO LONGER THAN 14 DAYS LATER.
4. CONSTRUCT EROSION CONTROL AS SHOWN ON DRAWINGS PRIOR TO BEGINNING GRADING OPERATIONS.
5. ALL NEW STRUCTURES AND EXISTING STRUCTURES SHALL HAVE SEDIMENT REMOVED PRIOR TO ACCEPTANCE.
6. SILT BARRIERS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 33% FILLED WITH SUCH SEDIMENT.
7. ALL DIMENSIONS AND LOCATIONS OF TEMPORARY EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DESIGNATED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
8. WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE IN THE OPINION OF THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER, THEY SHALL BE REMOVED.
9. REPLACE SILT BARRIERS WHEN CONDITIONS WARRANT AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
10. ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL MATTING INSTALLED PER MANUFACTURERS' RECOMMENDATIONS, OR SOD.
11. ANY MUD/CONSTRUCTION DEBRIS THAT MAY BE TRANSPORTED TO SURROUNDING ROADS, OR OTHER SURROUNDING ROADS OR PARKING AREAS SHALL BE CLEANED UP IMMEDIATELY.
12. GENERAL CONTRACTOR SHALL KEEP GROUND DISTURBANCE TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. ALL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IF DISTURBED AREA HAS NOT BEEN WORKED WITHIN THE PAST 14 DAYS.
13. SOD SHALL BE TURF TYPE TALL FESCUE.
14. TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM PERIOD OF 7 DAYS. TEMPORARY STABILIZATION MEASURES, I.E. SEEDING & MULCHING, SHALL BE PERFORMED ON ANY UNPROTECTED AREA WHERE CONSTRUCTION OPERATIONS WILL CEASE FOR 7 OR MORE DAYS.
15. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS.
16. CONSTRUCTION ENTRANCE SHALL BE IN PLACE PRIOR TO ANY COMBUSTIBLES, I.E. CONSTRUCTION TRAILER, LUMBER, ETC. BEING PRESENT ON JOB SITE. IN ADDITION TO THE CONSTRUCTION ENTRANCE, AN ALL WEATHER DRIVE MUST BE IN PLACE AND ACCESSIBLE TO ALL AREAS OF THE CONSTRUCTION SITE THAT WILL CONTAIN COMBUSTIBLES THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROCESS. THE ALL WEATHER DRIVE SHALL BE NO LESS THAN 20 FEET OF UNOBSTRUCTED WIDTH WITH ADEQUATE TURNING RADIUS CAPABLE OF SUPPORTING THE IMPOSED LOADS OF THE FIRE DEPARTMENT APPARATUS.
17. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
18. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
19. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN ANY KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
20. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
21. ALL CUT/FILL AREAS TO BE LANDSCAPED OR THAT HAVE A VEGETATIVE COVER POST-CONSTRUCTION, SHALL HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL SHALL BE SODDED AS SHOWN ON SHEET L1, LANDSCAPING PLAN.
22. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SODDED AS OTHER NEW GRASSED AREAS OF THE PROJECT.

SITE SPECIFIC EROSION CONTROL NOTES:

1. CONTRACTOR TO INSTALL AND MAINTAIN VEHICLE TRACKING CONTROL (CONSTRUCTION ENTRANCE/EXIT) (REF C-900).
2. CONTRACTOR TO INSTALL AND MAINTAIN WIRE BACKED SILT FENCE PERIMETER (REF. C-900).
3. CONTRACTOR TO INSTALL AND MAINTAIN 10' X 10' CONCRETE WASHOUT PIT WITH DIRECTIONAL SIGNS (REF. C-900).
4. CONSTRUCT A SEDIMENT BASIN WITH ASSOCIATED RISER, DISCHARGE, FOREBAY, AND POROUS BAFFELS. (REF. C-900).
5. CONSTRUCT A DIVERSION DITCH TO ROUTE 9.33 ACRES OF OFFSITE DRAINAGE AROUND THE SITE AT OUTFALL 6 (REF. C-904) TO KEEP DRAINAGE AREA TO OUTFALL 7 UNDER 5 ACRES..
6. CONSTRUCT A DIVERSION BERM TO ROUTE 5.5 ACRES OF DRAINAGE TO SEDIMENT BASIN 2 TO KEEP THE DRAINAGE AREA TO OUTFALL 12 UNDER 5 ACRES (REF. C-904).
7. STOCKPILE TOPSOIL AT DESIGNATED AREA, TO BE PROTECTED WITH SILT FENCE DOWNSLOPE.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 47113O168E, DATED AUGUST 03, 2009.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

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P. J. Smith — TENNESSEE — REGISTERED ENGINEER — 102.000 — STATE OF TENNESSEE

SHEET: E.P.S.C PHASE 1
NUMBER: C-400

L.I. Smith and Associates, Inc.
LAND DEVELOPMENT | INFRASTRUCTURE DESIGN
SURVEYING SERVICES
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475 Metroplex Drive, Suite 212 Nashville, TN 37211 ; 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100' | DATE: 01/15/2021
PROJECT # 201044

EAS000425

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

OUTFALL #	LATITUDE (N)	LONGITUDE (W)	APPROX. ELEV. (FEET)	PRE AREA (ACRES)	POST AREA (ACRES)	RECIEVING WATERS
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PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014

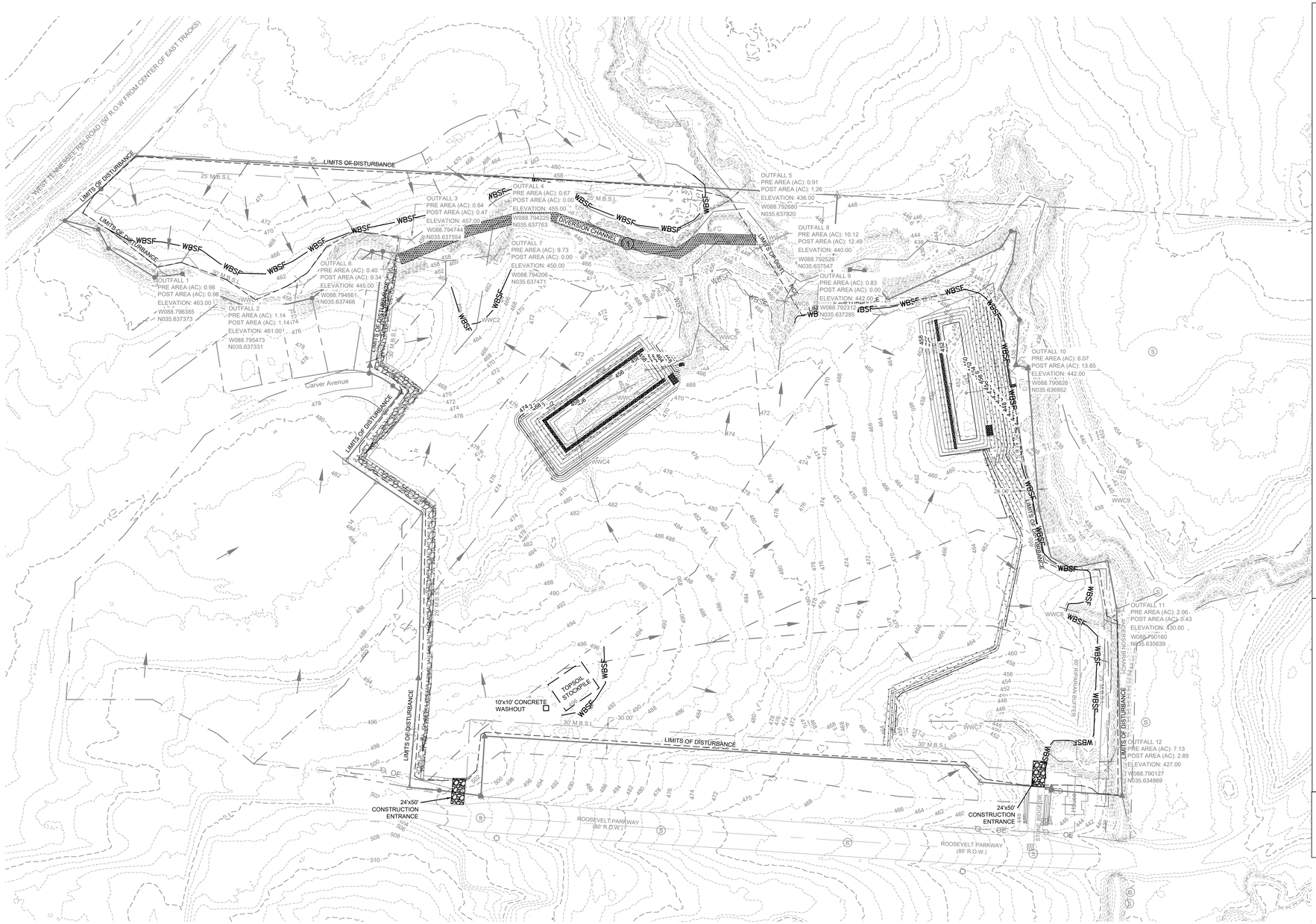
EROSION CONTROL LEGEND

- LIMITS OF CONSTRUCTION
- WBSF WBSF — WIRE BACKED SILT FENCE
- CHECK DAM
- INLET PROTECTION
- LANDSCAPING/SUITABLE COVER

LEGEND

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BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988



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3. ALL GRADED AREAS, INCLUDING SLOPES, ARE TO BE STABILIZED AS SOON AS POSSIBLE AFTER GRADING IS COMPLETED, BUT NO LONGER THAN 14 DAYS LATER.
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12. GENERAL CONTRACTOR SHALL KEEP GROUND DISTURBANCE TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. ALL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IF DISTURBED AREA HAS NOT BEEN WORKED WITHIN THE PAST 14 DAYS.
13. SOD SHALL BE TURF TYPE TALL FESCUE.
14. TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM PERIOD OF 7 DAYS. TEMPORARY STABILIZATION MEASURES, I.E. SEEDING & MULCHING, SHALL BE PERFORMED ON ANY UNPROTECTED AREA WHERE CONSTRUCTION OPERATIONS WILL CEASE FOR 7 OR MORE DAYS.
15. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS.
16. CONSTRUCTION ENTRANCE SHALL BE IN PLACE PRIOR TO ANY COMBUSTIBLES, I.E. CONSTRUCTION TRAILER, LUMBER, ETC. BEING PRESENT ON JOB SITE. IN ADDITION TO THE CONSTRUCTION ENTRANCE, AN ALL WEATHER DRIVE MUST BE IN PLACE AND ACCESSIBLE TO ALL AREAS OF THE CONSTRUCTION SITE THAT WILL CONTAIN COMBUSTIBLES THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROCESS. THE ALL WEATHER DRIVE SHALL BE NO LESS THAN 20 FEET OF UNOBSTRUCTED WIDTH WITH ADEQUATE TURNING RADIUS CAPABLE OF SUPPORTING THE IMPOSED LOADS OF THE FIRE DEPARTMENT APPARATUS.
17. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
18. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
19. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN ANY KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
20. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
21. ALL CUT/FILL AREAS TO BE LANDSCAPED OR THAT HAVE A VEGETATIVE COVER POST-CONSTRUCTION, SHALL HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL SHALL BE SODDED AS SHOWN ON SHEET L1, LANDSCAPING PLAN.
22. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SODDED AS OTHER NEW GRASSED AREAS OF THE PROJECT.

SITE SPECIFIC EROSION CONTROL NOTES:

1. CONSTRUCT DIVERSION CHANNEL IN EXISTING CHANNEL TO ROUTE WATER AROUND THE CONSTRUCTION OF THE BOX CULVERT . WORK AREA WILL BE PROTECTED WITH SANDBAG COFFER DAMS THROUGHOUT CONSTRUCTION. DIVERSION CHANNEL MUST HAVE A MINIMAL CROSS SECTIONAL AREA OF 32 SQUARE FEET (REF. C-903).

ANY WATER THAT IS PUMPED FROM WORK AREA MUST BE PUMPED THROUGH A SEDIMENT FILTER BAG.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 47113O168E, DATED AUGUST 03, 2009.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

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THIS DRAWING SHALL BE CONSIDERED PRELIMINARY IN NATURE AND, IN NO WAY, FINAL OR COMPLETE, UNLESS THE SEAL OF THE ENGINEER IS SHOWN BELOW AND/OR RECORDS AFFIXED HERETO.

William Smith — Registered Engineer — State of Tennessee — 102551 — Professional Engineer

SHEET: E.P.S.C PHASE 2
NUMBER: C-401

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DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100'
PROJECT # 201044 | DATE: 01/15/2021

EAS000426

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

OUTFALL #	LATITUDE (N)	LONGITUDE (W)	APPROX. ELEV. (FEET)	PRE AREA (ACRES)	POST AREA (ACRES)	RECIEVING WATERS
OUTFALL 1	35.637373	88.796385	463	0.98	0.98	ANDERSON BRANCH
OUTFALL 2	35.637331	88.795473	461	1.14	1.14	ANDERSON BRANCH
OUTFALL 3	35.633755	88.794744	457	0.64	0.47	ANDERSON BRANCH
OUTFALL 4	35.637763	88.794225	455	0.67	0.00	ANDERSON BRANCH
OUTFALL 5	35.637675	88.792950	436	0.91	1.26	ANDERSON BRANCH
OUTFALL 6	35.637470	88.794722	445	0.40	9.34	ANDERSON BRANCH
OUTFALL 7	35.637471	88.794206	450	9.73	0.00	ANDERSON BRANCH
OUTFALL 8	35.637401	88.792955	440	10.12	12.49	ANDERSON BRANCH
OUTFALL 9	35.637285	88.792312	442	0.83	0.00	ANDERSON BRANCH
OUTFALL 10	35.636967	88.790871	442	6.07	13.65	ANDERSON BRANCH
OUTFALL 11	35.635639	88.790160	430	2.06	0.43	ANDERSON BRANCH
OUTFALL 12	35.634869	88.790127	427	7.13	2.89	ANDERSON BRANCH

NOTICE OF COVERAGE HAS BEEN ISSUED FOR A GENERAL CONSTRUCTION PERMIT AND ASSOCIATED GENERAL ARAP PERMIT THROUGH TDEC.

PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014

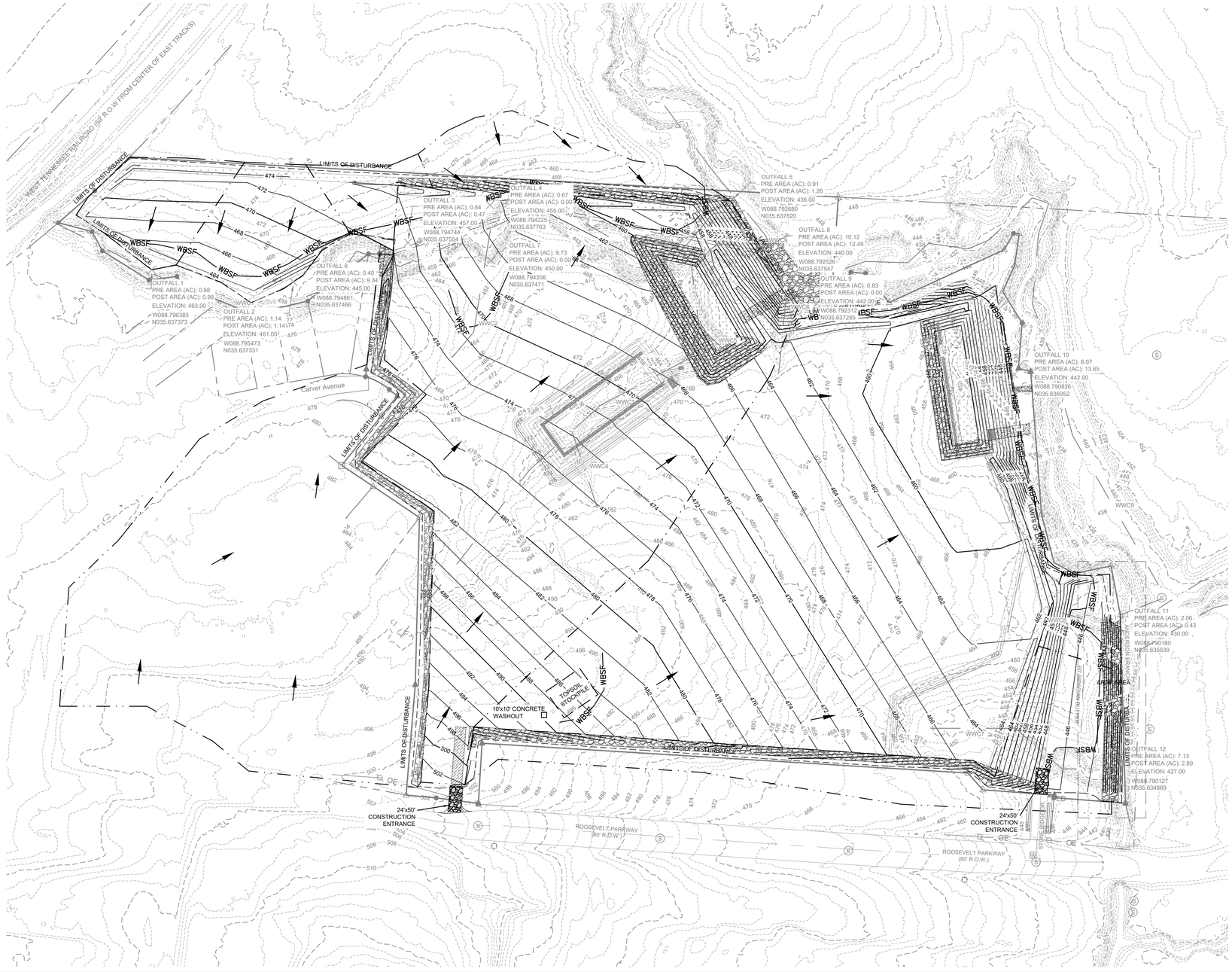
EROSION CONTROL LEGEND

- LIMITS OF CONSTRUCTION
- WBSF — WBSF — WIRE BACKED SILT FENCE
- CHECK DAM
- INLET PROTECTION
- LANDSCAPING/SUITABLE COVER

LEGEND

- PROPERTY LINE
- PROPERTY ADJOINER LINE
- EASEMENT LINE (ESMT)
- CENTERLINE OF ROAD
- WATER LINE
- GAS LINE
- OVERHEAD UTILITY LINE
- SEWER LINE
- STORM DRAIN LINE
- OVERHEAD COMS LINE
- FLOW LINE
- DRAIN AREA LINE
- REBAR FOUND
- 5/8" REBAR WITH L.I. SMITH CAP SET
- UNMARKED POINT
- BENCHMARK
- CONCRETE SURFACE
- ASPHALT SURFACE
- GUY WIRE
- LIGHT POLE
- POWER POLE
- ELECTRICTRANSFORMER
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- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SEWER MANHOLE
- DECIDUOUS TREE
- EVERGREEN TREE
- EVERGREEN SHRUB

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988



EROSION CONTROL NOTES:

1. NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES AND ONLY AS APPROVED BY OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
2. TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM OF 6".
3. ALL GRADED AREAS, INCLUDING SLOPES, ARE TO BE STABILIZED AS SOON AS POSSIBLE AFTER GRADING IS COMPLETED, BUT NO LONGER THAN 14 DAYS LATER.
4. CONSTRUCT EROSION CONTROL AS SHOWN ON DRAWINGS PRIOR TO BEGINNING GRADING OPERATIONS.
5. ALL NEW STRUCTURES AND EXISTING STRUCTURES SHALL HAVE SEDIMENT REMOVED PRIOR TO ACCEPTANCE.
6. SILT BARRIERS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 33% FILLED WITH SUCH SEDIMENT.
7. ALL DIMENSIONS AND LOCATIONS OF TEMPORARY EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DESIGNATED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
8. WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE IN THE OPINION OF THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER, THEY SHALL BE REMOVED.
9. REPLACE SILT BARRIERS WHEN CONDITIONS WARRANT AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
10. ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL MATTING INSTALLED PER MANUFACTURERS' RECOMMENDATIONS, OR SOD.
11. ANY MUD/CONSTRUCTION DEBRIS THAT MAY BE TRANSPORTED TO SURROUNDING ROADS, OR OTHER SURROUNDING ROADS OR PARKING AREAS SHALL BE CLEANED UP IMMEDIATELY.
12. GENERAL CONTRACTOR SHALL KEEP GROUND DISTURBANCE TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. ALL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IF DISTURBED AREA HAS NOT BEEN WORKED WITHIN THE PAST 14 DAYS.
13. SOD SHALL BE TURF TYPE TALL FESCUE.
14. TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM PERIOD OF 7 DAYS. TEMPORARY STABILIZATION MEASURES, I.E. SEEDING & MULCHING, SHALL BE PERFORMED ON ANY UNPROTECTED AREA WHERE CONSTRUCTION OPERATIONS WILL CEASE FOR 7 OR MORE DAYS.
15. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS.
16. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
17. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
18. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN ANY KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
19. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
20. ALL CUT/FILL AREAS TO BE LANDSCAPED OR THAT HAVE A VEGETATIVE COVER POST-CONSTRUCTION, SHALL HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL SHALL BE SODDED AS SHOWN ON SHEET L1, LANDSCAPING PLAN.
21. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SODDED AS OTHER NEW GRASSED AREAS OF THE PROJECT.

SITE SPECIFIC EROSION CONTROL NOTES:

1. CONSTRUCT DETENTION POND AND STABILIZE WITH SOD (REF. C-900).
2. CONSTRUCT PERMANENT CONTAINMENT BERM TO DIRECT FLOW OF STORMWATER TO DETENTION POND 2 (REF. C-904).

SITE WILL BE BROUGHT UP TO GRADE DURING THIS PHASE. ANY AREAS THAT HAVE SEEN NO CONSTRUCTION ACTIVITY FOR 14 DAYS WILL BE STABILIZED WITH SEED AND STRAW MULCH.

DIVERSION BERM/DITCHES WILL BE MAINTAINED TO DIRECT STORMWATER RUNOFF TO SEDIMENT BASINS.

ARAP NOTES:

BANK STABILIZATION OF ANDERSON BRANCH WILL FOLLOW ALL THE GUIDANCE AND REGULATION OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION GENERAL AQUATIC RESOURCE ALTERATION PERMIT FOR BANK STABILIZATION.

BANK WILL BE STABILIZED WITH A MIN. OF 2.5' OF CLASS A-1 RIP RAP ON TOP OF GEOTEXTILE FABRIC.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 471130168E, DATED AUGUST 03, 2009.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

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SHEET: E.P.S.C PHASE 3
NUMBER: C-402

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DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100'
PROJECT # 201044 | DATE: 01/15/2021

EAS000427

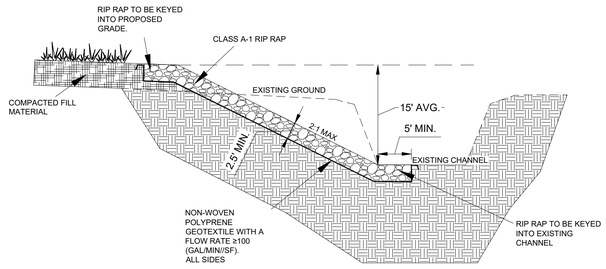
EROSION CONTROL LEGEND

- LIMITS OF CONSTRUCTION
- WBSF — WBSF — WIRE BACKED SILT FENCE
- CHECK DAM
- INLET PROTECTION
- LANDSCAPING/SUITABLE COVER

OUTFALL #	LATITUDE (N)	LONGITUDE (W)	APPROX. ELEV. (FEET)	PRE AREA (ACRES)	POST AREA (ACRES)	RECIEVING WATERS
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OUTFALL 4	35.637763	88.794225	455	0.67	0.00	ANDERSON BRANCH
OUTFALL 5	35.637675	88.792950	436	0.91	1.26	ANDERSON BRANCH
OUTFALL 6	35.637470	88.794722	445	0.40	9.34	ANDERSON BRANCH
OUTFALL 7	35.637471	88.794206	450	9.73	0.00	ANDERSON BRANCH
OUTFALL 8	35.637401	88.792955	440	10.12	12.49	ANDERSON BRANCH
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OUTFALL 12	35.634869	88.790127	427	7.13	2.89	ANDERSON BRANCH

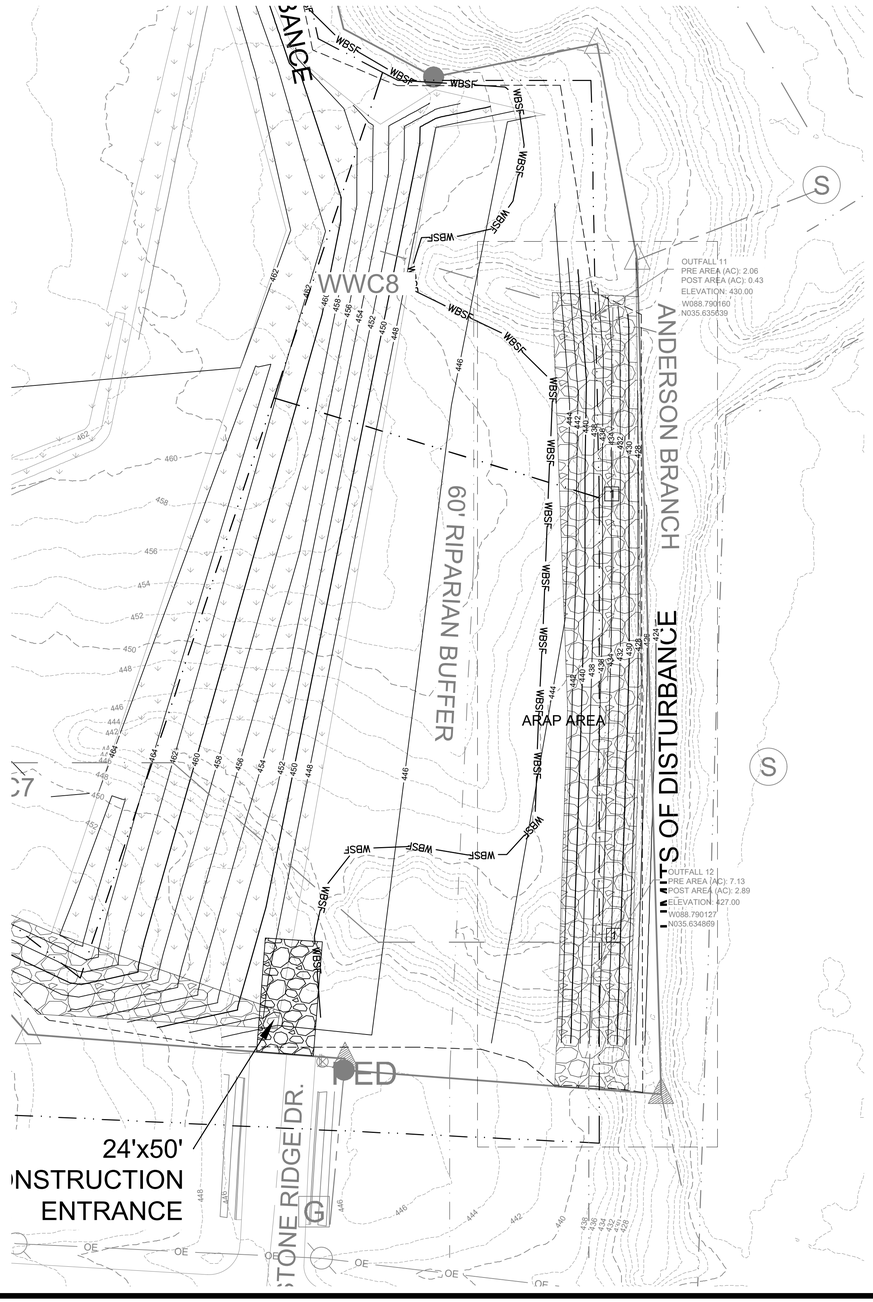
NOTICE OF COVERAGE HAS BEEN ISSUED FOR A GENERAL CONSTRUCTION PERMIT AND ASSOCIATED GENERAL ARAP PERMIT THROUGH TDEC.

PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014



4.12 *RIP RAP REVETMENT-BANK STABILZATION*

NO SCALE



LEGEND

- PROPERTY LINE
- PROPERTY ADJOINER LINE
- EASEMENT LINE (ESMT)
- CENTERLINE OF ROAD
- WATER LINE
- GAS LINE
- OVERHEAD UTILITY LINE
- SEWER LINE
- STORM DRAIN LINE
- OVERHEAD COMS LINE
- FLOW LINE
- DRAIN AREA LINE
- REBAR FOUND
- 5/8" REBAR WITH L.I. SMITH CAP SET
- UNMARKED POINT
- BENCHMARK
- CONCRETE SURFACE
- ASPHALT SURFACE
- GUY WIRE
- LIGHT POLE
- POWER POLE
- ELECTRICTRANSFORMER
- WATER METER
- WATER VALVE
- NATURAL GAS METER
- NATURAL GAS VALVE
- STORM MANHOLE
- CATCH BASIN
- CLEANOUT
- SIGN
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SEWER MANHOLE
- DECIDUOUS TREE
- EVERGREEN TREE
- EVERGREEN SHRUB

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

EROSION CONTROL NOTES:

1. NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES AND ONLY AS APPROVED BY OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
2. TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM OF 6".
3. ALL GRADED AREAS, INCLUDING SLOPES, ARE TO BE STABILIZED AS SOON AS POSSIBLE AFTER GRADING IS COMPLETED, BUT NO LONGER THAN 14 DAYS LATER.
4. CONSTRUCT EROSION CONTROL AS SHOWN ON DRAWINGS PRIOR TO BEGINNING GRADING OPERATIONS.
5. ALL NEW STRUCTURES AND EXISTING STRUCTURES SHALL HAVE SEDIMENT REMOVED PRIOR TO ACCEPTANCE.
6. SILT BARRIERS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 33% FILLED WITH SUCH SEDIMENT.
7. ALL DIMENSIONS AND LOCATIONS OF TEMPORARY EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DESIGNATED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
8. WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE IN THE OPINION OF THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER, THEY SHALL BE REMOVED.
9. REPLACE SILT BARRIERS WHEN CONDITIONS WARRANT AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
10. ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL MATTING INSTALLED PER MANUFACTURERS' RECOMMENDATIONS, OR SOD.
11. ANY MUD/CONSTRUCTION DEBRIS THAT MAY BE TRANSPORTED TO SURROUNDING ROADS, OR OTHER SURROUNDING ROADS OR PARKING AREAS SHALL BE CLEANED UP IMMEDIATELY.
12. GENERAL CONTRACTOR SHALL KEEP GROUND DISTURBANCE TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. ALL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IF DISTURBED AREA HAS NOT BEEN WORKED WITHIN THE PAST 14 DAYS.
13. SOD SHALL BE TURF TYPE TALL FESCUE.
14. TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM PERIOD OF 7 DAYS. TEMPORARY STABILIZATION MEASURES, I.E. SEEDING & MULCHING, SHALL BE PERFORMED ON ANY UNPROTECTED AREA WHERE CONSTRUCTION OPERATIONS WILL CEASE FOR 7 OR MORE DAYS.
15. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS.
16. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
17. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
18. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN ANY KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
19. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
20. ALL CUT/FILL AREAS TO BE LANDSCAPED OR THAT HAVE A VEGETATIVE COVER POST-CONSTRUCTION, SHALL HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL SHALL BE SODDED AS SHOWN ON SHEET L1, LANDSCAPING PLAN.
21. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SODDED AS OTHER NEW GRASSED AREAS OF THE PROJECT.

ARAP NOTES:

1. 300' OF STREAM BANK WILL BE CUT AT A 2:1 SLOPE AND STABILIZED WITH 2.5' MIN OF CLASS A-1 RIP RAP ON GEOTEXTILE FABRIC.

BANK STABILIZATION WILL ONLY BE PERFORMED WHEN THE CHANNEL IS DRY. NO WORK WILL BE ALLOWED IN THE CHANNEL WITHIN 72 HOURS OF A RAIN EVENT OF 0,1" OR GREATER.

BANK STABILIZATION OF ANDERSON BRANCH WILL FOLLOW ALL THE GUIDANCE AND REGULATION OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION GENERAL AQUATIC RESOURCE ALTERATION PERMIT FOR BANK STABILIZATION.

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 47113016BE, DATED AUGUST 03, 2009.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

SHEET: A.R.A.P. | NUMBER: C-403
DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=30' | DATE: 07/15/2021
PROJECT # 201044

EAS000428

EROSION CONTROL LEGEND

- LIMITS OF CONSTRUCTION
- WBSF — WBSF — WIRE BACKED SILT FENCE
- CHECK DAM
- INLET PROTECTION
- LANDSCAPING/SUITABLE COVER

OUTFALL #	LATITUDE (N)	LONGITUDE (W)	APPROX. ELEV. (FEET)	PRE AREA (ACRES)	POST AREA (ACRES)	RECIEVING WATERS
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OUTFALL 10	35.636967	88.790871	442	6.07	13.65	ANDERSON BRANCH
OUTFALL 11	35.635639	88.790160	430	2.06	0.43	ANDERSON BRANCH
OUTFALL 12	35.634869	88.790127	427	7.13	2.89	ANDERSON BRANCH

NOTICE OF COVERAGE HAS BEEN ISSUED FOR A GENERAL CONSTRUCTION PERMIT AND ASSOCIATED GENERAL ARAP PERMIT THROUGH TDEC.

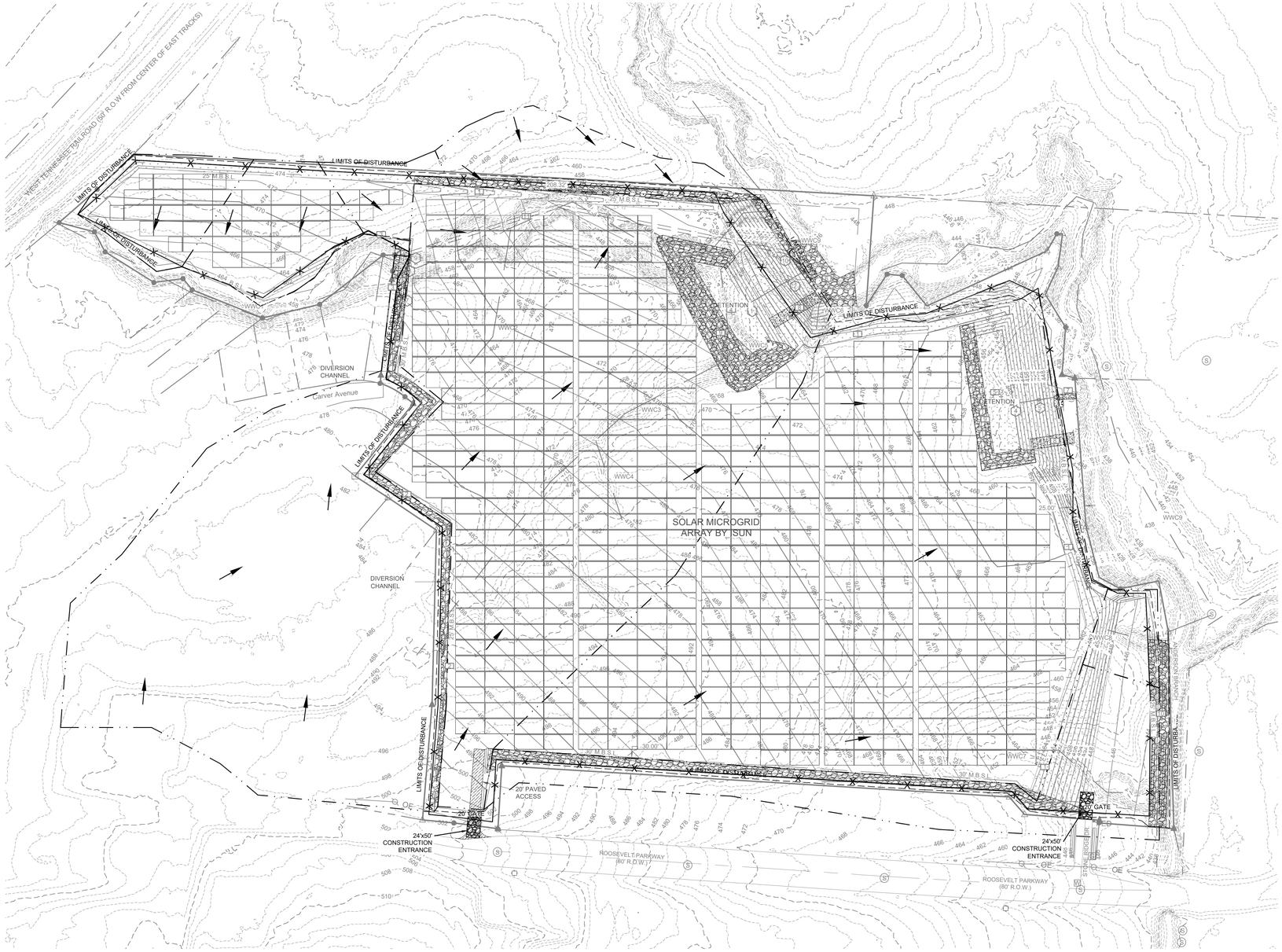
PERMITTED DISTURBANCE: 32 ACRES
TDEC PERMIT NUMBERS:
TNR 122460
NR 2102.014

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

LEGEND

- PROPERTY LINE
- PROPERTY ADJOINER LINE
- EASEMENT LINE (ESMT)
- CENTERLINE OF ROAD
- WATER LINE
- GAS LINE
- OVERHEAD UTILITY LINE
- SEWER LINE
- STORM DRAIN LINE
- OVERHEAD COMS LINE
- FLOW LINE
- DRAIN AREA LINE
- REBAR FOUND
- 5/8" REBAR WITH L.I. SMITH CAP SET
- UNMARKED POINT
- BENCHMARK
- CONCRETE SURFACE
- ASPHALT SURFACE
- GUY WIRE
- LIGHT POLE
- POWER POLE
- ELECTRICTRANSFORMER
- WATER METER
- WATER VALVE
- NATURAL GAS METER
- NATURAL GAS VALVE
- STORM MANHOLE
- CATCH BASIN
- CLEANOUT
- SIGN
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SEWER MANHOLE
- DECIDUOUS TREE
- EVERGREEN TREE
- EVERGREEN SHRUB



EROSION CONTROL NOTES:

1. NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES AND ONLY AS APPROVED BY OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
2. TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM OF 6".
3. ALL GRADED AREAS, INCLUDING SLOPES, ARE TO BE STABILIZED AS SOON AS POSSIBLE AFTER GRADING IS COMPLETED, BUT NO LONGER THAN 14 DAYS LATER.
4. CONSTRUCT EROSION CONTROL AS SHOWN ON DRAWINGS PRIOR TO BEGINNING GRADING OPERATIONS.
5. ALL NEW STRUCTURES AND EXISTING STRUCTURES SHALL HAVE SEDIMENT REMOVED PRIOR TO ACCEPTANCE.
6. SILT BARRIERS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 33% FILLED WITH SUCH SEDIMENT.
7. ALL DIMENSIONS AND LOCATIONS OF TEMPORARY EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DESIGNATED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
8. WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE IN THE OPINION OF THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER, THEY SHALL BE REMOVED.
9. REPLACE SILT BARRIERS WHEN CONDITIONS WARRANT AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TOWN ENGINEER.
10. ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL MATTING INSTALLED PER MANUFACTURERS' RECOMMENDATIONS, OR SOD.
11. ANY MUD/CONSTRUCTION DEBRIS THAT MAY BE TRANSPORTED TO SURROUNDING ROADS, OR OTHER SURROUNDING ROADS OR PARKING AREAS SHALL BE CLEANED UP IMMEDIATELY.
12. GENERAL CONTRACTOR SHALL KEEP GROUND DISTURBANCE TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. ALL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IF DISTURBED AREA HAS NOT BEEN WORKED WITHIN THE PAST 14 DAYS.
13. SOD SHALL BE TURF TYPE TALL FESCUE.
14. TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM PERIOD OF 7 DAYS. TEMPORARY STABILIZATION MEASURES, I.E. SEEDING & MULCHING, SHALL BE PERFORMED ON ANY UNPROTECTED AREA WHERE CONSTRUCTION OPERATIONS WILL CEASE FOR 7 OR MORE DAYS.
15. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS.
16. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
17. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
18. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN ANY KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
19. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
20. ALL CUT/FILL AREAS TO BE LANDSCAPED OR THAT HAVE A VEGETATIVE COVER POST-CONSTRUCTION, SHALL HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL SHALL BE SODDED AS SHOWN ON SHEET L1, LANDSCAPING PLAN.
21. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SODDED AS OTHER NEW GRASSED AREAS OF THE PROJECT.

SITE SPECIFIC EROSION CONTROL NOTES:

1. CONTRACTOR TO SOD ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WITH HARDSCAPE OR LANDSCAPING (TYP.)

FLOODPLAIN NOTE:

THE SITE IS LOCATED IN UNSHADED FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NO. 471130168E, DATED AUGUST 03, 2009.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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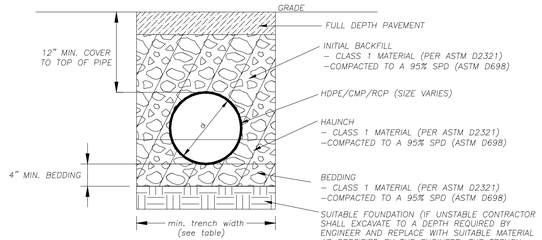


SHEET: E.P.S.C PHASE 4
NUMBER: C-404

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475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS | SCALE: 1"=100' | DATE: 01/15/2021
PROJECT # 201044

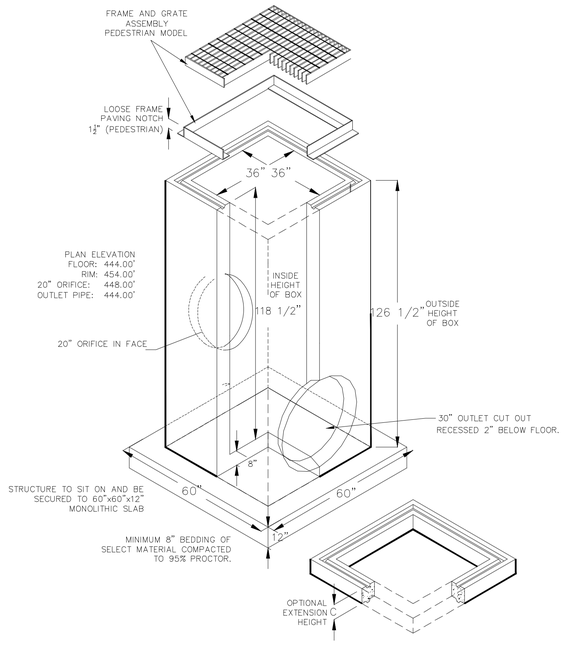
EAS000429



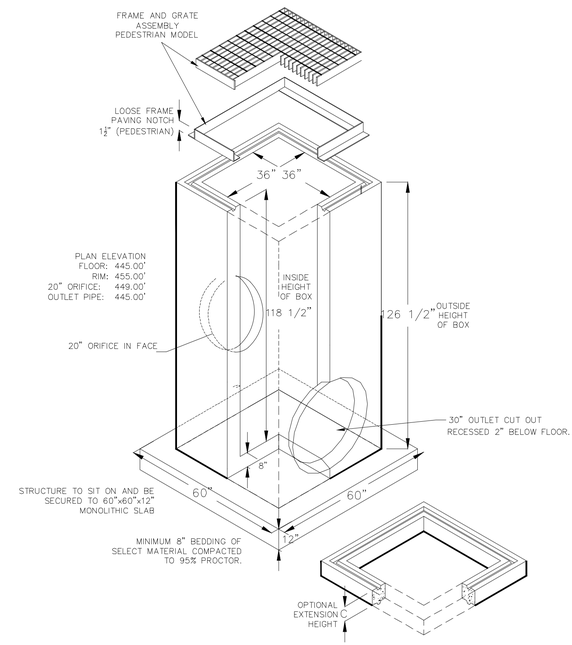
PIPE DIAMETER	MIN. TRENCH WIDTH
8" or smaller	26"
10"	32"
12"	36"
15"	39"
18"	46"
24"	54"
36"	70"

NOTE:
TRENCH WIDTHS, BEDDING MATERIALS AND COMPACTION REQUIREMENTS DEPICTED ARE MINIMUMS. CONTRACTOR SHALL INSTALL ALL PIPING PER MANUFACTURER'S WRITTEN INSTRUCTIONS OR ASTM D2321, UNLESS THESE DRAWINGS OR THE PROJECT SPECIFICATIONS ARE MORE STRINGENT.

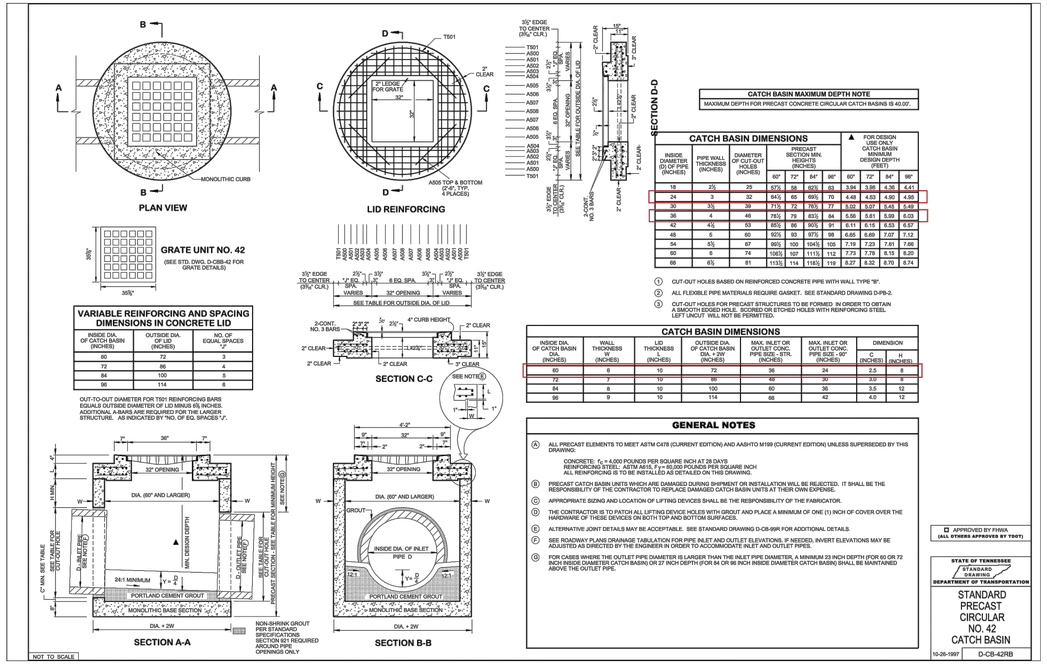
3.01 *DRAINAGE PIPE TRENCH DETAIL*
NO SCALE



3.02 *DETENTION POND 1 OUTLET STRUCTURE*
NO SCALE



3.03 *DETENTION POND 2 OUTLET STRUCTURE*
NO SCALE



INSIDE DIA. OF LID	NO. OF EQUAL SPACES "J"
60	3
72	4
84	5
96	6

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR PRECAST CONCRETE CIRCULAR CATCH BASINS IS 40.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES) 60"	72"	84"	96"	▲ FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET) 60"	72"	84"	96"
18	2½	29	57½	68	62½	63	3.94	3.98	4.06	4.41
24	3	32	64½	65	69½	70	4.48	4.53	4.90	4.95
30	3½	38	71½	72	76½	77	5.02	5.07	5.43	5.49
36	4	46	78½	79	83½	84	5.56	5.61	5.99	6.03
42	4½	53	85½	86	90½	91	6.11	6.15	6.53	6.57
48	5	60	92½	93	97½	98	6.65	6.69	7.07	7.12
54	5½	67	99½	100	104½	105	7.19	7.23	7.61	7.66
60	6	74	106½	107	111½	112	7.73	7.78	8.15	8.20
66	6½	81	113½	114	118½	119	8.27	8.32	8.70	8.74

① CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
② ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
③ CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED. IN ORDER TO OBTAIN A SMOOTH EDGED HOLE, SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

CATCH BASIN DIMENSIONS

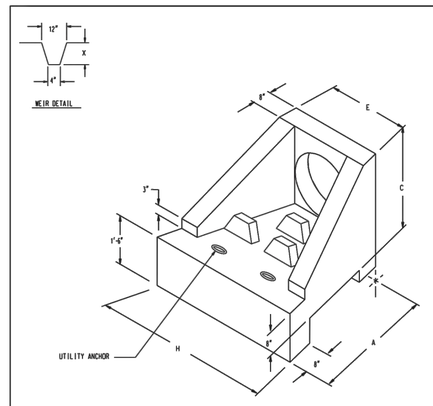
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS (INCHES)	OUTSIDE DIA. OF CATCH BASIN T(A. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)	DIMENSION H (INCHES)
60	6	10	72	36	24	2.5	8
72	7	10	86	48	30	3.0	8
84	8	10	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

GENERAL NOTES
(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.
CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.
(B) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT THEIR OWN EXPENSE.
(C) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
(D) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.
(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.
(F) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.
(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

☐ APPROVED BY FHWA (ALL STRESS APPROVED BY THDT)

STATE OF TENNESSEE STANDARD DRAWING DEPARTMENT OF TRANSPORTATION
STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN
10-26-1997 D-CB-42RB

3.04 *TYPE 42 DROP INLET*
NO SCALE



DIMENSION						
PIPE DIA.	A	C	E	H	X	WEIGHT
12"	4'-0"	2'-8"	2'-5"	4'-5"	12"	3.033#
15"	4'-0"	2'-8"	2'-5"	4'-5"	13 ½"	3.033#
18"	4'-6"	2'-11"	3'-0"	5'-1"	15"	3.766#
24"	5'-6"	3'-5"	3'-6"	6'-6"	18"	5.463#

GENERAL NOTES:
1. 2" MIN. CONCRETE COVERAGE.
2. REIF. - #4 REBAR 12" C.C. EA. WAY.
3. HOLE SIZE = PIPE O.D. + 3".
4. ¾" CHAMFER OR ROUND ON ALL EXPOSED EDGES.

FORTERRA
ENERGY DISSIPATOR BLOCK 12"- 27" PIPE | SCALE: NTS | PH# 1-800-737-0707 | DWG# ET-230 | DATE:01/23/12 | SHEET# 1 OF 1

3.05 *HEADWALL WITH ENERGY DISSIPATOR*
NO SCALE

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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SHEET: SITE DETAILS
NUMBER: C-900
SCALE:
DATE: 01/15/2021

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475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

DRAWN BY: NTG | CHECKED BY: WPS
PROJECT # 201044

EAS000430

STD-17-52603-1BARREL_BOXBY.DGN

1 @ 8 x 6 REINFORCED CONCRETE BOX BRIDGE

Maximum Fill Height ft.	Dimensions ST in.	SB in.	WT in.	BW in.	Bars TST Size	No.	Spacing in.	Length ft.	Bars TSB Size	No.	Spacing in.	Length ft.	Bars BST Size	No.	Spacing in.	Length ft.	Bars BSB Size	No.	Spacing in.	Length ft.	Bars EWE Size	No.	Spacing in.	Length ft.	Bars EWI Size	No.	Spacing in.	Length ft.	Bars LNT No.	Bars LND No.	Bars WS No.	Concrete CY/LF	Reinf. Steel LBS/LF
No Fill	9.5	9	8	9.33	4	1	12	9.83	6	2	6	9.83	8	1	12	9.83	4	2	12	6.00	5	2	12	6.00	54	16	-4	0.89	192
3	11	11	8	9.33	4	1	12	9.83	7	2	6	9.83	8	1	12	9.83	4	2	12	6.00	5	2	12	6.00	62	16	-4	0.96	202
5	9	9	8	9.33	4	1	12	9.83	7	2	6	9.83	8	1	12	9.83	4	2	12	6.00	5	2	12	6.00	62	0	-4	0.84	193
10	9	9	8	9.33	4	1	12	9.83	8	2	6	9.83	8	1	12	9.83	4	2	12	6.00	5	2	12	6.00	62	0	-4	0.84	201
20	10	11	8	9.33	4	1	12	9.83	7	2	6	9.83	8	1	12	9.83	4	2	12	6.00	5	2	12	6.00	62	0	-4	0.94	210
30	14	16	9	9.67	4	1	12	9.50	7	2	6	9.50	9	1	12	10.00	4	1	12	10.00	4	2	12	6.00	62	0	-4	1.20	264
40	16	19	10	9.67	4	1	12	9.17	7	2	6	9.17	8	1	12	10.17	4	1	12	10.17	4	2	12	6.00	62	0	-4	1.52	246
50	21	21	11	9.83	4	1	12	9.33	7	2	6	9.33	7	2	6	10.33	4	1	12	10.33	4	2	12	6.00	62	0	-4	1.75	209
60	24	24	12	10.00	4	1	12	9.00	7	2	6	9.00	7	2	6	10.00	4	1	12	10.00	4	2	13	6.00	62	0	-4	2.00	213

1 @ 8 x 7 REINFORCED CONCRETE BOX BRIDGE

Maximum Fill Height ft.	Dimensions ST in.	SB in.	WT in.	BW in.	Bars TST Size	No.	Spacing in.	Length ft.	Bars TSB Size	No.	Spacing in.	Length ft.	Bars BST Size	No.	Spacing in.	Length ft.	Bars BSB Size	No.	Spacing in.	Length ft.	Bars EWE Size	No.	Spacing in.	Length ft.	Bars EWI Size	No.	Spacing in.	Length ft.	Bars LNT No.	Bars LND No.	Bars WS No.	Concrete CY/LF	Reinf. Steel LBS/LF
No Fill	9.5	9	8	9.33	4	1	12	9.83	6	2	6	9.83	8	1	12	9.83	4	2	12	7.00	5	2	12	7.00	68	16	-4	0.91	198
3	11	11	8	9.33	4	1	12	9.83	7	2	6	9.83	8	1	12	9.83	4	2	12	7.00	5	2	12	7.00	68	16	-4	1.01	208
5	9	9	8	9.33	4	1	12	9.83	7	2	6	9.83	8	2	6	9.83	4	1	12	9.83	4	2	12	7.00	68	0	-4	0.89	200
10	9	9	8	9.33	4	1	12	9.83	8	2	6	9.83	8	2	6	9.83	4	1	12	9.83	4	2	12	7.00	68	0	-4	0.89	217
20	10	11	8	9.33	4	1	12	9.83	7	2	6	9.83	8	2	6	9.83	4	2	12	7.00	7	2	12	7.00	68	0	-4	0.98	224
30	14	16	10	9.67	4	1	12	9.17	7	2	6	9.17	8	2	6	10.17	4	1	12	10.17	4	2	12	7.00	68	0	-4	1.39	217
40	16	19	11	9.83	4	1	12	9.33	7	2	6	9.33	7	2	6	10.33	4	1	12	10.33	4	2	12	7.00	68	0	-4	1.66	222
50	21	21	12	10.00	4	1	12	9.50	7	2	6	9.50	7	2	6	10.50	4	1	12	10.50	4	2	12	7.00	70	0	-4	1.98	233
60	24	24	13	10.17	4	1	12	9.67	7	2	6	9.67	7	2	6	10.67	4	1	12	10.67	4	2	12	7.00	70	0	-4	2.14	235

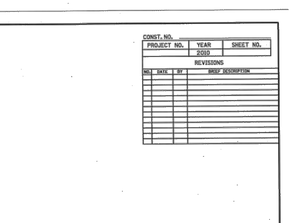
1 @ 8 x 8 REINFORCED CONCRETE BOX BRIDGE

Maximum Fill Height ft.	Dimensions ST in.	SB in.	WT in.	BW in.	Bars TST Size	No.	Spacing in.	Length ft.	Bars TSB Size	No.	Spacing in.	Length ft.	Bars BST Size	No.	Spacing in.	Length ft.	Bars BSB Size	No.	Spacing in.	Length ft.	Bars EWE Size	No.	Spacing in.	Length ft.	Bars EWI Size	No.	Spacing in.	Length ft.	Bars LNT No.	Bars LND No.	Bars WS No.	Concrete CY/LF	Reinf. Steel LBS/LF
No Fill	9.5	9	8	9.33	4	1	12	9.83	6	2	6	9.83	8	1	12	9.83	4	2	12	8.00	5	2	12	8.00	62	16	-4	0.99	224
3	11	11	8	9.33	4	1	12	9.83	7	2	6	9.83	8	1	12	9.83	4	2	12	8.00	5	2	12	8.00	62	16	-4	1.06	214
5	9	9	8	9.33	4	1	12	9.83	7	2	6	9.83	8	2	6	9.83	4	1	12	9.83	4	2	12	8.00	70	0	-4	0.94	206
10	10	12	9	9.50	4	1	12	9.83	8	2	6	9.83	8	2	6	9.83	4	1	12	9.83	4	2	12	8.00	70	0	-4	1.03	233
20	14	16	11	9.83	4	1	12	9.33	7	2	6	9.33	9	1	12	10.33	4	1	12	10.33	4	2	12	8.00	70	0	-4	1.50	245
30	18	19	12	10.00	4	1	12	9.50	7	2	6	9.50	9	1	12	10.50	4	1	12	10.50	4	2	12	8.00	74	0	-4	1.79	249
40	21	21	13	10.33	4	1	12	9.83	7	2	6	9.83	7	2	6	10.83	4	1	12	10.83	4	2	12	8.00	74	0	-4	2.10	260
60	24	24	15	10.50	4	1	12	10.00	7	2	6	10.00	7	2	6	11.00	4	1	12	11.00	4	2	12	8.00	0	0	-6	2.37	281

Note: Maximum fill height shown in the table is measured from the bottom of the top slab. To obtain the total fill height from the flow line, add the height of the box.
Note: When height of fill above the top slab is less than 1 foot, the top mat of reinforcing in the top slab shall be constructed with 2-1/2 inches of concrete cover.

The following bar information applies to all fill cases in the tables above:
Bars LNT Size = 4 Spacing = 12 in.
Bars LND Size = 5 Spacing = 6 in.
Bars WS Size = 5 Length = 5.00 ft. Spacing = 12 in.

DESIGNED BY: ELLISLP
DRAWN BY: KEVIN WHITTEN
SUPERVISED BY: RSMITH
CHECKED BY: ELLISLP
DATE: 3-09
DATE: 3-09
DATE: 12-09
DATE: 3-09



TYPICAL SECTION

CONST. NO.
PROJECT NO. | YEAR 2010 | SHEET NO.
REVISIONS
NO. | DATE | BY | BRIEF DESCRIPTION

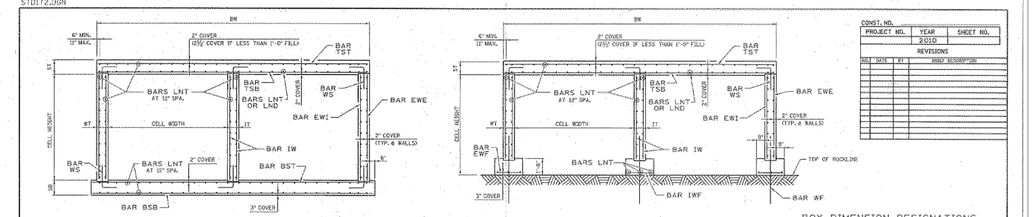
NOTES FOR DESCRIPTIONS OF BOX DIMENSIONS AND REINFORCING BAR DESIGNATIONS SEE STANDARD DRAWING NO. STD-17-5.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STANDARD REINFORCED CONCRETE BOX BRIDGE
INTERIOR SECTION
SPANS: 1 BARREL AT 8'-0" CLEAR HEIGHTS 6'-0" THRU 8'-0"
0' THRU 60' FILL
2010

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

STD-17-53

STD172.DGN



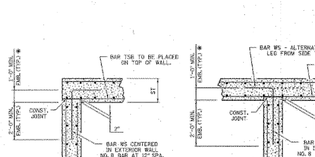
BOX BRIDGE

SLAB BRIDGE

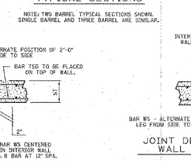
CONST. NO.
PROJECT NO. | YEAR 2010 | SHEET NO.
REVISIONS
NO. | DATE | BY | BRIEF DESCRIPTION

TYPICAL SECTIONS

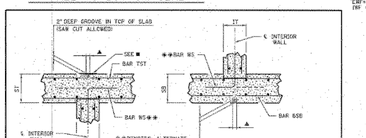
NOTE: TWO BARREL TYPICAL SECTIONS SHOWN. SINGLE BARREL AND THREE BARREL ARE SIMILAR.



JOINT DETAIL FOR WALL TO SLAB OR FOOTING



JOINT DETAIL FOR INTERIOR WALL TO BOTTOM SLAB



BOX OR SLAB BRIDGE

BOX BRIDGE

▲ BAR TST OR BAR BSB MUST BE DISCONTINUOUS AT THE GROOVE. THE GROOVE SHALL ALIGN WITH CENTER OF INTERIOR WALL. BAR TST OR BAR BSB SHALL BE CENTERED WITH RESPECT TO THE CELL WIDTH.

■ BUTYL RUBBER OR NEOPRENE STRIP 12 INCH WIDE BY ¼ INCH THICK SHALL COVER THE FULL LENGTH OF THE GROOVE IN THE TOP SLAB. STRIP MUST BE SET IN A BED OF BUTYL RUBBER CEMENT OVER EDGE OF THE CONTACT AREA.

✱✱ DENOTES: ALTERNATE POSITION OF 2'-0" LEG FROM SIDE TO SIDE.

MOMENT BREAK DETAIL FOR MULTIPLE BARREL BOX & SLAB BRIDGES

NOTE: MANDATORY FOR FILL HEIGHTS GREATER THAN 10 FEET.

BOX DIMENSION DESIGNATIONS

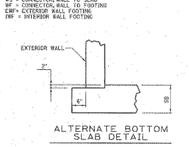
THE BOX DIMENSION DESIGNATIONS IDENTIFY THE BOX ELEMENTS AS FOLLOWS:

SB = BOTTOM SLAB THICKNESS
ST = TOP SLAB THICKNESS
WT = EXTERIOR WALL THICKNESS
IT = INTERIOR WALL THICKNESS
BW = BOX WIDTH

REINFORCING BAR DESIGNATIONS

THE REINFORCING BAR DESIGNATIONS IDENTIFY THE LOCATION AND PLACEMENT OF THE BARS AS FOLLOWS:

TST = TOP SLAB, TOP FACE
TSB = TOP SLAB, BOTTOM FACE
BST = BOTTOM SLAB, TOP FACE
BSB = BOTTOM SLAB, BOTTOM FACE
EWE = EXTERIOR WALL, EXTERIOR FACE
EWI = EXTERIOR WALL, INTERIOR FACE
IW = INTERIOR WALL, BOTH FACES
LNT = LONGITUDINAL TOP
LND = LONGITUDINAL DISTRIBUTION BAR, TOP SLAB, BOTTOM FACE
WS = CONNECTOR, WALL TO SLAB
WF = CONNECTOR, WALL TO FOOTING
EWF = EXTERIOR WALL FOOTING
IWF = INTERIOR WALL FOOTING



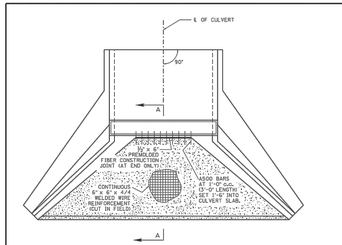
ALTERNATE BOTTOM SLAB DETAIL

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTIONS AND DETAILS
STANDARD REINFORCED CONCRETE BRIDGE BOX AND SLAB TYPE
2010

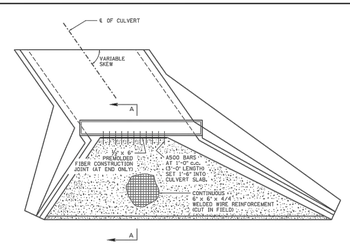
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

STD-17-5

STD175.DGN



PLAN VIEW FOR BOX CULVERTS ON 90 DEGREE SKEW TO CENTERLINE



PLAN VIEW FOR BOX CULVERTS ON VARIABLE DEGREE SKEW TO CENTERLINE

REVISIONS
M/R | NO. | DATE | BY | BRIEF DESCRIPTION
| | | | REVISIONS ASTM SPECIFICATION NUMBER

M/R DENOTES MINOR REVISSION, FHWA APPROVAL NOT REQUIRED.

GENERAL NOTES

① PAVED OUTLET DETAIL IS TO BE USED ONLY WHEN SPECIFIED IN DESIGN PLANS.

② CONCRETE PAVED OUTLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTIONS 204 AND 604 OR CURRENT SPECIAL PROVISIONS.

CONCRETE: CLASS "A", f'_c = 3000 PSI MINIMUM AT 28 DAYS.

REINFORCING STEEL: ASTM A615 GRADE 60

WELDED WIRE REINFORCEMENT: DETAILS AND PLACEMENT TO CONFORM TO CURRENT CRSI STANDARDS. THE MATERIALS TO CONFORM TO ASTM A1064. ⚠

FOUNDATION FILL MATERIAL: TO BE SAME AS THAT REQUIRED BY THE STANDARD SPECIFICATIONS FOR USE UNDER THE PROPOSED CONCRETE BOX CULVERT.

FORMS AND FINISH: TO CONFORM TO STANDARD SPECIFICATIONS.

③ CONCRETE JOINT MATERIAL IS TO BE ½" x 6" PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 - JOINT MATERIALS OF THE STANDARD SPECIFICATIONS. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "A" CONCRETE BOX BRIDGE.

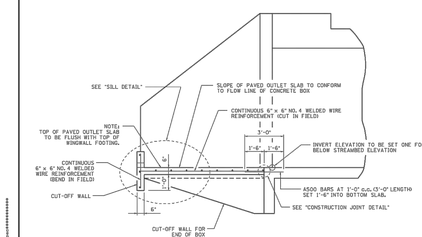
④ PAYMENT WILL BE MADE AS FOLLOWS:

FOUNDATION FILL MATERIAL PER CUBIC YARD.
CLASS "A" CONCRETE (BOX BRIDGES) PER CUBIC YARD.
STEEL BAR REINFORCEMENT (BOX BRIDGES) PER POUND.

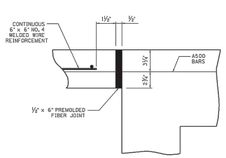
NOTES:
① WELDED WIRE REINFORCEMENT: TO BE 6" x 6" NO. 4 GAUGE WELDED WIRE AT 58 LBS./100 SQ. FT. WITH 9" MINIMUM LAP. WIRE TO CONFORM TO ASTM A1064 SPECIFICATIONS. THE WIRE IS TO BE PLACED 2" FROM TOP OF THE EDGE OF THE SLAB AND SHALL BE PLACED AT ONE HALF THE DEPTH OF THE SLAB. ⚠
② THE CONTRACTOR MAY SUBSTITUTE AN EQUIVALENT AREA OF ASTM NUMBER 3 REINFORCING BARS FOR THE 6" x 6" NO. 4 WELDED WIRE REINFORCEMENT.

ESTIMATED QUANTITIES

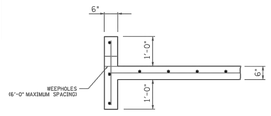
6" x 6" NO. 4 GAUGE WELDED WIRE REINFORCEMENT	REINFORCING STEEL (A500 BARS)	CONCRETE CLASS "A" SLAB	CONCRETE CLASS "A" CUT-OFF WALL	CONCRETE CLASS "A" SILL
58 LBS./100 SQ. FT.	3,150 LBS. PER A500 BAR	0.019 C.Y. PER SQ. FT.	0.019 C.Y. PER LIN. FT.	0.019 C.Y. PER LIN. FT.



SECTION A-A



CONSTRUCTION JOINT DETAIL



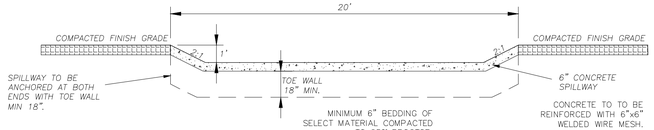
SILL DETAIL

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PAVED OUTLET DETAIL
STANDARD REINFORCED CONCRETE BRIDGE BOX TYPE
2010

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

STD-17-19

DESIGNED BY: CHAD J. MAAS — DATE: 12-09
DRAWN BY: SUSAN BURNS — DATE: 04-09
SUPERVISED BY: CHAD J. MAAS — DATE: 12-09
CHECKED BY: — DATE:



EMERGENCY SPILLWAY

NO SCALE

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

REVISIONS

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475 Metroplex Drive, Suite 212 Nashville, TN 37211 | 615-256-0290

SHEET: SITE DETAILS
NUMBER: C-901
DRAWN BY: NTG
CHECKED BY: WPS
PROJECT # 201044
SCALE:
DATE: 01/15/2021

EAS000431

STD173.DGN

ELEVATION VIEW OF WINGWALL

TYPICAL CORNER DETAIL

CONST. NO.	PROJECT NO.	YEAR	SHEET NO.
		2010	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTES

1. WALL JOINTS - AN EXPANSION JOINT IS REQUIRED AT THE LOCATION SHOWN ON THIS DRAWING FOR ALL BOX BRIDGES, AND FOR SLAB BRIDGES WHENEVER THE WINGWALL LENGTH IS GREATER THAN 15 FEET. FOR WINGWALLS GREATER THAN 20 FEET, PLACE A CONTRACTION JOINT AT MID-LENGTH OF WINGWALL.
2. IF MODIFICATION BRIDGES ARE USED, THE JOINTS SHALL BE SPACED TO CORRESPOND WITH PARTICIPATING WATERSTOPS SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 905. CONCRETE USED IN THE WORK SHALL MEET THE REQUIREMENTS OF SPECIFICATIONS SECTION 509. FOOTING AND FOOTING REINFORCEMENT SHALL BE CONTINUOUS.

CONTRACTION JOINT

EXPANSION JOINT DETAIL

TYPICAL KEY DETAIL

THE EXPANSION JOINT SHALL BE USED IN THE WALL ONLY AND NOT CARRIED THROUGH THE FOOTING. NO REINFORCEMENT SHALL PASS THROUGH THE JOINT. ONE END OF THE DOWELS SHALL BE PAINTED AND GREASED TO PERMIT MOVEMENT. A TAPERED CAP SHALL BE USED ON THE END OF THE RETURNUS FIBER AND DOWEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS A CONCRETE.

WALL JOINT DETAILS

PLAN VIEW OF WINGWALLS

(90° SKEW SHOWN-OTHER SKEWS SIMILAR)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TYPICAL WINGWALL DETAILS AND NOTES

STANDARD REINFORCED CONCRETE BRIDGE BOX AND SLAB TYPE

2010

CORRECT Edward P. Wasserman
EDWARD P. WASSERMAN

STD-17-10

DESIGNED BY: JOHN J. MARK — DATE: 08-08
DRAWN BY: STEVEN BUSH — DATE: 08-08
SUPERVISED BY: JOHN J. MARK — DATE: 08-08
CHECKED BY: — DATE:

STD174.DGN

45° SKEW

2:1 SLOPE

H	WL	hl	WS	hs	CONCRETE (C.Y.)	REINF. STEEL (LBS.)
4	9.75	2.50	4.50	1.75	4.9	720
4.5	11.00	2.75	5.00	1.75	5.9	782
5	12.25	3.25	5.50	2.00	7.6	886
5.5	13.75	3.50	6.25	2.25	9.1	1,067
6	15.00	3.75	6.75	2.50	10.3	1,173
6.5	16.25	4.25	7.25	2.75	12.2	1,242
7	17.75	4.50	8.00	3.00	14.7	1,614
7.5	19.00	4.75	8.50	3.00	16.4	1,731
8	20.25	5.25	9.00	3.25	19.1	1,878
8.5	21.50	5.50	9.75	3.50	21.3	2,090
9	23.00	5.75	10.25	3.75	24.6	3,137
9.5	24.25	6.25	10.75	4.00	27.3	3,253
10	25.50	6.50	11.50	4.00	29.9	3,573
10.5	26.75	6.75	12.00	4.25	32.6	3,756
11	28.25	7.25	12.50	4.50	37.7	4,237
11.5	29.50	7.50	13.25	4.75	42.4	5,191
12	30.75	7.75	13.75	5.00	46.1	5,566
12.5	32.25	8.25	14.25	5.25	50.2	5,730
13	33.50	8.50	15.00	5.25	57.0	6,753
13.5	34.75	8.75	15.50	5.50	60.9	7,336
14	36.00	9.00	16.00	5.75	66.2	7,741
14.5	37.00	9.50	16.75	6.00	71.5	8,221
15	38.75	9.75	17.25	6.25	80.1	8,868
15.5	40.00	10.00	17.75	6.50	84.8	9,888
16	41.25	10.50	18.50	6.50	90.3	10,287
16.5	42.75	10.75	19.00	6.75	95.9	10,229
17	44.00	11.00	19.75	7.00	109.5	13,789
17.5	45.25	11.50	20.25	7.25	115.7	13,669
18	46.75	11.75	20.75	7.50	122.1	14,206
18.5	48.00	12.00	21.50	7.75	128.6	14,903
19	49.25	12.50	22.00	7.75	141.7	15,966
19.5	50.50	12.75	22.50	8.00	148.4	18,028
20	52.00	13.00	23.25	8.25	161.3	19,025
20.5	53.25	13.50	23.75	8.50	169.1	19,598
21	54.50	13.75	24.25	8.75	189.1	21,959

3:1 SLOPE

H	WL	hl	WS	hs	CONCRETE (C.Y.)	REINF. STEEL (LBS.)
4	11.25	3.00	5.50	2.00	6.0	765
4.5	12.75	3.25	6.25	2.25	7.3	845
5	14.25	3.75	7.00	2.50	9.4	987
5.5	15.75	4.00	7.75	2.75	11.1	1,067
6	17.25	4.50	8.50	3.00	13.0	1,273
6.5	18.75	4.75	9.25	3.25	14.9	1,376
7	20.25	5.25	10.00	3.50	18.4	1,776
7.5	21.75	5.50	10.75	3.75	20.8	1,935
8	23.25	6.00	11.50	4.00	22.9	2,097
8.5	24.75	6.25	12.25	4.50	26.2	2,302
9	26.25	6.75	13.00	4.75	30.4	3,505
9.5	27.75	7.00	13.50	5.00	34.3	3,703
10	29.25	7.50	14.25	5.25	37.8	4,078
10.5	30.75	7.75	15.00	5.50	41.3	4,299
11	32.25	8.25	15.75	5.75	46.6	4,795
11.5	33.50	8.50	16.50	6.00	51.9	5,897
12	35.00	8.75	17.25	6.25	56.1	6,256
12.5	36.50	9.25	18.00	6.50	61.9	6,514
13	38.00	9.50	18.75	6.75	70.3	7,629
13.5	39.50	10.00	19.50	7.00	76.2	8,299
14	41.00	10.25	20.25	7.25	81.5	8,673
14.5	42.50	10.75	21.00	7.50	87.3	9,289
15	44.00	11.00	21.50	7.75	101.3	10,056
15.5	45.50	11.50	22.25	8.00	107.9	11,271
16	47.00	11.75	23.00	8.25	114.3	11,918
16.5	48.50	12.25	23.75	8.50	121.4	14,121
17	50.00	12.50	24.50	8.75	132.4	15,415
17.5	51.50	13.00	25.25	9.00	145.7	15,980
18	53.00	13.25	26.00	9.25	153.4	16,233
18.5	54.50	13.75	26.75	9.50	161.8	16,591
19	56.00	14.00	27.50	9.75	177.9	19,233
19.5	57.50	14.50	29.25	10.00	187.1	20,634
20	59.00	14.75	29.00	10.25	196.0	21,405
20.5	60.50	15.25	29.75	10.50	212.2	22,465
21	61.75	15.50	30.25	10.75	234.6	24,397

4:1 SLOPE

H	WL	hl	WS	hs	CONCRETE (C.Y.)	REINF. STEEL (LBS.)
4	12.25	3.25	6.50	2.25	6.3	806
4.5	13.75	3.50	7.25	2.75	8.3	887
5	15.50	4.00	8.00	3.00	10.7	1,023
5.5	17.00	4.25	9.00	3.25	12.5	1,225
6	18.75	4.75	9.75	3.50	14.7	1,360
6.5	20.25	5.25	10.50	3.75	17.4	1,474
7	21.75	5.50	11.50	4.00	20.6	1,885
7.5	23.50	6.00	12.25	4.50	23.5	2,029
8	25.00	6.25	13.00	4.75	26.2	2,183
8.5	26.50	6.75	14.00	5.00	29.7	3,451
9	28.25	7.25	14.75	5.25	33.0	3,819
9.5	29.75	7.50	15.50	5.50	36.3	3,973
10	31.25	8.00	16.50	6.00	42.4	4,366
10.5	33.00	8.25	17.25	6.25	46.3	4,594
11	34.50	8.75	18.00	6.50	51.0	5,206
11.5	36.00	9.00	19.00	6.75	59.3	6,336
12	37.75	9.50	19.75	7.00	64.9	6,784
12.5	39.25	10.00	20.50	7.25	70.0	6,997
13	40.75	10.25	21.25	7.75	79.3	8,146
13.5	42.50	10.75	22.25	8.00	85.6	8,859
14	44.00	11.00	23.00	8.25	94.5	9,374
14.5	45.75	11.50	23.75	8.50	101.2	9,976
15	47.25	12.00	24.75	8.75	113.9	10,756

6:1 SLOPE

H	WL	hl	WS	hs	CONCRETE (C.Y.)	REINF. STEEL (LBS.)
4	13.25	3.50	7.50	2.75	7.8	947
4.5	15.00	3.75	8.50	3.00	9.4	940
5	16.75	4.25	9.50	3.50	12.2	1,090
5.5	18.50	4.75	10.50	3.75	14.4	1,304
6	20.25	5.25	11.50	4.00	17.4	1,482
6.5	22.00	5.50	12.50	4.50	20.0	1,594
7	23.50	6.00	13.25	4.75	23.4	1,950

CONST. NO.	PROJECT NO.	YEAR	SHEET NO.
		2010	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: QUANTITIES ON THIS SHEET ARE ESTIMATED TOTALS FOR ALL FOUR WINGWALLS.

NOTE: ADDITIONAL CONCRETE AND REINFORCEMENT QUANTITIES FOR BOX CULVERT CUT-OFF WALL SHALL BE ADJUSTED BASED ON AS-BUILT DIMENSIONS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

WINGWALL DIMENSIONS AND QUANTITIES

STANDARD REINFORCED CONCRETE BRIDGE BOX AND SLAB TYPE

2010

CORRECT Edward P. Wasserman
EDWARD P. WASSERMAN

STD-17-14

DESIGNED BY: JOHN J. MARK — DATE: 08-08
DRAWN BY: STEVEN BUSH — DATE: 08-08
SUPERVISED BY: JOHN J. MARK — DATE: 08-08
CHECKED BY: — DATE:

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

SHEET: SITE DETAILS
NUMBER: C-902

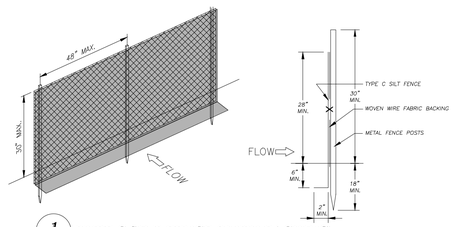
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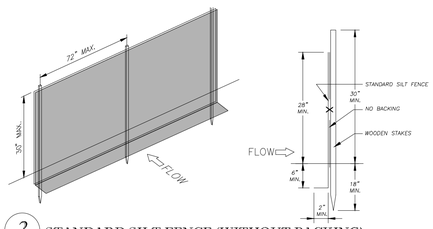
DRAWN BY: NTG | CHECKED BY: WPS | SCALE:
PROJECT # 201044 | DATE: 01/15/2021

REVISIONS

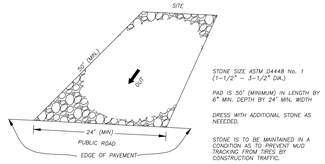
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1 TYPE C SILT FENCE (WITH BACKING)
NO SCALE



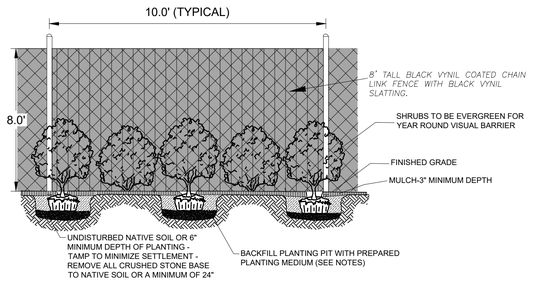
2 STANDARD SILT FENCE (WITHOUT BACKING)
NO SCALE



3 TEMPORARY CONSTRUCTION EXIT
NO SCALE

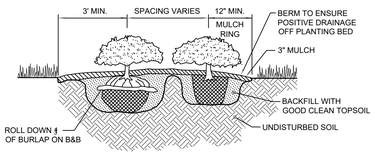
NOTES:

1. PLANT MATERIAL SHALL CONFORM TO "THE AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1; LATEST EDITION) FOR SIZE FORM AND QUALITY
2. MYCORRHIZAL INOCULATES AND SUPER - ABSORBENT MATERIAL ADDED TO TOPSOIL BACKFILL AT THE MANUFACTURER'S RECOMMENDED RATE AS PER SPECIFICATIONS

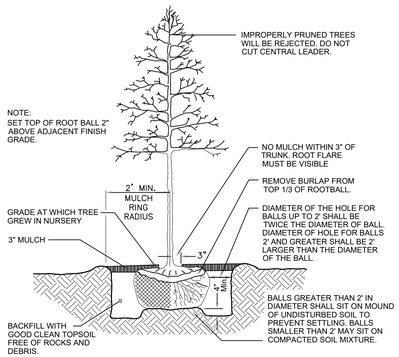


REMOVE ALL SYNTHETIC MATERIAL FROM AROUND ROOTBALL. REMOVE BURLAP AND ROPE FROM TOP ⅓ OF ROOTBALL

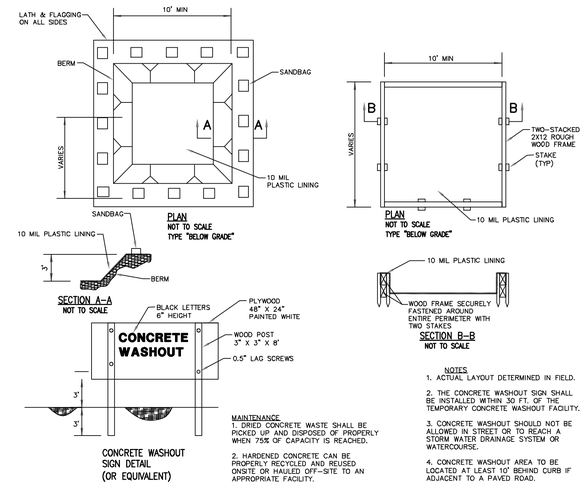
SCREENING ELEVATION VIEW
N.T.S.



SHRUB / GROUND COVER PLANTING
NOT TO SCALE



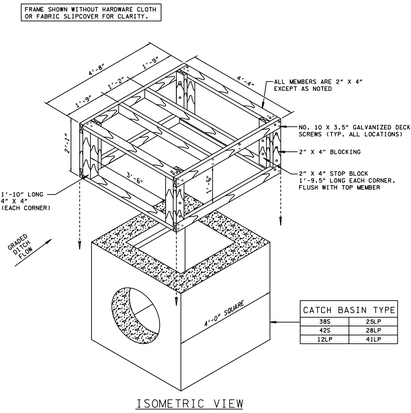
TREE PLANTING
NOT TO SCALE



NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. CONCRETE WASHOUT SHOULD NOT BE ALLOWED IN STREET OR TO REACH A STORM WATER DRAINAGE SYSTEM OR WATERCOURSE.
4. CONCRETE WASHOUT AREA TO BE LOCATED AT LEAST 10' BEHIND CURB IF ADJACENT TO A PAVED ROAD.

4.03 CONCRETE WASHOUT
NO SCALE



CATCH BASIN TYPE	
38S	25LP
42S	28LP
12LP	41LP

ISOMETRIC VIEW
CATCH BASIN FILTER ASSEMBLY
N.T.S.

EROSION CONTROL PLAN LEGEND: ① CATCH BASIN FILTER ASSEMBLY (TYPE 1)

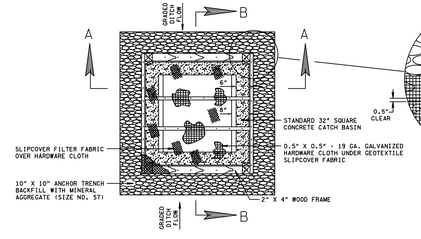
CATCH BASIN FILTER ASSEMBLY GENERAL NOTES

(A) DRAWING TO BE USED WITH STANDARD TYPES 38S, 42S, AND D-CB-SERIES LP CATCH BASINS. SEE STANDARD DRAWINGS FOR CATCH BASIN DIMENSIONS AND DETAILS.

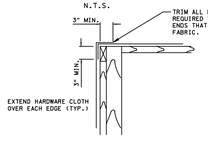
(B) THE CATCH BASIN FILTER ASSEMBLY IS TO BE USED WHERE INTERCEPTION OF CONCENTRATED FLOWS (e.g. DITCHES AND SWALES) IS REQUIRED AFTER STRUCTURES ARE CONSTRUCTED BUT PRIOR TO ESTABLISHING VEGETATION.

(C) 2 x 4 AND 4 x 4 PRESSURE TREATED MEMBERS SHOWN ARE NOMINAL DIMENSIONS. TYPICAL ACTUAL DIMENSIONS ARE 1.5 x 3.5 INCH AND 3.5 x 3.5 INCH RESPECTIVELY. ACTUAL DIMENSIONS OF WOOD MAY VARY EVEN GREATER DEPENDING ON MOISTURE CONTENT. ALL WOOD SHALL BE NO. 2 PRESSURE TREATED SOUTHERN YELLOW PINE.

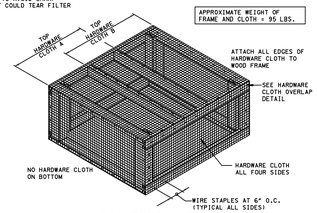
(D) PERIODIC MAINTENANCE AND CLEANING OF THE STRUCTURE SHALL BE PERFORMED AS NECESSARY TO PREVENT CLOGGING OF THE FILTER FABRIC. FILTER ASSEMBLY MAY BE CLEANED AT AN ACCEPTABLE LOCATION WITH WATER OR BY BRUSHING AND BLOWING CLEAN WITH COMPRESSED AIR. MAINTENANCE AND CLEANING OF STRUCTURES WILL NOT BE MEASURED AND PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.



PLAN VIEW - CATCH BASIN FILTER ASSEMBLY
N.T.S.



HARDWARE CLOTH OVERLAP DETAIL
N.T.S.



ISOMETRIC VIEW
FRAME WITH HARDWARE CLOTH
N.T.S.

INSTALLATION SEQUENCE FOR HARDWARE CLOTH

INSTALL TOP HARDWARE CLOTH A. PULL MATERIAL TIGHT, LAP AND STAPLE AS SHOWN. CUT TO LENGTH AND TRIM SHARP EDGES.

INSTALL TOP HARDWARE CLOTH B - OVERLAPPING CLOTH A. PULL CLOTH TIGHT, LAP, AND STAPLE AS SHOWN. CUT TO LENGTH AND TRIM ALL SHARP EDGES.

INSTALL HARDWARE CLOTH AROUND EXTERIOR OF WOOD FRAME USING ONE CONTINUOUS PIECE BEGINNING AT A CORNER, ENDING AT SAME CORNER, AND OVERLAPPING AS REQUIRED. PULL TIGHT AND STAPLE EACH SIDE BEFORE PROCEEDING WITH SUBSEQUENT SIDES.

TRIM EXCESS ALONG BOTTOM AS NECESSARY.

CATCH BASIN FILTER ASSEMBLY GENERAL NOTES (CONT.)

(E) DEFECTIVE WOOD, HARDWARE CLOTH OR FILTER FABRIC SHALL BE REPLACED AS NECESSARY TO INSURE PROPER FUNCTIONING OF FILTER ASSEMBLY. REUSE OF ASSEMBLIES IS ACCEPTABLE PROVIDED THE UNIT IS IN PROPER WORKING CONDITION. APPROVAL MUST BE GIVEN BY TDOT ENGINEER.

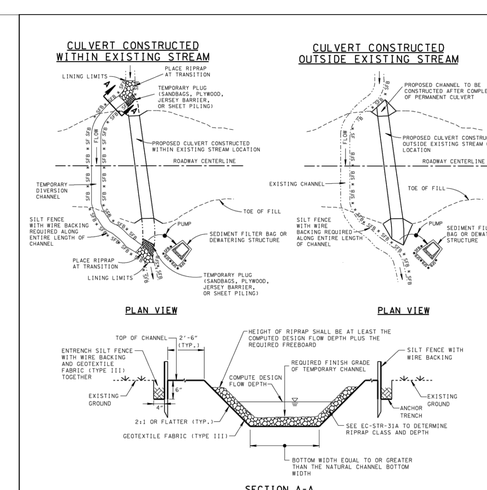
(F) ASSEMBLY AND STONE SHALL BE REMOVED AFTER UPSTREAM VEGETATION HAS BEEN ESTABLISHED OR OTHER SEDIMENT CONTROL STRUCTURES ARE IN PLACE. BACKFILL AND COMPACT ANCHOR TRENCH TO FINAL GRADE AS REQUIRED AFTER REMOVAL.

(G) IF NECESSARY, AT DIRECTION OF TDOT ENGINEER, SLIPCOVER MAY BE SECURED IN PLACE AT THE LOWEST PRACTICAL POINT WITH NYLON STRING, TWINE, WIRE OR OTHER SUITABLE MATERIAL.

(H) WHERE LARGE QUANTITIES OF SEDIMENT OR HIGH VELOCITIES OF APPROACHING WATER ARE ANTICIPATED DUE TO SPACING OF CATCH BASINS, DITCH GRADE, ETC...OTHER EROSION PREVENTION AND SEDIMENT CONTROL DEVICES MAY BE NECESSARY UPSTREAM OF FILTER ASSEMBLY.

(I) ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT AND INSTALL TEMPORARY CATCH BASIN FILTER ASSEMBLY INCLUDING TRENCHING, BACKFILLING, STONE, AND SLIPCOVER SHALL BE PAID FOR UNDER ITEM NUMBER 209-40.41, CATCH BASIN FILTER ASSEMBLY (TYPE 1), PER EACH.

4.04 AREA INLET PROTECTION
NO SCALE



EROSION CONTROL PLAN LEGEND: TEMPORARY DIVERSION CHANNEL (DESCRIBE - SIZE AND TYPE OF LINING)

TEMPORARY DIVERSION CHANNELS GENERAL NOTES

(A) DIVERSION CHANNELS SHALL BE USED TO DIVERT NORMAL STREAM FLOW FROM AN ERODIBLE AREA IN ORDER TO PREVENT POLLUTION OF THE STREAM DUE TO EROSION.

(B) EXAMPLE SHOWN IS FOR NEW CULVERT CONSTRUCTION. OTHER PROJECTS WOULD BE CONSTRUCTED IN A SIMILAR MANNER.

(C) TEMPORARY DIVERSION CHANNELS SHALL BE DESIGNED USING A 2-YEAR, 24-HOUR STORM FREQUENCY FLOW RATE. STANDARD DRAWING EC-STR-31A, MAY BE USED AS A GUIDELINE FOR DETERMINING THE CHANNEL SIZE. FOR ANY SITE WHERE Qsp EXCEEDS 500 CFS, THE DESIGN OF THIS MEASURE SHOULD BE COMPLETED BY A REGISTERED ENGINEER IN THE HYDRAULICS DIVISION. AT SITES WHICH INVOLVE EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE STABILITY OF THE RIPRAP CHANNEL LINING SHOULD BE DESIGNED FOR THE 5-YEAR, 24-HOUR PEAK FLOW.

(D) ALL TEMPORARY DIVERSION CHANNELS SHALL HAVE A TRAPEZOIDAL SHAPE AND THE BOTTOM WIDTH SHALL BE EQUAL TO OR GREATER THAN THE NATURAL CHANNEL BOTTOM WIDTH.

(E) TO DETERMINE RIPRAP CLASS AND DEPTH USE STANDARD DRAWING EC-STR-31A.

(F) ONLY GEOTEXTILE FABRIC (TYPE III) LISTED ON THE QUALIFIED PRODUCTS LIST SHALL BE USED.

(G) GEOTEXTILE (TYPE III) (EROSION CONTROL) SHALL BE USED EITHER WITH OR WITHOUT RIPRAP, AS RECOMMENDED IN NOTE B6 ON STANDARD DRAWING EC-STR-31A.

(H) GEOTEXTILE FABRIC (TYPE III) SHALL BE USED ALONE ONLY IN CHANNELS WITH INTERMITTENT FLOW. USE A RIPRAP LINED CHANNEL OR CULVERT WHERE THE STREAM FLOWS YEAR-ROUND.

(I) WHERE EXCAVATION FOR A DIVERSION CHANNEL EXPOSES BEDROCK, GEOTEXTILE FABRIC AND RIPRAP SHALL BE REQUIRED ONLY ON THE SIDES OF THE CHANNEL.

(J) RIPRAP TRANSITIONS AT THE ENTRANCE AND EXIT OF THE DIVERSION CHANNEL SHALL BE DESIGNED IN ACCORDANCE WITH APPROVED TDOT METHODS.

(K) DURING CONSTRUCTION OF THE DIVERSION CHANNEL, DAMAGE TO THE EXISTING STREAM AND DAMAGE TO THE CANOPY SHALL BE MINIMIZED. ALL EXISTING VEGETATION OUTSIDE THE CUT AND FILL LINES BUT INSIDE THE RIGHT-OF-WAY SHALL NOT BE DISTURBED UNLESS IT INTERFERES WITH SAFETY STANDARDS.

(L) THE PROJECT SHALL BE PLANNED IN ORDER TO MINIMIZE THE LENGTH OF TIME THE DIVERSION WILL BE REQUIRED.

(M) DIVERSION CHANNEL CONSTRUCTION SHALL BE COMPLETED IN THE DRY BEFORE DIVERTING WATER FROM THE EXISTING CHANNEL, WHERE THIS IS NOT FEASIBLE, TEMPORARY FLOW DIVERSION STRUCTURES CAN BE USED UNTIL WORK IS COMPLETE. THESE STRUCTURES CAN BE ANY NON-ERODIBLE MATERIAL.

(N) CONSTRUCTION SHALL PROCEED AS FOLLOWS:

1. CONSTRUCT A MEANDERING TEMPORARY CHANNEL ADJACENT TO THE PROPOSED PROJECT. ISOLATE THE TEMPORARY CHANNEL FROM THE EXISTING CHANNEL WITH TEMPORARY PLUGS. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 209 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. THE DIVERSION CHANNEL SHALL BE STABILIZED AND INSPECTED BY THE PROJECT ENGINEER BEFORE FLOW IS DIVERTED. DIVERT FLOW BY MOVING THE TEMPORARY PLUGS FROM THE TEMPORARY CHANNEL TO THE EXISTING CHANNEL. A COFFER DAM MAY BE USED UPSTREAM TO PREVENT STREAM FLOW DURING THIS OPERATION.
3. CONSTRUCT THE PROJECT IN THE EXISTING STREAM AND PLACE PERMANENT EROSION CONTROL ON THE EXISTING STREAM BANKS.
4. WHERE A TEMPORARY PLUG IS REQUIRED AT THE DOWNSTREAM END OF THE DIVERSION, IT SHOULD BE REMOVED FIRST. THEN REMOVE THE UPPER PLUG IN ORDER TO RELEASE FLOW INTO THE RECONSTRUCTED CHANNEL.
5. REMOVE LINING MATERIALS FROM THE DIVERSION CHANNEL, RESTORE THE AREA TO GRADE, AND STABILIZE EXPOSED SOILS.

(O) ALTERNATIVE DIVERSION METHOD MAY INCLUDE PARALLEL JERSEY BARRIERS LINED WITH POLYETHYLENE SHEETING (6 MIL MINIMUM).

(P) DIVERSION CHANNEL SHALL BE INSPECTED WEEKLY OR AFTER EVERY RAIN EVENT. ANY NEEDED REPAIRS SHALL BE DONE IMMEDIATELY.

(Q) FOR INSTALLATION DETAILS AND ITEM NUMBERS FOR DEWATERING STRUCTURES (EC-STR-31), SEDIMENT FILTER BAGS (EC-STR-21), AND SILT FENCE WITH WIRE BACKING (EC-STR-3C) SEE THEIR RESPECTIVE STANDARD DRAWINGS.

MINOR REVISION - FHWA APPROVAL NOT REQUIRED

NOT TO SCALE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TEMPORARY DIVERSION CHANNEL

10-26-92 EC-STR-31

4.05 TEMPORARY DIVERSION CHANNEL
NO SCALE

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

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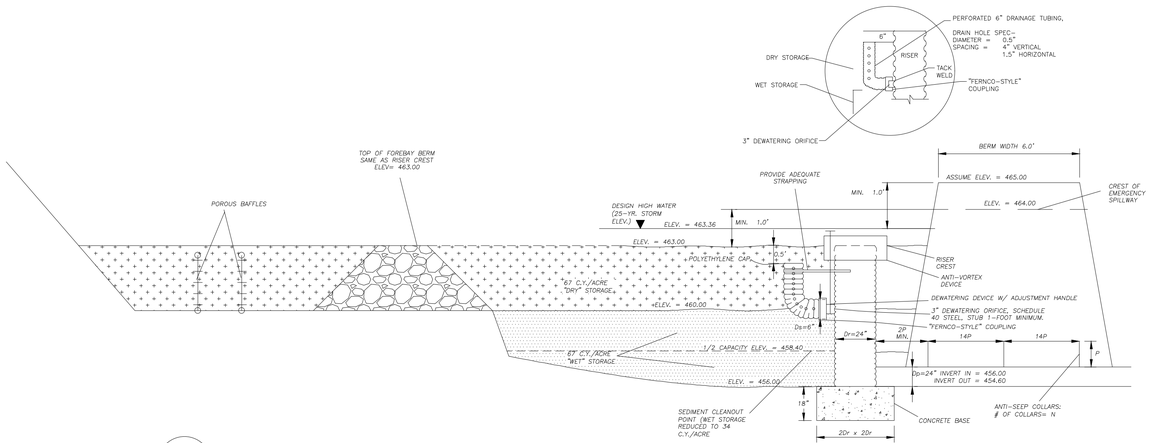
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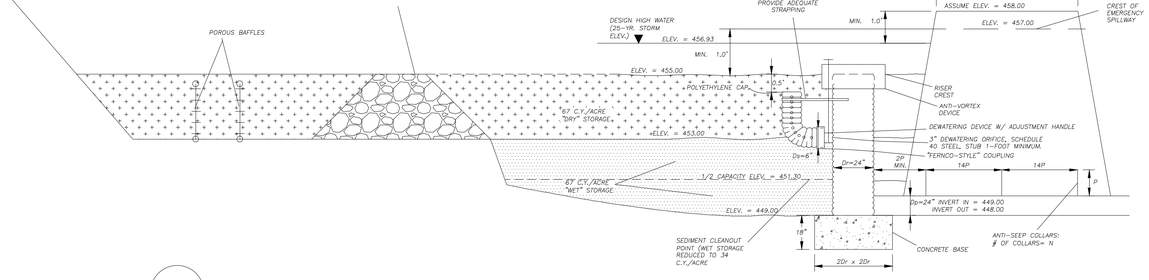
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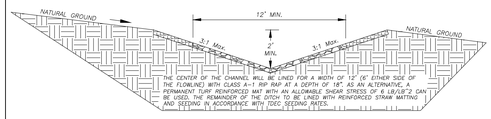
EAS000433



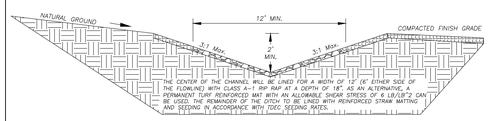
4.06 *SEDIMENT BASIN 1 (OUTFALL 8) CROSS SECTION & DEWATERING APPARATUS WITH DRAWDOWN DEVICE*
NOT TO SCALE



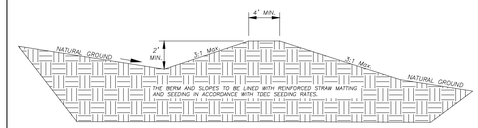
4.07 *SEDIMENT BASIN 2 (OUTFALL 10) CROSS SECTION & DEWATERING APPARATUS WITH DRAWDOWN DEVICE*
NOT TO SCALE



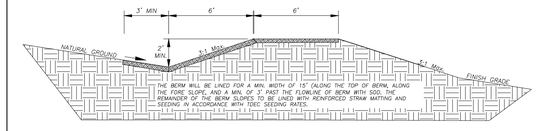
4.08 *TEMPORARY DIVERSION DITCH*
NO SCALE



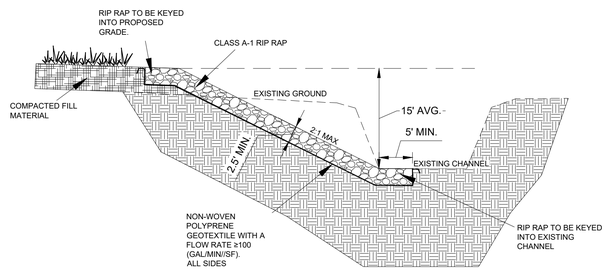
4.09 *PERMANENT DIVERSION DITCH*
NO SCALE



4.10 *DIVERSION BERM*
NO SCALE



4.11 *CONTAINMENT BERM*
NO SCALE



4.12 *RIP RAP REVETMENT-BANK STABILZATION*

COMMUNITY DEVELOPMENT ENTERPRISES
JACKSON SOLAR MICROGRID
ROOSEVELT PARKWAY
JACKSON, MADISON COUNTY, TENNESSEE

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PROJECT # 201044

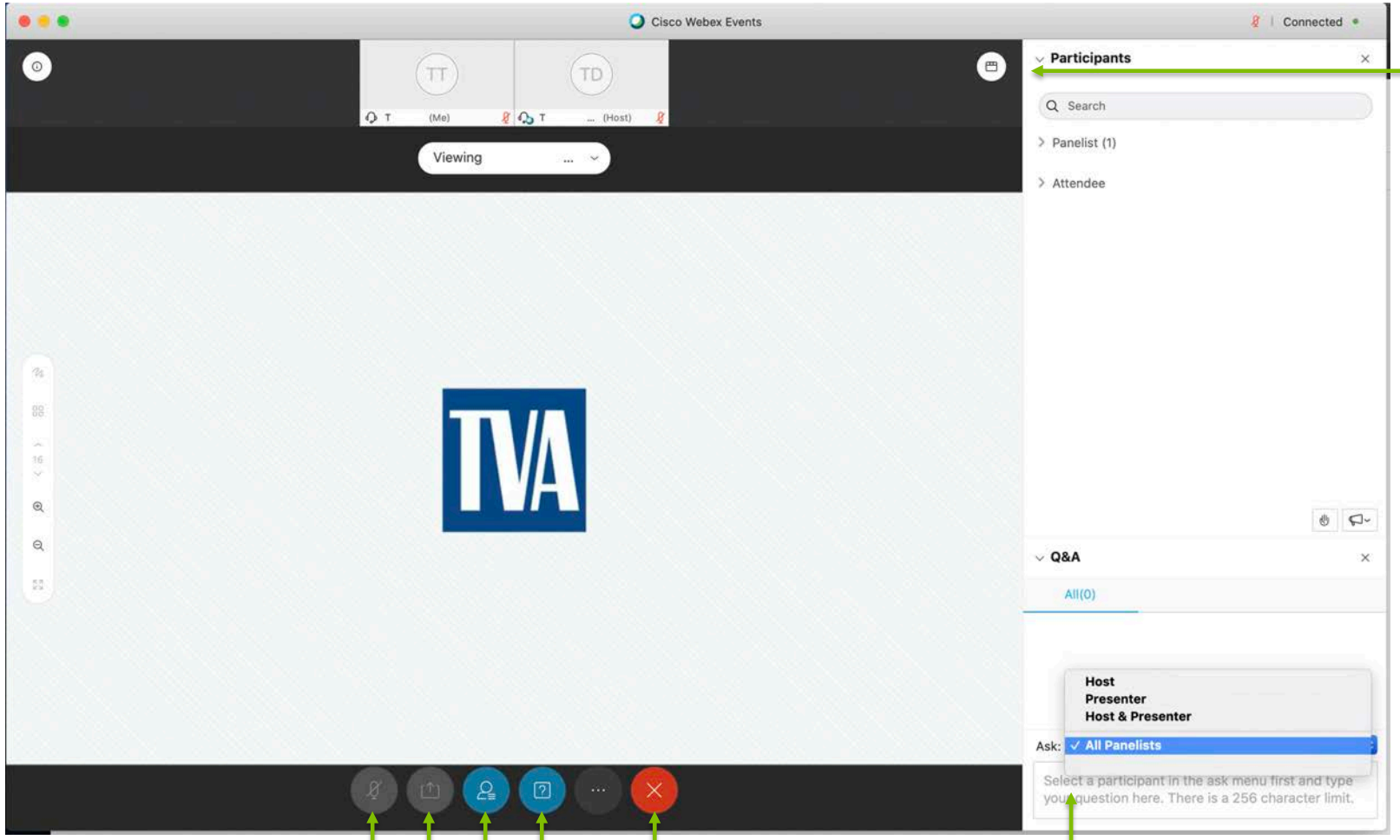
EAS000434



TVA Renewable Energy

August 21, 2020

EAS000435



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Mute

Share (disabled)

Exit event

Ask a question

Participants

Q&A: When available, ask a question here and direct to All Panelists or an individual.

EAS000436

Disasters Don’t Wait. Make Your Plan Today.

Week 1: September 1-5

Make a Plan

Week 2: September 6-12

Build a Kit

Week 3: September 13-19

Prepare for Disasters

Week 4: September 20-26

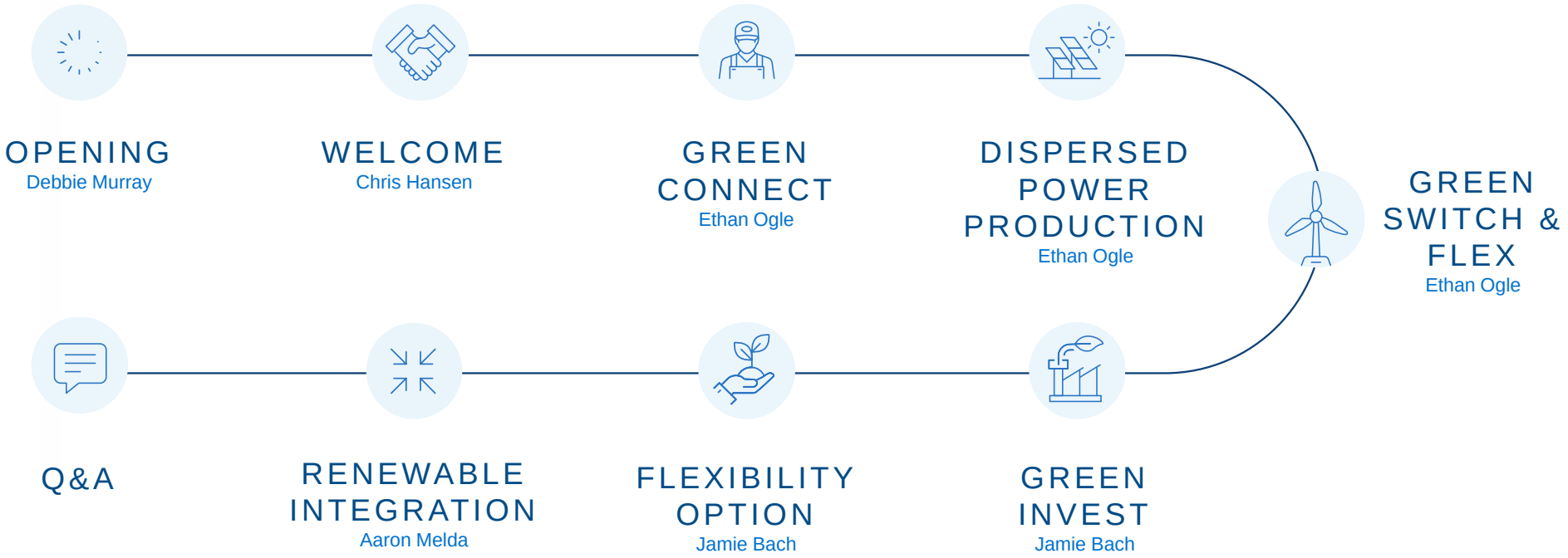
Teach Youth About Preparedness



https://www.ready.gov/september

EAS000437

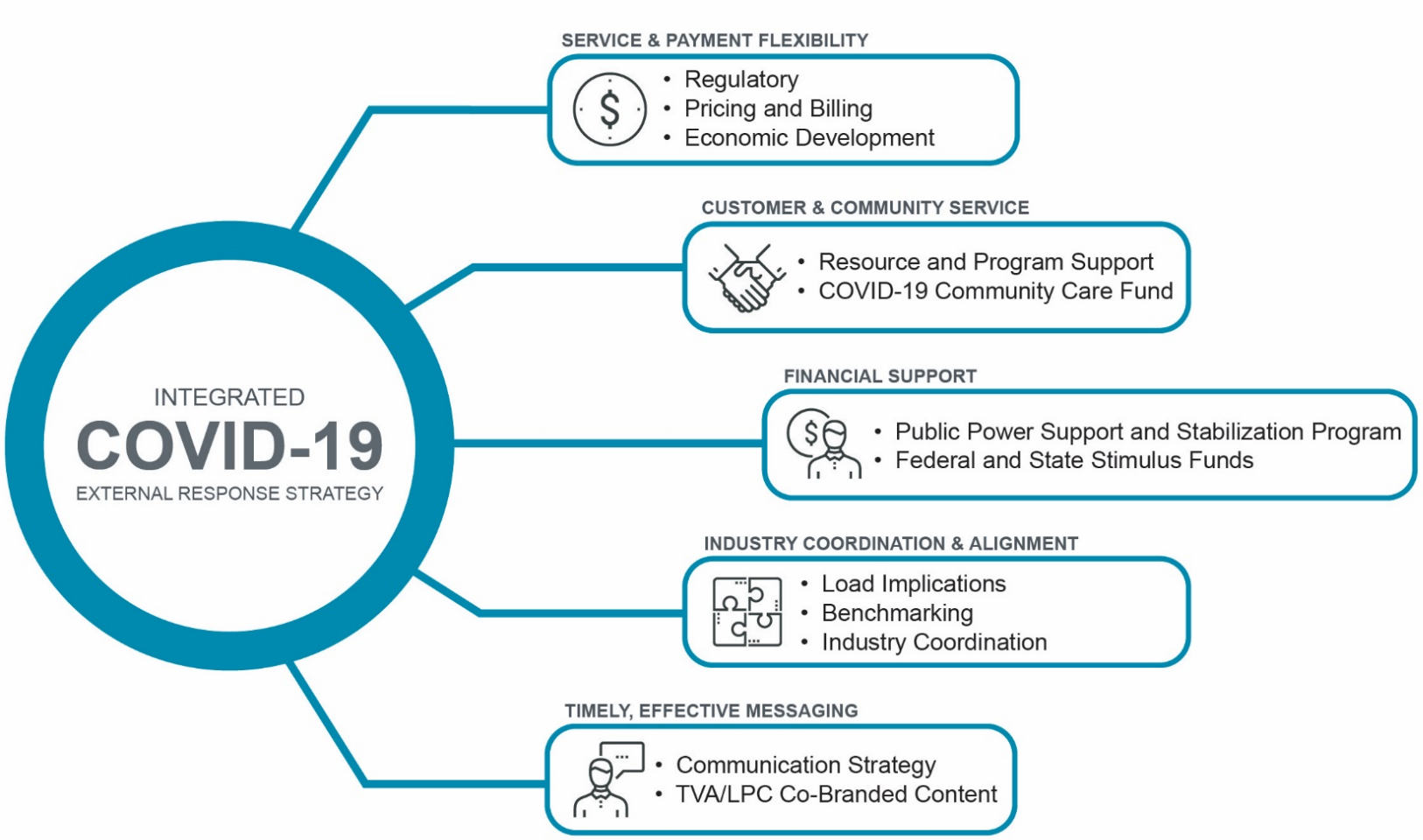
Agenda


OPENING
Debbie Murray
WELCOME
Chris Hansen
GREEN CONNECT
Ethan Ogle
DISPERSED POWER PRODUCTION
Ethan Ogle
GREEN SWITCH & FLEX
Ethan Ogle
Q&A
RENEWABLE INTEGRATION
Aaron Melda
FLEXIBILITY OPTION
Jamie Bach
GREEN INVEST
Jamie Bach



WELCOME

CHRIS HANSEN


INTEGRATED
COVID-19
EXTERNAL RESPONSE STRATEGY
SERVICE & PAYMENT FLEXIBILITY
• Regulatory
• Pricing and Billing
• Economic Development
CUSTOMER & COMMUNITY SERVICE
• Resource and Program Support
• COVID-19 Community Care Fund
FINANCIAL SUPPORT
• Public Power Support and Stabilization Program
• Federal and State Stimulus Funds
INDUSTRY COORDINATION & ALIGNMENT
• Load Implications
• Benchmarking
• Industry Coordination
TIMELY, EFFECTIVE MESSAGING
• Communication Strategy
• TVA/LPC Co-Branded Content



AUGUST 2020

We have a variety of renewable programs that align to the vast interests of our customers.

TVA Green

renewables@tva.gov

TVA Green

Renewable Solutions



Green Connect



Dispersed Power Production



Green Switch



Green Flex



Green Invest



Flexibility Option

IVA Green

EAS000442

COMING JANUARY 2021



GREEN CONNECT

TVA GREEN

TVA Green

EAS000443



GREEN CONNECT

Program benefits

FOR INSTALLERS

- Increased standardization
- Customer leads
- Green Connect contact center

FOR CUSTOMERS

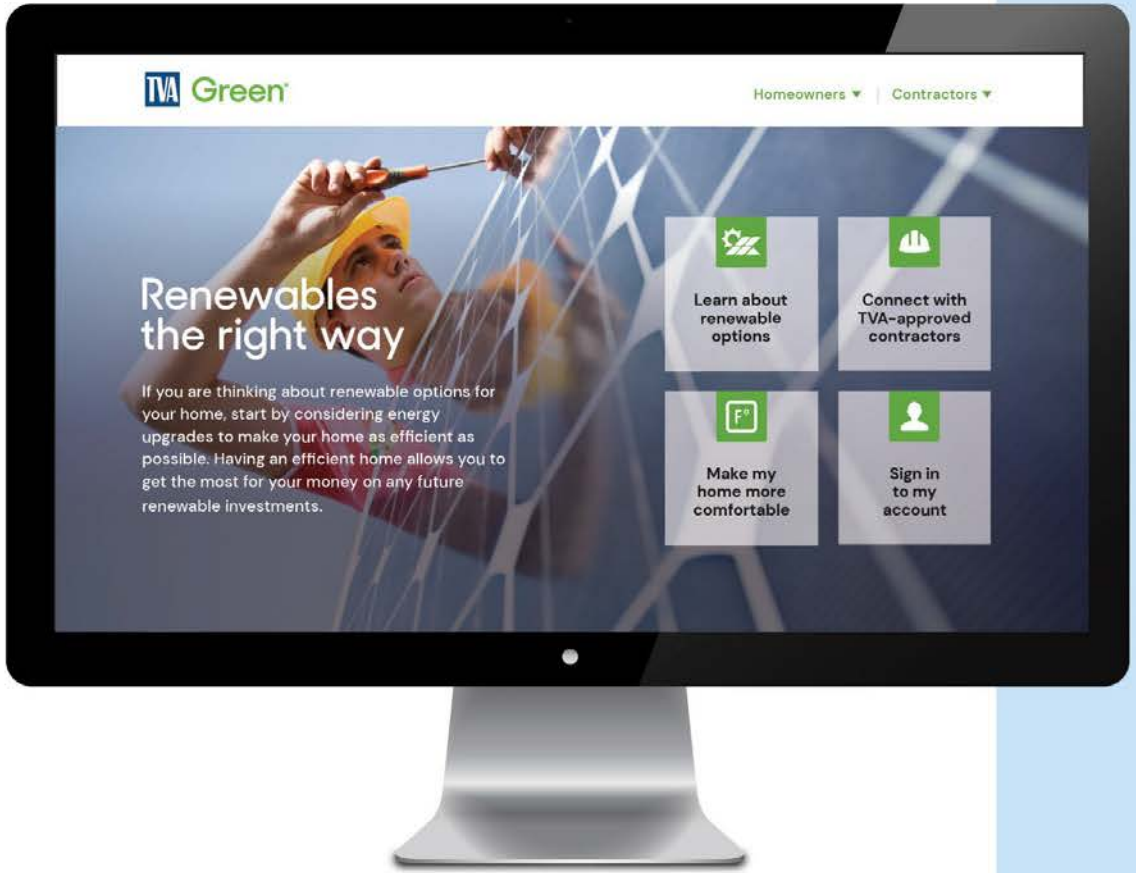
- Access to quality solar installers
- Educational resources
- Installation verifications

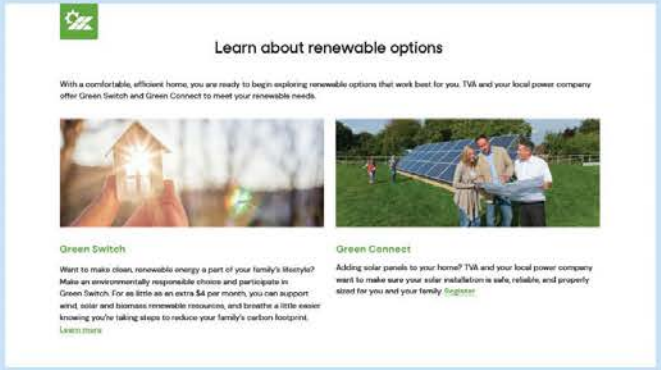
IVA Green

EAS000444

GREEN CONNECT

Customer portal





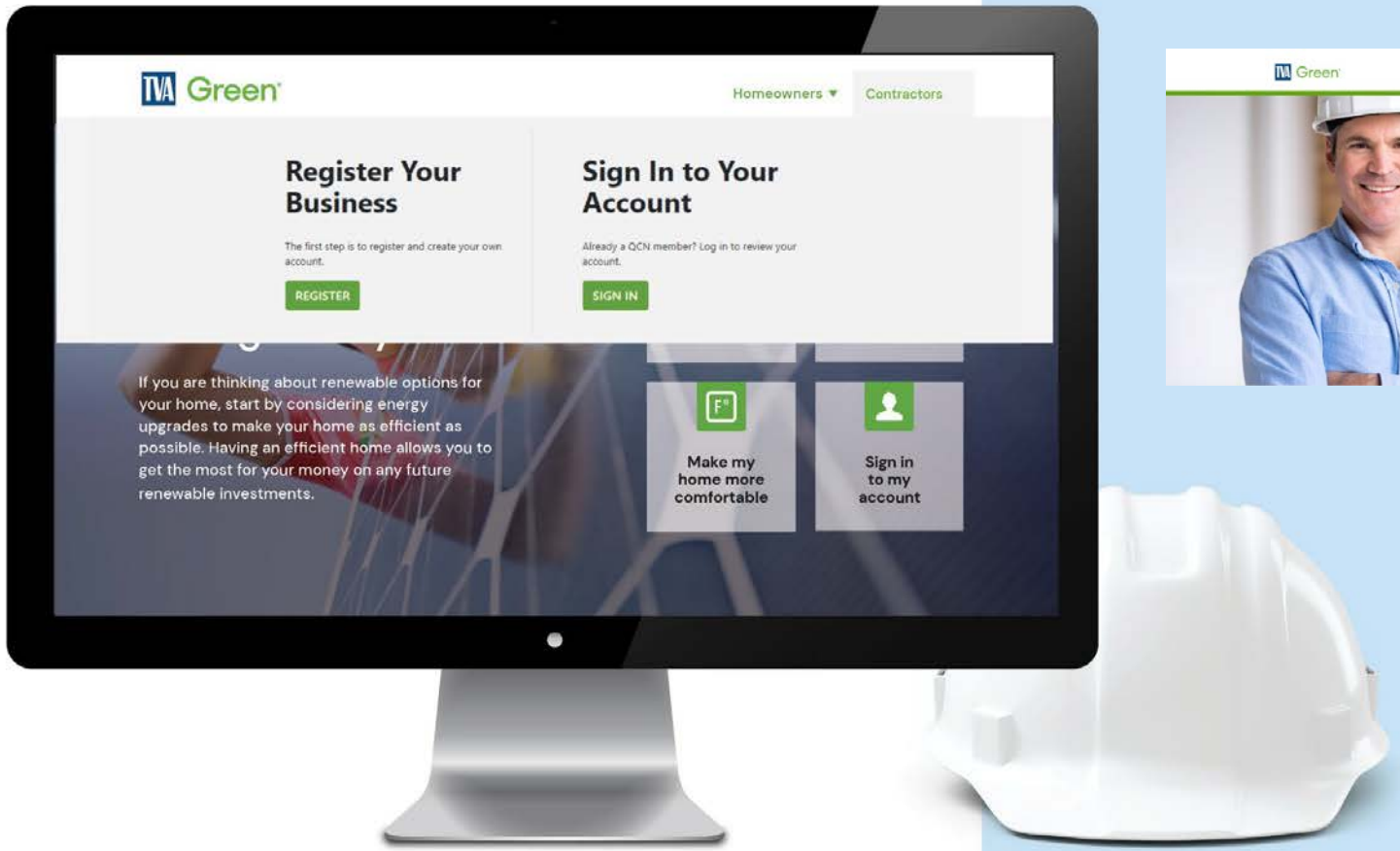


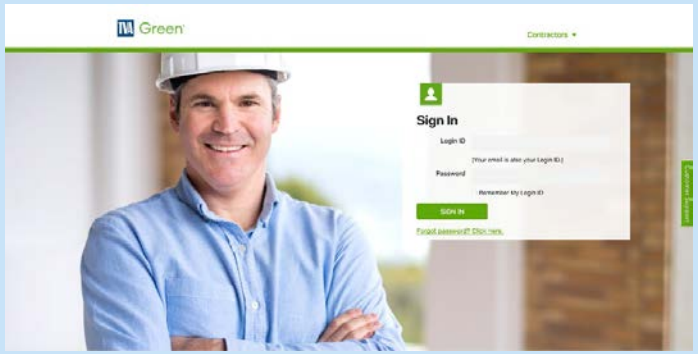
TVA Green

EAS000445

GREEN CONNECT

Installer portal





TVA Green

EAS000446



DISPERSED POWER PRODUCTION

TVA GREEN

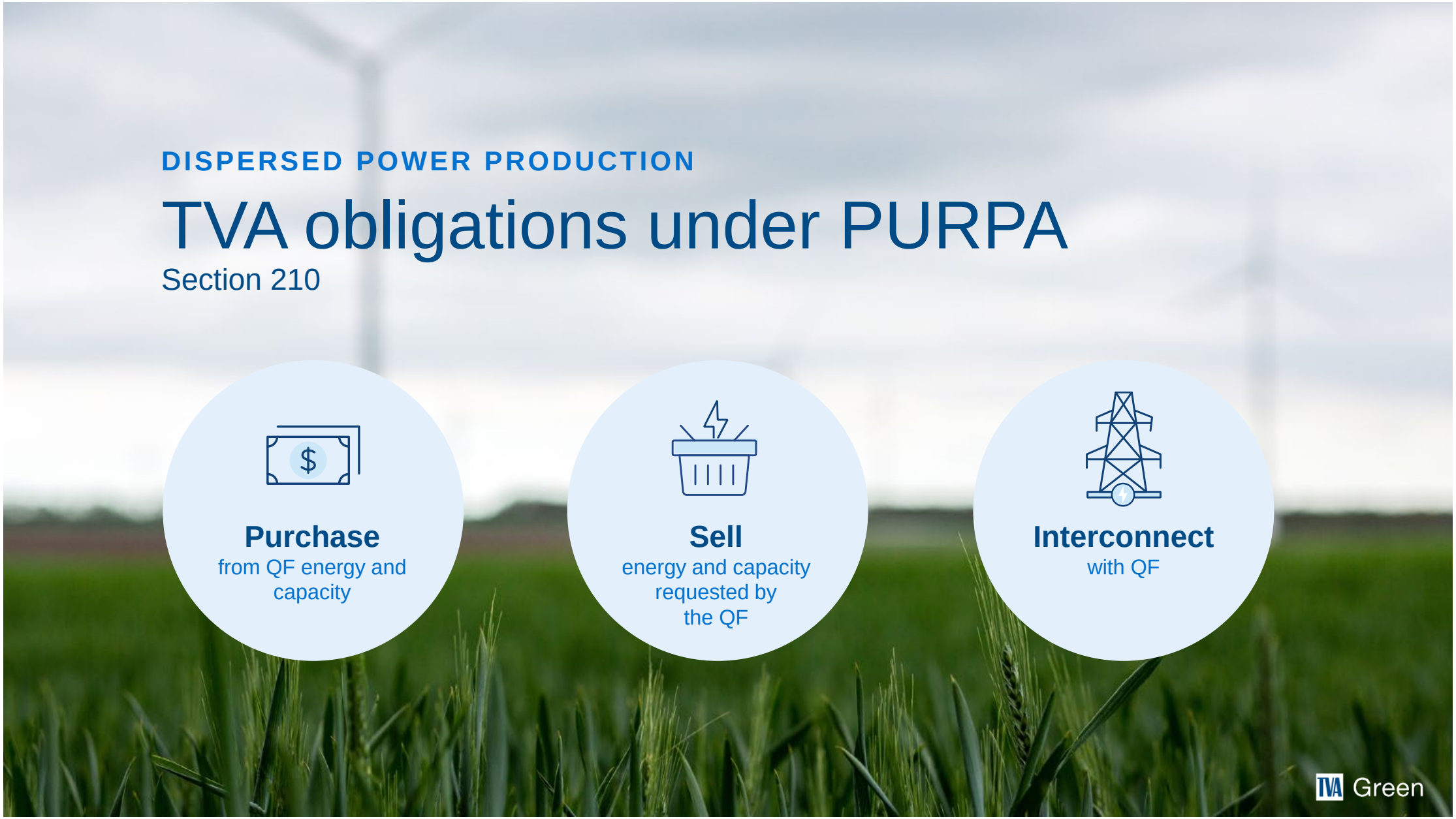
TVA Green

EAS000447

DISPERSED POWER PRODUCTION

TVA obligations under PURPA

Section 210



Purchase
from QF energy and capacity

Sell
energy and capacity requested by the QF

Interconnect
with QF

TVA Green

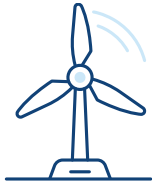
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DISPERSED POWER PRODUCTION

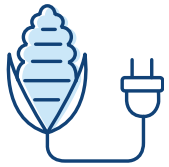
A program that allows residential, business and industry customers to **sell power from qualified facilities** to TVA.



SOLAR



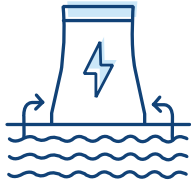
WIND



BIOMASS



WASTE



GEOTHERMAL

TVA Green

EAS000449

DISPERSED POWER PRODUCTION

Program highlights

5-year agreements

between TVA and qualified facility

No enrollment cap

We have room for as many of your customers as possible

No tri-party contracts

End-use customer creates agreement directly with TVA

Experienced program framework

The program has been around since 1981

Retained renewable attributes

by participants

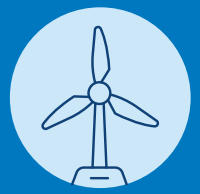
Regulated pricing

Public Utilities Regulatory Policies Act of 1978 (PURPA) obligates all regulated electric utilities to purchase energy under PURPA at avoided cost



TVA Green

EAS000450



GREEN SWITCH

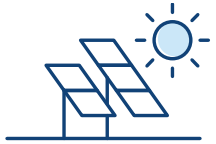
TVA GREEN

TVA Green

EAS000451

GREEN SWITCH

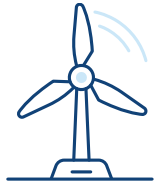
Helping residential, business and industrial customers support renewable energy generated **within the Valley.**



70%

SOLAR

GPP Sites



20%

WIND

Invenergy-Owned Buffalo Mountain Wind Purchase Power Agreement



10%

BIOMASS

GPP Sites

TVA Green

EAS000452

GREEN SWITCH COST

Customers purchase renewable energy to match their electricity usage. For as little as $2 per month, they reduce their environmental impact.

$2

for a

200 kWh BLOCK

through the Green-e Energy certification program

A GREEN-E ENERGY CERTIFIED PRODUCT

TVA Green

EAS000453

GREEN SWITCH

Program highlights

No long-term commitment

No contract with participants – they can enroll and un-enroll on a monthly basis

No upfront cost

Payments can be added to your customers monthly utility bill

No infrastructure needed

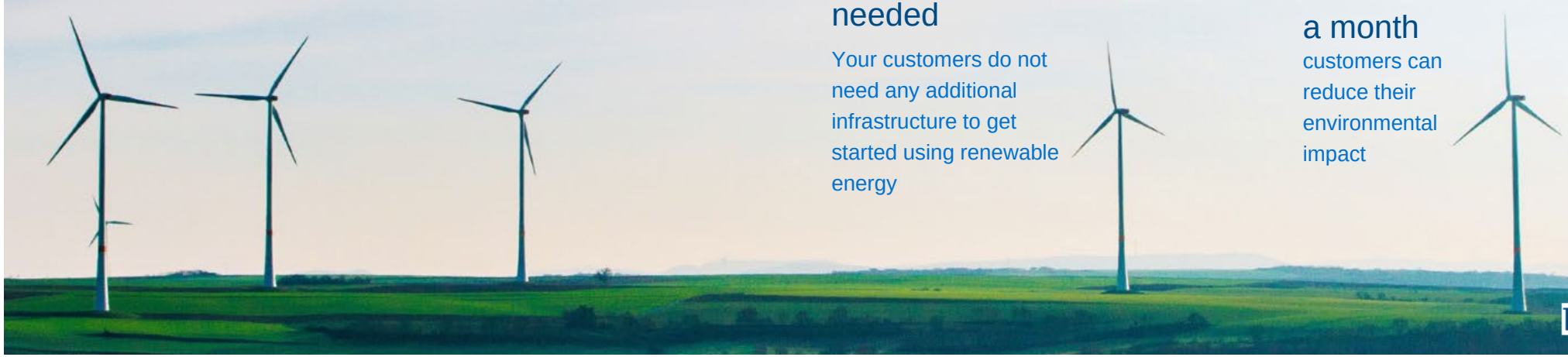
Your customers do not need any additional infrastructure to get started using renewable energy

For as little as

$2

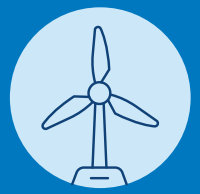
a month

customers can reduce their environmental impact



TVA Green

EAS000454



GREEN FLEX

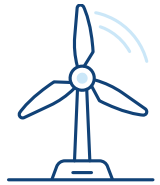
TVA GREEN

TVA Green

EAS000455

GREEN FLEX

A program that allows businesses and industries inside the Tennessee Valley to purchase **out-of-Valley wind** renewable energy certificates (RECs).



100%

WIND

Sourced from
Iowa, Illinois, or Kansas

TVA Green

EAS000456

GREEN FLEX COST

Customers purchase RECs, the full MWh of renewable energy generated and delivered to the grid, which allow your customers to make renewable claims.

$1.50

per

MWH

through the Green-e Energy certification program

A GREEN-E ENERGY CERTIFIED PRODUCT

TVA Green

EAS000457



GREEN FLEX

Program highlights

1-year
agreement
January – December

Certified
through Green-e,
guaranteeing renewable generation coverage for all purchased RECs

Free
to sign up
and get started with no additional infrastructure needed

2,000
RECs
Annual minimum purchase

Purchase may not exceed
105%
of participant's annual electricity consumption

TVA Green

EAS000458



GREEN INVEST

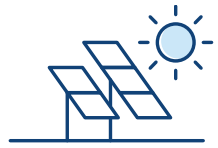
TVA GREEN

TVA Green

EAS000459

GREEN INVEST

Help your end-use customers meet their sustainability goals through partnering with us to bring new, renewable energy to the Tennessee Valley.



100%

RENEWABLE

TVA Green

EAS000460

GREEN INVEST

Program highlights

- Utility scale renewables
- Competitive procurement
- Lowest cost option
- Site specific
- Long-term load
- Aggregate projects

TVA Green

EAS000461



FLEXIBILITY OPTION


FLEX
Valley Partners now have the ability
to provide cleaner, greener power.
TVA VALLEY Partners

EAS000463


up to
5%
can be locally generated
MINIMUM 1MW
TVA VALLEY Partners

EAS000464

FLEXIBILTY OPTION

Partner benefits

- Lowers wholesale bill from TVA
- Long-term customer load commitments
- Partners with local businesses
- Mitigates behind-the-meter threats
- Pursues a variety of ownership and operating options (e.g., PPA)



TVA VALLEY Partners

EAS000465



RENEWABLE INTEGRATION

Aaron Melda

EAS000466

TVA continues to look for ways to efficiently integrate renewable energy into our portfolio, while providing low cost, reliable energy.



EAS000467



SEEM

Southeast Energy Exchange Market

Exploring a centralized, automated intra-hour energy market with a goal of lowering customer costs and optimizing renewable energy, while maintaining reliable service

EAS000468



Q&A

LAURA DUNCAN & DEBBIE MURRAY

Thank you and be safe

TVA Green

QUESTIONS?

www.tvagreen.com

renewables@tva.gov

Tre Hargett
Secretary of State

Division of Business Services
Department of State
State of Tennessee
312 Rosa L. Parks AVE, 6th FL
Nashville, TN 37243-1102

ACKSON SUSTAINABILITY COOPERATIVE
031 GREYSTONE SQ
ACKSON, TN 38305-3581

May 14, 2021

Filing Acknowledgment

lease review the filing information below and notify our office immediately of any discrepancies.

OS Control # :	**001200202**	Formation Locale:	TENNESSEE
iling Type:	Nonprofit Corporation - Domestic	Date Formed:	05/14/2021
iling Date:	05/14/2021 8:34 AM	Fiscal Year Close:	12
tatus:	Active	Annual Report Due:	04/01/2022
uration Term:	Perpetual	Image # :	B1034-0020
ublic/Mutual Benefit:	Mutual		
usiness County:	MADISON COUNTY		

Document Receipt

eceipt # : 006363414	Filing Fee:	$100.00
ayment-Check/MO - EQUITUS LAW ALLIANCE, PLLC, NASHVILLE, TN		$100.00

egistered Agent Address:
OHN A BEAM III
09 TAYLOR ST
ASHVILLE, TN 37208-2637

Principal Address:
1031 GREYSTONE SQ
JACKSON, TN 38305-3581

ongratulations on the successful filing of your **Charter** for **JACKSON SUSTAINABILITY COOPERATIVE** in the tate of Tennessee which is effective on the date shown above. You must also file this document in the office of the egister of Deeds in the county where the entity has its principal office if such principal office is in Tennessee. Please sit the Tennessee Department of Revenue website (www.tn.gov/revenue) to determine your online tax registration equirements. If you need to obtain a Certificate of Existence for this entity, you can request, pay for, and receive it om our website.

ou must file an Annual Report with this office on or before the Annual Report Due Date noted above and maintain a egistered Office and Registered Agent. Failure to do so will subject the business to Administrative issolution/Revocation.

Tre Hargett
Secretary of State

rocessed By: Alex Maxfield

FILED

CHARTER
OF
JACKSON SUSTAINABILITY COOPERATIVE

The undersigned person, under the Tennessee Nonprofit Corporation Act, adopts the following Charter for JACKSON SUSTAINABILITY COOPERATIVE.

1. The name of the Corporation is JACKSON SUSTAINABILITY COOPERATIVE.

2. The purpose or purposes for which this Corporation is formed are:

   (a) To assist its members in sharing supplemental electrical energy from renewable sources while contributing to the redevelopment of the Roosevelt Parkway neighborhood in Jackson, Tennessee;

   (b) To promote corporate goals for renewable energy where the Members cannot economically justify building, maintaining and operating their own renewable solar energy facilities;

   (c) To assist its members in the efficient and economical use of energy;

   (d) To use smart meter technology to allow members who share a solar facility to directly connect to the solar facility and share supplemental energy with other members;

   (e) To engage in research and to promote and develop energy conservation and sources and methods of conserving, producing, converting, and delivering energy;

   (f) To accomplish improved energy efficiency by acquiring the ability to monitor electricity usage by individual circuits;

   (g) To promote energy conservation through research into methods of conserving, producing, converting, and delivering energy;

   (h) To provide programs and training in solar energy for members by enhancing labor skills, and providing educational enrichment and curricula for schools and colleges.

   (i) To purchase, lease as lessee, and in any manner acquire the use of solar equipment, machines, supplies, and systems necessary or useful for furnishing supplemental electrical energy to its members in carrying out the purposes of the Corporation;

   (j) To acquire the use of, to the extent permitted by law, the franchises, rights, privileges, licenses, rights-of-way and easements necessary or useful for furnishing supplemental electrical energy to its members in carrying out the purposes of the Corporation;

   (k) To purchase, lease as lessee, or in any other manner acquire or dispose of any and all real and personal property or any interest therein necessary or useful for furnishing

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supplemental electrical energy to its members in carrying out the purposes of the Corporation;

(l) To borrow money, to make and issue bonds, notes and other evidences of indebtedness, secured or unsecured, and used in payment for property acquired, or for any of the other purposes of the Corporation, to secure the payment by deeds of trust upon, or by the pledge of any other lien upon, any or all of the property, rights, privileges or permits of the Corporation, wheresoever situated, acquired or to be acquired;

(m) To do and perform, either for itself or its members, any and all acts and things, and to have and exercise any and all of the foregoing purposes or as may be permitted by the Acts under which the Corporation is formed, for any lawful act or activity necessary or convenient to effect the foregoing purposes, including, but not limited to, the exercise of all powers granted to electric membership corporations as set forth in the Tennessee Electric G&T Cooperative Act of 2009, T.C.A. § 48-69-101 *et seq.*, as amended from time to time.

3. (a) The Corporation is a not for profit corporation organized for the benefit of its members pursuant to the provisions of the Tennessee Electric G&T Cooperative Act of 2009, T.C.A. § 48-69-101 *et seq.*

(b) The Corporation is a mutual benefit corporation.

(c) Membership and membership rights, privileges and obligations shall be as prescribed in the Bylaws of the Corporation.

(d) The private property of the Members of the Corporation shall be exempt from execution for the debts of the Corporation.

4. The period of duration of this Corporation is perpetual.

5. The name and complete address of the Corporation's registered agent is John A. Beam, III, P.O. Box 280240, 709 Taylor Street, Nashville, Davidson County, Tennessee 37208.

6. The name and address of the incorporator is: John A. Beam, III, P.O. Box 280240, Nashville, Davidson County, Tennessee 37228-0240.

7. The address of the Corporation's principal office is 1031 Greystone Square, Jackson, Madison County, Tennessee 38305.

8. The affairs of the Corporation shall be managed by a Board of Directors. The number of the Directors of the Corporation and the method of their election shall be established in the Bylaws. The number of initial, organizational Directors of this Corporation shall be five persons. The five organizational Directors shall serve until the solar facility is tested, commissioned, and certified, and then at the next annual meeting of the members the Directors will be elected under the process established in the Bylaws. The names and addresses of the organizational Directors who shall

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manage the affairs and business of the Corporation until the election of the Directors after the solar facility is operational are listed as follows:

(a) Dr. Ann Keyl, 445 Walnut Street, Jackson, TN 38305
(b) Mr. Robert Starr, 140 Sunnyvalley Drive, Jackson, TN 38305
(c) Mr. Jeff Frieling, 161 Shadow Ridge Drive, Jackson, TN 38305
(d) Dennis Emberling, 5548 Trousdale Drive, Brentwood, TN 37027
(e) David Shimon, 19840 W. Dixie Hwy, Unit #3311, Miami, FL 33180

9. The Corporation may be dissolved under provision established in the Bylaws.

10. Directors shall not have personal liability to the Corporation for monetary damages for a breach of fiduciary duty as a Director. This limitation shall not eliminate or limit the liability of the director for any breach of a director's duty of loyalty to the corporation or for any acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law.

11. Except as specifically limited in Section 48-58-502 of the Tennessee Nonprofit Corporation Act, this corporation shall indemnify against liability incurred in a proceeding by any individual made a party to the proceeding because he or she was or is a director or officer of this Corporation if the person conducted himself or herself in good faith and reasonably believed that:

(a) In the case of conduct in his or her official capacity with the Corporation, the conduct was in the Corporation's best interest;

(b) In all other cases, the conduct was at least not opposed to the best interest of the Corporation;

(c) In the case of any criminal proceeding the individual had no reasonable cause to believe the conduct was unlawful; and

(d) Conduct with respect to an employee benefit plan for a purpose reasonably believed to be in the interest of the participants and beneficiaries of the plan and the conduct was at least not opposed to their best interest.

12. The document is to be effective upon filing by the Secretary of State.

Dated this 14th day of May, 2021.

John A. Beam, III, Incorporator

B1034-0022 05/14/2021 8:34 AM Received by Tennessee Secretary of State Tre Hargett

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION

IN RE: THE APPLICATION OF JACKSON SUSTAINABILITY COOPERATIVE FOR A DETERMINATION OF EXEMPTION AND IN THE ALTERNATIVE, FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	))))))	**DOCKET NO. 21-00061**

DIRECT TESTIMONY OF DENNIS EMBERLING, PART II

Part I of the direct testimony of Dennis Emberling was filed with the Petition.

This is a continuation of Mr. Emberling's direct testimony.

Q. How was Jackson, Tennessee selected for the Solar Project?

A. In late 2019, two people from Jackson came up with an idea for a way to help the city redevelop and improve the lives of its citizens. One, a retired, disabled Army Lieutenant Colonel, West Point graduate, and professor of mathematics, has been working for some time on building affordable housing in East Jackson for other veterans and seniors. The other is the owner of several small businesses in Jackson who knows the area's problems first hand.

Both these Jacksonians were particularly focused on the plight of East Jackson. Although it is home to many businesses that employ thousands of people, the area is in the worst shape of any of Jackson's redevelopment districts. It is the only one classified as "deteriorated." The population is 88% black, and the median household income in 2019 was under $19,000 per year. It is the 24th poorest census tract in Tennessee. Its housing and infrastructure are extremely poor.

Q. Is Jackson, Tennessee at risk of losing national manufacturers? Why?

A. Many national companies have manufacturing facilities in East Jackson. Most of these national companies either already have or will soon have mandatory sustainability goals that require them to switch all or in large part to renewable energy by a date certain. These corporate goals represent corporate responsibility to change the impact on the environment and play a significant role in diverting an obvious future environmental crisis, and lead federal and state government into recognizing the need for legislative action to create supporting policies for the inevitable move to renewable energy sources.

These sustainability policies prevent national companies from expanding in cities where renewable energy is not available. They could eventually force companies to leave such cities altogether, taking advantage of offers from cities where renewable energy is available. Other companies looking for locations to build facilities are unlikely to consider cities without renewable energy. All this bodes ill for Jackson.

Q. Other than accomplishing corporate sustainability goals, do manufacturers in Jackson, TN have other reasons they need solar energy?

A. We are told by electrical contractors who service the heavy machinery of these manufacturers in Jackson that they suffer from poor power quality from the grid. Fluctuations in frequency and voltage, which are especially common when demand surges, increase maintenance and repair costs and shorten the life of expensive machinery. See "Using Distributed Energy Resources," by the Federal Energy Management Program of the U. S. Department of Energy's Office of Energy Efficiency and Renewable Energy, page 8, for the causes and effects of poor power quality, https://www.nrel.gov/docs/fy02osti/31570.pdf. When the grid fails, manufacturers must send workers home, wait for the grid to be restored, then go through lengthy restart protocols and recall workers. This is very expensive for such businesses. Naturally, having reliable, uninterruptible power is very important to them, but presently unavailable. See "Seven Steps for a Successful Shutdown," www.plantengineering.com/articles/seven-steps-for-a-successful-shutdown.

Right now, Jackson has little to offer manufacturers to cope with these problems. As of July 15, 2021, only 16% of TVA's electricity generation came from renewables (EIA). For Jackson manufacturers, installing their own renewable generation, such as solar, is impractical and uneconomical for many reasons: lack of incentives from TVA or the state of Tennessee (not even net metering), inadequate suitable land or roof space, sub-optimal weather, capital costs, inability to take advantage of tax benefits, and lack of experience with acquiring, operating, and maintaining solar and storage facilities. That's why there is so little individually-owned commercial solar in Tennessee. And manufacturers have no good solution to the problems of frequency and voltage fluctuations or grid failures.

This is partly why Jackson, which desperately needs more good-paying jobs, decent housing, and infrastructure improvements, isn't growing, isn't attracting new businesses, and isn't seeing present businesses expand. Worse, it means Jackson is in danger of losing some of the businesses it has if it can't help major employers meet their corporate sustainability goals and offer reliable, high-quality, uninterruptible power. Other cities will be glad to offer these

companies large incentives to relocate, bringing thousands of jobs with them.

Q. How is the local municipal service provider limited in its ability to respond to these issues?

A. The City of Jackson is an economically distressed community. It cannot afford to pay for building renewable energy generation facilities for its municipally-owned utility, Jackson Energy Authority ("JEA"). Additionally, TVA's contracts with its resellers such as JEA forbid resellers from buying electricity from anyone besides TVA or using their distribution systems to conduct non-TVA electricity to customers. This means JEA cannot buy significant amounts of renewable energy from anyone else either. That's a major reason why some of TVA's resellers, including JEA, are refusing to sign TVA's new long-term agreements and considering not renewing their current TVA contracts - so that they can look elsewhere for renewables.

Like all utilities, JEA's electric service to its customers suffers from frequent voltage sags, swells, and spikes, as well as frequency variations, momentary outages, harmonic distortion, and unbalanced voltages and currents between the three phases of the system. These are unavoidable for a large power utility, for well-known reasons within the energy industry, such as changes in load, changes in generation source (e.g., from suddenly bringing a new fossil-fuel generator on line to meet higher demand, equipment switching, and electronically-controlled loads.

These power-quality events make motors vibrate, overheat, or stall. They occur without warning. Power quality is not commonly warrantied by utilities to their customers. Customers have to install uninterruptible power systems, battery systems, other storage technologies, motor-generator sets, isolation transformers, voltage regulators, line conditioners, filters, shielding and grounding techniques, and surge suppressors to forestall and cope with these power-quality problems. All these are expensive to the customer. Because they do not address the power-quality issues at their source (the input of electricity to the building), they cannot fully prevent excess wear and tear on expensive machinery or shortening its lifespan.

Nor can JEA provide uninterruptible power to all its customers. It would be cost prohibitive.
Thus, it is economically impossible under current contracts for JEA to offer significant percentages of renewable energy to its customers, provide consistently high-quality power, or avoid power outages. To a manufacturer, this means Jackson is not a very desirable place to locate or expand, especially as corporate sustainability goals take effect.

Q. What steps did the concerned citizens take to bring solar energy to manufacturers in Jackson, Tennessee?

A. For all these reasons, the two Jacksonians came up with the idea of bringing solar to Jackson. They asked my partner, David Shimon, a solar dealer in Florida they knew through mutual acquaintances, to investigate Jackson's potential for solar. He brought in several large solar developers to research feasibility, and they concluded it was economically impossible because of the opposition of TVA and JEA and the lack of incentive programs.

He then asked me to look into it, and, with help from my friends and colleagues in the solar industry, I discovered a way to make it work, with no interconnection to JEA's grid, no violation of Tennessee law, and no capital cost to the city of Jackson, the manufacturers who would use the renewable energy, JEA or TVA. So David and I set up a joint venture partnership with our Jackson friends called Community Development Enterprises - Jackson I to develop the project on vacant land located close to several manufacturers in East Jackson.

Q. How does benefitting manufacturing citizens help all citizens in Jackson?

A. My talks with people in the solar and storage industries led to discussions with foundations eager to help in Jackson. Some offered to bring free educational programs in the renewable energy field to Jackson's high schools and its four colleges, along with internships to prepare students for careers in the industry. Others offered to bring job training and other services to the Jackson community. We and our partners committed to contribute a share of the project's revenue to help redevelop East Jackson, upgrade its housing, and improve its dilapidated infrastructure.
We commissioned a professional Economic Impact Study from SynEnergy, Inc. which showed the project having a total impact of $231M on the area, with 678 temporary full-time equivalent jobs and 28 permanent full-time-equivalent jobs.

This is why so many companies, organizations, individuals, advocacy groups, and governmental agencies have been so eager to help with this project, and why the people and businesses of Jackson are so enthusiastic: because it is so worthwhile for everyone. It makes solar possible in East Jackson where it is presently unobtainable. It offers tremendous benefits to manufacturers and the local community. And its is privately financed, with no out of pocket cost to the city.

Q. Were the Tennessee Valley Authority ("TVA") and Jackson Energy Authority ("JEA") willing to work with you?

A. We reached out to TVA and JEA when first researching the project. We offered to collaborate with them, help them move into solar in the future, help them meet their difficult peak demand needs, and work cooperatively with them in many ways, all without cost to them. They totally refused.

In fact, the project's only opponents are TVA and its affiliates. They seem to think the project competes with them and diminishes their profits. In this, they are totally wrong. It does exactly the opposite.

H. We discussed benefits to manufacturers, are there ways JSC benefits JEA and TVA?

First, meeting peak demand for electricity is very costly for utilities. As the generator of electricity for JEA, TVA must maintain expensive stand-by reserves to kick in quickly when demand spikes. The rest of the time, that generation capacity sits idle. If peak demand from its retailers rises, TVA must build additional power facilities, as it is doing now, to be able to meet this demand, plus satisfy legal reserve requirements. The higher the peak demand, the more ancillary and transmission equipment TVA needs, and the higher its fixed costs for this equipment.

TVA tries to cover these costs by charging its retailers, like JEA, a heavy surcharge for peak demand. But whether these surcharges fully cover the costs to TVA of higher peak demand is uncertain. It is a complicated calculation. It is likely that only TVA knows the answer. We have demanded from TVA its actual profit margin on demand charges.

In turn, the higher the peak demand from its customers, the higher JEA's monthly peak demand is from TVA, so the higher TVA's surcharges to JEA for that month's peak demand. These are heavy costs to JEA each month. If JEA's monthly demand peak is lowered, so are these costs it must pay TVA. JEA tries to recover these costs by charging its customers a heavy surcharge for their peak demand each month. Whether these surcharges fully cover the costs it must pay TVA for this peak demand is something only JEA knows. We have demanded from JEA its actual profit margin on demand charges.

But at the very least, lowering the monthly peak demand of a few of JEA's manufacturing customers will lower JEA's total monthly peak demand, and therefore lower its peak demand surcharges from TVA. Whether that alone will increase or decrease JEA's net profits is to be determined, but it is clear that the effect cannot be large. We have the potential to help JEA meet its other peak demand as well. See https://www.enertiv.com/resources/faq/

what-is-peak-demand; https://www.forbes.com/sites/baininsights/2017/05/01/can-utilities-profit-from-distributed-energy-resources/?sh=31263f6f1dbf; https://www.seia.org/initiatives/utility-rate-design-complementary-policies

Second, demand surges are very hard on transmission and distribution equipment. TVA and JEA both incur significant expenses for maintenance and repair of their systems. JEA alone spent over $3.2M last year on maintenance expenses. These peak demands and surges will be reduced by the new solar facility, thereby reducing losses on peak demand and lessening their repair, maintenance, and replacement costs for power lines and equipment. Overall, JEA's and TVA's revenue will decrease slightly, but their expenses decrease by even more, improving their profitability.

Third, the manufacturers who belong to the co-op remain customers of JEA/TVA, not just for electricity but for all other utility services. If solar encourages them not to leave Jackson, that prevents a reduction of profits for JEA/TVA. If solar encourages them to expand, JEA/TVA's profits go up. If solar encourages new businesses to locate in Jackson, they will become new JEA/TVA customers as well.

Taking all these benefits to JEA/TVA into account, it is clear that our supplementing electricity to members for their mutual benefit, is a net benefit to JEA/TVA, and far from a drag on their profits. Any perceived negative effects are short-sighted, and fail to put the benefits in context.

Q. How can a manufacturer participate in the benefits of renewable energy?

A. The only way right now for businesses that need a lot of electricity to get uninterruptible, high-quality, renewable energy is to share a facility with other similar companies. This solves the problem of optimal siting and brings the costs way down through economies of scale and making many more tax benefits available.

The most natural way in Tennessee for organizations to collaborate is through cooperatives, because they are offered many advantages in Tennessee law. Exemption from Public Utilities Commission regulation and monopolistic utility restrictions are only some of them. Therefore, it makes sense for manufacturers who want to share the renewable, uninterruptible power from a solar facility to form a nonprofit co-operative corporation for this purpose.

Such a co-operative also serves its members as a useful nonprofit vehicle to contribute in many ways to the redevelopment and economic improvement of their

community, which in turn benefits the member companies. As the labor pool expands and gains more skills, they can expand their businesses, knowing they can find the workers they need. As the quality of the community improves, their working environment and amenities improve, all to the benefit of the companies as well.

Since all these goals fit perfectly with what we and our partners want to do for Jackson, we launched the co-operative, to be controlled by its members. It will lease the entire solar facility, on-site and off-site, from the developer, Community Development Enterprises. It will distribute the electricity generated to its members through a smart controller that directs the flow to members according to their immediate demand, as well as to and from battery storage.

Q. How will the Co-op's system exist with JEA's grid?

A. Because Jackson is subject to severe storms, the entire facility will be storm-hardened, with all wiring underground. In this way, it will be able to continue to supply power when the grid fails. Its electricity is tightly regulated for frequency and voltage, so the members will no longer experience surges, spikes, or dips that damage their equipment. The power will supplement electricity they continue to receive from JEA's grid, coming on only when their demand rises. They will pay the co-operative for the electricity they use at rates guaranteed always to be lower than what they would have paid JEA had the solar not been available.

They will receive new smart meters and electrical panels that allow them to monitor their usage by individual circuit, enabling them to make improvements in energy efficiency. They can also prioritize their circuits to make sure the most important ones get power first in case the grid fails and there isn't sufficient sunlight or battery capacity to power all their circuits. All this without any capital expense to the manufacturers.

The electricity from the solar facility will be completely isolated from JEA's grid, so it can never backflow onto their grid when it is down. Nor can any power from JEA's grid ever flow onto the solar facilities system. It will come on and off seamlessly to the users just when they need it.

Q. Is membership in Jackson Sustainability Cooperative limited?

Because their site can only support so much solar power, the coop is limited allowing only a few manufacturers to participate in the project. Because the power must be distributed among the manufacturers according to their demand, the weather, the time of day, and the limits of our battery storage, we can

only serve manufacturers whose electrical usage profiles fit effectively with each other and fall within the limits of what we can supply.

Therefore, our engineers must carefully consider all the circumstances that affect each manufacturer's electrical usage and select from the candidates just those few that form a workable set of users that fit our facility's capability. That is why co-op membership is not open to the public, or even to all nearby companies. The requirements for membership in the co-op are very severe, and only our engineers can choose the group of companies that we can serve.

Q: How does Jackson Sustainability Cooperative determine whether an entity is eligible to participate as a member of the cooperative?

A. When initial research by Jackson Sustainability Cooperative indicates that a commercial entity's characteristics may be a suitable fit with those of other potential members, Jackson Sustainability Cooperative initiates a discussion with that entity. If the entity indicates a desire to become a member, it is given a Conditional Member Agreement to sign and required to provide Jackson Sustainability Cooperative with all the electricity usage information needed to evaluate its suitability for membership. This Conditional Member Agreement is non-binding, and provides for confidentiality of the electrical information supplied.

Q: When you review a conditional member's electric bills and energy profile, what elements are essential to allow discussions to continue on possible membership?

A. As stated in the Jackson Sustainability Cooperative Bylaws, Article II, Section 2.1, "An Entity becomes a conditional member of the Cooperative if it signs a Conditional Member Agreement. The Cooperative will analyze the energy profile and energy demands of the conditional Member to see if the conditional Member's electricity needs are a suitable fit with the other members and the Solar project. Qualifying conditional Members may be invited to become full Members who receive supplemental energy after they sign a Full Member Agreement (such person being a "Member" and the Member being in a "Membership"). An applicant may be eligible for conditional Membership if its plant and facility (1) annually requires or is expected to annually require at least 100,000 kilowatt-hours (kWh) of electric energy; and, (2) uses electric energy on a demand curve consistent with the Cooperative's requirements."

No entity is entitled to become a member of Jackson Sustainability Cooperative. Membership is by invitation from Jackson Sustainability Cooperative. There is no such thing as "qualifying" for membership. Jackson Sustainability Cooperative's shared services are not offered to the general public or to any categories of users. No public or private entity can demand service from Jackson Sustainability Cooperative. The cooperative service is of no use to the public in general, but only to those few manufacturers that Jackson Sustainability Cooperative specifically invites to participate in sharing supplemental solar energy under the Bylaws and Full Member Agreement with Jackson Sustainability Cooperative.

Jackson Sustainability Cooperative represents its members when holding itself out as facilitating supplemental electricity to members who share the common objective of using energy from renewable sources. Jackson Sustainability Cooperative does not hold itself out to the public in general or any limited portion of the public in general. It represents a collaborative effort of neighboring commercial and industrial concerns with a strong desire to increase their use of energy from renewable sources. Its offers of membership are made directly to selected neighboring manufacturers. The general public has no interest in Jackson Sustainability Cooperative, since the public is not and cannot connect to the solar facility. Even if entities strongly prefer solar energy, there is no way of receiving supplemental energy from Jackson Sustainability Cooperative. Jackson Sustainability Cooperative can only facilitate a few of the requests for membership, and only from neighboring manufacturers who are approved.

The membership factors Jackson Sustainability Cooperative considers include, but are not limited to, the location, number of buildings, number of meters, site wiring, building wiring, historical and projected electrical consumption profile, historical and projected peak electrical demand profile, maintenance and repair costs for machinery caused by voltage or frequency surges or dips, historical costs associated with power outages, shut down processes, sending workers home, lost productivity, and restart protocols, publically stated corporate goals for use of energy from renewable sources, and time lines for sustainability, reduction of emissions, and shifting to renewable energy, acceptance of mutually agreeable terms of full membership, credit worthiness, and a willingness to participate in and contribute to the charitable and public works of Jackson Sustainability Cooperative for the benefit of the Jackson community and the East Jackson development district. In addition, from the group of interested members, Jackson Sustainability Cooperative will invite only a small subgroup whose electrical profiles fit well together in terms of consumption and peak demand, so as to maximize the ability of the solar facility to serve the mutual benefit of members economically and to their satisfaction.

This restriction to a few members chosen by Jackson Sustainability Cooperative according to practical considerations demonstrates that Jackson Sustainability Cooperative is not in actual or potential competition with public utilities. Its sole service is to supplement the electricity provided by JEA to a few manufacturers. A competitor would be an alternative to JEA, not a supplement to it. When the grid fails and Jackson Sustainability Cooperative continues to provide power, it is not competing with JEA, it is helping JEA with its mission of providing energy to local employers.

Although it will reduce JEA's revenue in peak demand charges from those manufacturers, it will also reduce JEA's acquisition costs for that peak demand electricity from TVA. JEA's cost of assuring it meets peak demand is both in the form of payments to TVA for the capacity to deliver peak demand electricity and for the wear and tear on JEA's transmission system that peak demand imposes. The net result will likely be an increase in JEA's profit from those manufacturers. In addition, expansion of existing Jackson businesses and attraction of additional businesses to Jackson as a result of Jackson Sustainability Cooperative's contributions to Jackson will increase the number of customers of JEA and their increase total consumption, thereby increasing JEA's revenue and profits. There is no competitive loss or

disadvantage to JEA from Jackson Sustainability Cooperative's collaborative efforts to provide supplemental services.

Q: Describe the process by which a Conditional Member becomes a Full Member of the Cooperative?

A. Once Northern Reliability informs Jackson Sustainability Cooperative that sufficient electrical usage information from a sufficient number of Conditional Members has been received, Northern Reliability begins to analyze all relevant information submitted by all Conditional Members. Northern Reliability then selects a set of Conditional Members whose electrical usage patterns form a good fit for the capabilities of the solar facility. Jackson Sustainability Cooperative then offers these selected Conditional Members the opportunity to sign Full Member Agreements. If all sign, they become the only Full Members. If one or more do not sign, Northern Reliability selects replacements for them from the set of Conditional Members, and these newly selected Conditional Members are then offered Full Membership. Once a complete set of Full Members, according to Northern Reliability's analysis of the fit between members' usage and the facility's production, is achieved, membership is complete.

Q: Mr. Emberling, you have described two member agreements, why are there two steps before an entity becomes a member eligible for supplemental renewable solar energy?

A. The process of choosing the set of members is a type of problem in mathematics called "optimizing a set of interdependent variables." It proceeds recursively. One must start with a trial set, analyze it, change it, re-analyze it, and continue until the set reaches optimum in value. Therefore, potential members must first be identified, then evaluated, then formed into a well-fitting, optimized set. This requires securing their electrical usage profiles and other relevant information before membership can be offered, because which candidates fit best together cannot be determined until after evaluation and recursive attempts at fitting. Only when the set is optimized can membership be offered and the second membership step completed.

Q: Who regulates the proposed Jackson Solar Facility?

A. Electric utilities that deliver all the requirements for retail electric service to consumers are, in most states, regulated by state, federal, and local agencies. These agencies primarily govern the prices utilities charge, the terms of their service to consumers, their budgets and their construction plans. Two broad, fundamental principles justify governmental oversight of these utilities. First, because a utility provides essential services for the well being of society, the public interest is best supported by having one large provider charged with meeting the overall demand of the community. Second, the theory is that this can be accomplished more cheaply through a monopoly given to a single provider rather than having a competition among smaller providers.

Small providers cannot thrive under these conditions, so eventually all firms but one will exit the market or fail. The survivor is a natural monopoly.

Given these two conditions, economic regulation is explicit governmental intervention into a market. It is necessary to achieve public benefits that the market fails to achieve on its own. In recent years, we have seen telephone services, cable services, and other services give way to competitive pressure. In Tennessee, other than filing a financial report, a municipal electric energy acquisition utility is excluded from economic regulation by the Public Utility Commission. For example, Jackson Electric Authority is not required to submit its rates or its building projects to the Tennessee Public Utility Commission for approval. Local Commissioners regulate Jackson Electric Authority. The theory is that the public who benefits locally can elect Commissioners to direct the municipal service provider.

By contrast, Jackson Sustainability Cooperative provides supplemental electric energy for the mutual benefit of its members. Jackson Sustainability Cooperative does not replace the municipal provider. Jackson Sustainability Cooperative is not open to the public. However, it is locally owned and will ultimately be controlled by its members who are manufacturers who benefit from its supplemental solar energy. Much like the municipal provider and the consumer with its own equipment, in Tennessee the government does not regulate cooperative providers to its consumer-members. Cooperative providers are accountable to their members and must comply with the local electrical codes.

The proposed Jackson Solar Project is currently exempt from regulation under federal laws because it does not interconnect to the public utility grid.

Q: How will Jackson Sustainability Cooperative deliver supplemental energy without affecting the existing connection with JEA?

A: Smart electric meters will be installed at each member's facility. Energy from the Solar Facility will flow to these smart meters. The controller technology intelligently allocates power to and from the batteries and to members, taking all factors into account to optimize power delivery. Members will draw power seamlessly from both JEA and JSC's controller, but no power will ever be able to backflow onto JEA's grid. The controller is designed to deliver supplemental energy when demand is high and the energy is most needed. When a JEA or TVA grid outage occurs, members will draw all their electricity from the Solar Facility for short periods of time and/or for priority usage until grid power is restored.

Q: Has the Jackson Sustainability Cooperative solar energy facility received any national recognition?

A. The Jackson Solar Project received an award from the U. S. Department of Energy's National Community Solar Partnership for innovation and contribution to making solar available in areas of the country where it is presently uneconomical.

Q. How will Jackson Sustainability Cooperative finance the Jackson Solar Project?

A. Jackson Sustainability Cooperative will lease all equipment necessary for the production of solar energy for its members. The Lessor is Community Development Enterprises - Jackson I, who is the on site developer. Jackson Sustainability Cooperative has a purchase option. Therefore , if the members of Jackson Sustainability Cooperative can find more favorable finance terms, they can acquire the leased equipment.

Q. Who will maintain the operation of the solar facility for Jackson Sustainability Cooperative?

A. Maintenance of the facility will initially be handled by Northern Reliability, Inc.

Q. In summary, what steps has JSC accomplished to date?

Since beginning work on this project a year and a half ago, we have completed the following:

- Site research, survey, and acquisition
- Feasibility study
- Due diligence: environmental, regulatory, permitting, and utility
- Received all 6 environmental approvals needed
- Preliminary design of the facility
- Selecting equipment needed

- Selecting and contracting with companies to design, engineer, and construct the project
- Selecting local contractors for construction and electrical work, preferring local labor
- All civil engineering site work
- Approval of the site plan design by the Jackson Planning Commission
- Held neighborhood meetings to explain the project to people living nearby, receiving near-unanimous approval
- Arranging for insurance during and after construction
- Beginning funding negotiations with select tax-equity investment banks and investors

Once we are assured that we are in compliance with the law, we will be ready to complete our financing, obtain a building permit, and begin construction

of the Jackson Solar Project.

I swear that the foregoing testimony is true and correct to the best of my knowledge.

_____
Dennis Emberling, President

Respectfully submitted this _____ day of September, 2021.

STATE OF TENNESSEE)
)
COUNTY OF DAVIDSON)

Subscribed and sworn to me a Notary Public, in his capacity as President of JSC this this _____ of _____, 2021.

_____
Notary Public

Commission Expires: _____



Integrated Resource Plan – Draft Results

PSAT Meeting | May 29, 2020

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EAS000488

Agenda



• Overview / Meeting Objectives – J.T. Young	10:00 am
• Agenda and Executive Summary - Siemens	10:10 am
• MISO Overview and Membership Assessment - MISO	10:40 am
• Questions of PSAT to MISO	11:30 am
• Break	11:40 am
• IRP Overview - Siemens	11:50 am
◦ Introduction	
◦ Strategies / Scenarios / Portfolio Analyzed	
◦ Metrics	
◦ Load Forecast / Fuel Forecast / Technology Assessment	
◦ Transmission / Resource Adequacy Issues	
◦ Other Costs for Direct Comparison	
◦ Portfolio Analyses (deterministic, stochastic and Waterfall)	
◦ Summary of Conclusions and Recommendations	
◦ Next Steps	
• Break	1:20 pm
• Questions and Comments from PSAT	1:30 pm

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Introduction

IRP Process Recap

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- The IRP process is designed to evaluate options for MLGW to supply of its current and forecasted load while meeting key objectives including:
  - *Affordability / Least Cost / Rate Impact*
  - *Reliability / Resource Adequacy*
  - *Sustainability / CO2 / Water Use / RPS*
  - *Stability / Price Risk Mitigation / Reliance on Market*
  - *Economic Impact / Local Capital Investment*
- Today we will present the results of the final set of Portfolios and our findings and recommendations.



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Integrated Resource Planning… a Recap

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Why do an IRP?

The Integrated Resource Plan is:

- Independent and unbiased
- Comprehensive regarding strategies and options
- Addresses the risk associated with market, regulatory and technology uncertainty
- Compares the TVA Full Requirements Contract to alternatives on an equivalent basis (generation, plus transmission, PILOT, Gap analysis, MISO charges, TVA Benefits, becoming LBA)
- Determines No Regret Strategies

What is an IRP?

The purpose of an IRP is to provide a plan for energy resource (primarily generation, transmission and demand side programs) development to meet future load and compare the status quo (TVA FRC) to MISO market and self generation options):

This is not a traditional IRP which focuses primarily on generation. Exiting TVA requires a combination of generation and transmission investments to replace TVA supply.

Least cost plans are developed for a given transmission infrastructure – hence alignment between Siemens and MISO's assumptions regarding transmission are critical inputs to the analysis.

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Integrated Resource Planning… a Recap

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What we will do today

- Siemens will present analyses and results that MLGW can use to determine the best path forward for Memphis
- Siemens will present its findings regarding the tradeoffs among cost, risk, reliability, sustainability, resilience, and economic development
- Siemens will
  - review previous materials,
  - fill in gaps in information that not covered in previous presentations (PILOT, benefits, gap analyses, TVA cost),
  - present the results of the Risk Analysis,
  - Present the balanced Scorecard,
  - Explain No Regret Positions for each Strategy,
  - Describe the Waterfall showing the components of Savings among Strategies
  - Recommend next steps (RFP to confirm savings)

What we will not do today

- Siemens will not make a final recommendation regarding whether MLGW should exit the TVA agreement – that is an MLGW decision
- Siemens has no view regarding which of the metrics is the most important to MLGW
- Siemens believes that MLGW should conduct an RFP to verify savings before making a final decision regarding both TVA and the best Portfolio options. However its timing is an MLGW decision.

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Summary of Findings

11 Resource Portfolios under Self-Supply plus MISO (Strategy 3) and All MISO (Strategy 4) were Evaluated

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Portfolio ID	Final Portfolio	Total Thermal 2039	Local Renew 2039	Battery 2039	Total Local Nameplate 2039	MISO Renew 2039	MISO Cap 2039	950 MW CC	450 MW CC	237 MW CT
S3S1_P	Portfolio 1	1137	1000	0	2137	2200	1761	0	2	1
S3S1_F	Portfolio 2	1587	1000	0	2587	1550	1487	0	3	1
S3S2_BB	Portfolio 3	1824	1000	0	2824	1350	1308	0	3	2
S3S3_BB	Portfolio 4	1350	1000	0	2350	1550	1697	0	3	0
S3S5	Portfolio 5	1398	1000	100	2498	3450	1183	0	1	4
S3S7_BB	Portfolio 6	1137	1000	0	2137	2200	1761	0	2	1
S3S1_2CT	Portfolio 7	1374	1000	0	2374	2200	1550	0	2	2
S3S7_2CT	Portfolio 8	1374	1000	0	2374	2200	1550	0	2	2
S3S5_YD	Portfolio 9	1398	1000	100	2498	3450	1186	0	1	4
S3S10	Portfolio 10	950	1000	0	1950	2250	1901	1	0	0
S4S1	Portfolio All MISO	950	0	0	0	3200	1909	1	0	0

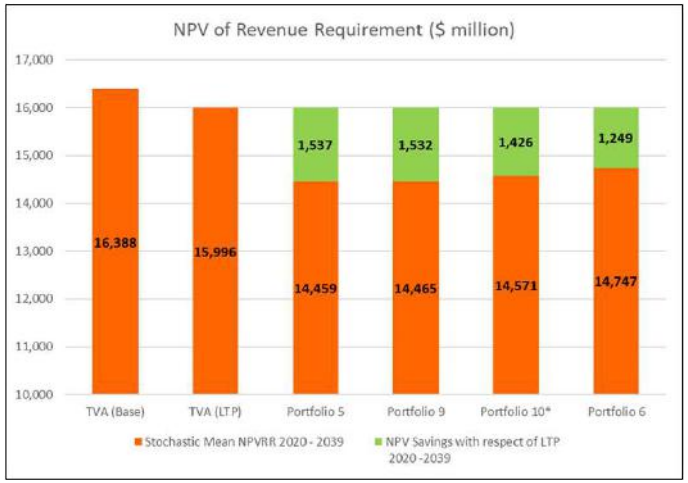
- Portfolio 1, 2 and 7: derived from the Reference case.
- Portfolio 3: derived from High Load / Base Gas case.
- Portfolio 4: derived from Low Load / Base Gas case.
- Portfolio 5 and 9: derived from High Transmission case, with battery storage (9 moved CTs to 2025).
- Portfolio 6 and 8: derived from Low Load / High Gas case (different numbers of CTs and timing).
- Portfolio All MISO: derived without local supply options.
- Portfolio 10: Shifted the CCGT and 1000 MW MISO renewables to local.

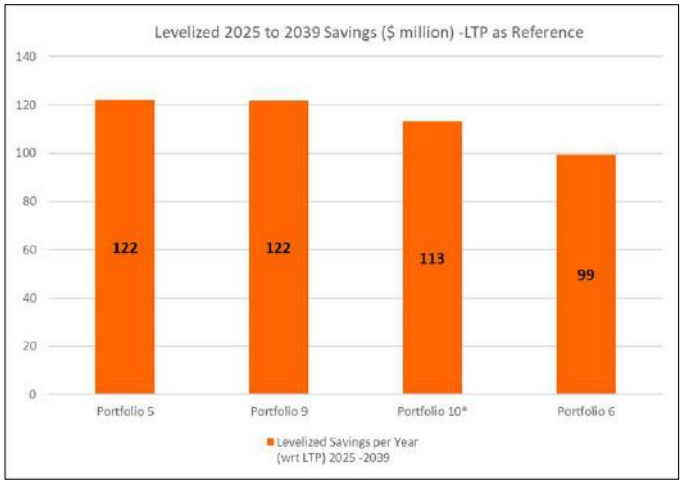
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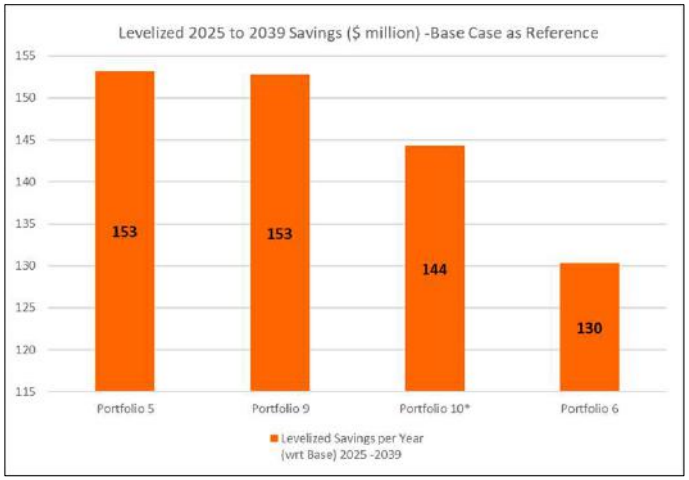
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Summary of Findings

- Future supply Portfolios 5 and 9 were identified that could provide savings of over $1.9 billion in 2018 dollars for the 2020 to 2039 period with respect of the TVA's Existing Contract and $1.5 billion (shown lower left) with respect of the Long Term Partnership contract. The sum of the $1.9 billion savings becomes about $3 billion in nominal dollars (including inflation).
- These two portfolios could achieve in annual savings of about $150 million per year (2025-2039) with TVA's Existing Contract (lower middle) and about $120 million per year (2025-2039) with TVA's LTP (in 2018$). In nominal dollars the $150 million averages about $200 million/year (assuming 2% inflation).



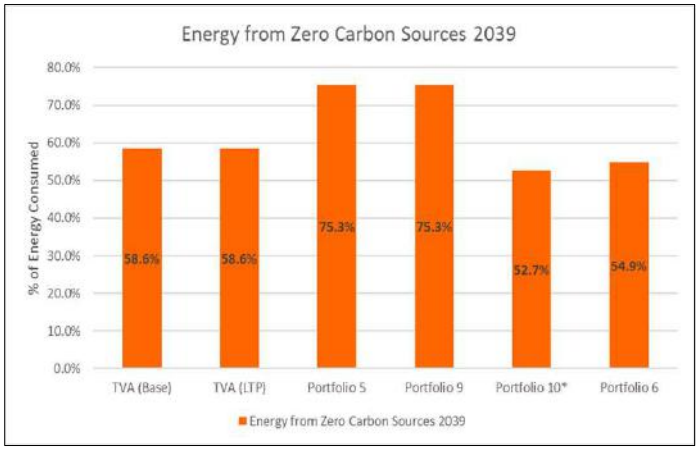


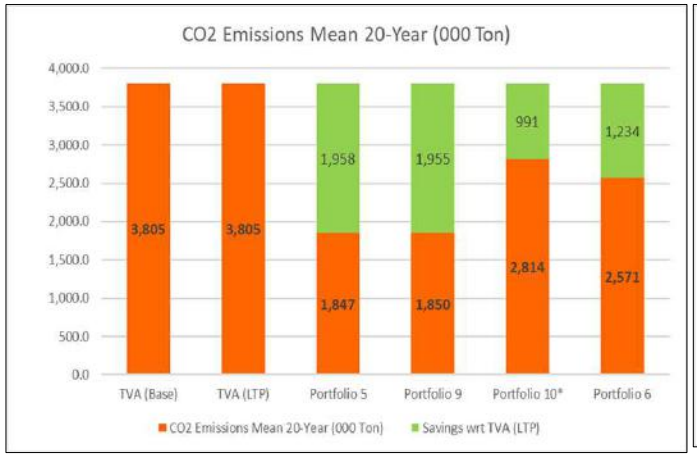


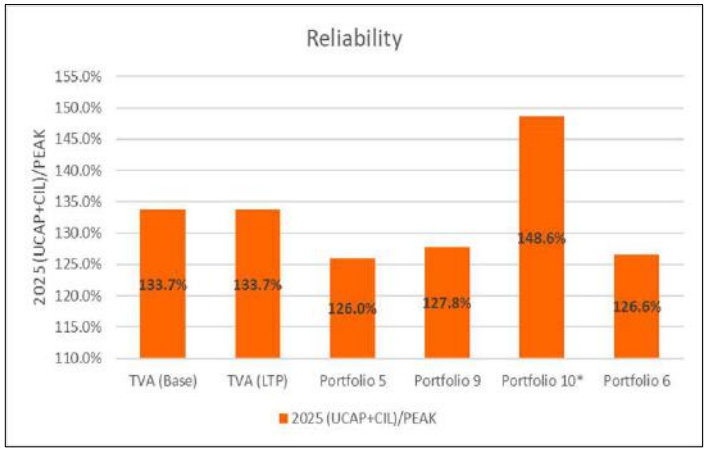
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Summary of Findings

- All of the best performing Self Supply plus MISO Portfolios have high levels of generation from zero carbon sources reaching levels from 52% to 75% when fully developed.
- CO_2 emissions are reduced by almost 50% of TVA levels with Portfolios 5 and 9.
- There will be an increase of local water consumption for generation of about 27% relative to TVA
- All Portfolios meet or surpass NERC reliability requirements, but Portfolio 5 has potential risk of load shed during double 500 kV line outages. This was addressed in Portfolio 9.







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MISO Overview and Membership Assessment

EAS000498

Memphis Light, Gas and Water (MLGW)
Power Supply Advisory Team Meeting

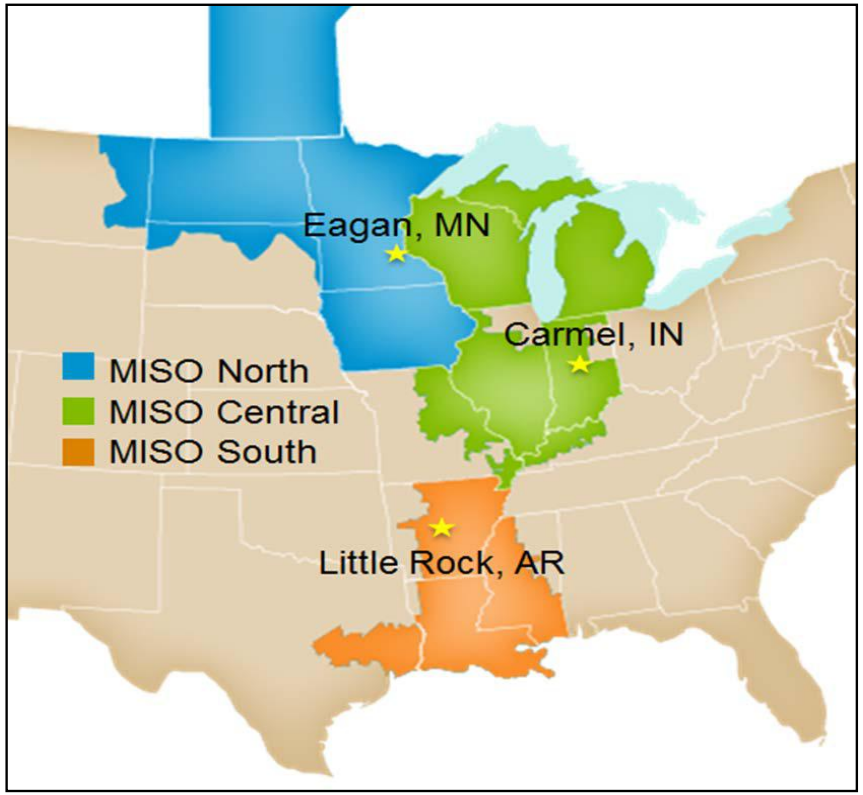
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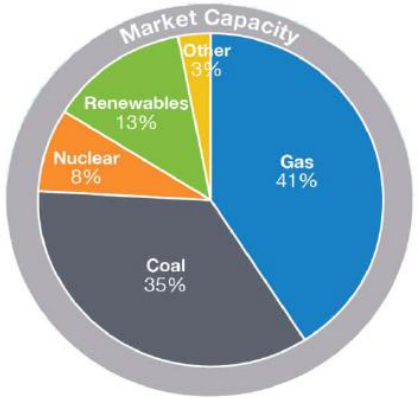
Part I: MISO Overview

MISO drives value creation through efficient and reliable markets, operations, planning, and innovation

Our Vision: To be the most reliable, value-creating RTO



MISO by-the-numbers	
High Voltage Transmission	65,800 miles
Generation Capacity	174,000 MW
Peak Summer System Demand (07-20-11)	127,125 MW
Customers Served	42 million



MISO Corporate Fact Sheet

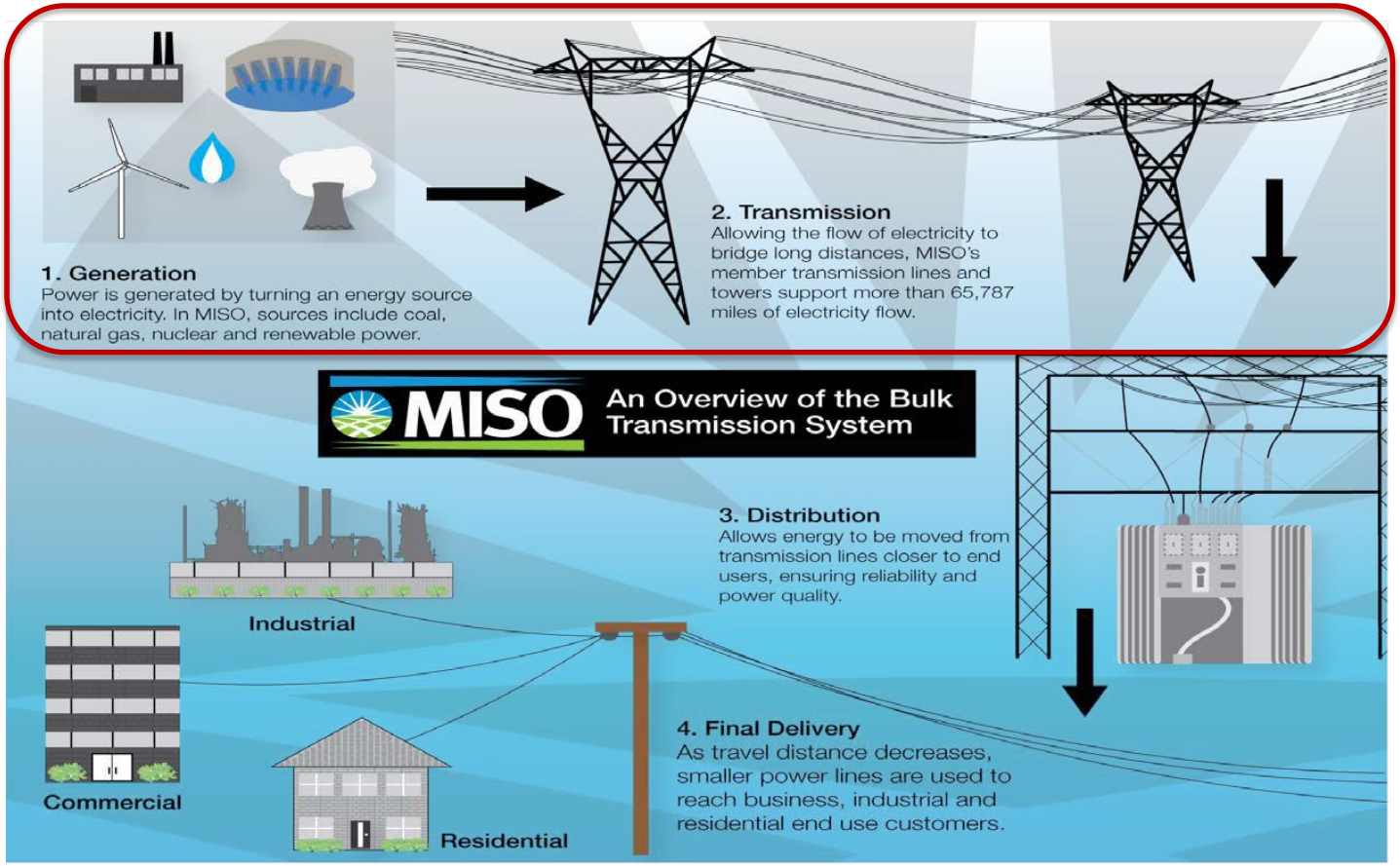
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MISO's Key Functions

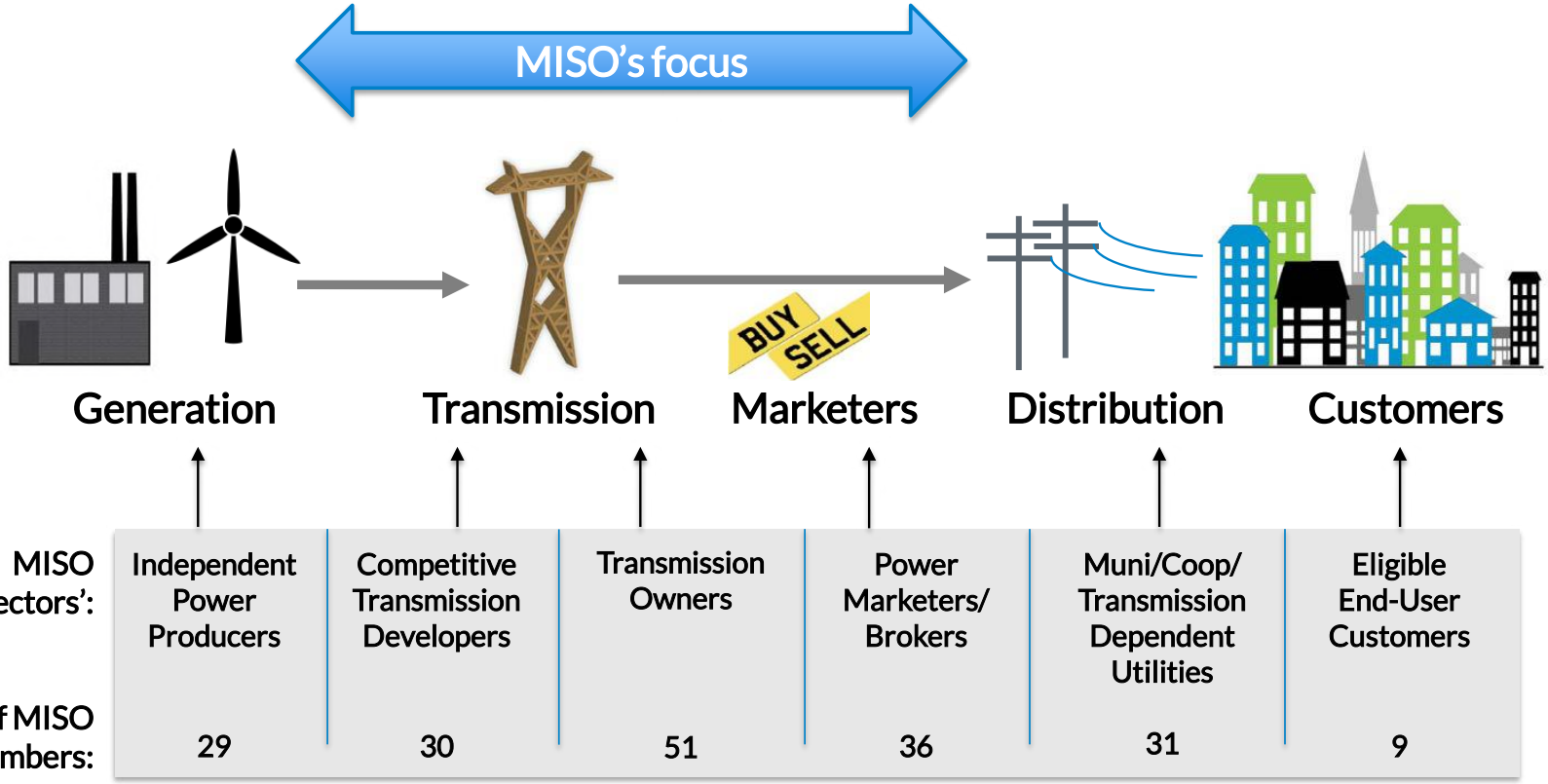
1. **Keeping the Lights On:** Safe and reliable operation of the electric grid
2. **Operating Open Energy Markets:** Scheduling and economic dispatch of generation to support reliability and efficiencies across the system
3. **Performing Transmission Planning:** Comprehensive expansion planning that meets reliability needs, policy needs, and economic needs



MISO doesn't own any physical assets, we manage flows on the transmission system by directing generator usage

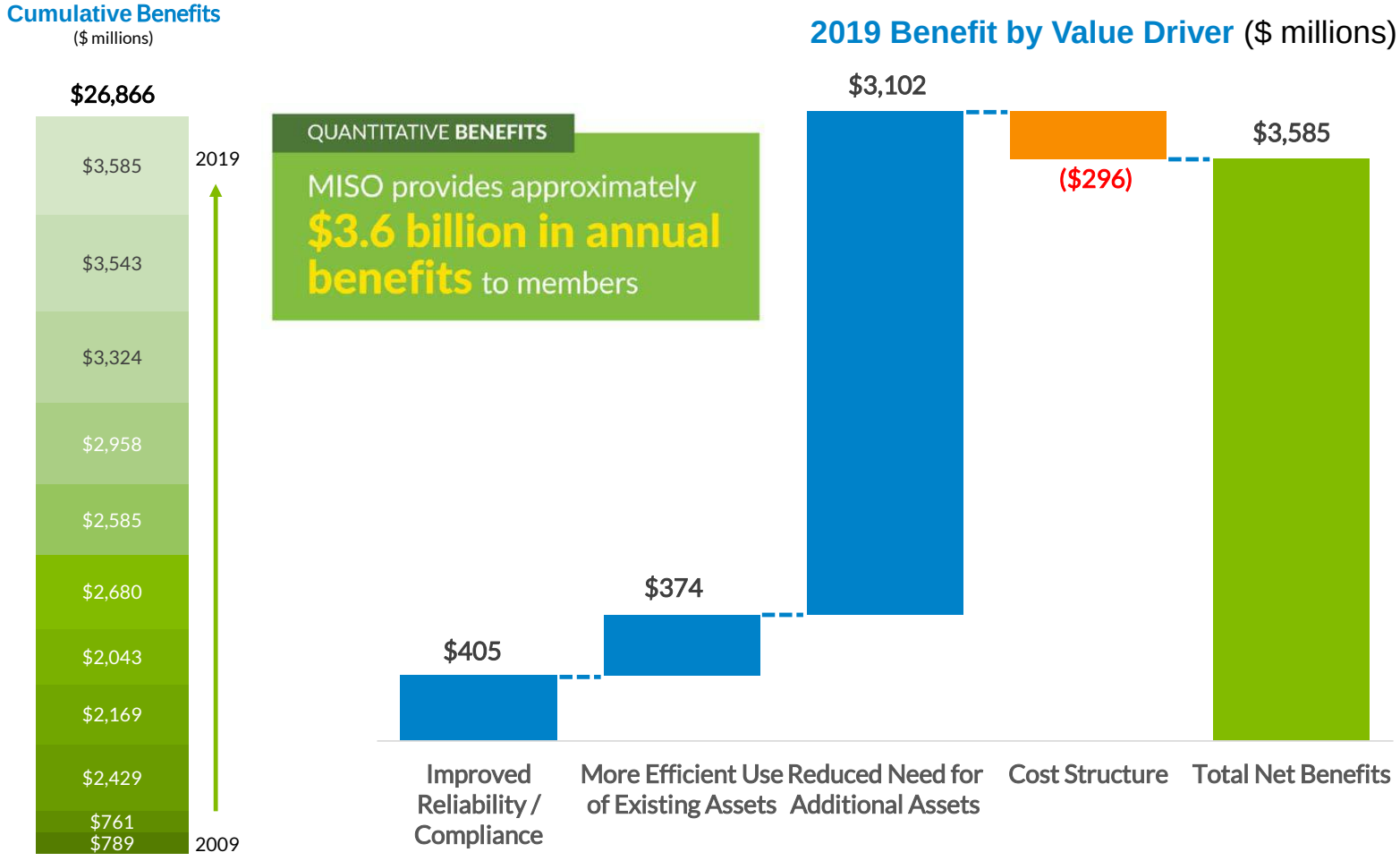


MISO members participate across the electricity value chain



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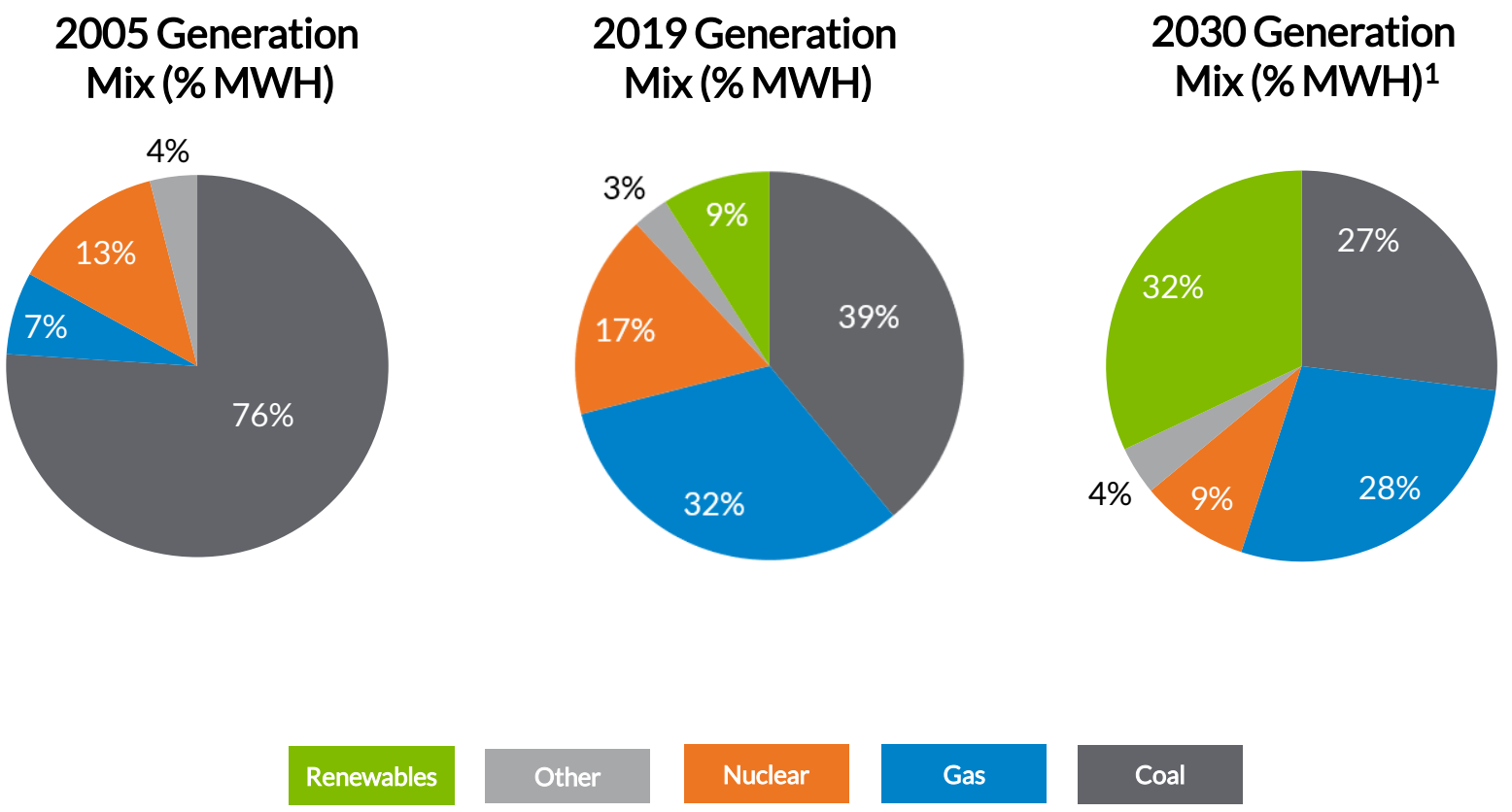
Since 2009, MISO has estimated over $26 billion in membership benefits



MISO Value Proposition

EAS000505

MISO will continue to support the evolution of resources on the bulk electric grid



[1]The 2030 projection compiled from Integrated Resource Plans , investor reports and other sources. Figures represent energy generated by fuel type, distinguished from capacity.

Part II: MLGW Membership Assessment

Siemens provided a list of study objectives and requested MISO's independent review

- Resource Adequacy:
  - Is the capacity expansion plan sufficient to join MISO Local Resource Zone (LRZ) 8 or to be a standalone Local Resource Zone?
  - What is the impact to the MISO Planning Reserve Margin (PRM)?
  - Is there adequate capacity for MLGW to purchase starting in 2025?
- Transmission Interconnection:
  - Is the transmission expansion proposal a reliable solution?
  - What is the MLGW import capability?
  - What is MISO's estimate of the costs for transmission expansion, reliability upgrades, and generator interconnections?
- Market Impact:
  - How will membership affect its Adjusted Production Costs (APC)?
  - What are the impacts to MISO's regional congestion patterns?
- MISO Cost:
  - What are the annual costs to MLGW of MISO membership?

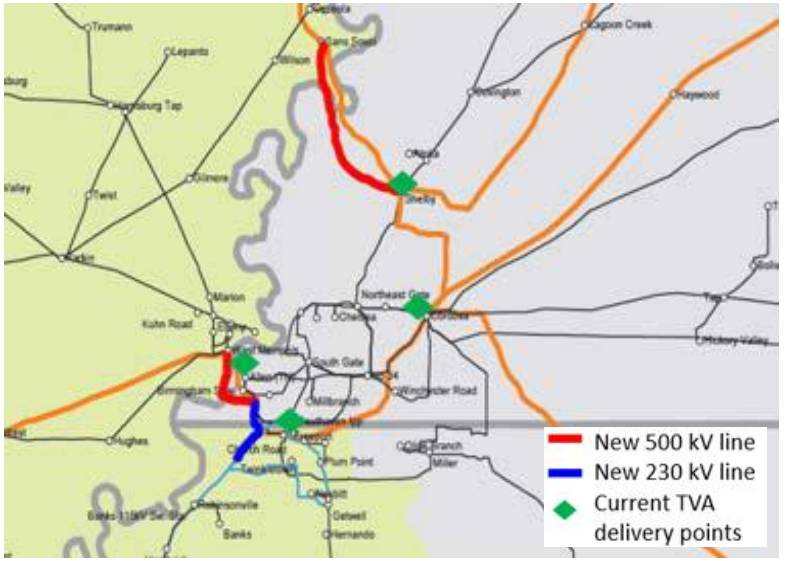
MISO performed its assessment for MLGW based on the following capacity and transmission expansion plan

Base Capacity Expansion Plan

MW	Gas CT	Gas CC	MLGW Solar	Arkansas Solar	Arkansas Wind
2025	237	1,350	600	500	200
2026	0	0	400	0	0
2027	0	0	0	0	0
2028	0	0	0	0	50
2029	0	0	0	0	50
2030	0	0	0	150	0
2031	0	0	0	50	0
2032	0	0	0	0	50
2033	0	0	0	50	0
2034	0	0	0	300	0
2035	0	0	0	0	0
2036	0	0	0	50	0

Transmission Expansion Plan

- 500 kV line from San Souci – Shelby
- 500 kV line from West Memphis – New Allen
- 230 kV line from Twinkletown – New Allen



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The MLGW membership analysis resulted in the following takeaways

RESOURCE ADEQUACY ASSESSMENT

- Siemens' proposal provides MLGW with adequate resources to join MISO Local Resource Zone (LRZ) 8 or to be its own standalone zone
- If MLGW were to join MISO it would lower the Installed Capacity (ICAP) Planning Reserve Margin (PRM) from 18.2% to 17.9%
- MISO is unable to provide direction on how much excess capacity would be available for purchase

TRANSMISSION INTERCONNECTION ASSESSMENT / COST

- MISO validated the physical transmission import capability up to 2,400 MW during 2024 summer peak conditions
- MISO's estimated the transmission expansion, reliability upgrades, and interconnection costs to be $736.2M vs. $728.2M by Siemens[2]

MARKET IMPACT ASSESSMENT

- MLGW could realize annual production cost savings of $92.6 million in 2024 to as much as $268.6 million in 2034 (note: these totals do not account for fixed costs)
- Projections show MLGW self supplying 50% of its energy needs in 2024 and increasing over time
- No significant changes to congestion patterns were observed

MISO ADMINISTRATIVE COST RECOVERY FEES

- Based on a projection of MISO's annual operating expenses MLGW's share of MISO's costs would be approximately $6 million annually
- As a MISO member MLGW would be charged a portion of FERC's annual budget. This cost is estimated at an additional $730,000 per year.

[2]The Siemens cost estimate is adjusted to match MISO's assumptions regarding contingencies and inflation.

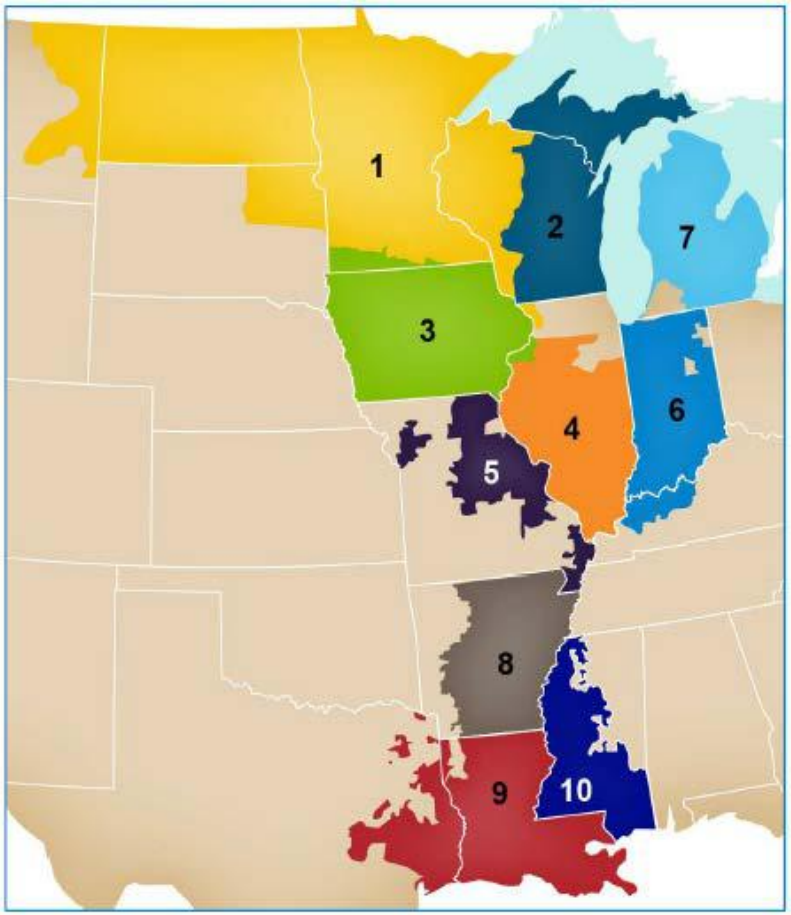
MLGW has requested that MISO evaluate an additional option which includes no local generating resources

- MISO will be analyzing the same variables that were reviewed under the previous capacity/transmission expansion plan
  - Resource Adequacy
  - Transmission Interconnection Reliability
  - Transmission Interconnection Cost
  - Market Impacts
- MISO has committed to delivering the results of its analysis prior to MLGW's Integrated Resource Plan (IRP) being finalized in early July

Appendix

MISO Local Resource Zone (LRZ) Map

- MISO's footprint is divided into ten Local Resource Zones (LRZs)
- MISO developed LRZs to reflect the need for an adequate amount of planning resources to be located in the right physical locations within the MISO Region
- The geographic boundaries of the LRZs are based on multiple criteria



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Strategies / Scenarios / Portfolio Analyzed

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Key Issue: Portfolio Expansion Strategies

- The **Strategies**, representing the available options to MLGW to supply its load, are combined with **Scenarios** (i.e. future states of the world) and using a structured approach to identify Portfolios.

- Multiple Strategies were assessed:
  - Strategy 1: Full Requirements Contract with TVA
  - Strategy 2: Self-Supply (found to be impractical)
  - Strategy 3: MLGW-MISO combination with restricted transmission access ("No Deal" Case)
  - Strategy 4: All MISO

- Multiple Scenarios were developed for Strategy 3

- A least cost generation and transmission plan was developed for each Strategy/Scenario combination

Scenarios / Portfolios		Strategy		
		Strategy 1 (TVA)	Strategy 3 Self + MISO	Strategy 4 All MISO
State of the World	Scenario 1 Reference	S1S1	S3S1	S4S1
	Scenario 2 (High Load)		S3S2	
	Scenario 3 (Low Load)		S3S3	
	Scenario 4 (High Load/Low Gas)		S3S4	
	Scenario 5 (High Transmission)		S3S5	
	Scenario 6 (Promote BESS)		S3S6	
	Scenario 7 (Low Load/High Gas)		S3S7	

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Summary of the Selection of 11 Portfolios

Portfolio ID	Final Portfolio	Load	Gas Price	Total Thermal 2039	Local Renew 2039	Battery 2039	Total Local Nameplate 2039	MISO Renew 2039	MISO Cap 2039	950 MW CC	450 MW CC	237 MW CT	343 MW CT
S3S1	No	Base	Base	1137	1000	0	2137	2200	1761	0	2	1	0
S3S1_P	Portfolio 1	Base	Base	1137	1000	0	2137	2200	1761	0	2	1	0
S3S7_BB	Portfolio 6	Base	Base	1137	1000	0	2137	2200	1761	0	2	1	0
S3S1_2CT	Portfolio 7	Base	Base	1374	1000	0	2374	2200	1550	0	2	2	0
S3S7_2CT	Portfolio 8	Base	Base	1374	1000	0	2374	2200	1550	0	2	2	0
S3S1_M	No	Base	Base	1930	650	0	2580	1050	1342	0	3	1	1
S3S1_MP	No	Base	Base	1587	750	0	2337	1800	1487	0	3	1	0
S3S1_F	Portfolio 2	Base	Base	1587	1000	0	2587	1550	1487	0	3	1	0
S3S1_A	No	Base	Base	1587	1000	0	2587	1150	1554	0	3	1	0
S3S2	No	High	Base	1824	1000	0	2824	1350	1746	0	3	2	0
S3S2_BB	Portfolio 3	Base	Base	1824	1000	0	2824	1350	1308	0	3	2	0
S3S3	No	Low	Base	1350	1000	0	2350	1550	1655	0	3	0	0
S3S3_BB	Portfolio 4	Base	Base	1350	1000	0	2350	1550	1697	0	3	0	0
S3S4	No	High	Low	1824	1000	25	2849	700	1849	0	3	2	0
S3S5	Portfolio 5	Base	Base	1398	1000	100	2498	3450	1183	0	1	4	0
S3S5_YD	Portfolio 9	Base	Base	1398	1000	100	2498	3450	1186	0	1	4	0
S3S6_N	No	Base	Base	900	1000	475	2375	2200	1505	0	2	0	0
S3S6	No	Base	Base	900	1000	475	2375	2200	1505	0	2	0	0
S3S7	No	Low	High	1137	1000	0	2137	2200	1718	0	2	1	0
S3S8	No	Base	Base	0	1000	0	1000	4850	2248	0	0	0	0
S3S10	Portfolio 10	Base	Base	950	1000	0	1950	2250	1909	1	0	0	0
S4S1	Portfolio All MISO	Base	Base	950	0	0	0	3200	1909	1	0	0	0

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Recognizing that cost was not the sole basis for selecting Portfolios. The determination of the final Portfolios is a two-step process:

- First: a base capacity expansion is produced using the Long Term Capacity Expansion (LTCE) module of the optimization software (AURORA).
- Next: Expert judgement is used to adjust the initial expansion plan and the AURORA LTCE was re-run with these adjustments in place, resulting in a unique Portfolio that is better suited to manage risks, such as reduced dependence on remote resources.

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Metrics

Objectives and Metrics Used in The Evaluation Of Alternative Portfolios

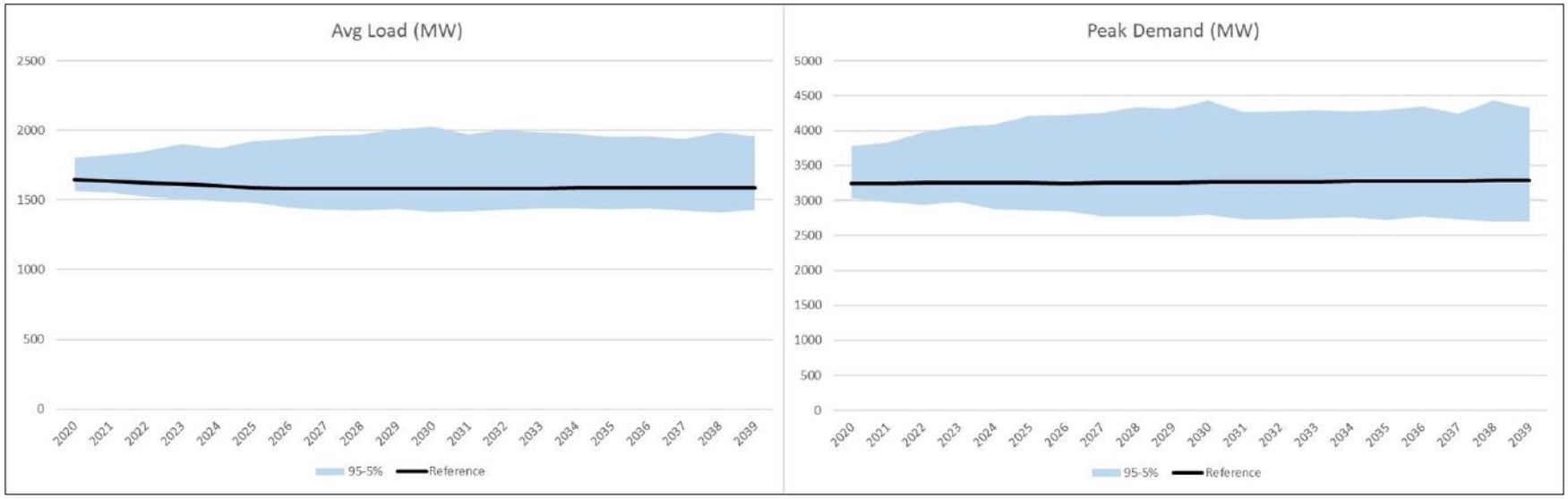
OBJECTIVES	METRICS
Reliability	Meets or exceeds NERC reliability requirements and manages intermittency. All Portfolios meet the minimum levels of NERC thus the metric is designed to measure the ratio of Capacity Import Limit (CIL) + Generation Unforced Capacity (UCAP) to Peak Load. ***Higher the better.***
Least cost (Affordability)	NPV of revenue requirements: this includes all costs in addition to the generation capital and operating costs, i.e. transmission, MISO Membership, TVA benefits, PILOT, etc. ***Lower the better.***
Price Risk (Minimization/Stability)	Measured as: a) 95% (worst) outcome and b) Regret: i.e. the level by which MLGW would regret having chosen a Portfolio in case of an adverse future. ***Lower worst outcome and Minimum or No Regret is the goal.***
Sustainability	Measured as a) Carbon (proxy for total emissions), b) water consumption and c) percentage of the energy coming from renewable resources (nuclear and large hydro excluded). ***On a & b lower the better , c higher the better.***
Market Risk	Energy Market Purchases or Sales as a percentage of load; Amount of Capacity Purchases. ***Lower the better.***
Economic Growth	Capital Expenditures in Shelby County and number of plants as a proxy. ***Higher the better.***
Resiliency	Amount of load shed during extreme events. ***Lower the better.***

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Input Assumptions

Memphis Stochastic Load



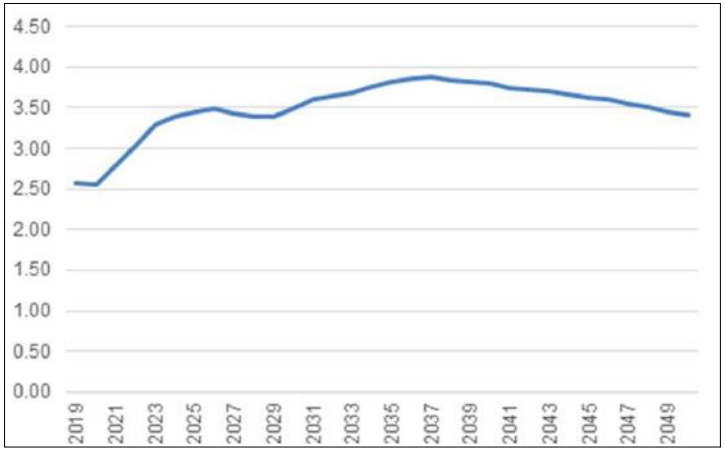
The overall distribution shows considerable uncertainty for future average load growth exceeding the reference case, and less uncertainty for future average load growth trending below the reference case.

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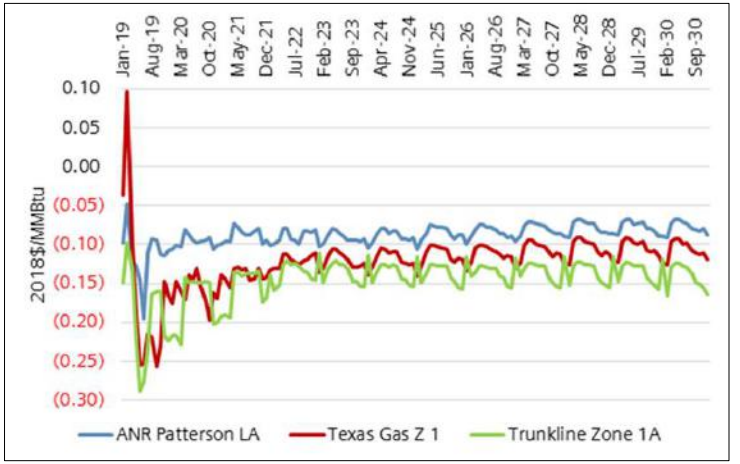
Natural Gas Price Outlook Cost Components: Henry Hub + Market Gas Hub Index + Transport Tariff

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Annual Henry Hub Natural Gas Forecast (2018$/MMBtu)



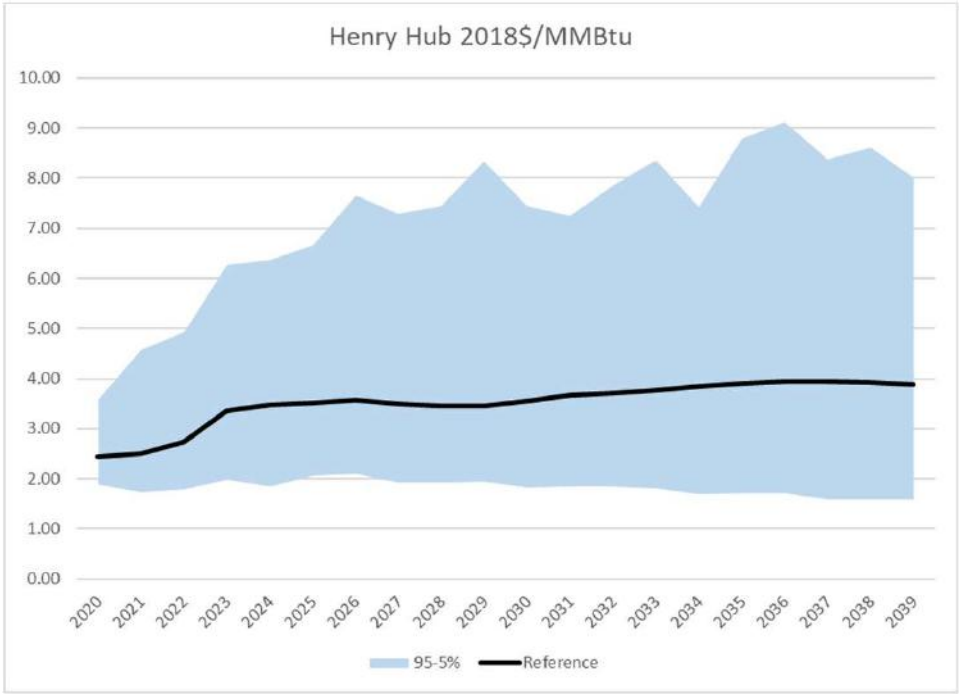
Monthly Forecast Gas Basis to Henry Hub (2018$/MMBtu)



- The average of Trunkline Zone 1A and Texas Gas Z1 was used as the gas basis for gas plants built in MLGW territory.
- Trunkline firm transportation rate of $0.3811/MMBtu was used for combined cycles and interruptible transportation rate of $0.3212/MMBtu was used for gas peaker.

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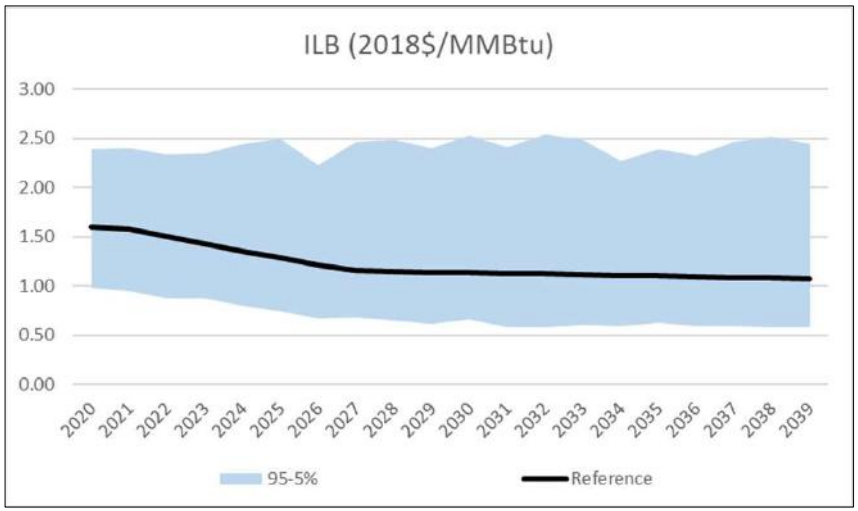
Stochastic Inputs – Gas Prices

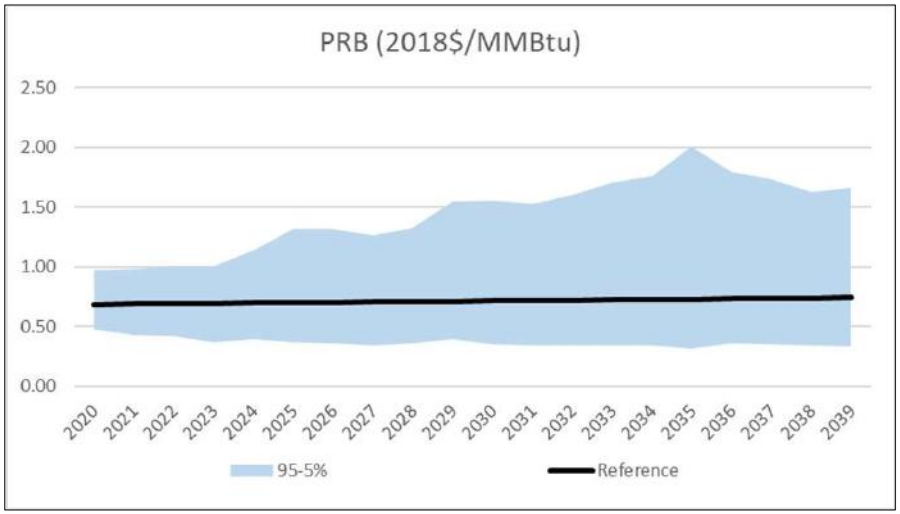


- Siemens has developed stochastics around the price at the Henry Hub based on historical volatility, current market forwards, and a long-term term fundamental view that considers the expected supply-demand balance.
- The 95th percentile probability bands are driven by increased gas demand (most likely due to coal retirements) and fracking regulations that raise the cost of producing gas.
- Prices in the 5th percentile are driven by significant renewable development that keeps gas plant utilization down as well as little to no environmental legislation around power plant emissions.

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Stochastic Inputs – Coal Prices





These stochastic distributions are based on a reference case view of coal prices with probability bands developed based on a combination of historical volatility and mean reversion parameters.

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Technology Options – Capital Costs

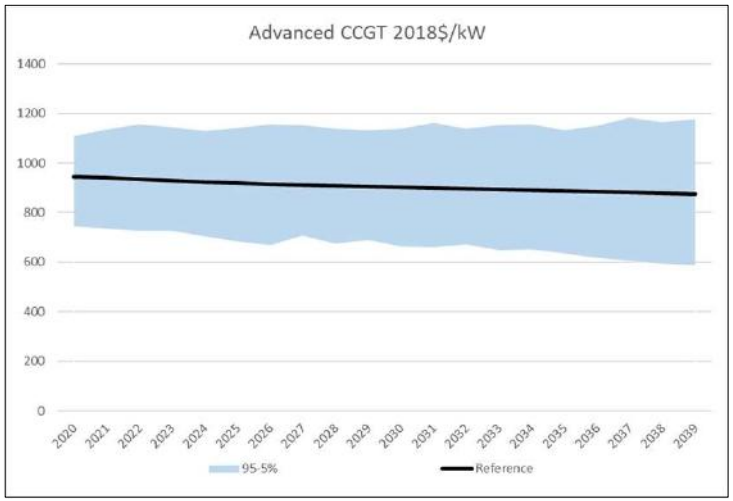
Technology	Advanced 2x1 CCGT	Conventional 1x1 CCGT, Duct Fired	Simple Cycle Advanced Frame CT	Simple Cycle Conventional Frame 7FA CT	Simple Cycle Aero CT	Coal With 30% CCS	Utility Solar PV - Tracking	Onshore Wind	Lithium Ion Batteries (4 hrs.)	Nuclear SMR
Fuel	Nat. Gas.	Nat. Gas.	Nat. Gas.	Nat. Gas.	Nat. Gas.	Coal	Sun	Wind	Elec. Grid	Uranium
Construction Time (Yrs.)	3	3	2	2	2	5	1	2	<1	7
Size (MW)	950	361 (Base) 89 (DF)	343	237	50	600	50	100	5 MW / 20 MWh	50-1,200
Average Heat Rate (Btu/kWh), HHV	6,536	7,011 (Base) 8,380 (Incr. DF)	8,704	9,928	9,013	9,750	N/A	N/A	N/A	N/A
VOM (2018$/MWh)	1.81	2.49	7.13	5.05	6.50	7.14	0.00	0.92	1.39	14.79
FOM (2018$/kW-yr)	15.90	17.41	9.53	4.39	15.70	73.45	20.70	36.56	32.21	165.42
Range of Capital Cost (2018$/kW)	947-874	1084-1003	711-652	626-578	1136-1041	6135-5027	1245-702	1636-1399	1534-693	9539-5365
Range of LCOE (2018$/MWh)	35-51	42-58	95-112	88-110	140-155	98-101	38-29	37-28	151-84	124-86

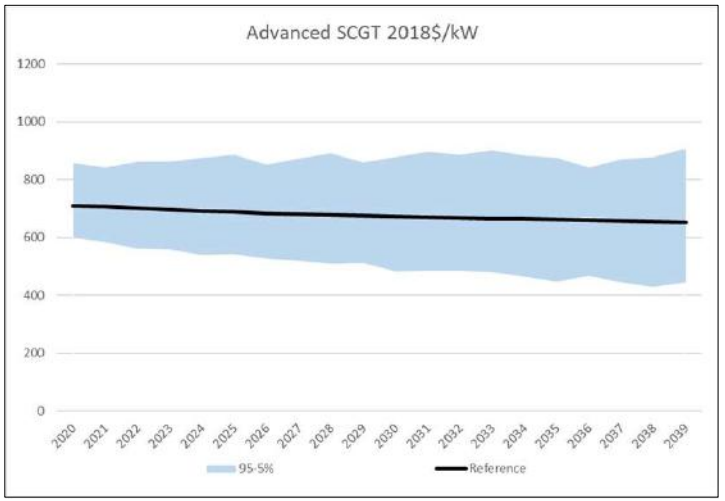
- The technologies in red boxes were selected for Self-Supply + MISO Portfolios.
- Local solar has important advantages as it is closer to the load, behind the transmission constraints, and has lower transmission costs. Due to land availability, only 1000 MW was allowed to be built in Shelby County.
- Advanced 2x1 CCGT was removed from being built locally as an option due to reliability considerations; but remains a candidate for All-MISO Strategy.

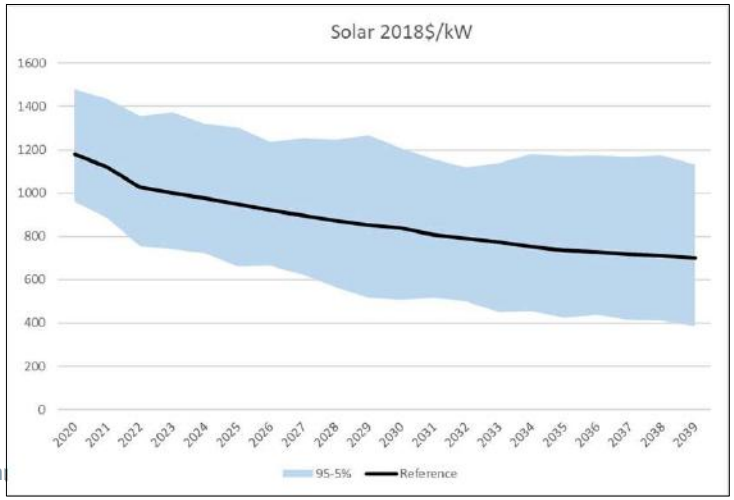
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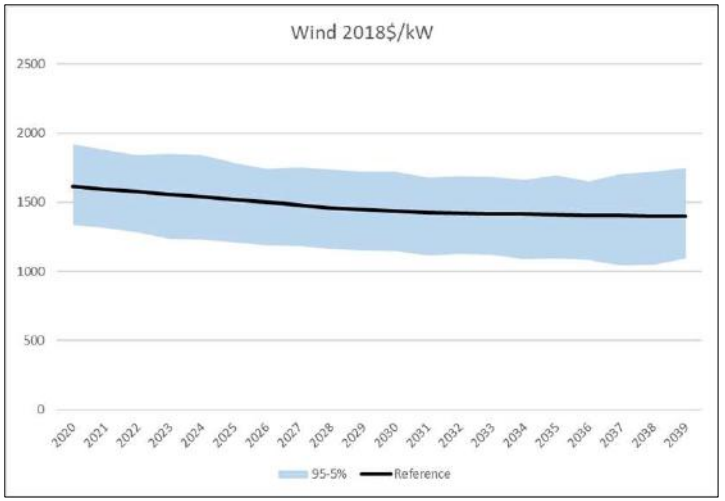
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Stochastic Inputs – Technology Costs



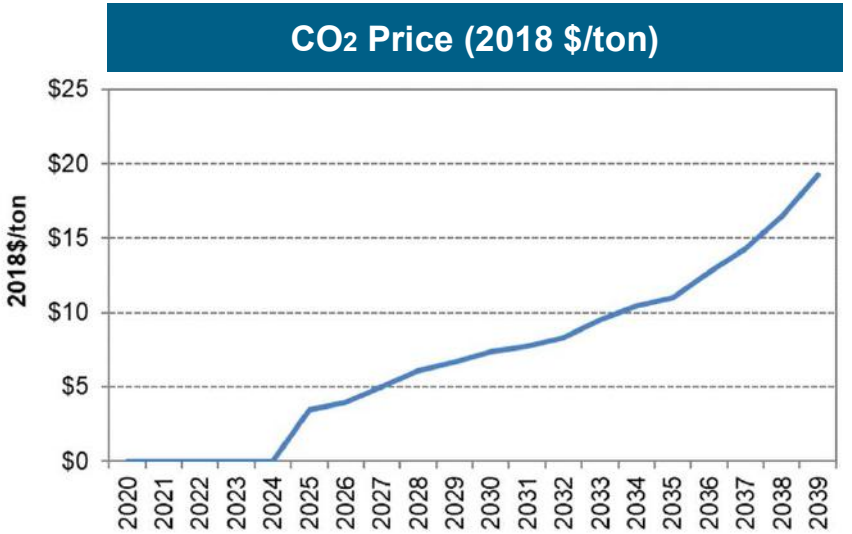






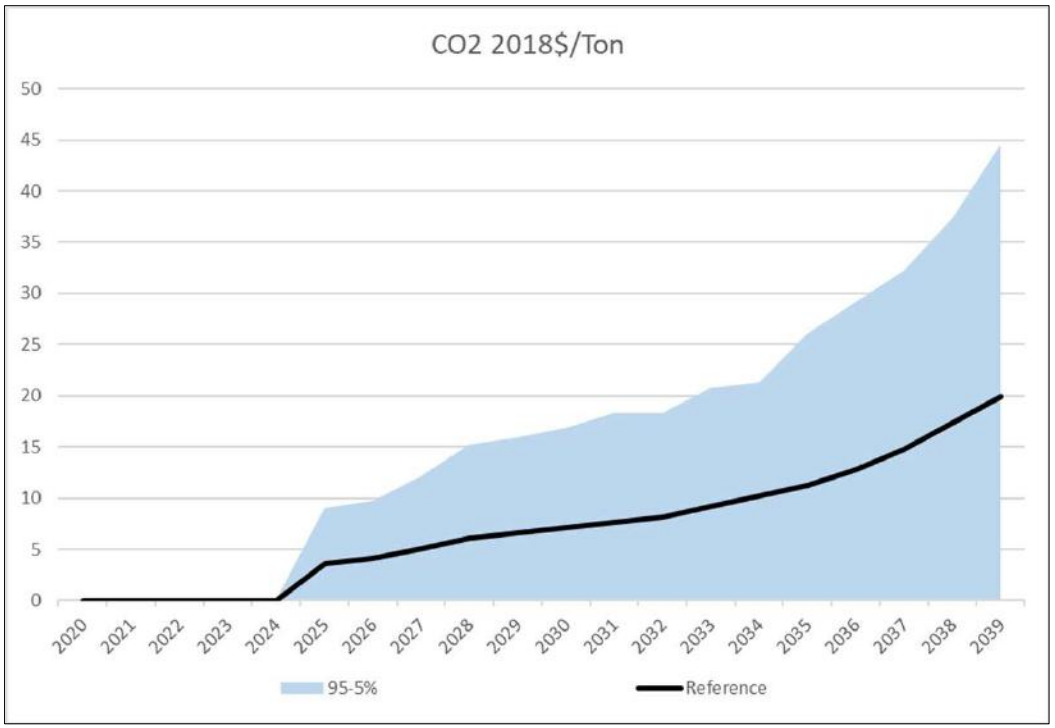
Sustainability / Environmental Considerations

- Renewable standard was imposed at a minimal level. However, because renewable technologies were found to be an economic option, most portfolios included 50% or more renewable generation.
- A moderate federal price on carbon emissions was included in the Reference Case starting in 2025.
- Emission allowance price costs were included for existing market for SO_2 and NO_x.
- Permitting for new generation facilities was not conducted as a part of the IRP.
- High level assessment suggests that water access and air permits would be feasible for any large new gas generation facility in Shelby County.



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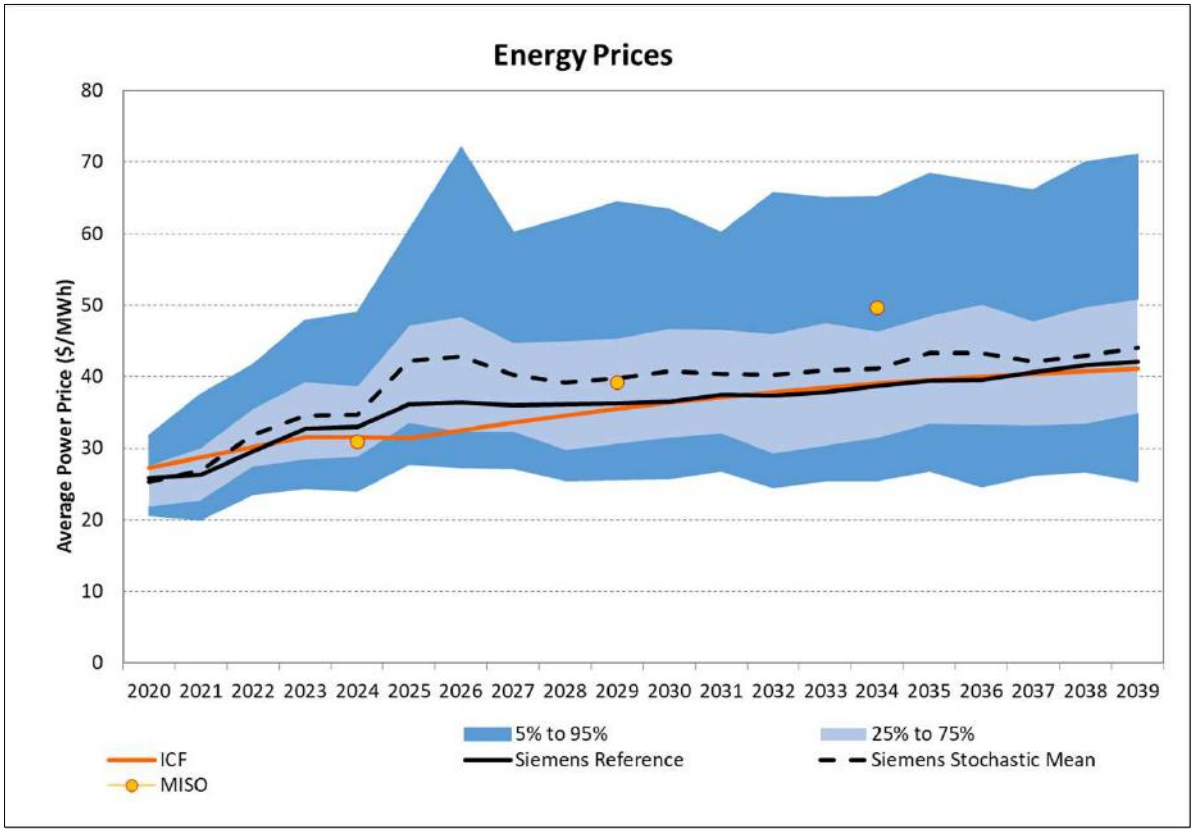
Stochastic Inputs – CO_2 Prices



- Siemens developed uncertainty distributions around carbon compliance costs based on “expert-opinion” based projections, when the historical data is not available. The top end reflects estimates of the social cost of carbon.
- The distribution of carbon prices were used in the power dispatch modeling to capture the inherent risk associated with regulatory compliance requirements.

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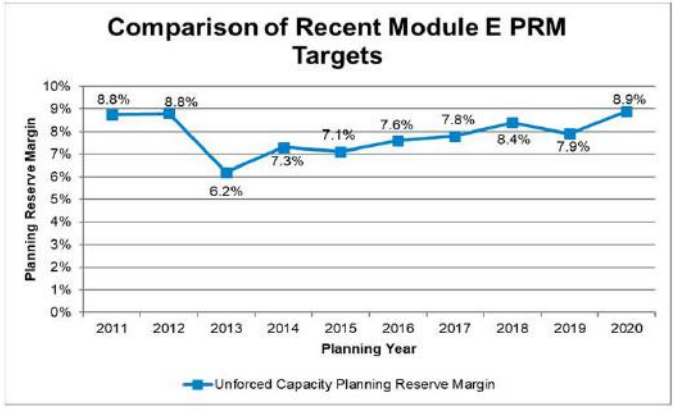
Stochastic Inputs – Market Forecast

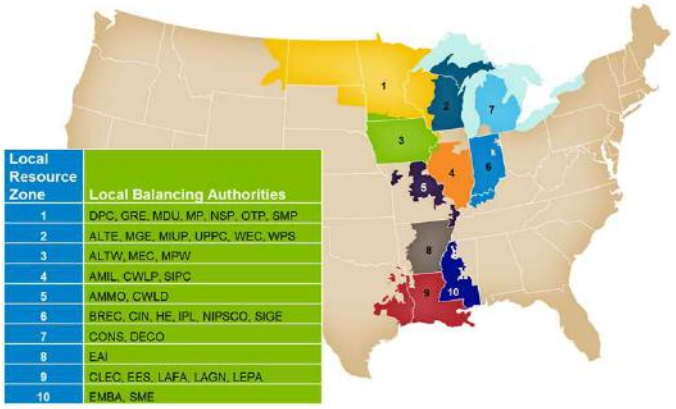


- Siemens also produces a range of views on how energy prices will change over the planning horizon.
- These are based on our forecast of future expansions.
- AURORA is used with all the input distributions to calculate energy prices.
- ICF and MISO forecasts are well within the bands of uncertainty evaluated. MISO is lower in the near term and higher in the long term.

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Resource Adequacy
All Portfolios Must Meet MISO Resource Adequacy





Local Resource Zone	Local Balancing Authorities
1	DPC, GRE, MDU, MP, NSP, OTP, SMP
2	ALTE, MGE, MIUP, UPPC, WEC, WPS
3	ALTW, MEC, MPW
4	AMIL, CWLP, SIPC
5	AMMO, CWLD
6	BREC, CIN, HE, IPL, NIPSCO, SIGE
7	CONS, DECO
8	EAI
9	CLEC, EES, LAFA, LAGN, LEPA
10	EMBA, SME

- MISO is planned so that there are enough reserves to ensure that the loss of load expectation (LOLE) is less than one day in 10 years
- Current requirement is 8.9% of Unforced Capacity (UCAP) or 18.2% considering the Installed Capacity (ICAP)
- To plan for this MISO is divided into 10 Local Resource Zones (LRZ)
- Each LRZ must have enough Local Resources so that with the ability to import resources from the rest of MISO (Capacity Import Limit – CIL) it meets the zone's criteria of 1 in 10. This is called the Local Reliability Requirement (LRR)
  - If MLGW were a new LRZ it would have a **LRR** of about 126%
  - If MLGW is part of LRZ-8 Arkansas this drops to about 120.6%
- Each LRZ must have internal resources so that it meets the larger of:
  a. MISO Planning Reserve Margin (PRM) of 8.9% (108.9% of peak load)
  b. The Local Clearing Requirement; which is the amount of internal generation (UCAP) that when added to the ability to import from MISO to meet the **LRR**
- All Portfolios that have internal generation were designed to meet:

UCAP + CIL >= 126% of Peak Load

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Transmission – The Proposed Plan and Analysis Performed

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- Transmission was planned under the assumption that TVA will not provide wheeling to MLGW for use of its transmission system, aka “No Deal”
- Strong interconnections must be established between MLGW and MISO if MLGW were to join MISO. This applies to Strategies 3 & 4.
- Baseline transmission interconnections consist of:
  1. New San Souci-MISO to Shelby-MLGW 500 kV line, 26 miles
  2. West Memphis-MISO to New Allen-MLGW 500 kV line, 8.5 miles
  3. Twinkletown-MISO to New Allen-MLGW 230 kV line, 8 miles
- Based on the LTCE plans and proposed transmission configurations, Siemens performed:
  - Steady state contingency analysis, using NERC TPL reliability standards confirming all system reliable, and identified local upgrades
  - Transfer analysis, determined import capabilities from 2579 MW to 3690 MW depending on the requirement by the Portfolio
  - Stability analysis, demonstrated system stable against critical faults
  - Economic nodal production cost analysis, showed no expected system congestion
- Maximum transmission option adds 4th interconnection line: Dell-MISO to Shelby-MLGW 500 kV, 44 miles, required for All MISO Strategy.

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Transmission – The Numbers

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- Total capital costs for baseline configurations ~$700 M (with contingency) in 2018 $ or $2.1/MWh NPV 2025-2039:
  - Transmission expansions, $376 M
  - Local 161 kV reinforcements, $184 M
  - Generator Interconnections, $88 M
  - Reimbursements to TVA for Allen CCGT reconnection and reliability upgrades, $47 M
- Maximum transmission option (for All MISO Strategy), adds ~$407 M for a total of $1,014 M, or $3.1/MWh NPV 2025-2039.
- Cost of transmission O&M for new facilities, 2.5% of capital cost, ~$9.4M/year, or $0.7/MWh for base plan and increased to $0.9/MWh for max transmission plan.
- Capital cost varies based on the import requirement of each Portfolio

The transmission configurations, reliability performance, transfer capability, and cost estimation were all independently reviewed by MISO

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Other Costs – Integral part of the total revenue requirement

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- Payment in Lieu of Taxes (PILOT)
  - MLGW assumes full responsibility of state and local PILOT
    - State PILOT assumes 5% of the wholesale power cost, ranging $2.3/MWh to $2.6/MWh, or avg. $33 M /year, depending on the NPVRR of the Portfolio
    - Local PILOT ranges $1.4/MWh to $2.3/MWh depending on the total transmission investments
- TVA Service and Benefits Replacements
  - TVA has been providing social and economic benefits to Memphis area
  - MLGW is expected to continue those benefits and spend $13 to $15 million per year, or $1/MWh on the NPV basis.
- MISO Membership Cost
  - MLGW would be responsible for MISO membership fee and annual cost shares at about $6.7 million per year or $0.45/MWh on the NPV basis.
- Energy Efficiency Programs
  - MLGW is assumed to implement system wide energy efficiency programs to achieve 0.5% penetration at a cost of ~$ 7 million per year or $0.64/MWh on the NPV basis.

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Gap Analysis

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Local Balancing Area Costs	
Fixed Capital Cost (2020 $M)-LBA	
AGC to MLGW controlled units	$0.8
Data communications to generators and LBA service provider	$1.2
Control center facility upgrade	$1.0
Real-time contingency and reliability analysis	$0.8
CIP compliance upgrade	$0.8
TOTAL	$4.6
Annual O&M Cost (2020 $M, with annual escalator)-LBA	
Annual LBA service vendor	$0.8
LBA service technical support at MLGW	$0.4
Expanded CIP Scope	$0.2
Staff (+3) and training	$0.8
Additional communications maintenance and fees	$0.4
Additional control center systems maintenance	$0.4
TOTAL	$3.0

- Siemens reviewed MLGW's existing capabilities and assessed the gaps for enabling MLGW to perform required planning and operating functions as a MISO LBA.
- The Gap Analysis referenced NERC reliability standards assigned to Balancing Authorities (BAs), and examined NERC's operations readiness (BA Certification) document. Additionally, the review included an analysis of the MISO Operating Agreement, last amended in January 2019.
- The total cost is about $0.5/MWh on NPV 2025-2039.

Gap Cost - Other	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Steady State--->
Resource and Transmission Planning, Studies and Procurement	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Resource Planning Staff	1	2	2	2	2	2	2	2	2	2	2
Transmission Planning and Interconnection Study Staff	1	2	2	2	2	2	2	2	2	2	2
Procurement Staff	1	2	2	2	2	2	2	2	1	1	1
Total Staff	3	6	6	6	6	6	6	6	5	5	5
Staffing Costs $266,000/FTE including salary, benefits, rent, facilities	$0.8	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.3	$1.3	$1.3
Contractor & Consulting Costs, G&T MLGW	$0.5	$0.8	$1.0	$1.0	$1.0	$1.0	$1.0	$0.5	$0.5	$0.3	$0.3
Total Cost	**$1.3**	**$2.4**	**$2.6**	**$2.6**	**$2.6**	**$2.6**	**$2.6**	**$2.1**	**$1.8**	**$1.6**	**$1.6**

*All staff are in addition to existing staff
*costs start 2021

*All Costs in Million

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Analyses of Portfolios

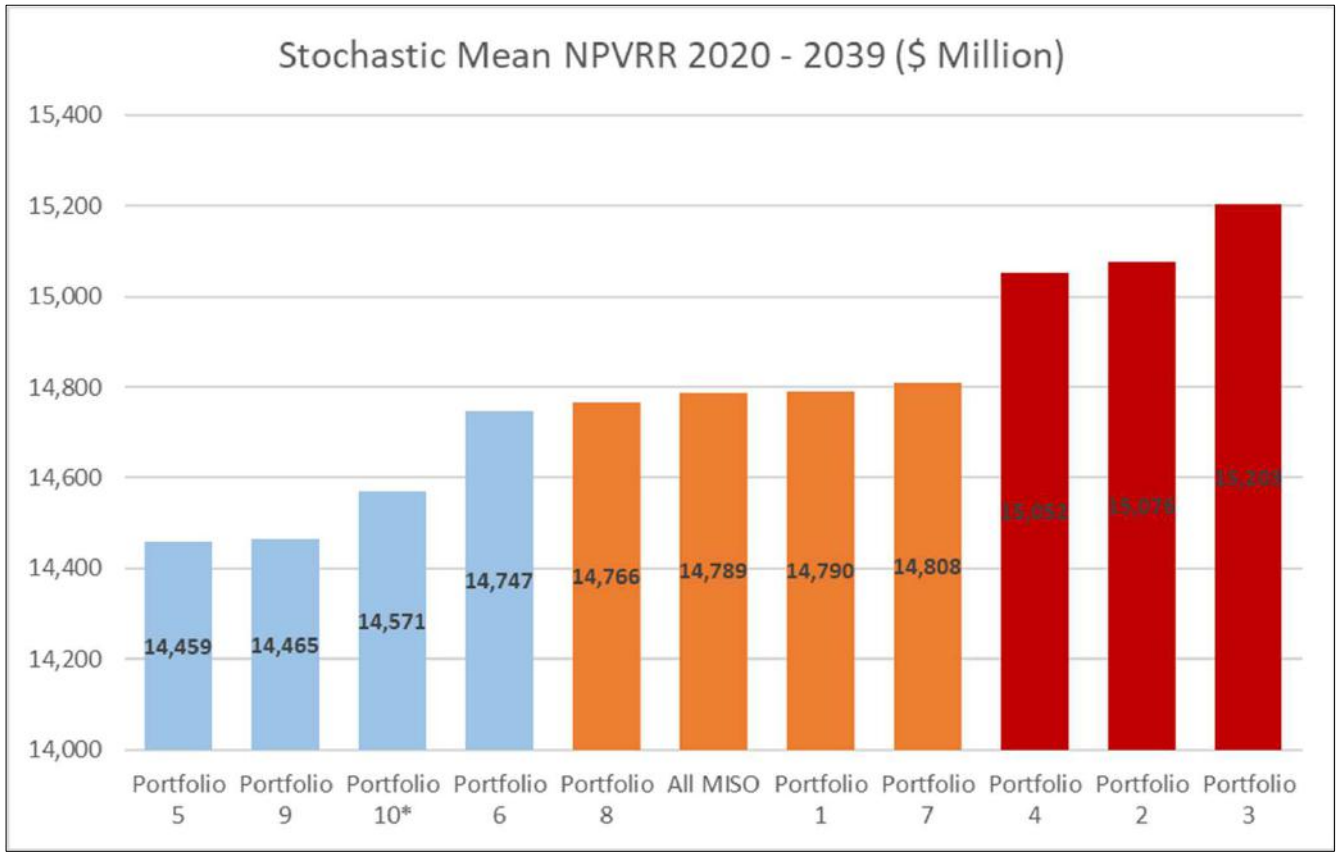
Balanced Scorecard: Portfolios 9 and 10 of Strategy 3 Perform Best Across All Metrics

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Objective	Measure	Unit	TVA (Base)	TVA (LTP)	Portfolio 5	Portfolio 9	Portfolio 10	Portfolio 6	Portfolio 8	All MISO	Portfolio 1	Portfolio 7	Portfolio 4	Portfolio 2	Portfolio 3
					1 CC + 4 CT	1 CC + 4 CT	1 CC + 0 CT	2 CC + 1 CT	2 CC + 2 CT	1 CC + 0 CT	2 CC + 1 CT	2 CC + 2 CT	3 CC + 1 CT	3 CC + 2 CT	3 CC + 0 CT
Least Cost	NPVRR 2020 - 2039	$ Millions	16,411	16,020	14,504	14,453	14,304	14,614	14,627	14,522	14,490	14,503	14,511	14,668	14,709
	Stochastic Mean NPVRR 2020 - 2039	$ millions	16,388	15,996	14,459	14,465	14,571	14,747	14,766	14,789	14,790	14,808	15,052	15,076	15,203
	Levelized Cost of Energy	$ / MWh	67.47	65.86	59.32	59.34	59.48	60.51	60.59	60.68	60.69	60.76	61.77	61.87	62.39
	NPV Savings with respect of LTP (wrt LTP) 2020 -2039	$ Millions			**1,537.4**	**1,531.7**	**1,425.9**	**1,249.3**	**1,230.5**	**1,207.8**	**1,206.8**	**1,188.0**	**944.7**	**920.2**	**793.0**
	Levelized Savings per Year (wrt LTP) 2025 -2039	$ Millions			**122.1**	**121.7**	**113.3**	**99.2**	**97.8**	**96.0**	**95.9**	**94.4**	**75.0**	**73.1**	**63.0**
	Levelized Savings per Year (wrt Base) 2025 -2039	$ Millions			**153.2**	**152.8**	**144.4**	**130.3**	**128.8**	**127.0**	**127.0**	**125.5**	**106.1**	**104.2**	**94.1**
Min Risk	95th Percentile Value of NPVRR	$ millions	17,221	16,830	16,576	16,517	16,993	16,946	16,944	17,211	17,051	17,074	17,648	17,535	17,844
Min Envr. Risk	CO_2 Emissions Mean 20-Year	Million Tons CO_2	3.8	3.8	1.85	1.85	2.81	2.57	2.57	2.81	2.57	2.57	3.29	3.29	3.30
	Energy from Renewable Sources 2039 (RPS)	% of Energy Consumed	6.5%	6.5%	75.3%	75.3%	52.7%	54.9%	54.9%	52.7%	56.8%	56.8%	47.3%	46.1%	40.7%
	Energy from Zero Carbon Sources 2039	% of Energy Consumed	58.6%	58.6%	75.3%	75.3%	52.7%	54.9%	54.9%	52.7%	56.8%	56.8%	47.3%	46.1%	40.7%
	2025 Local Water Consumption	Million Gallon	3,103	3,103	3,961	3,782	4,899	4,782	4,789	3,103	4,788	4,795	5,645	5,551	5,607
Reliability	2025 (UCAP+CIL)/PEAK	%	133.7%	133.7%	126.0%	127.8%	148.6%	126.6%	127.2%	115.4%	126.6%	127.2%	126.7%	130.8%	137.3%
Resiliency	Max Load Shed in 2025 under Extreme Event	MW	0	0	622.4	0.0	0.0	8.4	0.0	0.0	8.4	0.0	0.0	0.0	0.0
Min Market Risk	% Energy Purchased in Market	%	10.9%	10.9%	31.2%	31.2%	23.0%	17.4%	16.2%	16.7%	16.7%	15.6%	7.4%	7.0%	7.7%
	% Energy Sold in Market	%	8.7%	8.7%	22.6%	22.6%	17.9%	9.7%	9.7%	10.5%	10.5%	10.6%	7.6%	6.7%	5.6%
Econ. Grwth	Local T&G CapEx	$ Millions			2,989	2,864	2,984	2,845	2,965	1,014	2,811	2,932	3,138	3,299	3,404

*All $ is in 2018$ unless otherwise noted.

Evaluation of Strategies 3 and 4: Portfolios 5, 6, 9 and 10 are Lowest Cost

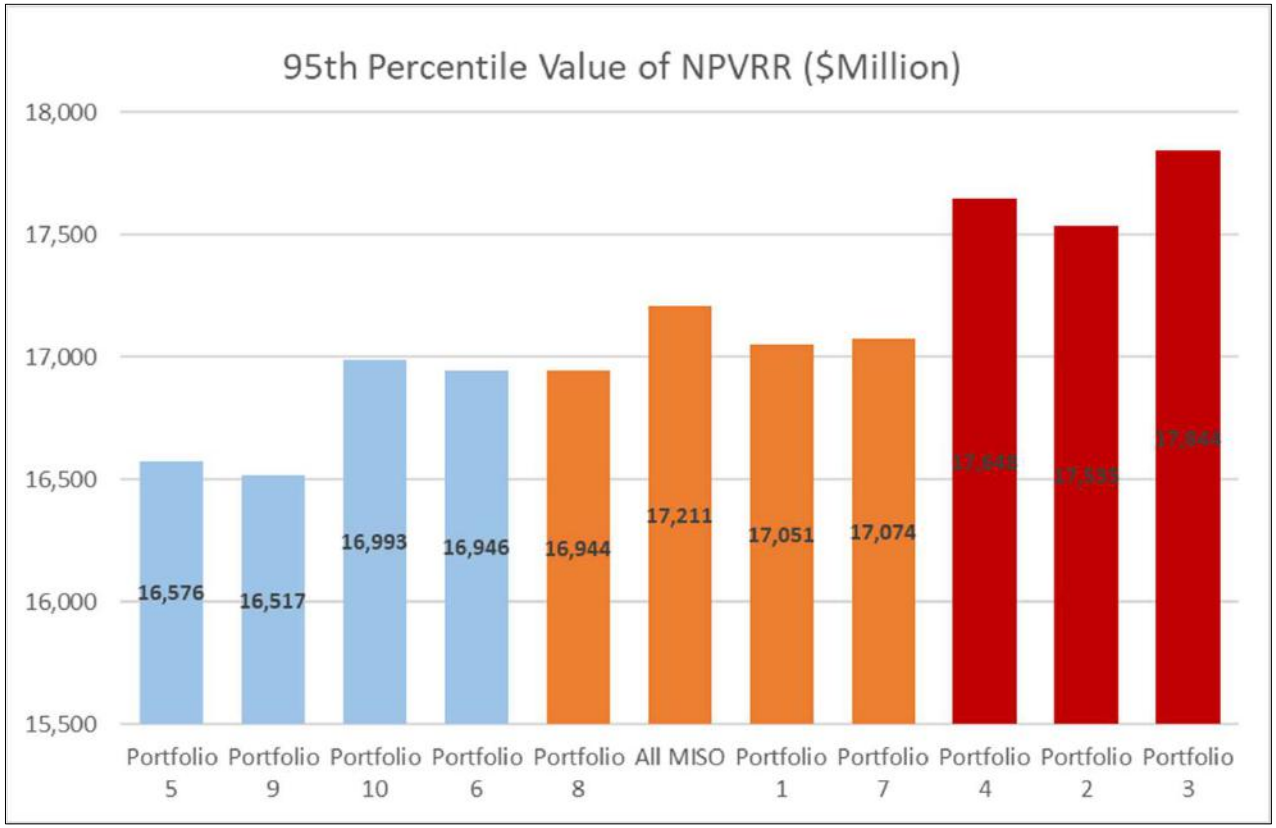


- Portfolios 5 and 9 have one 450 MW CCGT and Portfolio 10 has one 950 MW CCGT.
- Portfolio 6 has two 450 MW CCGTs.
- Other Portfolios with two CCGTs are close and Portfolio 6 is representative.
- Portfolios in blue are preferred.

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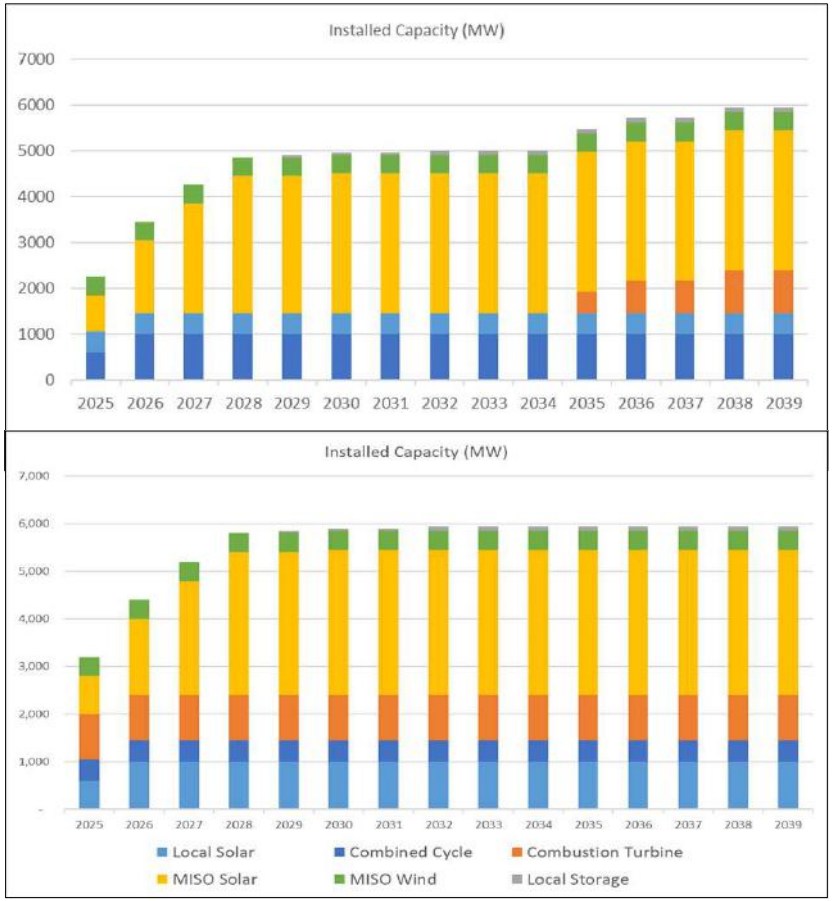
Evaluation of Strategies 3 and 4: Portfolios 5, 6, 9 and 10 are among the Lowest Risk



- Portfolios 10 and 6 show the higher risk among the preferred portfolios in blue.
- Risk is measured as the value that only 5% of the outcomes in the stochastic assessment was worse.

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Four Portfolios Selected for Comparison with TVA Portfolios 5, 6, 9 and 10.



Portfolio 5

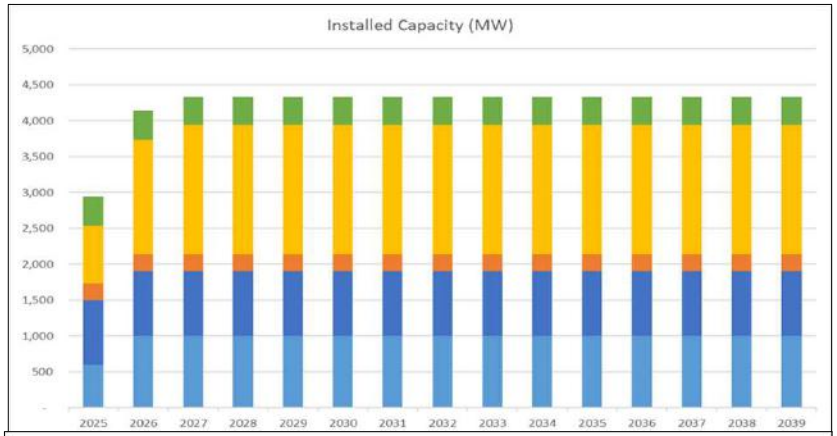
- Has the largest amount of renewable generation with 4,450 MW, most of which (4,400 MW) by 2028.
- Has one 450 MW CCGT in 2025.
- Four CTs (4x237 MW) are selected optimally as the price in MISO capacity increases.
- Requires heavy investments in transmission.

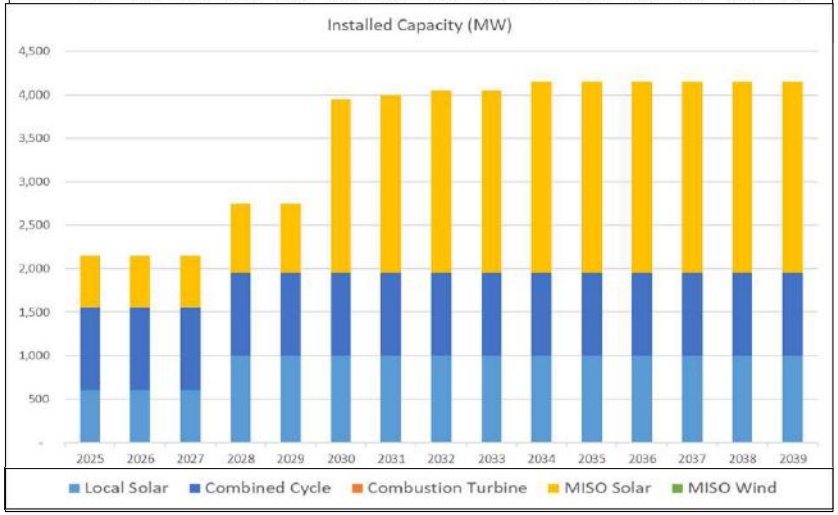
Portfolio 9

- Has the same level of renewable generation as Portfolio 5 and the CCGT.
- The four CTs are advanced to 2025 to address reliability concerns with Portfolio 5.
- Requires less investments in transmission.

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Four Portfolios Selected for Comparison with TVA Portfolios 5, 6, 9 and 10.





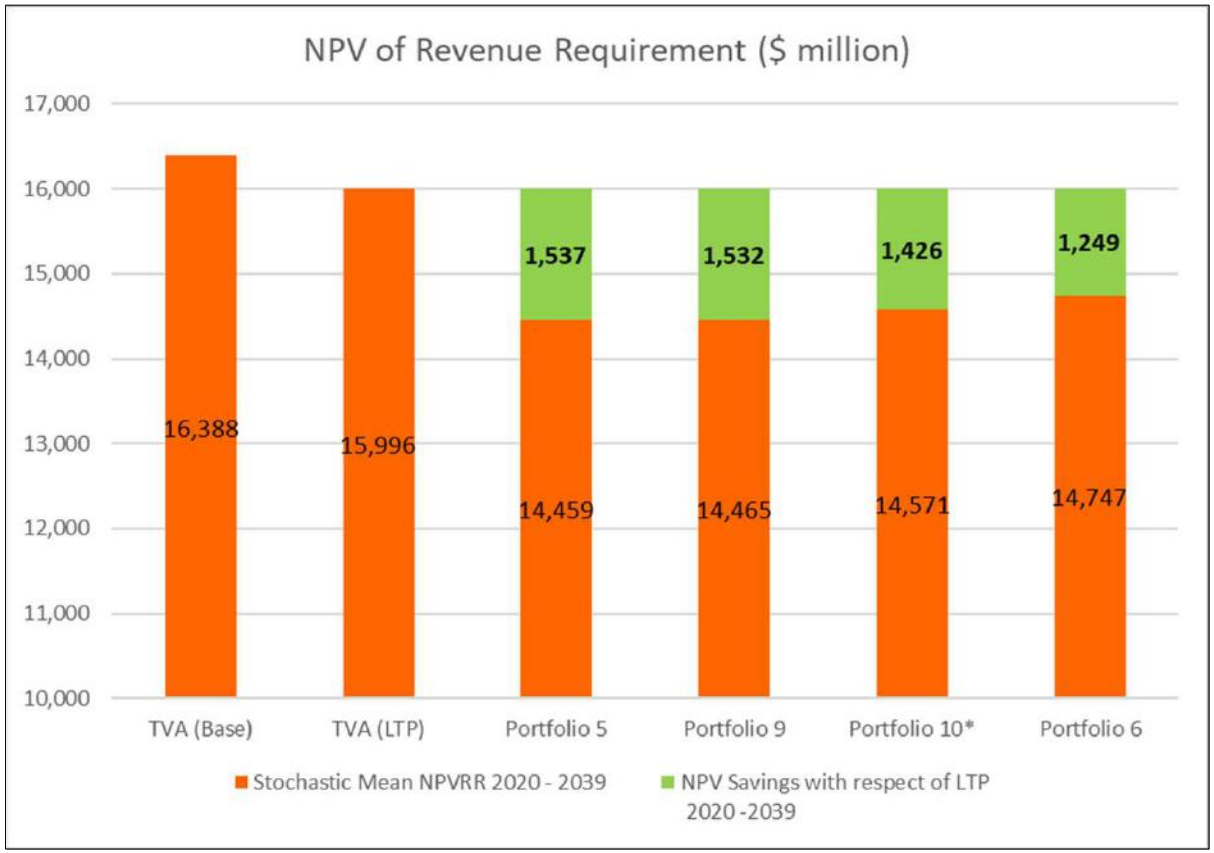
Portfolio 6

- Has 3,200 MW of renewable generation, all of which by 2027.
- Has two 450 MW CCGTs in service by 2025
- Has one CT (237 MW) by 2025
- Moderate investments in transmission

Portfolio 10

- Has 3,200 MW of renewable generation, most of which (3,000 MW) by 2030.
- Has one large 950 MW CCGT in 2025
- No CT
- Max investments in transmission to address reliability concerns due to one large CCGT

Exiting TVA Could Save MLGW $1.5 Billion over 20 Years Considering the LTP and $ 1.9 Billion with Current Contract

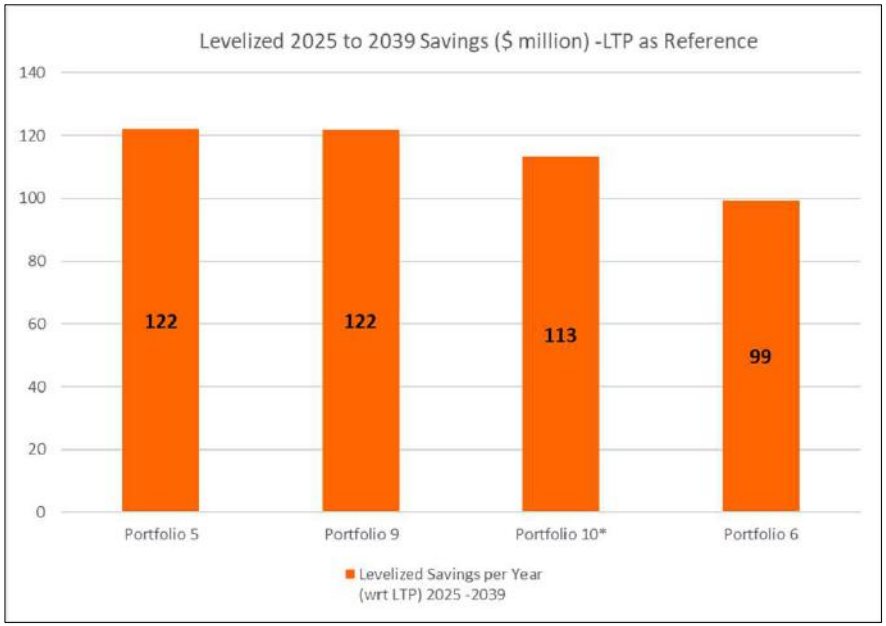


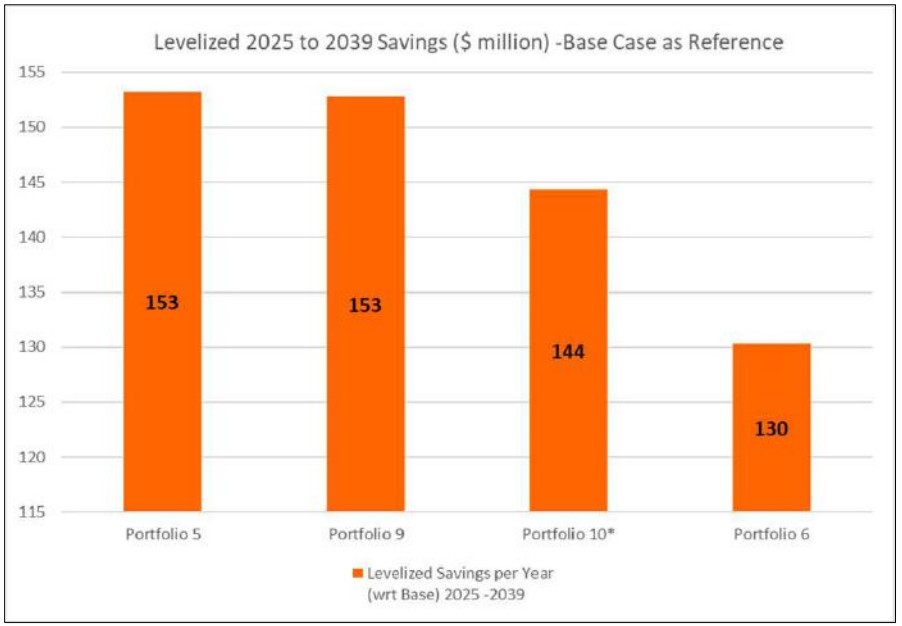
The savings are in real 2018$

- If expressed in 2020$ this would increase to $1.6 billion with respect of the LTP and $ 2.0 with respect of current contract.
- These savings are after all other costs are included.
- In nominal terms the savings add to over $ 3 billion with respect to the current contract.

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Exiting TVA could result in annual savings of about $120 million per year (2025-2039) with LTP to about $150 million per year (2025-2039) with current contract



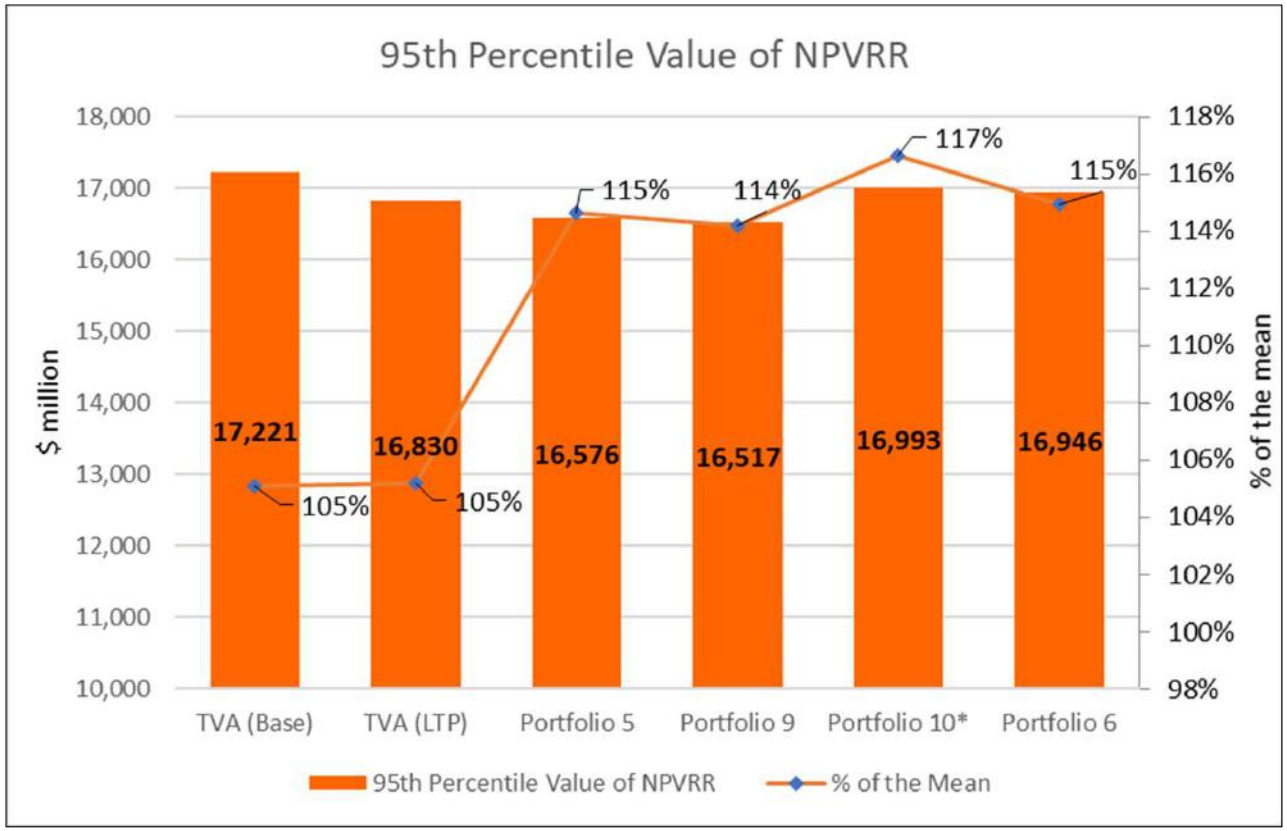


- There are potential savings of over $ 3.0 billion for the 2025 to 2039 period in nominal terms and with respect of the current contract. This averages to $ 200 million per year.

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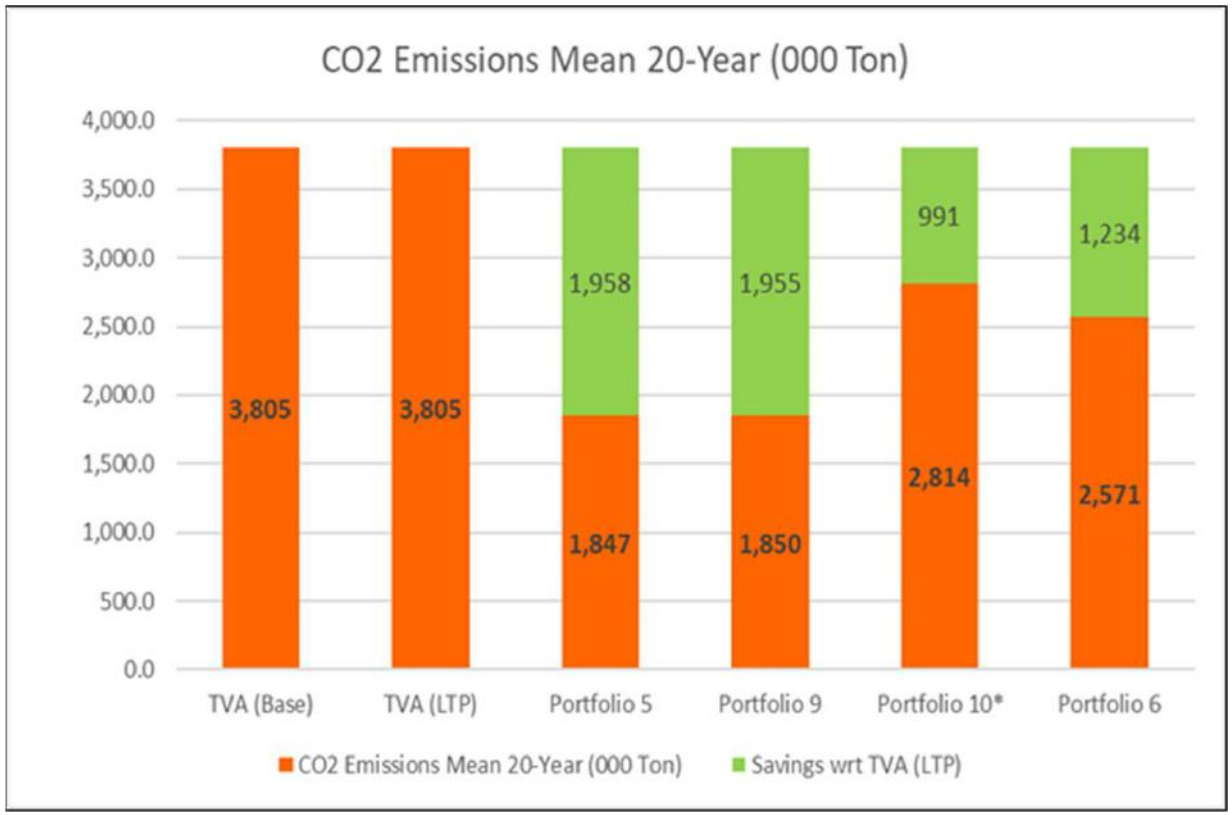
95th % NPVRR Risk Higher with TVA than Self Supply + MISO Options



- The TVA option, given the size of the company and strong presence of nuclear and hydro that experience little or no volatility in costs, has more stable cost
- The 95th percentile of TVA portfolios is only 105% times the mean, while in other portfolios this reaches 114% to 117% times.
- Portfolios 5 & 9 are still least cost.
- It is important for MLGW to manage this volatility in costs by entering into, for example, long term fuel supply contracts.

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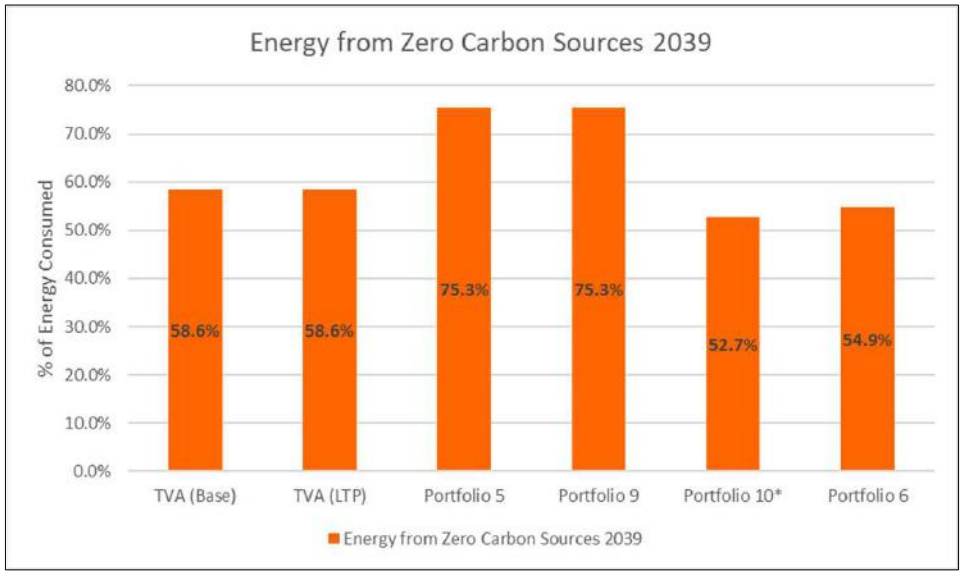
CO_2 Emissions from Self-Supply + MISO options are well below TVA options

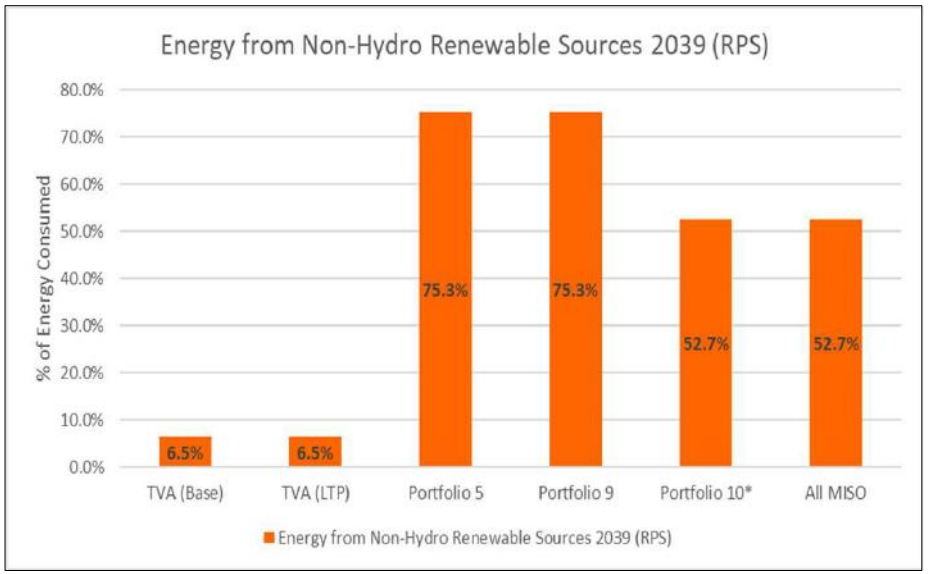


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Self-Supply + MISO Options Can Produce more Energy (Portfolios 5 and 9) from Zero Carbon Sources than TVA



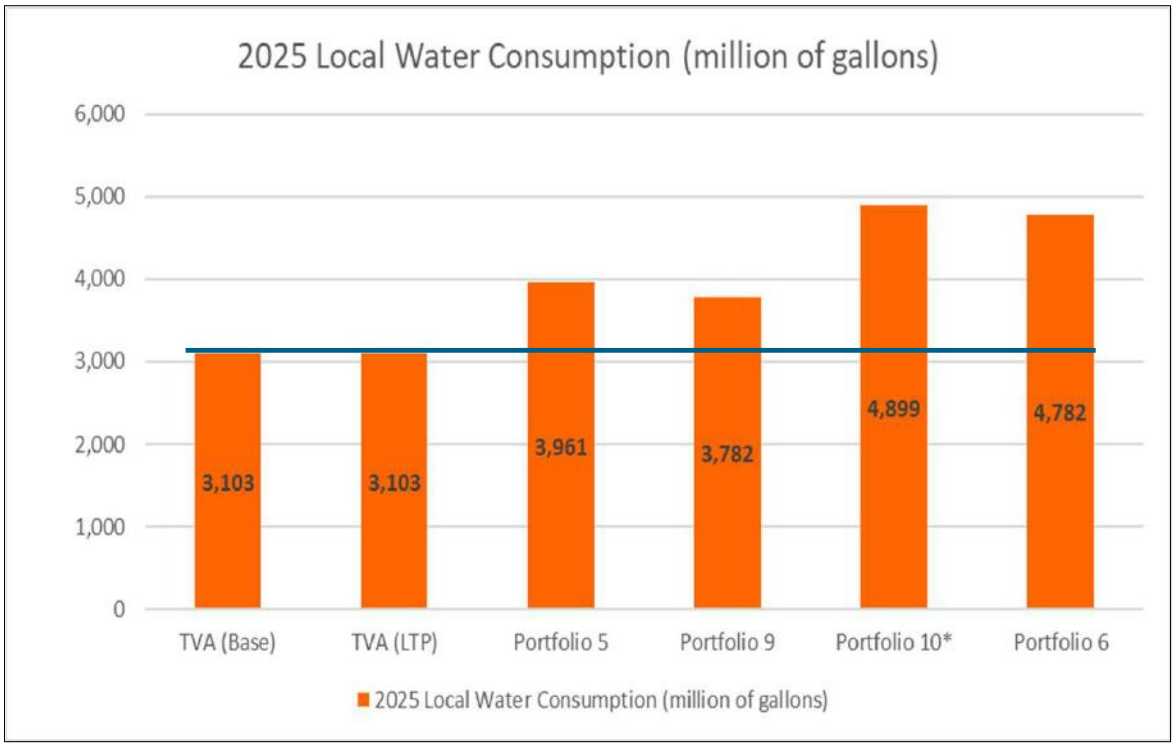


- TVA portfolio has lower renewable generation due to large hydro and nuclear being excluded.

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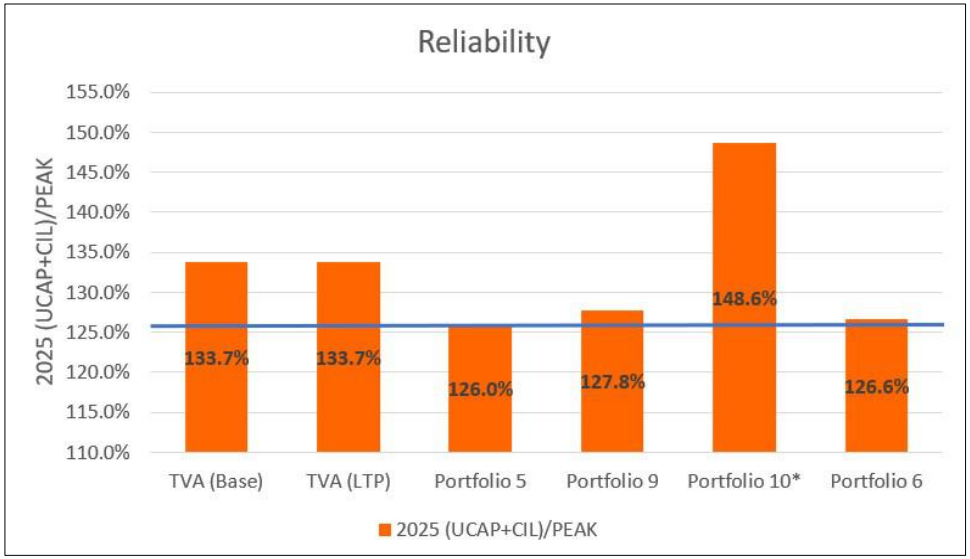
Shelby County Water Consumption is Lowest with TVA Options

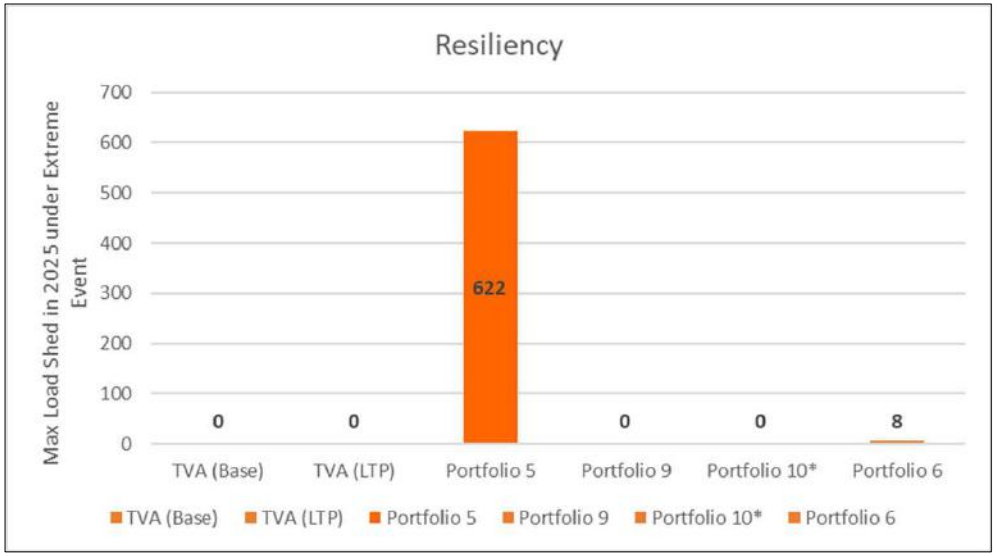


- These are the water usage for cooling thermal generation
- In case of TVA, the consumption is only by the Allen Combined Cycle
- Any other thermal generation adds to it.

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All the Portfolios Meet Minimum Reliability Requirements Portfolio 5 is Less Desirable Because of Potential Load Shedding

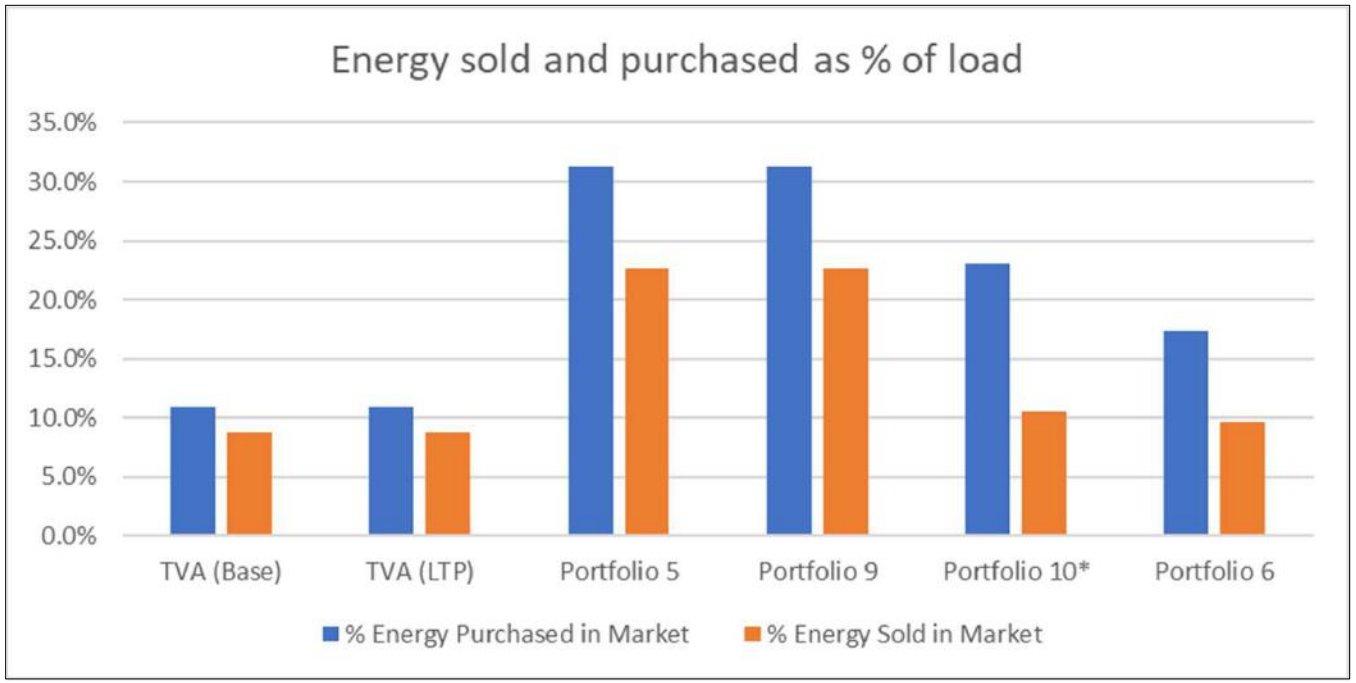




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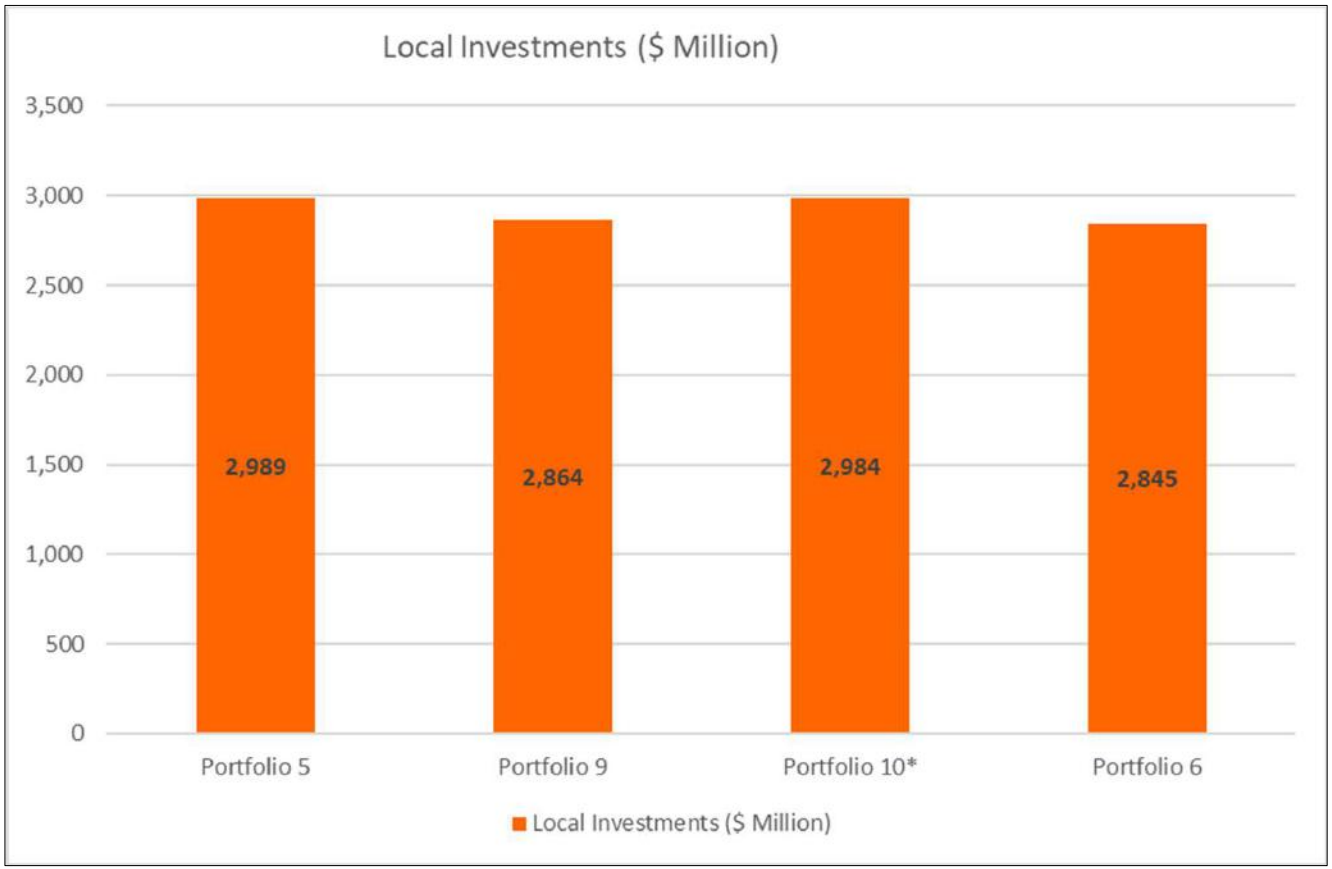
TVA Has Less Exposure to Energy Market Risk
Portfolios 5 and 9 Have the Greatest Exposure



- Portfolios 5 and 9 with high levels of renewable have the greatest amounts of energy exchanged with MISO.
- Sales during the day and purchases at night.

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Economic Development (as expressed by local investment) Impacts are Similar Among Portfolios

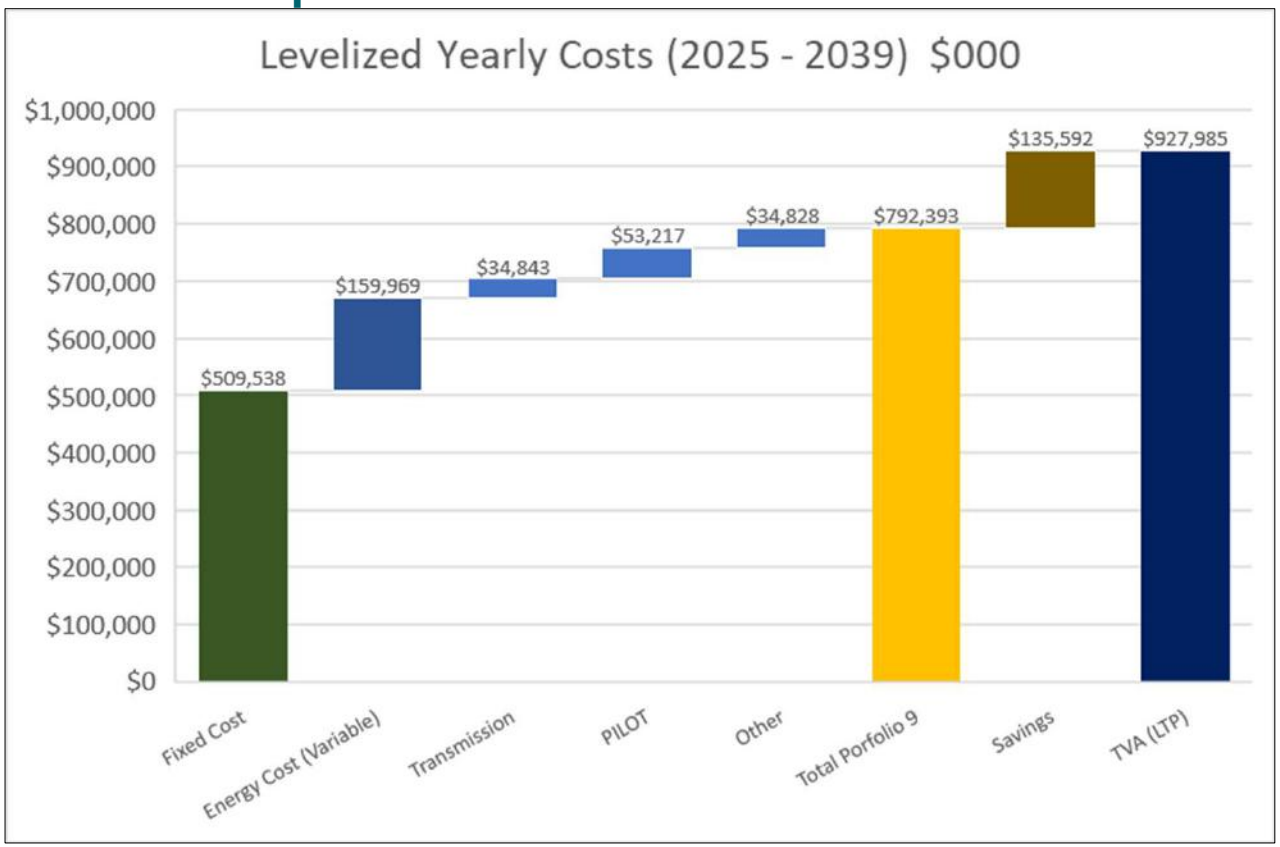


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Summary of Comparisons with TVA

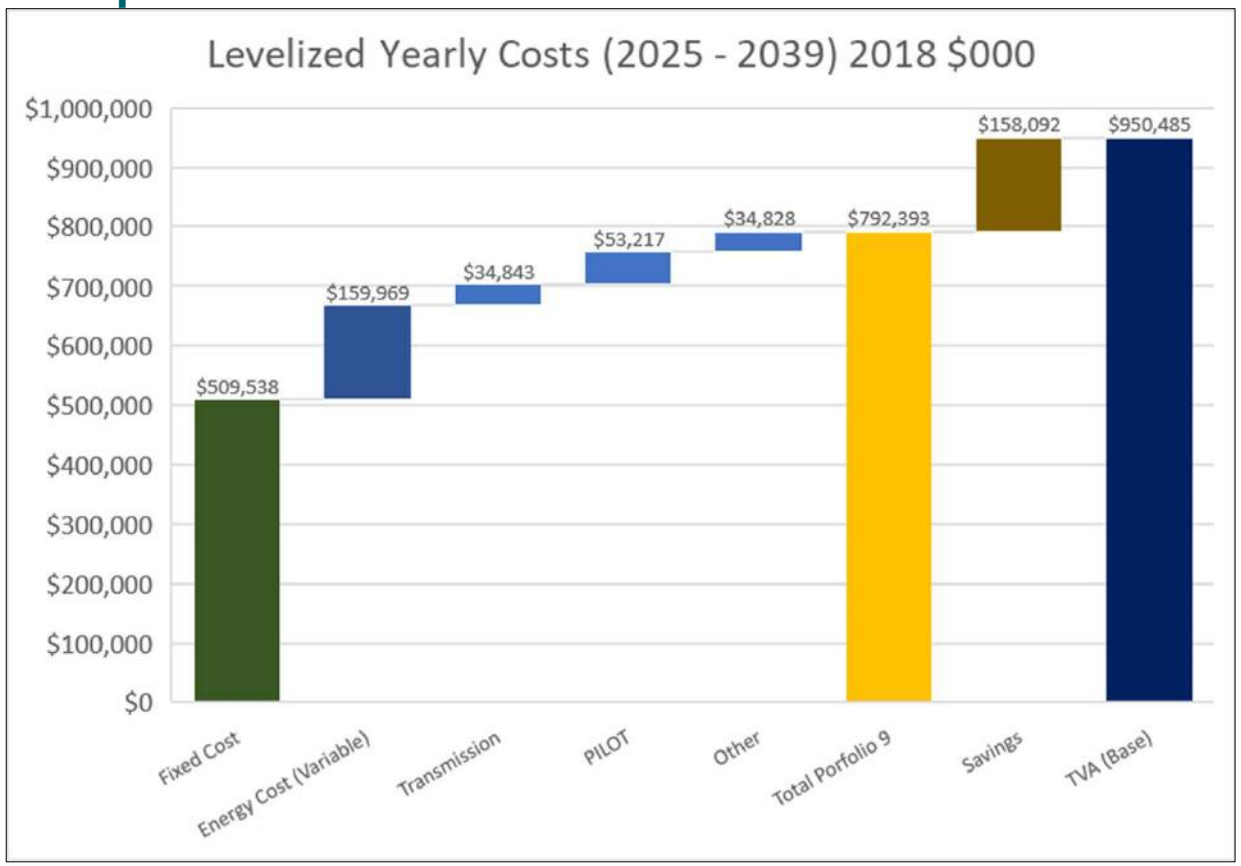
Focusing on the period after notice is given, the waterfall shows savings (2025-2039) with respect of the TVA LTP contract compared with Portfolio 9



- The waterfall (buildout) shows the importance of the relative components of cost for Portfolio 9.
- The transmission and other costs are important. They contribute over $122 million/year to the comparable cost for TVA.
- This highlights the importance of assumptions.
- The savings are determined looking only at the difference in NPVs for the 2025 to 2039 period

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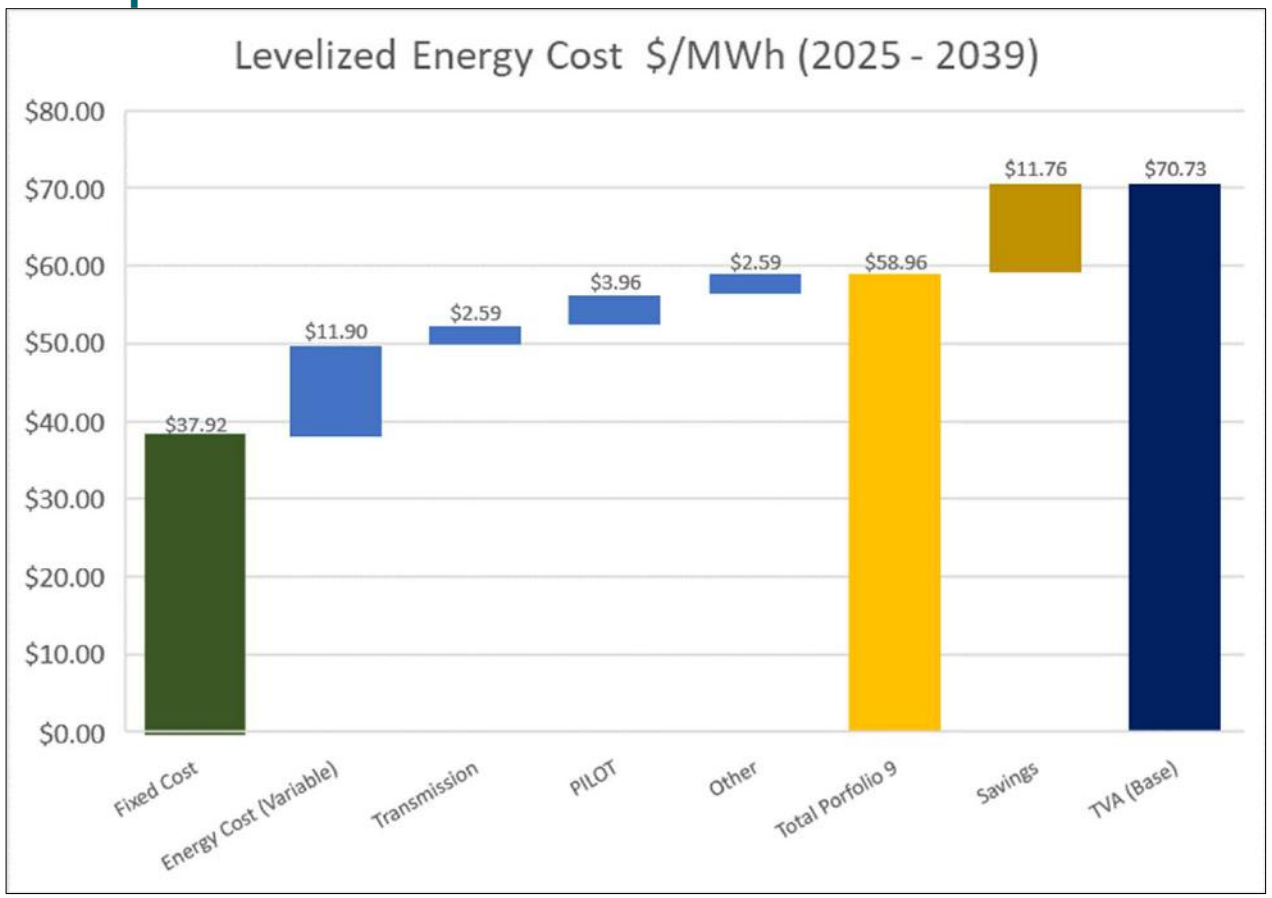
Focusing on the period after notice is given, annual savings for exiting TVA's current (5 year exit) contract (2025-2039) compared with Portfolio 9



- Siemens forecast assumptions drives a future rate for TVA of about $71/MWh. If TVA rate were to be maintained at the current $75/MWh, the savings would increase by about $66 million in 2018 $.
- All savings are reported in real 2018 $. If future inflation is 2%/year, the actual average savings is about $200 million/year.

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Focusing on the period after notice is given, levelized costs (2025-2039) with TVA current contract compared with Portfolio 9



- This shows savings on a levelized cost of energy basis ($/MWh)

Recommendations

No Regret Actions if MLGW Joins MISO

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If MLGW chooses to exit the TVA contract and join MISO, MLGW should:

- Maximize the amount of local renewable generation, which provides local support and it is not affected by transmission. This is a no regret decision, i.e. it is present in all Portfolios and should be pursued.
- One combined cycle (450 MW) is present in all preferred solutions, thus this is a no regret decision. However, its size could be subject to further optimization.
- Installing at least two combustion turbines (237 MW) in 2025, also appears to be a no regret solution. Also, if two CCGTs are selected (as in Portfolio 6) and then two CTs would be required to reduce the risk of load shedding under N-1-1 to zero.
- MLGW should seek to become part of MISO Local Resource Zone 8 rather than becoming an independent zone. Both MLGW and the current members in LRZ8 stand to gain from this given the load diversity and the larger size of the new zone.

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Recommended Next Steps to Confirm Savings Before Making a Final Determination

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An RFP should be undertaken by MLGW to confirm the savings before making a final decision.

The IRP can be utilized to determine the general mix of assets and locations of interest in the RFP and the orders of magnitude of transmission required.

Differences between Portfolios 5, 9, 6 and 10 can be reassessed with bids provided by potential suppliers.

Options to manage fuel price risk should be an element to be included in the RFP

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No Regret Actions if MLGW Stays with TVA

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In case MLGW decides to stay with TVA:

- MLGW should explore options to increase the amount of local renewable generation (which is limited to 5% offered by TVA under the 20-year LTP).

- In addition, MLGW should assess further the LTP option. On one hand there will be a reduction on the costs and the 20-year NPVRR with the LTP is approximately $400 million lower than without it. On the other hand, MLGW will be locked for 20 years or more and unable to control or take advantage of development in the power industry as, for example, deeper drops in the cost of renewable generation and storage that could increase the economic savings for reconsidering exiting TVA and joining MISO at a later date. The value of the optionality provided by a shorter term exit can be evaluated.

- This analysis only needs to be performed if MLGW chooses to stay with TVA.

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Questions

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For the U.S. published by
Siemens Industry Inc.

100 Technology Drive

Alpharetta, GA 30005

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Glossary

Glossary

- All-in Capital Cost = The capital costs for building a facility within the plant boundary, which includes equipment, installation labor, owners costs, allowance for funds used during construction, and interest during construction.
- Appalachia Basin = Marcellus Shale Play and Utica Shale Play.
- Average Demand = Average of the monthly demand in megawatts.
- Average Heat Rate = The amount of energy used by an electrical generator to generate one kilowatt hour (kWh) of electricity.
- Baseload Heat Rate = The amount of energy used by an electrical generator to generate one kilowatt hour (kWh) of electricity at baseload production. Baseload production is the production of a plant at an agreed level of standard environmental conditions.
- Breakeven Cost = Average price of gas required to cover capital spending (ideally adjusted to regional prices).
- BAU = Business As Usual
- BTU = British Thermal Unit = unit of energy used typically for fuels.
- CF = Capacity Factor. The output of a power generating asset divided by the maximum capacity of that asset over a period of time.
- CCGT (or CC) = Combined Cycle plant, gas turbine combined with an steam turbine
- CCS = Carbon Capture and Sequestration
- CT = Combustion Turbine
- DER = Distributed Energy Resources, distributed generation, small scale decentralized power generation or storage technologies
- DS = Distributed Solar
- Dth = Dekatherm (equal to one million British Thermal Units or 1 MMBtu)
- EE = Energy Efficiency
- ELCC = Effective Load Carrying Capability
- EFT = Enhanced Firm Transportation (varies by pipeline but can include short- or no-notice changes to day-ahead nominations of fuel delivery
- FID = Final Investment Decision
- FOM = Fixed operations and maintenance costs
- FT = Firm Transportation. FT capacity on a natural gas pipeline is available 24/7 and is more expensive than interruptible transportation (IT) capacity but unused FT capacity can be sold on secondary market.
- Futures = Highly standardized contract. Natural gas futures here are traded on the New York Mercantile Exchange (NYMEX) or Chicago Mercantile Exchange (CME).

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Glossary

- GT = Gas Turbine
- IPP = Independent Power Producer
- IRP = Integrated Resource Plan
- LNG = Liquified natural gas
- LCOE = Levelized cost of energy
- LOLE = Loss of load expectation
- LOLH = Loss of load hours
- LTCE = Long Term Capacity Expansion Plan; optimization process to select generation
- MMBtu = million British Thermal Units, unit of energy usually used for fuels
- MWh = unit of energy usually electric power = 1 million watts x hour
- MW = unit of power = 1 million watts
- Peak Demand = The maximum demand in megawatts (MW) in a year
- PPA = Power Purchase Agreement; contract to purchase the power from a generating asset
- PV = Photovoltaic
- Reserve Margin = The amount of electric generating capacity divided by the peak demand.
- RPS = Renewable Portfolio Standard: a regulation that requires the increased production of energy from renewable energy sources
- RFP = Request for Proposal
- SMR = Small Modular Reactor
- “Sweet Spot” Core Acreage = Areas within a natural gas play that offer the highest production at least cost.
- Utility Scale = large grid-connected power generation, could be solar, gas, diesel, etc.
- VOM = Variable operations and maintenance costs
- Wheeling = a transaction by which a generator injects power onto a third party transmission system for delivery to a client (load).

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Solar Lending Practices by Community and Regional Financial Institutions

Paul Schwabe and David Feldman
National Renewable Energy Laboratory

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Office of Energy Efficiency & Renewable Energy
Operated by the Alliance for Sustainable Energy, LLC

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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS000563

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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS000564

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Acknowledgments

The authors would like to thank the invaluable contributions from Kelsey Read and Andrew Belden from Massachusetts Clean Energy Center as well as the following individuals and organizations for their insightful perspectives and review comments: Justin Allender of First Green Bank; Sean Baird of Medallion Bank; Carol Chernikoff of Alternatives Credit Union; Ron Felder of Redwood Credit Union; Jasna Filipović and Justin Fuller of Celtic Bank; Phillip Forbert, Lance Griswold, and Danielle Silva of U.S. Eagle Credit Union; Kyle Henderson of FirstBank; Sarah Llewellyn and Chad Tomsich of Elevations Credit Union; David Miller and Pete Yang of Alpine Bank; Scott Pellegrini of Provident Credit Union; Steve Sherman formerly of GreenChoice Bank; Bob Schweigert of Salal Credit Union; and Skyler Webster of New Resource Bank. The authors also thank Jarett Zuboy for his superb editorial support and Eric O'Shaughnessy and Billy Roberts for their help with graphics.

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the Solar Energy Technologies Office of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.

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List of Acronyms

CRFI	community and regional financial institution
FDIC	Federal Deposit Insurance Corporation
FICO	Fair Isaac Corporation (credit score)
HELOC	home equity line of credit
ITC	investment tax credit
MassCEC	Massachusetts Clean Energy Center
NCUA	National Credit Union Administration
NREL	National Renewable Energy Laboratory
PACE	property assessed clean energy
PPA	power-purchase agreement
PV	solar photovoltaic
SREC	Solar Renewable Energy Certificate
TPO	third-party ownership
UCC	Uniform Commercial Code

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Executive Summary

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018). The shift towards PV loans has allowed new, smaller financiers such as CRFIs to enter the PV financing market.

CRFIs typically offer PV financing via loans to small residential and commercial borrowers. A sampling of CRFI perspectives collected from industry interviews indicates positive experiences with the development and evolution of PV loans. Quantitative data on 6,770 loans representing over $186 million in lending also suggest PV loans are performing very well to date—although these results must be put in the context of the high credit quality of borrowers, early state of the loans, and recent robust economy (Table ES-1). The strong performance to date suggests continued expansion of loan offerings by CRFIs already operating in this space and likely attraction of new entrants. Although most CRFI investment has targeted distributed PV without storage, other applications will likely emerge, such as community PV and PV coupled with energy storage. Looking ahead, access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth.

Table ES-1. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan (2018) and individual CRFI contributions

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1 Introduction

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

PV systems installed in the United States vary considerably in terms of size, location, and procurement mechanism. Large, centralized PV systems constitute most of the country's total installed PV capacity, but the greatest number of PV systems are distributed projects located on residential or commercial property (95.4% and 4.5% of U.S. PV systems, respectively) (SEIA and GTM Research 2018). Because each individual project represents a relatively small financial investment, some businesses have aggregated numerous projects to increase the size and attractiveness of distributed PV investments. Over the past 10 years, distributed PV markets have grown considerably; in 2017 alone, investment in U.S. distributed PV systems totaled over $10 billion (SEIA and GTM Research 2018).

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018).

The shift toward host ownership of PV systems has allowed new, smaller financiers—such as CRFIs—to enter the market, including lenders dedicated to small residential and commercial projects. The TPO market presents barriers to many small lenders, particularly as TPO projects often require complex investment structures with outside tax-equity investors to capture the value of the investment tax credit (ITC).[1] Providing loans rather than leases and power-purchase agreements plays to the strengths of many CRFIs as solar loans are like other CRFI products and because complex financial structuring is not required to use the ITC, which remains with the homeowner.

This report therefore examines the experiences and perspectives of CRFIs that have developed and launched PV loan products, including the evolution of the products and their performance.

[1] Given the limited number of tax-equity investors participating in the U.S. market, and the premium they can charge for many projects with limited options, there may be a role for some CRFIs in this space. That said, the federal wind and solar tax credits are scheduled to phase down over the next few years, so institutions may decide not to invest resources into learning how to structure these complex financial transactions with potentially limited availability.

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This information could assist other CRFIs that are considering participating in or expanding their role in PV financing.

The remainder of this report is organized as follows. Section 2 gives an overview of U.S. CRFIs and the financial products they typically offer. Section 3 provides CRFI perspectives about their experiences with PV financing products based on industry interviews. Section 4 presents quantitative data on PV loan performance and borrower credit profiles. Section 5 concludes and identifies future needs related to expansion of PV lending.[2]

[2] The National Renewable Energy Laboratory (NREL) has conducted previous PV-financing research. From 2013–2015, the Solar Access to Public Capital project examined how a securitization market for TPO PV allowed national-level players to increase PV project capital by attracting institutional and retail investors (NREL 2018). NREL also compared PV loans with other TPO products such as PPAs and leases (Feldman and Lowder 2014). This previous research focused on financial products rather than types of financial institutions.

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2 Overview of CRFIs and PV Lending

This section first discusses the importance of CRFIs in facilitating community investments and then briefly describes the characteristics of PV loan types. Here CRFIs include community banks insured by the Federal Deposit Insurance Corporation (FDIC) and credit unions insured by the National Credit Union Administration (NCUA).[3]

2.1 CRFIs

Table 1 shows the sizes and numbers of U.S. banks and credit unions. FDIC-insured community banks and NCUA-insured credit unions account for approximately 19% of all bank assets ($3.6 trillion), 24% of all bank loans ($2.6 trillion), and 96% of U.S. banking institutions (10,911 institutions).

Table 1. Bank Assets, Loans, and Number of Institutions in the United States

	Assets in $ trillions (% of total)	Loans in $ trillions (% of total)	Number of institutions (% of total)
FDIC-insured non-community banks	$15.3 (81.0%)	$8.2 (76.6%)	443 (3.9%)
FDIC-insured community banks	$2.2 (11.6%)	$1.6 (15.0%)	5,227 (46.0%)
NCUA-insured credit unions	$1.4 (7.4%)	$1.0 (9.3%)	5,684 (50.1%)
Total	$18.9	$10.7	11,354

Sources: CUNA (2017), FDIC (2017, 2018)

The FDIC defines community banks as those that "focus on providing traditional banking services in their local communities. They obtain most of their core deposits locally and make most of their loans to local businesses" (FDIC 2012). Further, CRFIs are often considered "relationship" lenders rather than "transaction" lenders. Community banks can be apt to make credit decisions based on local knowledge and unique data obtained through long-term relationships owing to their deep understanding of local market dynamics (FDIC 2012). Small businesses may rely more heavily on this relationship approach, because they may be challenged to qualify for loans based on the more rigid, standardized qualification parameters of non-community banks (FDIC 2012). Community banks are frequently privately owned and locally controlled, which may balance the competing interests of shareholders, customers, employees, and the local community. This is also true for credit unions, which are owned by their members and operate for the sole purpose of servicing their members. Larger banks are more likely to be publicly owned and tend to have stronger associations with the capital markets. They also operate in more places with centralized and model-based loan-approval structures. (FDIC 2012).

Community banks are particularly important and prevalent in certain regions of the country. In 2014, community banks held 72% of deposits in U.S. rural counties and 56% of deposits in

[3] Some CRFIs operate certain business lines, such as direct lending, in more than one market, while other business lines, such as retail banking, can be restricted to a smaller geographic footprint. This report does not exclude CRFIs even if a business line is operated in more than one market.

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micro-counties (FDIC 2015).[4] Many states with a large community banking presence are in the middle of the country, where PV penetration tends to be relatively low (Figure 1).[5] CRFIs could close this gap by providing financial solutions that help make distributed PV economically attractive in their region.

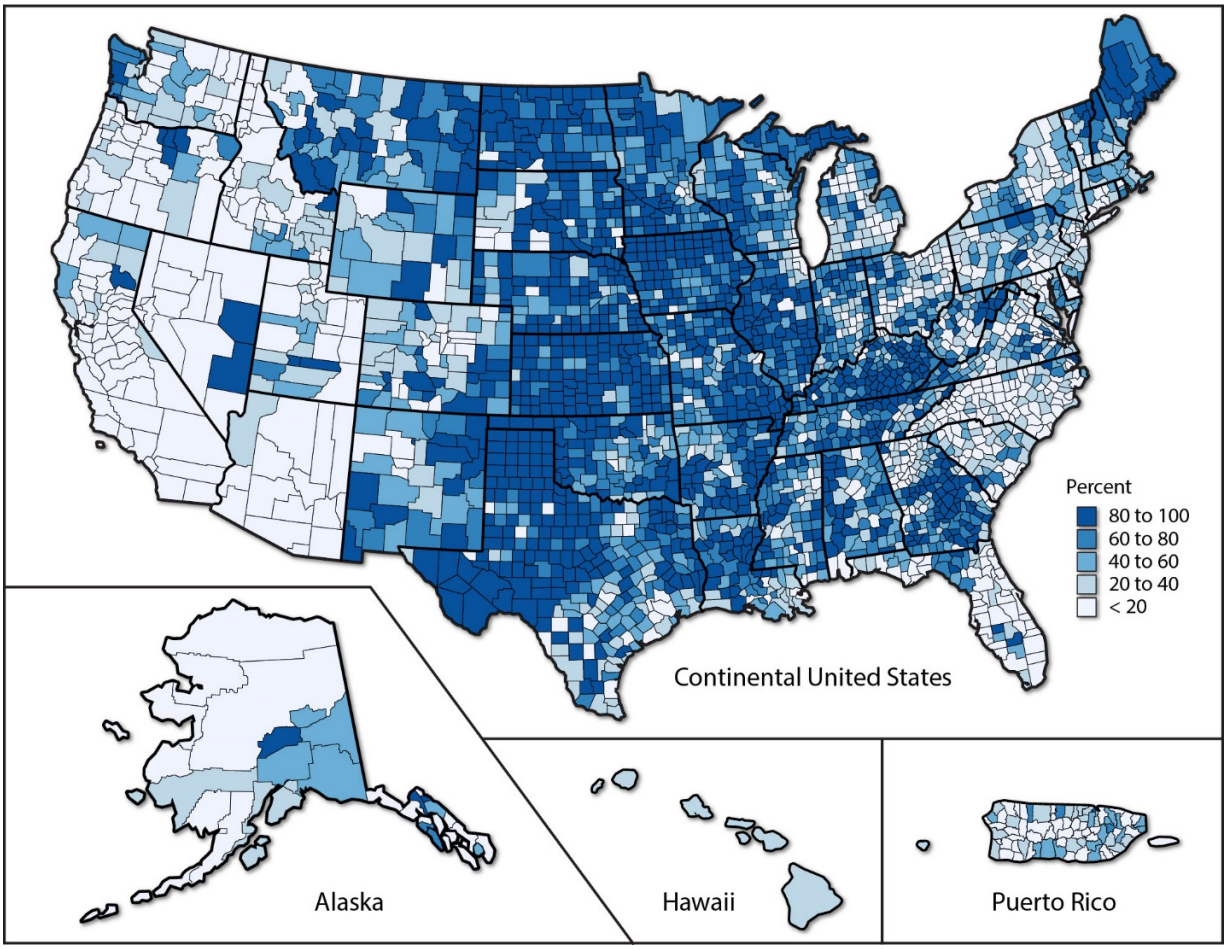


Figure 1. Percentage of total deposits held by community banks in 2017

Source: FDIC (2018)

Because of their size, geographic variation, and local market knowledge, CRFIs are well suited to develop innovative or tailored PV financing products. Relatively few banking institutions currently offer PV loan products, and existing product specifications might not be desirable in every market. However, new PV loan products could be developed for many of the communities served by CRFIs, and the willingness of many CRFIs to collaborate and share could enable rapid dissemination and evolution of the new products.

[4] Rural counties are defined as those with a population of less than 10,000 people. Micro-counties are defined as having between 10,000 and 50,000 people (FDIC 2012).
[5] Data as of June 30, 2017.

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Many CRFI loan types could be adapted for financing PV systems. As shown in Figure 2, most community bank loans are for commercial and residential real estate (70%), followed by commercial and industrial activities (13%), construction and development (7%), and unsecured loans to individuals (4%).[6] Credit unions generally focus more on individual customers and less on commercial activities, with 83% of their loans made for residential real estate or automobiles, 7% for commercial and industrial activities, and 10% for unsecured loans to individuals. Distributed PV systems are usually physically attached to real estate, much like many home-improvement projects (e.g., roof replacements, kitchen remodeling), which are often funded through real estate loans. A 2018 Federal Reserve Bank of New York study found that 56% of home equity lines of credit (HELOCs) and 72% of home equity loans—types of real estate loans—were used to make home improvements (Fuster et al. 2018). In the commercial space, a PV system is like other equipment financings and could be funded by commercial and industrial loans. Finally, because the cost of PV systems has fallen dramatically, loans made to an individual on an unsecured basis may also fund a PV project. Although unsecured loans to individuals represent a relatively small portion of CRFI loan portfolios, they still constituted over $160 billion at the end of 2017 (see Table 1 and Figure 2).

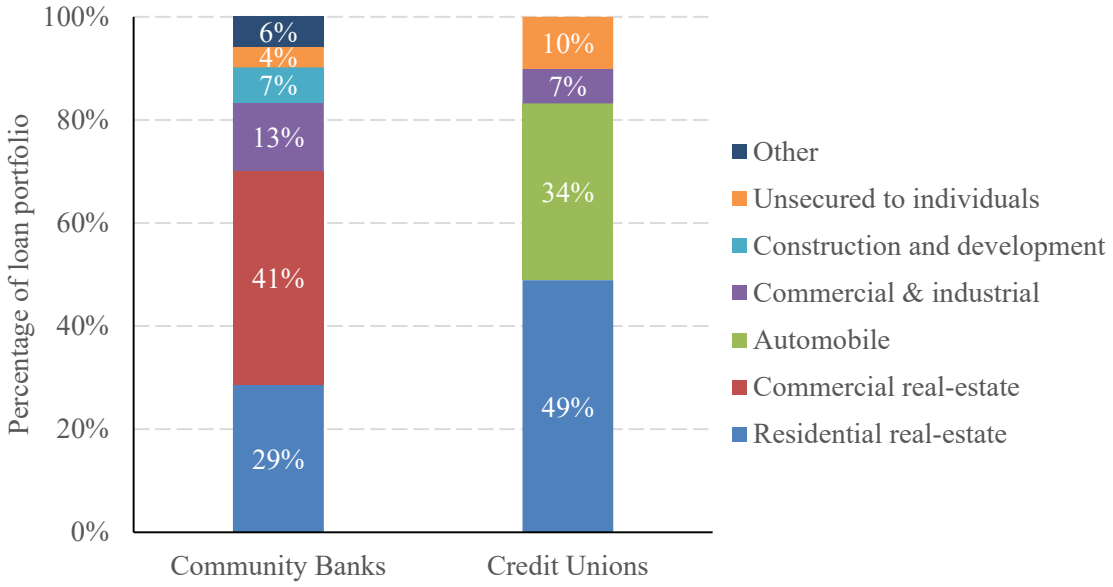


Figure 2. Portfolio breakdown for loans made by community banks and credit unions in 2017

Sources: CUNA (2017), FDIC (2018)

2.2 Primary PV Loan Types

PV loans generally fall into a few categories, with variations. As shown in Figure 3, PV loans can be classified by their level of security, based on what the borrower pledges as collateral for

[6] An unsecured loan is a loan issued based on the creditworthiness of the individual, rather than being based on collateral such as real estate equity.

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the loan. PV loans have typically been secured by real estate, by the equipment itself through a Uniform Commercial Code (UCC)-1 filing,[7] or as an unsecured personal loan.[8]

- **Loan secured on real estate**—PV loans can be secured via the underlying real estate, typically, in the residential space, through a home equity loan (also referred to as a second mortgage) or a HELOC.[9] Like other real estate loans, they require a closing, or settlement, at which all parties sign the necessary loan documents. To get to closing, the real estate typically is appraised to ensure the owner has sufficient equity in the property, the loan is registered with the county clerk, and taxes are evaluated. This is a heavily regulated process, particularly since the recent mortgage crisis. Obtaining a real estate loan requires time and money, but borrowers can often get a relatively low rate compared with the rates of other types of loans.[10] Real estate loans typically carry longer repayment terms, which allows PV system owners to match the loan payments more closely with the energy cost savings from the PV system.
- **Loan secured on equipment**[11]—Many PV loan providers secure the loan through a UCC-1 filing with the county or state (or both) of the borrower, which gives notice of the lender's lien (also referred to as a security interest) on the PV property, but importantly not on the underlying real estate. The UCC-1 filing gives the lender certain rights, such as repossession of the PV system itself until the loan is repaid. UCC-1 filings require less upfront time, money, and paperwork compared with real estate loan processes, but the UCC-1 security interest still comes up in a title search, which is typically conducted when a property is sold or refinanced. That said, the solar lender may have difficulty recouping the value of the PV system in the case of repossession, and the UCC-1 filing must be re-registered periodically. For these reasons, many lenders consider solar loans with UCC-1 filings as not fully secured.
- **Unsecured loan**—With an unsecured loan, the lender holds no collateral but instead makes the loan based on an individual's credit quality, income, and debt level. Such loans can be closed more easily and quickly than other loans, but the interest rate charged is typically higher and with a shorter term than the rate and term of a secured loan. In addition, unsecured loans are usually only available to borrowers with good credit or a high income and with limited outstanding debt.

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[7] UCC-1 refers to Form 1 (UCC Financing Statement) (IACA 2018).

[8] In some instances, banks have also secured loans using incentive streams generated by PV assets, such as Solar Renewable Energy Certificates (SRECs). This option is only available in markets with SRECs of sufficient value and is dependent on the PV asset continuing to generate electricity (to produce SRECs).

[9] HELOCs typically have a drawdown period with a floating interest rate. Funds from second mortgages are received at the beginning of the loan, and the loan is more likely to have a fixed rate.

[10] The interest payments on home equity loans and HELOCs can be tax deductible under certain qualifying uses. Generally, the home equity loan or HELOC is borrowed for home-improvement purposes, and the total of the borrower's first mortgage and their home equity loan or HELOC does not exceed $750,000. The Tax Cut and Jobs Act of December 2017 lowered this interest deduction cap from $1,100,000 to $750,000 and narrowed the allowable uses to primarily home-improvement related. Given these changes, it is possible that demand for home equity loans and HELOCs may fall, particularly in markets with comparatively high home prices and a higher probability of reaching the $750,000 combined interest deduction cap (Harney 2018).

[11] May also be referred to as a chattel loan. Although PV equipment is technically considered collateral, the practicality and cost effectiveness of physically removing the equipment from the property remains an open question (see Section 3.5).

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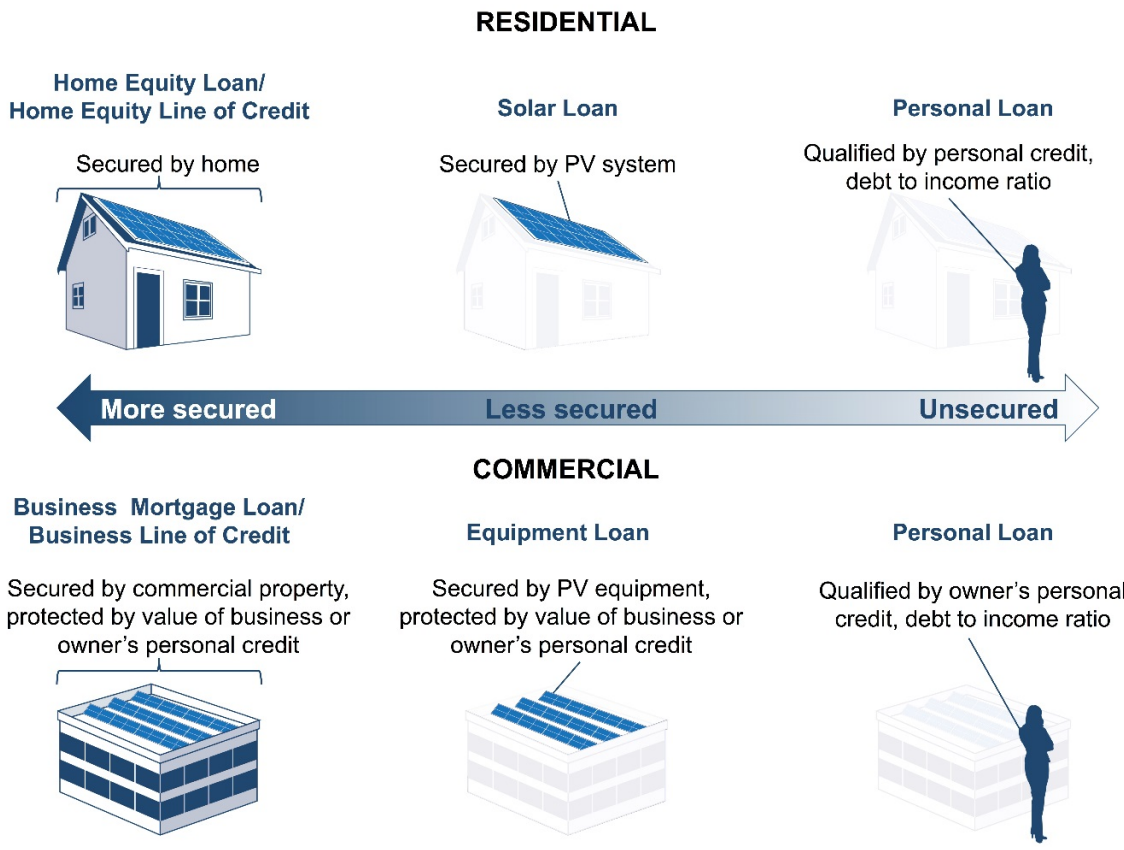


Figure 3. Variations in PV loan types by level of security

In addition to level of security, PV loans can be characterized by several criteria:

- **Tenor (loan length)**—Because PV assets are long-lived, it is often advantageous for a PV loan to have a longer tenor. A longer tenor reduces the amount of each periodic payment, potentially aligning the loan payment more closely with the PV energy savings. Some UCC-1 loans and personal, unsecured loans have relatively short tenors, but some banks have lengthened the tenor as their programs have evolved. For this reason, PV loan tenors can vary from 3–20 years.
- **Prepayment and reamortization**[12]—Some loans have prepayment penalties to compensate lenders for receiving fewer interest payments over the course of the loan. PV systems currently benefit from the 30% federal ITC, typically taken in the first year of operation. Therefore, PV system owners often get 30% of the system cost back very early in the loan. Many PV loans offer a one-time low or no-fee prepayment option, which the borrower can use to buy down the outstanding principal using the ITC, or no prepayment penalty over the life of the loan. Some borrowers also reamortize the loan after the prepayment to reduce monthly debt payments further.

[12] Reamortization is the process of recalculating the monthly loan payment amount while keeping the same original schedule of loan payments (i.e., tenor). A loan is typically reamortized when a significant portion of its principal is paid.

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- **Government involvement**—Many banks have introduced PV loan products based on market conditions without government financial support, but some loan products have benefited from state or federal government programs. Some state agencies have helped banks set up PV loan products and provided technical expertise to get banks comfortable with PV as an asset class. Other programs have subsidized the cost of PV loans by offering credit support (guaranteeing all or some of the loan amount), buying down the interest rate of a loan, or buying down the cost of a PV project (reducing the loan principal, typically through rebates). These programs are often instituted to establish or accelerate a market or to provide loans to customers who may not otherwise qualify (e.g., individuals with low income).[13]

[13] Local governments are also heavily involved in property assessed clean energy (PACE) programs, which offer commercial and residential customers loans that are tied to their property taxes.

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3 Themes about PV Loan Products from CRFI Interviews

This section summarizes the themes from in-depth interviews with 20 PV financing experts from 14 CRFIs or related stakeholder institutions, describing shared and diverse experiences of PV financing products. Themes arising from more than one institution or individual are included, and no approach is presented as favorable. The themes are described loosely in chronological order, starting with product initiation, followed by operational experiences, and concluding with forward-looking perspectives.

3.1 Market Demand, Institutional Philosophy, and Comfort with Home-Improvement Loans Drive PV Loan Product Development

In addition to the shifting PV market trends described earlier, PV loan products are frequently initiated in response to customer or member requests and repeated requests provide strong motivation. One interviewee had at least 10 customer inquiries before committing time and resources to the possibility of a PV-specific product. Conversely, in markets with barriers to PV adoption, CRFIs may be limited in their ability to stimulate PV demand, but they may alleviate a financing barrier by establishing a PV loan product. Commercial PV installations seem to have fewer dedicated lending products compared with the residential sector.

The motivations to offer PV loan products extend beyond requests from potential borrowers. Some CRFIs see promotion of PV as part of their commitment to environmental offerings or a triple-bottom-line (social, environmental, financial) business philosophy. Others see PV loans as an opportunity to grow the institution's lending portfolio or interact with new customers who might also be directed to the institution's other services.

In some cases, home-improvement contractors who banked with a CRFI asked the institution to create a PV loan offering, so they could recommend the product to their customers. Experience lending for similar home-improvement measures also drives PV loan product development or innovation. Several interviewees suggested PV loans complement existing home-improvement products. The interviewees generally reported positive experiences with energy efficiency lending (e.g., new windows, heating, ventilating, and air conditioning) and thought PV has a similar risk and performance profile. Some institutions came to PV lending through other PV-specific products, such as PACE financing or community PV projects. Several institutions entered the market in response to an attractive support policy, such as a state-based loan loss reserve fund for PV lending.

3.2 PV Loan Product Development Benefits from a Thoughtful Research, Approval, and Product-Rollout Period

All interviewees noted the need to devote considerable time and resources to understanding and developing a dedicated PV loan product. The education process typically entails a designated product lead researching the PV industry generally (technology, construction, pricing, risks, and reliability), the financing options available to local borrowers, the risks associated with PV lending, national and local competition, and the types of PV loans. As one banker noted, an overarching rule of banking is to know your product, know your market, and know your

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collateral. This industry research phase typically requires 6 months to 1 year, depending on the financial institution's familiarity with the PV industry.

There are multiple ways to develop a solar loan product. At some institutions, research is driven by an opportunistic, entrepreneurial and environmentally minded staff member (such as a loan officer) who champions the process, secures internal resources, and obtains decision-maker approvals. At other institutions, a management-level product-development officer (i.e., the chief lending officer or chief credit officer) provides the primary market research and justification for the product. In many cases, research and product development is driven by internal personnel. However, in some cases, an outside specialist with experience in the specific product class is hired to develop the product.

The internal champion often uses a concise product brief to secure internal approval, which can include approval by the chief credit officer, chief financial officer, loan and finance committee members, and potentially the board of directors. The brief can include information on local customer interest in the product, an assessment of the competitive lending landscape and market share, information on the technology and asset class, investigations into the local installer base, and a qualitative risk matrix. Decision makers scrutinize the loan tenors, which tend to be longer for PV than for other products, and the typical loan sizes among other criteria.

CRFIs frequently protect themselves against the unknowns of a new asset class by establishing a smaller initial loan product offering or portfolio concentration limits. Thus, they can roll out the program with relatively modest expectations and allow for a testing period, which can be reassessed later in the product-development cycle (often 1 or 2 years after program launch). Finding the right product balance is often part of the initial rollout. Too much volume, and the institution might feel uncomfortable with the portfolio concentration. Too little volume, and the time and setup costs are harder to justify.

3.3 Smaller CRFIs Possess Unique Challenges and Opportunities

It can be challenging for smaller CRFIs to establish a large portfolio of new loan products. Many have no dedicated product-development personnel, so personnel with other job duties must be tasked with establishing new loan products. In addition, because smaller institutions offer relatively few loans and cannot be over-weighted in any area (owing to concentration risk), the number of PV loans they can make may be limited, especially since there is a learning curve associated with a new asset class. Such limitations are particularly relevant for unsecured loans, because CRFIs are required to establish a loan loss reserve in case of default, which represents money not earning a return. A new product at a larger CRFI would represent a much smaller share of the total loan portfolio. Finally, the effort required for any product subject to significant regulations, such as real estate loans, may outweigh the product's benefits for a smaller institution without the dedicated capabilities to manage new requirements.

On the other hand, CRFIs have some advantages related to implementing PV loan products. Product approval processes can be easier at smaller institutions than at larger institutions. Smaller CRFIs may also be subject to less intense regulation compared with larger CRFIs. In addition, smaller CRFIs generally report the ability to be more nimble and adaptable when creating or modifying new products for a specific asset class like PV.

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3.4 PV Loan Products and Processes Vary across Institutions

Section 2.2 provides basic information about PV loan types. This subsection describes additional PV product variations across CRFIs.

CRFIs offer PV loans via direct and indirect lending programs. In the direct model, the lending institution provides capital to the borrower, and the borrower is typically free to choose a PV installer that meets minimum criteria (years in business, acceptable business ratings, applicable experience, etc.). Direct-lending customers are often existing members of the credit union or community bank or join specifically to take advantage of the loan offering. In the indirect model, the lending institution instead prequalifies select PV installers—typically based on requirements set by the institution—who can present the loan product on behalf of the institution. The indirect model gives the institution some control over the installation process and the borrower's experience with it.

PV loan programs evolve over time. Interviewees commonly reported launching a product, receiving customer and installer feedback during rollout, and making product adjustments accordingly. For example, several CRFIs adjusted to longer repayment periods or moved from a secured loan based on a second mortgage to a UCC-1 or unsecured loan.

PV loan products can include one or two loans per transaction. With two loans, the first amount is sized at approximately 30% of the PV purchase price to match the expected ITC amount, and the second funds the balance of the purchase price. The first loan can forego interest payments for the first 12–18 months (or the interest is paid by the installer), and the borrower can use their ITC benefit to pay off the zero-interest loan. The conventional second loan entails a standard amortization schedule (10–20-year term) and market interest rates. With one loan, for the full purchase price (at a set interest rate and term), the lender often offers a one-time reamortization for free or at a reduced rate (e.g., $100), allowing the borrower to use the ITC or other funds to pay down the principal. This prepayment reduces the monthly payments while maintaining the original loan schedule. However, in this model, the borrower pays interest on the full loan amount before the principal paydown, while interest is typically paid on only 70% of the full loan in the two-loan approach.

The other timing element in structuring a solar loan product is the disbursement schedule from the bank to the installer. For example, one program disburses 35% of the loan amount once the loan has been closed and then the final 65% after installation. Installers may prefer a more front-loaded disbursement schedule, while lenders typically prefer holding funds until after installation.

Loan application and closing processes also vary. Some CRFIs primarily handle customer applications over the phone, whereas others allow online applications through a dedicated portal connection. Some banks work with PV installers and developers to integrate the online portal into the PV sales process. Variations in closing processes include fully automated versus manual review and approval as well as online document signing versus finalizing loans in person at a branch and, in some cases, in the presence of an attorney.

Finally, options to improve loan terms vary. Attractive sales pitches can include low interest rates or a "no interest" period (e.g., the first year) that allow borrowers to save money

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immediately instead of waiting for energy savings from PV (e.g., in the winter, when electricity production is lower). The no-interest period is particularly attractive in the first year, before the loan's principal is reduced through an ITC buydown. These practices are done per strict lending regulation. However, borrowers should analyze all loan conditions including interest rates, terms, penalties, and fees—which lenders can charge to the borrower or the PV developer, who may pass the fee on to the PV sales price.

3.5 UCC-1 Fixture Filing Is Useful as a Security Interest, but Repossessing PV Systems Is Impractical

Most CRFIs that offer a dedicated PV loan use a UCC-1 fixture filing, and many institutions have had positive experiences with this process. Interviewees commonly described the usefulness of the UCC-1 fixture filing not in terms of collateral recoverable via repossession, but rather as an indicator that the PV system has an outstanding loan to be paid, which is often revealed at the time of a home sale or refinancing. The UCC-1 fixture filing provides some protection from a loss due to loan default, even if the lender must wait an extended time (sometimes years for a home sale) to potentially recover some portion of the debt. UCC-1 fixture filing is not, however, a one-time process; lenders typically must refile every 5 years to maintain protections.

Lenders can try to repossess PV systems, but most interviewees questioned the practicality of this approach for several reasons. First, CRFIs have little use for a used PV system, and—because there is no established secondary market for used PV equipment—attempting to liquidate a PV system might yield little return. In contrast, when a UCC-1 filing is used to secure a loan for commercial equipment such as heavy machinery or vehicles, the repossession value is relatively high owing to the equipment's mobility and the active secondary market for used equipment. Second, the all-in cost of a PV system (and thus the loan amount) reflects not only the equipment cost, but also various "soft costs" related to system design, installation labor, permitting, customer acquisition, and so forth. Repossessing the PV equipment would not compensate for these soft costs. At the same time, uninstalling, storing, and selling the used PV equipment (while preserving the roof's integrity) would be costly to the lender. Finally, and perhaps most importantly, trying to repossess PV equipment from a distressed borrower's home presents a risk of bad publicity.

3.6 PV Loan Repayment Has Been Strong, but Most Loans Are Young and Were Made to Highly Rated Borrowers

All interviewees reported positive results from their PV loan portfolios, with no portfolio-wide issues or systematic concerns to date and only a few repayment anomalies attributed to events such as divorces, bankruptcies, or deaths of the primary borrowers. Interviewees described their PV loans' performance with phrases such as "pretty good overall," "little to no losses to speak of but a few delinquencies," "charge-offs remaining unbelievably low," and "delinquencies and

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losses lower than expectations."[14] Because of high repayment performance to date, many CRFIs will increase the volume of PV loans offered.

However, the high performance of PV loans must be qualified. First, PV loan recipients were, on average, considered A+ borrowers and thus were expected to pay reliably. Some interviewees questioned whether borrowers with lower credit quality would do as well; some CRFIs are considering expanding their PV loan offerings to borrowers with slightly lower credit quality, but they are limited by the need for such borrowers to own homes. Second, the PV loan programs are generally young, and thus many loans are very early in their tenor. Many interviewees said delinquencies or losses from comparable loan products typically peak later, perhaps between years 2 and 5 of the loan. Finally, because the current economy is extremely robust, the performance of PV loans during a downturn is uncertain. Kroll Bond Rating Agency stated in its rating of a securitized portfolio of residential loans from a large solar provider that, "with no more than 36 months of performance data [typical for most solar loan programs] … these loans have not been through a full loan-cycle and therefore losses could be higher than experience to date suggests" (KBRA 2018).

See Section 4 for a quantitative summary of PV loan performance to date.

3.7 Relationships between PV Installers and CRFIs Can Enhance the Marketing of PV Loan Products

Interviewees consistently described the critical role of PV installers in driving the demand for PV loan products. Because, as one interviewee said, customers typically decide to install PV first and then search for financing products, many potential customer inquiries are directed to installers as opposed to finance providers.

PV installers and CRFIs both market PV loan programs. Product marketing channels include social media, newsletters, direct mailings, farmers markets, movie theater advertisements, coupon books, and home shows. Some interviewees described a shift in the way most loan leads have been generated as PV loan products have evolved. Early in the loan programs, some existing bank and credit union members contacted their CRFIs to finance PV. As new sales channels have been made, CRFIs have developed relationships with installer partners that bring in customers who may not have been CRFI members.

Being comfortable with installer partners is very important. Installers may have exclusive agreements pertaining to a CRFI's financial product and may have online access to the loan-origination system to close the deal. A CRFI can save underwriting time, help installers understand and promote loan products, and mitigate technology and installer risks by pre-vetting PV installers and developing relationships with vetted installers in the CRFI's service territory. The CRFI and installer both benefit from communicating about areas of concern and teaching each other their business languages. Although installers do not qualify borrowers, training enables them to speak with potential borrowers about the financial product, process, and

[14] Charge-offs generally refer to the situation in which a lender records a monetary loss on a loan due to non-repayment.

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relationships. Alternatively, an installer may simply provide the customer with a sample of financial product offerings (loan brochures, etc.) to choose from.

3.8 CRFIs Are Willing to Extend PV Loans to Lower-Rated Borrowers, but Barriers Exist

Although to date PV loan recipients have generally had high financial qualifications, interviewees agreed that offering loans to less highly rated customers, within reason, is desirable. Having a more extensive and detailed national history of PV loan credit performance would help this effort. In addition, having more granular data (e.g., at the county or state level) would likely be required to drive local financing decisions. The automobile industry provides a good example of easy access to credit data, with high regional fidelity and extensive history.

The primacy of the federal ITC as a residential PV incentive may hinder the offering of PV loans to customers with lower financial ratings. In many cases, low- to moderate-income customers may not benefit directly from a tax credit due to insufficient tax liabilities. In such cases, a TPO arrangement rather than direct PV ownership might be more appealing because the TPO provider can monetize the tax credit.

Naturally CRFIs want to extend loans that borrowers can repay with relative ease and consistency. After the recent mortgage crisis and ensuing regulations, lending institutions assumed additional fiduciary and legal responsibility to deny loans to customers who cannot service them. Although many government programs target low- and moderate-income customers, CRFIs are hesitant to push the bar too low for challenged borrowers. In any case, customers living paycheck to paycheck may be less interested in products like PV that offer savings over a 15-year period or longer.

That said, PV loan approval processes are not necessarily determined by hard and fast rules tied to credit scores or debt-to-income ratios. Because CRFIs know their market and customer base well, they can examine customers individually and evaluate loan products that make sense for the borrower and lender. Interviewees, however, did report that they frequently declined customers based on insufficient financial qualifications.

3.9 PV Energy Savings Are Generally Given Little Weight during Loan-Approval Processes

Although PV owners save on utility payments, many CRFIs generally do not factor these savings into PV loan criteria. Most financial institutions use a debt-to-income ratio to assess a borrower's ability to repay debt. Taking out a PV loan increases the debt side of that ratio, while acquiring a PV system increases the income side (through energy savings)—yet the PV income factor is generally not considered during loan qualification.

Because of this practice, government policies that affect PV economics might have a muted impact on CRFI decisions to offer a PV loan. For example, reducing PV's economic value by lowering the net metering rate might reduce the demand for PV loans, but it would not directly change a loan's evaluation criteria. That said, energy bill savings are sometimes factored in to the process of deciding whether to offer a PV loan product, even if they are not formally included as part of the loan-approval process. CRFIs may also be more inclined to include these

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savings in their analysis if they had access to widely accepted third-party guidance on the specifications that determine how much a PV system will reduce a customer's electricity bill. This type of documentation would be particularly beneficial for banks entering the space in markets without significant PV deployment.

3.10 Regulations Have Not Hindered PV Loans, but Educating Regulators about PV May Help

Various entities regulate CRFIs, including the FDIC (which insures deposits for local and regional banks), the NCUA (which insures deposits for credit unions), any number of state-based financial regulators (particularly for CRFIs with a state charter), federal regulators (such as the Office of the Comptroller of the Currency), and more. Some entities may overlap, and a single institution may be regulated or monitored by multiple agencies.

In general, interviewees identified no significant regulatory barriers related to PV loans. Regulators aim to ensure that loans do not harm the safety and soundness of the institution (because these regulators serve as guarantors of institution deposits) and that the consumer is protected against predatory or discriminatory lending practices. Thus, CRFIs must demonstrate how PV loans fit under those requirements, for example, by demonstrating clear and fair lending practices, a satisfactory credit quality of the overall portfolio, appropriate disclosures that are clear and sufficient, and that institutions are not over-weighted in any one market or customer segment (which can introduce portfolio-concentration risk).

Educating regulators about PV loans can facilitate regulatory review of CRFI portfolios. Most interviewees agreed that regulators do not approve PV loan programs before program initiation. Instead, PV loans are established under the same practices and general regulations that are applied to all other loan types. However, regulators might review an institution's entire loan portfolio annually or at other intervals, in which case it can be helpful to educate the regulators about the PV asset class. Some CRFIs work with outside partners to prepare for the audit process, which can last a week or more. In any case, product innovation outside of an industry standard, such as a 15-year equipment loan on PV, can happen if it fully conforms to regulations.

3.11 Challenges Remain for PV Loan Products

There are a few remaining challenges to CRFI development of PV loan products. For example, the term of a PV loan (up to 20 years) presents long-term interest rate risk, because interest rates could change while the loan's rate stays fixed. Some CRFIs are more comfortable assuming this risk than others. Risk-mitigation measures include shorter terms, higher rates, or one-time rate adjustments, but these measures can make the loan less attractive to borrowers.

The lack of an established securitization market for PV loans is another challenge. Although some PV loans from national installers have been sold on the securities market, most CRFIs do not have the size or volume to sell PV loans to the securities markets. Most interviewees said they would prefer to keep PV loans rather than sell them. However, the option to sell a portfolio

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of loans to other investors could lower risks by creating more liquidity, thus putting PV loans on equal footing with loans for more established asset classes such as mortgages and automobiles.[15]

PV loans with UCC-1 fixture filings can also entail challenges. Some lenders cannot offer such loans when the PV-hosting house is held in trust rather than in the borrower's name. In addition, because PV loans with UCC-1 fixture filings are not as widely familiar as secured loans (HELOCs, second mortgages) or unsecured, personal loans, the lender's requirements do not always meet the borrower's expectations.

Finally, the lack of national and local information about PV loans makes it difficult for CRFIs to assess market size and the risks of starting a PV loan program. Whereas market research firms provide robust data for other asset classes, such as automobile loans, the smaller PV market has not yet stimulated the development of detailed, widely available data products.[16]

[15] June 2017 guidance from the NCUA asserts that federal credit unions are authorized to issue and sell assets such as Ginnie Mae home mortgages, auto loans, and other assets (NCUA 2017). The practice, known as securitization, was not explicitly authorized for federal credit unions prior to the 2017 guidance. Securitization of assets by community banks is estimated at more than $28 billion in 2014 though small relative to total assets (Baily and Montalbano 2015). In general, securitization by CRFIs may be limited to larger institutions with asset volumes large enough to justify the transactional costs and expertise required.

[16] Previous NREL efforts targeted this data gap for the TPO market, but not for solar lending (NREL 2018).

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4 Quantitative Indicators of PV Loan Performance

This section provides summary statistics on PV loans made by CRFIs to complement the qualitative insights noted above. The data are anonymized and used to analyze loan and borrower characteristics as well as loan performance.

The data set contains high-level information from 6,770 loans, representing a combined PV loan portfolio exceeding $186 million across 22 different CRFIs. Massachusetts accounts for 57% of the PV loans in the data set and 67% of the loan value. These data were collected by the Massachusetts Clean Energy Center (MassCEC) and the Massachusetts Department of Energy Resources as part of the Mass Solar Loan Program (Mass Solar Loan 2018). NREL collected data for the remaining 43% of PV loans and 33% of loan value from individual CRFIs across the United States. Across the entire combined data set (6,770 loans), banks account for 32% of the PV loans and 38% of the loan value, and credit unions constitute the remaining 68% of PV loans and 62% of loan value. The loan data reflect performance through February 2018.

These data entail several caveats. The PV loan program data were self-reported by the various CRFIs. Although the data were spot checked, a thorough audit to check consistency across institutions or for reporting accuracy was not conducted. The Mass Solar Loan Program data are part of a state incentive program that includes a financially protective loan loss reserve fund, which may impact lending practices such as borrower qualification and the interest rate. The institutions outside the Mass Solar Loan Program reported data through a standardized form, but each institution may collect and process their PV lending data uniquely, which could produce subtle data differences across institutions. Thus, the data are useful for analyzing high-level trends. Future studies could improve the data-collection process and expand the scope of the analyses.

Table 2 categorizes the data by the value of each institution's PV loan portfolio. Out of 6,770 total PV loans, 12 loans (< 0.2%) were reported as charge-offs, indicating the loan is unlikely to be repaid by the borrower. Hypothetically, if an average lender charged-off $15,000 for each of the 12 defaulted loans, the loss would represent about $26 per loan when spread across all 6,770 loans. This estimate is likely high, because some loan charge-off losses could be offset from a claim to a loan loss reserve program or via the UCC-1 process when the home is sold or refinanced.

Table 2. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan 2018 and individual CRFI contributions

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There were 178 loans reported at least 30 days late, representing approximately 2.6% of the overall loan portfolio. Interviewees noted that short-term delinquencies can occur when borrowers are slow to set up automatic loan payments. Delinquencies drop substantially at the 60- and 90-day marks.[17] According to some interviewees, loan delinquency rates may vary by loan "seasoning" (i.e., the time elapsed since loan closing). For example, delinquencies might be expected to peak at 2–5 years of seasoning according to some interviewees. As shown in Table 2 and Figure 4, most PV loans in the data set were substantially younger than 2 years. The lower seasoning of CRFIs with portfolios of $1 million or less compared with the rest of the institutions could indicate smaller institutions or relatively nascent solar loan program offerings.

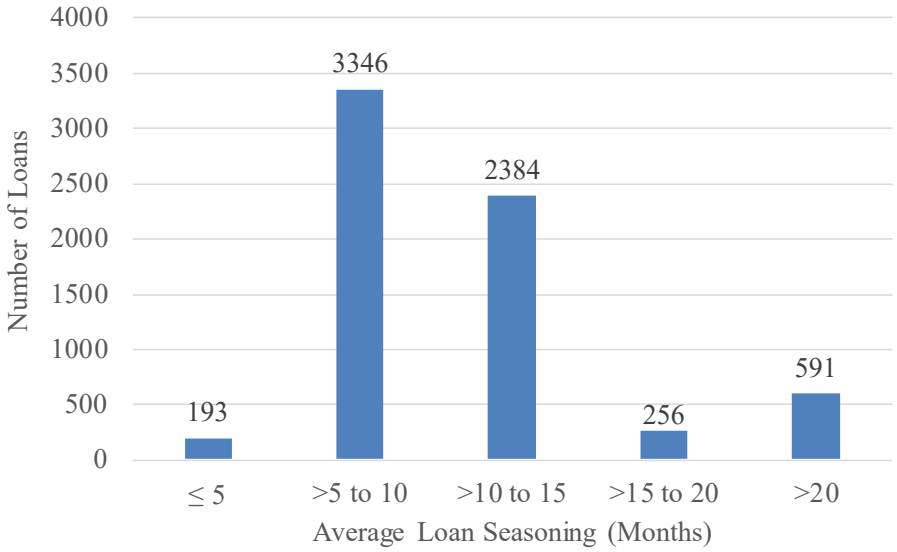


Figure 4. Number of CRFI PV loans by seasoning[18]

Table 2 also summarizes borrower credit profiles, which are consistent across CRFIs of various PV loan portfolio sizes: 76%–88% of borrowers had credit scores of 720 or higher, 9%–14% had scores of 681–720, and 3%–11% had scores of 680 or lower. Even within the lowest credit category, many borrowers likely were still considered "prime"—that is, attractive enough to qualify for approval at relatively low interest rates. The "subprime" level typically starts around a 620-credit score. These statistics agree with interviewees describing typical PV borrowers with overall high credit quality, thus presenting less risk. The high credit quality of PV borrowers is

[17] Some institutions report cumulative delinquency payments (how many loans have ever been late even if they are now current), whereas others report point-in-time delinquency metrics (how many loans are delinquent at any given point in time). Thus, the delinquency data in Table 2 are likely higher than if all the reported delinquencies were based on point-in-time estimates, because many delinquencies are corrected over time. Conversely, the delinquency data in Table 2 are likely lower than they would be if each financial institution reported a cumulative metric showing the number of loans that have ever been delinquent during the loan's operating period.

[18] Loan seasoning for Mass Solar Loan Program data is provided at the individual loan level, which is then averaged for each CRFI. Loan seasoning for CRFIs outside of the Mass Solar Loan Program is provided as a portfolio average for that CRFI. The number of loans shown in Figure 4 represents the total number of loans in each bin including both Mass Solar Loan Program and other CRFI data.

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also expected, because applicants must be homeowners and ideally have enough income to use the ITC effectively. Figure 5 provides a credit score summary of the total sample.

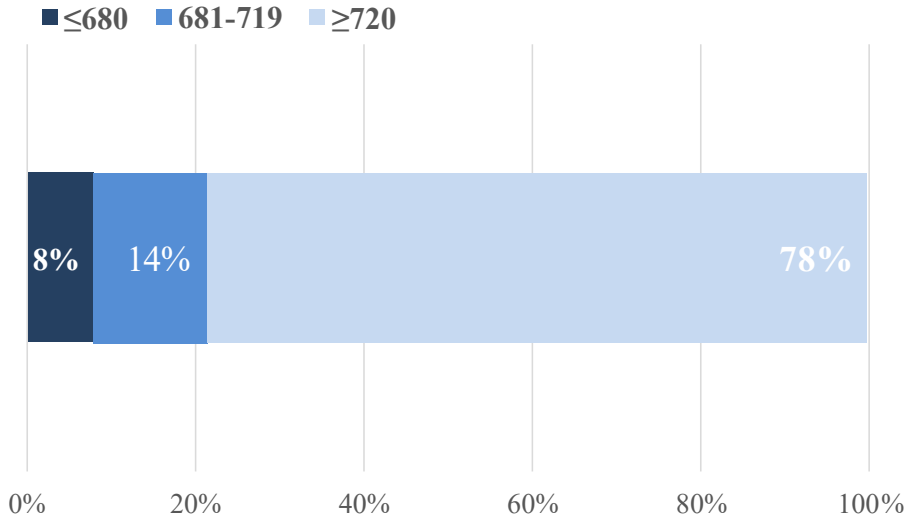


Figure 5. Credit score summary across entire sample of borrowers

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5 Conclusions and Future Needs

CRFIs have demonstrated the willingness and entrepreneurism to provide new loan products for growing distributed PV markets. Early qualitative perspectives and quantitative data suggest PV loans are performing very well, making expansion of loan offerings attractive for CRFIs already operating in this space and potentially attracting new entrants. Although most CRFI investment to date has targeted standalone distributed PV, other applications will likely emerge, such as community PV and PV coupled with battery storage.

Access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth, including the following:

- Higher-fidelity PV loan performance and borrower credit data on par with the data readily available for other assets classes, especially improved geographic, historical, and borrower-classification data.
- Information on the presence of PV financing providers across different markets as well as detailed information on the type of financing products provided.
- Information provided through dedicated PV lending training or educational materials to existing and potential PV lenders, covering areas such as technical evaluation of PV equipment, assessment of industry risk profiles, and characterization of various PV financing products.

Public and private partnerships may be able to collect and disseminate such data throughout the United States. Working together, the industry can help existing providers grow their loan portfolios and reduce risks while enabling new financiers to enter the PV loan space and service areas where distributed PV loans can be offered widely and profitably.

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VALUATION OF SOLAR GENERATION ASSETS

The valuation of solar energy projects is a complex subject and is a source of tension between regulators, developers and debt and equity investors. This paper is intended to highlight best practices, as well as common pitfalls in valuing solar energy projects including the tangible and intangible assets comprising a fully contracted in-place system (a "solar asset").

Solar assets may be valued for many purposes, including:

- Strategic planning
- Acquisition
- Debt and equity financing
- Investment tax credit and Section 1603 grant in lieu of credit
- Buyout options
- Allocation of purchase price for an acquisition

Depending on the purpose of a valuation, there can also be different standards (also referred to as definitions) of value required by regulators, or requested by the users of valuations. These standards include fair market value ("FMV"), market value, fair value, investment value, book value, and value to the holder. However, the most common valuations of solar assets will utilize the FMV standard. Fair market value is required for federal income tax purposes (e.g., investment tax credit, and tax allocation of acquisition purchase price) as well as for Section 1603 grant purposes, and is frequently requested by investors. Accordingly, this paper focuses only on valuations under FMV for new or "as-if fully complete" assets.

Many common errors are made by not adhering to the well-defined standard of FMV. Valuations should clearly state and define the standard of value. FMV is defined in accordance with Revenue Ruling 59-60 as follows:

> *"The price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts."*

It is generally accepted and supported by numerous cases that the term "fair market value" contemplates a hypothetical willing buyer and a hypothetical willing seller. FMV does not consider the unique motivations of a particular buyer or seller, nor does it consider unique synergistic value that a particular buyer may perceive. FMV also considers all risks inherent in ownership including factors related to control and marketability.

It is important to note that FMV contemplates an arm's length transaction whether or not there is an actual or contemplated transaction. Accordingly, the attributes of the current owner/holder (e.g., actual costs incurred and tax attributes) are generally not relevant unless they can be transferred to a hypothetical buyer. This concept is particularly important for solar assets that generate substantial value from tax attributes such as accelerated depreciation and tax credits. For example, a project owner entity's investment tax credits would be based on actual eligible direct and indirect costs, overhead and may include a developer fee paid to a related party, whereas FMV is determined from the buyer's perspective based on the expected price of the system and an allocation of that price to eligible components.

There are many accepted methods for valuing assets that do not have a readily available or quoted market price such as solar assets. These valuation methods can generally be aggregated into the following three categories:

- Asset/Cost Based
- Income Based
- Market Based

In the valuation of solar assets, generally all three approaches should be developed because each provides relevant information to estimating FMV (i.e., the price that would be negotiated between a hypothetical buyer and hypothetical seller). Each approach has its strengths and weaknesses and will be afforded different weight based on the facts and circumstances. Each approach, its strengths and weaknesses, and typical pitfalls are discussed below.

Cost Approach

The cost approach is applied using either the reproduction cost method (costs to replicate an identical asset) or the replacement cost method (costs to develop an asset of similar utility). The cost approach is most applicable in estimating the value of a new or hypothetical "as if complete" solar asset. This method becomes much less reliable for in-service assets because of the difficulty in estimating physical, functional, technological and economic obsolesce/depreciation.

The cost approach is developed by accumulating the market based direct and indirect costs to develop an asset of equivalent utility that would be incurred by a market participant, adding opportunity cost for the cost of capital during the development period, and adding an entrepreneurial profit to compensate for the risk in undertaking the development.

The cost approach has received a tremendous amount of attention in the valuation of solar assets, in part because certain grant applications required a cost certification from an independent certified public accountant ("Cost Certification"). However, from a valuation perspective, the cost approach is generally no more important than income or market approach, and is often the least reliable method in reaching a conclusion of fair market value. The factors causing the limitations of the cost approach mirror its lack of utility in an arm's length negotiation between a willing buyer and willing seller, which is the required standard inherent in FMV analysis.

It is critical to note that the cost method is not a Cost Certification, and actual costs are not utilized because costs must be based on what a hypothetical market participant would incur to replace the asset, not necessarily the costs that the developer incurred in developing the asset. The market participant concept is also applied in estimating opportunity costs. Entrepreneurial profit is difficult to estimate and based on market factors. Entrepreneurial profit should not be based on actual development agreements in place, which are often between related parties and may not be viewed as representative of a market transaction.

The cost approach provides relevant information in estimating FMV under the premise that a market participant would pay no more for an asset than their cost to develop an asset of equivalent utility. The cost approach, however, has significant weaknesses because it does not easily provide for consideration of an actual power purchase agreement ("PPA"), a contract for solar renewable energy certificates ("SREC") sale (and they may be favorable or unfavorable to the value of the solar asset), or substantial differences among state and local incentives in different jurisdictions.

The cost approach often provides the upper bound for the FMV of the solar asset. However, in circumstances where the cost approach provides a higher indication of value than income and market approaches, say because of a below-market PPA, the cost approach should be given little or no weight in reaching a conclusion of FMV to best reflect the expected action of the hypothetical buyer. In situations where the cost approach provides a lower indication of value than the income or market approach, this may justify increasing the entrepreneurial profit (and cost approach value) or relying more heavily on income or market approaches because the seller would demand this additional value.

Accordingly, in estimating FMV and similar to the process when parties negotiate a price, the cost approach is typically no more important than the income or market approach, and is often the least important method in reaching a conclusion. As is evident in many real estate markets that have seen market disruption, replacement cost can be substantially higher than fair market value.

The most common pitfalls using the cost approach include:

- Utilizing actual costs and not considering current market costs particularly when prices have dropped and the project is delayed.
- Utilizing a related party developer fee as entrepreneurial profit when the soalr asset's economics do not justify a large entrepreneurial profit.
- Placing too much reliance on the cost approach when it is a higher indication of value than the income and market approach (i.e., the economics do not support replacement cost).
- Placing too much reliance on the cost approach when it is a lower indication of value than the income and market approach (i.e. the economics support a higher value than represented by replacement costs and a reasonable entrepreneurial profit).

Income Approach

Valuation methods based on the income approach use the expected economic earnings capacity of the solar asset in question to estimate value. This approach is generally used by market participants in pricing solar assets, and is usually the most relevant method to estimate FMV because it considers the specific contracts and incentives applicable to the solar asset. There is also a substantial history of case law and tax authority that indicates that the income approach is most appropriate for determining the fair market value of property that generates income, particularly a consistent income stream over a long period.

For solar assets, the income approach is generally developed using the discounted cash flow ("DCF") method. The DCF method is based on the fundamental financial premise that the value of any investment is the present value of expected future economic benefits. The DCF method considers all of the relevant factors an investor would consider in determining value (i.e., economic benefits, risk, and the liquidation time horizon). In applying the DCF method, the economic benefit stream over the projection period is converted to present value at a discount rate which meets the return requirements of debt and equity investors (i.e., the weighted average cost of capital). A projection of economic benefits (after tax cash flows including tax benefits) covering the expected life of the system is utilized because the timing of significant benefits such as tax credits and depreciation and state and local incentives varies from year to year.

One of the inherent factors and potential weaknesses of the DCF method is the reliance on a projection covering the estimated useful life of the system. However, many solar assets will have a PPA with extensions covering a

substantial portion of the estimated life of the system and statutory provisions or contracts covering SRECs or incentives. Furthermore, the timing and amount of tax credits and depreciation benefits, which represent a significant portion of the economic value, can be estimated once the price/FMV is determined. Accordingly, the uncertainty for solar assets relates principally to merchant sales or un-contracted SREC revenue.

One of the more difficult aspects for some appraisers in applying the DCF method is determining the appropriate unleveraged discount rate or weighted average cost of capital ("WACC"). The WACC should reflect the required market rate of return on equity and the required market rate of return on debt with each weighted based on their respective portion of the long-term capital structure. The market return on equity should be based on current requirements for equity investors and is usually estimated using techniques like the capital asset pricing model used by valuation professionals. The cost of debt should reflect the market interest rate and fees on long-term solar asset debt financing.

Another difficult input to estimate is the long-term equity and debt weighting. Much like real estate and other long-lived tangible assets, solar assets are generally debt financed with amortizing debt with an amortization period and term that is significantly less than the life of the asset utilized in the DCF projection. Accordingly, the debt weight cannot be computed based on the initial loan to value or the WACC will be understated resulting in an overstatement of value. Additionally, the unlevered return or WACC should be referenced to recent studies on unleveraged rates of returns or direct observations from actual transactions in solar assets.

A further challenge in using the DCF method is projecting tax attributes such as depreciation and income tax rates. Many projects are eligible for bonus depreciation. However, if bonus depreciation creates projected losses, care must be taken to consider whether a typical market participant would put value on these benefits at marginal tax rates, and whether bonus depreciation would be considered by a typical market participant in pricing the subject asset.

It is also important to note that projections and the WACC should be determined from the perspective of a market participant, not the current holder of the asset. This is extremely important in estimating the correct amount of tax credits and depreciation that a buyer would obtain upon purchasing at FMV, allocating costs to eligible vs. ineligible items, and segregating components into depreciable lives. Additionally, the financing rates and debt and equity weighting for the current holder/owner are much less important than rates and weighting for a typical market participant.

Common pitfalls in using the income approach include:

- Utilizing the initial loan to value as the long-term debt weighting and understating the WACC.
- Failure to include a risk premium in the WACC for merchant sales or un-contracted SRECs and understating the WACC.

Market Approach

The market approach is typically developed in valuing solar assets when a sufficient number of adequately comparable assets have recently transferred ownership, and valuation metrics for the transactions can be obtained. Given the volume of solar transactions in most jurisdictions and access to reliable data, the market approach is utilized for most solar asset valuations using the comparative transaction method. Using the comparative transaction method, the reported price per capacity unit (e.g. megawatt) for recent comparable systems is

analyzed and a selected cost per capacity unit is then applied to provide an indication of the estimated fair market value for the solar asset.

The first challenge in applying the market approach is finding a sufficient number of recent comparable transactions from which valuation metrics can be obtained. Given the substantial difference for solar assets between jurisdictions for capacity factors, RECs and other incentives, comparable transactions should typically be from the same region and state, and consideration should be given to the size of the system. If these criteria cannot be met, little or no reliance should be placed on the market approach.

Even if an adequate number of comparable transactions are identified, an inherent weakness in the market approach is obtaining specific information on the comparables to quantify adjustments that may be appropriate to properly estimate FMV. The terms of the PPA can obviously have a substantial impact on the value of the solar asset, but it is often not possible to obtain the details to accurately adjust metrics from comparable transactions.

The most common pitfalls in using the market approach include:

- Utilizing price data from transactions that are not reasonably comparable because of location or size
- Utilizing transaction data is not current particularly given market forces over the last several years.
- Failure to consider whether adjustments to reported transactions should be made for factors specific to the system (e.g., terms of a PPA that are above or below market).

A Note Regarding Purchase Price Allocations

The allocation of the purchase price by buyers for both financial reporting and income tax reporting has also been the subject of controversy and wide disparity in practice for solar assets. The rules and approach may be different for financial reporting (using fair value as the required standard of value) than for income tax purposes (using FMV as the required standard for value). While the subject of purchase price allocation is beyond the scope of this article, it is important to note that certain concepts must be considered in estimating the FMV of the solar asset because FMV contemplates an arm's length transaction. For example, the amount of investment tax credit and depreciation considered in the valuation must be based on the perspective of the buyer, applying the concepts that a hypothetical buyer would apply in its purchase price allocation.

This general overview of best practices in fair market value determination and the importance of appraisals does not delve into the details of purchase price allocations, a complex and important process that will be the subject of a subsequent SEIA white paper.

Conclusion

Rigorous, accurate, third-party appraisals are critical to proper evaluation of solar energy generating assets. Even after valuation approaches are applied rigorously with the best available market data, reaching a conclusion is often difficult. In reaching a conclusion, each method should be analyzed for the quality of data obtained, actual and inherent weaknesses, and the importance of the indications from each method to a hypothetical purchaser. There is no basis for relying equally on the three (or fewer) approaches unless each provides the same quality of information. If the indications of value from the three approaches result in a reasonable range of indications, it may be appropriate to weight each equally. However, a wide range of indications may warrant revisiting each method and its inputs and assumptions, and in many circumstances, the cost and market approaches may need to be given less weight in reaching a conclusion.

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BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
NASHVILLE, TENNESSEE

IN RE: THE APPLICATION OF JACKSON	)	
SUSTAINABILITY COOPERATIVE	)	DOCKET NO. _____
FOR A DETERMINATION OF EXEMPTION	)	
AND IN THE ALTERNATIVE, FOR A	)	
CERTIFICATE OF PUBLIC CONVENIENCE	)	
AND NECESSITY	)	

DIRECT TESTIMONY OF DENNIS EMBERLING

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER.

A. Dennis Emberling
1104 Whitehall Street
Jackson, TN 38301
Phone: (731) 240-5001
Email: de@comdevent.com

Q. WHAT IS YOUR POSITION AND WHAT ARE YOUR RESPONSIBILITIES AT JACKSON SUSTAINABILITY COOPERATIVE ("JSC")?

A. President. I am responsible for overseeing and qualifying members to receive supplemental energy from renewable sources that JSC shares among its members. The members are a small group of manufacturers and commercial operators in an underserved area of Jackson, Tennessee. As the solar facility nears operation, I am responsible for making sure JSC has the administrative operations to run the cooperative.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I am an internationally-known, senior management consultant, with forty years of experience advising senior management of companies of all sizes, from startups to Fortune 100. My Bachelor's degree is in pure mathematics, from Reed College. For six years, I studied graduate-level and post-graduate-level classes in business, management theory and practice, organizational development, general systems theory, information theory, cybernetics, cognitive science, communication theory and practice, mediation and negotiation strategy, and finance. I was personally mentored for five years by Hugh MacLean, PhD., one of the country's leading pioneers in management science and related fields. My contributions to these fields have included over 4,000 pages of websites, articles, and teaching materials. This work is in use all over the world, including the

United Nations Development Program. I am also also an authority on distributed solar, having consulted for solar companies in California for seven years. I am a member of the California Intergovernmental Task Force on Consumer Protection and regularly advise the California Public Utility Commission. I have managed companies and have decades of experience in all aspects of business finance, tax, investing, and accounting.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony in this proceeding is to support JSC's Application for a determination of exemption under Tennessee law when constructing and operating a Solar Facility and Battery Storage in Madison County, Tennessee that offers supplemental energy from renewable sources to its members. If JSC is not exempt, then my testimony is to support a request for a Certificate of Public Convenience and Necessity to construct and operate this Solar Facility for shared supplemental energy.

Q. WERE YOU INVOLVED IN PREPARING JSC'S APPLICATION IN THIS DOCKET?

A. Yes.

Q. WHAT AUTHORITY IS JSC SEEKING FROM THE TRA?

A. JSC is requesting a prospective determination that it is exempt from regulation as a non-profit cooperative formed under the Electric G&T Cooperative Act. Alternatively, JSC is requesting approval to build and operate a solar facility and battery storage in Jackson, Tennessee.

Q. PLEASE DESCRIBE THE JACKSON SOLAR PROJECT.

A. As detailed in the JSC application, the Jackson Solar Project will make solar energy available in areas where it is presently uneconomical. The Jackson Solar Project has received an award from the U. S. Department of Energy's National Community Solar Partnership for innovation and contribution to making solar available in areas of the country where it is presently uneconomical. The Jackson Solar Project has strong support from the Jackson community and its businesses.

The Jackson Solar Project consists of solar panels mounted on fixed mounts (no movable trackers), inverters, batteries, system controller, and all associated electric equipment installed on 34.2 acres of land in Jackson, Tennessee, plus underground wiring to several commercial facilities within 3.5 miles of the solar site. The site is parcel IDs 057 065 10400 000 2020 (28.54 acres) and 057 065 10300 000 2020 (5.2 acres).

Approximately 33,347 SunPower A-450-COM solar panels rated for approximately 16 MW of power will supply approximately 25 GWh/yr. of electricity through SMA

Highpower string inverters, with Kore Power lithium battery storage of approximately 46 MWh. Northern Reliability, Inc., the nation's oldest developer of controller hardware and software (having built over 1,000 systems) is the prime contractor, and will design and build the controller hardware and software (including transformers and all supporting and safety electrical equipment on the site) for the Jackson Solar Project, install the system, and oversee, test, and commission the connections to the members of JSC. Smart electric meters will be installed at each customer's site. Energy from the Solar Facility will flow to these smart meters and to the electrical circuits in the buildings of the Members. The controller technology intelligently allocates power to and from the batteries and to members, taking all factors into account to optimize power delivery.

The smart meters will be completely isolated ("islanded") from the existing Jackson Electric Authority ("JEA") meters, which will remain in place and remain connected to JEA's grid. Members will draw power seamlessly from both JEA and JSC's controller, but no power will ever be able to backflow onto JEA's grid. When demand is average or below, members will primarily use electricity from JEA, as they do now. When demand rises, members will draw the extra electricity needed from the Solar Facility. When a JEA grid outage occurs, customers will draw all their electricity from the Solar Facility for short periods of time and/or for priority usage until grid power is restored.

The entire Solar Facility will be storm hardened and able to withstand severe storms without losing power. The solar panels are rated for high winds and will be mounted in racks rated to withstand hurricanes. The batteries will be housed in storm-hardened enclosures. All wiring on and off site will be underground. This ensures the capability of providing uninterruptible power during storms. (Jackson experiences these frequently, including two direct hits from tornadoes in 2020 alone.)

The Solar Facility is expected to cost approximately $67M. It will have at least a 30-year life, because it uses the highest quality equipment, run conservatively so as to extend lifespans. Operations and maintenance will be handled by Northern Reliability, Inc. All equipment, construction, and installation costs will be borne by Community Development Enterprises - Jackson I ("CDE"), who will lease the equipment to JSC. The members will have little expense. Members will pay a lower rate to JSCfor their peak demand usage than JEA's scheduled peak-demand charges.

All environmental approvals have either been received or have been applied for. All civil engineering designs and documents have been submitted to the Jackson Planning Department and have received staff recommendation for approval. The Solar Facility is exempt from regulation under PURPA from FERC, NERC, and SERC because it does not connect to the public utility grid.

The project is financed by CDE who is relying on private-equity investment because it is eligible for the Investment Tax Credit, New Markets Tax Credit, and accelerated MACRS

depreciation.

Q. HOW DOES THE JACKSON SOLAR PROJECT FIT WITH THE COMPANY'S COMMITMENT AND THE COMMUNITY REDEVELOPMENT AGENCY IN THE CITY OF JACKSON?

A. The Community Redevelopment Agency ("CRA") works with communities in Jackson to address blight and to provide affordable housing. CRA works with business owners and other community stakeholders to determine community priorities and potential projects. The Jackson Solar Project is a community priority. The Jackson Solar Project is a collaborative energy innovation project for the Jackson area along Roosevelt Parkway. One goal of JSC is to partner with the local community and elected leaders to help transition Jackson to a cleaner, smarter and more reliable energy future. JSC is committed to this partnership to promote the efficient use of energy in Madison County, Tennessee. The Jackson Solar Project represents a deliberate investment in shared renewable energy resources, and increased access to new and existing demand-side management and energy efficiency programs in Jackson. The Jackson Solar Project meets a portion of this commitment. JSC is evaluating additional solar and storage sites in Tennessee and will make appropriate filings with the Commission for approval once it has made a decision on those projects. Along with furthering its commitment to site solar and storage technologies in West Tennessee, JSC intends for the Jackson Solar Project to support the goals and objectives of the CRA.

Q. PLEASE DISCUSS THE NEED FOR THE JACKSON SOLAR PROJECT.

A. Members of JSC need a Solar Facility for many reasons. First, for environmental benefits: to reduce carbon emissions and clean the air and water. Many companies have publicly announced goals and policies for moving to clean energy in the future. The Solar Facility helps members of JSC do just that, without incurring any capital costs. Further, it is likely that new regulations and penalties for carbon emissions are coming, so the Solar Facility will help companies avoid these penalties.

Second, to provide uninterruptible power during grid outages without resorting to individually-owned diesel backup generators, which pollute, are hazardous, and canot supply enough electricity to meet commercial needs during outages. Jackson is regularly hit with severe storms that cause outages, including two tornadoes in 2020 alone. Outages are very expensive for manufacturers. They can damage machinery and often force manufacturers to lose production and send workers home during the outage, only calling them back to execute an extended restart protocol when power is restored. The Solar Facility increases energy security and resilience for all its users.

Third, to lower peak-demand charges and thus overall electricity costs. Peak demand is very expensive for commercial customers, as well as for JEA and TVA. Even if demand

spikes are brief, TVA must have massive reserve power generation on standby to meet it (with a 20% cushion on top of the peak). This is very expensive for TVA, who must pass the cost on to JEA, who must pass the cost onto the customers in the form of peak demand charges. For the commercial customers JSC can serve, these demand charges represent approximately 44% to 66% of their annual electricity bills. By helping JEA meet these peak demands, the Solar Facility reduces costs to its customers and lowers JEA's charges from TVA. For example, JEA maintains a total capacity of 570 MW to meet a maximum demand in any one hour of 381 MW (354,549 in 2020). If the six heavy commercial users near JSC's site receive their peak power from the Solar Facility, that would reduce JEA's overall peak demand by 12.9% for 2020.

Fourth, meeting peak demand for power is also stressful on all utility equipment and power lines. Reducing this demand lengthens the life and reduces repair costs for the utilities. The Solar Facility also saves JEA the capital costs of installing backup batteries themselves, thereby allowing them to lower their rates.

Fifth, lower electricity costs will allow businesses in Jackson to expand. The availability of lower-cost, clean, solar energy will put Jackson on the map as a forward-looking city moving towards a cleaner environment, attracting new businesses to the area. Jackson is an economically distressed community that needs more job opportunities. This project will provide 511 full-time-equivalent jobs in 2020 and 22 permanent jobs, rising to 28 over the first ten years of operation.

Sixth, planning for unknown future electricity rate increases is difficult for businesses. JSC's rates will not rise in real dollars, which hopefully, will help members of JSC to better control their electricity costs over the next thirty years.

Seventh, the Solar Facility provides higher quality power than the utility grid, which regularly suffers from brownouts, voltage fluctuations, and unstable frequency of current. The electricity from the Solar Facility is tightly regulated, providing steady, high-quality power that improves the reliability and extends the life of machinery.

Eighth, it is very uneconomical for businesses to acquire their own renewable energy generation, because of the lack of state incentives, high cost for small systems and batteries, lack of attractive financing, inadequate roof or ground space at their site, costs of operation and maintenance, need to upgrade equipment from time to time, and lack of utility net-metering programs (which allow customers to sell back excess electricity generated during peak hours to the utility for a credit). As a result, there is little renewable energy in Jackson, and it is likely to remain that way without help. The Solar Facility solves many of those problems by taking advantage of lower costs due to economies of scale, tax incentives, and financing not available to most businesses.

Q. PLEASE DISCUSS THE ENVIRONMENTAL ATTRIBUTES OF THE PROJECT.

A. Operation of the Facility will have no emissions or pollutants, and the generation source of the solar power will be 100% renewable. In addition, the Facility will be designed in accordance with State of Tennessee environmental requirements with regard to materials.

Q. TO YOUR KNOWLEDGE, HAS JSC FILED AND PROVIDED ALL INFORMATION AND OBTAINED ALL FEDERAL AND STATE LICENSES, PERMITS, AND EXEMPTIONS REQUIRED FOR CONSTRUCTION AND OPERATION OF THE PROPOSED GENERATION FACILITY?

A. Yes. I believe that the Application provides all information required under federal and state law and the Commission's rules. The Facility is expected to be fully permitted prior to construction. A complete list of all required federal, state and local approvals and their status is in the Application for Exemption.

Q. WHAT IS THE PROJECTED COST OF THE JACKSON SOLAR PROJECT?

A. The current engineering cost estimate for the Jackson Solar Project development is approximately $67M. The estimate includes Engineering Procurement & Construction ("EPC"), major equipment, labor, and associated permitting and development costs. Any tax credits and accelerated depreciation benefits will offset project costs for the benefit of the members of JSC.

Q. WHAT IS THE ESTIMATED CONSTRUCTION SCHEDULE FOR THE PROJECT?

A. If Commission approval were to be obtained, the notice to proceed is expected to be issued in May 2021, with site mobilization to begin as early as July 2021, with final commissioning by February of March of 2022.

Q. IN CONCLUSION, WHY IS JSC REQUESTING APPROVAL TO CONSTRUCT THE JACKSON SOLAR PROJECT?

A. The Jackson Solar Project is an innovative modernization solution for shared renewable energy. Moreover, it will enhance reliability to its members in the City of Jackson. The existing JEA grid incurs long duration outage events due to its location and is expected to require high-cost equipment upgrades in the future. Investing approximately $67M in the Facility, as an alternative to traditional utility upgrades to meet capacity requirements for peak demand, JSC will leverage local renewable generation and storage, improving reliability of service to its members who are primarily served by JEA. The project is also one of many deployments and initiatives designed to meet the shared goals of the members of JSC to invest in smart, clean energy projects in Tennessee. Finally, this project presents a unique opportunity for JSC to collaborate with community stakeholders on an innovative solution and reflects the community commitment to proactively support their energy-related goals and objectives. We are pleased with the

strong local support for the Jackson Solar Project and look forward to bringing it online for the benefit of the members of JSC and the Jackson community.

Q. ARE ALL STATEMENTS IN JSC'S APPLICATION TRUE AND CORRECT TO THE BEST OF YOUR KNOWLEDGE, INFORMATION, AND BELIEF?

A. Yes.

Q. DOES JSC HAVE ADEQUATE ACCESS TO THE CAPITAL NECESSARY TO PROVIDE SERVICE IN TENNESSEE?

A. Yes, JSC will lease the equipment and obtain start up capital from CDE. CDE has access to the financing necessary to fulfill any obligations it may undertake with respect to the operation and maintenance of the services specified in the Application.

Q. IF AUTHORIZED TO PROVIDE SUPPLEMENTAL ELECTRIC POWER SERVICES, WILL JSC ABIDE BY THE RULES, STATUTES, REGULATIONS, POLICIES, AND ORDERS OF THE COMMISSION, AND THE LAWS OF TENNESSEE, IN ITS PROVISION OF SERVICES, INCLUDING THOSE FOR DISCONNECTION AND RECONNECTION OF SERVICE?

A. Yes.

Q. PLEASE DESCRIBE THE PUBLIC INTEREST BENEFITS ASSOCIATED WITH JSC'S PROPOSED OFFERING OF SUPPLEMENTAL ELECTRIC POWER SERVICES IN JACKSON TENNESSEE?

A. Many environmental benefits, including reducing carbon emissions from power production, replacing fossil-fuel backup generators, and encouraging additional development of renewable energy projects. Many developmental benefit to Jackson for its economic redevelopment, including developing its reputation as a leader in green energy, a home for companies that have green-energy goals they must meet, $212M in economic impact over ten years, $14M in new tax receipts, 511 additional full-time-equivalent jobs in 2021, many additional jobs in the future, spurring expansion of existing businesses in Jackson, and attracting additional new businesses to Jackson. JSC will provide training, internships, and educational programs in the renewable energy field to Jackson's high school and colleges at its own cost. JSC will contribute to the improvement and redevelopment of Jackson's infrastructure. JSC's partners and members will contribute various programs to Jackson's community in the areas of job training and community building. The increasing availability of uninterruptible power will benefit first responders and improve safety in Jackson. Members who share supplemental energy from the Solar Facility will be able to afford to switch a major portion of their electricity usage to renewables without incurring any capital costs, while reducing their total

electricity costs. They will be assured of future stable electricity pricing, enabling them to plan with confidence and expand their businesses.

Q. HAS ANY STATE EVER DENIED OR REVOKED THE CERTIFICATION OF JSC OR ONE OF ITS AFFILIATES?

A. No.

Q. HAS JSC OR ONE OF ITS AFFILIATES EVER BEEN INVESTIGATED OR SANCTION BY ANY REGULATORY AUTHORITY FOR SERVICE OR BILLING IRREGULARITIES?

A. No.

Q. WHO IS KNOWLEDGEABLE ABOUT JSC'S OPERATIONS AND WILL SERVE AS JSC'S REGULATORY AND CUSTOMER SERVICE CONTACT?

A. Mr. Dennis Emberling is knowledgeable about its operations and will serve as CDE'S Regulatory and customer service contact.

Q. PLEASE EXPLAIN IN DETAIL JSC'S PROPOSED PROCEDURES FOR RESPONDING TO INFORMATION REQUESTS FROM THE TRA AND ITS STAFF.

A. All requests should be routed to Dennis Emberling, via email or telephone with a copy to counsel.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

I swear that the foregoing testimony is true and correct to the best of my knowledge.

_____

Dennis Emberling, President

Respectfully submitted this _____ day of _____, 2021.

STATE OF TENNESSEE)
)
COUNTY OF DAVIDSON)

Subscribed and sworn to me a Notary Public, in his capacity as President of JSC this this _____ of _____, 2021.

_____
Notary Public

Commission Expires: _____

2019 Integrated Resource Plan

VOLUME I - FINAL RESOURCE PLAN

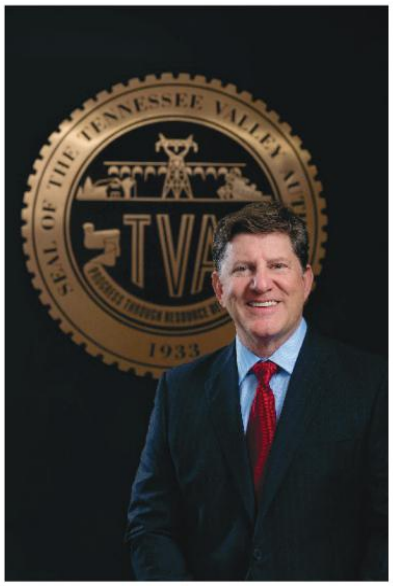


TENNESSEE VALLEY AUTHORITY

EAS000608

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

Message from the CEO



As the largest provider of public power in the nation, TVA provides low-cost, environmentally responsible and reliable power to the 10 million people of the Tennessee Valley region. We've been delivering our mission of service since 1933, all the while ensuring that our capabilities grow and change with the times.

This Integrated Resource Plan examines how TVA can meet future power demand in new and innovative ways. The Plan considers costs, environmental factors, reliability, regulations, energy efficiency, technological advancements, customer demands and other important factors to help us determine the best options for our energy future.

In developing the Plan, TVA enlisted the help of subject matter experts, our Regional Energy Resource Council and the public at large to ensure we considered the best possible options and the most likely future scenarios. TVA also relied on the diverse backgrounds and viewpoints of a working group of industry experts, environmental and business leaders, elected officials and others. This group helped TVA develop this Plan and its associated Environmental Impact Statement, which analyzes the potential impacts to the environment, economy and population of the Valley based on outputs of the Plan.

Collaborative planning efforts like this are an important part of how TVA partners with the people and communities we serve to improve quality of life in our region. In an ever-changing world, this Integrated Resource Plan will guide us on ways to live brighter lives together for decades to come.

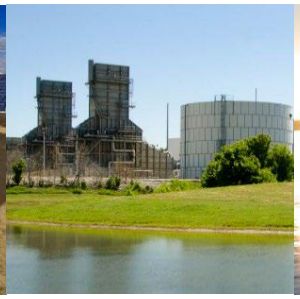
Jeff Lyash

2019 Integrated Resource Plan

EXECUTIVE SUMMARY













TENNESSEE VALLEY AUTHORITY

EAS000612

Introduction

PURPOSE AND NEED

The Tennessee Valley Authority's 2019 Integrated Resource Plan (IRP) is a long-term plan that provides direction on how TVA can best meet future demand for power. It shapes how TVA will provide low-cost, reliable and clean electricity; support environmental stewardship; and foster economic development in the Tennessee Valley for the next 20 years. The plan is a crucial element for TVA's success in a constantly changing business and regulatory environment, and it will better equip TVA to meet many of the challenges facing the electric utility industry in the coming years to benefit the Valley. The IRP will enhance TVA's ability to create a more flexible power-generation system that can successfully integrate increasing amounts of renewable energy sources and distributed energy resources (DER) while ensuring reliability. The IRP also will inform TVA's next Long-Range Financial Plan.

TVA POWER SYSTEM

As the nation's largest public power provider, TVA delivers safe, reliable, clean, competitively priced electricity to 154 local power companies and 58 directly served customers. TVA's power portfolio is dynamic and adaptable in the face of changing demands and regulations. TVA's portfolio has evolved over the past decade to a more diverse, reliable and cleaner mix of generation resources, which today provides 54 percent carbon-free power. In Fiscal Year (FY) 2018, TVA efficiently delivered more than 163 billion kilowatt-hours of electricity to customers from a power supply that was 39 percent nuclear, 26 percent natural gas, 21 percent coal-fired, 10 percent hydro, and 3 percent wind and solar. The remaining one percent results from TVA programmatic energy efficiency efforts.

SUMMARY OF IRP PROCESS AND GOALS

TVA used an integrated, least-cost framework that considered multiple views of the future to determine how potential power-generation resource portfolios could perform in different market and external conditions. We conducted the IRP process in a transparent, inclusive manner that provided numerous opportunities for public education and participation. Stakeholders and the public provided invaluable input that helped shape the IRP. The analysis performed in this IRP study relied on industry-standard models and incorporated best practices while using an innovative methodology to more fully evaluate the role of distributed energy resources as resources in our power supply. Resource cost and performance input data were independently validated. TVA's goal with the IRP was to identify an optimal energy resource plan that performs well under a variety of future conditions, taking into account cost, risk, environmental stewardship, operational flexibility and Valley economics. Per the National Environmental Policy Act (NEPA), TVA also prepared an Environmental Impact Statement (EIS) to analyze the 2019 IRP's potential impacts on the environment, economy and population in the Tennessee Valley.

EAS000613

TVA's 2019 IRP Recommendation

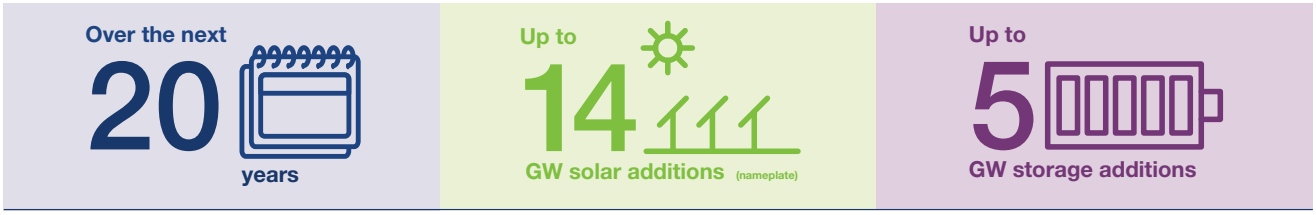
STUDY RESULTS

During the IRP process, TVA — with significant input from stakeholders and the public — considered a wide range of future scenarios, various business strategies and a diverse mix of power-generation resources to build on TVA's existing asset portfolio. IRP study results show:

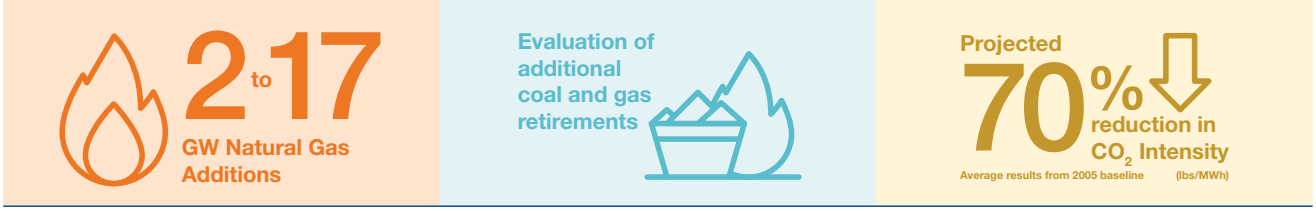
- There is a need for new capacity in all scenarios to replace expiring or retiring capacity.
- Solar expansion plays a substantial role in all futures.
- Gas, storage and demand response additions provide reliability and/or flexibility.
- No baseload resources (designed to operate around the clock) are added, highlighting the need for operational flexibility in the resource portfolio.
- Additional coal retirements occur in certain futures.
- Energy efficiency (EE) levels depend on market depth and cost-competitiveness.
- Wind could play a role if it becomes cost-competitive.
- In all cases, TVA will continue to provide for economic growth in the Tennessee Valley.

OBSERVATIONS

TVA has observed that the scenario, or future environment, it finds itself operating in will have more impact on overall results than the strategy or strategies it implements. TVA also recognizes that all strategies have positive aspects but also have unique tradeoffs to consider. If TVA needs to shift its resource mix, that need will be driven by these key variables: changing market conditions, more stringent regulations and technology advancements. Recognizing that a variety of future scenarios are possible and each strategy has positive aspects, all IRP results are included in the IRP Recommendation to provide flexibility for how the future evolves.



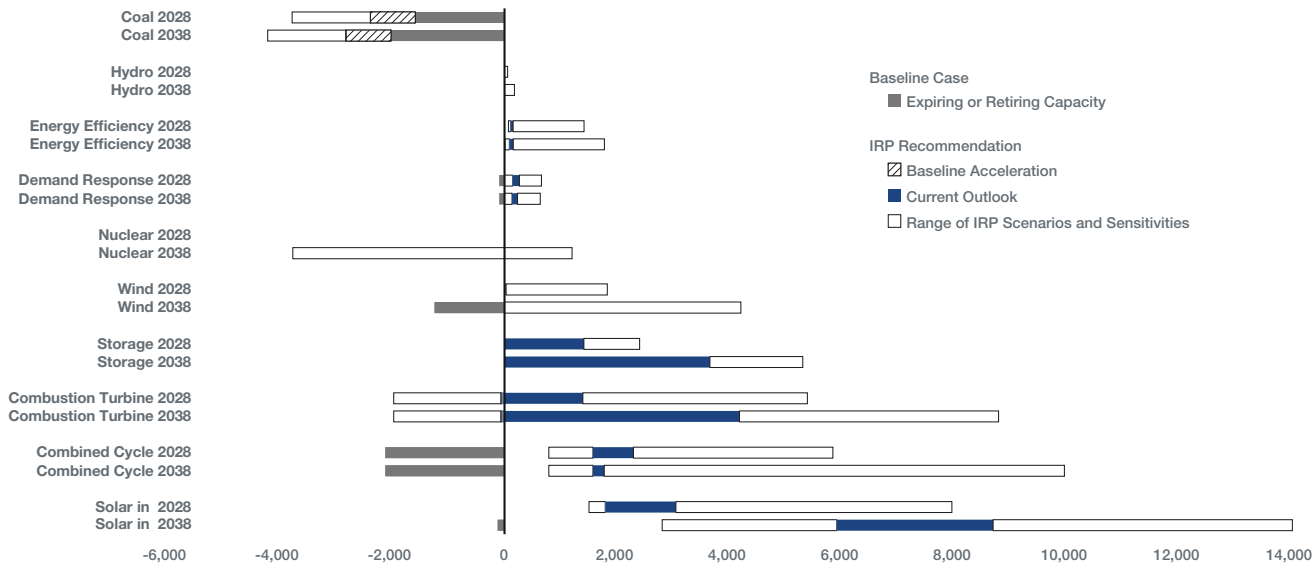
All portfolios point to a TVA power system that will be LOW-COST, RELIABLE, and CLEAN



EAS000614

TVA's 2019 IRP Recommendation

Range of MW Additions and Subtractions by 2028 and 2038



Notes

- **MWs are incremental additions from 2019 forward. Board-approved coal retirements are excluded from the totals.**
- **Browns Ferry Nuclear Plant license is not extended in the No Nuclear Extensions Scenario (outside of TVA control).**
- **Upper bounds of potential natural gas and solar additions are driven by the Valley Load Growth Scenario.**
- **Solar and wind are shown in nameplate capacity; accelerated solar additions are reflected in the IRP Recommendation.**
- **Solar, gas, and storage ranges include utility-scale and distributed additions (where promoted in a strategy).**

EAS000615

TVA's 2019 IRP Recommendation

TVA's recommended planning direction affirms its commitment to a diverse and flexible resource portfolio guided by the least-cost system planning mandate. The ranges shown, stated in megawatts (MW) of capacity, provide a general guideline for resource selections. In developing a Recommendation from the study, TVA elected to establish guideline ranges for key resource types (owned or contracted) that make up the target power supply mix. This general planning direction is expressed over the 20-year study period while also including more specific direction over the first 10-year period. Meeting the Valley's future needs in accordance with the resource technologies and ranges in this Recommendation will position TVA to continue to deliver low-cost, reliable and clean power to the people of the Tennessee Valley.



Coal: Continue with announced plans to retire Paradise in 2020 and Bull Run in 2023. Evaluate retirements of up to 2,200 MW of additional coal capacity if cost-effective.



Hydro: All portfolios reflect continued investment in the hydro fleet to maintain capacity. Consider additional hydro capacity where feasible.



Energy Efficiency: Achieve savings of up to 1,800 MW by 2028 and up to 2,200 MW by 2038. Work with our local power company partners to expand programs for low-income residents and refine program designs and delivery mechanisms with the goal of lowering total cost.



Demand Response: Add up to 500 MW of demand response by 2038 depending on availability and cost of the resource.



Nuclear: Pursue option for second license renewal of Browns Ferry for an additional 20 years. Continue to evaluate emerging nuclear technologies, including small modular reactors, (SMR) as part of technology innovation efforts.



Wind: Existing wind contracts expire in the early 2030s. Consider the addition of up to 1,800 MW of wind by 2028 and up to 4,200 MW by 2038 if cost-effective.



Storage: Add up to 2,400 MW of storage by 2028 and up to 5,300 MW by 2038. Additions may be a combination of utility and distributed scale. The trajectory and timing of additions will be highly dependent on the evolution of storage technologies.



Gas Combustion Turbine: Evaluate retirements of up to 2,000 MW of existing combustion turbines if cost-effective. Add up to 5,200 MW of combustion turbines by 2028 and up to 8,600 MW by 2038 if a high level of load growth materializes. Future CT needs are driven by demand for electricity, solar penetration, and evolution of other peaking technologies.



Gas Combined Cycle: Add between 800 and 5,700 MW of combined cycle by 2028 and up to 9,800 MW by 2038 if a high level of load growth materializes. Future CC needs are driven by demand for electricity and gas prices, as well as by solar penetration that tends to drive CT instead of CC additions.



Solar: Add between 1,500 and 8,000 MW of solar by 2028 and up to 14,000 MW by 2038 if a high level of load growth materializes. Additions may be a combination of utility and distributed scale. Future solar needs are driven by pricing, customer demand, and demand for electricity.

The IRP Recommendation meets the dual objective of ensuring flexibility to respond to the future while providing guidance on how our resource portfolio should change as the future unfolds.

EAS000616

Implementation

CONSIDERATIONS

With the implementation of the IRP Recommendation will come certain challenges. For example, the IRP Recommendation includes significant renewables expansion, which means it will become increasingly important to know the location of renewable resources, both utility and distributed scale, and how weather impacts solar generation. Early experience with battery storage on the system would provide additional insight to how the various storage-use cases might be employed to provide economic benefit and system flexibility, especially with increasing penetration of renewables. TVA will need to partner with local power companies and other stakeholders in the region to better understand the potential for distributed resources in the Valley and their locational value to inform resource decisions. Finally, the IRP Recommendation also includes more conventional resources, primarily gas-fired, and TVA will need to consider the implementation challenges in the areas of siting and permitting, both for the units themselves and associated transmission lines and gas pipelines.

In the process of developing the IRP, stakeholders raised a number of policy-related issues that are outside the scope of the IRP itself but will need to be considered as TVA moves toward implementation of recommendations from the IRP study. These considerations include continued evolution of programs that provide flexibility for customer-owned generation, evolution of federal/state energy and environmental policies, advancements in customer expectations and requirements for clean energy, and enhancing low-income equity and energy/environmental justice.

NEAR-TERM ACTIONS

The scenarios and strategies evaluated in the IRP provide insights to how TVA's resource portfolio may need to evolve as the future becomes clearer. The results indicate there are near-term actions that would provide benefit across multiple futures. The actions include:

RENEWABLES & FLEXIBILITY

- Add solar based on economics and to meet customer demand.
- Enhance system flexibility to integrate renewables and distributed resources.
- Evaluate demonstration battery storage to gain operational experience.

EXISTING FLEET

- Pursue option for license renewal for TVA's nuclear fleet.
- Evaluate engineering end-of-life dates for aging fossil units to inform long-term planning.

ENERGY USAGE

- Conduct market potential study for energy efficiency and demand response.
- Collaborate with states and local communities to address low-income energy efficiency.
- Collaboratively deploy initiatives to stimulate the local electric vehicle market.

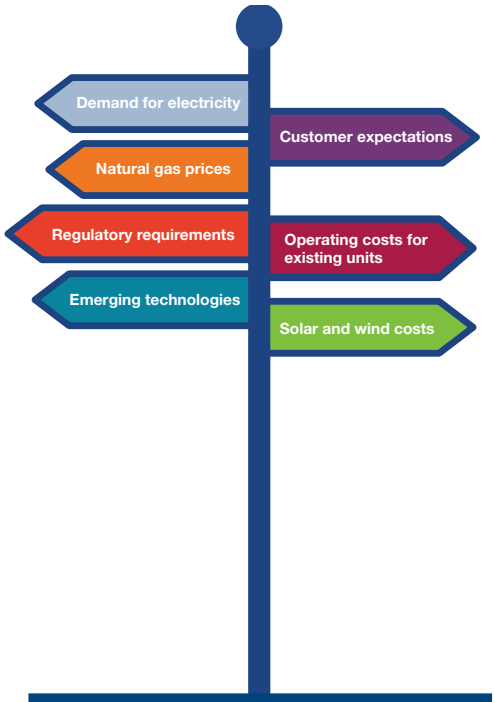
DISTRIBUTION PLANNING

- Support development of Distribution Resource Planning for integration into TVA's planning process.

EAS000617

KEY SIGNPOSTS TO GUIDE DECISIONS IN THE LONGER TERM

As the future unfolds, TVA will monitor key signposts that will guide decisions in the longer term. The signposts relate to key variables that could have a significant influence on the future generation portfolio. These key signposts include:



TVA will closely monitor these key drivers related to changing market conditions, more stringent regulations, and technology advancements to inform appropriate actions within the recommended ranges and appropriate timing for initiating the next IRP.

How TVA Developed the Integrated Resource Plan: An 18-Month Process

OVERVIEW

Developing the 2019 IRP has been an approximately 18-month process that began in February 2018 and will conclude when a Record of Decision is released. The IRP process will have included the following activities:

- **Scoping,** which took place in winter/spring 2018 and identified issues important to the public and laid the foundation for developing the IRP.
- **Development of Model Input and Framework,** which occurred in spring/summer 2018 and included identifying and developing scenarios, resource options and business strategies to evaluate how a future portfolio might change under different conditions.
- **Analysis and Evaluation,** which took place in fall 2018 and included developing and evaluating the performance of the 30 resource portfolios.
- **Presentation of Initial Results,** which occurred in February 2019 with release of the draft IRP and EIS.
- **Public Comment Period,** which was held from February 15 to April 8, 2019.
- **Additional Analysis,** which was completed in response to stakeholder and public comments.
- **Completion of the Study**, which includes the IRP Recommendation, near-term actions and key signposts, and the final environmental assessment.
- **Publication of the Final IRP and EIS** on June 28, 2019, on TVA's website.
- **Expected Request for Approval** of the IRP Recommendation from the Board in August 2019.
- **Record of Decision** will be published after Board approval.

EAS000618

Developing the IRP

PLANNING APPROACH

Uncertainties and Scenarios

With input from the IRP Working Group, TVA designed scenarios that are outside of TVA's control but represent possible futures in which TVA may find itself operating. TVA created a list of uncertainties that could alter the future operating environment and affect the cost of electricity and/or mix of optimal resources. The scenarios are:

	SCENARIOS
1	**CURRENT OUTLOOK** which represents TVA's current forecast for these key uncertainties and reflects modest economic growth offset by increasing efficiencies;
2	**ECONOMIC DOWNTURN** which represents a prolonged stagnation in the economy, resulting in declining loads (customers using less power) and delayed expansion of new generation;
3	**VALLEY LOAD GROWTH** which represents economic growth driven by migration into the Valley and a technology-driven boost to productivity, underscored by increased electrification of industry and transportation;
4	**DECARBONIZATION** which is driven by a strong push to curb greenhouse gas emissions due to concern over climate change, resulting in high CO_2 emission penalties and incentives for non-emitting technologies;
5	**RAPID DER ADOPTION** which is driven by growing consumer awareness and preference for energy choice, coupled with rapid advances in technologies, resulting in high penetration of distributed generation, storage and energy management;
6	**NO NUCLEAR EXTENSIONS** which is driven by a regulatory challenge to relicense existing nuclear plants and construct new, large-scale nuclear. This scenario also assumes subsidies to drive small modular reactor (SMR) technology advancements and improved economics.

Strategies

With input from the IRP Working Group, TVA developed five strategies, which are business decisions or directions that TVA could employ in each scenario. As it relates to strategies in the IRP, the word "promote" means an incentive was modeled to make the resource more attractive for adoption or selection. The five strategies are:

	STRATEGIES
A	**BASE CASE** which represents TVA's current assumptions for resource costs and applies a planning reserve margin constraint. This constraint applies in every strategy and represents the minimum amount of capacity required to ensure reliable power;
B	**PROMOTE DISTRIBUTED ENERGY RESOURCES** which incents DER to achieve higher, long-term penetration levels. The DER options include energy efficiency, demand response, combined heat and power, distributed solar and storage;
C	**PROMOTE RESILIENCY** which incents small, agile capacity to maximize operational flexibility and the ability to respond to short-term disruptions on the power system;
D	**PROMOTE EFFICIENT LOAD SHAPE** which incents targeted electrification (by incentivizing customers to increase electricity usage in off-peak hours) and demand response (by incentivizing customers to reduce electricity usage during peak hours). This strategy promotes efficient energy usage for all customers, including those with low income;
E	**PROMOTE RENEWABLES** which incents renewables at all scales (from utility size to residential) to meet growing or existing consumer demand for renewable energy.

MODELING ASSUMPTIONS AND CANDIDATE TECHNOLOGIES

TVA uses an industry standard model to derive an optimal capacity plan, considering the focus of each strategy evaluated in each scenario. Modeling assumptions, the framework of IRP planning, are the constraints and planning guidelines that are put into the model. The reliability constraint is especially critical, as it ensures we have enough capacity at all times to provide reliable electricity to customers. For the 2019 IRP, it also is crucial to understand how the system would operate with more renewables and DER on the system – driving a greater need for operational flexibility. TVA considered a broader range of mature and emerging technologies in this IRP, including some distributed energy technologies.

STAKEHOLDER & PUBLIC INVOLVEMENT

Throughout the IRP process, TVA engaged external stakeholders to understand diverse opinions and to challenge assumptions. TVA established the IRP Working Group, whose 20 members represent diverse interests in the Valley. The IRP Working Group met approximately monthly to review input assumptions and preliminary results and to enable its members to provide their respective views to TVA. TVA also presented IRP progress updates to the Regional Energy Resource Council (RERC), a federal advisory committee that provides advice to the TVA Board of Directors on a range of energy-related matters, including the IRP.

During a 60-day scoping period from February 15 through April 16, 2018, TVA obtained public comments on the scope of the effort to develop this IRP, which helped shape the draft IRP and EIS. After the release of the draft IRP and EIS on February 15, 2019, TVA provided a public comment period through April 8, 2019. TVA held meetings across the Tennessee Valley and an online webinar, and accepted public comments via mail, email, online and in-person at the meetings. Input was critical in shaping the IRP and EIS, and many of the sensitivity analyses that were performed were informed by stakeholder and public input.

The IRP Working Group included representatives from:

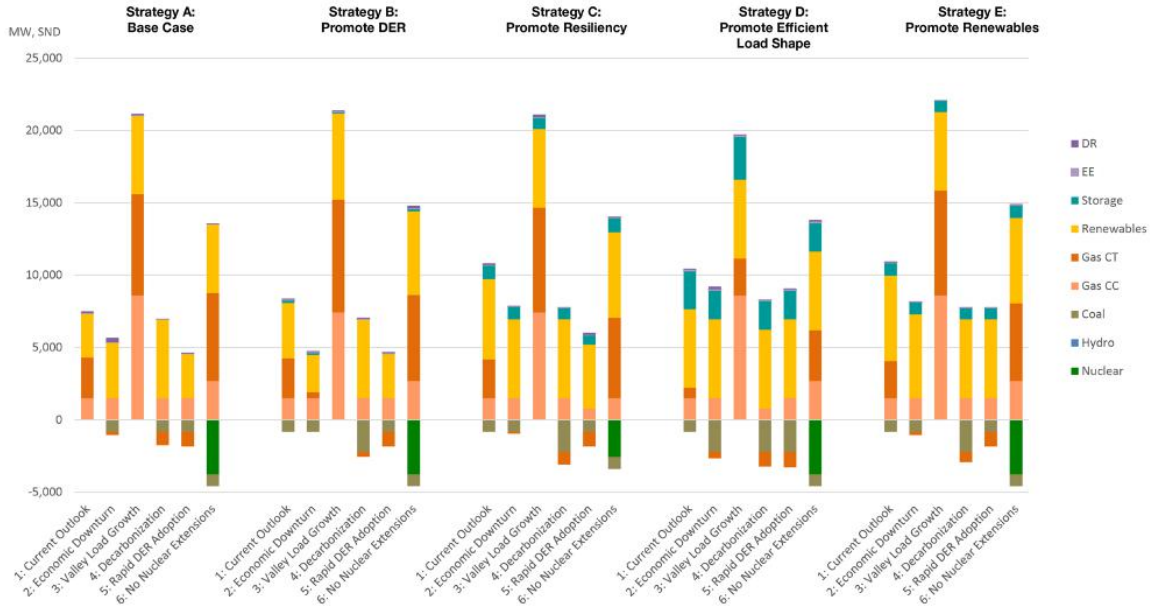
- State and local governments
- Academia and research groups
- Advocacy groups
- Local power companies (LPCs)
- Economic development organizations
- Directly-served/ industrial customers

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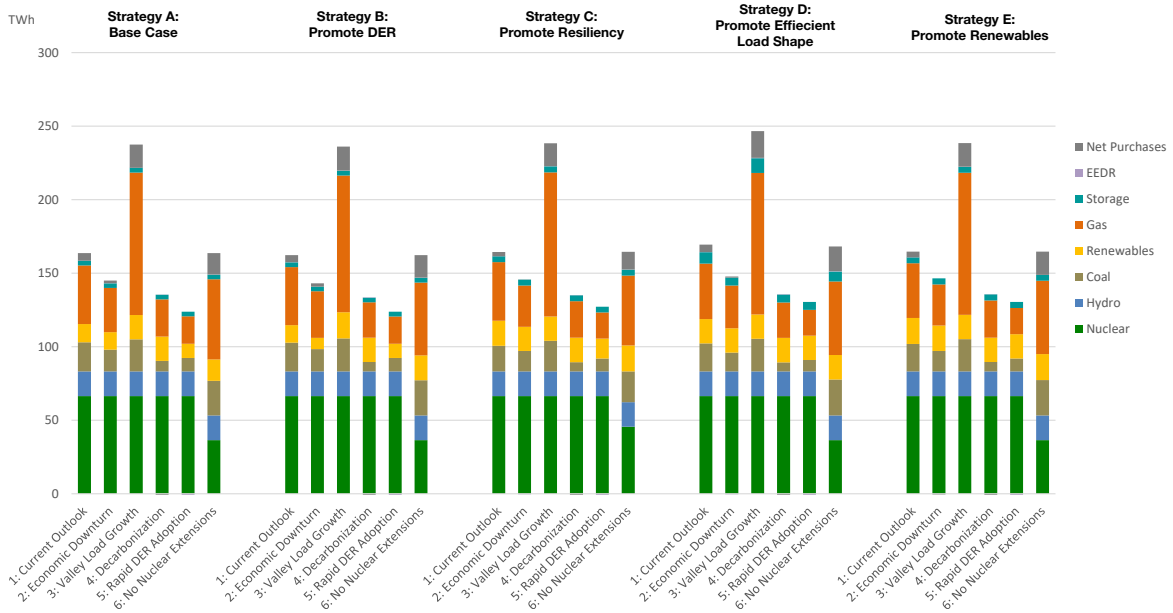
Developing the IRP

EVALUATING THE PORTFOLIOS

Incremental capacity by 2038 consists of additions of new energy resources and retirement of existing energy resources for the portfolios associated with each strategy.



Total Energy in 2038 by resource type in the portfolios associated with each strategy.



EAS000621

EVALUATING THE PORTFOLIOS

Each IRP case represents a combination of expectations about the future environment TVA operates in and potential strategies TVA could employ that result in unique resource portfolios. The modeling process resulted in 30 resource portfolios. The model analyzed how to achieve the lowest-cost portfolio with each strategy in each scenario, looking for the optimal solution within that particular combination. With input from the IRP Working Group and RERC, TVA identified 14 metrics that reflect desired goals and priorities in areas related to cost, risk, environmental stewardship, operational flexibility and Valley economics. The metrics were used to evaluate tradeoffs among the 30 resource portfolios.

Strategy Performance

	COST	RISK	ENVIRONMENTAL STEWARDSHIP		OPERATIONAL FLEXIBILITY	VALLEY ECONOMICS
			CO_2, Water, Waste	Land Use		
STRATEGY A: BASE CASE						All strategies have similar impacts on the Valley economy as measured by per capita income and employment
STRATEGY B: PROMOTE DER						
STRATEGY C: PROMOTE RESILIENCY						
STRATEGY D: PROMOTE EFFICIENT LOAD SHAPE						
STRATEGY E: PROMOTE RENEWABLES						

Good — Better — Best

Developing the IRP

SENSITIVITY ANALYSIS

When analyzing results from the draft IRP, TVA identified issues that warranted further evaluation prior to finalizing the study. In addition, TVA received helpful input from the IRP Working Group and the RERC, as well as from the public during the comment period. Many of the questions raised by TVA, stakeholders and the public focused on certain key assumptions that could influence results. To explore the impacts of changes in key assumptions and to inform the Recommendation, TVA evaluated sensitivities related to the following categories: natural gas prices; storage, wind, combined heat and power (CHP) and small modular reactor (SMR) capital costs; greater energy efficiency (EE) and demand response (DR) market depth; integration cost and flexibility benefit; pace and magnitude of solar additions; higher operating costs for coal plants; more stringent carbon constraints; and variation in climate.

Summary of 2019 IRP Sensitivities

SENSITIVITY CASE Base Case comparison is the Current Outlook unless otherwise noted	CAPACITY EXPANSION IMPACTS BY 2038 GREEN indicates increase and RED indicated decrease in resource						
	NUCLEAR	COAL	GAS	HYDRO	SOLAR	WIND	EEDR
Higher Natural Gas Prices				+55 MW	+2,050 MW		
Lower Natural Gas Prices			2,000 MW CT replaced by CC		-5,900 MW		
Lower Wind Costs			-1,100 MW		-3,100 MW	+4,200 MW	
Greater EE & DR Market Depth			-2,000 MW		-2,200 MW		+2,100 MW
Integration Cost & Flexibility Benefit			Minor timing differences		Minor timing differences		
Pace & Magnitude of Solar Additions					+1,100 MW		
Magnitude of Solar Additions (Valley Load Growth)			1,000 MW CC replaced by CT		+6,000 MW		
Higher Operating Costs for Coal Plants		-2,200 MW	+1,500 MW				
More Stringent Carbon Constraints (Decarbonization)		-2,000 MW accelerated	CC expansion accelerated	+175 MW			
Variation in Climate	Summer derates	Summer derates	CT expansion accelerated		+2,100 MW		

Note

- **Impacts shown in Summer Net Dependable MW, except for solar and wind that are shown in nameplate MW**

The IRP and the Tennessee Valley Environment

FORMING THE IRP RECOMMENDATION

The IRP results — including the 30 primary cases and the sensitivity cases — provide a robust set of potential resource additions and retirements. The final Recommendation is derived from this evaluation. The Recommendation takes into account customer priorities around power cost and reliability across different futures, along with environmental stewardship and Valley economics considerations. In developing a recommendation from the study, TVA elected to establish guideline ranges for key resource types (owned or contracted) that make up the target power supply mix. In order to distill the considerable number of cases evaluated through the original scenario and strategy analysis and the sensitivity cases, the Recommendation uses ranges that are centered on results obtained under the Current Outlook scenario. The other scenario and sensitivity results provide a sense of how the target power supply mix might change as the future changes. Recognizing that a variety of future scenarios are possible and each strategy has positive aspects, all IRP results are included in the Recommendation to provide flexibility for how the future evolves. Implementing the least-cost resource plan with all of these priorities in mind will help ensure TVA continues to fulfill its mission to serve the people of the Tennessee Valley.

PURPOSE OF THE EIS

TVA's EIS assesses the natural, cultural and socioeconomic impacts associated with the 2019 IRP. The five strategies are the basis for the alternatives discussed in the EIS. The Base Case serves as the No-Action Alternative, and the remaining four strategies are the Action Alternatives. The draft EIS analyzed and identified the relationship of the natural and human environment to each of the five alternative strategies. The final EIS includes an additional alternative, the 2019 Recommendation (Target Power Supply Mix). The portfolios associated with each of the five alternative strategies, as well as the 2019 Recommendation, are quantitatively and qualitatively evaluated to determine the environmental impact. This evaluation addresses systemwide topics, including

- Greenhouse gas emissions
- Fuel consumption
- Air quality
- Water quality and quantity
- Waste generation and disposal
- Land requirements
- Socioeconomic impacts
- Environmental justice.

Public comments on the draft EIS and draft IRP are addressed in the final EIS.

The primary study area described in the EIS includes the combined TVA service area; the Tennessee River watershed; and parts of the Cumberland, Mississippi, Green and Ohio Rivers in TVA's power service area. For some resources, such as air quality and climate change, the assessment area extends beyond the TVA region. For some socioeconomic resources, the study area consists of the 170 counties where TVA is a major provider of electric power and/or operates generating facilities.

EAS000624

The IRP and the Tennessee Valley Environment

ENVIRONMENTAL IMPACTS OF THE 2019 IRP

Under all the portfolios and the 2019 Recommendation, there is a need for new capacity, with a significant expansion of solar generation overall. Uncertainty around future environmental standards for carbon dioxide emissions, along with the outlook for loads and gas prices, are key considerations when evaluating potential coal retirements. Emissions of air pollutants, the intensity of greenhouse gas emissions (CO_2 intensity) and generation of coal waste decrease under all strategies. Strategies focused on resiliency, load shape and renewables have the largest amounts of solar and storage expansion and coal retirements, resulting in lower environmental impact overall but higher land use. For most environmental resources, the impacts are greatest for the No Action alternative. The exception is the land area required for new generating facilities, which is greater for the action alternatives, particularly strategies which focus on resiliency, load shape and renewables. Most of this land area would be occupied by solar facilities, which, compared to most other energy resources, have a relatively low level of impact to the land. Additional sensitivity analysis showed the potential for an extended range of resource additions and retirements, which generally resulted in reduced impacts to most environmental resources. The land area occupied by solar facilities, however, could greatly increase.

Conclusion

TVA finds considerable value in undertaking an IRP and EIS, and especially appreciates the input, review and insights of individuals on the IRP Working Group and the Regional Energy Resource Council. They spent considerable time helping TVA develop a robust plan that meets all the criteria outlined in its objectives. TVA values their involvement and the expertise they provided on behalf of their respective stakeholders in making this a better IRP.

As with any long-term plan, TVA's IRP reflects what we know today and can reasonably expect for the coming years. TVA and our employees across the Valley stand ready every day to carry out our three-part mission around energy, the environment and economic development. In an ever-changing world, TVA will do its best to continue to serve the people of the Tennessee Valley by providing low-cost, reliable and clean power in an environmentally responsible manner while promoting economic development across the Valley.

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List of Acronyms

Acronym	Description
4th NCA	Fourth National Climate Assessment
AC	Alternating Current
ACS	American Community Survey
APWR	Advanced Pressurized Water Reactor
ARC	Appalachian Regional Commission
B.P.	before present
BART	Best Available Retrofit Technology
BCF	billion cubic feet
Btu	British Thermal Units
CAA	Clean Air Act
CAES	compressed air energy storage
CAGR	compound annual growth rate
CC	Combined Cycle
CCR	Coal Combustion Residuals
CCS	carbon capture and storage/sequestration
CCW	condenser cooling water
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHP	Combined Heat and Power
CO	carbon monoxide
CO_2	carbon dioxide
CO_2-eq	CO_2-equivalent emissions
CRM	Clinch River Mile
CT	Combustion Turbine
CWA	Clean Water Act
DC	Direct Current
DDT	Dichlorodiphenyltrichloroethane
DER	Distributed Energy Resources
DGIX	Distributed Generation Information Exchange
DO	dissolved oxygen
DOE	Department of Energy
DP	Data Profile
DR	demand response
DSM	Demand Side management
dV	deciview
E.O.	Executive Order
EA	Environmental Assessment
EBCI	Eastern Band of Cherokee Indians
EE	energy efficiency

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Acronym	Description
EIS	Environmental Impact Statement
EPRI	Electric Power Research Institute
ERM	Emory River Mile
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FGD	flue gas desulphurization
FOM	Fixed operating and maintenance costs
FY	Fiscal Year
gal/d/mi^2	gallons per day per square mile
GDP	Gross Domestic Product
GHG	greenhouse gas
GP	Generation Partners
GPP	Green Power Providers
GW	gigawatt
GWh	gigawatt hours
HAP	Hazardous Air Pollutants
HFC	hydroflurocarbons
Hg	Mercury
HUC	Hydrologic Unit Code
HVAC	heating, ventilation, and air conditioning
HVDC	high voltage direct current
IGCC	integrated gasification combined cycle
IMP	Internal Monitoring Point
IPP	Independent power producers
IRP	Integrated Resource Plan
KDFWR	Kentucky Department of Fish and Wildlife Resources
KPDES	Kentucky Pollutant Discharge Elimination System
kV	kilovolt
KWh	kilowatt-hours
LCA	life cycle assessments
LED	light emitting diode
LPC	Local Power Companies
MAPE	Mean absolute percent error
MATs	Mercury and Air Toxics Standards
MBCI	Mississippi Band of Choctaw Indians
MBTA	Migratory Bird Treaty Act
MBtu	Million British Thermal Units
MGD	million gallons per day
MISO	Midcontinent Independent System Operator
MLGW	Memphis Light, Gas and Water
MSAs	metropolitan statistical areas
MW	Megawatt

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Acronym	Description
MWh	Megawatt-hour
N2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NWS	National Weather Service
ORSANCO	Ohio River Valley Water Sanitation Commission
PCB	polychlorinated biphenyl
PEP	Population Estimates Program
PFC	perfluorocarbons
PFOS	Perfluorooctane sulfonate
PM	particulate matter
PPA	Power Purchase Agreement
ppm	parts per million
PSA	Power Service Area
PURPA	Public Utility Regulatory Policies Act
PV	photovoltaic
PVRR	Present Value of Revenue Requirement
PWR	Pressurized Water Reactor
QCN	Quality Contractor Network
RBI	Reservoir Benthic Index
RCP	representative concentration pathway
RCRA	Resource Conservation and Recovery Act
REC	Renewable Energy Certificate
RFAI	Reservoir Fish Assemblage Index
RICE	reciprocating internal combustion engines
ROD	Record of Decision
ROS	Reservoir Operations Study
RSO	Renewable Standard Offer
SAE	Statistically Adjusted End-use model
SCPC	supercritical pulverized coal
SCR	selective catalytic reduction
SDTSA	state-designated tribal statistical areas
SEPA	Southeastern Power Administration

Acronym	Description
SLR	Second License Renewal
SMR	small modular reactors
SND	summer net dependable
SO_2	sulfur dioxide
SOC	Special Opportunities Counties
SPCP	supercritical pulverized coal plant
SPP	Southwest Power Pool
T&D	transmission and distribution
TCP	Traditional Cultural Properties
TDEC	Tennessee Department of Environment and Conservation
TDS	total dissolved solids
TRM	Tennessee River Mile
TSCA	Toxic Substances Control Act
TSS	total suspended solids
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
USACE	U.S. Army Corps of Engineers
USBEA	U.S. Bureau of Economic Analysis
USBLS	U.S. Bureau of Labor Statistics
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USDOE	U.S. Department of Energy
USET	United South and Eastern Tribes, Inc.
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compounds
VOM	Variable operating and maintenance costs
WAP	Weatherization Assistance Program
WKWMA	Western Kentucky Wildlife Management Area

1 Introduction

TVA has developed the 2019 IRP and associated programmatic EIS to address the demand for power in the TVA service area, the resource options available for meeting that demand, and the potential environmental, economic and operating impacts of these options. The IRP will serve as a roadmap for meeting the energy needs of TVA's customers over the next 20 years.

1.1 TVA Overview

1.1.1 TVA's Mission

TVA was created by Congress in 1933 and charged with a unique mission – to improve the quality of life in the Valley through the integrated management of the region's resources. For more than eight decades, TVA has worked to carry out that mission and to make life better for the nearly 10 million people who live, work and play in the Valley. TVA is fully self-financed, funding virtually all operations through electricity sales and power system bond financing. TVA sets rates as low as feasible and reinvests net income from power sales into power system improvements and economic development initiatives. TVA makes no profit and receives no tax money. To achieve its overall mission of providing low-cost, reliable power to the people of the Valley, TVA focuses on four strategic imperatives: balancing power rates and debt so that TVA maintains low rates while living within its means; and recognizing the trade-off between optimizing the value of our asset portfolio and being responsible stewards of the Valley's environment and natural resources (Figure 1-1). Today, TVA continues to serve the people of the Tennessee Valley through its work in three areas: Energy, the Environment and Economic Development.



Figure 1-1: Strategic Imperatives

1.1.1.1 Energy

TVA is the largest producer of public power in the United States. TVA provides wholesale power to 154 local power companies and directly sells power to 58 industrial and federal customers. TVA's power system serves nearly 10 million people in a seven-state, 80,000-square-mile region (the Valley).

TVA's generating assets include: six coal plants, three nuclear plants, 29 conventional hydro plants, one pumped storage hydro plant, nine natural gas combustion turbine (CT) gas plants, eight natural gas combined cycle (CC) gas plants, one diesel generator site, and 14 solar sites. TVA has gas-co-firing potential at one coal-fired site as well as biomass co-firing potential at all of its coal-fired sites. In total, these

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assets constitute a portfolio of 33,500 MWs. TVA also purchases a portion of its power supply from third-party operators under long-term power purchase agreements (PPAs).

Safe, clean, reliable and affordable electricity powers the economy of our region and enables greater prosperity and a higher quality of life for everyone. In setting rates, the TVA Board is charged by Section 113 of the Energy Policy Act of 1992 (now the least-cost, system-wide planning provision of the TVA Act) to have due regard for the primary objectives of the TVA Act, including the objective that power be sold at rates as low as are feasible.

TVA operates one of the largest transmission systems in the U.S. It serves an area of 80,000 square miles through a network of about 16,200 miles of transmission lines, 500 substations, switchyards and switching stations, and over 1,300 individual customer connection points. The system connects to switchyards at generating facilities and transmits power from them at primarily either 161 kV or 500 kV to local power companies and directly served customers. For the past 18 years, the system has achieved 99.999 percent power reliability. It efficiently delivered nearly 163 billion kilowatt-hours of electricity to customers in FY 2018.

Also, the TVA transmission system has 69 interconnections with 13 neighboring utilities at interconnection voltages ranging from 69-kV to 500-kV. These interconnections allow TVA and its neighboring utilities to buy and sell power from each other and to wheel power through their systems to other utilities. To the extent that Federal law requires access to the TVA transmission system, the TVA transmission organization offers services to others to transmit power at wholesale in a manner that is comparable to TVA's own use of the transmission system, according to FERC Standards of Conduct for Transmission Providers (FERC 2008).

In recent years, TVA has built an average of 75 miles of new transmission lines and several new substations and switching stations per year to serve new customer connection points and/or to increase the capacity and reliability of the transmission system. TVA has also upgraded many existing transmission lines. A major focus of recent transmission system upgrades has been to maintain reliability when coal units are retired. Between 2011 and 2018, TVA spent about $420 million on these upgrades and anticipates spending $10 million on coal-retirement related transmission system upgrades in 2019 and 2020. The upgrades include modifications of existing lines and substations and new installations as necessary to provide adequate transmission capacity, maintain voltage support, and ensure generating plant and transmission system stability. In May 2017, TVA began a $300 million, multi-year effort to upgrade and expand its fiber-optic network to help meet the power system’s growing need for bandwidth as well as accommodate the integration of new distributed energy resources.

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Chapter 1: Introduction

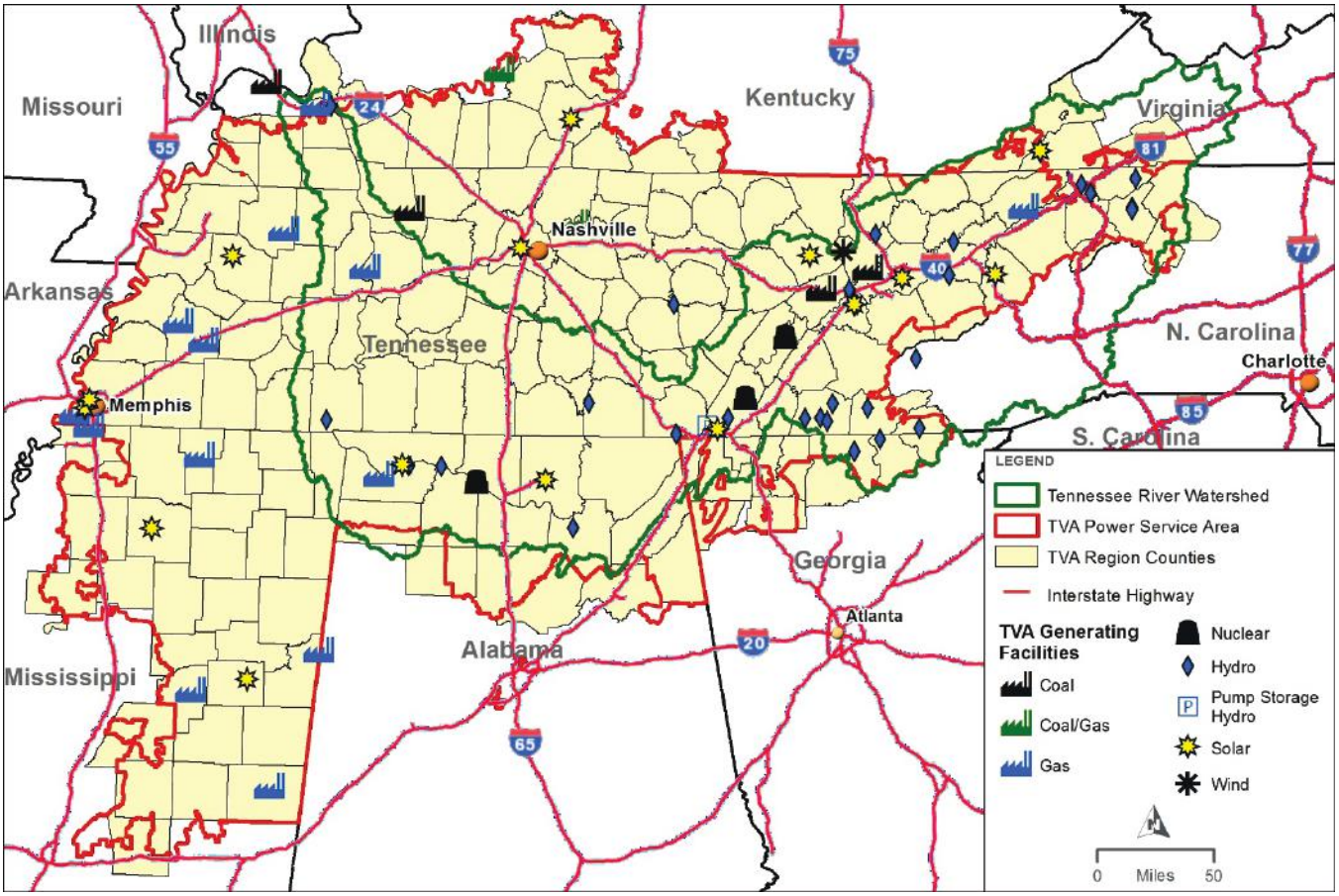


Figure 1-2: Power Service Area and Tennessee River Watershed, herein the TVA region

Additionally, TVA makes annual investments in science and technology innovation that enable TVA to meet future business and operational challenges. Core research activities directly support improving generation and delivery assets, enhancing air and water quality, and integrating clean energy resources.

1.1.1.2 Environmental Stewardship

Environmental stewardship is an important part of TVA's mission of service. TVA is committed to protecting the Valley's natural resources, as well as its historical and cultural heritage. TVA manages and monitors 293,000 acres of reservoir land, 11,000 miles of shoreline and 80 public recreation areas. These areas generate about $12 billion a year in recreation to the regional economy and create or retain about 130,000 jobs each year.

To protect water quality and aquatic life, TVA has installed equipment to add oxygen to the water around TVA dams and committed to releasing minimum flow to keep the downstream riverbed from drying out when power generation is shut off.

To protect air quality, TVA has invested nearly $7 billion installing systems to reduce nitrogen oxides and sulfur dioxide emissions from coal-fired plants. TVA has also reduced carbon dioxide emissions by retiring several of its oldest, least efficient coal-fired units and adding cleaner forms of power generation, including:

- the first nuclear unit of the 21st century,
- more clean-burning natural gas units,
- generating and purchasing more renewable energy.

Through FY 2018, these actions have helped TVA to achieve:

- a 98 percent reduction in sulfur dioxide (SO_2) from peak levels in 1977,
- a 94 percent reduction in nitrogen oxides (NO_x) emissions from peak levels in 1995,
- reduced water use, wastewater discharges, and waste production from TVA's operations, and
- a 47 percent reduction in carbon dioxide (CO_2) emissions through calendar year 2017 compared to 2005 levels.

1.1.1.3 Economic Development

Economic development is a cornerstone of TVA's mission to make life better for Valley residents. In 2018, TVA worked in partnership with communities and the business sector to spur over $11.3 billion in business investments in the Valley, helping to attract and retain more than 65,400 jobs. This was in addition to assisting more than 200 companies to locate or expand existing operations in the Valley. TVA also assisted communities directly with more than 1,100 outreach activities related to economic growth preparedness and retail business development, including 34 communities in the Valley Sustainable Communities Program, which helps to differentiate those communities by highlighting and increasing local sustainability efforts. TVA is also providing ongoing economic development assistance to communities and companies through financial support, technical services, leadership training, market research and other business offerings.

1.2 Integrated Resource Planning

The purpose of the IRP and EIS process is to evaluate TVA's current energy resource portfolio and alternative future portfolios of energy resource options to meet the future electrical energy needs of the TVA region at a least system-wide cost while taking into account TVA's mission of energy, environmental stewardship and economic development. The Recommended Target Power Supply Mix described in the 2015 IRP was formally approved by the TVA Board of Directors in August 2015 and has guided TVA decisions since then.

Several recent industry-wide changes have led TVA to begin development of the new IRP and associated EIS ahead of the five-year cycle identified in the 2015 IRP.

Natural gas supplies are abundant and are projected to remain available at lower cost. The electric system load is expected to be flat, or even declining slightly, over the next 10 years. The price of renewable resources, particularly solar, continues to decline. Consumer demand for renewable and distributed energy resources (including distributed generation, storage, demand response and energy services, and energy efficiency programs) is growing. Given these recent changes, the main focus areas of the 2019 IRP are:

- System flexibility,
- Distributed energy resources, and
- Portfolio diversity.

The focus on flexibility in this IRP is multi-faceted. The Valley benefits from a diverse power system that provides flexibility for how the future evolves. As the economics of renewables and distributed energy resources continue to improve, operational flexibility will be increasingly important to successfully integrate these resources into the generation portfolio. Due to their intermittent nature, TVA needs flexible resources that can quickly respond to dynamic loads.

1.2.1 IRP Objectives

The following objectives guide the development of this IRP:

- Deliver a plan aligned to mandated least-cost planning principles,
- Ensure the portfolio delivers energy in a reliable manner,
- Manage risk by utilizing a diverse portfolio of supply and demand-side resources,
- Deliver cleaner energy and continue to reduce environmental impacts,
- Evaluate increased use of renewables, energy efficiency, and distributed energy resources,
- Continue to innovate by dynamically modeling energy efficiency and distributed energy resources in the study,

- Proactively plan to meet future needs for system flexibility,
- Provide flexibility to adapt to changing market conditions and identify significant signposts,
- Increase credibility and trust through a collaborative and transparent process, and
- Integrate stakeholder perspectives throughout the study.

Given these objectives and in consideration of the focus areas listed above, the final, optimal resource plan has been developed with the goals of being low-cost, risk-informed, environmentally responsible, reliable, diverse, and flexible.

1.2.2 IRP Development

TVA developed this new IRP and associated EIS to proactively address several changes within the utility marketplace, both regionally and nationally. Upon adoption by the TVA Board, the IRP will replace the 2015 IRP. The purpose of the IRP and EIS processes is to evaluate TVA's current energy resource portfolio and alternative future portfolios of energy resource options to meet the energy needs of the Valley while taking into account TVA's mission of energy, environmental stewardship and economic development.

To ensure TVA best meets projected future needs, TVA has continued its tradition of incorporating innovations in each succeeding IRP.

- The 2011 IRP focused on diversifying and modernizing its generation portfolio, part of which included adding cost-effective renewables.
- The 2015 IRP identified distributed energy resources (DER) as a growing trend in the utility industry and designed a mechanism where energy efficiency could be chosen as a resource.
- The 2019 IRP:
    - Improves TVA's understanding of the impact and benefit of system flexibility to meet dynamically changing loads with increasing renewable and distributed resources.
    - Explores various DER scenarios, considering the speed and amount of DER penetration.
    - Determines the implications of implementing the selected diverse portfolio mix over the next 20 years.

Distributed energy resources (DER) are power generation and storage systems that are connected to the power distribution system and deliver power to the grid or that are "behind the meter" and deliver power directly to an end-user. Examples include solar panels, combined heat and power systems, microturbines, and battery storage systems. DER also includes energy management, such as energy efficiency and demand response.

1.2.3 IRP Innovations

Building upon previous versions of the IRP, the 2019 IRP includes modeling refinements, updated studies, and additional public outreach. The purpose of these innovations is to provide an IRP that evolves with the industry and helps TVA continue to provide reliable, clean power at the lowest feasible rate.

1.2.3.1 Reserve Margin

TVA's planning reserve margin, which provides reserve capacity for unplanned events, has historically been an annual target based on a study focused on the summer peak. In the 2015 IRP, TVA's planning reserve margin was 15 percent applied across the year. TVA has a dual-peaking system, with similarly high demand in both winter and summer. In winter, there is increased thermal and hydro generating capacity but also greater weather-driven peak variability than in the summer. While solar capacity additions are expected, driven by increasing consumer demand and decreasing prices, solar generation does not coincide with winter peak demand times. Since the 2015 IRP, TVA conducted an updated reserve margin study to evaluate seasonal differences in demand and supply and the impact of increasing solar capacity on the system. The objective was to identify discrete reserve margin targets for summer and winter to ensure an industry best-practice level of reliability across both peak seasons. The study

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also evaluated the cost of reserves and reliability events to the customer. Based on the study, the planning reserve margins being applied in the 2019 IRP are 17 percent for the summer peak season and 25 percent for the winter peak season.

1.2.3.2 Integration Cost and Flexibility Benefit

With increasing penetration of variable energy resources, such as wind farms, utility-scale solar farms and rooftop solar, utilities need to ensure their bulk system is flexible enough to respond to dynamically changing loads, even to load changes within each hour. If variable energy resources are added, the balance of the system must respond to their variability, driving an integration cost. Conversely, if very flexible assets (i.e., those that can rapidly change their output) are added, there is a benefit resulting from the balance of the system running more efficiently. To capture these impacts in long-term planning, TVA recently conducted a study to quantify an integration cost for solar and wind resources and a flexibility benefit for small, agile gas and storage resources. The result is a sub-hourly integration cost or flexibility benefit that was applied to energy or build costs in 2019 IRP modeling performed at an hourly level.

1.2.3.3 DER Modeling

In the 2015 IRP, DER was included in the load forecast as a load modifier that reduced demand for electricity from TVA, and energy efficiency and demand response were modeled as selectable resources. In the 2019 IRP, TVA made further refinements in modeling behind-the-meter generation in the load forecast, including variations across the scenarios. We also modeled distributed generation resources, including combined heat and power, and distributed solar and storage. There are targeted levels of adoption of these distributed resources based on incentive levels in each strategy.

1.2.3.4 Public Outreach and Engagement

Building upon the outreach and engagement work done for the 2015 IRP, TVA developed an outreach strategy to foster broader engagement from different demographic groups; a social media campaign designed to engage various audiences; and ongoing communications about the IRP, rather than communications only at key milestones.

Social media communications included multiple posts targeted to the different demographic groups on platforms such as Twitter, LinkedIn, Facebook and Instagram. Additionally, TVA published videos to build the public's knowledge and understanding of the electrical system as well as the IRP process. Additional details on social media outreach are located in Section 3.3.1 of Volume I.



Figure 1-3: Example of TVA IRP LinkedIn Post

In conjunction with the issuance of the draft IRP and EIS documents for public review, TVA developed an interactive report to enable members of the public to learn about and provide comments on the draft IRP and EIS documents. Materials from public meetings that TVA hosted across the Valley are also on TVA's IRP webpage. The interactive report has been updated to capture final results.

1.3 Overview of Volumes I and II

Volume I contains the 2019 IRP along with descriptions on the methodology and development of the recommendation. This works in conjunction with Volume II, which contains the EIS. The EIS is an assessment conducted under the National Environmental Policy Act (NEPA) that describes the

environmental effects of a proposed action and its alternatives that may have a significant effect on the quality of the human environment.

TVA developed the draft IRP and EIS and made them available to the public and government agencies for review and comment from February 15th, 2019, until April 8th, 2019. During the public comment period, TVA conducted public meetings across the Valley to discuss the IRP process, share draft results, and receive comments on the draft IRP and EIS. Over 1,200 people commented on the draft IRP and EIS. TVA considered all comments received, made revisions as appropriate, and is now publishing the final IRP and EIS. The final EIS includes TVA's responses to public comments on the Draft IRP and EIS.

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2 IRP Process

TVA's 2019 IRP process consisted of seven distinct steps:

1. Scoping
2. Develop Study Inputs and Framework
3. Analyze and Evaluate
4. Present Initial Results and Gather Feedback
5. Incorporate Feedback and Perform Additional Modeling
6. Identify Preferred Target Supply Mix
7. Approval of IRP Recommendations by TVA Board of Directors

Public participation was integral to the process and is explained in more detail in Chapter 3. Steps 2 through 6 are explained in more detail in Chapter 6.

2.1 Scoping

The IRP team collected information from TVA's resource planning, forecasting, and electricity generation experts to begin developing IRP model inputs. A 60-day public scoping period for TVA's 2019 IRP occurred from February 15 to April 16, 2018. The objective in this initial step was to identify resource options, strategies and future conditions that merited evaluation in the IRP process. Public scoping comments covered a wide range of issues, including the nature of the integrated resource planning process, preferences for various types of power generation, input on planning scenarios and strategies, and the environmental impacts of TVA's power generation. The comments received helped to identify issues important to the public and to lay the foundation for the EIS that supports the 2019 IRP. Additional information on the scoping process and results can be found in Volume I, Section 3.1.

2.2 Develop Study Inputs and Framework

When developing a long-term plan for a power system, utilities typically use a least-cost decision making framework that focuses on a single view of the future. TVA also uses a least-cost decision making framework but considers multiple views of the future to determine how potential resource portfolios could perform across multiple futures given different market and external conditions.

TVA's goal is to identify an energy resource plan that performs well under a variety of future conditions (e.g., a strong economy or a weak economy), thereby reducing the risk that a selected strategy or plan would perform well under one set of future conditions, but poorly under a different set of conditions. This increases the likelihood that TVA's plan will provide least-cost solutions to future demands for electricity from its power system regardless of how the future plays out.

This decision-making framework requires use of a scenario planning approach. Scenario planning provides an understanding of how the results of near-term and future decisions would change under different conditions over a 20-year planning horizon.

After review of the scoping comments, suggestions from members of the IRP Working Group (see Volume I, Section 3.2), and further analysis, TVA selected the five unique scenarios summarized in Table 2-1. In addition to these five scenarios, TVA also analyzed an additional Current Outlook scenario based on TVA's current assumptions about future conditions.

Scenarios are alternate plausible futures outside of TVA's control with different economic and regulatory conditions, as well as social trends and pace of adoption of newer technologies. Strategies are alternate business approaches within TVA's control that differ in the type and amount of resources that are promoted in the future. A portfolio is the result of a strategy evaluated inside a scenario. Each strategy and scenario combination will result in a 20-year resource portfolio to meet the energy needs of the Valley.

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Table 2-1: Description of the Six Scenarios

Scenario	Description
1- The Current Outlook	TVA's current forecast for key uncertainties that reflects modest economic growth offset by impact of increasing efficiencies resulting in a flat load outlook
2- Economic Downturn	Represents a prolonged stagnation in the economy, resulting in declining loads and delayed expansion of new generation
3- Valley Load Growth	Represents economic growth driven by migration into the Valley, a technology-driven boost to productivity, and increased electrification of transportation
4- Decarbonization	Represents a strong push to curb GHG emissions due to concern over climate change, resulting in high CO_2 emission penalties and incentives for non-emitting technologies
5- Rapid DER Adoption	Represents growing consumer awareness and preference for energy choice, coupled with rapid advances in technologies driving high penetration of distributed generation, storage, and energy management
6- No Nuclear Extensions	Represents a regulatory challenge to relicensing of existing and construction of new, large scale nuclear and a preference for more secure, modular, and flexible technologies, including subsidies to drive a breakthrough in Small Modular Reactor design and cost

After review of the scoping comments, suggestions from members of the IRP Working Group, and further analysis, TVA selected five distinct strategies, including a base case representing least-cost planning with no specific resources promoted and reflecting decisions made to date by the TVA Board of Directors. The resource strategies TVA evaluated are shown in Table 2-2. These strategies differ in their emphasis on distributed generation, energy efficiency and demand response efforts, renewable energy resources, nuclear generating capacity additions, and coal-fired generation. The alternative strategies were analyzed in the context of six different scenarios (Table 2-1) that described plausible future economic and regulatory conditions, as well as social trends and adoption of newer technologies.

Table 2-2: Description of Strategies

Strategies	Description
A- Base Case	• Represents TVA's current assumptions for resource costs and applies a planning reserve margin constraint, which also applies in every strategy
B- Promote DER	• Promotes DER to high long-term penetration levels by incenting distributed solar and storage, combined heat and power, energy efficiency and demand response
C- Promote Resiliency	• Promotes small, agile capacity to increase operational flexibility of TVA's power system, while also improving the ability to respond locally to short-term disruptions
D- Promote Efficient Load Shape	• Promotes targeted electrification, demand response, and energy management to optimize load shape, including programs targeting low-income energy efficiency
E- Promote Renewables	• Promotes renewables at all scales to meet growing prospective or existing customer demands for renewable energy

2.3 Analyze and Evaluate

After the resource planning scenarios and strategies were developed, the performance of each planning strategy was analyzed in detail across all of the scenarios. This phase of the IRP used industry standard capacity expansion planning and production cost-modeling software to estimate the total cost of each combination of strategy and scenario. Metrics, financial risks and environmental impacts were developed from the cost-modeling results.

Unique resource plans, or "portfolios," were developed, one for each combination of scenario and strategy. Each of the 30 portfolios represented a long-term,

least-cost plan of different resource mixes that could be used to meet the region's power needs.

Every portfolio was evaluated using metrics within a consistent, standard scorecard. The metrics were chosen based on importance to TVA's mission, and captured financial, environmental, operational and economic impacts. Portfolios were analyzed for their robustness under stress across multiple scenarios and metrics. TVA identified portfolios that performed best overall, and those strategies that performed well in most models of the future.

2.4 Present Initial Results and Gather Feedback

The draft 2019 IRP and EIS were released for public review and comment from February 15th, 2019, until April 8th, 2019. It presented an initial range of viable planning strategies for further consideration, and included scorecards and assessments using key metrics, along with an assessment of environmental impacts based on the draft results. As in the scoping period, TVA encouraged public comments on the draft IRP and associated EIS. Over 300 comment submittals were received, along with a petition from the Sierra Club signed by close to 1,000 individuals. The comments expressed public concerns, questions, and recommendations for the future operation of the TVA power system.

2.5 Incorporate Feedback and Perform Additional Modeling

Following the public comment period, all comments were reviewed. Similar comments were combined into a group, as appropriate. TVA provided responses to all substantive comments either by revising the IRP or associated EIS, or by providing specific answers in the final EIS. Results of any additional technical analysis conducted to respond to comments are included in the final IRP. Comments received, along with TVA's responses, can be found in Appendix F of the Final EIS.

2.6 Identify Target Power Supply Mix

After consideration of IRP Working Group and RERC input, review of the public comments received and additional analysis, TVA identified a target power supply mix based on planning strategies evaluated in the IRP. This target, expressed in ranges, reflects the mix of supply and demand side resources that best position the Valley for success in a variety of alternative futures while preserving the flexibility necessary to respond to uncertainty. Final results and implementation considerations are found in Chapter 9 of the IRP.

2.7 Identify Near-Term Actions and Signposts

Considering the IRP key findings and Recommendation for the target power supply mix over the next 20 years, TVA also identified near-term actions that would provide benefit across multiple futures. Additionally, we have highlighted key signposts, or drivers, that will guide decisions in the longer term.

2.8 Approval of IRP Recommendations

A Notice of Availability of the final 2019 IRP and EIS has been published in the *Federal Register*. No sooner than 30 days after publication of the Notice of Availability in the Federal Register, the TVA Board of Directors will be asked to approve the recommendations included in the study, including the target power supply mix. The Board will decide whether to approve the recommendations presented in the study, to modify them or to approve an alternative. The Board's decision will be described and explained in a Record of Decision.

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3 Public Participation

Understanding the varying needs and priorities of TVA's nearly 10 million stakeholders and striking a balance can be challenging, but is a key to TVA's IRP process. Gaining that perspective is why TVA used a transparent and participatory approach in developing this long-range plan. Obtaining diverse input and support for the IRP was one of the goals. TVA wanted to ensure those who wanted to participate could do so.

TVA's public involvement goals were to:

- Engage numerous stakeholders with differing viewpoints throughout the process.
- Incorporate public opinions into the development of the IRP by offering stakeholders and the public opportunities to review and comment on various inputs, analyses and options being considered.
- Encourage open and honest communication in order to provide a sound understanding of the process.
- Create public awareness and opportunities to receive feedback.
- Incorporate input from an IRP Working Group and the RERC, made up of people representing the broad perspectives of those who live and work in the Valley.

Public involvement was a particular focus throughout the IRP process described in Section 2, including steps 1 and 2, Scoping and Develop Study Inputs and Framework, and as part of step 4, Present Initial Results and Gather Feedback.

3.1 Public Scoping

To begin the 2019 process, TVA published a Notice of Intent (NOI) in the *Federal Register* announcing plans to prepare an EIS to address the potential environmental effects associated with the implementation of the updated IRP. The NOI initiated a 60-day public scoping period starting on February 15, 2018, and ending on April 16, 2018. The NOI included five scoping questions for consideration.

- How do you think energy usage will change in the next 20 years in the Tennessee Valley Region?
- Should the diversity of the current power generation mix (e.g., coal, nuclear, power, natural gas, hydro, renewable resources) change? If so, how?
- How should Distributed Energy Resources (DER) be considered in TVA planning?
- How should energy efficiency and demand response be considered in planning for future energy needs? And how can TVA directly affect electricity usage by consumers?
- How will the resource decisions discussed above affect the reliability, dispatchability (ability to turn on or off energy resources) and cost of electricity?

In addition to the NOI in the *Federal Register*, TVA sent notification of the NOI to local and state government entities and federal agencies; issued a news release to media; and posted the news release on the TVA website. TVA sent 2,500 scoping notices via email and/or mail to agencies, organizations and the public, including those on the 2015 IRP mailing list and people who registered to receive additional information on the TVA IRP website.

TVA published notices regarding the NOI in local newspapers, including the following cities and associated newspapers.

- Chattanooga, Tenn. – *Chattanooga Times Free Press*
- Huntsville, Ala – *The Huntsville Times*
- Memphis, Tenn. – *The Commercial Appeal*
- Nashville, Tenn. – *The Tennessean*
- Knoxville, Tenn. – *Knoxville News Sentinel*
- Paducah, Ky – *Paducah Sun*
- Bowling Green, Ky – *Bowling Green Daily News*

TVA maintains a distribution list of more than 2,000 individual stakeholders that is regularly updated with contact information. This list includes those who made

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public comments, registered on the TVA IRP website, or attended webinars and meetings.

3.1.1 Public Meetings and Webinar

TVA held two public meetings and a public webinar as part of the scoping period:

- February 21, 2018: Webinar
- February 27, 2018: Educational open house at The Westin Chattanooga, 801 Pine St., Chattanooga, Tenn.
- March 5, 2018: Educational open house at Memphis Light, Gas and Water Auditorium, 220 S. Main St., Memphis, Tenn.

The purpose of the scoping period and meetings was to present TVA's project objectives and initial alternatives for input from the public and interested stakeholders. At each meeting, TVA staff described the process of developing the IRP and associated EIS and responded to questions from meeting attendees both in person and online. Scoping meeting and webinar materials are included in the Scoping Report on TVA's website: www.tva.com/irp.

Participants included the public; congressional, state and local officials; representatives from local power companies; non-governmental organizations and other special interest groups; and TVA employees.

Ninety-one people attended the meetings in person or via webinar.

3.1.2 Scoping Comments

TVA published the 2019 IRP Scoping Report on August 1, 2018. The Scoping Report includes copies of scoping materials and comments received during the 60-day comment period. TVA received a total of 87 comment submissions. Comments were received from six of the seven states within the TVA power service area, with approximately 50 percent from the state of Tennessee. Comments were also received from the District of Columbia and eight states outside of the TVA power service area.

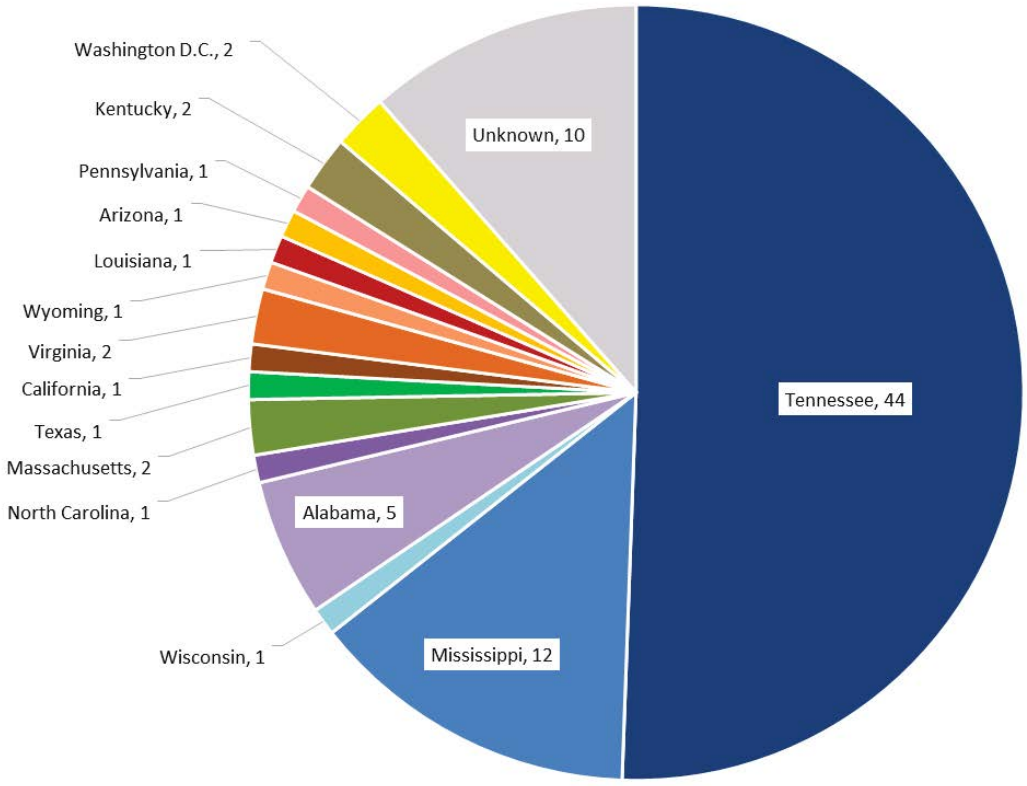


Figure 3-1: Location of Scoping Report Commenters

Of the 87 comment submissions, 30 were received from individuals, 28 were from businesses, 23 comments were from civic or non-governmental organizations, four were from government agencies, and two comments were from educational institutions. TVA used scoping comments to develop a list of Frequently Asked Questions, which can also be found on TVA's website: www.tva.com/irp.

3.1.3 Results of the Scoping Process

The information collected during the public scoping period helped shape the initial framework of TVA's 2019 IRP and was used to help determine which resource options should be considered. Scoping comments, including those from the scoping meetings, addressed a wide range of IRP-related topics categorized as follows.

Table 3-1. Summary of Scoping Comment Themes

Comment Theme	Examples of Comments
Integrated Resource Planning	• Planning process in general. • TVA's reason for developing a new IRP. • Recommendation to include grid reliability and cybersecurity as part of the IRP model. • Recommendations related to renewables modeling and battery storage. • Questions about TVA's flat or declining growth projections in comparison to population and industrial growth in the Valley. • Emphasis on the use of least-cost analysis and that TVA be sensitive to the adopted plan's effects on ratepayers.
Energy Resource Options	• Benefits and/or drawbacks of energy options, including nuclear, coal-fired, and natural gas-fired generation, as well as solar, biomass, and wind renewable generation and energy storage. • Recommendations for increased energy efficiency efforts. • Recommendations for increasing demand-reduction options, including demand response and combined heat and power. • Recommendations for TVA to continue purchasing power from the Red Hills Power Plant. Recommendations to either incentivize or limit the adoption of DER.
Planning Scenarios	• Recommendations that TVA evaluate renewable energy, carbon policy and electrification as potential scenarios. • Recommendation that TVA consider repeal of the Clean Power Plan and Coal Combustion Residual (CCR) disposal rules.
Planning Strategies/Alternatives	• Recommendations that TVA consider strategies that evaluate energy efficiency, renewable energy and DER.
Portfolio Evaluation Metrics	• Suggestions for portfolio evaluation metrics related to wildlife and recreation benefits, flexibility and resiliency, and low-income and minority communities.
Environmental Impact Statement	• Questions and comments about the scope of the EIS. • Comments about how TVA should analyze the cumulative impacts of the IRP on various resources. • Recommendations that TVA provide a detailed evaluation of impacts to low-income and minority communities. • Various comments about biological resources, air quality, climate and greenhouse gases, and water resources.

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Many comments were received about the scope of the EIS and how TVA should analyze the cumulative impacts of the IRP on various resources. In particular, several comments were received recommending TVA provide a detailed evaluation of impacts to low-income and minority communities. Specific comments were also received about biological resources, air quality, climate and greenhouse gases, and water resources.

All of the scoping comments are detailed in the 2019 IRP Scoping Report on TVA's website.

3.2 IRP Working Group

The formation of an IRP Working Group was a cornerstone of the public input process for the 2019 IRP, just as it was for the 2015 study. Working Group members reviewed input assumptions, preliminary results and provided feedback throughout the process. They provided their individual views to TVA, as well as representing and keeping their constituencies informed regarding the IRP process.

The 2019 Working Group consisted of 20 external stakeholders representing 20 organizations. Eight of the members represented the interests of entities purchasing power from TVA:

- Local power companies (LPCs) (3)
- Industrial customers (3)
- Organizations representing LPCs and industrial customers (2)

The 12 other members represented the following interest groups:

- Energy and environmental non-governmental organizations (3)
- Research and academia with expertise in DERs (3)
- State government (2)
- Economic development organizations (2)
- Community and sustainability interests (2)

Beginning in February 2018, TVA met with the IRP Working Group approximately every month. Ten meetings were held at various locations throughout the region prior to the release of the draft IRP and associated EIS, with an additional four meetings held before the release of the final IRP and associated EIS.

The meetings were designed to encourage discussion on all facets of the process and to facilitate information sharing, collaboration and expectation setting for the IRP. IRP Working Group members reviewed and commented on proposed scenarios, planning assumptions, analytical techniques, energy resource options and strategies, along with draft results. Specific topics included load and commodity forecasts, resource planning framework, resource options, and energy efficiency and DER approach in the IRP models.

Given the diverse makeup of the IRP Working Group, there was a wide range of views on specific issues, such as the value of DER and EE programs, environmental concerns and the costs associated with various generation technologies. Open discussions supported by the best available data helped improve the IRP Working Group's understanding of the specific issues.

To increase public access to the IRP process, all non-confidential IRP Working Group meeting material was posted on TVA's website, along with webinar recordings and related presentation materials.

3.2.1 IRP Working Group Members

Kendra Abkowitz
State of Tennessee
Nashville, Tenn.

Dr. Al Armendariz
Sierra Club Beyond Coal Campaign
Tampa, FL

Rick Bender
Commonwealth of Kentucky
Frankfort, Ky.

Dr. Don Colliver
University of Kentucky
Lexington, Ky.

Odell Frye
Associated Valley Industries (AVI)
Chattanooga, Tenn.

Erin Gill
City of Knoxville
Knoxville, Tenn.

Paul Griffin
Partnership for Affordable Clean Energy
Virginia

Keith Hayward
Northeast Mississippi EPA
Oxford, MS

Richard Holland
Directly Served Customer Representative
Counce, Tenn.

Dana Jeanes
Memphis Light Gas and Water
Memphis, Tenn.

Wes Kelley
Huntsville Utilities
Huntsville, Ala.

Teja Kurunganti
Oak Ridge National Lab
Oak Ridge, Tenn.

Pete Mattheis
Tennessee Valley Industrial Committee
Washington, DC

Jon Maynard
Oxford-Lafayette County Economic Development Foundation and Chamber of Commerce
Oxford, MS

Susan Hadley Maynor
Greater Memphis Chamber
Memphis, Tenn.

Doug Peters
Tennessee Valley Public Power Association (TVPPA)
Chattanooga, Tenn.

Patrice Robinson
Memphis City Council
Memphis Tenn.

Dr. Charles Sims
Howard H. Baker Jr. Center for Public Policy, University of Tennessee
Knoxville, Tenn.

Brian Solsbee
Tennessee Municipal Electric Power Association
Nashville, Tenn.

Daniel Tait
Energy Alabama
Huntsville, Ala.

3.3 Public Outreach and Briefings

In addition to the public scoping and IRP Working Group meetings, TVA hosted four webinars during the IRP process to keep the public informed about the progress of the 2019 IRP and EIS.

- Public Update #1, May 15, 2018
- Public Update #2, September 10, 2018
- Public Update #3, February 26, 2019
- Public Update #4, June 5, 2019

At each webinar, TVA staff made a brief presentation, followed by a moderated Q&A session. Topics discussed at the webinars included an introduction to the integrated resource planning process, development of scenarios and strategies, resource options, evaluation metrics, and sensitivity analyses. Webinar materials were posted as they became available on the IRP website.

TVA also briefed the public on the IRP process through presentations in public meetings and to local organizations, clubs and associations.

3.3.1 Social Media

A key priority for TVA's public outreach is to improve awareness of the IRP process and promote opportunities for public input. During development of the IRP and EIS, TVA used social media communications to inform and educate the public about the IRP and its processes, and to promote opportunities for public input. Social media communications for the 2019 IRP began in June 2018

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and used TVA's four social media platforms: Facebook, Twitter, LinkedIn and Instagram.

Social media communications objectives for the IRP and EIS included:

- Keep various audiences informed throughout the IRP process;
- Foster more informed public input by educating audiences about what an IRP is and why it is important;
- Provide clear, consistent and accurate information about the IRP; and,
- Encourage a diversity of voices to engage in the IRP process.

Examples of content posted to social media include announcements for public webinars and other IRP-related events; infographics providing basic information on the IRP; educational graphics on resource generation; IRP scenario and strategy descriptions; and announcement of the draft IRP and draft EIS and associated public meetings. TVA also used social media to promote four videos during the IRP about power delivery and the importance of the IRP, the IRP modeling process, opportunities for public input after the release of the draft IRP and draft EIS, and the final portfolio recommendation. Between June 2018 and May 2019, approximately 75 posts were published about the 2019 IRP across all of TVA's social media platforms. TVA posted updates throughout the public comment period about upcoming meeting dates and reminders to submit comments via the IRP website or interactive report. TVA continued its use of social media during release of the final IRP and EIS, and included information about TVA's portfolio recommendation.

3.3.2 Public Outreach

TVA defined several communication objectives for the 2019 IRP to help build public awareness and engagement in the process. Objectives include to:

- Educate various audiences about the IRP and its importance;
- Keep them informed throughout the IRP process;
- Use simple language to explain technical concepts; and
- Gather input and gain buy-in from customers and stakeholders.

Communications methods included the initial public scoping period with public meetings; public webinars to keep the public updated on the IRP development process and provide an opportunity to ask questions; ongoing social media outreach; and public meetings, tabling events and an interactive report corresponding with the IRP public comment period to help build understanding and gain feedback and comments from the public.

TVA also worked to reach a broader, more diverse cross section of the public to ensure there was awareness about the 2019 IRP and to provide opportunities for comments to be made. TVA sought input from existing partners who serve diverse communities regarding the methods that would be most successful in reaching a broader diversity of people. Generally, the input received suggested that working through groups and entities that have existing relationships with various diverse communities would be the most successful way to achieve this. Given this input, TVA sought to join existing events where people of greater diversity already were engaged. TVA appreciates key partners such as Greenspaces, Habitat for Humanity, TVA Supplier Diversity Alliance, and the TVA Energy Efficiency Information Exchange partners and local power company partners for helping to provide these opportunities.

Further input suggested that make key materials available in Spanish and ensure that the overall language used was clear and not overly technical, where possible. TVA published materials in Spanish and strived to meet the recommendations for using clear, simple wording in IRP materials.

3.4 Public Review of Draft IRP and EIS

TVA provided the draft IRP and EIS for public comment from February 15, 2019, through April 8, 2019. During this time, TVA also held public meetings around the region to provide an opportunity for residents and stakeholders to learn more about the draft IRP and EIS, ask questions and provide general feedback. These information and feedback opportunities are also consistent with our obligations under the National Environmental Protection Act (NEPA). Written comments were also accepted online, mail and email.

3.4.1 Public Meetings

Seven public meetings and a public webinar were held around the TVA region during the public comment period.

Date	Location
February 19, 2019	RERC meeting in Murfreesboro, Tenn.
February 26, 2019	Webinar
February 27, 2019	Knoxville, Tenn.
March 18, 2019	Memphis, Tenn.
March 19, 2019	Huntsville, Ala.
March 20, 2019	Chattanooga, Tenn.
March 21, 2019	Nashville, Tenn.
March 26, 2019	Bowling Green, Ky.

At each of these meetings, TVA presented an overview of the draft IRP, followed by a moderated Q&A session supported by a panel of TVA subject-matter-experts. Attendees were able to address comments or questions to the panel. Attendees also had the option to submit written or online comments at the meetings. Written and online comments were also accepted during the full public comment period. Approximately 300 people attended the public meetings in person and 100 people listened to the webinar online.

In addition to these meetings and webinar, TVA also hosted a booth at the Tennessee Environmental Conference in Kingsport, Tennessee, on March 19, 2019.

Verbal and specific written comments enabled TVA staff to identify public concerns and recommendations concerning the future operation of the TVA power system.

The meetings and opportunities for public input were promoted on all the TVA social media platforms. A fact sheet (in English and Spanish) was distributed to attendees at the meetings and available on the website at www.tva.com/irp. An interactive report of the IRP is accessible online at tvairp.com.

3.5 Public Comment General Topics

Over 1,200 people commented on the draft IRP and draft EIS. Approximately 300 unique comment statements were derived from comment letters received by TVA. The comment statements can be grouped into the following topics:

- Editorial Comments
- Energy Resource Options
- Environmental Impacts
- General Comments
- Integrated Resource Planning
- Out of Scope

As described in Section 2.5 of the IRP, all comments were reviewed and combined with other similar comments, as appropriate. TVA has provided responses to all substantive comments either by revising the IRP or associated EIS, or by providing specific answers in the final EIS. Results of any additional technical analysis conducted to respond to comments has been included in the final IRP. Comments received, along with TVA's response, can be found in Appendix F of the Final EIS.

Reviewing comments received during the comment period yielded the following general observations:

- TVA should select a plan that is flexible and quickly adapts to changing conditions.
- Concerns that the IRP does not do enough to promote energy efficiency or support TVA's energy efficiency programs.
- Support for:
    - distributed generation
    - demand reduction

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    - energy storage
- Concern over small amount of energy efficiency in portfolios
- Support for and concern about coal plant retirements
- Increased and earlier adoption of renewable energy
- Concerns that TVA has not been aggressive enough in reducing greenhouse gas emissions in light of recent reports from the Intergovernmental Panel on Climate Change and National Climate Assessment.
- Support for and opposition to nuclear energy
- Concern about the accuracy of land use metric, particularly for solar generation
- Assumptions of costs for various resources
- Need for more transparency in IRP process and benchmarking
- Operations and role of the IRP Working Group.

4 Need for Power Analysis

A primary purpose of this IRP is to determine the optimal mix of resources to supply the power the Tennessee Valley region will need over the 2019 to 2038 study period. TVA estimates the capacity gap by comparing anticipated demand and current supply, and then determines the type and amount of additional generating resources or energy management services needed to fill the gap. TVA would also consider whether retirements of certain resources may be economical, such as in low load cases.

This chapter describes the four steps in the process used to make this determination: estimate demand, determine reserve capacity needs, estimate supply and estimate the capacity gap.

4.1 Estimate Demand

The first step in forecasting future power needs is to estimate long-term growth in electricity sales and seasonal peak demand. Seasonal peak demand, or peak load, is the highest one-hour power requirement placed on the system in a given season, winter or summer. In order to reliably serve customers, TVA must have sufficient resources to meet the peak hour demand.

The electricity sales and peak demand forecasts for this IRP were developed from individual, detailed forecasts of residential, commercial and industrial sales. TVA generated a range of forecasts (high, expected, and low) to ensure that its plans do not depend on the accuracy of a single forecast.

4.1.1 Load Forecasting Methodology

To forecast future electricity demand, TVA uses statistical and mathematical models that link electricity sales to several key drivers. These include the growth in overall economic activity, changes in the underlying demographics, energy substitution and changes in consumer usage through technology.

The main forecasting tool TVA utilizes is a Statistically Adjusted End-use model (SAE). This model is designed to take the changing customer base and usage data into account to produce flexible and dynamic forecasts.

As an example, for residential consumers, energy usage is forecasted for space heating, air conditioning, water heating and several other uses after accounting for changes in efficiency over time, appliance saturation and replacement rates, growth in average home size and other factors. Changes in these factors accurately describe the decline in average use per residential customer observed over the last half decade.

Finally, working with its customer service representatives, TVA supplements historical data used in modeling with industry analyses and feedback from large, directly served customers regarding demand. This input helps TVA better predict the magnitude and timing of changes in load attributable to both plant closures and expansions.

4.1.2 Key Forecast Drivers

4.1.2.1 Growth in Economic Activity

On a biannual basis, TVA produces a forecast of regional economic activity for budgeting and long-range planning purposes. These forecasts are developed first on a national basis, which is then filtered into county-level economic forecasts in order to accurately model the prevailing economic conditions in the region.

Historically, the Valley economy has been more dependent on manufacturing than the economies of other regions. Industries such as pulp and paper, aluminum, steel and chemicals were drawn to the Valley because of the availability of natural resources, access to a skilled workforce and the supply of reliable and affordable electricity. However, manufacturing's share of non-farm employment has steadily declined in the Valley, as it has across the nation.

TVA's region is similar to others in that manufacturing's share of economic output in the Valley has eased slightly, sliding from 16.6 percent in 2005 to 15.3 percent as of 2017. This contrasts with the U.S. overall, where the manufacturing share of output has declined slightly faster, falling from 13.0 percent to 11.2 percent

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during that same timeframe. While many labor-intensive manufacturing industries have moved overseas, a continued shift toward energy-efficient manufacturing processes in the Valley is helping to preserve manufacturing's contribution to total economic output. This is important to TVA's load forecasting in that it may indicate a weakening in the historical relationships between economic growth and load growth.

Because of this continued dependence on manufacturing, the region's economy tends to be more sensitive to economic conditions impacting the demand for manufactured goods. Growth in 2018 and 2019 is expected to benefit from positive cyclical economic conditions. After 2019, however, longer-term demographic pressures are expected to hold average growth in Gross Regional Product near 1.9 percent over the next decade as retiring baby boomers restrict the available labor supply. Population growth in the Tennessee Valley declined from an annual average of about 1.0 percent per year in 1980 to 0.7 percent in 2016. Looking forward, it is expected to steadily decline to around 0.6 percent per year by 2024, further easing to 0.5 percent per year by the tail end of the IRP horizon (2033 – 2038). This will tend to slow the pace of demand increase for all goods and services, including power.

4.1.2.2 Customer Forecasts

Over the past 25 years, the electric utility industry has undergone a fundamental change in most parts of the country. In many states, an environment of regulated monopoly has been replaced with varying degrees of competition. Although TVA has contracts with the 154 LPCs, it is not immune to competitive pressures. The contracts allow LPCs to give TVA notice of contract cancellation after which they may buy power from other sources. Many large industrial customers also have the option of shifting production to plants outside TVA's service area if TVA's rates become non-competitive. Additionally, large industrial operations could generate their own power without distribution or transmission line losses – an increasingly attractive option to TVA's largest customers as hydraulic fracturing reduces the cost of natural gas. These risks are factored into TVA's load forecasts because they could affect future load.

4.1.2.3 Impact of Competing Energy Sources

Changes in technology have given end users far more flexibility in how they meet their energy needs. Declining solar panel prices and lower natural gas prices encourage substitution.

If consumers can heat their homes and water cheaper using natural gas or other energy sources, they may move away from electricity in the long-term. The potential for this type of substitution depends on the relative prices of other fuels and the ability of those fuels to provide a comparable service. It also depends on the physical capability to make the substitution. For example, while consumers can change out electric water heaters and replace electric heat pumps with natural gas furnaces, the ability to use another form of energy to power consumer electronics, lighting and cooling is far more limited by current technology. Changes in the price of TVA electricity compared to the price of natural gas and other fuels also influence consumers' choices of appliances – either electric, gas or other fuels.

4.1.3 Forecast Accuracy

Broadly speaking, forecast accuracy measures the variance of the forecast to what actually occurs. This helps gauge the understanding of the overall business environment. Between FY02 and FY17, TVA's System Peak and Energy forecasts had annual, weather-normalized, absolute average errors of 1.9 percent (Figure 4-1) and 2.9 percent (Figure 4-2), respectively. These measurements encompass error as a result of the forecasting models and error as a result of incorrect forecast assumptions. For forecasting models alone, TVA's peak and energy forecast mean absolute percent errors (MAPEs) of around 1 to 2 percent are in line with other utilities, based on a market survey conducted by Itron, Inc., a leading vendor of load forecasting software.

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Figure 4-1 is a comparison of weather-normalized actual annual peaks in megawatts (MW) to peaks forecasted one year earlier. The red "Normalized Actual" line represents what the annual peaks would have been under normal weather conditions. The closer the blue-dotted "Forecast" is to the red "Normalized Actual" line, the more accurate the peak forecast. For example, in FY17, the actual peak was only 1.4 percent lower than forecasted.

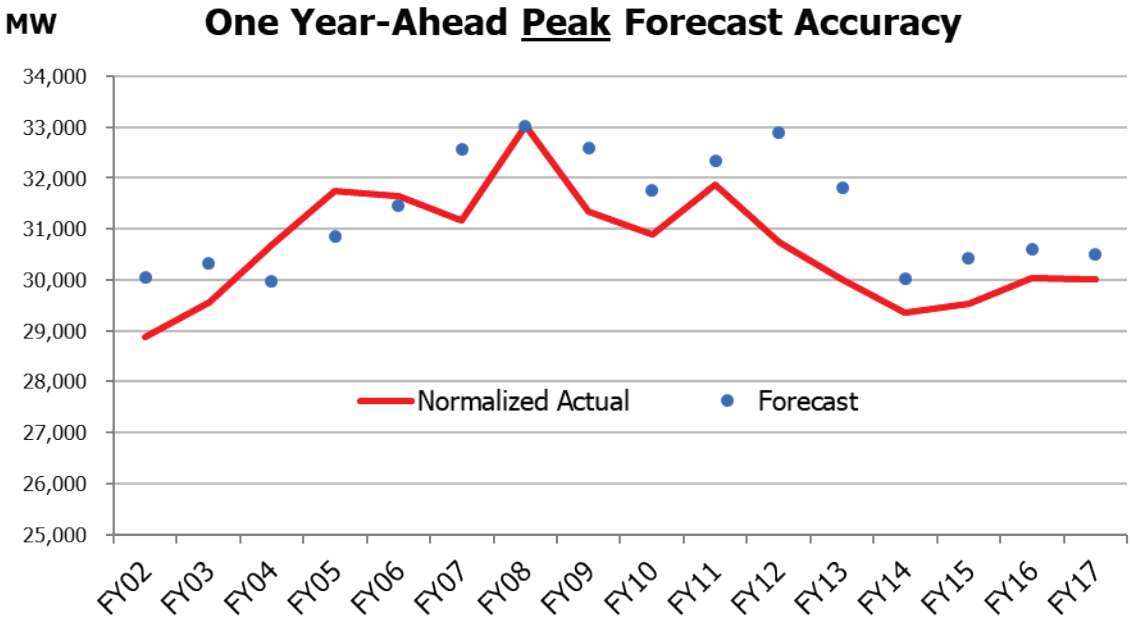


Figure 4-1: Comparison of Actual and Forecasted Annual Peak Demand

Figure 4-2 is a comparison of weather-normalized actual annual energy requirements in gigawatt-hours (GWh) to energy forecasts from one year earlier. Energy is somewhat less volatile than peaks, which are based on a single hour of each year, because energy is the sum of all the hours of the year. This difference makes energy easier to forecast; hence, year-ahead forecast variances tend to be smaller.

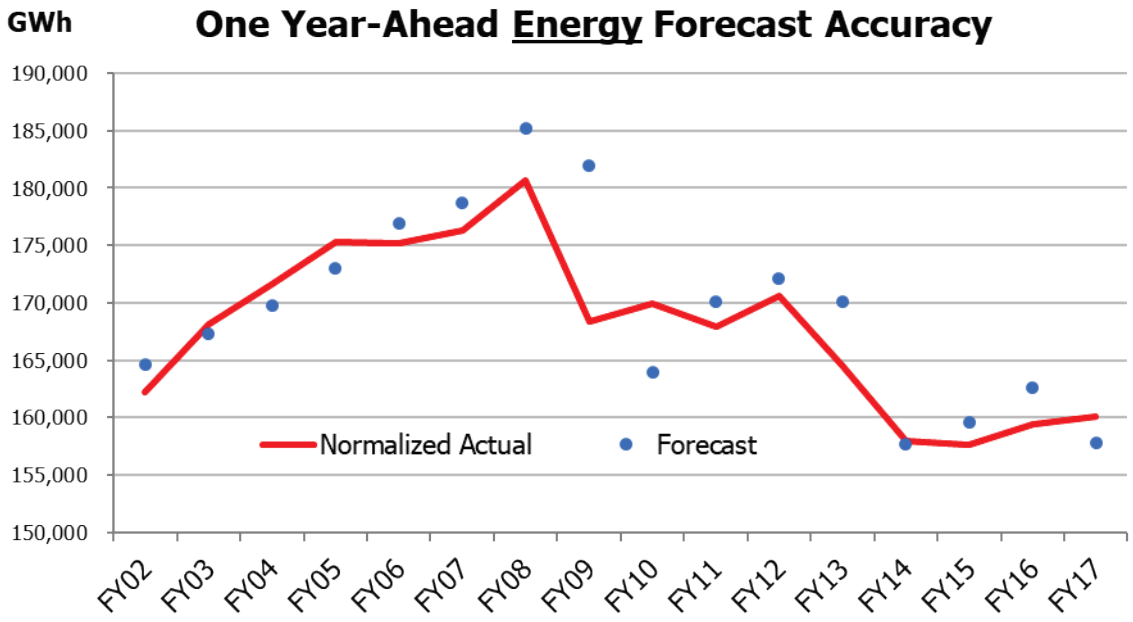


Figure 4-2: Comparison of Weather-normalized Actual and Forecasted Energy

Model accuracy is assessed by using historical actuals for forecast variables and checking to see how close the models reproduce historic power demand. R-squared (R^2) is a statistical measure of how well the regression predictions approximate real data points. This back testing methodology indicates that TVA's forecast model explains 98 percent of the variation, as measured by the R^2, in historic demand and estimates monthly demand within a monthly average absolute error of 1.4 percent. Fundamentally, if TVA had perfect foresight pertaining to the macro environment, the actual demand would be within +/- 1.4 percent. Figure 4-3 compares the back-tested prediction (x-axis) to the actual observations (y-axis).

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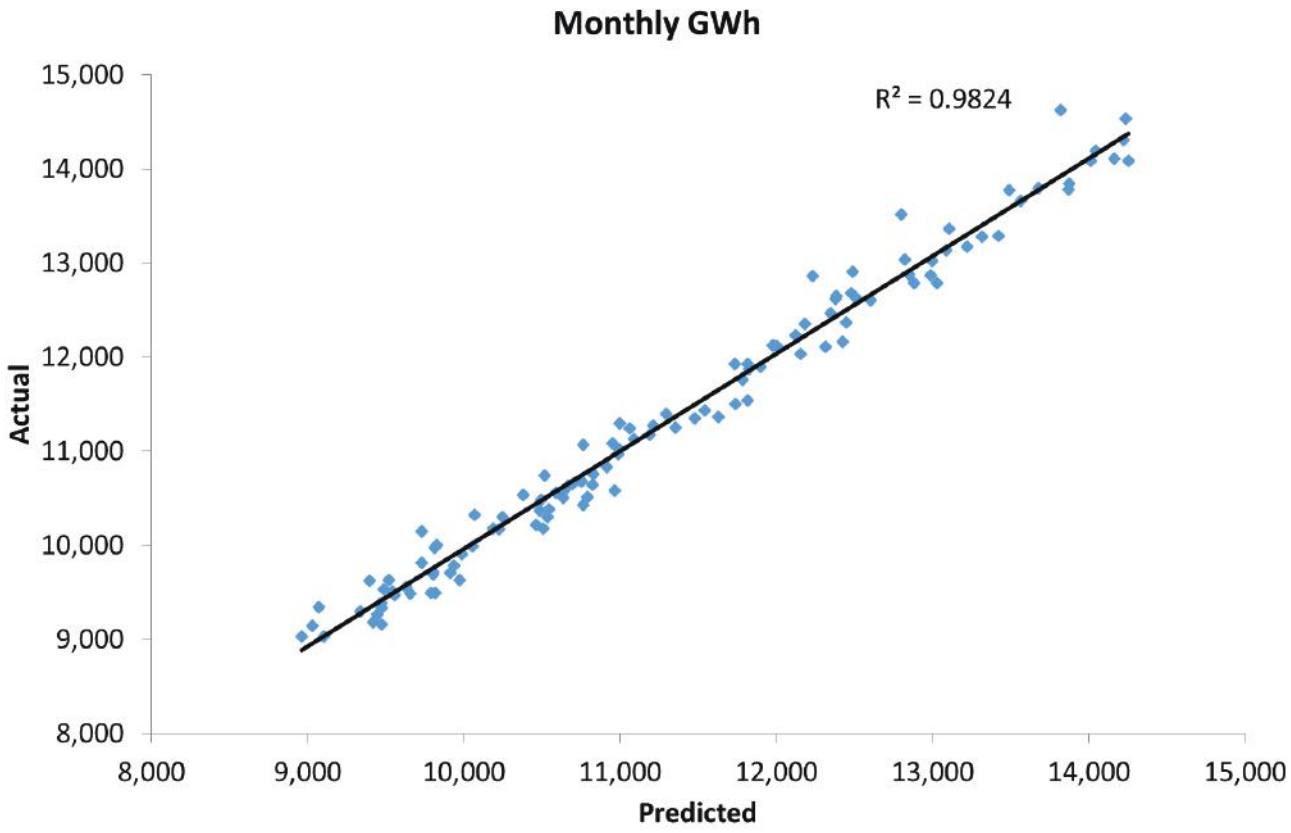


Figure 4-3: Comparison of Predicted versus Actual Monthly Energy

The remainder of the forecast error is caused by assumptions about market fundamentals. Forecasts of future economics, demographics and efficiency improvements drive expected demand for power. Variation in the expected business environment manifest as forecast variance. For example, at the height of the Great Recession (FY09), TVA's weather-normalized forecast variance was 8.0 percent and 4.0 percent for System Energy and Peak, respectively, driven by the significant recession that was not part of the economic forecast. Impacts from changes in the underlying market fundamentals highlights the value in scenario analysis.

4.1.4 Forecasts of Peak Load and Energy Requirements

Over the next couple of decades, the Current Outlook anticipates system energy to remain flat at a 0.0 percent compound annual growth rate (CAGR) and peak demand to grow at a 0.3 percent CAGR. These forecasts are very similar to the actual growth over the FY02 through FY17 period for energy (-0.1 percent CAGR) and peak (0.3 percent CAGR). These expectations are a function of both economics and energy efficiency projections. Slower economic growth, driven by the baby boomers' retirement, and an ever-tightening regulatory environment are both anticipated to moderate future energy growth.

To deal with the inherent uncertainty in forecasting, TVA uses a range of forecasts. Each forecast corresponds to different scenarios that reflect higher or lower loads compared to the Current Outlook. The Current Outlook scenario for the IRP is the forecast that TVA prepared for the FY19 Long Range Financial Plan in the spring of 2018. The range of forecasts for system peak load and energy requirements in the IRP are shown in Figures 4-4 and 4-5, respectively. Both include the Current Outlook scenario and the highest and lowest growth scenarios that are modeled. They are the Valley Growth

scenario and the Rapid DER Adoption scenario, respectively. Annual peak load growth over the 2019 through 2038 time period is 0.3 percent in the Current Outlook scenario and varies from a -0.7 percent CAGR in the lowest peak scenario to a 1.7 percent CAGR in the highest growth scenario. System energy requirements are flat in the Current Outlook scenario with energy declining annually 1.5 percent in the lowest scenario and going as high as 2.0 percent annually in the highest growth scenario.

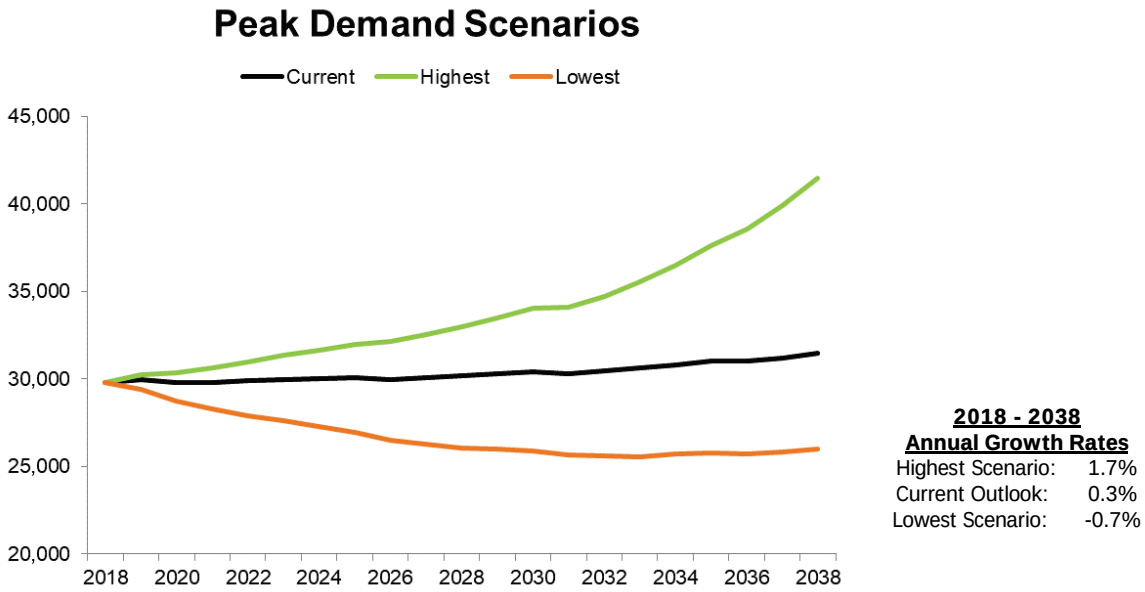


Figure 4-4: Peak Demand (MW) Forecast

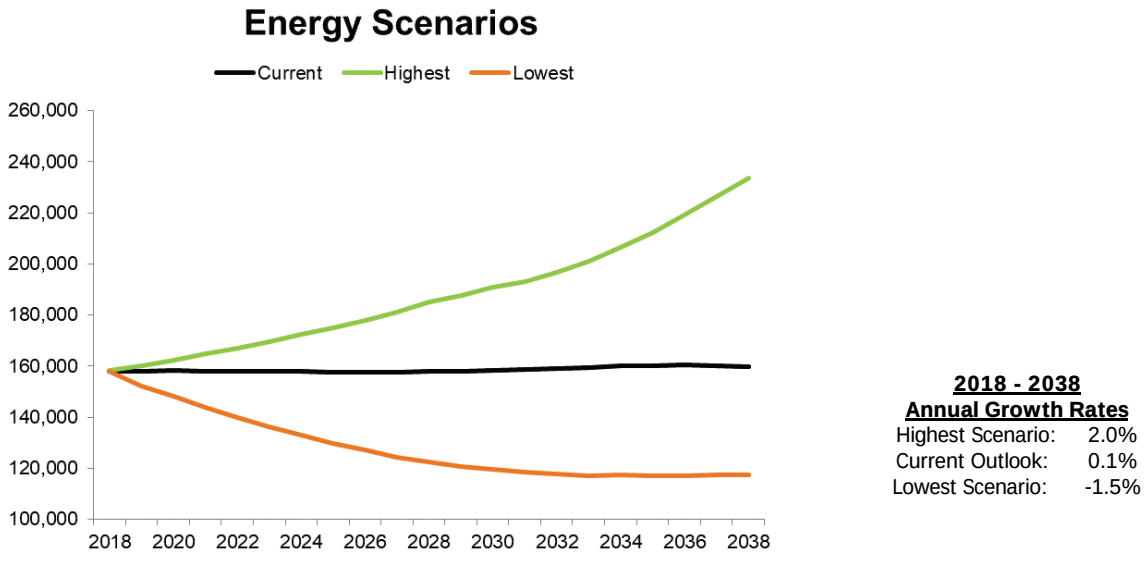


Figure 4-5: Energy (kW-hours) Forecast

The use of ranges ensures that TVA considers a spectrum of electricity demand in its service territory and reduces the likelihood that its plans are overly dependent on a single-point estimate of demand growth. Alternative scenarios highlight the risk inherent in forecasting and planning to a single point estimate. The scenario-generated ranges are used to inform planning decisions beyond pure least-cost considerations based on a specific demand in each year.

4.2 Determine Reserve Capacity Needs

To maintain reliability, power providers must always have more generating capacity available than required to meet peak demand. This additional generation, called "reserve capacity," must be large enough to cover the loss of the largest single operating unit (contingency reserves), be able to respond to moment-by-moment changes in system load (regulating reserves) and replace contingency resources should they fail (replacement reserves). Total reserves must also be sufficient to cover uncertainties such as unplanned unit outages, undelivered purchased capacity, severe weather events, or load forecasting error.

Through a recent study, TVA identified planning reserve margins for both the summer and winter peak seasons. The reserve margin study is based on a probabilistic analysis that considered the uncertainty of unit availability, transmission capability, weather-dependent unit capabilities (e.g., hydro, wind and solar), economic growth and weather variations to compute expected reliability impacts and costs. TVA selected planning reserve margins for summer and winter that targeted industry best-practice levels of reliability, while also minimizing the cost of reserves and reliability events to the customer. Based on this methodology, TVA's current planning reserve margin is 17 percent above peak load requirements in the summer and 25 percent above peak load requirements in the winter. Additional detail about the Reserve Margin study can be found in Appendix D.

4.3 Estimate Supply

The third step in the process of analyzing future power needs is to identify the supply- and demand-side resources currently available to meet future power demand. TVA's generation supply consists of a combination of existing TVA-owned resources; budgeted and approved projects such as new plant additions and updates to existing assets; and existing power purchase agreements (PPAs).

Generating assets can be categorized both by whether the power they produce is used to meet base, intermediate or peak demand or used for storage, and by capacity type or energy/fuel source.

4.3.1 Baseload, Intermediate, Peaking and Storage Resources

Figure 4-6 illustrates the uses of baseload, intermediate and peaking assets. Although these categories are useful, the distinction between them is not always clear-cut. For example, a peaking unit, which is typically used to serve only intermittent but short-lived spikes in demand, may be called on from time to time to run continuously for a limited period even though it may be less economical to do so. This may be due to transmission or other power system constraints. Similarly, some baseload units are capable of operating at different power levels, giving them some characteristics of an intermediate or peaking unit. This IRP considered strategies that take advantage of this range of operations.

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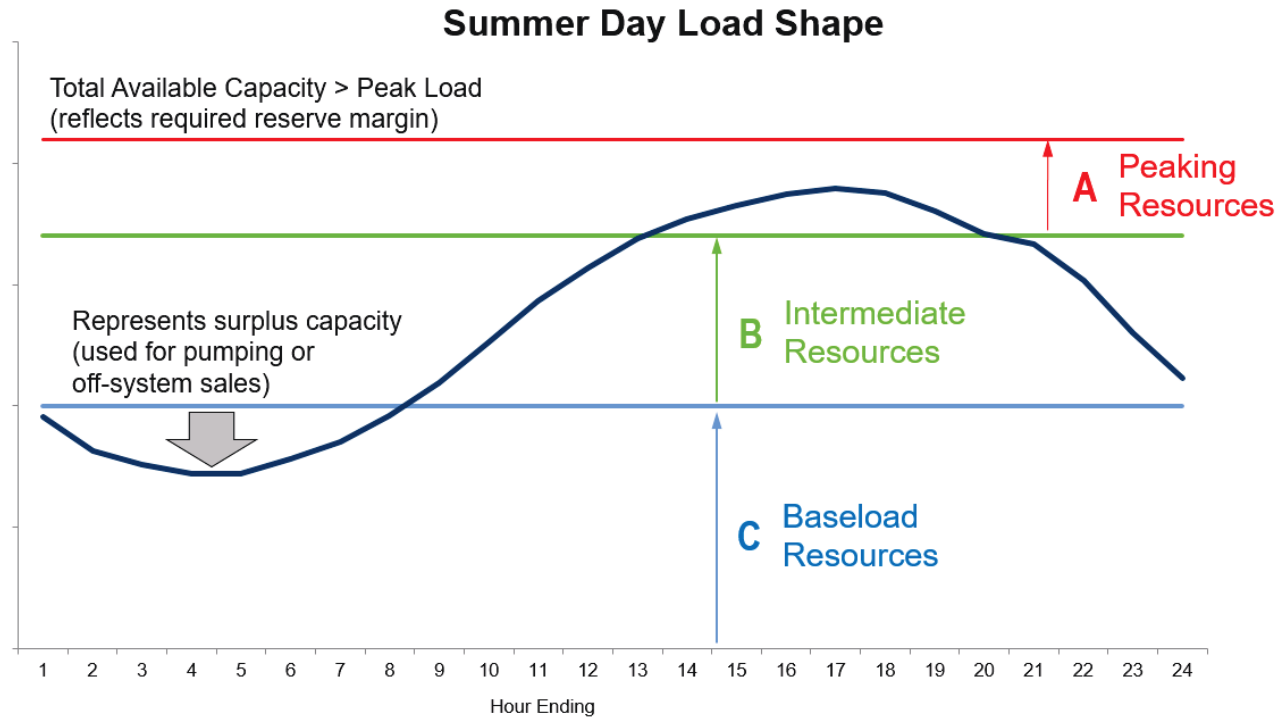


Figure 4-6: Illustration of Baseload, Intermediate and Peaking Resources

4.3.1.1 Baseload Resources

Due to their lower operating costs and high availability, baseload resources are used primarily to provide continuous, reliable power over long periods of uniform demand. Baseload resources typically have higher construction costs than other alternatives, but also have lower fuel and variable costs, especially when fixed costs are expressed on a unit basis (e.g., dollars per MWh). An example of a baseload resource is a nuclear power plant.

Some energy providers also use larger coal units and natural gas-fired combined cycle (CC) plants as incremental baseload generators. Natural gas-fired CC plants have become more attractive for baseload generation as the fundamentals of fuel supply and demand have changed and as access to shale gas has grown.

4.3.1.2 Intermediate Resources

Intermediate resources are used primarily to fill the gap in generation between baseload and peaking needs. They also provide backup and balance the supply of energy from intermittent wind and solar generation.

Intermediate units are required to produce more or less output as the energy demand increases and decreases over time, both during the course of a day and seasonally. Given current fuel prices and relative generating efficiencies, these units are typically more costly to operate than baseload units but less expensive than peaking units.

Intermediate generation comes from natural gas-fired CC plants and smaller coal units and also from wind and solar generation. Solar's energy profile aligns more closely with summer load shapes and wind with winter load shapes, and the availability of energy storage technologies increases the ability to leverage these intermittent resources.

Hydro generating assets can generally be categorized as intermediate resources, but their flexibility allows them to operate the full range from baseload to peaking. The limitation of hydro generation is restricted more by water availability and the various needs of the river system such as navigation, flood control and recreation.

4.3.1.3 Peaking Resources

Peaking units are expected to operate infrequently during short-duration, high demand periods. They are essential for maintaining system reliability requirements, as they can start up quickly to meet sudden changes in either demand or supply. Typical peaking resources are natural gas-fired frame combustion turbines (CTs), aeroderivative CTs, reciprocating internal combustion engines (RICE), and conventional hydro generation.

4.3.1.4 Storage Resources

Storage units usually serve the same power supply function as peaking units but use low-cost, off-peak electricity to store energy for generation at peak times. An example of a storage unit is a hydro pumped-storage plant. These plants pump water to a reservoir during periods of low demand and release it to generate electricity during periods of high demand. Consequently, a storage unit is both a power supply source and an electricity user. Lithium-ion batteries are another example of a storage resource.

4.3.2 Capacity and Energy

Power system peaks are measured in terms of capacity, the instantaneous maximum amount of energy that can be supplied by a generating plant and collectively by the power system.

For long-term planning purposes, capacity can be defined in several ways:

- Nameplate capacity is the theoretical design value or intended maximum megawatt output of a generator at the time of installation.
- Capability is the maximum dependable load-carrying ability of units or the number of megawatts that can be delivered by a generating unit without restrictions (i.e., does not reflect temporary capacity restrictions caused by known fuel or mechanical derates) and less station power.
- Net dependable capacity is the maximum dependable output less all known adjustments (e.g., transmission restrictions, station service needs and fuel derates) and is dependent on the season. This value, which is used by capacity planners, is typically determined by performance testing during the respective season. TVA uses both summer and winter net dependable capacities of units in the analysis, given the dual-peaking nature of the system.

Overall power system production is measured in terms of energy (i.e., megawatt-hour). Energy is the total amount of power that an asset delivers in a specified time frame. For example, one MW of power delivered for one hour equals one megawatt-hour (MWh) of energy.

The capacity factor of a power plant is a measure of the actual energy delivered by a generator compared to the maximum amount it could have produced at the nameplate capacity. Assets that run constantly, such as nuclear plants, provide a significant amount of energy with capacity factors greater than 90 percent.

Assets that are used infrequently, such as a combustion turbine, provide relatively little energy with capacity factors of typically less than five percent, although the energy they produce is crucial since it is often delivered at peak times.

Variable energy resources such as solar and wind have capacity factors based on their shapes, or pattern of generation across the days and seasons. Utility-scale solar capacity factors can approach 25 percent, and wind capacity factors from Midwest farms average around 40 percent. Capacity factors for these resources vary by location. For example, solar capacity factors in very sunny regions of the U.S. are higher than in less sunny regions, and wind farms in the Midwest plains have higher capacity factors than in-Valley installations.

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Capacity Factor Examples

High capacity factor unit:
A 1,200-MW nuclear unit could theoretically produce 10,510 GWh of energy if it ran every hour of the year. After planned annual outages, the unit will typically produce 9,460 GWh or 90 percent of its theoretical capacity.

Low capacity factor unit:
A 250-MW natural gas-fired combustion turbine (CT) unit could theoretically produce 2,190 GWh of energy if it ran every hour of the year. However, CT units generally have a capacity factor less than 5 percent, which means the unit would likely operate about 440 hours of the year and produce about 110 GWh.

Energy efficiency also can be measured in terms of capacity and energy. Even though energy efficiency does not input power into the system, the effect is similar because it represents power that is not required from another resource. Demand response also is measured in capacity and energy. However, unlike energy efficiency, it does not offer a significant reduction in total energy used.

4.3.3 Current TVA Capacity and Energy Supply

TVA uses a wide range of technologies to meet the needs of the Valley residents, businesses and industries. Figure 4-7 shows the current projection for capacity demand and for capacity supply from existing resources and power purchase agreements, highlighting the capacity gap. Applying the Base Case strategy, TVA then uses the planning model to optimize the resource portfolio to fill this gap while scheduling the contribution of current energy efficiency, demand response, and renewable programs and considering retirements where economic. The optimized result for the Base Case strategy evaluated in the Current Outlook scenario is shown later in the results section of this document.

Figure 4-7 includes both owned and purchased resources, in megawatts of summer net dependable capacity, and is divided into fuel-type (i.e., nuclear, hydro, coal). The chart builds up from the bottom generally in a baseload, intermediate and peaking order, as some assets can serve dual roles.

Figure 4-7 shows how TVA's existing capacity portfolio is expected to change through 2038. This projection serves as the baseline firm capacity for optimizing all portfolios. The existing assets only include resources that currently exist; assets that are under contract; TVA Board-approved changes to existing resources such as refurbishment projects; and TVA Board-approved additions. Existing resources decrease through 2038 primarily because of the retirement of coal-fired units and the expiration of existing contracts (power purchase agreements). The renewable component of the existing portfolio is primarily composed of wind PPAs that expire in the early 2030s. Because the power generated from wind and other renewable resources is intermittent, the firm capacity (or the amount of capacity that can be applied to firm requirements) for these assets is lower than the nameplate capacity. Figure 4-8 identifies expiring and retiring resources that are currently on the TVA system and their respective capacities.

Having a diverse portfolio of resource types – coal, nuclear, hydro, natural gas and renewable resources – and being able to use these resources in different ways enables TVA to provide reliable, low-cost power while minimizing the risk of disproportionate reliance on any one type of resource.

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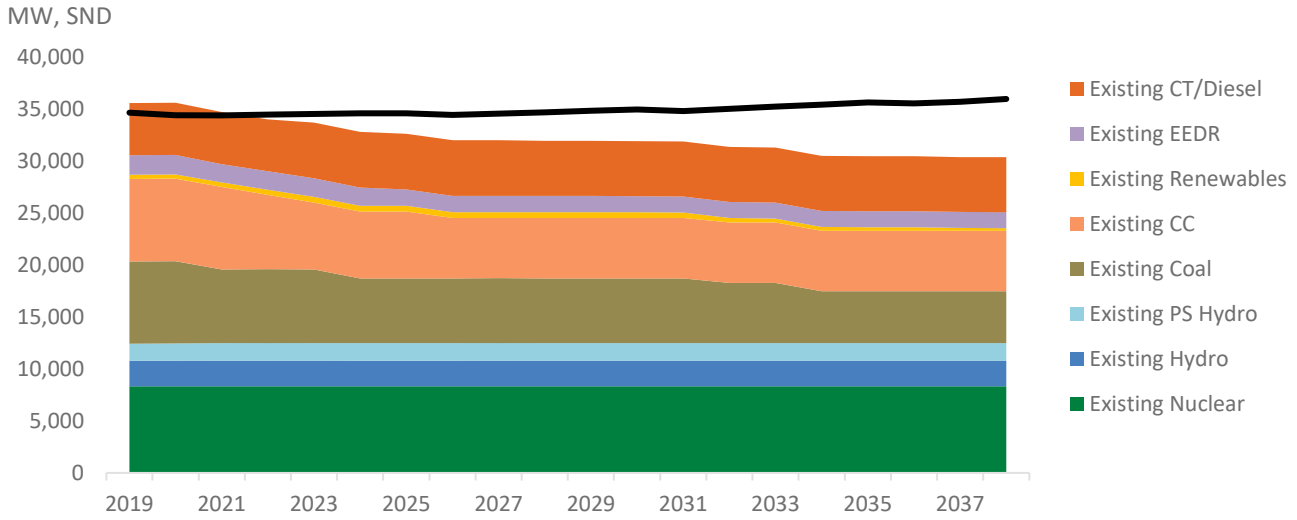


Figure 4-7: Baseline Firm Capacity, Summer Net Dependable MW

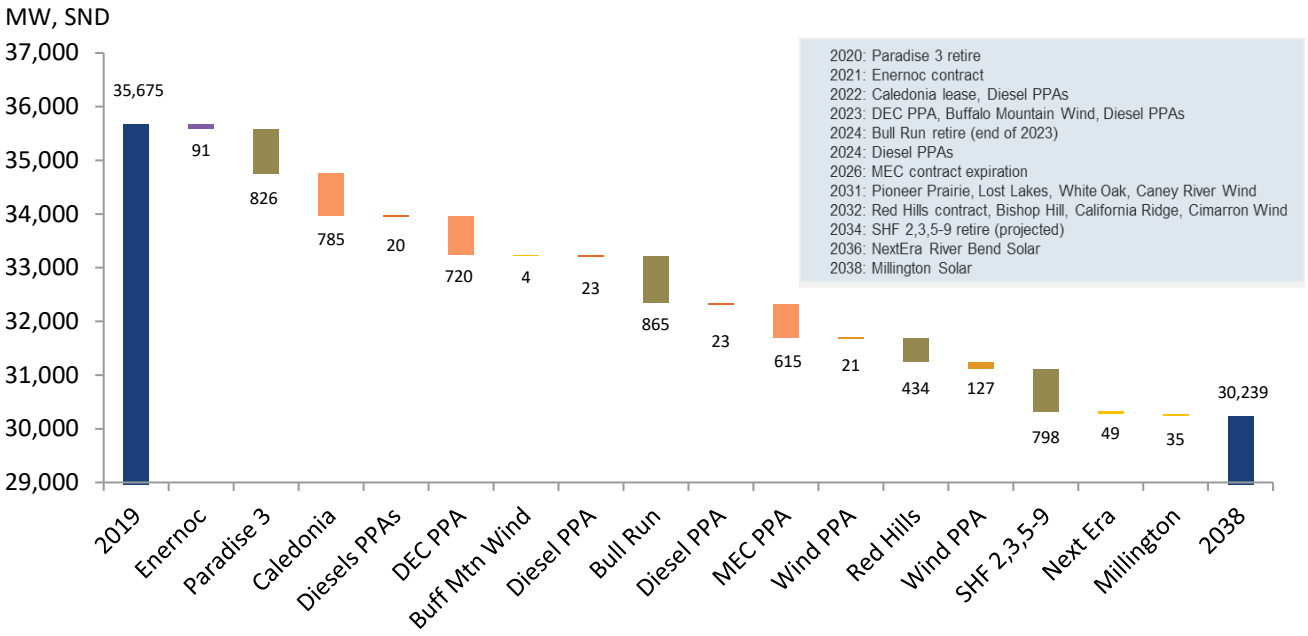


Figure 4-8: Changes in Baseline Firm Capacity, Summer Net Dependable MW

Approximately 36 percent of TVA's capacity is currently sourced from emission-free assets such as nuclear power, renewable resources including hydro, and interruptible load management. The renewable category shown throughout this document is based on modeled outputs of energy from renewable sources such as wind, solar, and biomass. This metric is not intended to represent a quantity of certified renewable energy credits.

In FY18, 39 percent of TVA's energy was produced from the nuclear fleet. Coal plants produced about 21 percent of the generation, while the gas fleet produced about 26 percent. Hydro plants produced approximately 10 percent, and 3 percent was produced from wind and solar sources. The remaining one percent results from TVA programmatic energy efficiency efforts, which have been reduced due to increasingly effective USDOE codes and standards.

4.3.4 Calculate the Capacity Gap

As noted previously, a capacity gap is the difference between total supply and total demand. More specifically, it is the difference in megawatts between a power provider's existing firm capacity and the forecast annual peak adjusted for any interruptible customer loads and long-term planning reserve requirements (i.e., (i.e., 17 percent for summer and 25 percent for winter).

Figure 4-9 shows TVA's estimated capacity gap or shortfall based on the existing firm capacity and the annual firm requirement for the Current Outlook scenario for the summer and winter peaks. The aim of the IRP is to evaluate strategies and portfolios to meet the capacity gap across a wide range of potential future scenarios.

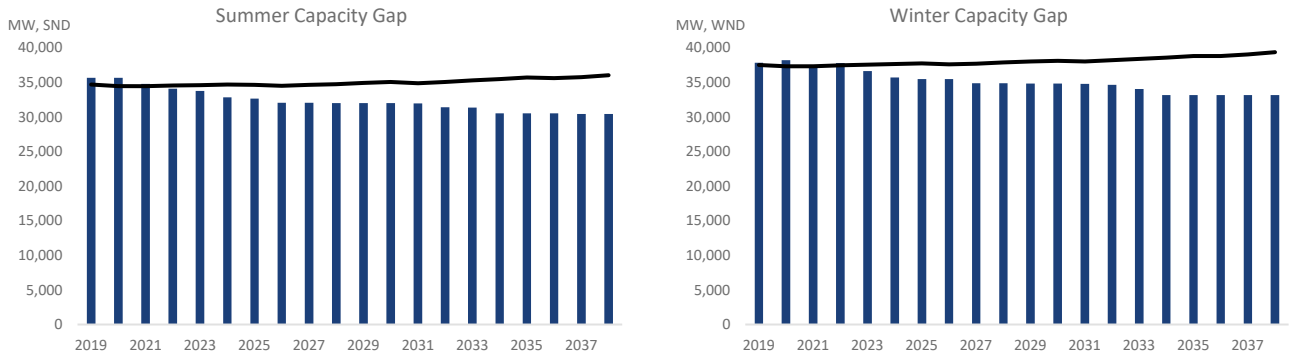


Figure 4-9: Estimating the Capacity Gap

TVA also considers the capacity gaps that might occur within the other scenarios. Figure 4-10 shows the range of capacity gaps corresponding to all the scenarios, ranging from the Valley Load Growth scenario on the high end to the Rapid DER Adoption scenario on the low end. All scenarios are described in detail in Chapter 6.

When optimizing the portfolio, power system analysis evaluates the most economical way to meet the capacity gap and associated energy needs, considering resource options and promotions applicable in each strategy.

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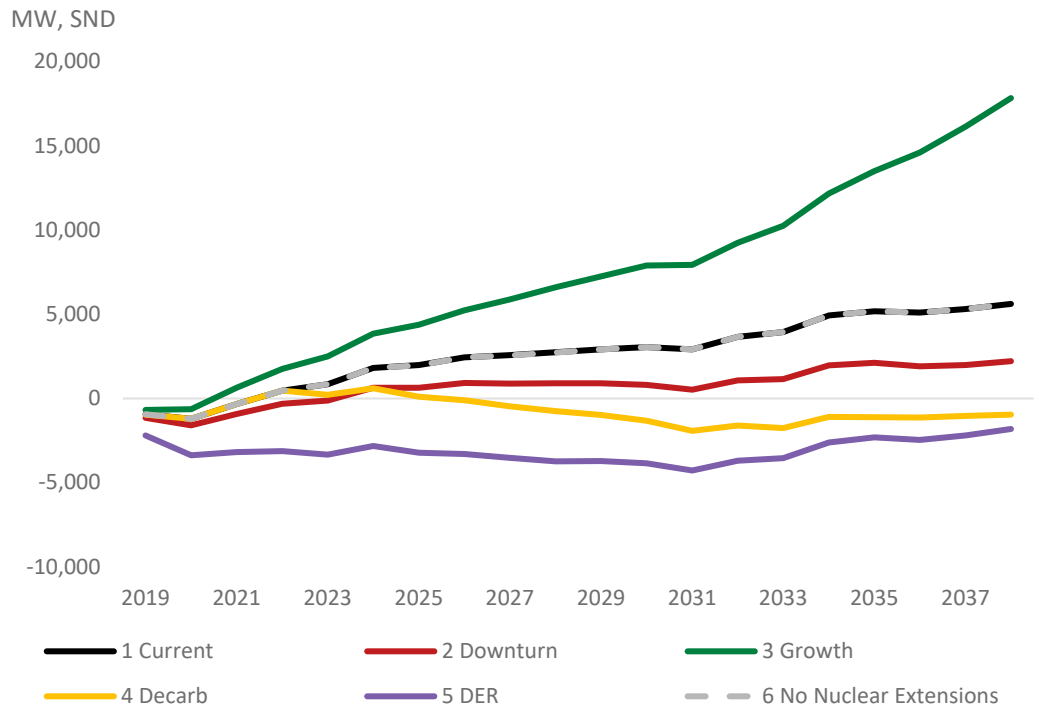


Figure 4-10: Capacity Gap Range

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5 Energy Resource Options

Maintaining the diversity of energy resources is fundamental to TVA's ability to provide low-cost, reliable and clean electric power to Valley residents, businesses and industries. For this reason, TVA considered the addition of a wide range of supply-side generating resources, as well as energy efficiency and other demand-side resource options, to fill the forecasted 20-year capacity and energy gaps identified through the power needs analysis described in Chapter 4.

The power needs analysis indicates that, under the Current Outlook scenario, TVA will require additional capacity and energy of about 1,200 MW and 7,100 GWh by 2028, growing to about 4,400 MW and 13,800 GWh by 2038.

5.1 Energy Resource Selection Criteria

During the scoping process, TVA identified a broad range of energy resources that could be used to fill the predicted capacity and energy gaps. The next two sections explain the criteria that were used to reduce this list to a manageable portfolio of expansion options. For a complete list of resource options considered, see Chapter 5, Energy Resource Options, of the associated EIS.

5.1.1 Criteria for Considering Resource Options

Two criteria were used to ensure that only viable energy resource options were considered in the IRP analysis. To be considered, resource options must:

- Use a proven technology, or one that has reasonable prospects of becoming commercially available in the planning horizon
- Be available to TVA within the region or be available to be imported through market purchases.

Technology is a key factor in TVA's ability to fulfill its mission in a balanced way. TVA continues to pursue technological advances to become more efficient and sustainable. As part of its mission under the TVA Act, the agency is called upon to be a leader in technology innovation.

In the 2015 IRP, DER was included in the load forecast as a load modifier that reduced demand for electricity from TVA, and energy efficiency and demand response were modeled as selectable resources. In the 2019 IRP, TVA has made further refinements in modeling behind-the-meter generation in the load forecast, including variations across the scenarios. We have also modeled distributed generation resources, including combined heat and power, and distributed solar and storage. There are targeted levels of adoption of these distributed resources based on incentive levels in each strategy. Further information on how these resources were modeled is included in Appendices A, B and C.

5.1.2 Criteria Required for Resource Options

To compare energy resource options available for new generation objectively, it is important to have consistent data regarding the cost and operating characteristics of each option. A list of characteristics used in the 2019 IRP are identified and defined in Table 5-1 and Table 5-2. Section 5.2.2 provides the numerical values for some of these parameters for the new assets.

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Table 5-1: Cost Characteristics

Type of Characteristic	Description
Cost characteristics	
Unit capital costs	Each technology type must have a representative $/kW unit, which is considered a total installed cost. Total installed cost includes equipment, engineering and interest during construction in present day dollars.
Capital escalation rates	Since capital costs typically increase over time, TVA assumes that capital costs escalate at the forecast rate of inflation for most resources. However, some energy technologies (e.g. solar and battery storage) are rapidly evolving, so TVA assumes declining costs for these resources.
Construction spend schedule	Some technologies take a long time to build. Construction times for nuclear units, for example, average about 10 years. To estimate the cash flow for the construction of a long-lead time build unit such as a nuclear unit, the percent of total capital dollars spent in each year is required. This metric is typically not needed for renewable assets which are smaller in scale and generally built in less than a year.
Fixed operating and maintenance costs (FOM)	FOM costs are independent of the number of hours of operation or amount of electricity produced and are generally expressed in dollar per kilowatt per year ($/kW-yr). FOM includes operating and maintenance labor, plant support equipment, administrative expenses and fees required by regulatory bodies.
Variable operating and maintenance costs (VOM)	VOM costs are dependent on the number of hours of operation and are generally expressed as a dollar per megawatt-hour ($/MWh). VOM costs include consumables like raw water, waste and water disposal expenses, and chemicals and reagents. VOM costs do not include fuel expenses.
Fuel expenses	Fuel is the material that is consumed to generate electricity – for example, coal, natural gas, uranium and biomass. These costs are typically expressed in dollar per million British thermal units ($/mmBtu) and include the delivery charges.
Transmission	A new generating resource has to be connected to the transmission system. Costs are typically expressed in a dollar per kilowatt ($/kilowatt) unit.
Integration cost	Intermittent resources require the balance of system resources to absorb sub-hourly fluctuations, driving an integration cost. Further details on the cost study are included in Appendix D. New solar and wind resources have integration costs, expressed in $/MWh.
Flexibility benefit	Highly flexible resources provide a sub-hourly benefit associated with ability to more efficiently absorb sub-hourly fluctuations in intermittent resources. Further details on the benefit study are included in Appendix D. New aeroderivative CTs and utility battery storage resources have flexibility benefits, expressed in $/kW.

Table 5-2: Operating Characteristics

Type of Characteristic	Description
Operating characteristics	
Net dependable capacity	Each unit must have a summer and winter net dependable capacity rating in megawatts.
Capacity credit	The capacity credit is the amount of capacity immediately available at the highest demand times. The capacity credit must be estimated for variable units or non-dispatchable resources.
Full load heat rate	A heat rate must be specified for each unit for summer and winter. A heat rate is a measure of the consumption of fuel necessary for a unit to produce electricity. Heat rates are expressed in British thermal units per kilowatt hour (Btu/kWh) and are based on a full-load heat rate. Heat rates are considered long-term planning assumptions and include the expected degradation in the heat rate of a unit after the first two years. Although a heat rate is not typically associated with a nuclear unit, one is necessary to model the fuel costs.
Unit availability	A date when each unit would be available for operation must be specified. Unit availability is restricted by technical feasibility or commercial availability, as well as permitting and construction times. For example, if it takes five years to build a combined cycle plant, then a new CC could not be selected prior to five years into the planning horizon.
Book life	The book life of a unit is the number of years a resource is expected to be in service for accounting purposes. Book life is the financial payback period which represents the amount of time the asset is expected to be used and useful. A license extension, beyond the original asset life, is not assumed with any new generating option.

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5.2 Resource Options Included in IRP Evaluation

TVA's existing assets, budgeted and approved projects, and power purchase agreements are considered as the baseline firm capacity in the IRP evaluation. These assets are generally expected to continue operating through the duration of the planning period or through the terms of existing power purchase agreements and other contracts, where applicable.

Options to meet the forecast net system requirements identified in Chapter 4 include:

- Building new generating units
- Entering into new power purchase agreements
- Developing energy efficiency and demand response programs
- Retiring existing resources

The next two sections describe existing and potential new generation by resource category, as well as retirement options. For a comprehensive description of all resource option attributes, characteristics and technologies, see Chapter 5, Energy Resource Options, of the associated EIS.

5.2.1 Existing Assets by Resource Category

5.2.1.1 Nuclear

TVA currently operates seven nuclear reactors: three at Browns Ferry Nuclear Plant, two at Sequoyah Nuclear Plant and two at Watts Bar Nuclear Plant. These plants have a combined generating capacity of about 7,700 MW. Extended power uprates for the three Browns Ferry units have been approved by the TVA Board and will be completed by the end of 2019. These uprates will add about 450 MW of additional capacity at the Browns Ferry plant.

The three units at Browns Ferry Nuclear Plant have license expiration dates of 2033, 2034, and 2036, respectively. TVA will evaluate non-renewal of these licenses in the No Nuclear Extensions scenario, where no nuclear units in the U.S. will be allowed to operate beyond 60 years. All other scenarios assume that TVA is granted a Second License Renewal (SLR) by the Nuclear Regulatory Commission (NRC). The two units at Sequoyah are licensed for operation through 2040 and 2041, respectively. Watts Bar Unit 1 is licensed for operation through 2035 (initial 40 year license), and Watts Bar 2 began commercial operation in October 2016.

5.2.1.2 Coal

TVA operates six coal-fired power plants consisting of 26 active generating units with a total capability of almost 7,900 MW. TVA uses a value lower than the capability of a resource, based on its summer and winter net dependable capacity. Table 5-3 is a snapshot of the planning assumptions for the coal units, including the forecasted retirement of the uncontrolled Shawnee units in 2034 to meet air quality standards. Following detailed evaluation, on February 14, 2019, the TVA Board of Directors voted to retire Paradise Unit 3 by the end of 2020 and Bull Run by the end of 2023. All cases reflect retirements of these units in 2020 and 2023, respectfully.

In addition to TVA-owned coal-fired units, TVA has access to the output from a coal-fired power plant with a generating capacity of about 440 MW through a long-term power purchase agreement that expires in 2032.

5.2.1.3 Natural Gas

TVA operates 87 natural gas-fired combustion turbines (CT) at nine power plants with a combined generating capability of about 5,700 MW and 14 combined cycle (CC) units at eight plants with approximately 6,800 MW of capability. TVA has power purchase agreements for about 1,300 MW of capability from two merchant combined cycle gas plants, with agreements expiring in the early to mid-2020s.

5.2.1.4 Petroleum Fuels

TVA currently owns five diesel generators with a total capability of 9 MW.

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Table 5-3: Coal Fleet Portfolio Plans

Coal Plant	Total Number of Original Units	Current Operating Status	Operational Plan
Allen	3	Retired	
Bull Run	1	Operational	Retire by end of 2023
Colbert	5	Retired	
Cumberland	2	Operational	Continue to operate
Gallatin	4	Operational	Continue to operate
John Sevier	4	Retired	
Johnsonville	10	Retired	
Kingston	9	Operational	Continue to operate
Paradise	3	Units 1-2 Retired Unit 3 Operational	Retire Unit 3 by end of 2020
Shawnee	10	Units 1-9 Operational Unit 10 Retired	Retire Units 2,3,5-9 in 2034
Widows Creek	8	Retired	

5.2.1.5 Hydro

TVA operates 109 conventional hydro generating units at 29 dams. These units have the capability to generate about 3,800 MW of electricity. All IRP portfolios reflect investing in and maintaining TVA's existing hydroelectric fleet. TVA has completed 60 hydro unit modernization projects out of 109 conventional hydro units. TVA plans to modernize two to three units per year, and the program is perpetual in nature to maintain capacity over time.

In addition, TVA has a long-term power purchase agreement with the U.S. Army Corps of Engineers for eight dams on the Cumberland River system. These facilities provide about 400 MW of capability.

TVA anticipates about 70 percent of this hydro capability to be available at the summer peak hour, given the operational constraints of the hydro units.

5.2.1.6 Energy Storage

TVA operates one large energy storage facility. The Raccoon Mountain Pumped-Storage Plant has four generating units with a Summer Net Dependable (SND) capacity of about 1,600 MW. Raccoon Mountain is TVA's largest hydro facility and provides critical flexibility to the TVA system by storing water at off-peak times for use when demand is high.

5.2.1.7 Wind

TVA purchases all of the power produced by the Buffalo Mountain wind farm in Anderson County, Tennessee. Buffalo Mountain is one of the largest wind farms in the Southeast, with 15 turbines and 27 MW of nameplate capacity. As defined in section 4.3.2, the nameplate capacity is the maximum technical output of a generator, or the theoretical design value.

TVA has long-term power purchase contracts with seven wind farms located in Illinois, Kansas and Iowa. These facilities provide about 1,200 MW of nameplate capacity. TVA anticipates about 14 percent and 31 percent of the nameplate to be available for peak summer and winter requirements, respectively. These agreements expire in the early 2030s. TVA obtains the renewable energy credits from these farms. Renewable energy credits are a separate commodity formed from the production of energy at designated sites.

5.2.1.8 Solar

TVA owns 14 photovoltaic (PV) installations with a summer capability of approximately 1 MW. TVA also purchases solar power through several programs and

long-term power contracts totaling 370 MW of nameplate capacity with about 250 MW expected to be available at the summer peak hour. TVA obtains the renewable energy credits from these sites, and the existing PPAs extend through the late 2030s. Solar power purchase agreements signed subsequent to the spring of 2018 when baseline firm capacity was established for this IRP are not included in existing assets. This includes agreements signed for about 700 MW of solar nameplate capacity to meet specific customer needs.

5.2.1.9 Biomass

TVA purchases about 50 MW of biomass-fueled generation through existing programs.

5.2.1.10 Energy Efficiency

TVA's energy efficiency portfolio focuses on reduction in peak demand and energy savings. From FY07-FY18, these efforts contributed about 400 MW of summer peak demand reduction and saved about 2450 GWh of energy annually. These savings are adjusted for applicable transmission and distribution (T&D) losses, free rider/driver discounts, realization rates, and performance adjustments for actual weather.

5.2.1.11 Demand Response

Demand response programs focus on reduction of peak demand. Under these programs, TVA direct-served customers and local power companies can reduce their power bills by allowing TVA to suspend availability of power in the event of a power system, economic, or reliability need. These programs provide about 1800 MWs of peak reduction.

5.2.2 New Assets Considered by Resource Category

A complete list of viable new resource options for evaluation in this IRP is provided below. All options are based on a generic location and unit availability rounded to the next full year. A detailed discussion by resource category follows.

With a focus on DERs in this IRP, TVA also leveraged input from the Distributed Generation Information Exchange (DGIX) to inform resource characteristics and costs. DGIX input specifically helped inform inputs for distributed solar and storage, CHP, and electric vehicles.

An independent third-party reviewed and compared the parameters to proprietary and other industry sources to ensure the modeled unit characteristics and assumptions were representative of the respective generating technologies. See Appendix A for the letter summary of the benchmarking efforts of Navigant Consulting, Inc. as well as a brief discussion of TVA's internal benchmarking on resource costs ($/kW).

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Nuclear
- Pressurized Water Reactor (PWR)
- Advanced Pressurized Water Reactor (APWR)
- Small Modular Reactor (SMR)

Coal
- Supercritical Pulverized Coal 1x8
- Supercritical Pulverized Coal 2x8
- Integrated Gasification Combined Cycle (IGCC)
- Integrated Gasification Combined Cycle with Carbon Capture and Storage (IGCC CCS)
- Supercritical Pulverized Coal 1x8 with Carbon Capture and Storage
- Supercritical Pulverized Coal 2x8 with Carbon Capture and Storage

Natural Gas
- Combustion Turbine 6x (LMS 100)
- Combustion Turbine 4x (LMS 100)
- Combustion Turbine 2x (LMS 100)
- Combustion Turbine 3x (7FA)
- Combustion Turbine 4x (7FA)
- Combined Cycle 1x1
- Combined Cycle 2x1
- Combined Cycle 3x1
- Combined Cycle Supplemental Duct-firing (1x1, 2x1, 3x1)
- Combined Cycle With Carbon Capture and Storage
- Reciprocating Internal Combustion Engine (RICE) 12x
- Reciprocating Internal Combustion Engine (RICE) 6x
- Reciprocating Internal Combustion Engine (RICE) 2x
- Commercial & Industrial Combined Heat and Power (CHP)

Hydroelectric
- Hydro Spill Addition
- Hydro Space Addition
- Hydro Run of River

Energy Storage
- Pumped Storage
- Utility Battery Storage
- Residential Battery Storage
- Compressed Air Energy Storage (CAES)
- Fuel Cells
- Advanced Chemistry Battery

Wind
- Midcontinent Independent System Operator (MISO)
- Southwest Power Pool (SPP)
- In-Valley
- High Voltage Direct Current (HVDC)

Solar
- Utility-scale Single-axis Tracking
- Utility-scale Fixed-Axis
- Large Commercial-scale
- Small Commercial-scale
- Residential Scale

Biomass
- New Direct Combustion Biomass
- Repowering Existing Coal with Biomass

Energy Efficiency
- Residential
- Commercial
- Industrial

Demand Response

Electrification

Retirement Options
- Gas Combustion Turbines > 40 years old (as early as 2020)
- Uncontrolled Shawnee units (as early as 2020)
- All Other Coal Units (as early as 2025)
- Browns Ferry Nuclear Units 1-3 (as early as 2033)

Figure 5-1: List of New Assets

5.2.2.1 Nuclear

There are three nuclear expansion options available to fill the expected capacity gap: a Pressurized Water Reactor (PWR), an Advanced Pressurized Water Reactor (APWR) and a Small Modular Reactor (SMR).

SMRs are a new type of nuclear reactor in which the components are manufactured in a factory and then assembled together onsite. The individual units are smaller in size, allowing for increased flexibility in installation and use. New units could be located at existing nuclear plants or at other sites beneficial to the transmission system or local resiliency.

As mentioned previously in Chapter 4, the retirement of the three Browns Ferry units is being evaluated in the No Nuclear Extensions scenario. In this scenario, it was mentioned there could be subsidies to drive small modular reactor technology advancements and improved economics. What is contemplated is more about demonstrating modular construction processes efficiently in a nuclear application, in order to reduce cost and schedule uncertainties for subsequent SMR facilities. Strategy C, which emphasizes small, agile resources, includes two SMRs totaling 1,200 MW forced in to replace one of three Browns Ferry units.

Table 5-4 shows some of operating characteristics used to model each option. Summer net dependable capacity, summer full load heat rate, unit availability and book life are explained earlier in this section. The annual outage rate percentage includes forced and planned outages. See Chapter 4, Section 4.3.2, for a discussion of the different types of capacity ratings.

Table 5-4: Nuclear Expansion Options

	PWR	APWR	SMR
Unit Characteristics			
Summer Net Dependable Capacity (MW)	1,260	1,117	600
Summer Full Load Heat Rate (Btu/kWh)	9,853	9,715	10,046
Unit Availability (Yr)	2029	2029	2025
Annual Outage Rate (%)	10%	10%	10%
Book Life (Yrs)	40	40	40

5.2.2.2 Coal

The 2019 IRP includes six coal expansion options, including two integrated gas combined cycle (IGCC) options and four supercritical pulverized coal (SCPC) options as shown in Table 5-5.

IGCC technology converts coal into gas. One IGCC option has carbon capture and sequestration (CCS) and one does not. The CCS technology option is assumed to be commercially available starting in 2028 and has a 90 percent carbon dioxide (CO_2) capture rate. Coal units typically have a CO_2 emission rate of 205 pounds per million BTUs of coal burned; therefore, the CCS technology would reduce the CO_2 rate to 20.5 pounds per million BTUs of coal burned. The modeled CO_2 emissions incur an emission penalty in the form of a dollar per ton of CO_2 emitted.

Two of the four SCPC options have one steam generator with a supercritical steam cycle. One of these options includes CCS technology; the other does not. The other two SCPC options have two steam generators with supercritical steam cycles. Again, one of these options includes CCS technology, and one does not.

In addition to the approved retirements of Paradise Unit 3 in 2020 and Bull Run in 2023, there are several additional coal retirement options available for model selection:

- Uncontrolled Shawnee Units (2,3,5-9) as early as 2020
- All other coal units as early as 2025

Table 5-5: Coal Expansion Options

	IGCC	IGCC CCS	SCPC 1x8	SCPC 2x8	SCPC 1x8 CCS	SCPC 2x8 CCS
Unit Characteristics						
Summer Net Dependable Capacity (MW)	550	515	800	1,600	617	1,200
Summer Full Load Heat Rate (Btu/kWh)	8,000	10,412	8,674	8,674	11,965	10,843
Unit Availability (Yr)	2027	2028	2030	2030	2030	2030
Annual Outage Rate (%)	17%	15%	10%	10%	10%	11%
Book Life (Yrs)	40	40	40	40	40	40

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5.2.2.3 Natural Gas

The IRP evaluation includes three reciprocating internal combustion engine (RICE) options, five simple cycle combustion turbine (CT) options, and four combined cycle (CC) natural gas fueled options. The RICE engines are available in packages of two, six, or twelve engines. The simple cycle frame CTs are available with either three or four turbines. The other three CT options are aeroderivatives in packages of two, four, or six turbines as shown in Table 5-6.

The CC options have one turbine and one steam generator (CC 1 by 1), two turbines and one steam generator (CC 2 by 1), or three turbines and one steam generator (CC 3 by 1). CC units have supplemental capacity termed duct-firing capacity that adds approximately 100 MW to the base capacity shown. The fourth CC option is a 3 by 1 integrated gasification combined cycle (IGCC) with carbon capture and storage (CCS). The CO_2 emission rate for a typical gas unit is 117 pounds of CO_2 per million Btus of gas burned. The modeled gas units incur emission charges based on a dollar-per-ton emission penalty for those scenarios with a CO_2 penalty.

In addition to options for TVA to build gas-fueled units, the IRP evaluation includes options for continuing to purchase power from existing merchant gas plants or acquiring those plants. PPAs are available for selection based on competitive information which cannot be disclosed. PPA options are evaluated similar to build options with a few slight differences. One difference is that when present value revenue requirements resulting from the expansion model selections are converted into cash flows, then the build options have significant capital expenditures that match the construction spend schedule (noted in section 5.1.2) versus the PPA options which have levelized cash flow payments based on the terms of the contract (similar to a mortgage). The other difference for PPAs is that if the asset is located outside of the TVA transmission area, then the necessary transmission wheeling charges are included.

Combined heat and power (CHP), a distributed gas resource, is offered as an option. Rather than being selectable, various levels of CHP adoption are included to represent consumer response to incentive levels applicable in each strategy, as described in Appendix F.

In addition, there are options for retirement of TVA's older simple cycle frame CTs as early as 2020.

Table 5-6: Gas Expansion Options

	RICE 2X	RICE 6X	RICE 12x	LMS100 2X	LMS100 4X	LMS100 6X
Unit Characteristics						
Summer Net Dependable Capacity (MW)	36	113	226	192	384	576
Summer Full Load Heat Rate (Btu/kWh)	8,266	8,266	8,266	9,350	9,150	9,150
Unit Availability (Yr)	2023	2023	2023	2023	2023	2023
Annual Outage Rate (%)	4%	4%	4%	3%	3%	3%
Book Life (Yrs)	30	30	30	30	30	30

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Table 5-6: Gas Expansion Options (con't)

	7FA CT 3X	7FA CT 4X	CC 1x1	CC 2x1	CC 3x1	CC 3X1 CCS
Unit Characteristics						
Summer Net Dependable Capacity (MW)	703	934	591	1,182	1,773	1,593
Summer Full Load Heat Rate (Btu/kWh)	10,132	10,132	6,520	6,520	6,520	7,530
Unit Availability (Yr)	2023	2023	2023	2023	2023	2028
Annual Outage Rate (%)	4%	4%	7%	7%	7%	7%
Book Life (Yrs)	30	30	30	30	30	30

5.2.2.4 Petroleum Fuels

TVA expects to phase out petroleum power purchases by 2028. There are no diesel fuels or other petroleum-based resource options as a primary fuel source under consideration in the IRP because of emissions from these facilities.

5.2.2.5 Hydro

Two new hydro projects are included in the IRP evaluation. They include adding additional hydro turbines to existing dam facilities where there is space available with structural modifications. The other project would add turbines at existing dam facilities where water that is now spilled could be used to power more turbines.

Both projects are similar to the larger TVA hydro system and are energy-limited units. Energy-limited units are resources that cannot be dispatched (in the model) based on price ($/MWh) as are traditional thermal generating resources, such as nuclear, coal and gas. Hydropower cannot be dispatched based on price alone because water releases in the Tennessee River system also are required for municipal and industrial uses, navigation, flood damage reduction, recreation, water quality and other purposes. For this reason, TVA includes a fixed amount of monthly energy in the model for conventional hydro stations. The model then uses the hydro energy to level the load shape served by other stations.

Since hydro plants do not use fuel, a heat rate is not needed for modeling.

Small- and low-head hydropower, called run of river, also is included as an IRP resource option. The hydro expansion options are shown in Table 5-7.

Table 5-7: Hydro Expansion Options

	Dam Spill Addition	Dam Space Addition	Run of River
Unit Characteristics			
Summer Net Dependable Capacity (MW)	40	30	25
Unit Availability (Yr)	2023	2023	2023
Annual Outage Rate (%)	-	-	4%
Book Life (Yrs)	40	40	40

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5.2.2.6 Energy Storage

The IRP evaluation includes a new hydro pumped-storage unit as a resource option. The pumped-storage option would use three reversible turbine generators to either take electricity from the grid by pumping water into a higher altitude reservoir during periods of excess power or add electricity to the grid by using the pumped water to power a turbine as it falls from the upper to the lower reservoir.

A compressed air energy storage (CAES) option also is included. A CAES plant is similar to a pumped-storage plant but, instead of pumping water from a lower to an upper reservoir, a gas turbine is used to compress air often into an underground cavern where it can be stored under pressure until electricity is required. The pressurized air is then heated and directed through a conventional generator to produce electricity.

Battery storage is included as an option at the utility scale and the residential scale. Rather than being selectable, distributed storage is modeled at various levels of adoption to represent consumer response to incentive levels applicable in each strategy, as described in Appendix F. TVA is also including fuel cells and advanced chemistry batteries as options in this IRP. The storage options are shown in Table 5-8.

Storage efficiency is included in modeling all these energy storage options because of the energy losses inherent to the energy conversion process and due to the loss of water or air during storage. The storage efficiency percentage for these energy storage options represents the efficiency of one cycle (i.e., pumping water, then releasing).

Table 5-8: Storage Options

	Utility Battery	Pumped Storage	CAES	Fuel Cell	Adv. Chem. Batt.
Unit Characteristics					
Summer Net Dependable Capacity (MW)	100	850	330	25	25
Summer Full Load Heat Rate (Btu/kWh)	-	-	-	6,824	-
Unit Availability (Yr)	2023	2028	2024	2023	2023
Annual Outage Rate (%)	2%	7%	10%	2%	2%
Storage Efficiency (%)	88%	81%	70%	-	88%
Book Life (Yrs)	20	60	40	20	20

5.2.2.7 Wind

Because TVA cannot take direct advantage of the tax credits and other investment incentives offered by the federal government to encourage wind power development, it has been more financially advantageous to acquire wind power resources through PPAs. This approach allows TVA to include wind as a resource option in the IRP. The purchase of wind resources as a PPA, whether produced in or imported to the TVA region, lowers the costs of these resources to TVA and its customers. TVA may evaluate the option of building wind facilities in the future if investment incentives and/or future federal or state renewable mandates change.

Four wind options are included in the IRP evaluation as shown in Table 5-9. The Midcontinent Independent System Operator (MISO), the Southwest Power Pool (SPP) and the In-Valley options represent various wind resources in different regional transmission areas. The High Voltage Direct Current (HVDC) option would use a direct current (DC) bulk transmission system. The HVDC transmission system would reduce power losses that are typical of the more common alternating current (AC) transmission systems. The HVDC option would require a third-party to permit and build a new transmission line, driving a later availability date than the other options.

Wind resources are energy- and capacity-limited resources. For this reason, TVA uses an energy production profile to dispatch wind energy rather than price. The method used for wind resources is somewhat similar to hydro resources except that an hourly generation schedule (not a monthly amount) is pre-loaded into the capacity expansion model. TVA also applies a capacity credit since the total nameplate capacity of a wind turbine cannot be expected at the time of the system peak. To determine the capacity credit, TVA used historical data to estimate the typical wind power output at the time of the peak power demand on the TVA system. This resulted in a 14 percent capacity credit, meaning that 14 percent of nameplate capacity is expected to be available at the system summer peak. This reduced capacity is considered the summer net dependable capacity. Appendix A includes a more detailed discussion about the determination of the data assumptions for the modeling of the wind options included in this IRP.

Table 5-9: Wind Expansion Options

	MISO	SPP	In Valley	HVDC
Unit Characteristics				
Nameplate Capacity (MW)	200	200	120	200
Summer Net Dependable Capacity (MW)	62	62	37	62
Unit Availability (Yr)	2023	2023	2023	2023
Annual Outage Rate (%)	4%	4%	4%	4%
Book Life (Yrs)	20	20	20	20

5.2.2.8 Solar

Similar to new wind generation, TVA cannot take direct advantage of the current investment incentives offered to promote solar power development, making it more financially advantageous to acquire solar power resources through PPAs. TVA may evaluate the option of building solar facilities in the future if investment incentives and/or federal or state renewable mandates change.

Five solar options are included in the IRP evaluation as shown in Table 5-10. All capacities are stated in AC terms. The utility tracking option is a single-axis tracker that allows the solar panels to follow the sun. The utility fixed option represents ground mounted fixed-axis/fixed-tilt solar installations. Distributed solar options are offered at large commercial, small commercial, and residential scales. Rather than being selectable, various levels of distributed solar adoption are included to represent consumer response to incentive levels applicable in each strategy, as described in Appendix F.

Like wind resources, solar resources are energy-limited and therefore dispatched in the model using an hourly energy production profile to ensure that solar generation is not utilized by the model when the sun is not available. Solar resources also are similar to the capacity-limited wind resources where the availability of the unit at the time of the TVA system peak is less than the full nameplate capacity. TVA applied a 68 percent capacity credit for the utility tracking unit and a 50 percent capacity credit for the fixed axis options. The unit availability date was rounded to the first full year. More details about the assumptions used in the development of the unit characteristics for these solar options can be found in Appendix A.

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Table 5-10: Solar Expansion Options

	Utility tracking	Utility fixed	Commercial small	Commercial large	Residential
Unit Characteristics					
Nameplate Capacity (MW)	50	25	0.2	1	0.006
Summer Net Dependable Capacity (MW)	34	13	0.1	0.5	0.003
Unit Availability (Yr)	2023	2023	2023	2023	2023
Annual Outage Rate (%)	-	-	-	-	-
Book Life (Yrs)	30	30	30	30	30

5.2.2.9 Biomass

Two biomass options are included in the IRP evaluation as shown in Table 5-11: a new direct combustion biomass facility and a repower option, which is the conversion of existing coal-fired units to biomass-fired units. Because biomass co-firing is considered a fuel switch opportunity, it was not included as a capacity expansion option.

Table 5-11: Biomass Expansion Options

	Direct Combustion	Repower
Unit Characteristics		
Summer Net Dependable Capacity (MW)	115	124
Summer Full Load Heat Rate (Btu/kWh)	17,000	18,000
Unit Availability (Yr)	2024	2023
Annual Outage Rate (%)	14%	12%
Book Life (Yrs)	30	20

5.2.2.10 Demand Response

Demand response programs enable participating customers to reduce their power costs by allowing TVA to limit their power during peak demand times. These programs were modeled in the 2019 IRP, as shown in Table 5-12, based on unit characteristics similar to those used for natural gas CTs. Demand response programs are operated much like CTs, or peaking units, and focus on reduction of peak demand. However, the terms of the demand response customer contracts are shorter than the expected book life of a CT unit. In all strategies, TVA assumed that current interruptible pricing products and third-party aggregation of small commercial and industrial demand response will continue with current program size limitations at the carrying cost of a CT. Also included are residential demand response expansion options for space conditioning and water heating, available beginning in 2020.

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Table 5-12: DR Expansion Options

	Res 1	Res 2
Unit Characteristics		
Summer Capacity (MW)	36	4
Winter Capacity (MW)	82	10
Unit Availability (Yr)	2020	2020
Book Life (Yrs)	8	8

5.2.2.11 Energy Efficiency

The 2019 IRP builds on the innovative modeling approach used in the 2015 IRP to evaluate EE as a supply-side resource, with characteristics and costs structured similarly to conventional generating resources or power plants. More details about this modeling approach can be found in Appendix D.

This IRP includes EE programs for residential (Res), commercial (Com) and industrial (Ind) sectors as shown in Table 5-13. Each was divided into tiers, representing distinct price points. The 2019 IRP includes low-income residential EE programs, which are designed to facilitate EE improvements for those least able to afford them. The costs for these programs vary by strategy, but are enforced as required resources at the incentive level dictated by the strategy goals. For all programs, all tiers are available beginning in 2020. These programs are energy limited, similar to hydro, wind and solar units, and use annual hourly production profiles.

Table 5-13: EE Expansion Options

	Res Prog. 1 Tier 1	Res Prog. 1 Tier 2	Res Prog. 2 Tier 1	Res Prog. 2 Tier 2	Res Prog. 2 Tier 3	Res Prog. 3 Tier 1	Com Prog. 1 Tier 1	Com Prog. 1 Tier 2	Com Prog. 1 Tier 3
Unit Characteristics									
Summer Capacity (MW)	2	3	1	3	6	0	1	24	36
Winter Capacity (MW)	3	4	2	4	8	3	0	18	27
Unit Availability (Yr)	2020	2020	2020	2020	2020	2020	2020	2020	2020
Book Life (Yrs)	6	6	15	15	15	6	13	13	13

	Ind Prog. 1 Tier 1	Ind Prog. 1 Tier 2	Ind Prog. 1 Tier 3
Unit Characteristics			
Summer Capacity (MW)	1	11	23
Winter Capacity (MW)	1	15	31
Unit Availability (Yr)	2020	2020	2020
Book Life (Yrs)	11	11	11

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Table 5-13: EE Expansion Options (con't)

	Low Income Low	Low Income Mid	Low Income High
Unit Characteristics			
Summer Capacity (MW)	0.49	2.06	4.60
Winter Capacity (MW)	0.79	3.29	7.37
Unit Availability (Yr)	2020	2020	2020
Book Life (Yrs)	14	14	14

5.2.2.12 Electrification

Electrification is the increased adoption of electric end-use technologies displacing other commercial energy forms. Promotion of smart energy technologies with a favorable load shape should decrease carbon emissions and increase profitability for Valley businesses. While electrification is not a "resource" like the others described in this section, potential electrification offerings for the residential, commercial and industrial sectors are included as selectable options in this IRP. The residential electrification programs focus on retrofit and new construction markets, while commercial and industrial programs focus on diverse technology offerings to help shape load. These options are also offered in three tiers at distinct price points as shown in Electrification Expansion Options Table 5-14.

Table 5-14: Electrification Expansion Options

	Res Prog. 1 Tier 1	Res Prog. 1 Tier 2	Res Prog. 1 Tier 3	Res Prog. 2 Tier 1	Res Prog. 2 Tier 2	Res Prog. 2 Tier 3	Res Prog. 3 Tier 1	Res Prog. 3 Tier 2	Res Prog. 3 Tier 3
Unit Characteristics									
Summer Capacity (MW)	1.2	1.0	0.8	0.2	0.2	0.3	0	0	0
Winter Capacity (MW)	8.6	6.9	6.0	0.7	0.6	0.8	0.06	0.05	0.08
Unit Availability (Yr)	2020	2020	2020	2020	2020	2020	2020	2020	2020
Book Life (Yrs)	15	15	15	15	15	15	15	15	15

	Res Prog. 4 Tier 1	Res Prog. 4 Tier 2	Res Prog. 4 Tier 3	Com Prog. 1 Tier 1	Com Prog. 1 Tier 2	Com Prog. 1 Tier 3	Ind Prog. 1 Tier 1	Ind Prog. 1 Tier 2	Ind Prog. 1 Tier 3
Unit Characteristics									
Summer Capacity (MW)	0.08	0.06	0.09	8.6	7.5	5.4	9.0	7.9	5.6
Winter Capacity (MW)	10.3	8.3	12.4	18.2	16.0	11.4	9.4	8.2	5.9
Unit Availability (Yr)	2020	2020	2020	2020	2020	2020	2020	2020	2020
Book Life (Yrs)	15	15	15	13	13	13	10	10	10

6 Resource Plan Development and Analysis

This chapter describes the process TVA used to identify a target power supply mix that was based on the analysis done in the IRP. The process involves choosing the types of resources that TVA could use to meet the future power needs of its customers, recognizing that the future is uncertain and the choices need to provide flexibility to adapt. The approach tests several options around resource choices TVA could make (called strategies) in different sets of uncertain future conditions (called scenarios). The set of resource choices selected in any one future defines how TVA would provide power to its customers under those conditions; TVA calls that set of resource choices a portfolio, and it is created by modeling a strategy in a particular scenario. These portfolios are then evaluated using key factors (called metrics) that allow TVA to capture cost, risk, environmental footprint and other aspects that should be considered when deciding the best target power supply mix.

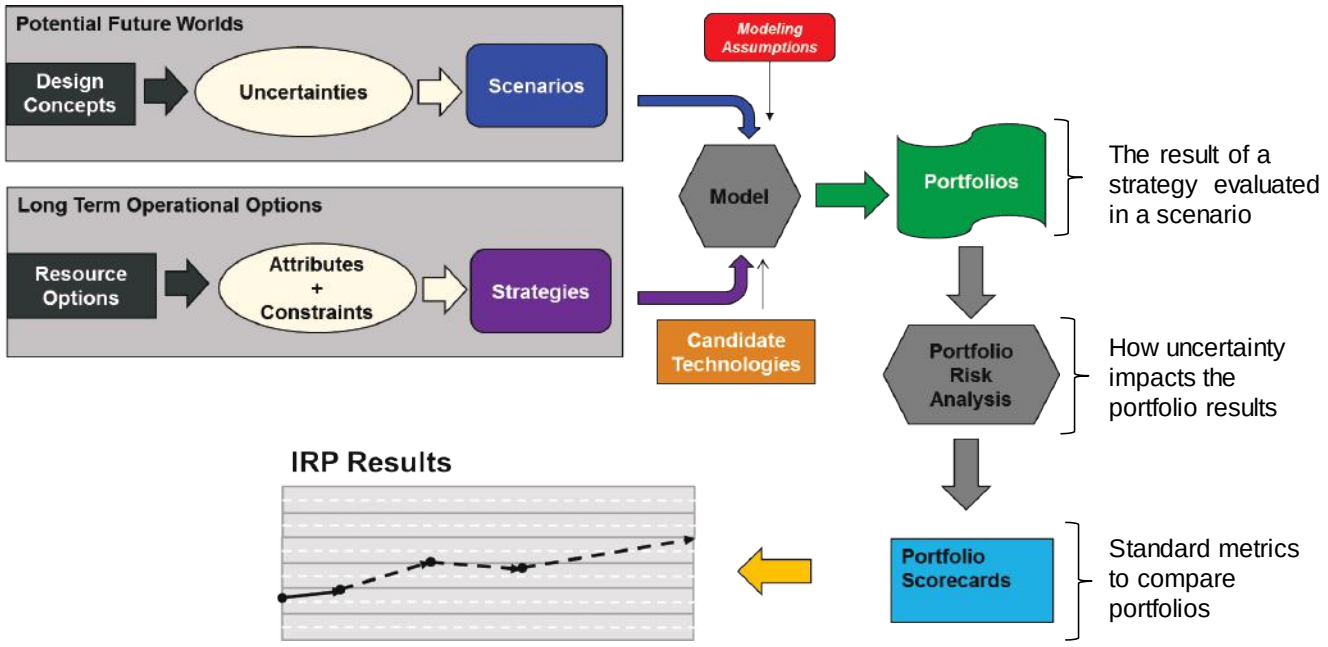


Figure 6-1: Process Graphic Development of Scenarios and Strategies

TVA uses a scenario planning approach in integrated resource planning, a common approach in the utility industry. Scenario planning is useful for determining how various business decisions will perform in an uncertain future. The goal is to develop a least-cost strategy that is consistent with TVA's legislatively mandated mission and also delivers rate stability to its customers over a variety of future environments.

Multiple strategies, which represent business decisions that TVA can control, are modeled against multiple scenarios, which represent uncertain futures outside of TVA's control. The intersection of a single strategy and a single scenario results in a resource portfolio. A portfolio is a 20-year capacity plan that is unique to that strategy and scenario combination.

6.1 Development of Scenarios

While most quantitative models used in long-range planning focus on what is statistically likely based on history, market data and projected future patterns, TVA uses scenario analysis that allows for the possibility that the future could evolve along paths not suggested solely by historical trends.

The scenarios used in the IRP analysis were developed during the scoping phase of the study in 2018. The process used to develop these scenarios is described below.

6.1.1 Identification of Key Uncertainties

The first step in developing scenarios was to work with the individuals on the IRP Working Group to identify key uncertainties. Uncertainties are factors that are likely to change in the future, affecting economics, demand for electricity, commodity prices, etc. While TVA can forecast future values for these uncertainties, they are difficult to predict. The goal of scenario analysis is to study broad variations in uncertainties to cover a wide range of potential futures. The 12 uncertainties, shown in Table 6-1, were used as building blocks to construct scenarios.

These uncertainties address a range of economic, financial, regulatory and legislative conditions, as well as social trends and adoption of newer technologies. The 12 uncertainties used in defining each scenario are described in Table 6-1.

Table 6-1: Uncertainties

Uncertainty	Description
Electricity Demand	The customer energy requirements (in gigawatt hours) for the TVA service territory (including losses), representing the load to be served by TVA
Market Power Price	The hourly price of energy ($/megawatt hour) at the TVA boundary, used as a proxy for market price of power
Natural Gas Prices	The price ($/million BTUs) of natural gas, including transportation
Coal Prices	The price ($/million BTUs) of coal, including transportation
Solar Prices	The price ($/megawatt hour) of solar power purchase agreements delivered to TVA
Storage Prices	The price ($/kW) of storage new builds
Regulations	All regulatory and legislative actions, including applicable codes and standards, that impact the operation of electric utilities, excluding CO_2 regulations
CO_2 Regulation/Price	The cost of compliance with possible CO_2 related regulation and/or the price of cap-and-trade legislation, represented as a $/ton value
Distributed Generation Penetration	National trending of distributed generation resources and potential regional activity by customers or third-party developers (not TVA)
National Energy Efficiency (EE) Adoption	An estimate of EE measure adoption by customers nationally, recognizing the impacts of technology affordability, electricity price, and consumer interest on the willingness to adopt efficiency measures
Electrification	An estimate of electric end-use technology adoption displacing other commercial energy forms and providing new services
Economic Outlook (National/Regional)	All aspects of the regional and national economy, including general inflation, financing considerations, population growth, GDP and other factors that drive the overall economy

6.1.2 Construction of Scenarios

Scenarios were constructed using combinations of the key uncertainties shown in Table 6-1 and then refined to ensure that each scenario:

- Represented a plausible, meaningful future in which TVA could find itself operating within over the 20-year study period;
- Was unique among the scenarios being considered for study;
- Placed sufficient stress on resource selection and provided a foundation for analyzing the robustness, flexibility and adaptability of each combination of supply- and demand-side options; and
- Captured relevant key stakeholder interests.

Based on overlapping characteristics, the potential scenarios were grouped into the categories of declining economy, economic growth, stringent environmental regulation, changing paradigm, and emerging technology. The IRP Working Group members provided their individual rankings on the list of scenarios

Chapter 6: Resource Plan Development and Analysis

that would be considered in the IRP. Based on the scoping comments, IRP Working Group member rankings and further analysis, TVA selected the five unique scenarios summarized in Table 6-2 along with their respective attributes. In addition to these five scenarios, TVA also analyzed a Current Outlook scenario based on TVA's current assumptions about future conditions. In the modeling process, TVA considers each scenario as equally plausible.

Table 6-2: Attributes of the Six Scenarios

Scenario	Description and Attributes
1- The Current Outlook	• Economic outlook reflects slowing expected in 2020, transitioning to a long-term growth rate of 2% for TVA region GDP and 1.9% inflation • Demographic changes slow customer count growth, while declining household size and increasing efficiencies drive lower energy use per customer • Gas supply more than adequate to meet demand, and power prices follow seasonality of gas prices and volatility of weather
2- Economic Downturn	• Prolonged, stagnant economy results in weak growth and delayed expansion of new generation • Rising budget deficits and public debt constrain federal economic policy options • Stringent environmental regulations are delayed due to concerns of adding further pressure to the economy • Weaker demand lowers cost of new plant construction
3- Valley Load Growth	• Technology-driven investment in automation and artificial intelligence raise electricity use, boosting labor productivity and economic growth while lowering inflation • Rapid economic growth, driven by migration into the Valley and growth in emerging markets and developing economies, translates into higher energy sales • Lower battery prices due to economies of scale drive increased electrification of transportation, magnifying growth • Preference for lower emissions, DER and EE drives lower demand for emitting generation, offsetting some of the upward fuel price pressure from robust economic conditions
4- Decarbonization	• Increasing climate-driven effects create strong federal push to curb greenhouse gas (GHG) emissions, increasing CO_2 emission penalties for the utility industry and incentives for non-emitting technologies • Compliance with new rules that are stringent by global standards increases energy prices and U.S.-based industry becomes less competitive, resulting in lagging economic growth that fails to rebound to trend levels • Fracking regulations never materialize, but gas demand is impacted by the CO_2 penalty • New expansion units are necessary to replace existing CO_2-emitting fleet
5- Rapid DER Adoption	• Growing consumer awareness of and preference for energy choice, coupled with rapid advances in energy technologies, drive high penetration of distributed generation, storage, and energy management • Utilities are no longer the sole source of generation and multiple options are available to consumers • Market shift results in lower loads, decreased need for supply-side generation, but increased potential impacts to transmission and distribution planning and infrastructure
6- No Nuclear Extensions	• Driven by aging assets and desire for national energy security and resiliency, there is a regulatory challenge to relicensing existing and constructing new, large scale nuclear plants • National energy policy drives carbon regulation or legislation and promotes small modular reactor (SMR) technology through subsidies to drive advancements and improved economics

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6.1.3 Determination of Key Scenario Assumptions

The final step in scenario development was to forecast key assumptions for each scenario.

Figure 6-2 shows the forecasted assumptions for TVA's energy and peak demand loads for each scenario. The Current Outlook scenario projects energy growth to be flat, as does the No Nuclear Extensions scenario. Three scenarios – Economic Downturn, De-Carbonization and Rapid DER Adoption – project declining energy forecasts, with the largest energy decline of about 1.5 percent per year in the Rapid DER Adoption scenario. The Valley Load Growth scenario projects energy growth of about 2 percent per year.

Each scenario contains unique assumptions around sector forecasts and behind-the-meter impacts that influence load shape, which drives different energy and peak growth patterns. The Current Outlook scenario projects slight peak load growth of about 0.3 percent per year, as does the No Nuclear Extensions scenario. The three scenarios that have declining energy forecasts also have declining peak load forecasts, with the largest peak decline of about -0.7 percent per year in the Rapid DER Adoption scenario. The Valley Load Growth scenario reflects peak load growth of about 1.7 percent per year.

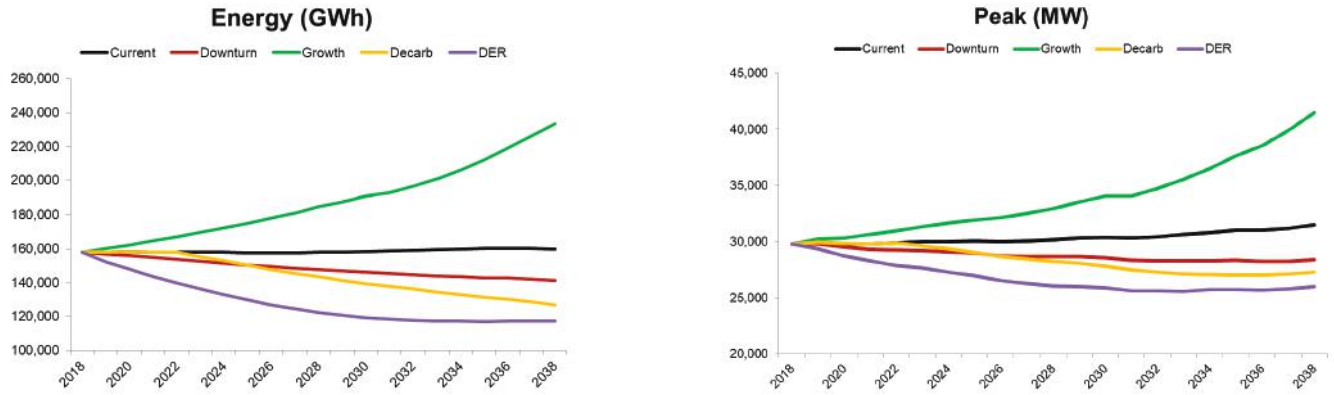


Figure 6-2: Energy and Peak Assumptions

Figure 6-3 shows the forecasted assumptions for natural gas prices. Gas prices are similar for the Current Outlook and No Nuclear Extensions scenarios. The Valley Load Growth and Decarbonization scenarios assume higher gas prices, with the Valley Load Growth increase happening more gradually and the Decarbonization trajectory ratcheting up as assumed regulations take effect. The Economic Downturn and Rapid DER Adoption scenarios assume lower gas prices on somewhat different trajectories.

Figure 6-4 shows the forecasted assumptions for coal prices. Steadily increasing coal prices are forecasted for all scenarios, with modest variations across the scenarios resulting from projected movements in real coal prices and inflation.

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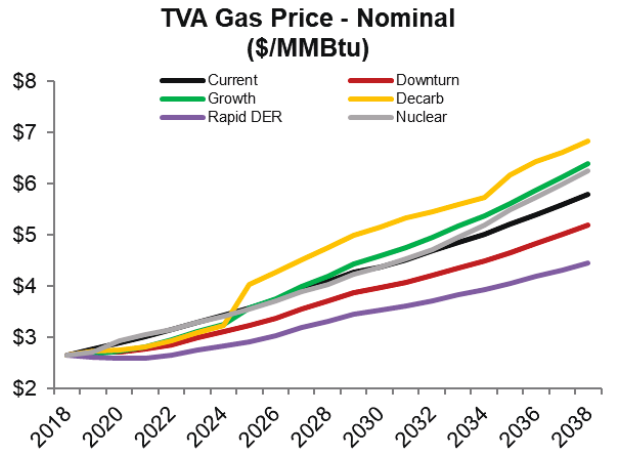


Figure 6-3: Gas Price Assumptions

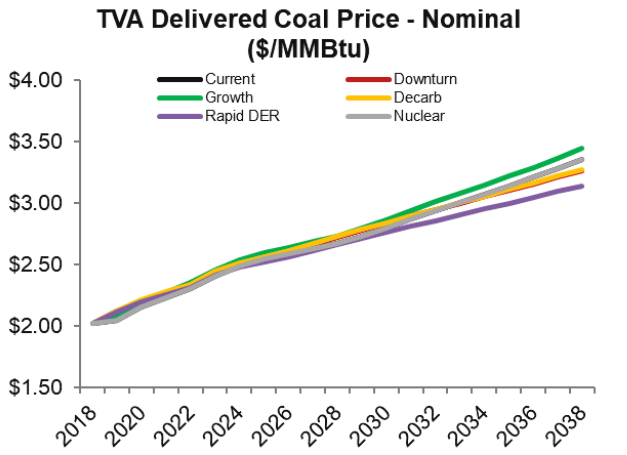


Figure 6-4: Coal Price Assumptions

Figure 6-5 shows the forecast assumptions for on-peak and off-peak electricity prices. Electricity prices are similar for the Current Outlook and No Nuclear Extensions scenarios. The Valley Load Growth and Decarbonization scenarios assume higher energy prices, with the Valley Load Growth increase happening more gradually and the Decarbonization trajectory ratcheting up as assumed regulations take effect. The Economic Downturn and Rapid DER Adoption scenarios assume lower electricity prices on similar trajectories.

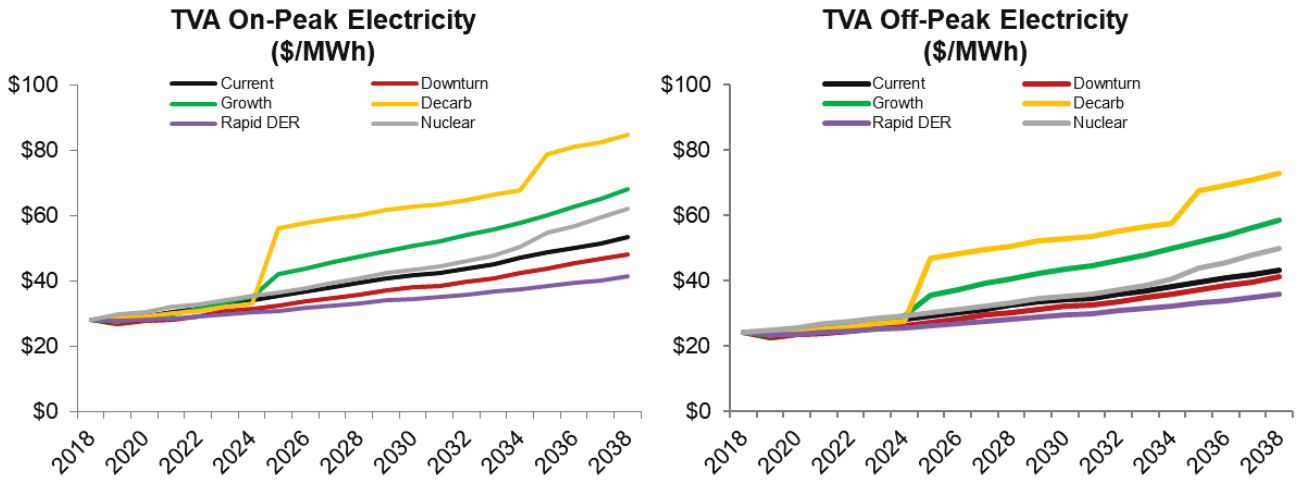


Figure 6-5: On-peak & Off-peak Price Assumptions

Figure 6-6 shows the forecasted assumptions for CO_2 prices. The Current Outlook assumes no carbon penalty, which is also the case in the Economic Downturn, Rapid DER Adoption and No Nuclear Extension scenarios. The Valley Load Growth scenario assumes a modest carbon penalty beginning in 2025 to spur faster adoption of electric vehicles. The Decarbonization scenario assumes a larger carbon penalty driven by regulations or legislative actions that takes effect in 2025 and that is ratcheted up further in 2035.

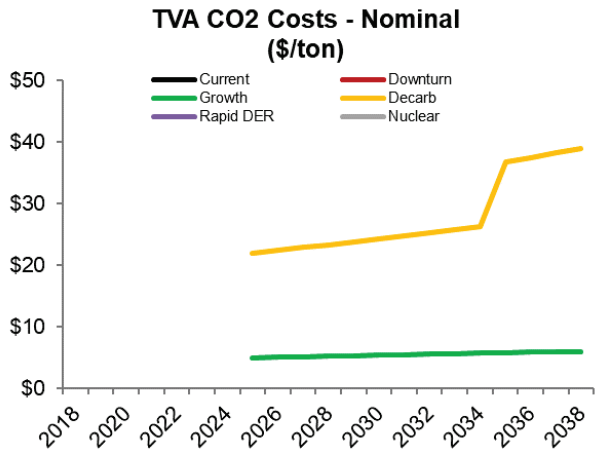


Figure 6-6: CO_2 Price Assumptions

6.2 Development of Strategies

After the scenarios were developed, the next step in the IRP process was to design planning strategies. Scenarios and strategies are very different. Whereas scenarios describe plausible futures and include uncertainties that TVA cannot control, strategies describe business decisions or approaches that TVA could employ.

Generally speaking, strategies promote certain resources, and in some cases also limit certain resources to support promotion of others. In IRP modeling terms, strategies that constrain how resources are selected may not be fully optimized nor produce plans that have the lowest possible financial cost. When a resource is promoted, the cost of the resource is lowered for model selection within a particular strategy. The full cost (resource and incentive) will be captured in the financial metrics. Several strategies evaluated in this IRP explore the promotion of distributed resources, and the costs of promoting adoption of those resources is shared between TVA and the DER participants. These shared costs will be analyzed further using metrics. The process used to develop strategies is described below.

6.2.1 Identification of Key Strategy Components

The first step in developing strategies was to identify the key components, or attributes, to be included in each strategy. Ten distinct attributes were identified using input from individuals on the IRP Working Group and comments received during the public scoping period. These attributes are described in Table 6-3.

Table 6-3: Key Planning Strategy Attributes

Attributes	Description
Existing Nuclear	Constraints related to the existing nuclear fleet; EPUs are considered part of existing nuclear
Nuclear Additions	Limitations on technologies and timing related to the addition of new nuclear capacity; A/P 1000s and SMRs are considered in this category
Existing Coal	Constraints related to the existing coal fleet
New Coal	Limitations on technology and timing on new coal-fired plants; includes CCS on conventional coal plus IGCC technology

Attributes	Description
Gas Additions	Limitations on technologies and timing related to the expansion options fueled by natural gas (CT, CC)
Energy Efficiency	Considers energy efficiency programs that are offered by TVA and/or LPCs (excludes impacts from naturally occurring efficiency/conservation)
Demand Response	Considers demand response programs that are offered by TVA and/or LPCs
Renewables (Utility Scale)	Limitations on technologies and timing of renewable resources; considers options that would be pursued by TVA or in collaboration with LPCs
Storage (Utility Scale)	Limitations on technologies and timing of storage resources; considers utility scale storage options varying in size or storage capacity
Distributed Generation/Storage	Includes customer-driven resource options or third party projects that are distributed in nature

6.2.1.1 Development of Strategies Using Attributes

TVA combined these 10 attributes to initially create seven strategies for consideration by the IRP Working Group. After review of the scoping comments, suggestions from members of the IRP Working Group, and further analysis, TVA selected five distinct strategies. Table 6-4 lists the five strategies and their key characteristics.

Table 6-4: Key Characteristics of the Planning Strategies

Strategies	Description and Attributes
A- Base Case	• Planning Reserve margins for summer and winter peak seasons are applied, targeting an industry best-practice level of reliability (applies in all strategies) • No specific resource types are promoted beyond continuation of existing programs as currently forecasted.
B- Promote DER	• DER is incented to achieve higher end of long-term penetration levels • New coal is excluded, and all other technologies are available while EE, demand response, distributed generation and storage are promoted • Programs targeting low-income customers will be part of EE promotion

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Strategies	Description and Attributes
C- Promote Resiliency	• Small, agile capacity is incented to maximize flexibility and promote ability to respond to short-term disruptions on the power system • All technologies are available while small modular reactors (SMRs) and small gas additions (aeroderivative turbines, reciprocating engines), demand response, storage and distributed generation are promoted • Combinations of storage and distributed generation could be installed as microgrids • Flexible loads and DERs are aggregated to provide synthetic reserves to the grid to promote resiliency
D- Promote Efficient Load Shape	• Targeted electrification and demand and energy management are incented to minimize peaks and troughs and promote an efficient load shape • All technologies are available but those that minimize load swings, including EE, DR and storage, are promoted • Programs targeting low-income customers will be a part of EE promotion
E- Promote Renewables	• Renewables at all scales are incented to meet growing prospective or existing customer demands for renewable energy • New coal is excluded, and all other technologies are available while renewables are promoted

Strategy attributes were used in the modeling in several different ways. The Base Case represents least-cost planning with no specific resources promoted and reflects decisions made to date by the TVA Board of Directors. The remaining strategies provide incentives to promote adoption of certain resources, with consideration of market potential, pace of adoption and reserve margin. Resources that were promoted generally received a modeled incentive that improved economics for adoption or selection. In some cases, a resource category may be limited, such as new coal being excluded in the Promote DER and Promote Renewables strategies. Others have temporal restrictions, such as allowing retirements to take effect in a certain year when transmission work to allow plant separation could be completed.

6.2.1.2 Definition of Strategies

After defining each strategy's key characteristics, incentive levels were determined to achieve the objectives of the strategy as shown in Figure 6-7. The Strategy Design Matrix provided the roadmap for how resource promotions were applied in capacity planning. Further information on strategy design can be found in Appendix F.

Strategy	Distributed Resources & Electrification						Utility Scale Resources					
	Distributed Solar	Distributed Storage	Combined Heat & Power	Energy Efficiency	Demand Response	Beneficial Electrification	Solar	Wind	Biomass & Biogas	Storage	Aero CTs & Recip Engines	Small Modular Reactors
Base Case	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Promote DER	High	Moderate	High	Moderate	Moderate	Base	Base	Base	Base	Base	Base	Base
Promote Resiliency	Moderate	High	Moderate	Base	Moderate	Base	Base	Base	Base	Moderate	Moderate	Moderate
Promote Efficient Load Shape	Base	Moderate	Base	High	High	Moderate	Base	Base	Base	High	Base	Base
Promote Renewables	Moderate	Moderate	Base	Base	Base	Base	Moderate	Moderate	Moderate	Moderate	Base	Base

Figure 6-7: Strategy Design Matrix

6.3 Resource Portfolio Optimization Modeling

The development of resource portfolios was a two-step process. First, an optimized portfolio, or capacity plan, was generated, followed by a detailed financial analysis. This process was repeated for each strategy/scenario combination and for additional sensitivity runs. Sensitivity runs change one variable in a strategy, such as the level of promotion for a certain resource, to lend insight to the impact of a specific input.

6.3.1 Development of Optimized Capacity Expansion Plans

TVA uses a capacity optimization model called System Optimizer.[1] This model employs an optimization technique where an "objective function" is minimized subject to a number of constraints.

Energy resources were selected by adding or subtracting assets based on minimizing the present value of revenue requirements (PVRR). PVRR represents the cumulative present value of total revenue requirements for the study period based on an 8 percent discount rate. In other words, PVRR is the present day value of all future costs for the study period, discounted to reflect the time value of money and other factors such as investment risk.

In addition, the following constraints were applied in the optimization runs:

- Balance of supply and demand
- Energy balance
- Reserve margin
- Generation and transmission operating limits
- Fuel purchase and utilization limits
- Environmental stewardship
- Distributed generation/storage adoption.

In order to promote certain resources within a strategy, incentive levels for distributed generation and storage resources were developed to increase adoption in each strategy. These resulting adoption levels were modeled as constraints prior to optimizing the balance of the portfolio.

The System Optimizer model uses a simplified dispatch methodology to compute production costs and a "representative hours" approach in which average generation and load values in each representative period within a week are scaled up appropriately to span all hours of the week and days of the months. The least-cost path (based on lowest PVRR) from all feasible states in the study period is identified as the optimized capacity plan.

[1] System Optimizer is an industry standard software model developed by ABB.

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6.3.2 Financial Analysis

Next, each capacity plan was evaluated using an hourly production costing methodology, which calculated detailed production costs of each plan, including fuel and other variable operating costs. These detailed cost simulations provided total strategy costs and financial metrics that were used in the strategy assessment process.

This analysis was accomplished using a strategic planning software tool called MIDAS[2]. MIDAS uses a chronological production costing approach coupled with financial planning data to assess plan cost, system rate impacts and financial risk. It uses a Monte Carlo analysis,[3] which is a sophisticated analytical technique that allows for a better understanding of portfolio performance by testing the variability of key assumptions and expressing portfolio results as a range around an expected case.

The total cost for each resource plan (PVRR) was calculated taking into account additional considerations, including the cash flows associated with financing. The model generated multiple combinations of the key assumptions for each year of the study period and computed the costs of each combination. Capital costs for supply-side options were amortized for investment recovery using a real economic carrying cost method that accounted for unequal useful lives of generating assets.

In addition to computation of the total plan cost (PVRR) over the full 20-year study period, a system average cost metric was calculated. This metric provides an alternative view of the revenue requirements for the study period expressed per MWh. It is not intended as a forecast of wholesale or retail rates over the study period. Rather, it was developed to gauge the potential rate impact associated with a given portfolio and provides an indication of relative rate pressure across the strategies being studied. Reviewing this metric in combination with PVRR and the financial risk measures provides a clearer picture of the cost/risk balance for each resource plan.

6.3.3 Uncertainty/Risk Analysis

While scenarios explore step changes in possible futures, stochastic analysis evaluates risk of uncertainty around key planning assumptions for each portfolio. Stochastic analysis of production cost and financials bounds the uncertainty and identifies the risk exposure that is inherent in long-range power supply planning, because the fundamental forecasts used in those studies are inevitably wrong. Variability will result due to supply/demand disruptions, weather, market conditions, technology improvements and economic cycles. A Monte Carlo simulation allows for a better understanding of the richness of possible futures, as well as their likelihoods, so that plans can be made proactively as opposed to reactively. A stochastic model is used to estimate probability distributions of potential outcomes by allowing for simultaneous random-walking variation in many inputs over time.

At TVA, a representative Monte Carlo distribution using Latin hypercube sampling (efficient method for generating probability distributions) comprised of 120 stochastic iterations is developed for each of the scenario/strategy combinations to more fully assess the likely plan costs, generation, and performance for each portfolio. To illustrate the iterations, Figure 6-8 shows a trade-off graph comparing PVRR versus CO_2 intensity for each iteration of a portfolio as well as the expected value, or average, and the 5th percentile and the 95th percentile, or P(5) and P(95), respectively.

A sample stochastic result which compares revenue requirements of two hypothetical portfolios is shown in Figure 6-9. This example illustrates the range of possible results of costs for each portfolio from the P(5) to P(95). The point where the color of the bars changes represents the expected cost for that portfolio.

[2] MIDAS is also an ABB product.

[3] Monte Carlo analysis is also referred to as stochastic analysis.

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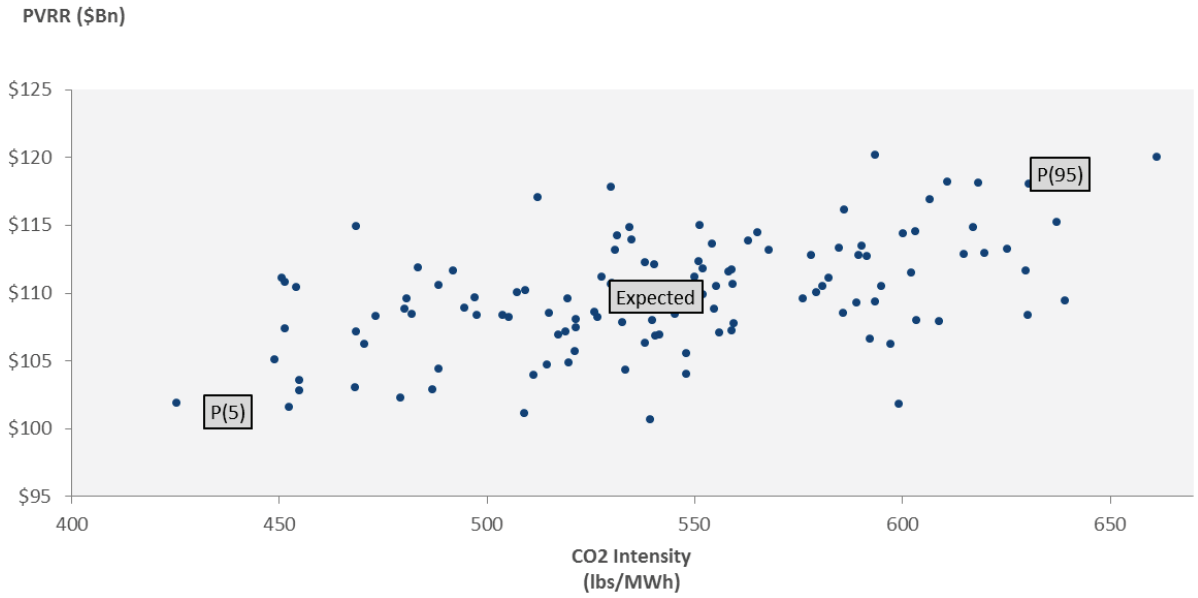


Figure 6-8: Sample Stochastic Result with Trade-off between Present Value of Revenue Requirements and CO_2 Intensity

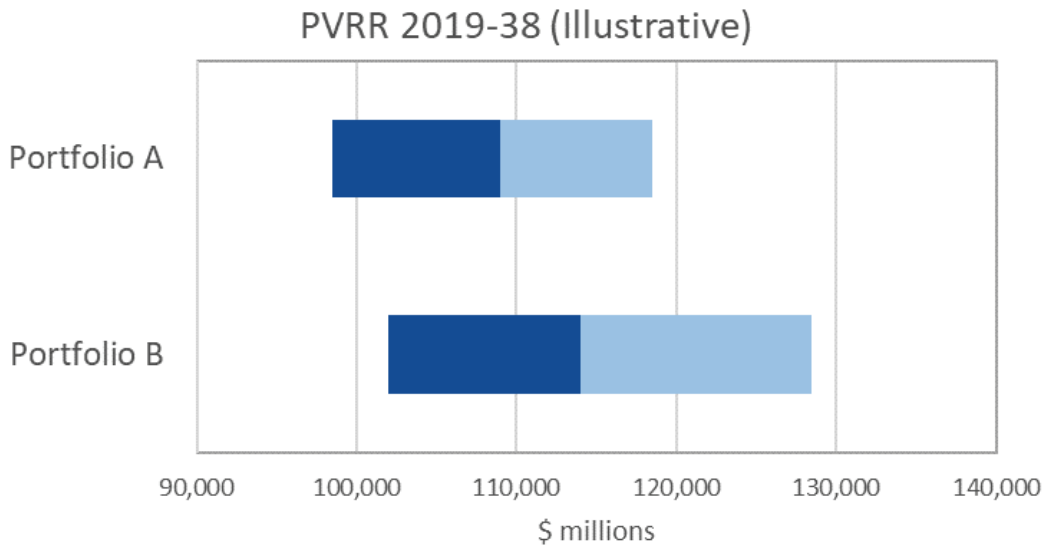


Figure 6-9: Sample Stochastic Result for Present Value of Revenue Requirements

Cost and risk metrics shown later in this report are calculated from the distribution of stochastic iterations. The cost and metrics are primarily the expected values while the risk metrics are functions of the P(5), P(95), and the expected value. The MIDAS tool allows TVA to explicitly consider uncertainty and risk exposure in the evaluation of the planning strategies. This analysis is based on applying probability distributions around the key variables used to frame the scenarios and define assumptions used in the strategies.

The Monte Carlo analysis in MIDAS includes 16 key variables:

- Commodity prices: natural gas, coal, oil, CO_2 allowances, electricity price[4]
- Financial parameters: interest rates, capital costs, operation and maintenance costs
- Availability: hydro, coal, gas, nuclear, solar, and wind
- Net sales forecast uncertainty: peak and energy, (includes demand, EE, electrification, behind-the-meter solar, and CHP)

The fundamental (expected value) forecasts for these key variables differ across the six scenarios and, as a result, the uncertainty ranges (stochastic envelope) are also different. The evaluation of the uncertainty around the performance of the strategies considers both the variation across the scenarios (different plausible futures) and the probability distribution around the expected forecasts represented by the stochastic envelope. As an example, Figure 6-10 shows these different uncertainty ranges around the TVA peak load forecast.

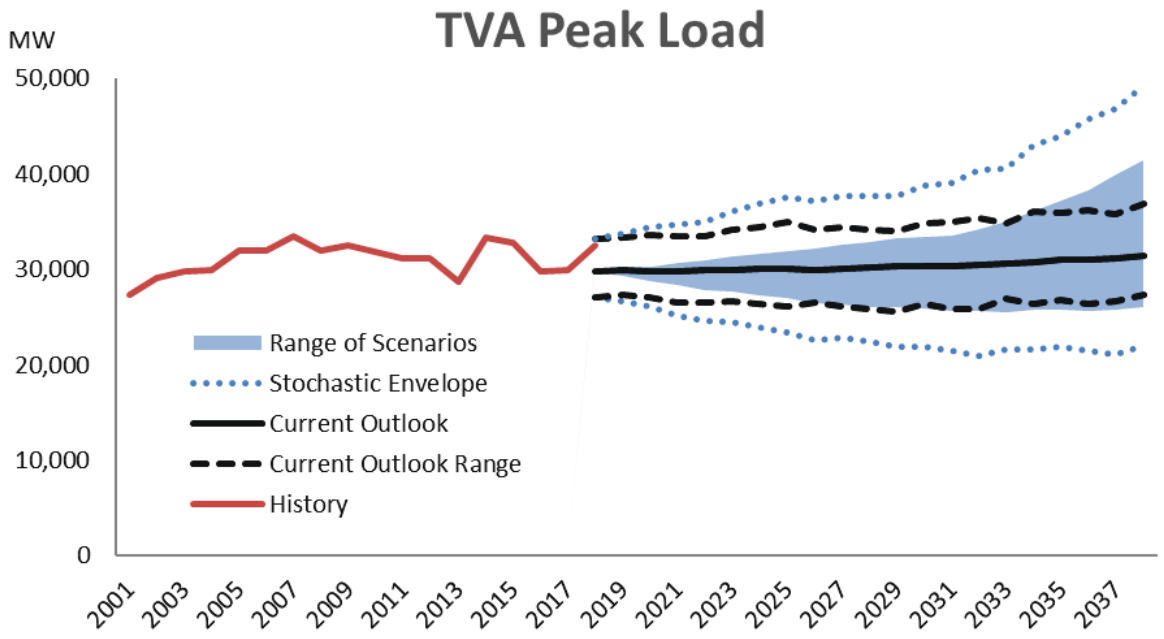


Figure 6-10: Example Uncertainty Ranges

Figure 6-10 shows the range of variation in the expected forecast of peak demand across all six scenarios (represented by the blue shaded area). For orientation, the Current Outlook scenario's fundamental forecast and its associated uncertainty range is shown in the black solid and dotted lines. The stochastic envelope, representing the uncertainty ranges from all six scenarios, is shown as the blue dotted line and bounds the uncertainty range evaluated in MIDAS. Each of the 16 key variables has a set of scenario ranges and stochastic envelopes that ensure a more dynamic assessment of the variability in the performance of each planning strategy.

6.4 Portfolio Analysis and Scorecard Development Process

Modeling multiple strategies within multiple scenarios resulted in a large number of portfolios. So, initially, the portfolio analysis focused on common characteristics

[4] Stochastic electricity price was derived fundamentally in MIDAS using stochastic variables as inputs.

that strategies exhibited over multiple scenarios rather than on specific outcomes in individual portfolios. Strategies that behaved in a similar manner in most scenarios were considered to be "robust" – i.e., more flexible, less risky over the long-term and able to lessen the impacts of uncertainty. Conversely, strategies that behaved differently or poorly in most scenarios were considered more risky with a higher probability for future regret.

The first step in the portfolio evaluation process was to develop a scorecard to assess and compare the performance of strategies in each scenario. The process used to develop an evaluation scorecard is described below.

6.4.1 Selection of Metric Categories

TVA's mission and stakeholder concerns related to resource planning were key considerations in developing a set of metrics for use in evaluating the performance of the portfolios generated in the IRP.

To achieve its overall mission of providing low-cost, reliable power to the people of the Valley, TVA focuses on four strategic imperatives, as mentioned previously in Chapter 1. These imperatives are: balancing rates and debt so that TVA maintains low power rates while living within its means; and recognizing the trade-off between optimizing the value of our asset portfolio and being responsible stewards of the Valley's environment and natural resources.

Optimizing TVA's asset portfolio is the primary purpose of integrated resource planning, but other imperatives also shape the process:

- As part of the financial analysis, a balance sheet and income statement are created for each portfolio to determine the revenue requirements to fund each resource plan.
- A coverage ratio method is used to ensure that the overall debt limit is respected in each optimization run.
- Stewardship obligations are considered in modeling of various compliance requirements, including portfolio optimization which factors in a carbon penalty and includes key environmental metrics in the assessment of each resource plan (air, water, waste and land-use impacts).

Based on TVA's strategic imperatives and feedback from stakeholders, five metric categories were selected for use in evaluating the performance of planning strategies:

- Cost, including both the long-range cost of the resource plan as well as a look at average system cost, which is an indicator of possible rate pressure
- Financial Risk, which measures the variation (uncertainty) around the cost of the resource plan by assessing a risk/benefit ratio and computing the likely amount of cost at risk using data from probability modeling
- Environmental Stewardship, which captures multiple measures related to the environmental footprint of the resource plans, including air emissions and water, waste and land use impacts
- Operational Flexibility, which measures how responsive the generation portfolio of each resource plan is by evaluating the portfolio's ability to ramp up and down to respond to changes in demand
- Valley Economics, which computes the macro-economic effects of the resource plans by measuring the change in real per capita income (where real references the fact that the income streams have been adjusted to remove the impacts of inflation, such that future income streams and present income streams all possess a consistent purchasing capability) and employment compared to a reference case.

6.4.2 Development of Metrics

After establishing the metric categories, the next step was to identify candidate metrics for each category to be used in the scorecard to assess the performance of each strategy in different scenarios.

Considering input from the IRP Working Group and Regional Energy Resource Council, TVA selected 14 metrics that clearly and effectively measure the performance of each portfolio as summarized in Figure 6-11.

Category	Metric	Definition
Cost	PVRR ($Bn)	Total plan cost (capital and operating) expressed as the expected (stochastic) present value of revenue requirements over the 20-year study period
	System Average Cost ($/MWh)	Expected average system cost for the study period, computed as the levelized annual average system cost (annual revenue requirements divided by annual sales)
	Total Resource Cost ($Bn)	Total plan cost (capital and operating) expressed as the expected present value of revenue requirements over the study period plus participant cost net of bill savings and tax credits
Risk	Risk/Benefit Ratio	Area under the plan cost distribution curve between P(95) and expected value divided by the area between expected value and P(5) based on stochastic analysis
	Risk Exposure ($Bn)	The point on the plan cost distribution below which the likely plan costs will fall 95% of the time based on stochastic analysis
Environmental Stewardship	CO_2 (MMTons)	Expected annual average tons of CO_2 emitted over the study period
	CO_2 Intensity (lbs/MWh)	Expected CO_2 emissions expressed as an emission intensity, computed by dividing emissions by energy generated and purchased
	Water Consumption (MMGallons)	Expected annual average gallons of water consumed over the study period
	Waste (MMTons)	Expected annual average quantity of coal ash, sludge and slag projected based on energy production in each portfolio
	Land Use (Acres)	Expected acreage needed for expansion units in each portfolio in 2038
Operational Flexibility	Flexible Resource Coverage Ratio	The ratio of flexible capacity available to meet the maximum 3-hour ramp in demand in 2038
	Flexibility Turn Down Factor	Ability of the system to serve low load periods as measured by the percent of must-run and non-dispatchable generation to sales
Valley Economics	Percent Difference in Real Per Capita Income	The change in real per capita personal income expressed as a change from a reference portfolio in each scenario
	Percent Difference in Employment	The change in non-farm employment expressed as a change from a reference portfolio in each scenario

Figure 6-11: Metrics Definitions

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Figure 6-12 shows the formulas used to compute the metrics.

Category	Metric	Formula
Cost	PVRR ($Bn)	Present Value of Revenue Requirements over Planning Period
	Total Resource Cost ($Bn)	PVRR + Participant cost net of savings (bill savings, tax credits)
	System Average Cost ($/MWh)	$\frac{\text{NPV Rev Reqs (2019–2038)}}{\text{NPV Sales (2019–2038)}}$
Risk	Risk/Benefit Ratio	$\frac{95\text{th }_{(PVRR)}-\text{Expected }_{(PVRR)}}{\text{Expected }_{(PVRR)}-5\text{th }_{(PVRR)}}$
	Risk Exposure ($Bn)	95th Percentile $_{(PVRR)}$
Environmental Stewardship	CO2 (MMTons)	Average Annual Tons of CO2 Emitted During Planning Period
	CO2 Intensity (lbs/MWh)	$\frac{\text{Pounds CO2 (2019–2038)}}{\text{MWh Generated \& Purchased (2019–2038)}}$
	Water Consumption (MMGallons)	Average Annual Gallons of Water Consumed During Planning Period
	Waste (MMTons)	Average Annual Tons of Coal Ash and Scrubber Residue During Planning Period
	Land Use (Acres)	Acreage Needed for Expansion Units in Each Portfolio (2038)
Operational Flexibility	Flexible Resource Coverage Ratio	$\frac{\text{Flexible Capacity Available for Max 3–Hour Ramp in each Strategy (2038)}}{\text{Capacity Required for Max 3–Hour Ramp in each Scenario (2038)}}$
	Flexibility Turn Down Factor	$\frac{\text{"Must Run" + "Non–Dispatchable" (2038)}}{\text{Sales (2038)}}$
Valley Economics	Percent Difference in Real Per Capita Income	Percent Difference in Real Per Capita Personal Income Compared to the Base Case (for each scenario)
	Percent Difference in Employment	Percent Difference in Non-Farm Employment Compared to the Base Case

Figure 6-12: Metric Formulas

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The scorecard metrics selected align with TVA's mission as shown in Figure 6-13.

IRP Scorecard Metrics		Low-Cost Reliable Power	TVA Mission Economic Development	Environmental Stewardship
Cost	PVRR ($Bn)	✓	✓	
	System Average Cost ($/MWh)	✓	✓	
	Total Resource Cost ($Bn)	✓		
Risk	Risk/Benefit Ratio	✓		
	Risk Exposure ($Bn)	✓		
Environmental Stewardship	CO2 (MMTons)		✓	✓
	CO2 Intensity (lbs/MWh)		✓	✓
	Water Consumption (MMGallons)			✓
	Waste (MMTons)			✓
	Land Use (Acres)			✓
Operational Flexibility	Flexible Resource Coverage Ratio	✓		
	Flexibility Turn Down Factor	✓		
Valley Economics	Percent Difference in Real Per Capita Income	✓	✓	
	Percent Difference in Employment		✓	

Figure 6-13: Scorecard Alignment Scorecard Design

Chapter 6: Resource Plan Development and Analysis

Scorecard Metric	Scenarios					
	Current Outlook	Economic Downturn	Valley Load Growth	Decarbonization	Rapid DER Adoption	No Nuclear Extensions
PVRR ($Bn)						
Total Resource Cost ($Bn)						
System Average Cost ($/MWh)						
Risk/Benefit Ratio						
Risk Exposure ($Bn)						
CO2 (MMTons)						
CO2 Intensity (lbs/MWh)						
Water Consumption (MMGallons)						
Waste (MMTons)						
Land Use (Acres)						
Flexible Resource Coverage Ratio						
Flexibility Turn Down Factor						
Percent Difference in Real Per Capita Income						
Percent Difference in Employment						

Figure 6-14: Scorecard Template

Once the metrics were selected, the strategy scorecard could be designed. Using a format similar to the 2015 IRP, the scorecard summarizes the performance of an individual planning strategy in each of the scenarios. To evaluate differences within a given scenario, all five scorecards were reviewed. Interpretation of the performance of each strategy is presented in Chapter 7.

6.5 Strategy Assessment Process

Finally, scorecards were populated based on an assessment of overall performance of each strategy in the five metric categories: cost, risk, environmental stewardship, operational flexibility, and Valley economics.

Each metric category was assessed individually and graphics were developed to facilitate interpretation of trends and to identify preliminary observations. Examples of key graphics include a comparison of cost and risk and a comparison of cost and CO_2 emissions to enable investigation of possible trade-offs. These observations guided the development of an action plan for further case analysis.

The strategy assessment graphics, along with information about observations from the IRP study and the action plan, can be found in Chapter 8.

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7 Study Results

This chapter describes the findings of the 2019 IRP. The results for 30 distinct portfolios are presented in this chapter, along with the scorecard measures as described in Chapter 6. Throughout the discussion of results, scenarios are referred to by number and strategies by letter. Portfolios that represent the combination of a scenario and strategy are referred to by the relevant number and letter reference, such as the Current Outlook scenario and the Base Case strategy combination represented as 1A.

Table 7-1: Strategy and Scenario Matrix

	Strategies				
Scenarios	A: Base Case	B: Promote DER	C: Promote Resiliency	D: Promote Efficient Load Shape	E: Promote Renewables
1: Current Outlook	1A	1B	1C	1D	1E
2: Economic Downturn	2A	2B	2C	2D	2E
3: Valley Load Growth	3A	3B	3C	3D	3E
4: Decarbonization	4A	4B	4C	4D	4E
5: Rapid DER Adoption	5A	5B	5C	5D	5E
6: No Nuclear Extensions	6A	6B	6C	6D	6E

7.1 Analysis Results

7.1.1 Firm Requirements and Capacity Gap

The key components of each scenario were translated into a forecast of firm requirements for both summer and winter, based on projected demand and required reserves in each season. The forecast was used to identify the resulting capacity gap and need for power which drove the selection of resources in the capacity planning model.

Figure 7-1 illustrates the firm requirements forecasts for the six scenarios studied in the IRP.

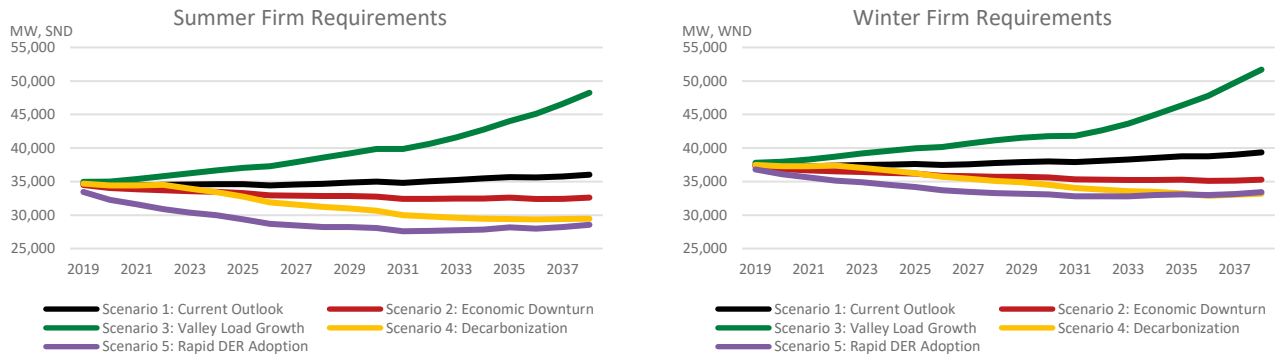


Figure 7-1: Firm Requirements by Scenario – Scenario 6 (No Nuclear Extensions) is the same as the Current Outlook

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Firm requirements were greatest in Scenario 3 and lowest in Scenario 5. The remaining scenarios fell within this range. The shape of the firm requirement curves influenced the type and timing of resource additions in the strategies. The timing of resource additions was a function of the existing system capacity and the impact of the attributes used to define each strategy. Figure 7-2 shows the range of the capacity gaps across the cases.

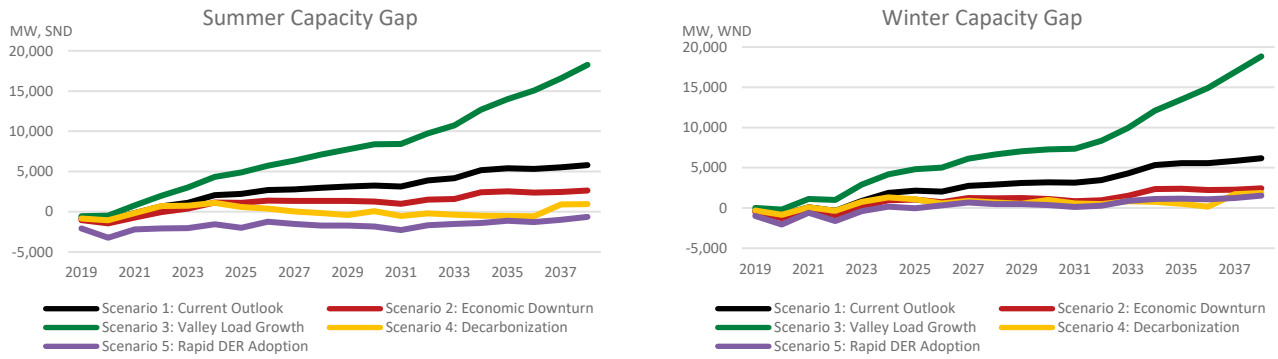


Figure 7-2: Range of Capacity Gaps by Scenario (Capacity Gaps for Scenario 6 (No Nuclear Extensions) are the same as the Current Outlook)

7.1.2 Expansion Plans

Capacity expansion plans by strategy are presented below. Further information on the capacity expansion plans is presented in Appendix G – Capacity Plan Summary Charts.

Figure 7-3 compares the incremental capacity for all 30 cases by 2038. The 'incremental' capacity represents the resources selected to fill the capacity gap referenced above and it includes both resource additions and retirements. The vertical axis is in summer net dependable (SND) megawatts, the capacity that can be applied to firm requirements. While both summer and winter capacity needs and capabilities factored into portfolio optimization, summer capacity results are being shown throughout the document. Thermal resources have higher net dependable capacities in winter due to ambient temperatures, and hydro generation is typically higher in winter than in summer. Additionally, solar resources have higher capacities in summer, while wind resources have higher capacities in winter. The results for each strategy are grouped together, and incremental capacity additions are grouped by resource type (i.e., nuclear, hydro, coal, solar, etc.).

Scenarios 4 and 5 had the lowest demand forecasts and therefore the least amount of incremental capacity. Conversely, Scenario 3 had the highest demand and therefore resulted in the most incremental capacity.

Chapter 7: Study Results

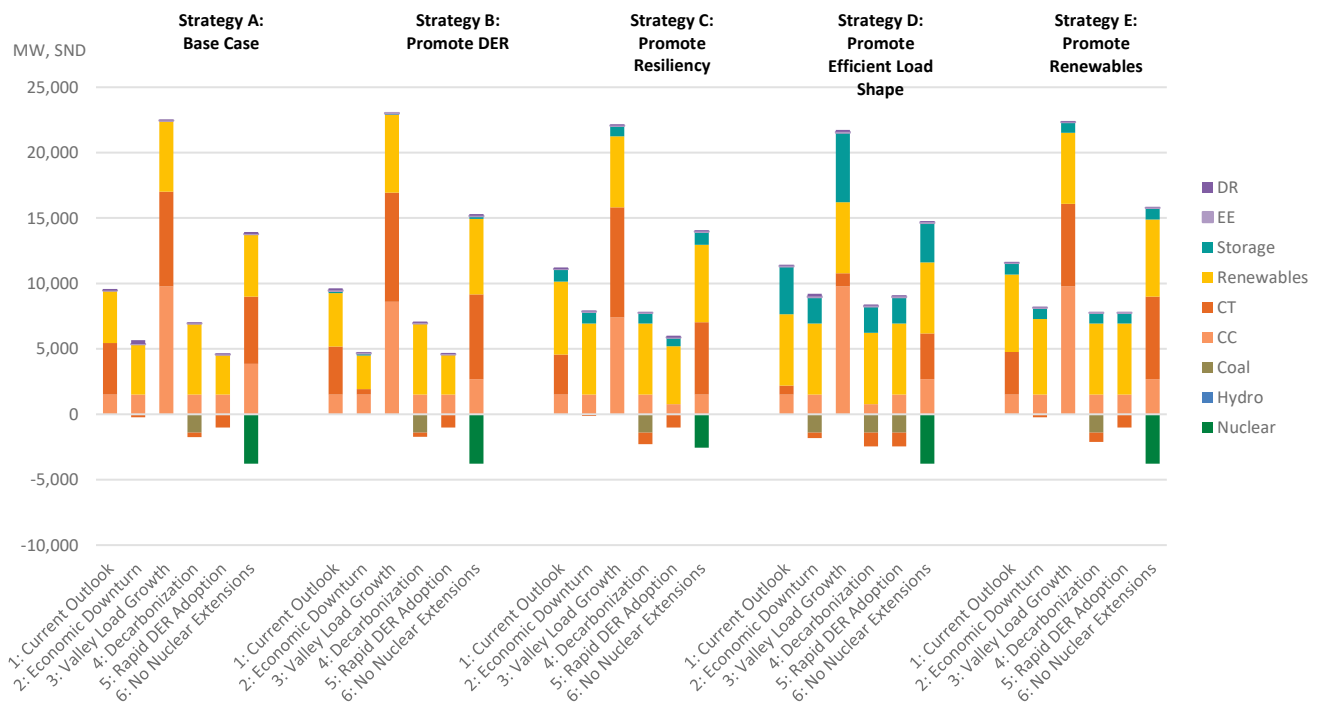


Figure 7-3: Incremental Capacity by 2038 for All 30 Cases

Highlights of capacity additions by 2038 for all 30 cases are summarized below by resource type:

Nuclear: No new nuclear was selected in any portfolio other than in 6C, where two SMRs totaling 1,200 MW were added as part of Strategy C to replace one of three Browns Ferry units. All three Browns Ferry units were retired in all strategies in Scenario 6.

Hydro: No new hydro was selected in any portfolio, driven primarily by the competitiveness of forecasted solar prices.

Coal: No new coal plants were selected. In carbon-constrained and lower load futures, additional coal generation was retired beyond that currently planned, up to about 2,200 MW (including the impact of accelerated retirements) depending on the scenario and strategy combination. Strategy D resulted in the most additional coal retirements.

Natural Gas: Natural gas additions varied more significantly than other resources and depended on the forecasted load in each scenario and the strategic focus. Scenario 3 cases had the highest addition of Gas CT capacity, up to 8,400 MW, while no additional Gas CT capacity was chosen in the Scenario 5 cases. In scenarios with lower load expectations, such as Scenario 2, 4, and 5, some older existing CT capacity was retired. Gas CC capacity additions were similar in Scenario 1 and the declining load scenarios (2, 4 and 5) at 1,500 MW. Scenario 6 cases have 2,500 MW in incremental Gas CC capacity, while Scenario 3 cases have the highest Gas CC expansion ranging from 7,400 to 9,800 MW.

Renewables: Figure 7-3 shows the non-hydro renewable assets in summer net dependable megawatts, which is the amount of firm capacity that can be expected at the system peak. No new wind was selected. Solar expansion is significant in all cases, ranging from 2,600 to 6,000 MW on a summer net dependable capacity basis, or about 4,000 to 9,000 MW of nameplate capacity. Portfolios include varying amounts of utility (single-axis tracking) and distributed solar, as certain strategies (B, C and E) promote distributed solar. Solar expansion is highest, on average, in Strategy E.

Storage: Storage additions range from 0 to 5, 300 MW depending on strategic focus. Most storage additions are utility-scale batteries, with mechanical selected in some instances. Additions are highest in Strategy D, moderately high in Strategies C and E, and relatively small in Strategy B. Without promotion, no storage is added in Strategy A.

EE: The amount of energy efficiency added is consistent within a strategy and ranges from about 20 MW in several strategies to a high of 85 MW in Strategy D. Load forecasts include projections for more efficient electricity usage driven by codes and standards and changes in consumer behavior, with variation across the scenarios as applicable.

DR: The incremental demand response averages about 75 MW across all 30 cases, reaching a high of 300 MW in some cases. These DR additions complement current interruptible pricing products and programs assumed to continue in all cases.

7.1.3 Capacity Plans

The capacity plans (firm supply plus incremental capacity) are presented below. Further information on the capacity plans is presented in Appendix G – Capacity Plan Summary Charts.

Figure 7-4 compares the capacity plans in 2038 for all 30 cases. The capacity plans represent the total resource portfolios available to meet firm requirements, shown in summer net dependable (SND) megawatts, grouped by strategy, and segmented by resource type.

Since Scenarios 4 and 5 have the lowest demand forecasts, these scenarios typically have the lowest capacity. Conversely, Scenario 3 has the highest demand, resulting in the highest capacity.

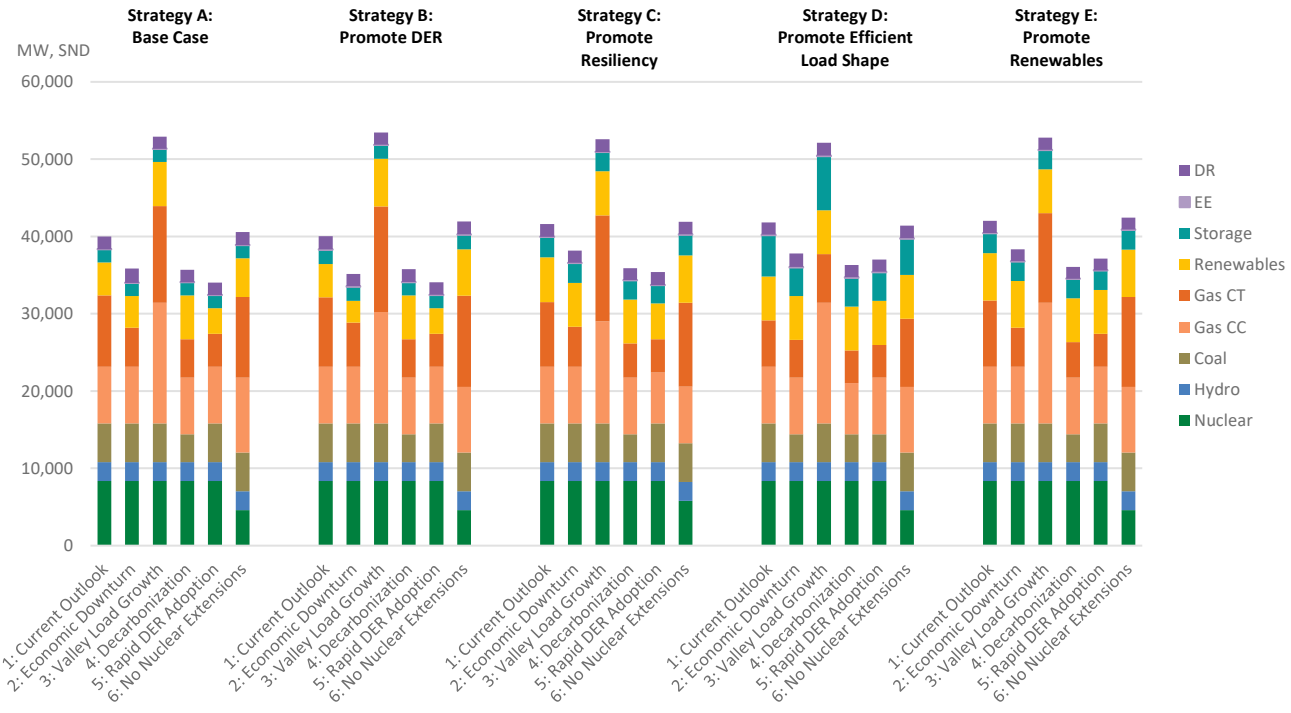


Figure 7-4: Total Capacity in 2038

Highlights of capacity plans in 2038 are summarized below by resource type:

Nuclear: Nuclear capacity is the same in all cases, with the exception of Scenario 6 where Browns Ferry Nuclear units are retired. In that scenario, the Strategy

C portfolio has 1,200 MW higher nuclear capacity than the other portfolios due to the addition of two SMRs in that strategy.

Hydro: Hydro capacity is the same across all portfolios.

Coal: Coal capacity is the same or less than currently planned, as no coal was added. Strategy D results in the lowest coal capacity on average across the scenarios. Scenario 4 results in low coal capacity across all strategies.

Gas: Gas capacity is lower in the declining load scenarios (2, 4 and 5) and is significantly higher in the Scenario 3 cases. Strategy D has the lowest gas additions, driven by the promotion of storage.

Renewables: Solar becomes a significant part of all 30 capacity portfolios, and is highest on average in Strategy E. Portfolios include varying amounts of utility and distributed solar, as certain strategies (B, C and E) promote distributed solar. No additional wind is selected in any portfolio.

Storage: Storage capacity includes the existing Raccoon Mountain Pumped Storage plant, and strategies that promote storage add to this existing storage amount. Strategy D has the highest storage capacity, and Strategies C and E also see increases.

EE: EE capacity is similar across portfolios and highest in Strategy D cases. Load forecasts include projections for more efficient electricity usage driven by codes and standards and changes in consumer behavior, with variation across the scenarios as applicable.

DR: DR capacity includes current interruptible pricing products and programs assumed to continue in all cases, with additions averaging 75 MW and up to 300 MW in some cases.

7.1.4 Energy Plans

Energy plans resulting from the associated capacity plans are presented below. Further information on the energy plans is presented in Appendix G – Capacity Plan Summary Charts.

Figure 7-5 compares the energy plans in 2038 for all 30 cases. The energy plans represent the energy expected from the economic dispatch of the resources available in each capacity plan, shown in terawatt-hours (TWh), grouped by strategy, and segmented by resource type.

Energy patterns across strategies and scenarios generally vary for similar reasons as noted in the discussion of capacity plans. Nuclear generation is the same in most portfolios, except for Scenario 6 cases, and hydro generation is the same in all portfolios. Coal generation reflects no additional coal but some retirements, and is the lowest on average in Strategies C and D and in Scenario 4 cases. Gas generation is similar on average across strategies, and is appreciably higher in Scenario 3 cases. Solar generation is a larger part of the portfolio in all cases, and is highest in Strategy E. Strategy D results in the highest generation (discharge) from storage, followed by Strategies C and E. Finally, energy contribution of EEDR is modest overall and highest in Strategy E.

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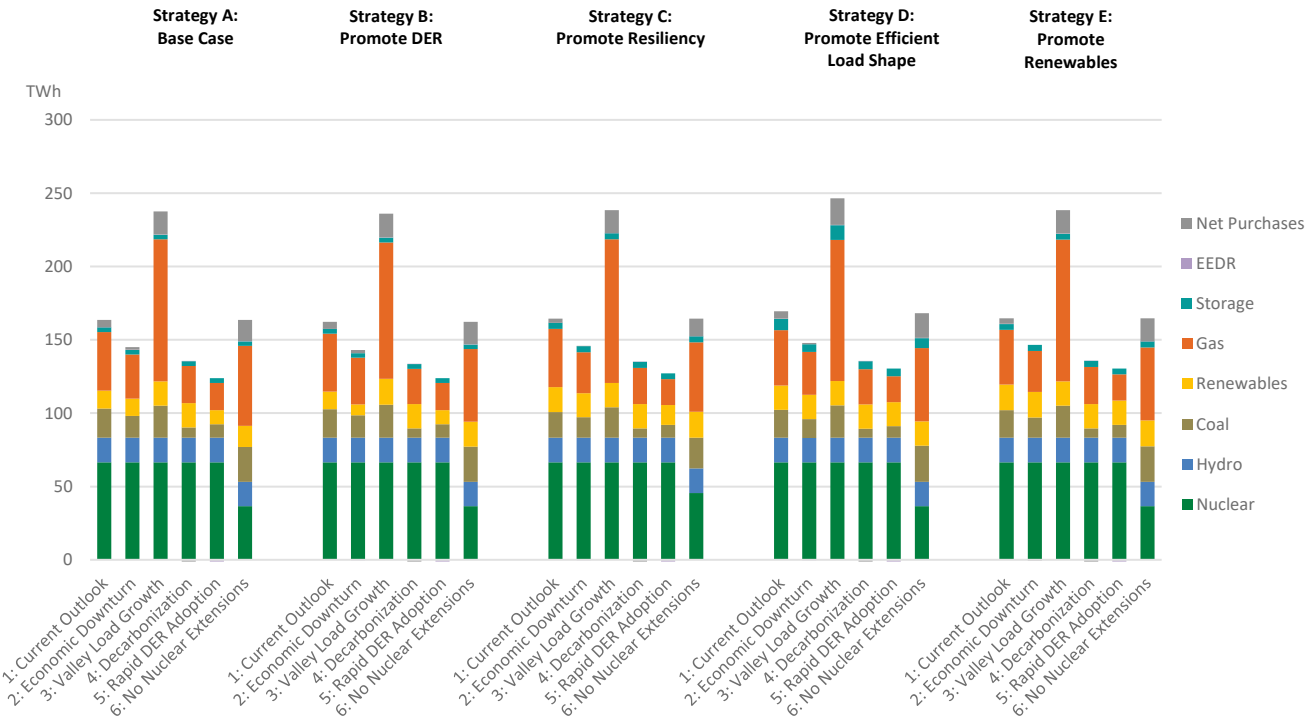


Figure 7-5: Total Energy in 2038

7.1.5 Solar and Storage Additions

As described in Chapter 5, both utility and distributed scale options for solar and storage resources are offered in the 2019 IRP. The approach used to model accelerated adoption of distributed resources using an incentive mechanism is discussed further in Appendix C. Figure 7-6 shows incremental solar and storage capacity by 2038, delineating additions as utility or distributed scale. Strategy D results in the highest combined levels of solar and storage at all scales due to a high promotion of storage, followed by Strategies C and E. As the Decarbonization and Rapid DER Adoption scenarios already include a high penetration of distributed solar and storage, there is no ability to incent further adoption through a TVA strategy.

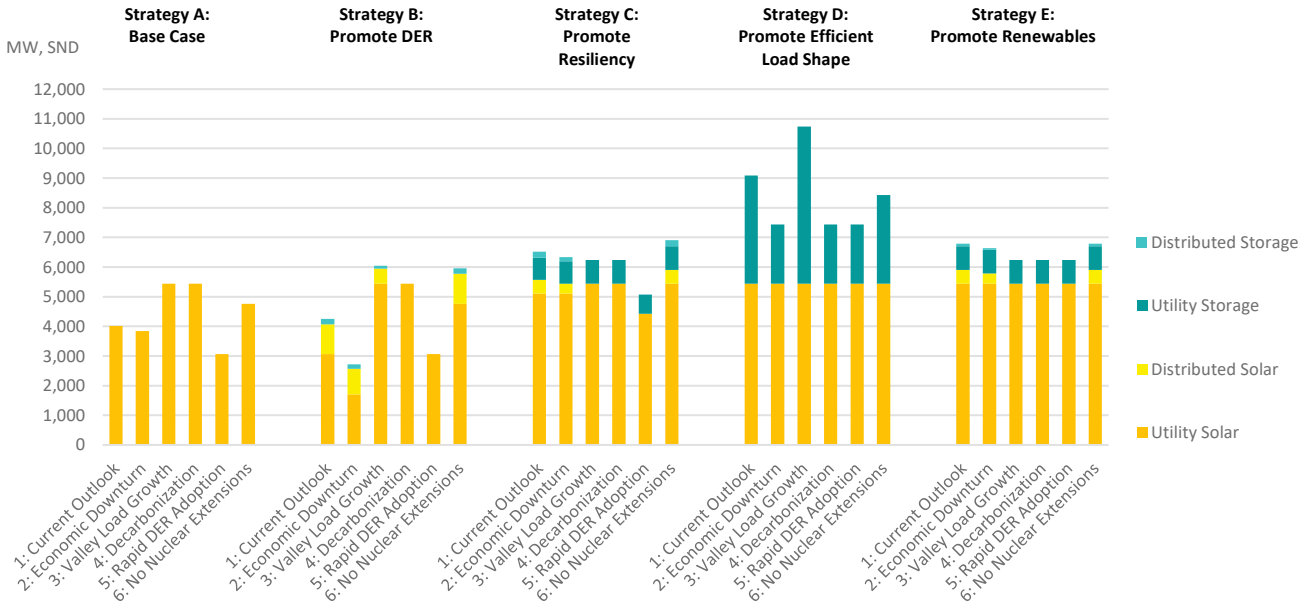


Figure 7-6: Incremental Solar and Storage Capacity by 2038

7.1.6 Nameplate Solar Additions

Another way to look at solar additions is by the nameplate capacity, or designed maximum output under ideal conditions. Figure 7-7 shows the nameplate solar additions across the strategies and scenarios. Solar additions are highest on average in Strategy E, followed closely by Strategies C and D. Strategies A and B have a similar level of solar additions on average.

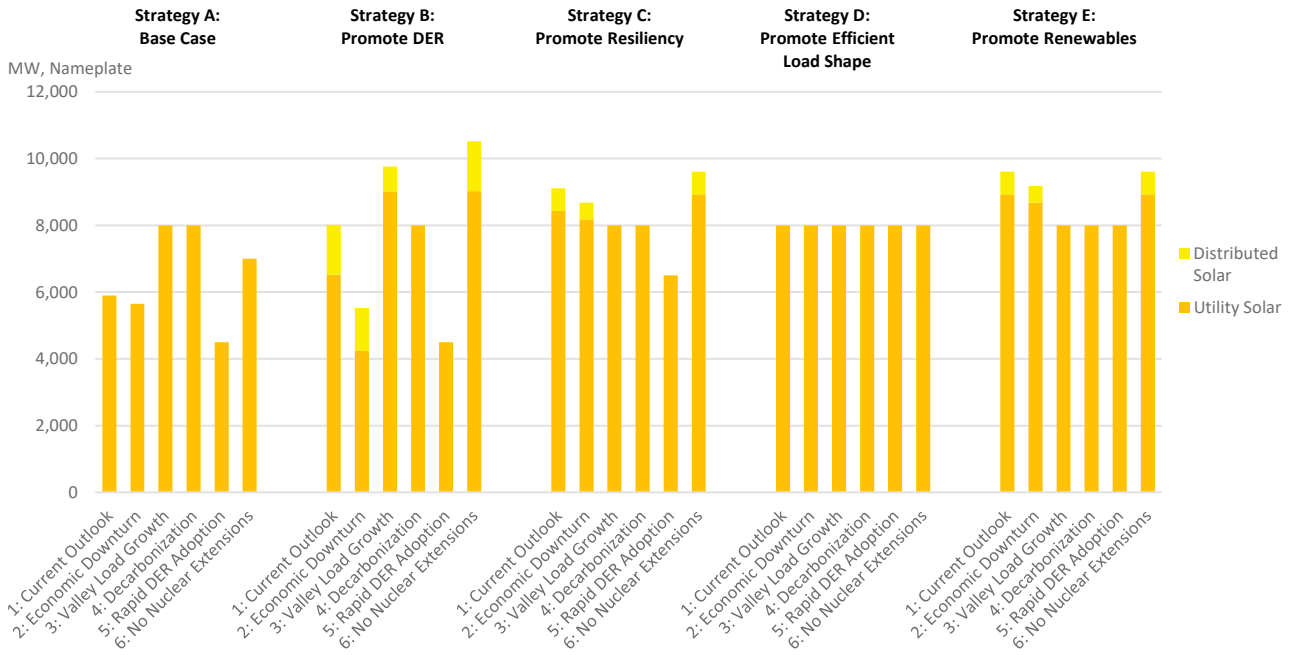


Figure 7-7: Incremental Solar Nameplate Capacity by 2038

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7.1.7 Thermal Additions

The vast majority of thermal additions across portfolios were natural gas. Several new natural gas options were offered in the 2019 IRP, including aeroderivatives (smaller, highly flexible CTs) and a distributed gas option (combined heat and power, or CHP). The approach used to model accelerated adoption of CHP is discussed further in Appendix C. Figure 7-8 shows incremental gas capacity by 2038, delineating additions as CC, Frame CT, Aero CT, or CHP. Strategy D has the lowest gas additions overall, while Strategy C swaps Frame CTs for Aero CTs due to the promotion of small, agile resources in that case. In Scenario 6, two 600 MW SMR units are promoted in Strategy C to replace one Browns Ferry nuclear unit.

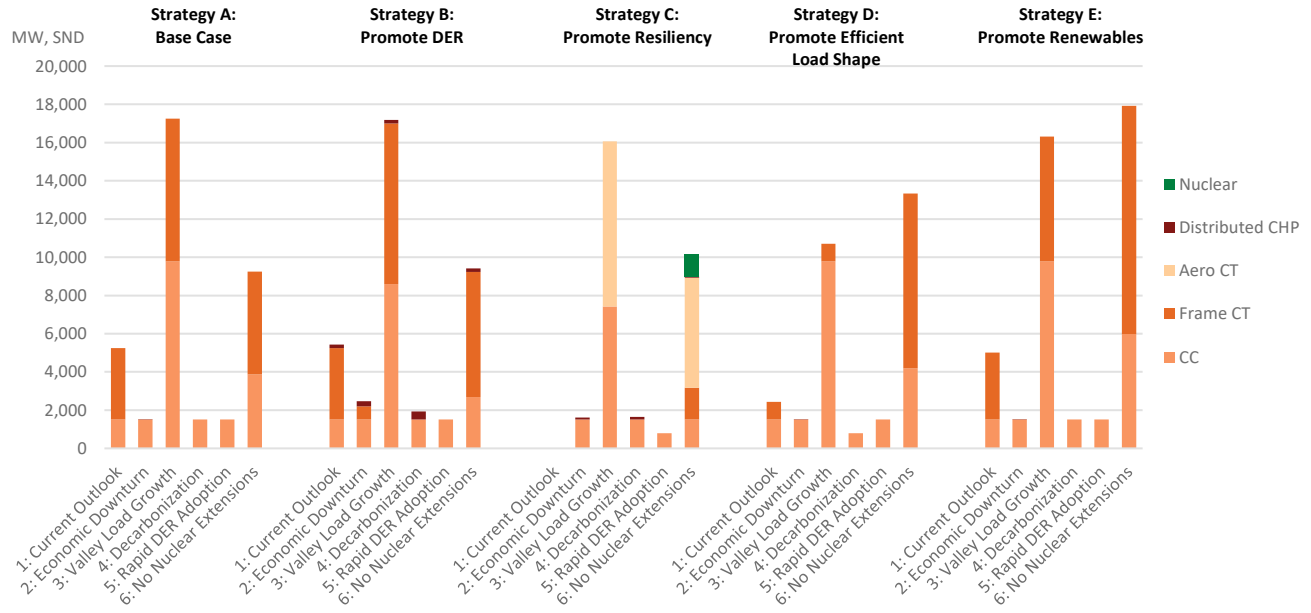


Figure 7-8: Incremental Thermal Capacity by 2038

7.1.8 Distributed Energy Resource Additions

Given the focus on exploring distributed resources in this IRP, another interesting view is a summary of distributed energy resource additions resulting from incentives through a TVA strategy, beyond what occurs behind the meter in any scenario. Figure 7-9 shows incremental DER capacity by 2038, with delineations for distributed solar, distributed storage, CHP, and EEDR. Incremental DER capacity is highest in Strategy B, as might be expected, but is also higher in some of the Strategy C and E cases.

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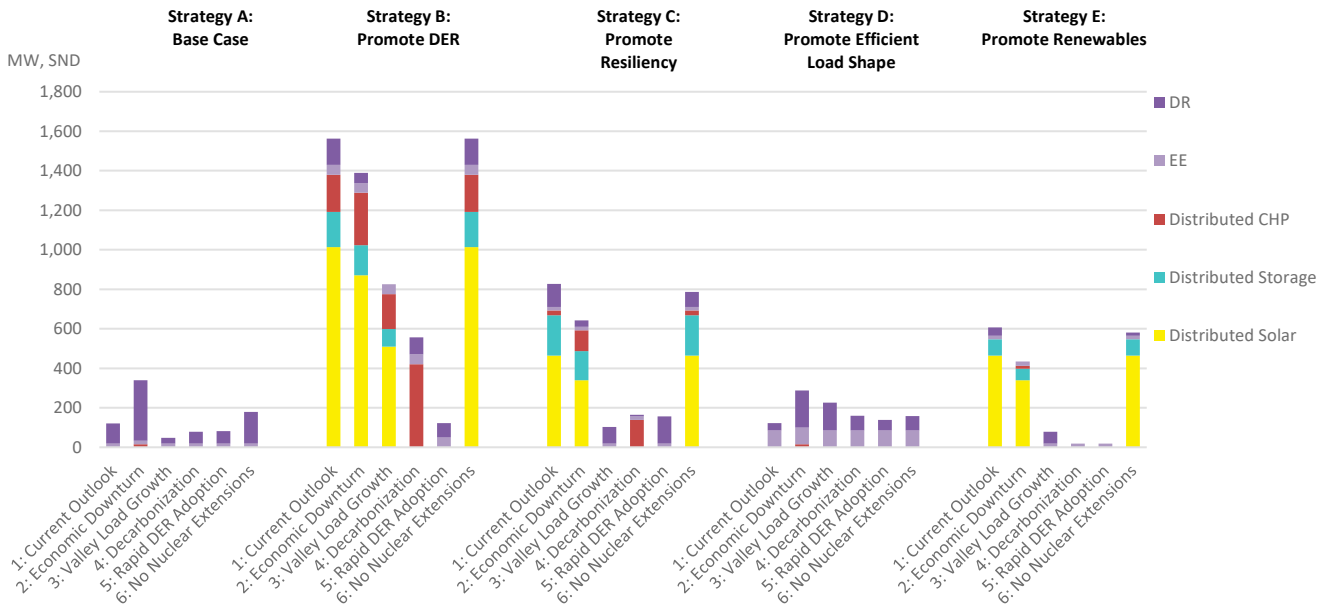


Figure 7-9: Incremental DER Capacity by 2038

7.1.9 Programmatic DER Additions (EEDR and Beneficial Electrification)

Programmatic options for energy efficiency (EE), demand response (DR), and beneficial electrification (BE) are offered as resource options in all strategies and are promoted to the greatest extent in Strategy D. Figures 7-10 and 7-11 summarize the incremental EEDR and BE capacity in Strategy D at several points in time throughout the 20-year study period. Even in strategies where programmatic DER has little or no incentive, similar patterns play out over time but at generally lower levels.

Regarding EE, programs related to reducing energy consumption for residential, commercial and industrial entities are selected early in the study period. As the impacts of codes and standards materialize in the load forecast and consumer behaviors evolve, there is less need for TVA programmatic EE. The competitiveness of solar prices also played a role in driving less need for EE. There is the potential to expand EE programs for low-income residential consumers, who have less opportunity to adopt energy efficient technologies. These programs are expanded throughout the Valley and incented highly in Strategy D. Cumulative capacity from this program increases through time, leveling out toward the end of the study period.

Relative to DR, programs related to reducing energy consumption at the TVA system peak are also selected early in the study period. DR resources include programs that aggregate and control residential space conditioning and water heating around the peak. In the latter half of the study period, impacts begin to roll off and other resources are selected to meet peaking needs, especially storage that is highly incented in this case.

For BE, a similar pattern is exhibited as for EEDR, excluding the low-income program. Programs that target electrification which help optimize the load shape by filling valleys and shaving peaks are selected early in the study period. Commercial & Industrial options are most attractive given their relatively lower cost. Levels of BE selected are comparatively higher in general than EE and vary more across scenarios. The highest levels of BE occur in Scenario 5, where differences in peaks and valleys in the load shape are the most extreme.

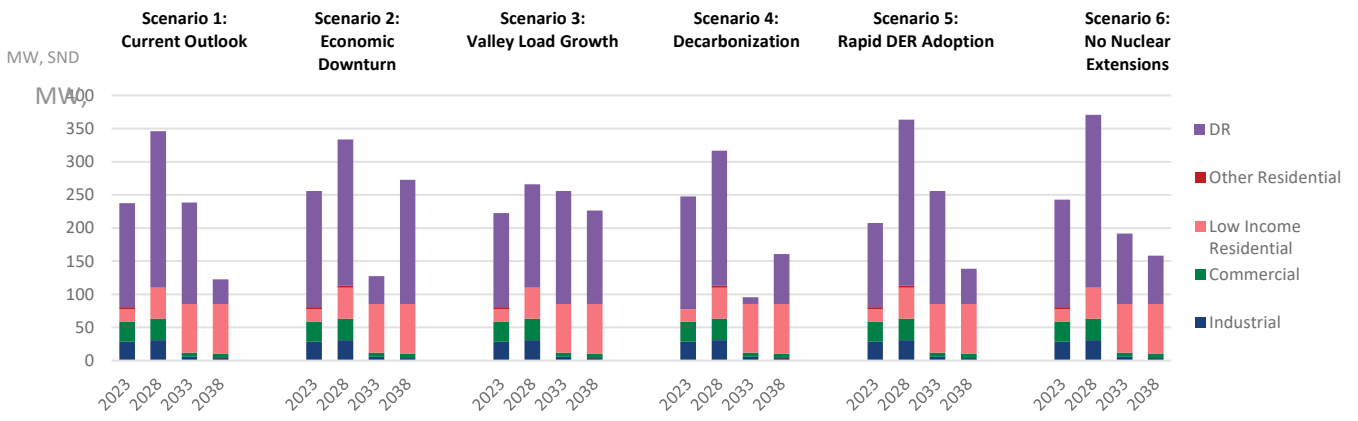


Figure 7-10: Incremental EEDR Capacity by 2038

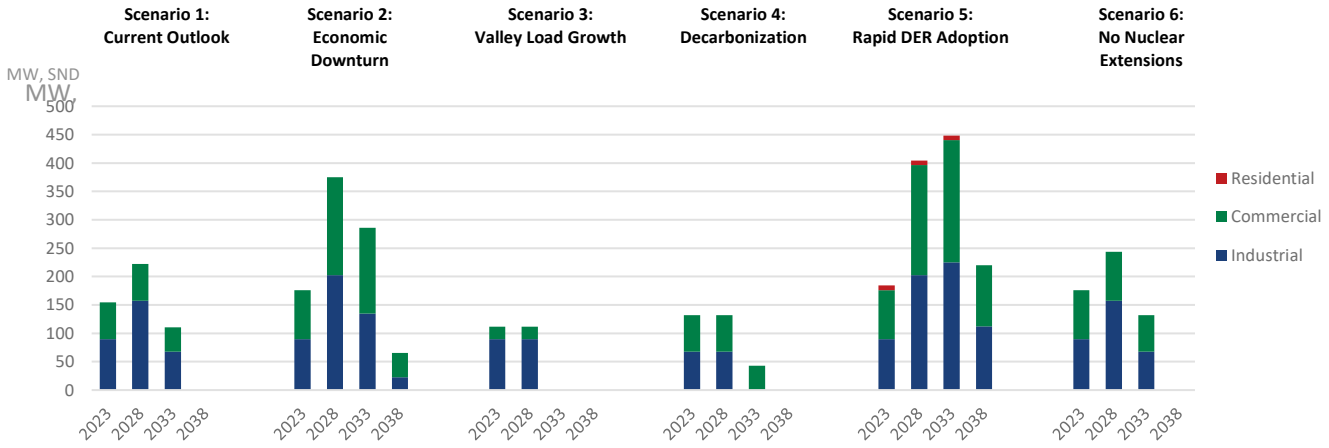


Figure 7-11: Incremental BE Capacity by 2038

7.1.10 Summaries by Strategy

Strategy A: Base Case is TVA's least-cost optimization plan that applies no additional incentives or targets. Resources are chosen economically to meet the reserve margin constraint for reliability.

Figure 7-12 presents the modeled capacity results for Strategy A. The capacity portfolios show the summer net dependable megawatts in 2038. The **nuclear** portfolio is the same in all scenarios, except for Scenario 6 where Browns Ferry units are retired. **Hydro** capacity is the same in all cases. **Coal** capacity is the same in all scenarios, except for Scenario 4, where carbon regulation leads to additional coal retirements. **Solar** assets are added beginning in the mid-2020 time frame, and continue to be added throughout most of the planning horizon. Including hydro, renewables account for 18 percent of the capacity portfolio on average. Natural **gas** assets increase over time, beginning with Gas CC additions that could be achieved through renewal of existing contracts, acquisitions or builds. These are augmented by Gas CT additions in Scenario 3 and 6 cases. With current cost projections and no promotion in Strategy A, no **storage** appears in any portfolios. **Energy efficiency** increases modestly in all scenarios, with impacts lessened as efficiencies from codes and standards increase. **Demand response** increases similarly across scenarios, with some differentiation due to load shape and strategic focus.

Figure 7-13 shows the energy portfolios that correspond to the capacity charts in Figure 7-12.

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Nuclear energy remains the same over time across the cases, with the exception of the Scenario 6 case where energy from the retired Browns Ferry units is replaced primarily with solar and gas generation. Hydro energy remains the same across portfolios. Coal generation decreases over the planning horizon as units are retired and declines further in lower load cases, especially in Scenario 4. Solar generation increases substantially in all cases, with the highest increases seen in Scenario 3 and 4 portfolios. Including hydro, renewables account for 20 percent of total generation on average. Natural gas generation varies with load and strategic focus, with the highest gas generation seen in the Scenario 3 and 6 cases. Demand response, which produces low energy volumes, has been combined with the energy efficiency into one group termed EEDR. Incremental EEDR contributes a small amount to the portfolio, with increasing impacts from codes and standards reflected in the load forecast without additional TVA incentives. Strategy A results in 61 percent carbon-free generation in 2038 on average.

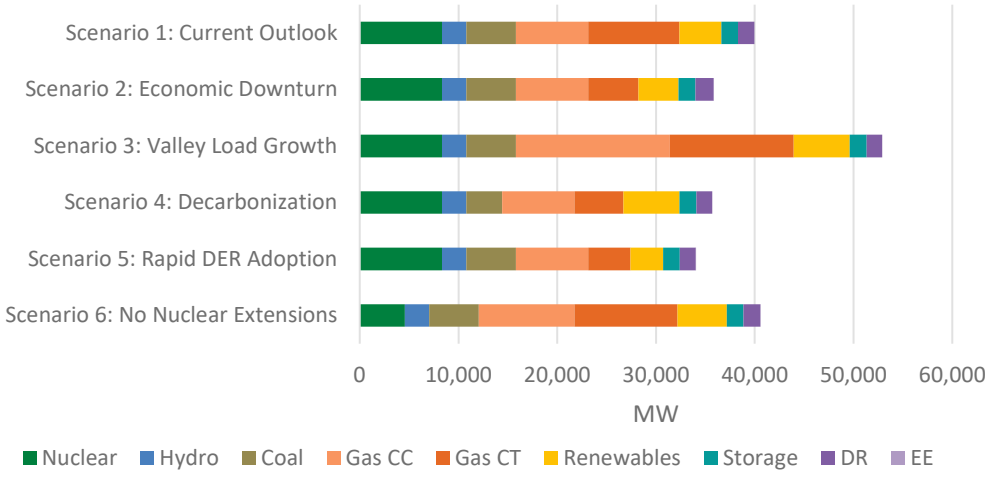


Figure 7-12: Capacity (Summer Net Dependable Megawatts) in 2038 for Strategy A by Scenario

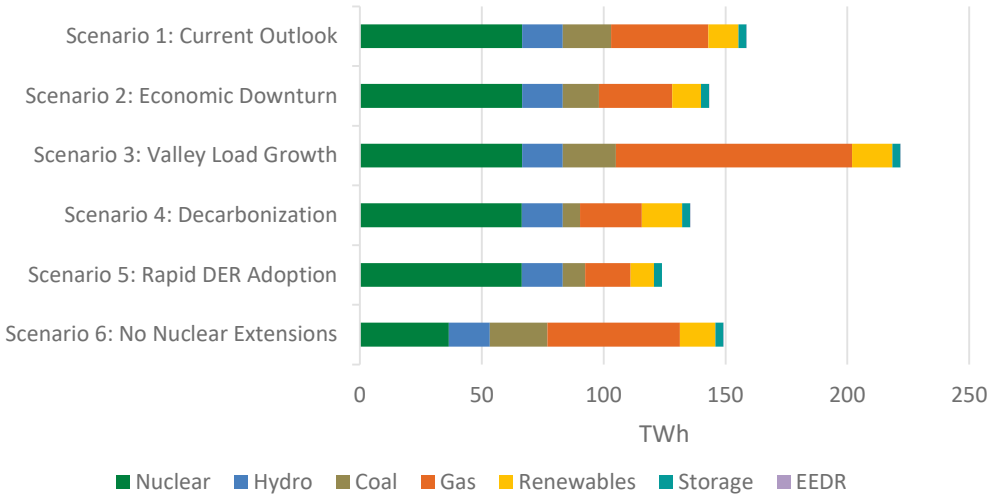


Figure 7-13: Energy (Terawatt Hours) in 2038 for Strategy A by Scenario

Strategy B: Promote DER focuses on increasing the pace of DER adoption by incenting distributed solar and storage, combined heat and power, energy efficiency and demand response. Promotions are first applied, and then the balance of the system is optimized in a least-cost manner. The approach used to model increased adoption through an incentive mechanism is discussed further in Appendix C.

Figure 7-14 shows the capacity resources added by 2038 in Strategy B across the six scenarios. The results from this strategy are very similar to Strategy A with a few notable differences. Distributed solar is promoted in this strategy and generally replaces a portion of lower cost utility solar. Distributed storage is also promoted, replacing a portion of demand response but at a higher cost. Finally, CHP is promoted, driving slightly lower utility-scale gas additions.

Figure 7-15 shows how the energy portfolios for Strategy B play out driven by the capacity changes and other factors in the scenarios. Including hydro, renewables account for 20 percent of total generation on average. Strategy B results in 61 percent carbon-free generation in 2038 on average, similar to Strategy A.

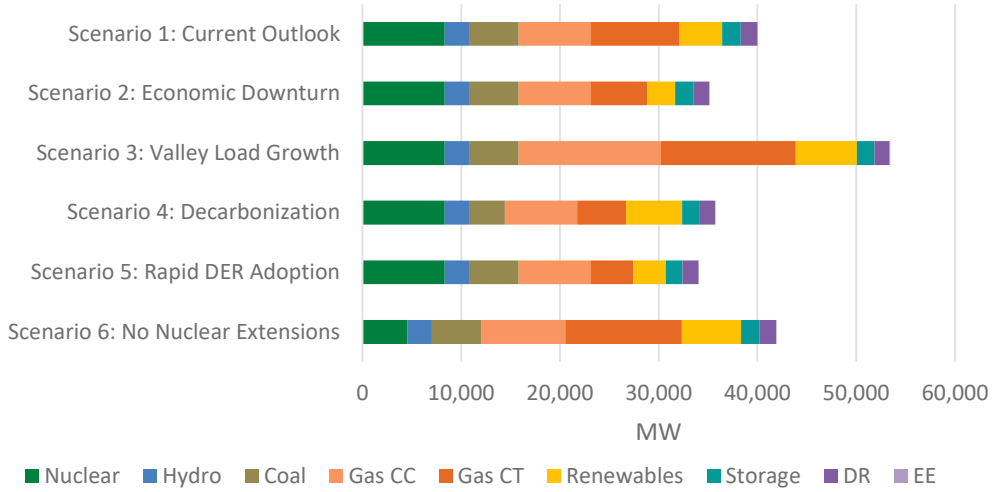


Figure 7-14: Capacity (Summer Net Dependable Megawatts) in 2038 for Strategy B by Scenario

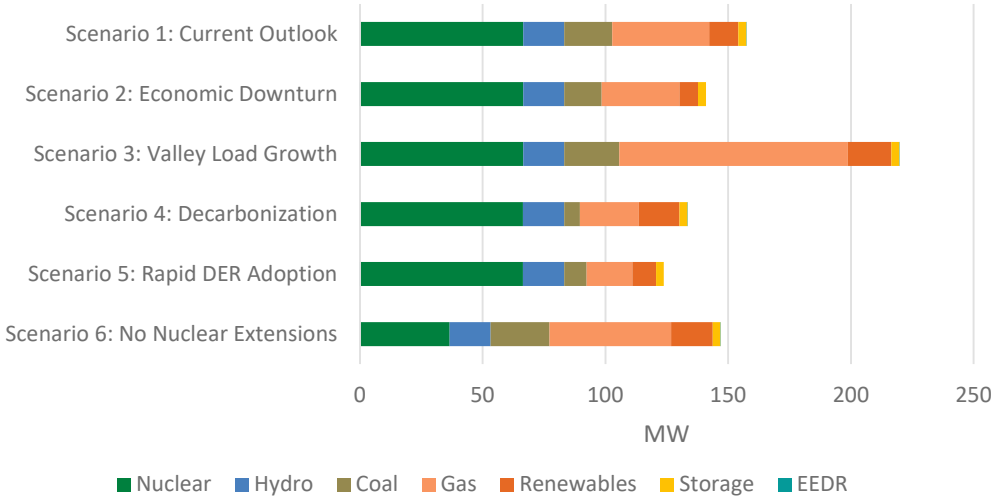


Figure 7-15: Energy (Terawatt Hours) in 2038 for Strategy B by Scenario

Strategy C: Promote Resiliency incents higher adoption of small, agile capacity to increase the operational flexibility of TVA's power system, while also improving the ability to respond locally to short-term disruptions. Promotions are first applied, and then the balance of the system is optimized in a least-cost manner. The approach used to model increased adoption through an incentive mechanism is discussed further in Appendix C.

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Figure 7-16 presents the total capacity portfolios in 2038 for Strategy C. The hydro portfolio is the same as in Strategy A. Nuclear capacity is the same as in Strategy A, with the exception of Scenario 6 where 1,200 MW of SMRs are added to replace one Browns Ferry nuclear unit. Coal capacity is the same across all scenarios, except for Scenario 4 in which carbon regulation leads to additional coal retirements. When more coal is retired, solar capacity increases at both utility and distributed scales. Storage additions are promoted, resulting in somewhat lower gas capacity additions on average. EEDR volumes remain similar across the scenarios in this strategy.

Figure 7-17 shows the resulting energy portfolios for Strategy C driven by the capacity changes and other factors in the scenarios. Including hydro, renewables account for 22 percent of total generation on average. Strategy C results in 63 percent carbon-free generation in 2038 on average, compared to 61 percent in Strategy A.

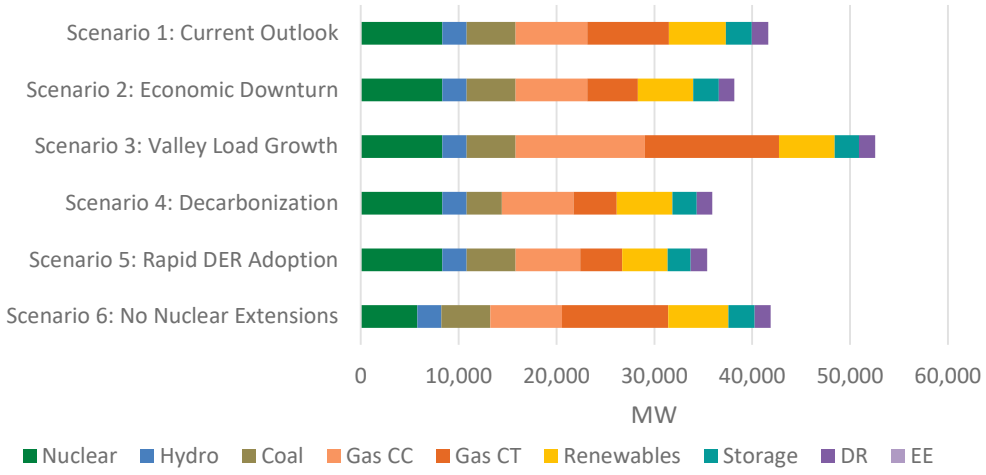


Figure 7-16: Capacity (Summer Net Dependable Megawatts) in 2038 for Strategy C by Scenario

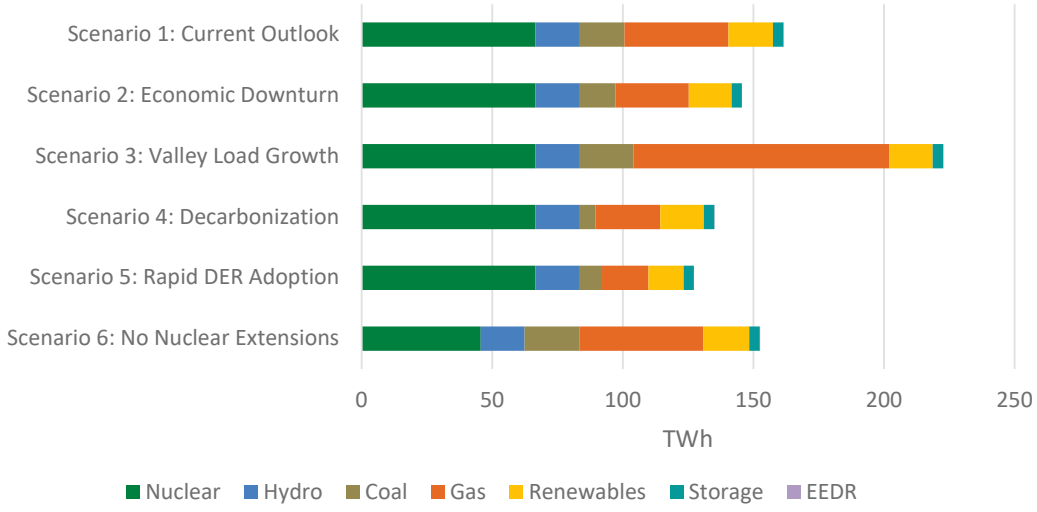


Figure 7-17: Energy (Terawatt Hours) in 2038 for Strategy C by Scenario

Strategy D: Promote Efficient Load Shape incents targeted electrification, demand response, and energy management to optimize load shape, including programs targeting low-income energy efficiency. Promotions are first applied, and then the balance of the system is optimized in a least-cost manner.

Figure 7-18 shows the capacity resources added by 2038 in Strategy D across the six scenarios. The **nuclear** and **hydro** portfolios are the same as in Strategy A. This strategy results in the highest amount of **coal** retirements on average. That capacity is replaced with a combination of solar, storage and gas additions, with a high penetration of **solar** achieved in all cases. **Storage** is promoted to the greatest degree in this strategy, resulting in the highest storage capacity overall. The storage additions drive the lowest need for gas capacity, especially CT peaking units. The highest **EE** volumes are seen in this strategy, and **DR** volumes are similar to Strategy A by 2038, as the promotion of storage meets peaking needs.

Figure 7-19 shows the corresponding energy portfolios for Strategy D driven by the capacity changes and other factors in the scenarios. Including hydro, renewables account for 22 percent of total generation on average. Strategy D results in 61 percent carbon-free generation, similar to Strategy A.

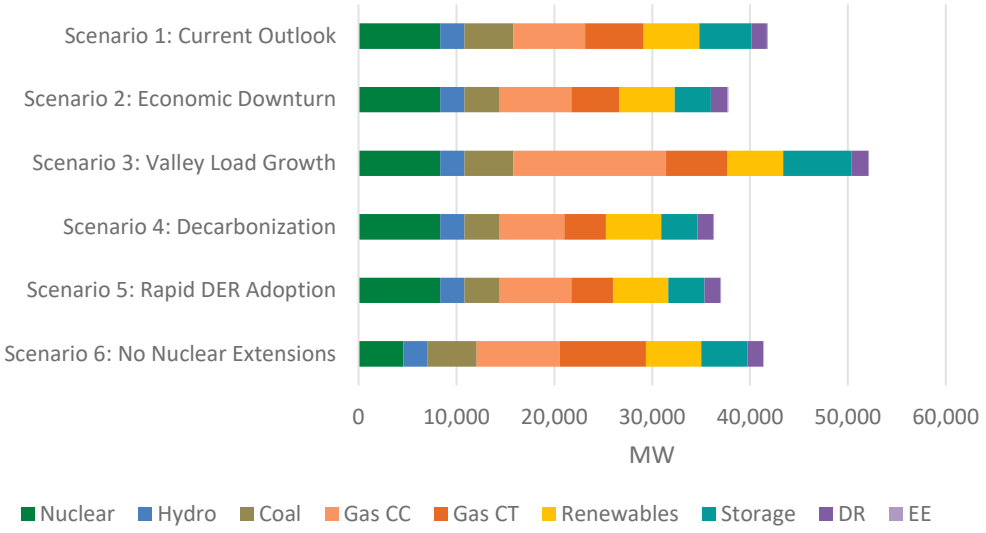


Figure 7-18: Capacity (Summer Net Dependable Megawatts) in 2038 for Strategy D by Scenario

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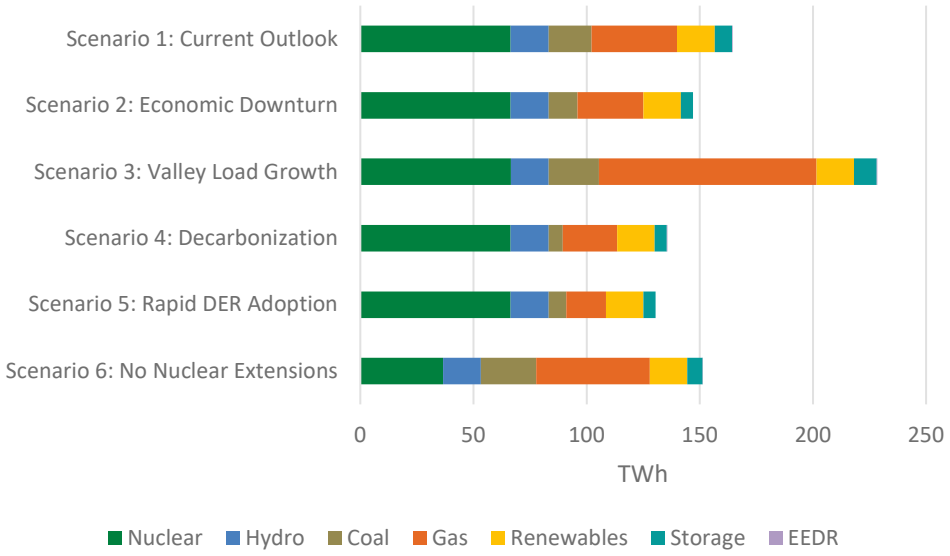


Figure 7-19: Energy (Terawatt Hours) in 2038 for Strategy D by Scenario

Strategy E: Promote Renewables incents renewables at all scales to meet growing prospective or existing customer demands for renewable energy. Promotions are first applied, and then the balance of the system is optimized in a least-cost manner. The approach used to model increased adoption through an incentive mechanism is discussed further in Appendix C.

Figure 7-20 presents the total capacity portfolios in 2038 for Strategy E. The nuclear and hydro portfolios are the same as in Strategy A. Coal capacity is the same across all scenarios, except for Scenario 4 in which carbon regulation leads to additional coal retirements. The highest levels of solar additions are seen in this strategy across all scenarios, averaging nearly 6,000 MW summer NDC and 9,000 MW nameplate. Including hydro, renewables account for 20 percent of the capacity portfolio on average. Storage is also promoted, resulting in a comparable level of storage additions as in Strategy C, and similarly reducing the need for gas capacity additions. EEDR volumes remain similar across the scenarios in this strategy, also resembling Strategy C.

Figure 7-21 shows the corresponding energy portfolios for Strategy E driven by the capacity changes and other factors in the scenarios. Including hydro, renewables account for 22 percent of total generation on average. Strategy E results in 62 percent carbon-free generation in 2038 on average, compared to 61 percent in Strategy A.

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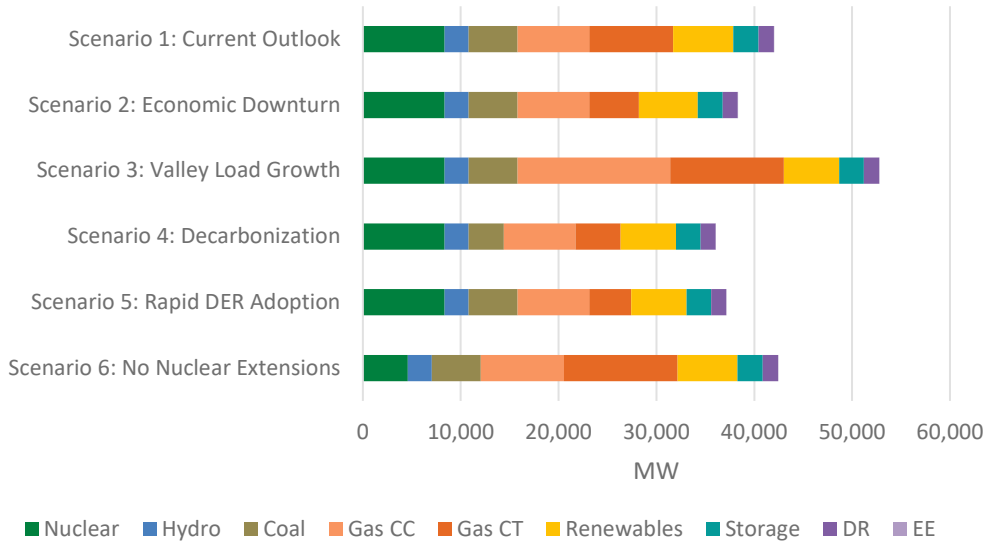


Figure 7-20: Capacity (Summer Net Dependable Megawatts) in 2038 for Strategy E by Scenario

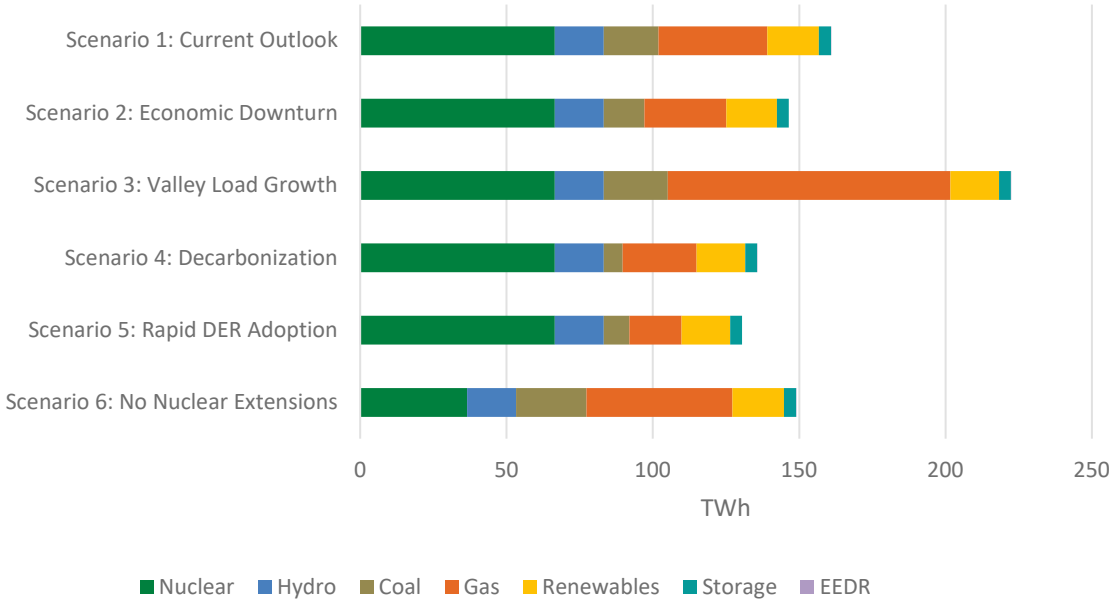


Figure 7-21: Energy (Terawatt Hours) in 2038 for Strategy E by Scenario

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7.2 Scorecard Results

The fully populated scorecards for each of the five strategies are included in this section (see Chapter 6 for a discussion about the development of the scorecard template). Each strategy scorecard contains the metric values for that particular strategy in each of the six scenarios modeled in the IRP. The metric values are based on the combination of the portfolio optimization and uncertainty analysis work applied to each of the strategies under consideration.

The scorecard for Strategy A (Base Case) is shown in Figure 7-22. The highest PVRR is the Valley Load Growth due to the large build-out to meet firm requirements. The highest system average cost is the Rapid DER Adoption. The Valley Load Growth has the highest risk exposure driven by higher loads, and has the highest CO_2 emissions, water consumption, solid waste production, and land use. Strategy A has the best flexibility performance across all scenarios. Because the Valley Economics metric uses Strategy A as the reference case in computing impacts, the change in per capita income is 0 percent for this strategy.

Strategy A (Base Case)		Scenarios					
		1	2	3	4	5	6
Cost	PVRR ($Bn)	110	105	125	109	99	111
	System Average Cost Years 1-20 ($/MWh)	70	71	70	75	76	71
	Total Resource Cost ($Bn)	110	106	125	109	100	112
Risk	Risk/Benefit Ratio	1.06	1.00	1.06	1.04	0.94	1.08
	Risk Exposure ($Bn)	119	113	137	118	106	121
Environmental Stewardship	CO2 (MMTons)	43	36	52	31	23	46
	CO2 Intensity (lbs/MWh)	541	489	552	427	361	570
	Water Consumption (MMGallons)	54,053	51,136	58,823	50,276	45,678	51,895
	Waste (MMTons)	2,269	1,865	2,283	1,272	1,177	2,371
	Land Use (Acres)	43,365	41,245	59,647	58,400	32,850	51,730
Operational Flexibility	Flexible Resource Coverage Ratio	1.98	1.37	2.17	0.98	1.14	2.22
	Flexibility Turn Down Factor (2038)	50%	56%	36%	66%	63%	32%
Valley Economics	Percent Difference in Per Capita Income	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Percent Difference in Employment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Figure 7-22: Strategy A Scorecard

The scorecard for Strategy B (Promote DER) is shown in Figure 7-23. These results are very similar to those shown for Strategy A across the metrics with the exception of total resource cost. Higher total resource cost is driven by the promotion of distributed resources that tend to have less economies of scale.

Chapter 7: Study Results

Strategy B (Promote DER)		Scenarios					
		1	2	3	4	5	6
Cost	PVRR ($Bn)	110	105	124	109	99	111
	System Average Cost Years 1-20 ($/MWh)	70	71	70	75	76	71
	Total Resource Cost ($Bn)	119	115	131	116	100	120
Risk	Risk/Benefit Ratio	1.05	1.00	1.06	1.03	0.94	1.07
	Risk Exposure ($Bn)	119	113	137	118	106	121
Environmental Stewardship	CO2 (MMTons)	43	36	52	30	23	45
	CO2 Intensity (lbs/MWh)	537	488	550	418	361	561
	Water Consumption (MMGallons)	53,958	51,133	58,675	48,706	45,697	51,637
	Waste (MMTons)	2,256	1,861	2,318	1,271	1,176	2,354
	Land Use (Acres)	33,145	18,980	59,627	58,400	32,850	51,710
Operational Flexibility	Flexible Resource Coverage Ratio	1.97	1.71	2.11	0.98	1.14	2.03
	Flexibility Turn Down Factor (2038)	50%	53%	36%	66%	63%	34%
Valley Economics	Percent Difference in Per Capita Income	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Percent Difference in Employment	0.01%	0.00%	0.00%	0.01%	0.10%	0.00%

Figure 7-23: Strategy B Scorecard

The scorecard results for Strategy C (Promote Resiliency) are shown in Figure 7-24. PVRR and system average costs are slightly higher than Strategy A and B due in part to promotion of storage. Strategy C has moderate financial risk compared to other strategies. This strategy has the lowest environmental impact overall, due to the largest amount of coal retirements across scenarios, but high land use due to the large amount of solar expansion. Flexibility scores are comparable to the results for Strategies D and E.

Strategy C (Promote Resiliency)		Scenarios					
		1	2	3	4	5	6
Cost	PVRR ($Bn)	111	105	126	109	99	116
	System Average Cost Years 1-20 ($/MWh)	71	71	71	75	76	74
	Total Resource Cost ($Bn)	114	109	126	112	100	118
Risk	Risk/Benefit Ratio	1.05	0.98	1.06	1.04	0.94	1.07
	Risk Exposure ($Bn)	120	113	138	118	106	125
Environmental Stewardship	CO2 (MMTons)	42	36	53	31	23	43
	CO2 Intensity (lbs/MWh)	529	477	561	424	358	531
	Water Consumption (MMGallons)	53,343	50,708	57,456	48,878	45,582	51,878
	Waste (MMTons)	2,196	1,843	2,363	1,266	1,162	2,300
	Land Use (Acres)	56,570	54,810	59,679	58,464	47,502	59,711
Operational Flexibility	Flexible Resource Coverage Ratio	1.65	1.29	2.09	1.04	1.02	1.75
	Flexibility Turn Down Factor (2038)	53%	59%	36%	66%	66%	40%
Valley Economics	Percent Difference in Per Capita Income	-0.01%	0.00%	-0.02%	0.00%	0.00%	-0.03%
	Percent Difference in Employment	0.01%	0.01%	0.00%	0.01%	0.10%	0.01%

Figure 7-24: Strategy C Scorecard

The Strategy D (Promote Efficient Load Shape) scorecard is shown in Figure 7-25. This strategy has the highest PVRR and system average cost due to the highest promotion of storage and is mid-range among the strategies in total resource cost. Strategy D has the highest risk exposure across the strategies. It has low environmental impact overall, but higher land use due to a large solar expansion. Flexibility scores are comparable to the results for Strategies C and E.

Strategy D (Promote Effiicent Load Shape)		Scenarios					
		1	2	3	4	5	6
Cost	PVRR ($Bn)	111	107	128	110	101	113
	System Average Cost Years 1-20 ($/MWh)	71	72	72	76	77	72
	Total Resource Cost ($Bn)	112	108	129	111	102	114
Risk	Risk/Benefit Ratio	1.02	0.97	1.04	1.02	0.93	1.07
	Risk Exposure ($Bn)	121	115	141	120	107	123
Environmental Stewardship	CO2 (MMTons)	42	36	53	30	23	44
	CO2 Intensity (lbs/MWh)	531	475	557	422	351	547
	Water Consumption (MMGallons)	53,746	50,658	58,999	48,627	45,402	51,363
	Waste (MMTons)	2,229	1,849	2,386	1,235	1,137	2,367
	Land Use (Acres)	59,034	58,560	60,091	58,560	58,560	59,189
Operational Flexibility	Flexible Resource Coverage Ratio	1.60	1.39	1.79	1.15	1.13	1.83
	Flexibility Turn Down Factor (2038)	53%	59%	36%	66%	69%	34%
Valley Economics	Percent Difference in Per Capita Income	-0.01%	-0.02%	-0.09%	-0.02%	-0.02%	-0.01%
	Percent Difference in Employment	0.02%	0.01%	-0.06%	0.01%	0.11%	0.00%

Figure 7-25: Strategy D Scorecard

Strategy E (Promote Renewables) metric values are shown in Figure 7-26. PVRR and system average costs are slightly higher than Strategy A and B. Similar to Strategy C, Strategy E has moderate financial risk compared to other strategies. It has low environmental impact overall, but higher land use due to a large solar expansion. Flexibility scores are comparable to the results for Strategies C and D.

Strategy E (Promote Renewables)		Scenarios					
		1	2	3	4	5	6
Cost	PVRR ($Bn)	110	105	125	109	100	112
	System Average Cost Years 1-20 ($/MWh)	70	71	70	75	76	71
	Total Resource Cost ($Bn)	113	108	125	109	100	114
Risk	Risk/Benefit Ratio	1.04	0.98	1.06	1.04	0.93	1.07
	Risk Exposure ($Bn)	119	113	137	118	106	121
Env Stewardship	CO2 (MMTons)	42	35	53	31	23	44
	CO2 Intensity (lbs/MWh)	529	473	556	425	358	544
	Water Consumption (MMGallons)	53,720	50,569	58,843	49,087	45,640	51,304
	Waste (MMTons)	2,227	1,831	2,350	1,260	1,167	2,347
	Land Use (Acres)	58,759	58,464	59,637	58,464	58,464	59,074
Operational Flexibility	Flexible Resource Coverage Ratio	1.65	1.26	2.15	1.04	1.02	1.98
	Flexibility Turn Down Factor (2038)	53%	60%	36%	66%	67%	34%
Valley Economics	Percent Difference in Per Capita Income	0.00%	0.00%	-0.01%	0.00%	-0.01%	0.00%
	Percent Difference in Employment	0.01%	0.01%	0.00%	0.00%	0.10%	0.00%

Figure 7-26: Strategy E Scorecard

7.3 Scorecard Metric Comparisons

Figure 7-27 shows a comparison of how each strategy scored across all scenarios by metric.

EAS000724

		Scenario					
		1	2	3	4	5	6
	Strategy	Current	Economic Downturn	Growth	Decarbonization	Rapid DER Adoption	No Nuclear Extensions
PVRR ($ billion)	A	109.7	104.9	124.5	108.9	99.3	111.2
	B	110.0	105.2	124.5	109.0	99.5	111.1
	C	110.7	105.4	125.7	109.1	99.5	115.6
	D	111.5	107.0	128.2	110.3	100.7	112.7
	E	110.4	105.4	124.5	108.9	99.9	111.6
System Average Cost Years 1-20 ($/MWh)	A	70.1	70.6	70.1	74.7	75.8	71.2
	B	70.2	70.8	70.1	74.9	75.9	71.1
	C	70.7	70.9	70.8	74.9	75.9	73.9
	D	71.4	71.9	72.3	75.8	76.8	72.1
	E	70.5	71.0	70.3	74.8	76.0	71.3
Total Resource Cost ($ billion)	A	110.2	105.6	125.0	109.4	99.7	111.7
	B	118.9	114.8	130.6	116.5	100.1	120.0
	C	113.5	109.3	126.2	111.7	100.0	118.5
	D	112.3	108.1	129.0	111.2	101.5	113.6
	E	112.8	107.7	124.9	109.4	100.4	114.0
Risk Benefit Ratio	A	1.06	1.00	1.06	1.04	0.94	1.08
	B	1.05	1.00	1.06	1.03	0.94	1.07
	C	1.05	0.98	1.06	1.04	0.94	1.07
	D	1.02	0.97	1.04	1.02	0.93	1.07
	E	1.04	0.98	1.06	1.04	0.93	1.07
Risk Exposure ($ billion)	A	118.7	112.6	136.7	118.0	105.5	120.8
	B	119.0	113.0	136.7	118.0	105.8	120.6
	C	119.7	113.2	138.0	118.2	105.8	125.0
	D	120.6	115.0	141.1	119.6	107.2	122.5
	E	119.4	113.1	136.7	118.0	106.3	121.2
CO2 Emissions (million tons/year)	A	43.2	36.5	52.3	30.8	23.3	45.5
	B	42.9	36.5	52.2	30.1	23.4	44.9
	C	42.3	35.7	53.3	30.5	23.2	42.5
	D	42.4	35.6	52.8	30.4	22.8	43.7
	E	42.3	35.3	52.6	30.6	23.3	43.6
CO2 Intensity (lbs/MWh)	A	540.7	488.7	551.8	426.9	360.6	569.7
	B	536.7	488.2	550.2	418.3	361.0	561.1
	C	529.5	476.7	561.5	423.6	357.8	531.3
	D	531.1	474.7	556.8	422.3	351.3	547.1
	E	528.6	473.1	555.6	424.9	358.3	544.3
Water Consumption (million gallons/year)	A	54,053	51,136	58,823	50,276	45,678	51,895
	B	53,958	51,133	58,675	48,706	45,697	51,637
	C	53,343	50,708	57,456	48,878	45,582	51,878
	D	53,746	50,658	58,999	48,627	45,402	51,363
	E	53,720	50,569	58,843	49,087	45,640	51,304
Waste (million tons/year)	A	2,269	1,865	2,283	1,272	1,177	2,371
	B	2,256	1,861	2,318	1,271	1,176	2,354
	C	2,196	1,843	2,363	1,266	1,162	2,300
	D	2,229	1,849	2,386	1,235	1,137	2,367
	E	2,227	1,831	2,350	1,260	1,167	2,347
Land Use (Acres)	A	43,365	41,245	59,647	58,400	32,850	51,730
	B	33,145	18,980	59,627	58,400	32,850	51,710
	C	56,570	54,810	59,679	58,464	47,502	59,711
	D	59,034	58,560	60,091	58,560	58,560	59,189
	E	58,759	58,464	59,637	58,464	58,464	59,074

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		Scenario					
		1	2	3	4	5	6
	Strategy	Current	Economic Downturn	Growth	Decarbonization	Rapid DER Adoption	No Nuclear Extensions
Flexible Resource Coverage Ratio	A	1.98	1.37	2.17	0.98	1.14	2.22
	B	1.97	1.71	2.11	0.98	1.14	2.03
	C	1.65	1.29	2.09	1.04	1.02	1.75
	D	1.60	1.39	1.79	1.15	1.13	1.83
	E	1.65	1.26	2.15	1.04	1.02	1.98
Flexibility Turn Down Factor (2038)	A	50%	56%	36%	66%	63%	32%
	B	50%	53%	36%	66%	63%	34%
	C	53%	59%	36%	66%	66%	40%
	D	53%	59%	36%	66%	69%	34%
	E	53%	60%	36%	66%	67%	34%
Percent Difference in Real Per Capita Income (Relative to Strategy A)	A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	B	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	C	-0.01%	0.00%	-0.02%	0.00%	0.00%	-0.03%
	D	-0.01%	-0.02%	-0.09%	-0.02%	-0.02%	-0.01%
	E	0.00%	0.00%	-0.01%	0.00%	-0.01%	0.00%
Percent Change in Employment (Relative to Strategy A)	A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	B	0.01%	0.00%	0.00%	0.01%	0.10%	0.00%
	C	0.01%	0.01%	0.00%	0.01%	0.10%	0.01%
	D	0.02%	0.01%	-0.06%	0.01%	0.11%	0.00%
	E	0.01%	0.01%	0.00%	0.00%	0.10%	0.00%

Figure 7-27: Scorecard Metrics by Strategy and Scenario

7.4 Observations from Modeling Results

Based on the results of the modeling, TVA made the following observations about incremental capacity across the portfolios.

- There is a need for new capacity in all scenarios, even in low load futures, to replace expiring or retiring capacity
- Solar expansion plays a substantial role in all futures, driven by its attractive energy value beginning in the mid-2020 time frame
- Gas, storage and demand response additions provide reliability and/or flexibility across all seasons
- No baseload resources (designed to operate around the clock) are added, except for the promotion of SMRs in one case
- Additional coal retirements occur in certain futures, especially in a carbon-constrained world
- EEDR levels are relatively similar across the portfolios, with EE opportunity decreasing as efficiency impacts from codes and standards increase over time
- In all cases, TVA will continue to provide for economic growth in the Tennessee Valley.

These observations are further explored in the assessments presented in Chapter 8.

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8 Strategy Assessment and Next Steps

This chapter explains the strategy assessments and summarizes the results. Areas where additional study may be needed and next steps in the IRP process are also discussed. Throughout the assessment discussion, scenarios will be referred to by number and strategies by letter. Portfolios that represent the combination of a scenario and strategy will be referred to by the relevant number and letter reference, such as the Current Outlook scenario and the Base Case strategy combination represented as 1A.

8.1 Strategy Assessments

To assess the performance of the five planning strategies (explained in Chapter 6 and highlighted here), TVA used scorecard data to conduct four assessments:

- Cost and risk
- Environmental stewardship
- Operational flexibility
- Valley economics.

Planning Strategies

Strategy A: Base Case

Strategy B: Promote DER

Strategy C: Promote Resiliency

Strategy D: Promote Efficient Load Shape

Strategy E: Promote Renewables

8.1.1 Cost and Risk Assessment

The cost and risk assessment was aimed at gaining a better understanding of the relative performance of different strategies in terms of total plan costs and financial risk.

The cost assessment was based on three scorecard metrics:

- PVRR ($Bn) – Total plan cost (capital and operating) expressed as the expected (stochastic) present value of revenue requirements over the 20-year study period
- System Average Cost ($/MWh) – Expected average system cost for the study period, computed as the levelized annual average system cost (annual revenue requirements divided by annual sales)
- Total Resource Cost ($Bn) – Total plan cost (capital and operating) expressed as the expected present value of revenue requirements over the study period plus participant costs net of bill savings and tax credits.

These metrics allow a comparison of the cost and financial risks associated with different planning strategies. (See Chapter 6, section 6.2.2, for more information on metrics, including the formulas used to compute them.)

Figure 8-1 provides a comparison of portfolio results for PVRR and Total Resource Cost (TRC), which also includes net participant costs.

PVRR for the 20-year study period is similar across the strategies, with Strategies A and B typically lower and Strategy D typically the most expensive. Average system costs are also similar, with similar trends as PVRR across the strategies. Total Resource Cost has more variation, with Strategy A the least expensive and Strategy B typically the most expensive.

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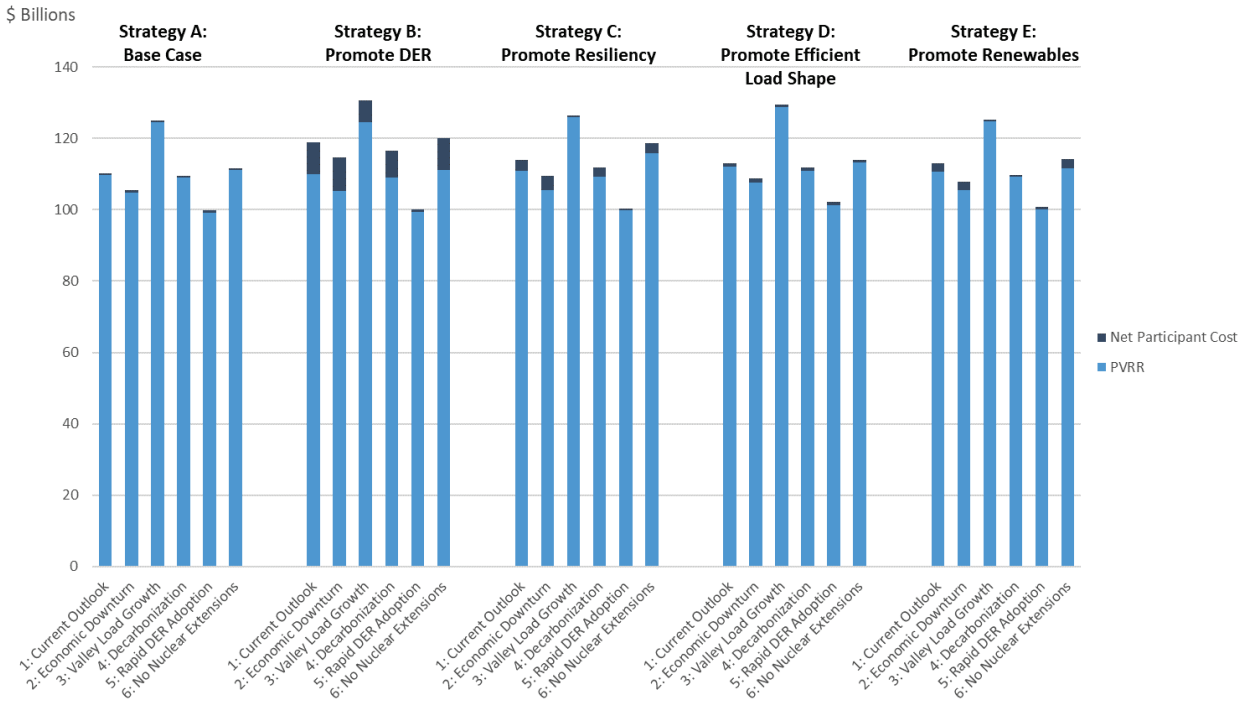


Figure 8-1: PVRR and Total Resource Cost

Another view of PVRR and TRC that is helpful to consider is the range of outcomes around the expected case for each strategy, as shown for Scenario 1 (Current Outlook) in Figures 8-2 and 8-3. The lower end of each bar is the best case (lowest cost) outcome from the uncertainty analysis; the upper end is the worst case (highest cost) outcome; and the expected value is the point of transition between the two colored sections of each bar.

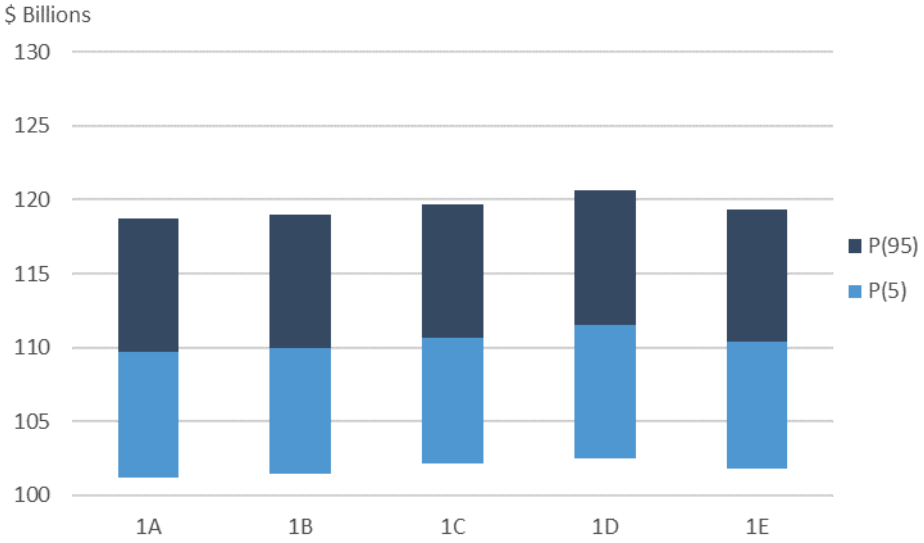


Figure 8-2: Range of PVRR for Scenario 1 (Current Outlook)

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Figure 8-3: Range of Total Resource Cost (TRC) for Scenario 1 (Current Outlook)

Figure 8-4 shows the results for the system average cost metric for Scenario 1 (Current Outlook). The blue bar represents the system average cost values for the 20-year study period (2019-2038), the orange bar represents the values for the first 10 years (2019-2028), and the gray bar represents the values for the second 10 years (2029-2038).

Over the 20-year study period, system average cost follows the PVRR relationships with Strategies A and B the lowest cost, Strategies C and E mid-range, and Strategy D the highest cost.

During the first 10-year period, the system average cost is very similar across all five strategies. In the second 10-year period, there is more variation. Strategies A and B are the lowest, followed by Strategy E, then Strategy C, and finally Strategy D, which exhibits the highest system average cost due to the highest promotion of storage. Within and across metric categories, evaluating tradeoffs can be insightful.

Figure 8-5 shows the tradeoff between PVRR and system average cost across the portfolios. For example, the Valley Load Growth scenario (Scenario 3) has the largest expansion and largest capital cost requirement (highest PVRR), but also has the greatest amount of energy sales. This higher amount of sales reduces system average cost. Conversely, the Rapid DER Adoption scenario (Scenario 5) has the lowest expansion but also has the lowest amount of sales, resulting in the highest system average cost (i.e., spreading cost over a fewer number of sales).

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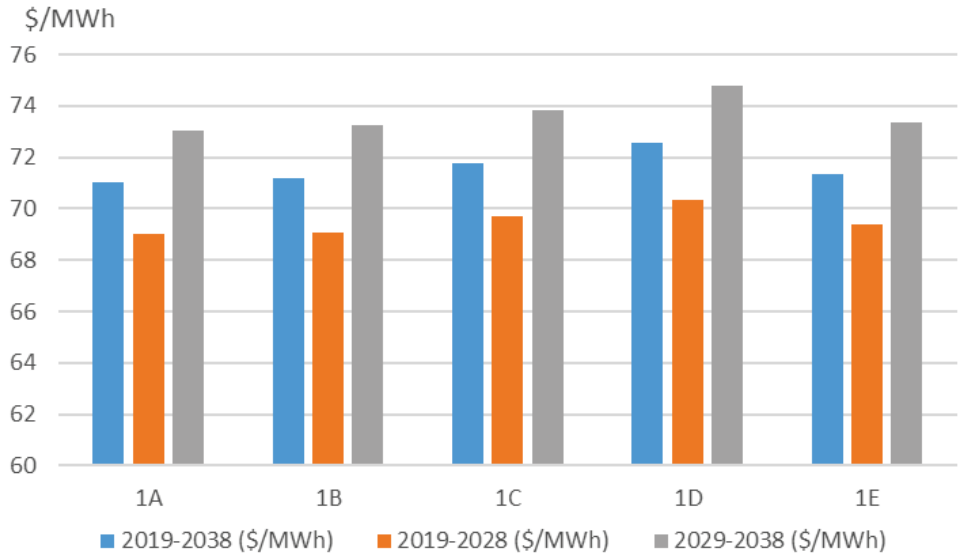


Figure 8-4: System Average Cost for Scenario 1 (Current Outlook)

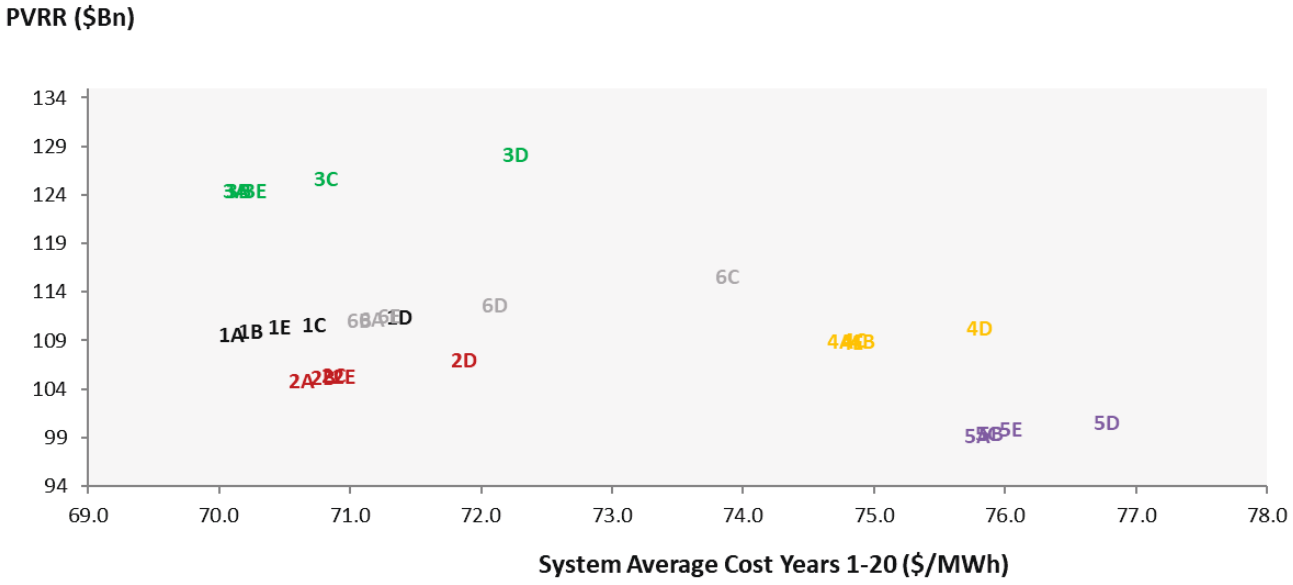


Figure 8-5: Portfolio Cost Tradeoffs

While scenarios explore step changes in possible futures, stochastic analysis evaluates risk of uncertainty around key planning assumptions for each portfolio, as described in Chapter 6. Stochastic analysis of production cost and financials bounds the uncertainty and identifies the risk exposure inherent in long-range resource planning driven by supply/demand disruptions, weather, market conditions, technology improvements and economic cycles.

Two additional metrics, leveraging the use of stochastic analysis, were used to assess the risk of each strategy:

- Risk / Benefit Ratio – Area under the plan cost distribution curve between P(95) and expected value divided by the area between expected value and P(5) based on stochastic analysis
- Risk Exposure – The point on the plan cost distribution below which the likely plan costs will fall 95 percent of the time based on stochastic analysis

Figure 8-6 shows a comparison of the risk/benefit ratios and risk exposures for the Current Outlook. For these metrics, lower values indicate better performance where the benefits outweigh the risks and overall risk exposure is less. Risk/benefit scores less than 1.0 indicate that costs are more likely to be less than the expected value, and scores higher than 1.0 indicate costs are more likely to be greater than expected value. Risk exposure represents the worst case outcome and is useful in determining which strategies present higher financial risks overall.

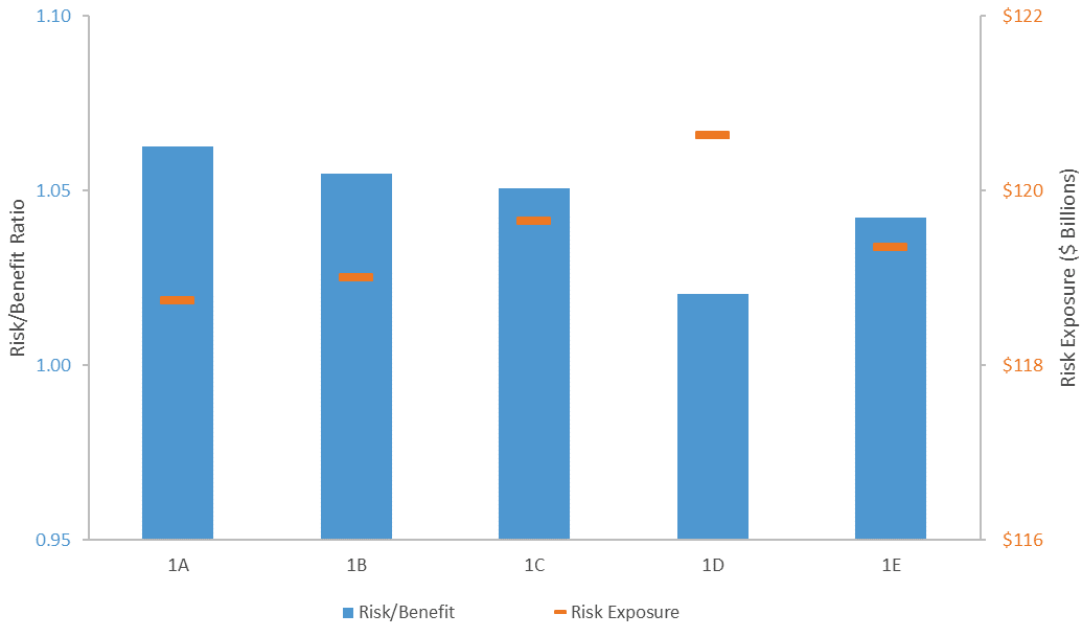


Figure 8-6: Portfolio Risk Profiles (Current Outlook)

Strategies with lower costs generally have lower risk exposure. Strategy A has the lower risk exposure but least favorable risk/benefit ratio, while Strategy D has the opposite profile. Other strategies have moderate risk overall. Most portfolios have risk/benefit ratios between 1.0 and 1.1, indicating that risks typically outweighed the benefits. Some portfolios in declining load cases have risk/benefit scores less than 1.0, indicating less financial risk in lower load scenarios.

Relative to risk exposure, Strategies A and B have the lowest levels while Strategies C and E have mid-range risk exposure. Strategy D carries the highest financial exposure and is the most risky, about $2 billion more at stake on average than in Strategy A. Overall, these results indicate that strategies which constrain resource selection have higher risk exposure. Strategies which promote a resource that is significantly higher in cost relative to alternatives, such as storage, will have higher cost and risk exposure.

Another way to assess cost and financial risk is to combine the cost and risk scores so that an analysis of tradeoffs can be performed. Figure 8-7 shows cost/risk trade-offs based on comparisons of risk exposure to TRC.

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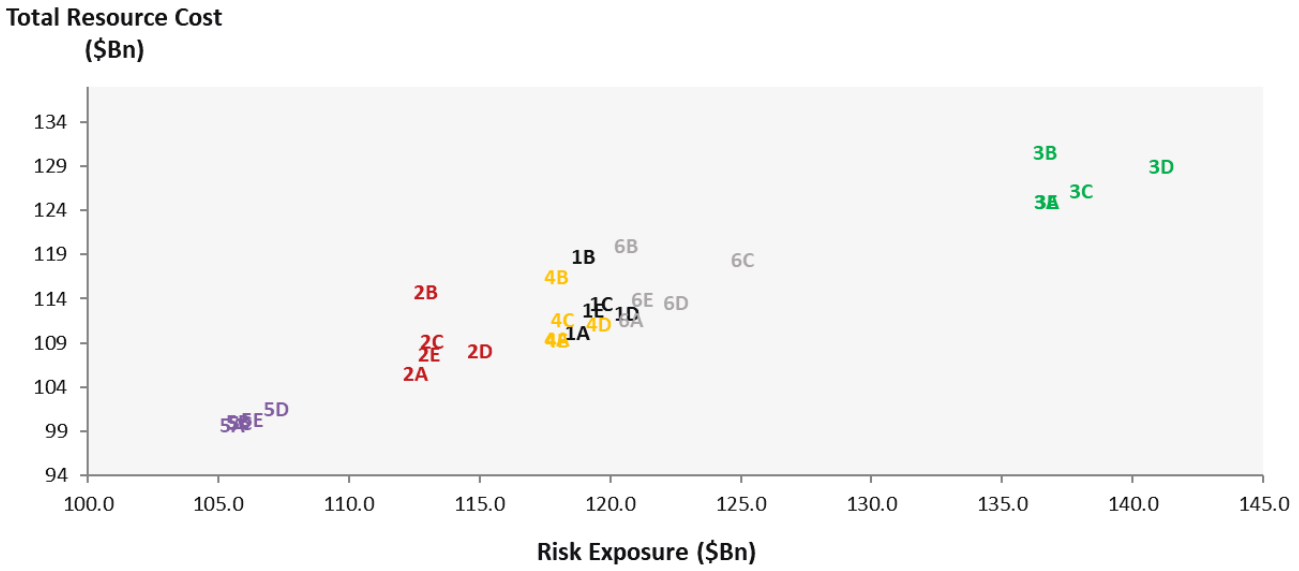


Figure 8-7: Cost/Risk Trade-Offs

These charts reinforce the cost and risk assessment results. Generally, within a scenario, Strategy A has lower cost and risk exposure, Strategy B has the highest cost (on a TRC basis) with mid-range risk exposure, and Strategy D has mid-range cost and highest risk exposure. The exception is the 6C case, which forces in two SMRs to partially replace the loss of the Browns Ferry units.

More information on financial metrics and the range around expected cases (stochastics) for all portfolios can be found in Appendix H.

8.1.2 Environmental Stewardship

As described in Chapter 6, strategy scorecards include five measures for environmental stewardship performance:

- CO_2 Tons – the expected annual average tons of CO_2 emitted over the study period
- CO_2 Intensity – the expected CO_2 emissions expressed as an emission intensity, computed by dividing emissions by energy generated and purchased
- Water consumption – the expected annual average gallons of water consumed over the study period
- Waste – the expected annual average quantity of coal ash, sludge and slag based on energy production in each portfolio
- Land Use – the expected acreage needed for expansion units in each portfolio in 2038.

Figure 8-8 shows the average environmental impact for Scenario 1 (Current Outlook) across all strategies. More information about the development of these metrics can be found in Appendix I.

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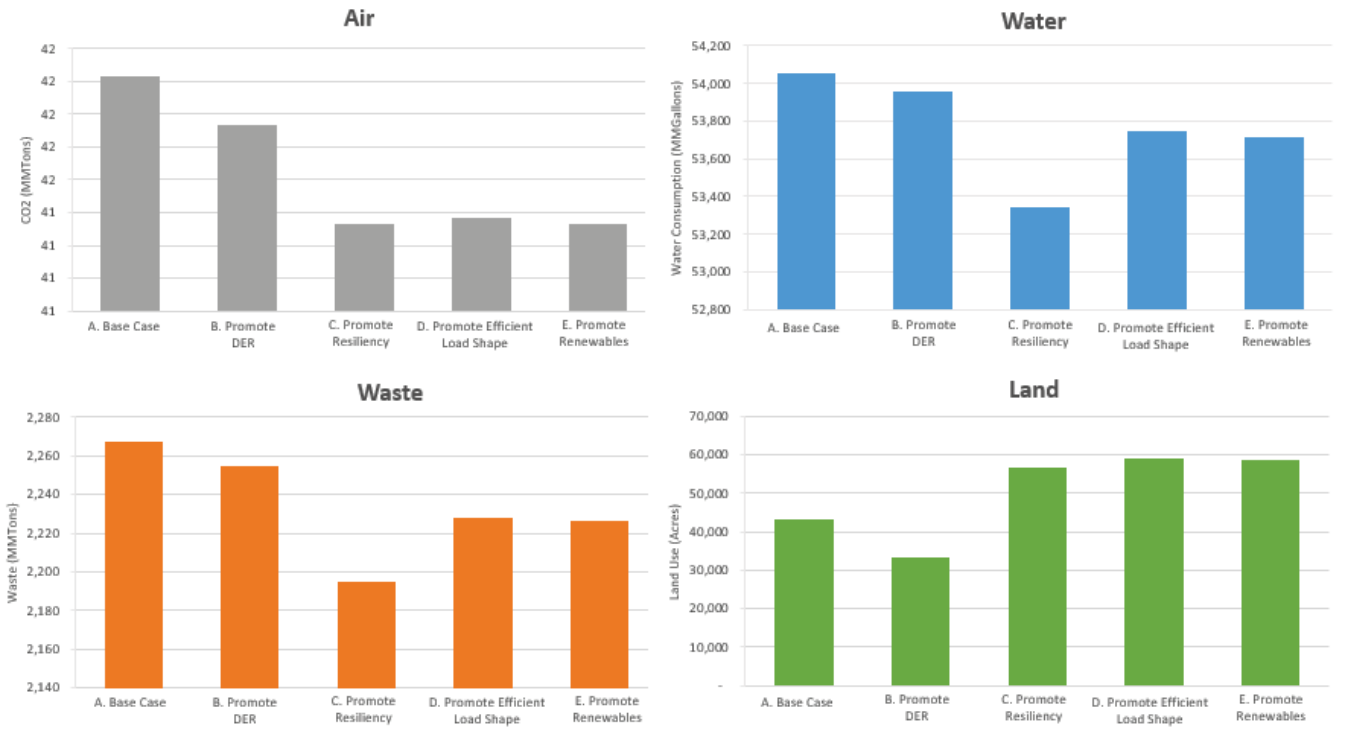


Figure 8-8: Environmental Impacts for Scenario 1 (Current Outlook)

All strategies show improvement in air, water and waste compared to the current resource portfolio, with Strategy C the most favorable. All strategies show increased land use compared to the current resource portfolio driven by various levels of solar expansion. Strategies that promote solar tend to have favorable environmental profiles, except for increased land use. While overall land use is higher for solar facilities on a per MW basis, the impacts to the land are generally low level and have the potential to be readily returned to the previous condition or use.

Strategy C has the lowest environmental impact with respect to air, water and waste. Strategy A has the highest environmental impact overall but low land use. The other strategies generally fall somewhere in between, except for land use where Strategy B has the lowest acreage.

Another helpful view is a comparison of CO_2 intensity across all 30 portfolios. As shown in Figure 8-9, the scenario has the greatest influence on CO_2 intensity, with variations across strategies as described in the Current Outlook example. Range of stochastic results are included in Appendix I.

Figure 8-10 shows trade-offs between system average cost and CO_2 intensity across all portfolios. The scenario that materializes will drive CO_2 intensity at relatively similar system average cost, regardless of the strategy.

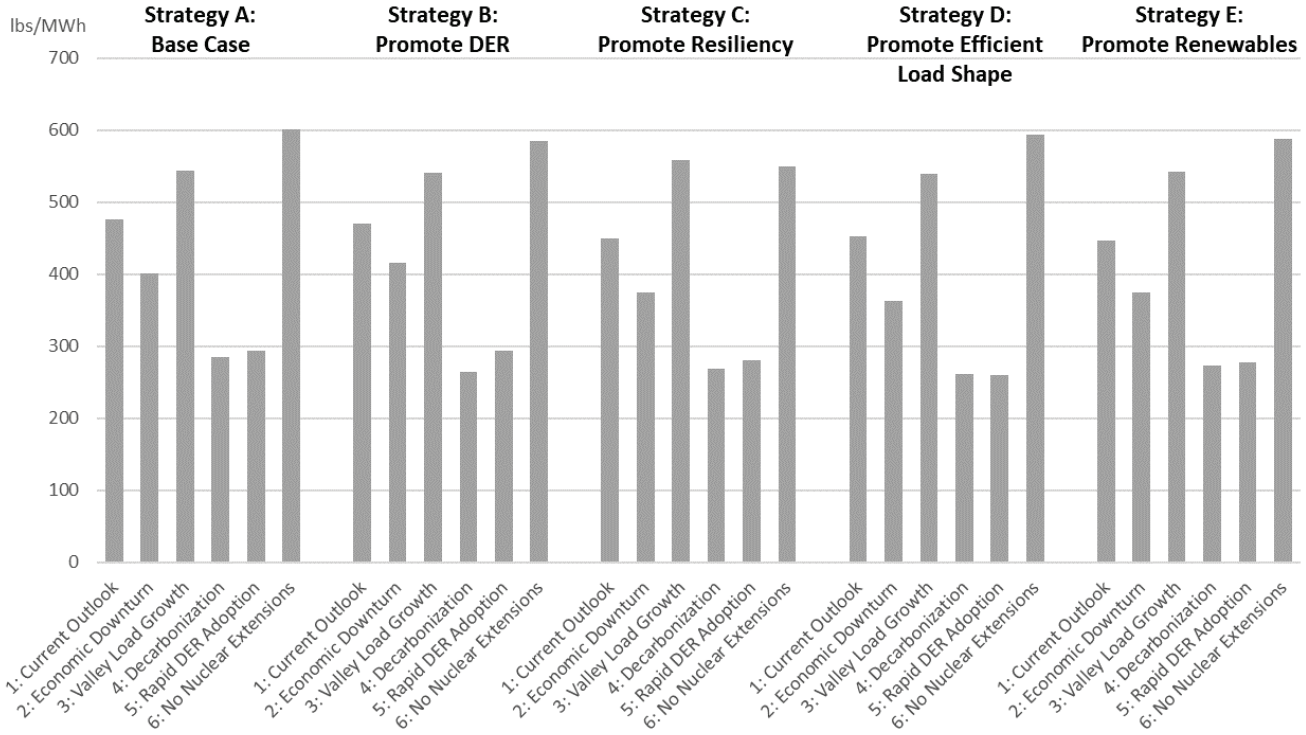


Figure 8-9: Portfolio CO_2 Intensity

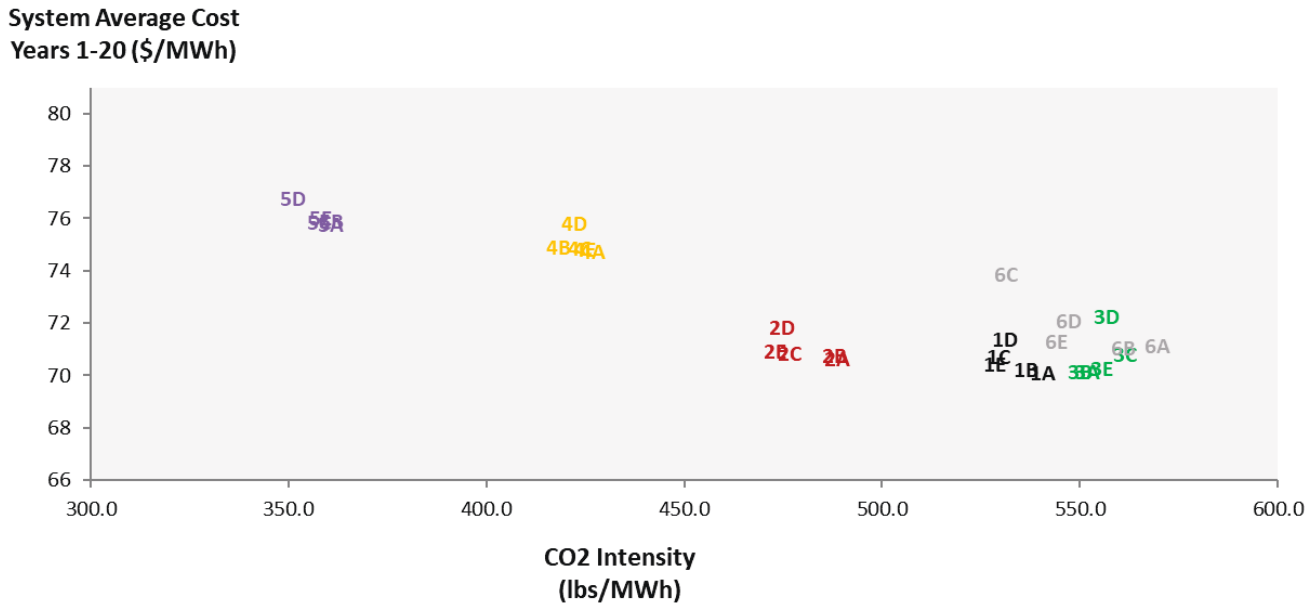


Figure 8-10: Cost and CO_2 Trade-Offs

8.1.3 Operational Flexibility

As described in Chapter 6, understanding system flexibility is a focus in this IRP. Strategy scorecards include two measures of operational flexibility:

- Flexible Resource Coverage Ratio – the ratio of flexible capacity available to meet the maximum 3-hour ramp in demand in 2038
- Flexibility Turn Down Factor – the ability of the system to serve low load periods as measured by the percent of must-run and non-dispatchable generation to sales.

TVA views system flexibility – the ability to cover rapid changes in load demand and to serve low load periods – as a key future consideration for long-range resource planning. This is especially true as the resource mix shifts from conventional, fully dispatchable central station units toward more diverse and dispersed generating assets that introduce more intermittency.

This is the first time TVA has used flexible resource coverage as a metric to assess the performance of a resource portfolio. TVA based this measure in part on research of other utilities and independent system operators in an effort to represent a portfolio's ability to meet rapid changes in demand.

Figure 8-11 shows a comparison of flexible resource coverage ratio and flexibility turn down factor for the Current Outlook. Figure 8-12 displays cost and flexibility trade-offs across all portfolios.

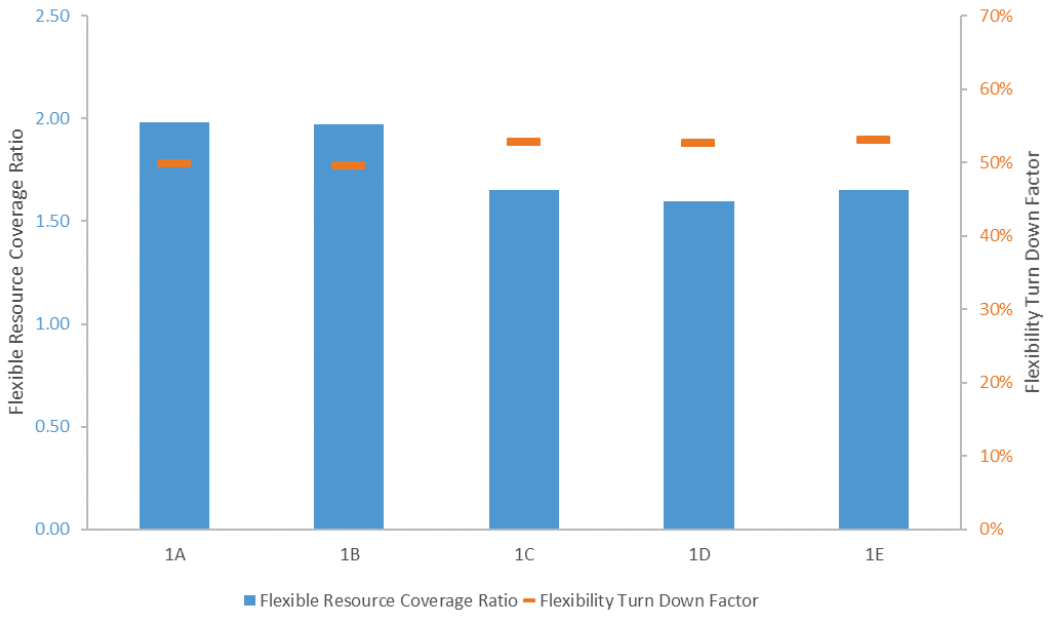


Figure 8-11: Portfolio Flexibility Profiles (Current Outlook)

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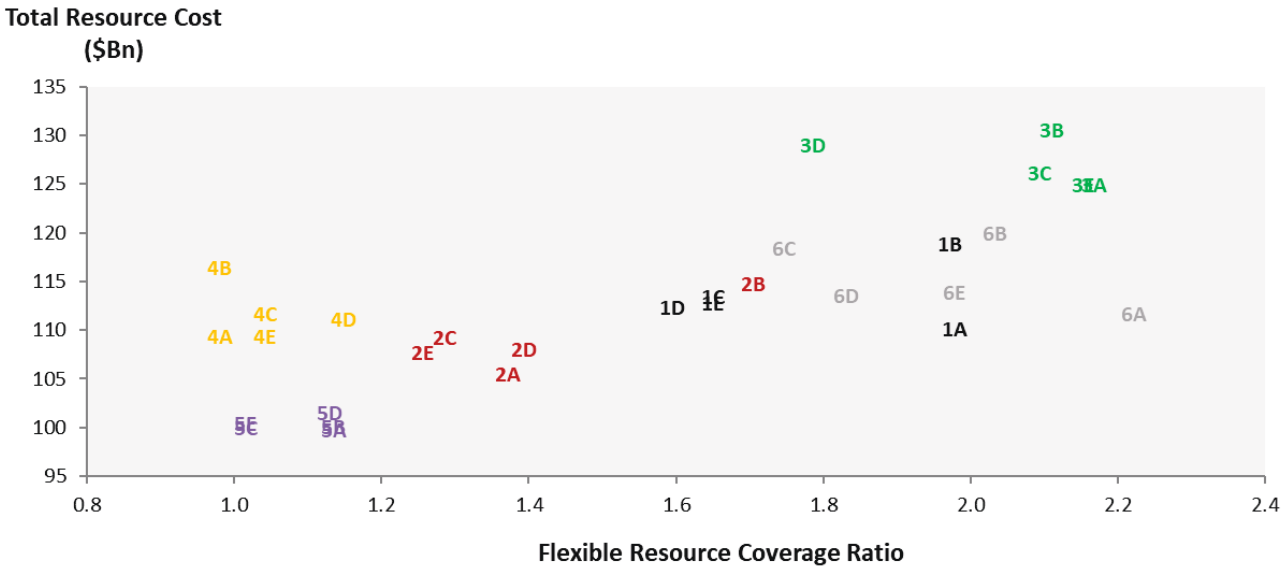


Figure 8-12: Cost and Flexibility Trade-offs

TVA's analysis indicates that Strategies A and B result in a more flexible system than other strategies on average. Strategies that drive more solar expansion tend to have lower flexibility. In portfolios where nuclear units are retired (Scenario 6) and replaced in part with gas units, overall system flexibility increases. In general, portfolios with a higher percentage of non-dispatchable resources will have relatively less ability to respond to unexpected load swings.

8.1.4 Valley Economics

The impact of different planning strategies on the Valley economy was assessed based on two measures:

- Percent Difference in Real Per Capita Income – the change in real per capita personal income expressed as a change from a reference portfolio in each scenario
- Percent Change in Non-Farm Employment – the change in employment expressed as a change from a reference portfolio in each scenario.

The reference portfolio is the level of impact to per capita income or employment in Strategy A in each scenario. More details about how TVA has computed this macro-economic impact can be found in Appendix J. All strategies have comparable impacts on the Valley economy based on these two standard measures.

Strategy D consistently outperformed the reference income level across all scenarios. This is likely due to the retention of more investment in the Valley under this strategy driven by the commitment to energy efficiency, which results in increased investment in the Valley relative to other resource options. However, the overall variation in per capita income estimates is very small across the strategies, in part due to changes in other factors such as underlying population growth (e.g., in some cases employment increases are matched or even exceeded by larger corresponding increases in Valley population), changes in the composition of employment (increased total non-farm employment yet declining manufacturing employment), and/or changes in regional inflation levels due to higher electricity costs. Furthermore, the scale of TVA incremental investments across the various scenarios and strategies are modest in relation to the overall size of the Valley economy. This suggests that the Valley Economics metric is unlikely to be a key definitive determinate when selecting a preferred target power supply mix.

8.1.5 Summary of Observations

Based on analysis of scorecard results, TVA makes the following observations about metric performance across the portfolios:

- The strategy that most leverages utility-scale resources is the most economic and has the lowest risk exposure (Strategy A).
- The strategy that most leverages distributed resources has the highest Total Resource Cost (Strategy B).
- The strategy that most leverages storage has the highest PVRR, driven by current projections for storage prices (Strategy D).
- Strategies that most leverage solar and coal retirements have lower environmental impact overall, but higher land use (Strategies C, D and E).
- Strategies that drive more solar expansion tend to have lower operational flexibility (Strategies C, D and E).
- All strategies have comparable impacts on the Valley economy as measured by real per capita income and employment.

The overall performance of the five planning strategies is explained in more detail below, by metric category in Table 8-1 and by strategy in Table 8-2.

Table 8-1: Summary of Observations by Metric Category

Metric Category	Assessment Observations
Cost	• PVRR is similar across the strategies, with Strategy D typically the most expensive • Average system costs are also similar, with Strategies A and B typically lower and Strategy D typically the highest • Total Resource Cost has more variation, with Strategy A the least expensive and Strategy B typically the most expensive
Risk	• Strategies with lower costs generally have lower risk exposure • Strategy A has the lowest risk exposure but least favorable risk/benefit ratio, while Strategy D has the opposite profile • Other strategies have moderate risk overall
Environmental Stewardship	• All strategies show improvement in air, water and waste categories compared to the current resource portfolio, with Strategy C the most favorable • All strategies show increased land use compared to the current resource portfolio driven by various levels of solar expansion, with the exception of Strategy B
Operational Flexibility	• Strategies A and B result in a more flexible system than other strategies, on average • Strategies that drive more solar expansion tend to have lower flexibility • In portfolios where nuclear units are retired (Scenario 6) and replaced in part with gas units, overall system flexibility increases
Valley Economics	• All strategies have comparable impacts on the Valley economy as measured by real per capita income and employment

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Table 8-2: Summary of Observations by Strategy

Strategy	Assessment Observations
Strategy A: Base Case	• Lowest PVRR, Total Resource Cost, and System Average Cost across scenarios • Lowest risk exposure, but highest risk/benefit ratio • Highest environmental impact overall, but low land use • Best flexibility performance across scenarios
Strategy B: Promote DER	• Similar to Strategy A in PVRR and System Average Cost, but most expensive with respect to Total Resource Cost • Risk exposure similar to Strategy A, with moderate risk/benefit profile • Higher environmental impact overall, but lowest land use • Flexibility performance comparable to Strategy A
Strategy C: Promote Resiliency	• Mid-range in PVRR, System Average Cost, and Total Resource Cost • Moderate financial risk • Lowest environmental impact overall, but higher land use • Moderate flexibility, comparable to Strategies D and E
Strategy D: Promote Efficient Load Shape	• Highest PVRR and System Average Cost due to promotion of storage, and mid-range in Total Resource Cost • Highest risk exposure across the strategies • Low environmental impact overall, but higher land use • Moderate flexibility, comparable to Strategies C and E
Strategy E: Promote Renewables	• Mid-range in PVRR and System Average Cost, but lower in Total Resource Cost (second only to Strategy A) • Moderate financial risk • Low environmental impact overall, but higher land use • Moderate flexibility, comparable to Strategies C and D

8.2 Sensitivity Analysis

Each IRP case represents a combination of expectations about the future environment TVA operates in and potential strategies TVA could employ that result in unique resource portfolios. When analyzing results from the draft IRP, TVA identified issues that warranted further evaluation prior to finalizing the study. In addition, TVA received helpful stakeholder input from the IRP Working Group and the Regional Energy Resource Council (RERC), as well as through comments received from the public during the comment period.

Many of the questions raised by TVA and stakeholder review focused on certain key assumptions that could influence results. To explore the impacts of changes in key assumptions and to inform the recommendation ranges in Chapter 9, TVA evaluated sensitivities related to the following categories:

- Natural gas prices
- Storage, wind, CHP, and SMR capital costs
- Greater EE and DR market depth
- Integration cost and flexibility benefit
- Pace and magnitude of solar additions
- Higher operating costs for coal plants
- More stringent carbon constraints

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- Variation in climate.

Sensitivity analyses are typically run as variations from the Base Case strategy in the Current Outlook scenario, except where noted, to isolate the impact of a change in one key assumption.

8.2.1 Natural Gas Prices

Natural gas generation makes up a significant part of TVA's existing fleet, and several types of gas generation are offered as expansion options. Changes in natural gas prices change the variable cost of gas units and may change the economics of different types of gas capacity relative to other resource options. Two standard deviations above and below the expected value were simulated in the Current Outlook. Figure 8-13 shows the range of natural gas prices for the IRP scenarios and for two standard deviations above and below the Current Outlook forecast.

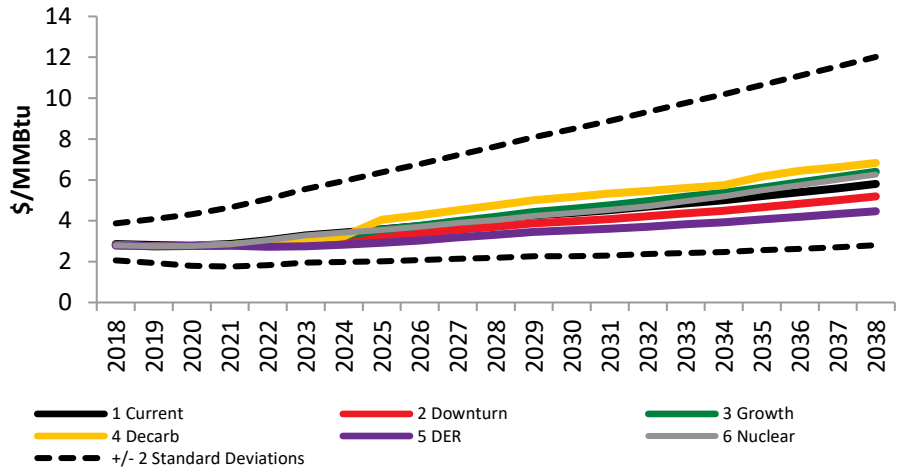


Figure 8-13: Natural Gas Price Assumptions

Higher Natural Gas Prices

Higher natural gas prices increase the cost of gas generation, making the generation of competing resources more valuable. Solar is projected to become economic compared to gas beginning in the mid-2020s, resulting in 5,900 MW nameplate of solar expansion in the base plan. In the high gas sensitivity, about 2,050 MW nameplate of additional solar capacity is added by 2038 compared to the base case, bringing total nameplate solar expansion to about 8,000 MW in this case. Other changes in the expansion plan include the addition of 55 MW of new hydro, as well as reduced electrification programs driven by the overall higher operating cost for the fleet. The Total Resource Cost increased by about $6 billion due to higher fuel costs. Carbon emissions increased 21 percent driven by an overall increase in coal capacity factors.

Lower Natural Gas Prices

Lower natural gas prices improve the economics of gas generation, especially higher efficiency CCs. In the low gas sensitivity, no solar is added, which represents a reduction of 5,900 MW in nameplate solar compared to the base case. Additionally, about 2,000 MW of CT capacity is replaced by CC capacity to better leverage lower gas prices. This sensitivity does not take into account customer demand for renewables that would likely drive more solar additions than economics would dictate. The Total Resource Cost decreased by about $6 billion due to lower fuel costs. Carbon emissions decreased 21 percent driven by an overall increase in gas capacity factors.

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8.2.2 Battery, Wind, CHP, and SMR Capital Costs

Several resource options that were promoted in an IRP strategy were not selected based on economics in any of the primary portfolios. Of particular interest were battery storage, wind, CHP, and SMRs. TVA, stakeholder groups, and the public expressed interest in understanding how much lower the costs of these resources would need to be for the resource to become economic. TVA performed a breakeven analysis to determine how the IRP costs for battery storage, wind, CHP, and SMR compared to the benefits those units could provide to the system.

The IRP cost is the levelized cost of the resource using Current Outlook assumptions. To determine the benefits the resource could provide to the system, TVA added the resource to the portfolio in the earliest year available at zero cost and calculated the levelized benefit in $/MWh. This approach effectively describes the value of these resources in terms of the avoided energy and capacity from competing resources. As IRP cost approaches breakeven cost, the resource is more likely to be selected in a portfolio.

Battery Costs

Even though the IRP assumed a downward trajectory in costs, utility-scale battery storage was not selected based on economics. Due to the varying ways that augmentation and warranty costs can be included in the initial capital investment or paid on an ongoing basis as a fixed cost, direct comparisons between benchmarks requires calibration. As described in Appendix C, TVA matched storage additions to solar additions in strategies where storage was promoted to explore the potential impacts of storage on overall portfolio results. Additionally, TVA performed a breakeven analysis. As battery storage is a higher-value resource, the breakeven value to the system is higher than for wind or CHP. However, using current projections for utility scale battery storage costs, IRP costs are still triple the breakeven value. TVA will continue to monitor rapidly evolving battery storage technologies for improving economics.

Combined Heat and Power (CHP) Costs

Although a small amount of CHP did appear in the Promote DER strategy portfolios, the IRP stakeholder working group expressed interest in understanding the breakeven value for CHP without promotion. Analysis indicates that IRP costs for CHP are double the breakeven value. CHP systems also provide steam for space heating, driving additional value for the end-use customer that was not included in the breakeven analysis.

Wind Costs

Wind from both outside and inside the Valley has challenging economics. Out-of-Valley wind must be imported to TVA across interconnected systems, driving significant transmission expense. In-Valley wind has lower intensity and efficiency, driving lower capacity factors and higher effective costs. Additionally, the production tax credit is set to expire which will increase costs for all wind options, and IRP costs assume no decreasing technology curve. TVA performed a breakeven analysis for out-of-Valley wind, which had the better cost profile. Analysis indicates that IRP costs for wind are triple the breakeven value.

A further sensitivity case was evaluated to test the effects of a substantially lower wind forecast than the IRP cost assumptions. While IRP assumptions for wind costs were in the range of the National Renewable Energy Laboratory (NREL) ATB mid-case forecast, TVA used the lower bound of NREL's mid-case adjusted to nominal dollars for this sensitivity. Lower prices could be the result of technology improvements, cost efficiencies, tax incentives, or a reduction in transmission costs. Figure 8-14 compares the IRP wind cost assumptions and the NREL lower mid-case cost trajectory, and it includes solar cost projections as an additional reference point.

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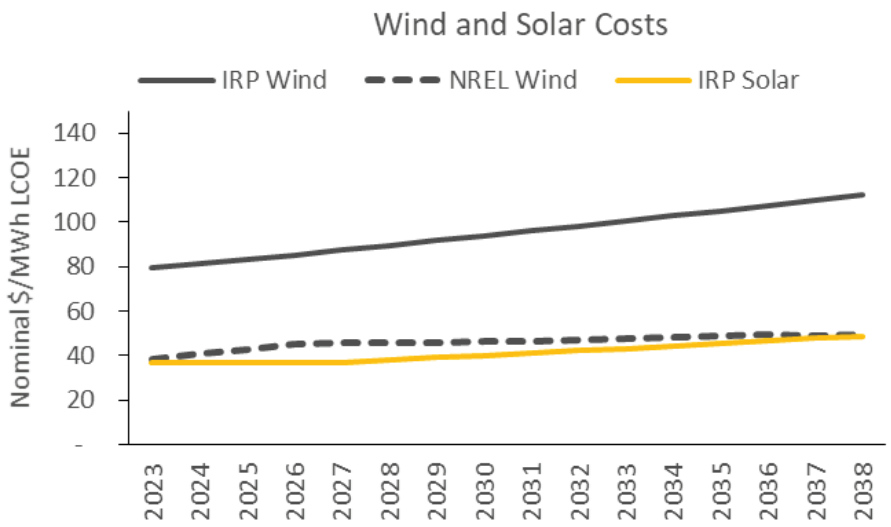


Figure 8-14: Wind and Solar Cost Comparison

In the NREL lower mid-case sensitivity, 4,200 MW nameplate of wind capacity was added by 2038. Because wind resources contribute about a third of their nameplate capacity toward meeting winter reserve margin targets, some gas additions were displaced early in the plan. If the lower wind cost materializes, wind would also compete with solar in the latter part of the plan and displace about 3,100 MW nameplate of solar by 2038, reducing solar additions roughly by half.

Small Modular Reactors (SMR)

SMR investment would be capital-intensive and represent first-of-a-kind technology deployment at utility scale. Given this, TVA performed a breakeven analysis to help understand the cost gap and inform ongoing discussions with the Department of Energy, a stakeholder that may be willing to share in costs and risks associated with potential SMR deployment. SMRs were evaluated assuming operation beginning in 2028 and running through the end of the study window in 2038. A limitation of this analysis is that capital-intensive resources have long economic lives, and two thirds of SMR economic life would be outside the study window. Analysis indicates that IRP costs for SMRs are more than double the breakeven value. Refinements in design may improve SMR costs, but cost and risk sharing are essential to close the gap.

8.2.3 Greater EE and DR Market Depth

Across the primary IRP cases, the amount of available programmatic EE and DR is limited in yearly additions and total cumulative volumes based on projected opportunity. TVA performed a sensitivity to determine the potential impact if EE and DR market depth was greater than projected. Additional tiers of programmatic EE and DR were offered at incrementally increasing costs and with no cumulative volume limit. Analysis indicates about 2,100 MW of additional EE and DR was economic compared to the base case, if higher volumes could be realized at assumed costs. Additional EE and DR displaces about 2,200 MW nameplate of solar and about 2,000 MW of CT capacity. An assumed increase in EE and DR market depth results in a similar PVRR, higher system average cost, and 10 percent lower carbon emissions.

8.2.4 Integration Cost and Flexibility Benefit

Integration cost is the sub-hourly economic signal used to represent the cost of balancing an intermittent resource with dispatchable resources. This cost is not recognized in hourly planning models. Conversely, flexibility benefit is the sub-hourly value that highly flexible and dispatchable resources have that also isn't recognized in hourly models. More detail can be found

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on integration cost and flexibility benefit in Appendix D. Reflecting a sub-hourly integration cost and flexibility benefit was a recent addition to our modeling framework, so TVA performed a sensitivity to evaluate the impact of removing them from our models. Removing integration cost and flexibility benefit drove a very similar end result for resource selection, indicating that these costs and benefits alone do not drive macro-level decision making but would inform evaluation of specific deals, contracts, and decisions.

8.2.5 Pace and Magnitude of Solar Additions

Limits on the pace, timing, and magnitude of resource additions are common in modeling, as they serve to create more realistic resource plans. For example, the ability to construct or contract resources may be limited by the market or by the ability of operations to integrate new resources into the portfolio. Annual limits in a model that has perfect foresight also prevents over-optimizing resource selections in any single year. TVA, stakeholder groups and the public raised questions about the impact of limitations on solar, in particular. Solar was limited in three ways in the primary cases, as follows:

- 2023 earliest online date, driven by August 2019 IRP publication date and subsequent time required for interconnection requests and environmental permitting
- Annual addition limit of 500 MW nameplate, reflecting other utilities' experience with average annual solar additions
- Cumulative limit of 10,000 MW nameplate based on the study window time frame and system turndown capability.

TVA performed a sensitivity to evaluate the impact of accelerating solar additions to as early as 2021 to align with two programs to support accelerated renewable investment launched after the IRP base case was established. These programs include the Renewable Investment Agreement (RIA) and the Flexibility Research Project (FRP) pilot. RIA supports utility scale buildouts for large commercial and industrial customers, and FRP supports community solar in partnership with LPCs. In this sensitivity, TVA reflected recent solar signings of about 700 MW scheduled to come online in 2020/2021 (contracted after the IRP base case was established) and assumed 500 MW per year of accelerated solar additions thereafter until economic solar additions pick up in the mid-2020s. Analysis of potential acceleration indicates about 1,100 MW nameplate of additional solar by 2038 compared to the base case.

TVA also performed a sensitivity that doubled the annual addition limit to 1,000 MW and removed the cumulative limit. This analysis indicates a similar result of about 1,100 MW nameplate of additional solar by 2038 compared to the base case.

In discussions about the solar sensitivities evaluated in the Current Outlook, stakeholder groups inquired if results might be different in other scenarios. TVA performed an additional sensitivity to test the impact of increasing annual and cumulative limits in the Valley Load Growth base case (3A). Higher electricity demand with no additional base load resources added would lower the turndown pressure in the growth case. This additional sensitivity was run with an annual addition limit of 1,000 MW and a cumulative limit of 14,000 MW, which is roughly the difference between the growth scenario load profile and the output of baseload nuclear and hydro resources adjusted for pumped storage ability to shift some baseload. Analysis indicates 6,000 MW nameplate of additional solar compared to the growth scenario base case, or 14,000 MW nameplate of solar additions in total. Other expansion changes include 1,000 MW of CCs replaced with CTs.

8.2.6 Higher Operating Costs for Coal Plants

When reviewing results of the primary cases, TVA and stakeholders had questions about the ongoing operating costs for TVA's coal fleet. Aging coal units expected to operate more frequently outside their design, driven by low gas prices and increasing renewables on the system, have a greater risk of substantially increased operating costs. To assess the potential impact, TVA performed a sensitivity simulating a high trajectory for operations and maintenance costs

and capital costs for the coal plants, as well as higher environmental spend. Unit performance assumptions remained the same as in the base case, while total non-fuel costs were increased by over 60 percent on average on a present value basis.

Analysis indicates the potential for about 2,200 MW of coal to be retired by 2028. As the retired coal capacity had relatively low capacity factors overall, CTs were the preferred replacement resource.

8.2.7 More Stringent Carbon Constraints

When reviewing results of the primary cases, stakeholders inquired about the potential impact of a higher than projected carbon penalty in the Decarbonization scenario.

To assess this, TVA performed a sensitivity off the Decarbonization base case (4A) that doubled the carbon penalty to $40-80/ton and reflected the cascading impact in natural gas and power price forecasts. Figures 8-15 through 8-17 shows a comparison of the key assumptions in the Current Outlook and Decarbonization base cases compared to the double decarbonization sensitivity case.

Analysis indicates an acceleration of about 2,200 MW of coal retirements that were already present in the Decarbonization base case. CC expansion was accelerated, displacing coal generation, and 175 MW of hydro generation was added by 2038.

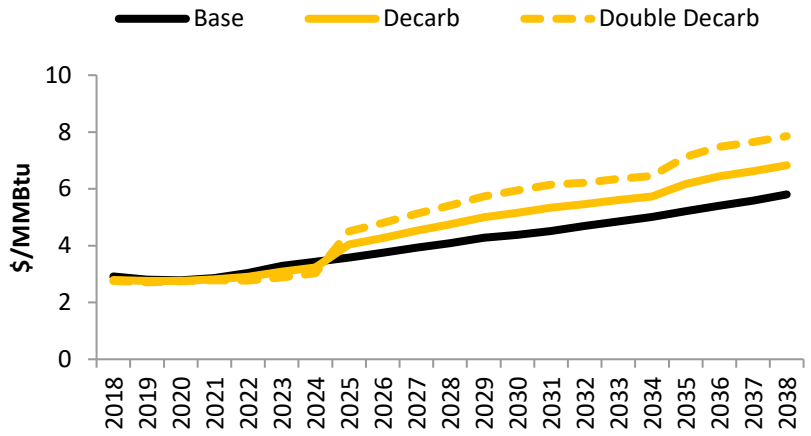


Figure 8-15: Natural Gas Price Forecast

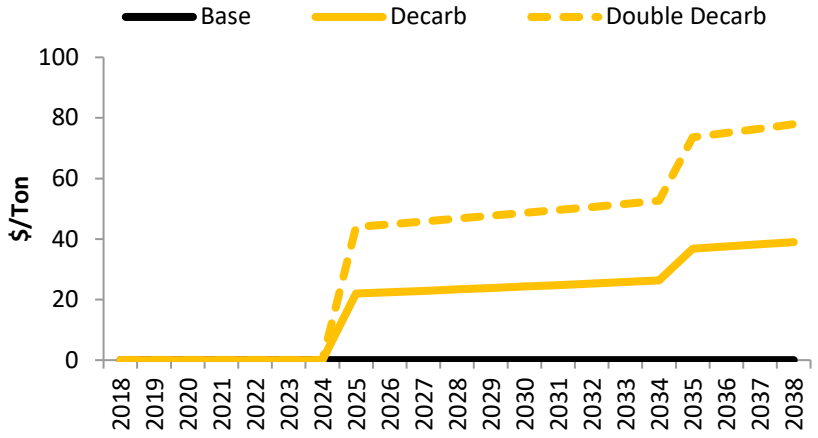


Figure 8-16: Carbon Price Forecast

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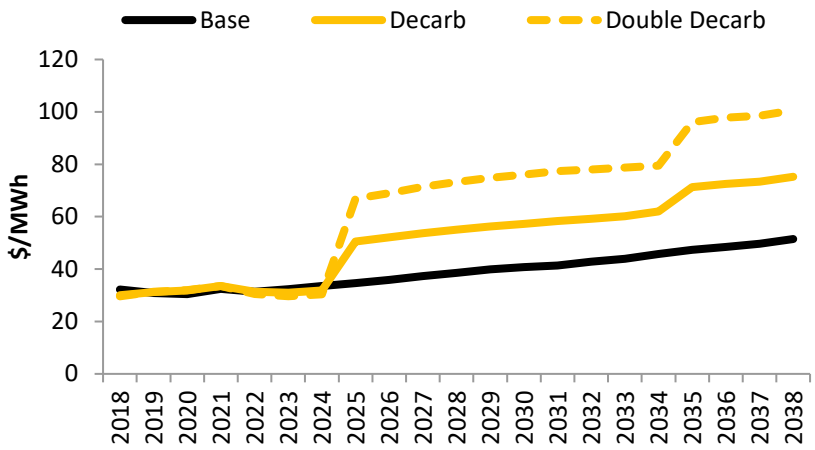


Figure 8-17: Power Price Forecast

8.2.8 Variation in Climate

Stakeholders also expressed interest in understanding how variation in climate may impact capacity expansion plans. Based on an USEPA report (USEPA 430-F-16-004, "What Climate Change Means for Tennessee"), the effects of climate change may mean hotter, drier summers and warmer, wetter winters. Hotter and drier summers will reduce the output of thermal and hydro resources and increase loads. On the other hand, a warmer and wetter winter will decrease loads and increase hydro generation. TVA performed a sensitivity to gauge the impact of a 3° F increase in the average annual temperature across the Tennessee Valley, coupled with changes in seasonal rainfall.

Analysis for this sensitivity indicates that the TVA system would become summer peaking. CT additions are accelerated to replace the impact of derated coal and nuclear capacity in the summer until about 2,100 MW nameplate of additional solar can be added to help maintain summer reserve margins. Total Resource Cost increased by about $3 billion due to the increased summer peak and thermal derates in the summer, while carbon emissions improved slightly due to increased solar and hydro generation and decreased coal generation.

8.2.9 Summary of Sensitivity Cases

The sensitivity cases TVA performed that have the potential to impact capacity expansion are summarized below in Figure 8-18. Capacity expansion impacts are shown by resource type, with increases highlighted in green and decreases highlighted in red. The results from the sensitivity cases were considered in developing the IRP Recommendation.

Chapter 8: Strategy Assessment and Next Steps

SENSITIVITY CASE Base Case comparison is the Current Outlook unless otherwise noted	CAPACITY EXPANSION IMPACTS BY 2038 GREEN indicates increase and RED indicates decrease in resource type						
	Nuclear	Coal	Gas	Hydro	Solar Nameplate	Wind Nameplate	EEDR
Higher Natural Gas Prices				+55 MW	+2,050 MW		
Lower Natural Gas Prices			2,000 MW CT replaced by CC		-5,900 MW		
Lower Wind Costs			-1,100 MW		-3,100 MW	+4,200 MW	
Greater EE & DR Market Depth			-2,000 MW		-2,200 MW		+2,100 MW
Integration Cost & Flexibility Benefit			Minor timing differences		Minor timing differences		
Pace & Magnitude of Solar Additions					+1,100 MW		
Magnitude of Solar Additions (Valley Load Growth)			1,000 MW CC replaced by CT		+6,000 MW		
Higher Operating Costs for Coal Plants		-2,200 MW	+1,500 MW				
More Stringent Carbon Constraints (Decarbonization)		-2,200 MW accelerated	CC expansion accelerated	+175 MW			
Variation in Climate	Summer derates	Summer derates	CT expansion accelerated		+2,100 MW		

Figure 8-18: Summary of Sensitivity Cases

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9 Recommendations

9.1 Introduction

The Tennessee Valley Authority's 2019 Integrated Resource Plan (IRP) will guide TVA in making decisions about the energy resources used to meet future demand for electricity. Having a long-range resource plan enables us to provide low-cost, reliable and clean electricity to the people we serve. The plan is a crucial element for success in a constantly changing business and regulatory environment that will better equip us to meet many of the challenges facing the electric utility industry in the coming years.

TVA used an integrated, least-cost framework considering multiple views of the future to determine how potential resource portfolios could perform in different market and external conditions. TVA's goal is to identify an energy resource plan that performs well under a variety of future conditions, taking into account cost, risk, environmental stewardship, operational flexibility and Valley economics.

TVA conducted the IRP process in a transparent, inclusive manner that provided numerous opportunities for public education and participation. The analyses performed in this IRP study relied on industry-standard models and incorporated best practices while using an innovative methodology to more fully evaluate the role of distributed energy resources in the power supply mix. Resource cost and performance input data were independently validated.

9.2 Key Findings

The IRP study demonstrates that TVA power will continue to be low-cost, reliable and clean into the future. Our resource additions will build on TVA's existing diverse asset portfolio.

Study results show:

- There is a need for new capacity in all scenarios to replace expiring or retiring capacity
- Solar expansion plays a substantial role in all futures
- Gas, storage and demand response additions provide reliability and/or flexibility
- No baseload resources (designed to operate around the clock) are added, highlighting the need for operational flexibility in the resource portfolio
- Additional coal retirements occur in certain futures (such as lower load, higher operating cost, and carbon-constrained worlds)
- Energy Efficiency (EE) levels depend on market depth and cost-competitiveness
- Wind could play a role if it becomes cost-competitive (including transmission)
- In all cases, TVA will continue to provide for economic growth in the Tennessee Valley.

TVA assessed the performance of the five planning strategies using metrics to evaluate cost and risk, environmental stewardship, operational flexibility and effects on Valley economics. TVA's observations about strategy performance include the following:

- The scenario TVA finds itself operating in has more impact on overall results than the strategy or strategies TVA implements.
- All strategies evaluated have positive aspects but also have unique tradeoffs to consider.

9.3 Developing the Recommendation

The IRP results, including the 30 primary cases and the sensitivity cases, provide a robust set of potential resource additions and retirements evaluated in the IRP from which the final recommendation was derived. The Recommendation takes into account customer priorities around power cost and reliability across different futures, along with environmental stewardship and Valley economics. Implementing the least-cost resource plan with these priorities in mind will help ensure TVA continues to fulfill its mission to serve the people of the Tennessee Valley.

In developing a recommendation from the study, TVA has elected to establish guideline ranges for key resource types (owned or contracted) that make up the

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target power supply mix. This general planning direction is expressed over the 20-year study period while also including more specific direction over the first 10-year period. In order to distill the considerable number of cases evaluated through the original scenario and strategy analysis, and the sensitivity cases, the recommendation uses ranges that are centered on results obtained under the Current Outlook scenario. The other scenario and sensitivity results provide a sense of how the recommended mix might change as the future changes.

The need to shift the resource mix will be based on these key variables:

- Changing market conditions
- More stringent regulations
- Technology advancements

These three variables represent the fundamental drivers for most of the variation in the resource plans produced across the strategy/scenario combinations. Our planning direction, while initially focused around the current view of the future, is flexible enough to indicate how that power supply mix shifts if one or more of these key variables exhibits a material change from the forecasts used in the IRP. The Recommendation meets the dual objective of ensuring flexibility to respond to the future while providing guidance on how our resource portfolio should change as the future unfolds.

9.4 Target Power Supply Mix

Based on scorecard results, the Base Case strategy performs well, but there are tradeoffs compared to other strategies across the full set of performance metrics. Recognizing that a variety of future scenarios are possible and each strategy has positive aspects, all IRP results are included in the recommendation to provide flexibility for how the future evolves.

Figure 9-1 shows the range of resource additions and retirements proposed by the end of the first 10 years of the study (2028) and by the end-year of the study (2038), shown in Megawatts (MW). The solid gray bars represent expiring or retiring capacity assumed in the baseline case. The patterned gray bars indicate where retirements were accelerated in some IRP cases. The solid blue bars represent the range of results from all strategies evaluated in the Current Outlook scenario, which represents our best estimation of the future. The broader range (shown in unshaded black bars) represents how the resource portfolio may respond in different future scenarios and if various conditions evaluated in the sensitivities materialize.

The recommended ranges represent incremental additions (or retirements) from the existing resource fleet and include contracted (market) positions that can be sourced from resources that meet cost and performance requirements, providing flexibility for the portfolio. The results are bound by the full range of the IRP cases and sensitivity runs. TVA will closely monitor key input variables, including changing market conditions, more stringent regulations, and technology advancements to inform appropriate actions within the recommended ranges and appropriate timing for initiating the next IRP.

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Chapter 9: Recommendations

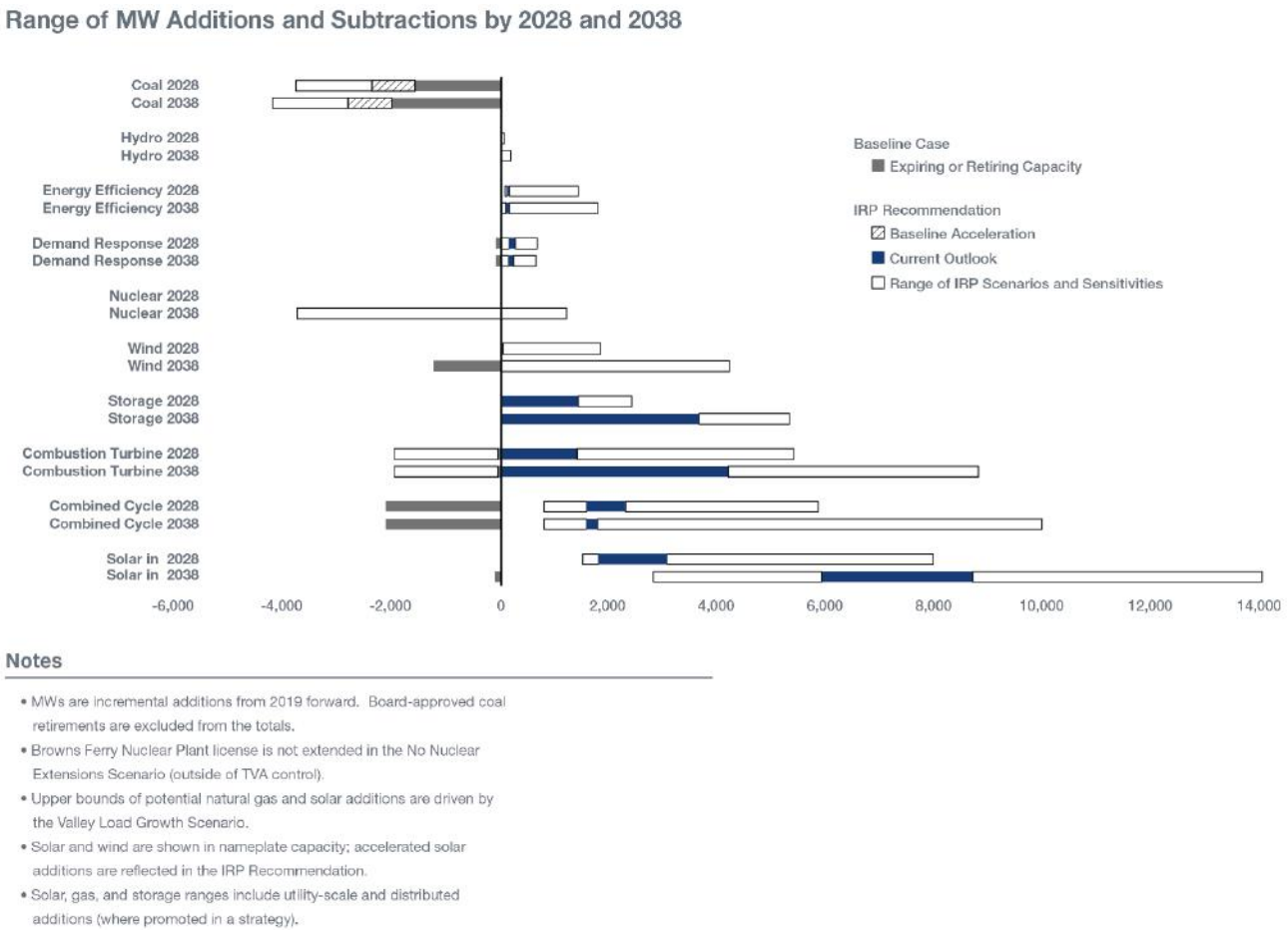


Figure 9-1: Summary of 2019 IRP Recommendation

Coal: Continue with announced plans to retire Paradise in 2020 and Bull Run in 2023. Evaluate retirements of up to 2,200 MW of additional coal capacity if cost-effective.

Hydro: All portfolios reflect continued investment in the hydro fleet to maintain capacity. Consider additional hydro capacity where feasible.

Energy Efficiency: Achieve savings of up to 1,800 MW by 2028 and up to 2,200 MW by 2038. Work with our local power company partners to expand programs for low-income residents and refine program designs and delivery mechanisms with the goal of lowering total cost.

Demand Response: Add up to 500 MW of demand response by 2038 depending on availability and cost of the resource.

Nuclear: Pursue option for second license renewal of Browns Ferry for an additional 20 years. Continue to evaluate emerging nuclear technologies including Small Modular Reactors as part of technology innovation efforts.

Wind: Existing wind contracts expire in the early 2030s. Consider the addition of up to 1,800 MW of wind by 2028 and up to 4,200 MW by 2038 if cost effective.

Storage: Add up to 2,400 MW of storage by 2028 and up to 5,300 MW by 2038. Additions may be a combination of utility and distributed scale. The trajectory and timing of additions will be highly dependent on the evolution of storage technologies.

Gas Combustion Turbine: Evaluate retirements of up to 2,000 MW of existing combustion turbines if cost effective. Add up to 5,200 MW of combustion turbines

by 2028 and up to 8,600 MW by 2038 if a high level of load growth materializes. Future CT needs are driven by demand for electricity, solar penetration, and evolution of other peaking technologies.

Gas Combined Cycle: Add between 800 and 5,700 MW of combined cycle by 2028 and up to 9,800 MW by 2038 if a high level of load growth materializes. Future CC needs are driven by demand for electricity and gas prices, as well as by solar penetration that tends to drive CT instead of CC additions.

Solar: Add between 1,500 and 8,000 MW of solar by 2028 and up to 14,000 MW by 2038. Additions may be a combination of utility and distributed scale. Future solar needs are driven by pricing, customer demand, and demand for electricity.

TVA's recommended planning direction affirms its commitment to a diverse and flexible resource portfolio guided by the least-cost system planning mandate. The ranges above provide a general guideline for resource selections. TVA believes meeting its future needs in accordance with the resource technologies and ranges in this recommendation position TVA to continue to deliver low-cost, reliable, and clean power to the people of the Tennessee Valley.

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10 Implementation

This chapter outlines some of the challenges and next steps TVA faces in implementing the recommendations of the IRP study, and discusses key policy considerations and improvements to modeling and the study process.

10.1 Overview of Next Steps

In finalizing the IRP and EIS and developing the IRP Recommendation, TVA considered the input received during the comment period. No earlier than 30 days after publication of the notice of availability of the Final IRP/EIS in the Federal Register, the TVA Board of Directors will be asked to make a decision on the IRP Recommendation. After the Board makes a decision, the NEPA process is completed by issuing a Record of Decision that documents the Board's action and its basis.

10.2 Implementation Challenges

The Regional Energy Resource Council (RERC), after reviewing the recommendations in the IRP, offered the following advice to the TVA Board:

1. TVA should monitor federal and state regulations, legal challenges, and industry changes that may alter the broader energy environment and take appropriate actions to mitigate risks to the power system's reliability and costs.
2. TVA should continue to work with local power companies, directly served customers, and stakeholders to collaborate on Distributed Energy Resources (DER) and distribution planning; build greater visibility into customer needs; and prepare for associated data management. Standardization of cost-effective DER smart technologies will enable the system to efficiently utilize distributed resources.
3. TVA should continue engaging with stakeholders early in any decision process on the site selection for solar, gas power generation, and utility-scale energy storage to avoid land-use conflicts, encourage the utilization of existing infrastructure assets, and maximize system benefits. In addition, TVA should continue to analyze small-scale, flexible, carbon-free nuclear resources for their potential inclusion in a diverse portfolio.
4. TVA should continue evaluating gaps in data, including customer needs and desires, the speed of technology advancement, locational value, flexibility value, etc., in order to inform and be prepared for future IRPs. TVA should also explore advanced data tools to support the analysis.

(Above excerpt from the advice provided by the TVA Regional Energy Resource Council on June 27, 2019. See www.tva.gov/rerc for the full advice statement).

The IRP Recommendation includes significant renewables expansion, introducing operational challenges required to manage intermittency and dynamic loads. Enhanced awareness of the location of renewable resources, both utility and distributed scale, and to weather impacts on solar generation, will become increasingly important. Early experience with battery storage on the system will provide additional insight as to how the various storage use cases might be employed to further support renewables integration and provide economic benefit.

Implementing the recommendations from the IRP will require close cooperation between TVA, local stakeholders, Local Power Company (LPC) partners and Valley electric customers, particularly around deployment of distributed energy resources. TVA is primarily a wholesale power provider and the LPCs have the relationship with most end-use customers. TVA will need to partner with LPCs and other stakeholders in the region to better understand the potential for distributed resources in the Valley and their locational value to inform resource decisions.

The IRP Recommendation also includes more conventional resources, primarily gas-fired, that come with their own implementation challenges in the areas of siting and permitting, both for the units themselves and for the transmission lines and gas pipelines associated with them. TVA has several teams working on various aspects of the siting and permitting work necessary to ensure that when these resources are

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needed as part of the generation portfolio, TVA will be better positioned to add them to the resource mix.

10.3 Policy Considerations

The IRP is a resource planning study focused on identifying a target power supply mix for TVA. In the process of developing the cases and reviewing the results with stakeholders, a number of policy-related issues were raised that are outside the scope of the IRP itself, but will need to be considered as we move toward implementation of recommendations from the study.

- Continued evolution of programs that provide flexibility for customer-owned generation
- Evolution of Federal/State energy and environmental policies
- Advancements in customer expectations and requirements for clean energy
- Enhancing low income equity and energy/environmental justice

We also realize that the level of electric rates and job growth are critical concerns for Valley governments, businesses and residents. The IRP uses two specific metrics for the macro-economic impacts of resource strategies. These metrics and underlying analyses provide important information about future revenue requirements that affect future rate levels and will help inform the future direction of TVA's economic development program. However, none of the strategies had a significantly different impact from the others on the Valley economy. Section 5.5.6 of the EIS provides more information about socioeconomic effects.

10.4 Next Steps

The scenarios and strategies evaluated in the IRP provide insights to how TVA's resource portfolio may need to evolve as the future unfolds. The results also indicate near-term actions that provide benefit across multiple futures. TVA is planning to implement the following near-term actions as part of the IRP:

- Add solar based on economics and to meet customer demand
- Enhance system flexibility to integrate renewables and distributed resources
- Evaluate demonstration battery storage projects to gain operational experience
- Pursue option for license renewal for TVA's nuclear fleet
- Evaluate engineering end-of-life dates for aging fossil units to inform long-term planning
- Conduct market potential study for energy efficiency and demand response
- Collaborate with states and local stakeholders to address low-income energy efficiency across the Valley
- Collaboratively deploy initiatives to stimulate the local electric vehicle market
- Support development of Distribution Resource Planning for integration into TVA's planning process.

As the future evolves, TVA will monitor key signposts that will guide decisions for the long-term. Signposts relate to key variables that could have a significant influence on the future generation portfolio. Key signposts include:

- Demand for electricity
- Natural gas prices
- Customer expectations
- Regulatory requirements
- Operating costs for existing units
- Solar and wind costs
- Emerging and developmental technologies.

TVA will closely monitor these key drivers related to changing market conditions, more stringent regulations, and technology advancements to inform appropriate actions within the recommended ranges and appropriate timing for initiating the next IRP.

Chapter 10: Implementation

10.5 Conclusion

TVA finds considerable value in undertaking an IRP and especially appreciates the input, review and insights of individuals on the IRP Working Group and the RERC. The IRP Working Group and RERC members spent considerable time helping TVA develop a robust plan that meets the criteria outlined in TVA's objectives. TVA values their involvement and the expertise they provided on behalf of their stakeholders in the development of this IRP.

As with any long-term plan, TVA's IRP reflects what we know today and can reasonably expect for the coming years. TVA, along with our employees across the Valley, stands ready to carry out its three-part mission around energy, the environment and economic development. In an ever-changing world, TVA will do its best to continue to serve the people of the Tennessee Valley by providing low cost, reliable and clean power in an environmentally responsible manner while promoting economic development across the Valley.

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2019 Integrated Resource Plan

VOLUME I - APPENDICES



TENNESSEE VALLEY AUTHORITY

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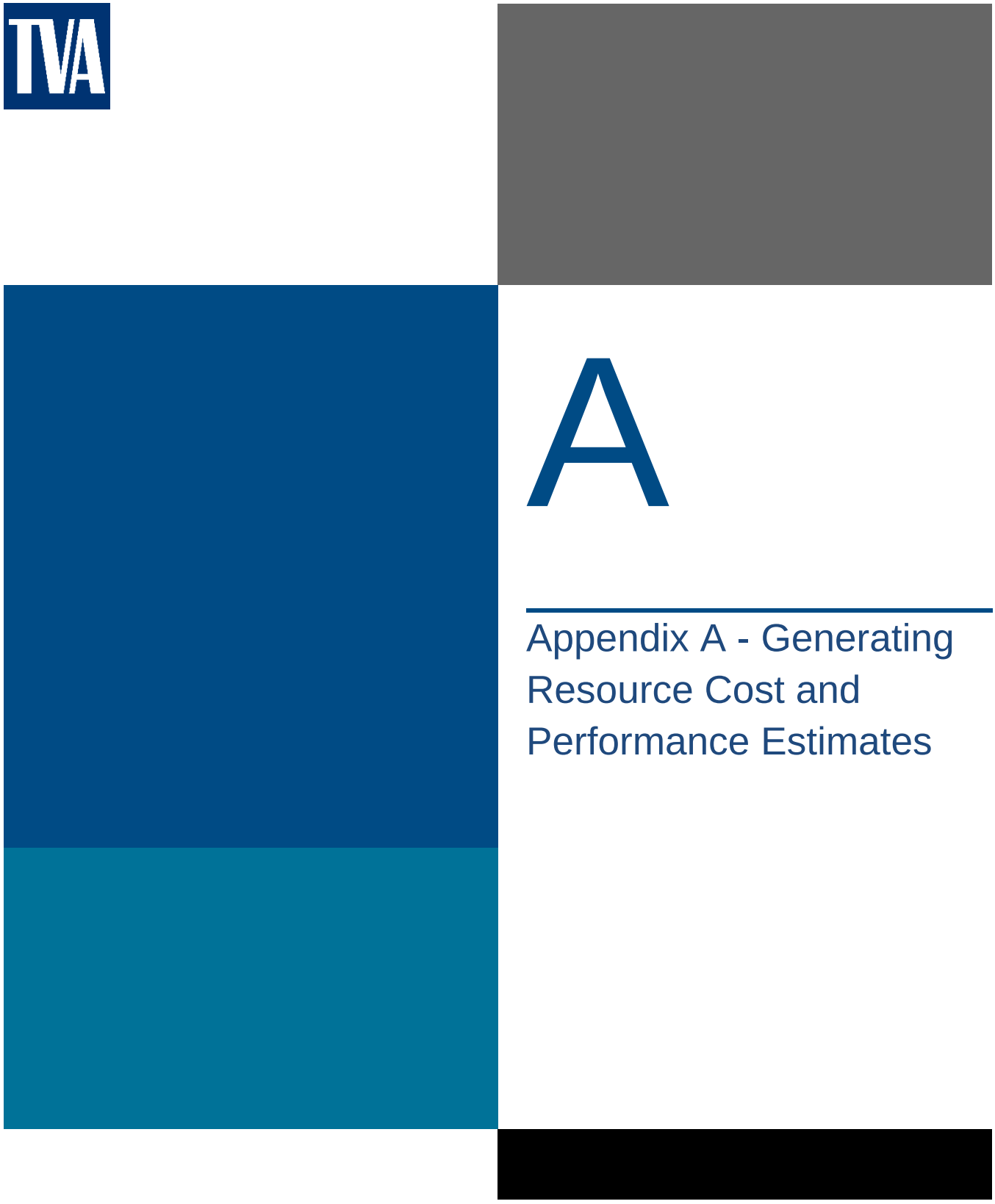
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Appendix A - Generating Resource Cost and Performance Estimates



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Appendix A – Generating Resource Cost and Performance Estimates

Appendix A - Generating Resource Cost and Performance Estimates

A.1 Introduction

A wide array of new resource options were available in the capacity expansion planning models for selection to meet load growth or fill resource needs. Each resource option has a set of unique characteristics such as capacity, construction time, book life, heat rate, outage rate, capital cost, variable cost and fixed cost. Chapter 5 includes a discussion of the resource options considered in the IRP. An independent third party, Navigant Consulting, Inc. (Navigant), reviewed and compared the TVA planning parameters used in the IRP to other industry sources to ensure the modeled unit characteristics and assumptions were representative of the respective generating technologies. This appendix contains a letter from Navigant (see Section A.2. below) summarizing its benchmarking efforts. The appendix also includes TVA's internal benchmarking efforts (see Section A.3).

A.2 Summary Letter: Navigant Benchmarking Report

A.2.1 Cost and Performance Parameters for Resource Alternatives

Review for the 2019 TVA Integrated Resource Plan (IRP)

July 13, 2018

A.2.1.1 Background

Navigant Consulting, Inc., ("Navigant") has reviewed and recommended cost and performance parameters for potential new power generation and storage resource alternatives to be considered in the Tennessee Valley Authority (TVA) 2019 Integrated Resource Plan (IRP) ("Resource Estimates"). The work was performed for TVA under purchase order #3890415 (revised). The primary deliverable was a Microsoft Excel workbook summarizing the Resource Estimates and related assumptions and notes. The preliminary draft workbook was delivered on June 20, 2018, and the final workbook was delivered on July 13, 2018.

This report ("Report") summarizes the work scope, the resources and parameters reviewed, and our primary findings at a high level. In performance of this review and Report, we have in part relied on information provided to us by TVA and third parties. While we believe this information to be reliable, it has not been independently verified for either accuracy or validity, and no assurances are offered with respect thereto. This Report does not represent any endorsement of any particular resource type, nor a guarantee that any resource type is viable or can be ultimately delivered. This Report covers the TVA 2019 IRP only. Navigant and its employees are independent contractors providing professional services to TVA and are not officers, employees, or agents of TVA.

A.2.1.2 Scope

As part of the 2019 IRP effort, TVA is identifying and evaluating potential new power generating and storage resources necessary to serve future load. Estimated values for new resource cost and performance parameters are necessary in order to perform generation capacity expansion and dispatch modeling. TVA requires estimated values that are internally consistent and representative of actual values to be observed in practice. Parameters include performance and cost for traditional, renewable, and alternative generation technologies, and also for distributed energy and associated storage technologies. Estimated values were obtained from several sources including the TVA business units, the Distributed Generation Information Exchange (DGIX), and the IRP project staff itself.

Navigant's task was to perform a due diligence review of the TVA-provided cost and performance parameter values. This included comparison to credible industry sources, where available, with the objective of determining whether the provided estimates are indicative of what can be expected for the technologies when located in the Tennessee Valley.

The deliverable was a spreadsheet workbook of tables – one for each resource technology – that:

- lists the parameters and associated values provided by TVA,
- lists alternative values as available and relevant, and
- recommends specific Resource Estimates for use in IRP modeling.

A.2.1.3 Technologies and Parameters Reviewed

Power generation and energy storage resources considered in the review included the following, which represent alternatives for new capacity to serve future load:

- Natural gas-fired generation
  - Reciprocating internal combustion engine (RICE)
  - Simple cycle combustion turbine
  - Combined cycle (with and without Supplemental Duct Firing)
- Coal-fired generation
  - Pulverized coal (with and without carbon capture and sequestration)
  - Integrated gasification combined cycle (coal) (with and without carbon capture and sequestration)
- Nuclear generation
  - Pressurized water reactor (PWR)
  - Advanced pressurized water reactor (PWR)
  - Small modular reactors
- Energy storage
  - Pumped hydro-electric storage
  - Battery storage
  - Compressed air energy storage (CAES)
- Solar photovoltaic (PV) generation
  - Utility scale (both fixed-panel and tracking)
  - Commercial rooftop (both small and large scale)
- Wind energy generation
  - Located in Midcontinent Integrated System Operator (MISO) or Southwest Power Pool (SPP)
  - Onshore within the Tennessee Valley
  - Obtained via High Voltage Direct Current (HVDC) transmission
- Biomass energy generation
  - Direct combustion at new facility
  - Repowering of existing coal facility

Cost and performance parameters vary somewhat according to generating and storage technology, but each technology generally has 11-14 applicable characteristics or parameters for which values were reviewed. These include summer net dependable capacity, summer full-load heat rate, build time, annual outage rate, storage efficiency, number of storage hours, storage input demand, book life, plant overnight capital cost, transmission upgrade cost, total overnight capital cost, variable operating & maintenance (O&M) cost, and fixed operating & maintenance cost (both in $ and $/kW-year).

When relevant and reliable industry values for specific parameter values were available, they were utilized for comparison and as a basis for any Resource Estimate. Notes concerning the source and reconciliation of any material differences were provided in the workbook.

High-Level Findings and Recommendations

Navigant provided recommended parameter values and performed direct comparisons with TVA estimates for 272 draft parameters provided by TVA, and provided an additional 22 values for parameters where TVA had not yet formulated a value. For about 57 percent of these, the TVA values were determined to be consistent with the recommended values (meaning within 10 percent, measured relative to the original TVA estimate). The remaining 43 percent of the values showed numerical differences of greater than 10 percent, characterized here as “material”. Of the materially different values, over 80 percent were differences greater than 20 percent. Some parameters are correlated with others, and one key difference in interpretation or estimation sometimes led to a pattern of differences across parameters.

Appendix A – Generating Resource Cost and Performance Estimates

Additionally, variations in underlying classification categories (in cost allocation, for example) can mean that there is some compensation or offsetting in net effects when modeling. Overall, the majority of TVA values were determined to be consistent with recommended values, and otherwise reasonable.

Regarding natural gas-fired generating resources, for the 103 parameter values compared, 45 (44 percent) of the TVA values were consistent with values recommended by Navigant. Roughly half of all parameters showed differences of 20 percent or more. Systematic material difference between TVA values and recommended values existed in annual outage rates, where the Navigant recommendations were higher across the board. Build times recommended by Navigant were generally lower, and overnight capital costs mostly higher. For a given resource, parameter value differences vary in terms of impact, and a number of potentially offsetting differences are evident.

The majority (75 percent) of the 48 coal resource parameters compared were in agreement. For the parameters with material differences, there was no systematic pattern, although some differences were noted for plant variable O&M ($/MWh) and fixed O&M ($/kW-year) costs.

For nuclear generation, the vast majority (88 percent) of the 24 parameter values were found to be consistent. Total overnight capital costs were 20 percent greater for two reactor types, and variable O&M values were moderately higher than TVA values.

Regarding energy storage, 73 percent of the 26 compared parameter values were materially consistent. Each value with a material difference was at least 20 percent different. The parameters with such differences included net dependable capacity, book life, total overnight capital cost, variable O&M and fixed O&M costs.

Over half (56 percent) all of the solar PV parameter values compared were consistent. Net dependable capacity, build time, total overnight capital costs, and fixed O&M costs showed material differences from the Navigant-provided values.

For wind energy, 11 of the 89 parameter values compared (or 39 percent) were consistent, with most of the remaining values showing differences greater than 20 percent. Build time, variable O&M and fixed O&M costs were all greater than 20 percent different than TVA values in most cases for the four technology alternatives.

Biomass options show consistent parameter values in 44 percent of the comparisons, with material differences in all of the nine remaining values compared. Most of the parameters for repowering existing coal with biomass were at least 20 percent different, reflecting the situational nature of such projects.

On balance for all the generating and storage resources examined, the majority of the proposed TVA parameter values for which comparisons were performed were consistent with recommended values – almost three-fifths of all compared values. For those parameters with material differences in values of 10 percent or more, a number of those were to some degree offsetting within a given resource/technology.

The TVA values reviewed were provided in June of 2018, and the summary above relates to recommendations and comparisons based on the values provided at that time. Since then, TVA has modified numerous values to be used in its IRP modeling, in part reflecting the outcome of this review. TVA staff were extremely helpful and responsive both in providing supporting information needed in the review/comparison process, and in providing useful feedback and clarification on the draft workbook deliverable and the constituent parameter values. It is clear that TVA is striving to fairly represent all of the potential new generating resources in its IRP modeling, thus laying the basis for meaningful IRP modeling of resource expansion alternatives.

A.3 TVA Benchmarking Summary: Optimizing Asset Decisions

When evaluating how to best meet future needs for electricity, TVA optimizes decisions using least-cost planning models. These models require inputs on variables such as capacity amounts, upfront capital

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costs, and fuel usage parameters, and many others. The models integrate all the variables for new resources under the various scenarios (i.e., various fuel prices, demand projections, regulatory environments, etc.) to select expansion units that best fit the portfolio needs and requirements in a manner that represents the least system cost.

One of the key assumptions that contributes to resource selection is the cost to construct a particular unit. Construction and capital costs are determined from industry experience, vendor information, benchmarking, etc. These costs are presented as Overnight Capital Costs in the table. This is the cost to build the asset and is computed as total dollars divided by the capacity of the unit in kilowatts ($/kW).

Depending on how an asset's dispatch cost compares to other assets in the fleet, the amount of energy sourced from an asset may vary greatly over time. For example, when natural gas prices are low, those assets powered with natural gas serve customers with more energy than when natural gas prices are high. A concept that is sometimes used to compare asset costs is Levelized Cost of Energy (LCOE). This measure divides the total cost of an asset (i.e., construction and capital, ongoing maintenance and operating, and dispatch costs which are primarily fuel) by expected output or generation.

Because dispatch costs and expected output vary widely across all of the IRP scenarios, LCOE is not a useful metric to benchmark resource costs. A better comparison, and the standard for resource planning, is to compare $/kW installed capital costs. These are the actual inputs to the capacity expansion model and the costs benchmarked by TVA's independent third-party contractor.

Table A-1: Capacities and Capital Costs of Resources

Supply Option[1]		Unit Characteristics	
		Summer Net Dependable Capacity (MW)	Total Overnight Capital Cost[2] (2017 $/kW)
Natural Gas	RICE 12x	226	$948
	RICE 6x	113	$1,071
	RICE 2x	36	$1,656
	Combustion Turbine 6x (LMS 100)	576	$796
	Combustion Turbine 4x (LMS 100)	384	$831
	Combustion Turbine 2x (LMS 100)	192	$925
	Combustion Turbine 3x (7FA)	703	$560
	Combustion Turbine 4x (7FA)	934	$540
	Combined Cycle 1x1	591	$699
	Combined Cycle 2x1	1,182	$612
	Combined Cycle 3x1	1,773	$560
	Combined Cycle With Carbon Capture and Storage	1,593	$2,165
Coal	Integrated Gasification Combined Cycle Coal	550	$3,834
	Pulverized Coal 1x8	800	$2,880
	Pulverized Coal 2x8	1,600	$2,682
	Integrated Gasification Combined Cycle Coal with Carbon Capture and Storage	515	$7,326

Appendix A – Generating Resource Cost and Performance Estimates

Supply Option[1]		Unit Characteristics	
		Summer Net Dependable Capacity (MW)	Total Overnight Capital Cost[2] (2017 $/kW)
	Pulverized Coal 1x8 with Carbon Capture and Storage	617	$7,003
	Pulverized Coal 2x8 with Carbon Capture and Storage	1,200	$6,275

Appendix A – Generating Resource Cost and Performance Estimates

Supply Option[1]		Unit Characteristics	
		Summer Net Dependable Capacity (MW)	Total Overnight Capital Cost[2] (2017 $/kW)
Nuclear[3]	PWR	1,260	$5,981
	APWR	1,117	$8,040
	Small Modular Reactors	600	$5,369
Storage	Pump Storage	850	$2,332
	Utility Battery Storage (4 hour)	100	$2,824
	Residential Battery Storage (4 hour)	0.005	$2,998
	Compressed Air Energy Storage	330	$855
	Fuel Cells	25	$4,050
	Advanced Chemical Battery	25	$2,871
Hydro	Hydro Spill Addition	40	$2,429
	Hydro Space Addition	30	$1,988
	Hydro Run of River	25	$2,816
Solar[4, 5]	Utility Tracking Solar (20 Year PPA)	50	$1,293
	Utility Tracking Solar	25	$1,293
	Utility Fixed-Panel Solar	25	$1,203
	Small Commercial Rooftop Solar	0.2	$1,850
	Large Commercial Rooftop Solar	1	$1,740
	Residential Solar	0.006	$2,800
Wind[5]	MISO Wind	200	$1,744
	SPP Wind	200	$1,744
	In-Valley Wind	120	$1,838
	HVDC Wind	200	$1,719
Biomass	New Direct Combustion Biomass	115	$4,687
	Repowering Existing Coal with Biomass	124	$2,271

Footnotes:

1. Supply options represent generic site build costs.
2. Overnight capital costs do not include Allowance for Funds Used During Construction (AFUDC). All options include a generic transmission upgrade costs.
3. The PWR and APWR costs are for the first unit. The SMR cost is for a 12-unit facility.
4. The overnight costs for solar are stated in $/kW (DC) as benchmarked but summer net dependable capacity (SNDC) is stated as nameplate AC MW.
5. The capital costs for solar and wind assume that tax credits expire or decrease, as applicable, under current federal law. Solar capital costs are assumed to decline over time per recent trajectories and wind capital costs to increase at less than the rate of inflation.

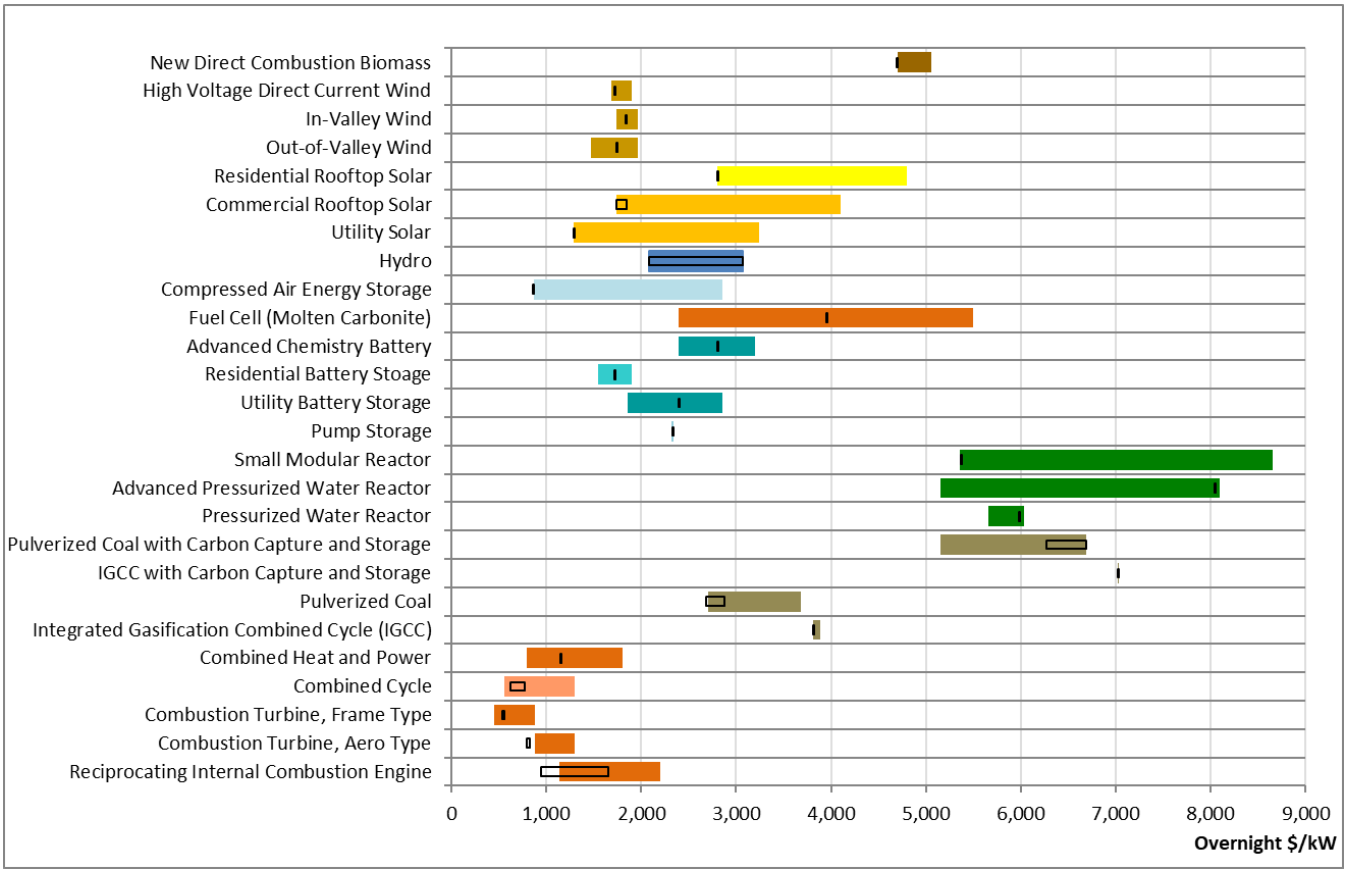
A.3.1.1 Benchmarking Capital Costs

TVA engaged an independent third party, Navigant Consulting, Inc. (Navigant), to review cost and performance assumptions proposed for use in the 2019 IRP. Navigant evaluated TVA's assumptions for various unit types along with assumptions for distributed resources in a collaborative effort with stakeholders. This independent assessment found

Appendix A – Generating Resource Cost and Performance Estimates

that the majority of assumptions proposed for the study were consistent with typical values used in the industry. Many of the remaining assumptions were modified, based on Navigant's recommendations, prior to running the IRP cases. The data in the table presented in the preceding section reflects adjustments recommended by Navigant.

TVA also prepared a comparison of its capital cost assumptions from the IRP study to a recent Lazard report, EIA data and other utility IRPs to further verify the reasonableness of TVA's assumptions. This comparison chart, Figure A-1, shows how TVA's assumptions on capital costs compare to those recently published sources. The cost comparisons are generally consistent given that the majority of the data points are based on national averages and TVA's costs are specific to the TVA system and reflect recent project experience and quotes.



Colored bars reflect benchmark ranges and black outlines represent TVA assumptions;
TVA assumptions outside of benchmark ranges are based on actual costs of TVA projects or vendor quotes.

Figure A-1: Benchmark Ranges of Capital Costs and IRP Values.

A.4 Modeling Approach for Wind & Solar Options

Wind and solar resources have unique operating characteristics that are different from thermal and other more traditional resources. To properly account for the contribution from these intermittent resources, the energy contribution is represented using hourly energy profiles that are imported into the model, and the seasonal capacity of these resources is represented by a computed Net Dependable Capacity (NDC) value. The annual capacity factor of the hourly energy profiles is also computed to ensure the total amount of energy is comparable to industry benchmark sources. This appendix discusses the methodology TVA used to determine both the energy profiles and NDC values for wind and solar options that are considered in the IRP.

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A.4.1 Wind Modeling

Generation from wind is weather and location dependent and not dispatchable like more conventional resources. Therefore, utilities need to develop a reasonable representation of the output from wind for use in long-range planning models. This "wind shape" is based on actual data collected from specific sites, or modeled data using wind turbine design assumptions.

TVA uses a combination of data from 3TIER, a third-party company specializing in renewable energy assessment and forecasting, and data from TVA wind PPAs to develop the planning assumptions around wind shape and capacity factor for use in the IRP. A "typical week" hourly shape for each month was developed by 3TIER for each wind option. From these shapes, the amount of energy produced can be determined and a capacity factor computed (actual generation expressed as a percentage of maximum possible generation).

A.4.2 Wind Capacity Factors

TVA used actual results from its wind contracts (1,200 MW in Oklahoma, Illinois, Kansas and Iowa), simulated and actual data for the in-Valley sites, and proposals for various projects to determine the capacity factors for the wind resources options included in the IRP. Since each of the options originates from different regions, TVA used a region-specific estimate for annual capacity factors. For modeling purposes, TVA assumed the MISO and SPP option had a 40 percent capacity factor, the HVDC option originating from Oklahoma had a 55 percent capacity factor, and the in-Valley option had a 30 percent capacity factor.

The HVDC project has a 55 percent annual capacity factor due to the availability of wind in Oklahoma and the newer technology of the wind turbines, which were assumed to be GE 1.7-100 wind turbines at a height of 80 meters. This capacity factor is much higher than TVA's existing wind contracts in other locations. Figure A-2 shows the range of capacity factors:

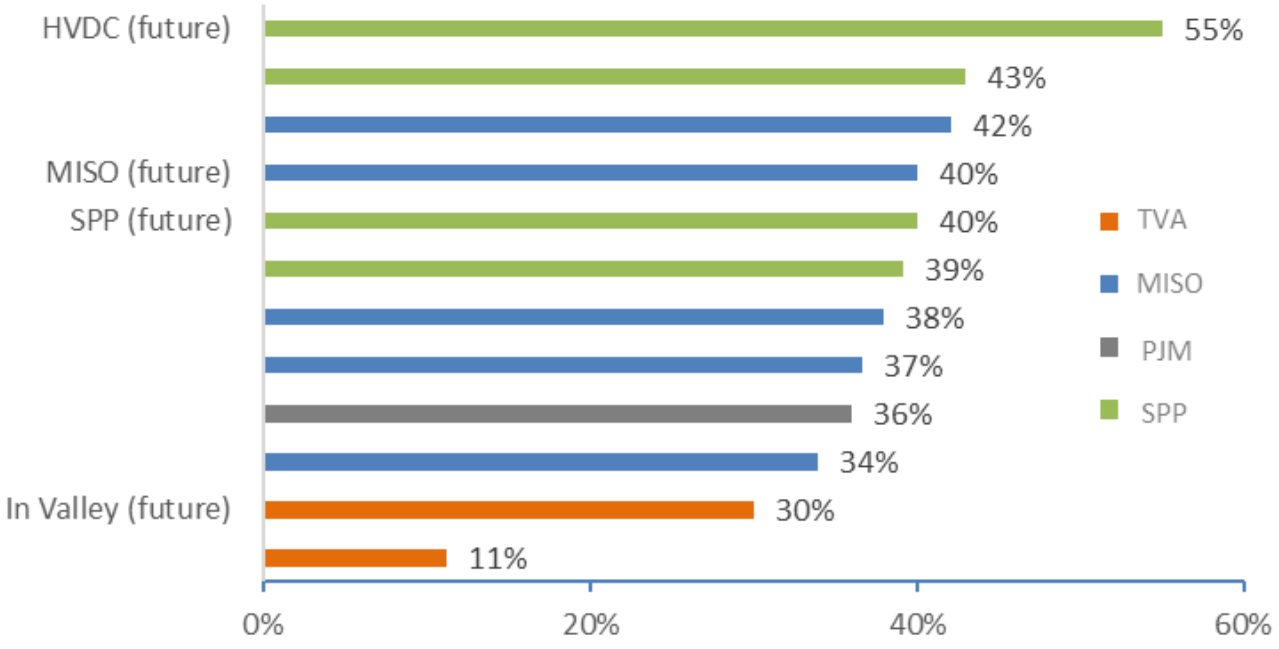


Figure A-2: Wind Capacity Factors.

Appendix A – Generating Resource Cost and Performance Estimates

A.4.3 Wind Net Dependable Capacity

Planners must determine how much wind generation is likely at the summer and winter peak hours so that appropriate Net Dependable Capacity (NDC) credit can be given to wind resources when computing the capacity/load balance to determine if the required reserve margins have been met in a given year. The NDC is applied to the nameplate capacity and is used by the expansion model as a wind resource's contribution toward meeting reserve margin requirements.

For this IRP study, TVA used 39 years of simulated and actual hourly wind data ranging from 1980 to 2018. This 3TIER study simulated data was not updated for this IRP as material changes in historical and simulated wind data were not expected. The wind generation was based on simulation of TVA's existing wind contracts in MISO, SPP, and PJM as well as a site in Kansas near the proposed HVDC site. TVA and 3TIER data were used to assess the long-term variability of the wind for each site in a retrospective analysis of historical wind speed and power. These data points were derived from a mesoscale Numerical Weather Prediction (NWP) model that was statistically calibrated to match the observed data during the measurement period at the height of the towers. An example of the variability of the wind net power is shown in Figure A-3.

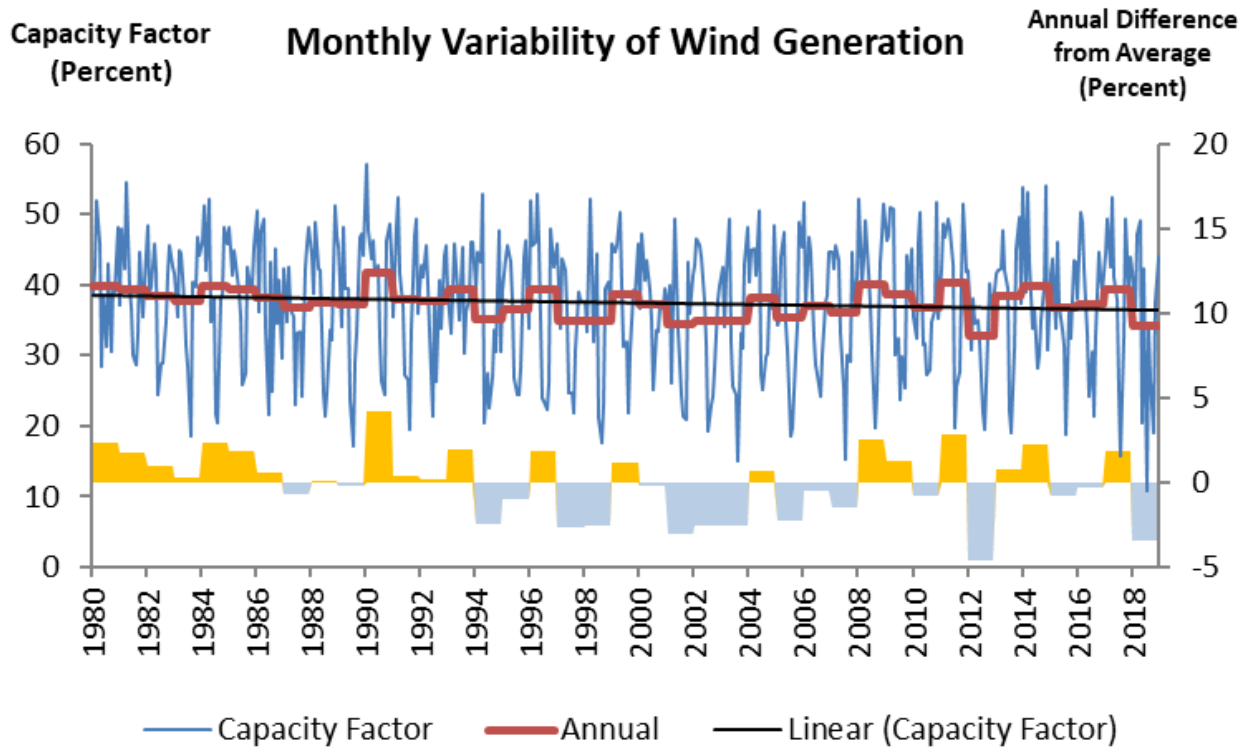


Figure A-3: Example of Wind Monthly-mean variability.

NDC was calculated as 14 and 31 percent for summer and winter, respectively, based on a portfolio view of all current wind contracts to capture the diversity of location across the different states of the region (i.e., Oklahoma, Kansas, Illinois, Iowa). These NDC values were used for all wind options. Further detail on how wind NDC values were calculated is included in the Intermittent Resources Study section of Appendix D.

Because specific sites of future wind in MISO, SPP or In-Valley is unknown, it would be inappropriate to assume a different NDC at this time. A more specific NDC would be incorporated into the wind portfolio NDC calculation once specific sites are known. TVA

did not consider over-subscription contracts where transmission is limited to a level below the nameplate rating of the wind capacity which tends to improve both the annual capacity factor and the NDC rating. The costs associated with the wind projects modeled in the IRP do not reflect oversubscription. In TVA's experience with several existing wind contracts, this over-subscription provision is negotiated through the terms and costs of a particular contract and is not easily comparable to industry benchmarks.

A.4.4 Solar Modeling

Similar to wind, solar resources are also weather and location dependent. Modeling of solar options in the IRP proceeds in a similar fashion to wind, and requires determination of solar shapes, capacity factors and NDC values. Solar data for the 2015 IRP was provided by members of the TVRIX stakeholder group who commissioned Clean Power Research (CPR) to provide TVA with the solar energy profiles for 26 sites across the Tennessee Valley shown in the map below. CPR provided SolarAnywhere® data for 15 years (1998-2013) of consistent, validated, time-series irradiance measurements that provided the historical basis for the NDC, capacity factors and hourly energy patterns. This data was collected for the 2015 IRP and was not updated as material changes were not expected. However, TVA also incorporated capacity factors and hourly generation patterns from TVA solar PPAs to inform assumptions in the 2019 IRP.

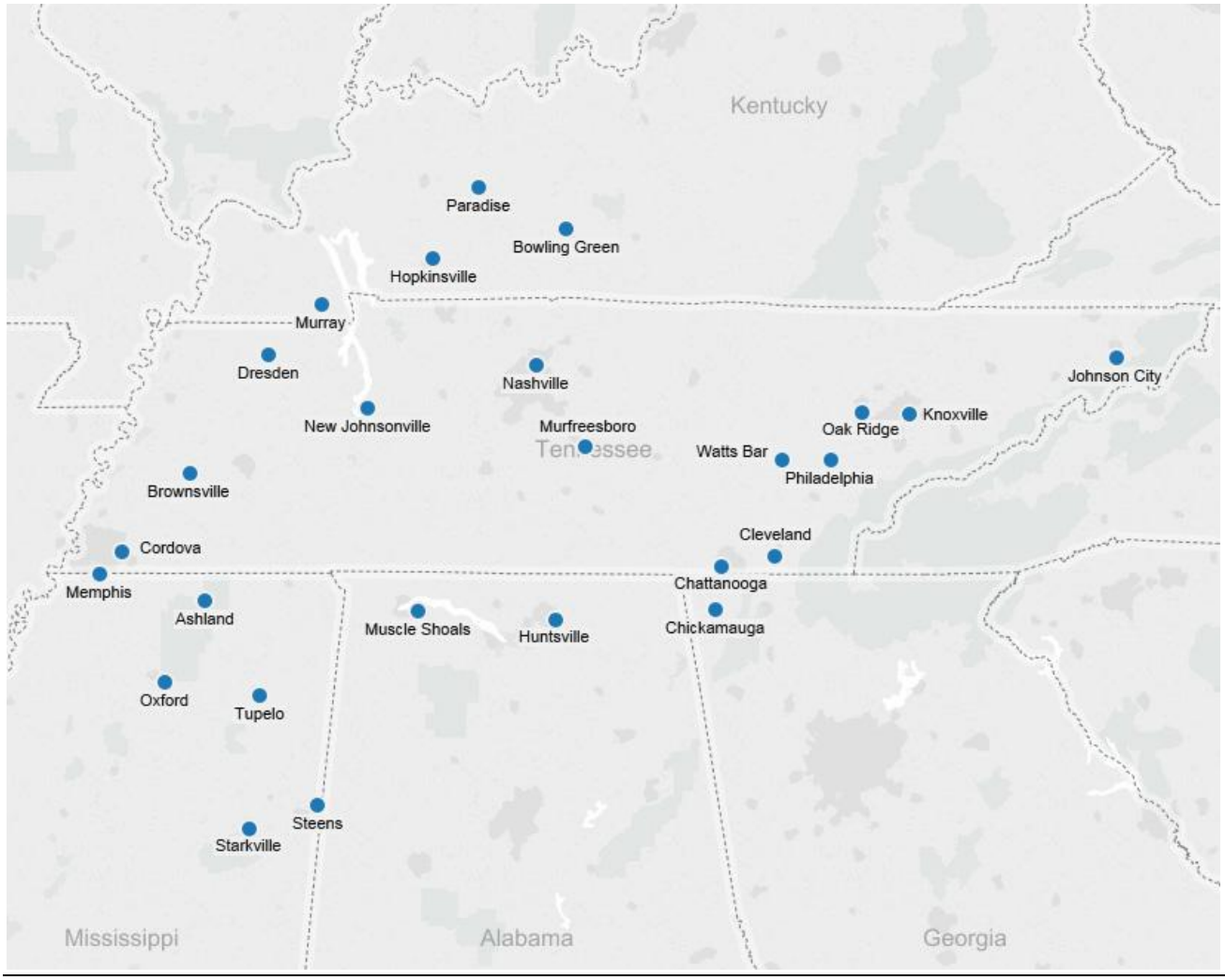


Figure A-4: Sites across Tennessee Valley with historical solar irradiance data supplied by CPR.

Appendix A – Generating Resource Cost and Performance Estimates

A.4.5 Solar Capacity Factors

Using the data supplied through CPR as well as PPA data, TVA determined that annual capacity factors are 20 percent for the fixed axis and 23 percent for the single-axis tracking option. The monthly capacity factors vary as shown in the following chart.

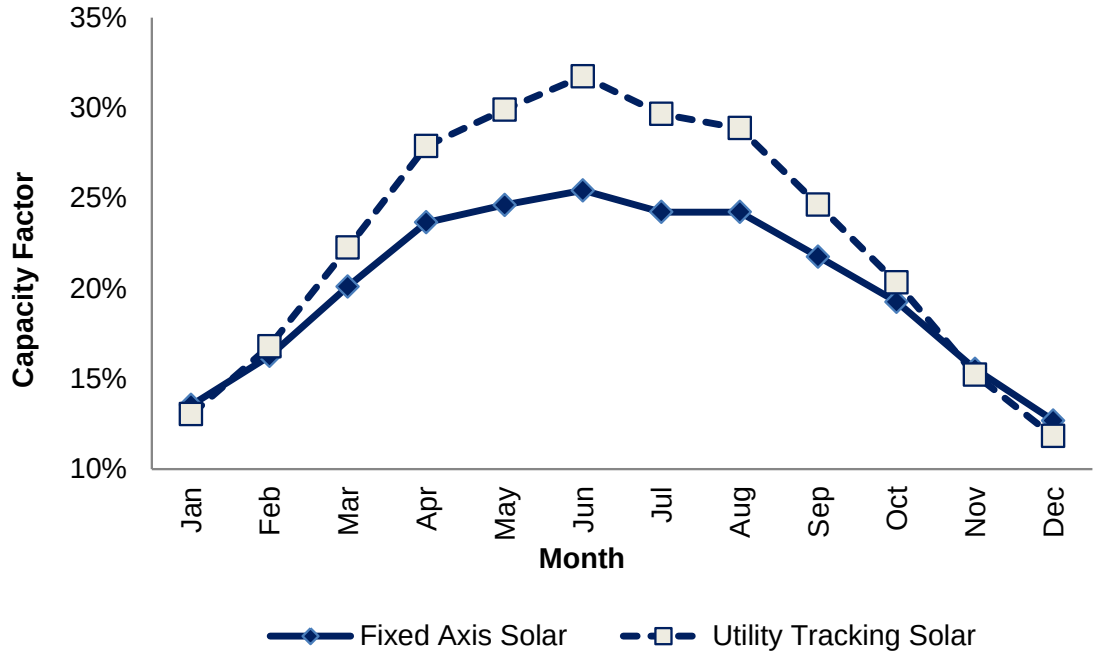


Figure A-5: Solar Fixed Axis and Utility Tracking Capacity Factors by Month.

A.4.6 Solar Net Dependable Capacity

The determination of the NDC for solar resources utilizes the same process as described for wind resources. The figure below shows the range of NDC values for solar fixed-axis systems computed using the CPR and TVA PPA data.

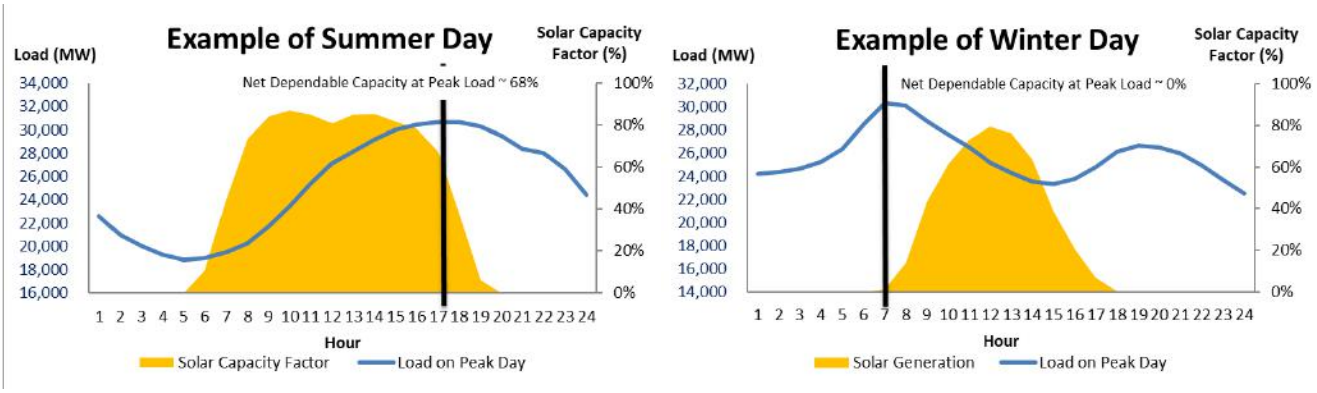


Figure A-6: NDC by hour for Summer and Winter.

In the summer, TVA normally has a peak load at 5:00 p.m. CST, but can also see a peak load between the hours of 2:00 p.m. and 6:00 p.m. CST. The 25th percentile of solar generation of those hours would occur at 5:00 p.m. or 6:00 p.m. CST as the sun is setting. Therefore, the summer NDC was set at 50 percent for fixed axis at all scales. The utility tracking option has a 68 percent summer NDC. All solar options have a zero percent NDC during the winter, since TVA's winter peaks normally occur around 7:00

a.m. CST when solar is not available. Further detail on how solar NDC values were calculated is included in the Intermittent Resources Study section of Appendix D.

B

Appendix B - Programmatic Resource Methodology

Appendix B - Programmatic Resource Methodology

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Appendix B - Programmatic Resource Methodology

B.1 Demand Response, Energy Efficiency, and Beneficial Electrification in the IRP

TVA utilizes a diverse portfolio of energy resource options to provide electric power service at the lowest feasible rate, including the use of programmatic resources related to demand response (DR), energy efficiency (EE) and beneficial electrification (BE). Collectively, these will be referred to as DER programs. These offerings can include incentive programs, pricing products and educational efforts to encourage informed consumer choice. Programs are offered under the EnergyRight® Solutions (ERS) brand and span residential, commercial and industrial sectors. Over the years, TVA programs changed to suit the evolving energy landscape, as depicted in Figure B-1.

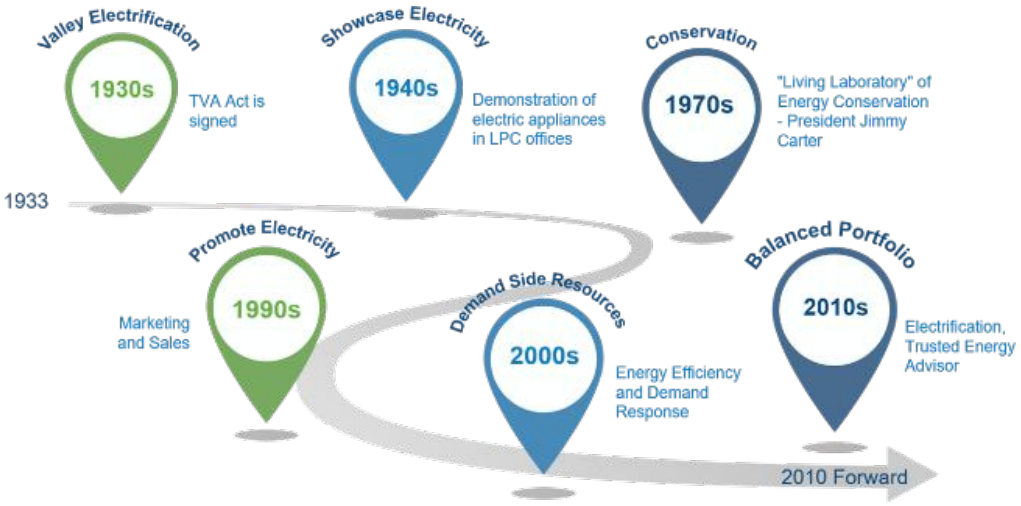


Figure B-1: TVA Energy Program History – A Long View.

For over thirty years, TVA offered DR programs that incent commercial and industrial customers to reduce loads during periods of high demand. Since the mid 2000s, TVA facilitated EE programs that incent energy efficiency across all sectors. Currently, TVA also offers BE programs that help customers reduce overall energy costs, emissions, or both.

DR programs reduce system load at peak hours and potentially offset or delay the need for more expensive peaking generation or power purchases. Various programs provide incentives or price structure changes to commercial and industrial customers in exchange for them suspending a portion of their load during peak periods. These programs act as a zero emissions resource to the TVA system.

EE programs target efficiency upgrades and improvements to reduce system load across many hours. Programs provide incentives or educational opportunities to consumers to spur efficiency improvements in their homes or businesses above and beyond current codes and standards. By reducing inefficient energy use, EE programs help lower fuel costs and decrease emissions. As U.S. Department of Energy (DOE) codes and standards have increased and energy efficiency has taken hold in most market sectors and reduced electricity demand, TVA has reduced EE incentives. However there is opportunity to reduce energy burden within the Low Income residential sector, which has more limited opportunity to adopt energy efficiency technologies. In 2016, TVA initiated an Energy Efficiency Information Exchange stakeholder group to work together to launch a sustainable and equitable

low-income energy efficiency and education model in the Valley. In 2018, TVA launched a Low Income EE pilot program focused on education and outreach coupled with incentives for home upgrades leveraging matching funds from federal programs, LPCs and local communities.

BE programs promote adoption of smart energy technologies across all sectors. Current BE programs incent commercial and industrial customers to utilize equipment powered by electric rather than other conventional sources and incent residential customers to use electric sources for space conditioning and water heating. These programs have the potential to reduce fuel costs and/or societal emissions as compared with individual gas and diesel powered appliances and equipment.

B.1.1 Modeling DER Program Options: A Three-Tiered Approach

To model DER program options for the IRP, TVA leveraged experience and historical data to estimate load changes and costs of potential DR, EE and BE programs. TVA uses a third-party provider (DNV-GL) to evaluate, measure and verify program impacts, and DNV-GL also provides insights on the potential impacts of new programs based on their experience working with TVA and other utilities. Additionally, TVA conducts a Residential Saturation Survey and a Business & Industry Saturation Survey every other year to understand market depth and potential reach of programmatic efforts, which vary from region to region. TVA is also an active participant in and member of multiple industry trade organizations that specialize in energy programs, including eSource, Association of Energy Services Professionals, and others.

Because IRP strategies explore various levels of DER program incentives, it was necessary to model options for selection. As TVA utilizes a combination of education and monetary incentives to encourage greater levels of program participation, a three-tiered approach was taken to develop program offerings for selection (Figure B-2).

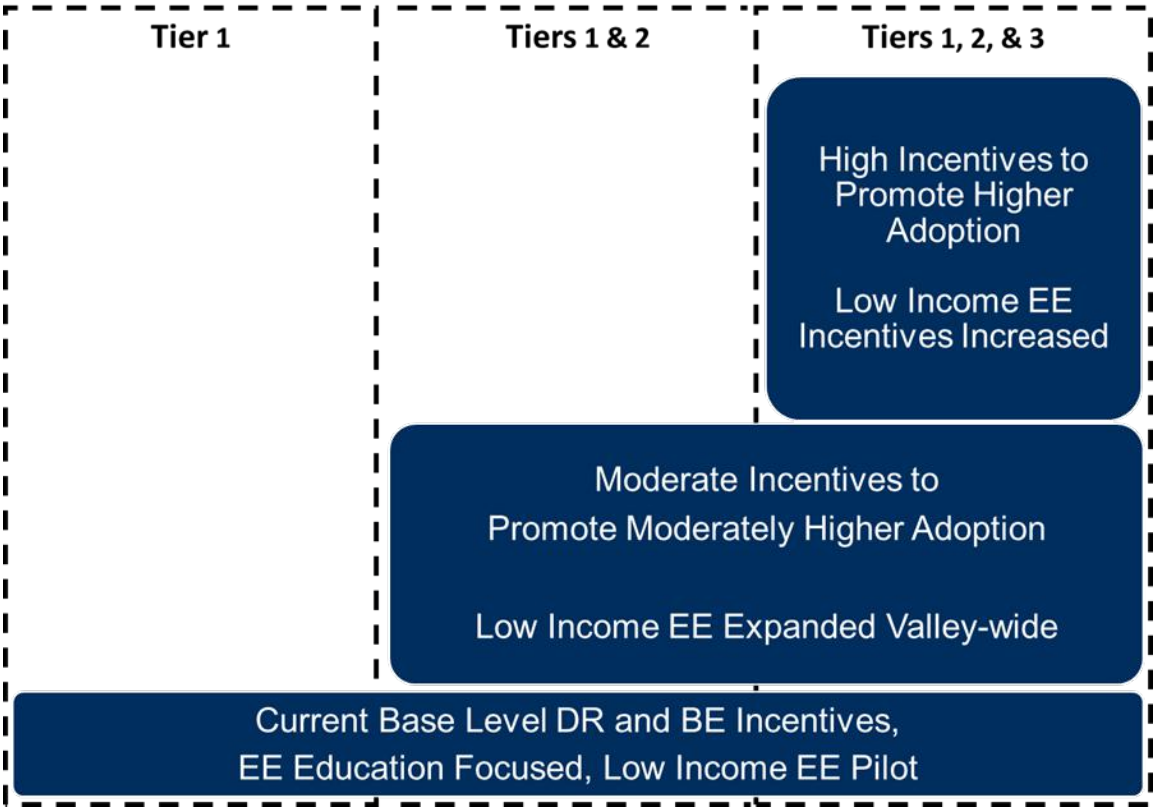


Figure B-2: IRP Programmatic DER Three-Tiered Structure.

Appendix B – Programmatic Resource Methodology

Tier 1 programs reflect current incentive levels for DR and BE programs, and an emphasis on education with no or low monetary incentives for EE programs beyond the Low Income EE pilot program. Tier 2 programs build on Tier 1 by providing a moderately high monetary incentive for all programs equal to 50 percent of the marginal cost of a comparable generating unit in each scenario. While resources can provide energy and capacity, IRP modeling takes a simplified approach to use marginal energy cost for EE and BE and marginal capacity cost is used for DR, aligning to the primary role of each resource. Tier 3 programs further build on Tiers 1 and 2 by providing a high monetary incentive equal to 100 percent of the marginal cost of a comparable generating unit. Tier design takes into account the market depth potential at each level of incentive.

The incentive level effectively reduces the price of a given program in a given strategy. The model is then given the freedom to select the programs and other resources in order to create the lowest cost system portfolio. Low Income EE programs are the exception, as they are enforced in the model at levels applicable in each strategy due to the high cost of these programs.

B.1.2 DER Program Promotion in IRP Strategies

Strategy design applies a base, moderate or high level of promotion aligned to each strategy narrative. A base level of promotion includes Tier 1 incentives for each program, moderate level includes Tier 1 and 2 incentives, and high level includes Tiers 1, 2 and 3 incentives. Figure B-3 depicts the base, moderate or high promotion for each DER program resource type applicable in each strategy.

Strategy	EE	DR	BE
Base Case	Base	Base	Base
Promote DER	Moderate	Moderate	Base
Promote Resiliency	Base	Moderate	Base
Promote Efficient Load Shape	High	High	Moderate
Promote Renewables	Base	Base	Base

Figure B-3: IRP Programmatic DER Tier by Strategy.

Low Income EE programs are treated as required resources, with applicable tiers enforced in the model according to each strategy. While all strategies include programs from Low Income EE Tier 1, the Promote DER strategy also includes Tier 2, and the Promote Efficient Load Shape strategy also includes Tiers 2 and 3.

B.1.3 TVA Program Characteristics

B.1.3.1 Demand Response (DR)

DR resources reduce system load at peak hours. Figure B-4 illustrates summer and winter load shapes and typical peak or near-peak demand hours around which DR is most likely to be called upon for economic or reliability reasons.

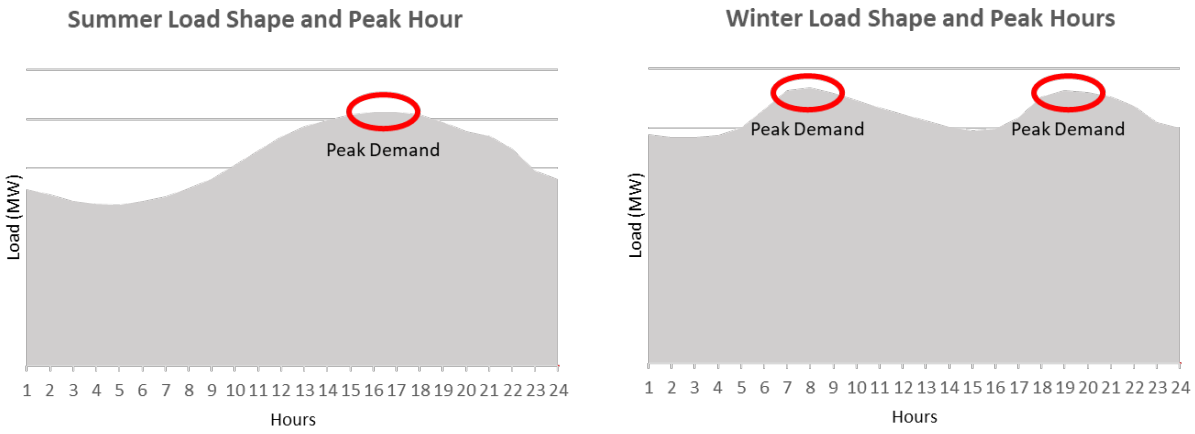


Figure B-4: Seasonal Load Shapes and Typical Peak Demand Hours.

Current TVA DR programs include the Interruptible Power Program (IP), Peak Power Partners, Voltage Optimization, and Instantaneous Response. The 2019 IRP assumes existing programs will continue through their respective program lives with pricing generally aligned to the projected carrying cost of a natural gas combustion turbine (CT).

IP is TVA's largest DR segment and includes the IP30 and IP5 sub-programs. Large industrial customers allow TVA to call on them to reduce their electric load during peak hours when supply is tight or costly, in exchange for a pricing reduction. When called upon, participants in the IP30 program are given 30 minutes' notice to reduce their load to a specified amount. The IP30 program may be used for economic or system reliability reasons. Participants in the IP5 program are given 5 minutes' notice to reduce their load to a specified amount. The IP5 program can only be used for system reliability. IP currently supplies about 1,500 MW of load reduction.

Peak Power Partners utilizes third-party program administrators to aggregate smaller commercial and industrial customers to meet load reduction targets. While similar in concept to IP, Peak Power Partners is smaller and currently supplies about 100 MW of net load reduction. Contracts with program administrators must periodically be renewed, and the IRP baseline case assumes a renewal of an aggregated DR program at the cost of a comparable gas CT unit.

The Voltage Optimization program works in partnership with LPCs to lower the voltage on their respective systems to the lower half of the acceptable voltage range. This program currently supplies about 200 MW in load reduction and can be scheduled day-ahead or as part of a longer-term conservation effort. Current Voltage Optimization programs extend into the early to mid 2020s.

In this IRP, we are also including DR program options for the residential sector. Programs for aggregated control of residential space conditioning and water heating have been modeled for selection.

B.1.4 Energy Efficiency (EE)

EE programs span all customer segments and focus on reducing electrical consumption overall. Since temperature is the largest driver of peak loads, particularly in the residential sector, many EE programs focus on space conditioning (HVAC) and weatherization improvements. Programs may also include more efficient lighting, variable frequency drives, and other custom options tailored to a specific industry.

The eScore technology platform is the cornerstone for the residential segment. The eScore system is currently being leveraged as a tool to educate the end-use consumer, as well as build and reinforce consumer trust. Consumers can use the platform to ensure their contractor has been trained and approved and their installation has been performed to program standards. The flexibility remains to include incentives where they may apply in the future. Residential customers can also use eScore to set up appointments for home efficiency evaluations.

Appendix B – Programmatic Resource Methodology

Following the home inspection, the customer will receive a detailed report including an efficiency score (1-10), pictures of problem areas, and recommendations. Contractor search and validation enables customers to find contractors who have been vetted and trained by TVA, providing peace of mind when selecting a contractor for home improvements. The Tier 2 and 3 offerings, mentioned in section B.1.1 above, would reintroduce incentives to the eScore program. These incentives are generally in the form of customer rebates following verification that certain home efficiency projects were completed by TVA-vetted contractors. In the past, these rebates included window upgrades, HVAC replacements and additional insulation.

An important aspect of residential EE offerings are TVA's Low Income EE programs. Since 2009, TVA has partnered with the state of Tennessee's Weatherization Assistance Program (TN WAP) to provide home energy audit and upgrade services to families with incomes less than or equal to 200 percent of the federal poverty level for the household size. The DOE provides funding for this program, which is then administered locally by the state of Tennessee. TVA continues to provide administrative and technical support to TN WAP to ensure the state takes advantage of all available DOE funds. TVA's Home Uplift initiative, currently in pilot phase, seeks to augment TN WAP by working with LPCs and local communities to create a sustainable program aimed at making weatherization improvements in low income households. TVA contributes about 50 percent of the funds, with the remainder contributed by LPCs, local governments and non-profit agencies. Tier 1 includes Low Income EE education and outreach programs and Home Uplift at the pilot program level. Tier 2 includes all programmatic elements from Tier 1 and additionally expands Home Uplift from pilot phase to a Valley-wide program under the same matching concept. TVA would provide seed money necessary to begin Home Uplift programs with LPCs across the Valley, contingent on matching funds. Tier 3 includes all programmatic elements from Tiers 1 and 2 and, additionally, expands Home Uplift by finding grant sources and partnering agencies and matching that additional level of funding.

Commercial and industrial (C&I) EE programs include some standard rebates, but focus more on customized solutions. Tier 1 continues support of Strategic Energy Management (SEM), which provides a forum to allow companies to work together to identify common energy efficiency challenges and develop common solutions. An example solution may involve a company discussing the advantages and lessons learned from installing smart thermostats at their facility. SEM has traditionally focused on the industrial sector, but is being expanded to include the commercial sector. Tier 2 and 3 C&I offerings include incentives. Example programs include LED lighting retrofits, variable frequency drives, or HVAC upgrades. Industrial projects tend to be highly customized based on a given customer's use case. For custom projects, the customer would provide TVA with a proposed plan, obtain approval for the plan, implement improvements, and receive rebates following verification for completed projects.

The impact of the EE programs on TVA's load will vary by customer segment, season, and time of day (Figure B-5). Residential EE programs have the greatest impact in late afternoon hours and early winter morning hours when residents are returning home from work and school or preparing for the day. Commercial EE load impacts are typically higher during traditional business hours. Due to round the clock shifts, industrial EE impacts are generally more consistent throughout all hours. Sector impacts also vary depending on whether a program targets HVAC, lighting, other equipment, or a combination of these aspects.

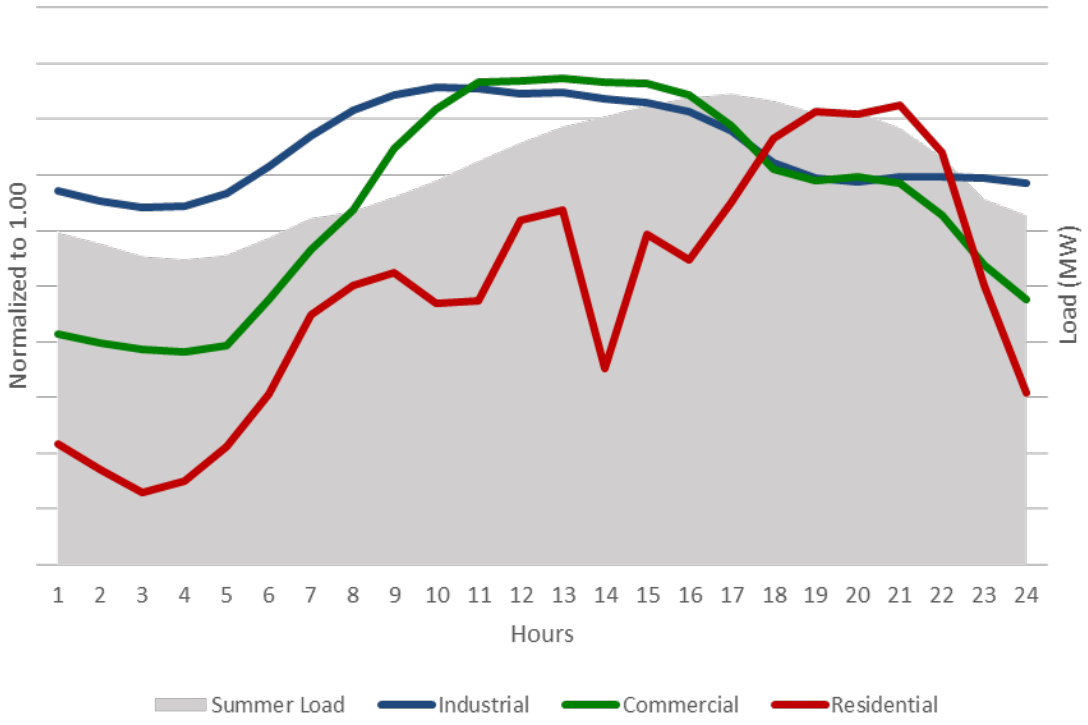


Figure B-5: Illustrative Energy Efficiency Summer Load Shapes, Normalized.

Consumer preference, as well as increased DOE codes and standards, have resulted in a nearly flat load forecast across the TVA region over the planning horizon. Consumers across customer segments see the benefits of replacing older lighting solutions with more efficient LEDs, while appliances such as HVAC and refrigeration systems continue to improve efficiencies. As less efficient technologies continue to age and go out of use, the percentage of electrical load they displace will continue to grow. While TVA's past EE programs also had an impact on efficiency efforts, these impacts have been greatly surpassed by the market-driven effects. Figure B-6 depicts the impacts that market-driven and TVA programmatic EE has had on TVA's weather-normal system load since 2007, along with the forecasts included in the Current Outlook scenario. The 2019 IRP EE expansion options are available starting in year 2020; therefore, Figure B-6 only includes impacts from TVA programmatic EE installations from years 2007-2020 that are already included in TVA's business plan. EE expansion included in the results for each portfolio would be in addition to the impacts included in this chart.

Appendix B – Programmatic Resource Methodology

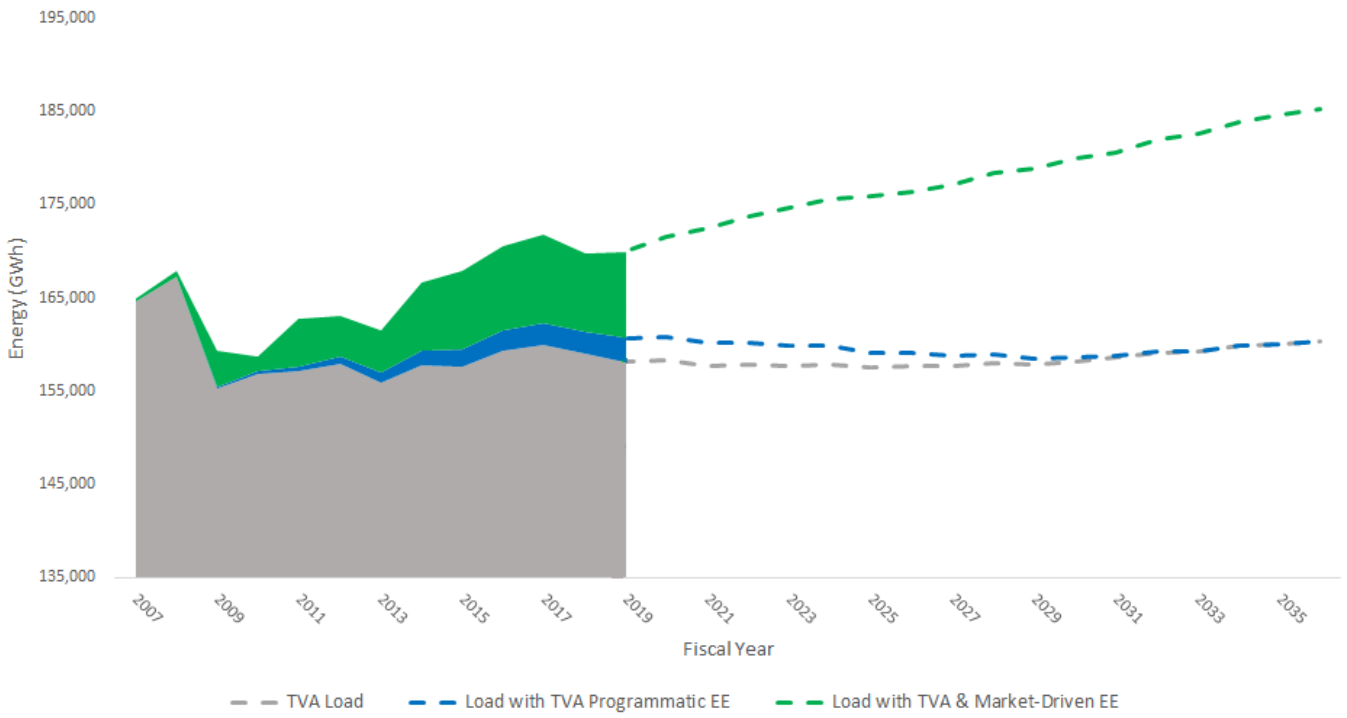


Figure B-6: Market-Driven EE Impacts on TVA Weather-Normal Load (Current Oulook)

B.1.5 Beneficial Electrification (BE)

BE programs span all customer segments and focus on adoption of smart energy technologies. Residential programs encourage the use of electric or dual fuel space conditioning and appliances. BE programs incent commercial and industrial customers to utilize equipment powered by electricity, rather than other conventional sources.

The eScore platform is also being leveraged to deliver residential BE programs. Tier 1 includes education, as well as rebates for residential customers switching from gas to electric or dual fuel. Programs cover dual fuel heat pumps, air source heat pumps, mini-split units, and conventional electric water heaters. Additionally, the residential segment includes a new homes program which provides rebates to builders who install electric HVAC, water heaters, and appliances in new construction. Tiers 2 and 3 build on these existing programs with additional marketing and increasing levels of rebates.

Commercial and industrial (C&I) BE programs are generally more customized than residential offerings. C&I incentives may include rebates to encourage the use of electric forklifts or electric options for food service and other equipment. TVA works with industrial customers to develop solutions to modify processes to reduce customer cost while also benefitting TVA's overall system load shape.

The BE impact to TVA's load will vary based upon customer segment (Figure B-7). Residential and commercial BE programs will have the greatest relative impact during the day, when Valley residents are awake and businesses are open. Due to energy intensity and round-the-clock shifts, industrial BE programs tend to have a higher and more consistent impact across all hours and the biggest impact for dollars spent.

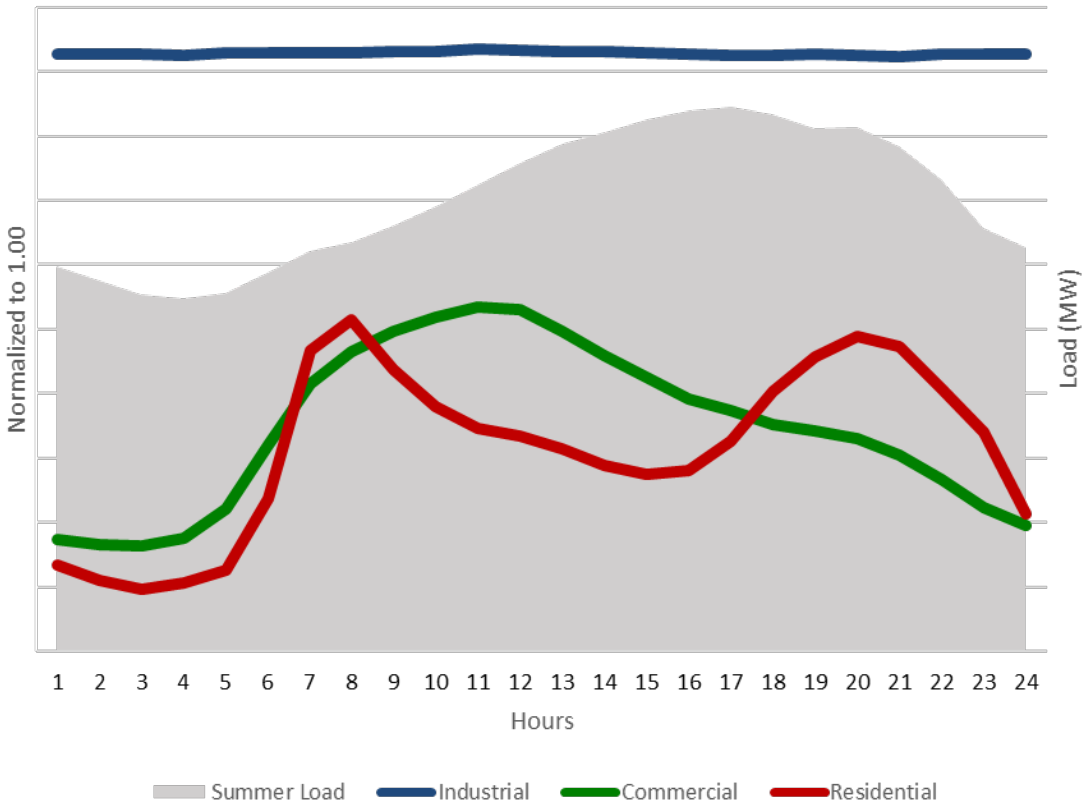


Figure B-7: Illustrative Beneficial Electrification Average Load Shapes, Normalized.

B.2 Model Inputs and Assumptions

For DER programs to be offered for selection in the optimization model, certain characteristics must be defined that are comparable to conventional supply side resources.

Conventional supply side resources have the following characteristics:

- Capacity and energy - typically a known size in MW and MWh, respectively
- Installation cost – typically non-site specific $/kW
- Construction lead time – years to build from initial project consideration
- Operational characteristics – heat rate (fuel efficiency), capacity factor, etc.
- Service Life – years

DER program characteristics must be developed that are comparable to supply side resources. Figure B-8 compares supply side and DER program unit characteristics that feed the capacity planning model.

Appendix B – Programmatic Resource Methodology

	SUPPLY SIDE COMPARISON			
	DR	EE	BE	Conventional Resource*
Year Available	2020	2020	2020	2023+
Outage Rate				✓
Heat Rate				✓
CO2 Emissions				✓
Fuel Costs				✓
Fuel Escalation				✓
O&M Costs	✓	✓	✓	✓
O&M Escalation	✓	✓	✓	✓
Capital Costs				✓
Capital Escalation				✓
Transmission Contingency Cost				✓
Project Contingency Cost				✓
Capacity Factor	✓	✓	✓	✓
Technology Shifts	✓	✓	✓	

*Conventional Resources could include nuclear, coal, gas, hydro, etc.

Figure B-8: Resource Characteristic Comparison with Programmatic DER.

Similar operational characteristics of each sector program were developed for all tiers, including additional costs that would be incurred to expand delivery system infrastructures and encourage greater participation. Tier 1 programs generally represent costs for platform infrastructure and business as usual, and as such, have known costs. The steps in cost for Tiers 2 and 3 are similar to a supply stack concept, where programs with more potential are lower cost programs and programs with less potential are higher cost programs. As market depth is exhausted from the lower cost programs, the optimization model moves up the supply stack to the next lowest cost program. The exception is the Low Income EE program for which volumes are enforced at base, moderate and high levels as appropriate, before applying least-cost optimization in each strategy. Figure B-9 illustrates the range of costs for each segment and programmatic DER resource type. The ranges shown span the costs of all three tiers. Tier 1 typically includes some initial startup and administration costs that can be leveraged in other tiers, whereas Tiers 2 and 3 have higher incentives in order to attract higher participation. Finally, commercial and industrial programs are typically lower cost on a $/MWh basis compared to residential due to project economies of scale.

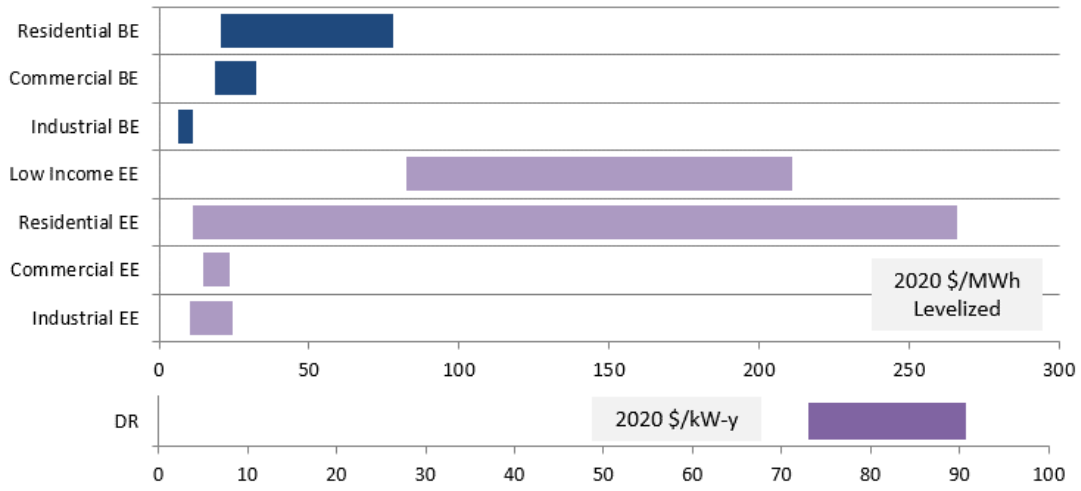


Figure B-9: Programmatic DER Options and Cost.

Much like supply side counterparts, programmatic DER programs also have operational-like limits on the maximum energy reductions or additions. The limits are driven by program development, customer awareness, market penetration, participant acquisition and many other customer and market factors. TVA is able to calculate an estimated participation rate for each program tier using historical data, based on the level of incentives provided. The optimization model will add the full quantity from the next available tier for a given programmatic DER segment if it determines that program to be the least cost resource. New Programmatic DER resources are available for selection in the model starting in 2020. Details for the individually modeled programs are shown in Figure B-10.

Appendix B – Programmatic Resource Methodology

Resource Type	Segment	Program Name	Program Code	Program	Life Span	Summer ^ Capacity (MW)	Winter ^ Capacity (MW)	$/MWh (2020 $)	Fixed Costs (2020 $)	Variable Costs (2020 $)	Annual Energy / Install (kWh)	Max Installs	Max Summer Cumulative Capacity (MW)
EE	Residential	eScore Online Self Audit	R2	Res Prog. 1 Tier 1	6	2.4	2.8	$11	$209,306	$21	660	15,000	5.6
				Res Prog. 1 Tier 2	6	3.2	3.8	$33	$523,265	$73	660	20,000	
		eScore In-Home Audit	R14	Res Prog. 2 Tier 1	15	1.1	1.5	$266	$7,953,620	$0	460	7,600	10.1
				Res Prog. 2 Tier 2	15	3.2	4.3	$116	$1,255,835	$401	460	22,400	
				Res Prog. 2 Tier 3	15	5.8	7.8	$235	$3,139,587	$848	460	40,000	
		eScore Direct Install	R14	Res Prog. 3 Tier 1	6	0.01	2.6	$31	$0	$31	220	70,000	0.01
		Low Income*	R17	Low Income Tier 1	14	0.5	0.8	$83	$1,434,319	$0	3510	600	n/a
				Low Income Tier 2	14	2.1	3.4	$140	$11,187,358	$0	3510	3000	
				Low Income Tier 3	14	4.6	7.4	$211	$27,073,339	$0	3510	5600	
	Commercial	Standard Rebate Commercial	C10	Com Prog. 1 Tier 1	13	0.4	0.3	$19	$366,285	$0	1,000,000	3	56.9
				Com Prog. 1 Tier 2	13	24.0	18.1	$15	$0	$117,327	1,000,000	148	
				Com Prog. 1 Tier 3	13	35.7	27.0	$24	$3,139,587	$172,677	1,000,000	220	
	Industrial	Standard Rebate Industrial	C11	Ind Prog. 1 Tier 1	11	0.5	0.6	$10	$366,285	$0	1,000,000	5	34.3
				Ind Prog. 1 Tier 2	11	11.1	15.0	$12	$0	$88,955	1,000,000	120	
				Ind Prog. 1 Tier 3	11	22.7	30.7	$25	$3,139,587	$162,212	1,000,000	245	
BE	Residential	All-Electric New Home	R1E	Res Prog. 1 Tier 1	15	1.2	8.6	$23	$732,570	$816	5,250	3,600	n/a
				Res Prog. 1 Tier 2	15	1.0	6.9	$30	$0	$1,360	5,250	2,900	
				Res Prog. 1 Tier 3	15	0.8	6.0	$38	$0	$1,716	5,250	2,500	
		Electric Water Heater	R13E	Res Prog. 3 Tier 1	15	0.2	0.7	$42	$549,428	$523	3,400	800	n/a
				Res Prog. 3 Tier 2	15	0.2	0.6	$34	$0	$994	3,400	650	
				Res Prog. 3 Tier 3	15	0.3	0.8	$41	$0	$1,204	3,400	950	
		Dual Fuel Heatpump	R6E	Res Prog. 4 Tier 1	15	0.0	0.1	$67	$1,020,366	$523	1,800	2,000	n/a
				Res Prog. 4 Tier 2	15	0.0	0.1	$65	$0	$994	1,800	1,600	
				Res Prog. 4 Tier 3	15	0.0	0.1	$78	$0	$1,204	1,800	2,400	
		Gas Furnace to Air Source HP	R5HPE	Res Prog. 5 Tier 1	15	0.1	10.3	$22	$1,020,366	$523	5,600	2,000	n/a
				Res Prog. 5 Tier 2	15	0.1	8.3	$21	$0	$994	5,600	1,600	
				Res Prog. 5 Tier 3	15	0.1	12.4	$25	$0	$1,204	5,600	2,400	
	Commercial	Standard Rebate Commercial	C6E	Com Prog. 1 Tier 1	13	8.6	18.2	$19	$3,034,934	$110,932	1,000,000	80	n/a
				Com Prog. 1 Tier 2	13	7.5	16.0	$24	$0	$193,608	1,000,000	70	
				Com Prog. 1 Tier 3	13	5.4	11.4	$32	$0	$256,400	1,000,000	50	
	Industrial	Custom Industrial	C8E	Ind Prog. 1 Tier 1	10	9.0	9.4	$22	$3,034,934	$110,932	1,000,000	80	n/a
				Ind Prog. 1 Tier 2	10	7.9	8.2	$29	$0	$193,608	1,000,000	70	
				Ind Prog. 1 Tier 3	10	5.6	5.9	$38	$0	$256,400	1,000,000	50	

* While tiers are generally shown as incremental, Low Income EE tiers are shown as cumulative due to program structure (i.e. Tier 2 includes Tier 1 and Tier 2 impacts)

^ Capacity impacts for each program tier are shown at TVA's system peak for both summer and winter

Resource Type	Segment	Program Name	Program Code	Program	Life Span	Summer Capacity (MW)	Winter Capacity (MW)	2020 $/kW-yr	Dispatches / year	Max Installs / year	Max Cumulative Installs
DR	Residential	Nest Thermostat Control		Res Prog. 1	8	36.1	82.4	$73	16	40,000	400,000
		Water Heater Control		Res Prog. 2	8	3.5	10.4	$91	50	10,000	400,000

Figure B-10: Detailed Programmatic Resource Programs and Characteristics.

B.3 Program Methodology within System Planning

B.3.1 Planning Approach

As in the 2015 IRP, EE is being treated as a selectable resource. We have continued to innovate by adding selectable DR and BE resource options to the mix. DER programs are modeled in a manner consistent with how conventional supply side resources are modeled (i.e. nuclear, coal, gas, hydro, etc.), including a defined energy pattern (i.e. the load shape) similar to a solar resource. The three-tiered approach (see Figure B-2) builds and improves upon the block method used in the last IRP by more specifically defining program offerings and associated impacts and costs.

This allows TVA to model selectable DR, EE and BE resources for full optimization. EE and BE programs are non-dispatchable and operate similarly to other non-dispatchable generation resources in that system operators cannot directly control impacts based on system needs. There are no variable operations and maintenance (VOM) costs or emissions penalty (CO_2 costs) for non-dispatchable resources. Key input parameters are monthly avoided capacity, $/kW (cost divided by summer peak kW), and an hourly energy pattern.

Increased experience and continuous improvement in the design and implementation of programmatic DER since the 2015 IRP gives program designers a better understanding of the costs, availability and load impacts of the programs modeled. Therefore, TVA is not applying the Planning Factor Adjustment that was present in the 2015 IRP to account for certain risks.

EE and DR programs have two basic impacts that are relevant to planners, with EE having a larger energy impact and DR having a larger capacity impact:

- Avoided energy calculation – Energy not consumed means fuel not burned, resulting in savings in variable costs. Further, since program impacts are realized at the consumer meter, they also avoid applicable transmission and distribution (thermal) losses which can average up to 6.5 percent by the time energy reaches an end user.
- Avoided capacity calculation – Capacity is avoided, because reduced electricity demand translates into reduced need for incremental capacity additions.

BE programs take the same impacts into account with the potential to increase rather than avoid costs, ideally in a manner beneficial to overall system load shape, customer costs and net emissions:

- Increased energy calculation – Additional energy consumed means additional fuel burned, ideally at times when the TVA and LPC systems can efficiently supply that energy. Some programs may eventually require transmission or distribution system upgrades.
- Increased capacity calculation – Capacity may be added when the benefits of adding load offset the cost of incremental capacity additions.

Using EE and BE program design parameters, hourly demand profiles are developed via engineering models and then calibrated through program evaluation. Inputs to the models include occupancy/utilization profiles, building characteristics and weather data. The model provides an 8,760 hourly profile of a “before” end use shape and an “after” efficient end use shape that are subtracted to derive the program impact shape. That shape is then regressed on weather and calendar variables, revealing the relationship between temperature, day of week, season, etc. The model is then forecast forward using TVA weather and load forecast as inputs. The final result is an hourly net forecast synched to the TVA load forecast.

B.3.2 Modeling Uncertainty

For supply side resources in the IRP, unit performance is not expected to be 100 percent. This delivery risk is captured in an outage rate for the unit. There is not a comparable outage rate for the modeled programmatic DER; rather, the modeling approach assumes programs to be operationally available 100 percent of the time. Efficiency and electrification are dependent on variables such as

equipment reliability and service life, operating conditions, etc., that would impact operability similar to an outage rate. In addition to outage rates, there are other potential uncertainties for DER programs (as compared to supply side resources) in that costs such as CO_2 emissions penalty, fuel cost uncertainty, project cost contingencies and cost escalation uncertainties are not captured.

Programmatic DER introduces some uncertainties around design and delivery (Figure B-11) that are unique relative to other resources. Design uncertainty is introduced by the creation of programs today that may have different costs, lifespans or load shape impacts over time. Delivery uncertainty exists around claimed versus evaluated measures, the ability to deliver and implement programs though TVA's 154 different local power companies, and risk around EE deliveries relative to future codes and standards.

Example Sources of Uncertainty	
Design	**Delivery**
Cost Variation	LPC Delivery Risk
Measure Life	DOE Codes and Standards
Fixed Shape	Claimed vs. Evaluated

Figure B-11: Design and Delivery Uncertainties.

EE and BE impacts manifest themselves in load, as do other variables such as forecast penetration for distributed solar, CHP and electric vehicles.

Stochastic analysis, discussed earlier in the IRP document, will evaluate risks of load uncertainty driven by DER programs and many other factors.

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Appendix B – Programmatic Resource Methodology

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Appendix C - Distributed Generation Methodology



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Appendix C - Distributed Generation Methodology

C.1 Distributed Generation in the IRP

TVA utilizes a diverse portfolio of energy resource options in order to provide electric power service at the lowest feasible rate. Traditionally, utility companies generated electricity at large scale and delivered all of the power needs of end consumers. Recent technology advancements and consumer preference have led to increased interest in distributed generation (DG). The 2019 IRP focuses on three main sources of distributed generation: solar, solar with storage, and combined heat and power (CHP).

At TVA, DG was introduced through the Dispersed Power Program (DPP) in 1981 to comply with provisions of the Public Utility Regulatory Policies Act of 1978 (PURPA). DPP's primary aim was to allow commercial and industrial customers the ability to sell back excess generation to the grid. In 2003, TVA introduced a small-scale distributed generation program, most recently known as Green Power Providers. Finally, TVA's mid-scale programs, such as the Flexibility Research Project (FRP) pilot, facilitate LPC community solar offerings, a more convenient and cost-effective alternative to rooftop installations for consumers to support distributed renewable generation.

For the 2019 IRP, TVA developed an innovative way to model adoption of distributed generation technologies. First, the base level of market penetration for each distributed resource type is calculated based on assumptions present in the various scenarios. Next, the level of incentives certain strategies will apply to reduce payback on investment is determined. Then, an adoption curve approach is used to simulate higher penetration levels achieved through improved economics. Next, these new penetration levels are enforced in the capacity expansion model as a required resource. Finally, the capacity planning model optimizes the remainder of the resource portfolio in a least cost manner. This new DG methodology allows TVA to gain insights into the roles DG could have on the TVA system under a variety of different future states. The individual steps are discussed in greater detail in the following sections.



Figure C-1: Distributed Resources Modeling Process.

C.1.1 Step 1: Model Base Level of Adoption in Each Scenario

Due to decreasing prices and increasing consumer demand for energy choice, distributed generation is expected to continue to grow. TVA system planners and forecasters, with input from TVA stakeholders, worked together to determine likely levels of distributed solar, battery and CHP penetration across the various scenarios modeled. These scenarios include levels of DG that would naturally occur in the market based on unique scenario assumptions, before any TVA strategies are employed. For example, some scenarios include extensions or expansions of current Investment Tax Credits (ITC) offered by the federal government to encourage solar and storage purchases by decreasing their costs. The Rapid DER Adoption and Decarbonization scenarios show high levels of forecasted distributed generation, whereas the Economic Downturn scenario shows comparatively lower levels due to less disposable income. Figure C-2 breaks down the base levels of

penetration for each scenario by resource type, prior to any additional TVA incentives.

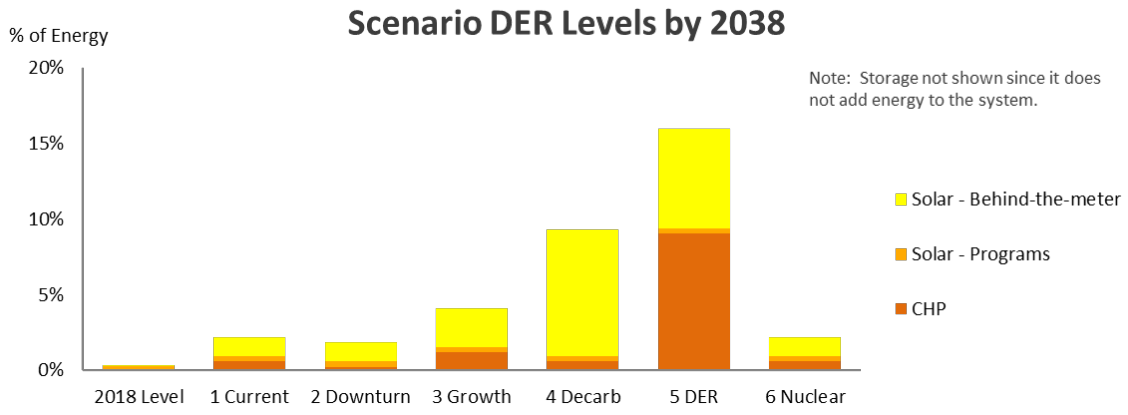


Figure C-2: Levels of DG in each Scenario.

For further information on how unique assumptions around DG were developed for each scenario, see Appendix E: Scenario Design. As each strategy is applied in a scenario, the base level of adoption in each scenario sets the baseline comparison. There will be relatively less opportunity to increase adoption in scenarios where DG penetration is already high before applying the strategic incentive, due to market depth limitations.

C.1.2 Efficient Electric Vehicle (EV) & Battery Charging

As part of Strategy D, Promote Efficient Load Shape, a time-of-use rate structure is modeled to incent owners of electric vehicles and distributed batteries to charge these devices at economically efficient times. The TVA system experiences different peak hours, depending on the season. In the summer, the system peaks in the late afternoon. Winter peaks typically occur early in the morning, with a near-peak early in the evening. On-peak hours require TVA to use more expensive peaking generation sources, raising system costs. TVA developed a modeling approach to evaluate the impact of a time-of-use rate structure that strongly promotes EV charging in super off-peak (i.e., hours of minimum load) and off-peak hours. The modeled approach, shown in Figure C-3, is similar to Georgia Power's Plug-in Electric program with modifications to match TVA's unique system peaks.

Appendix C: Distributed Generation Methodology

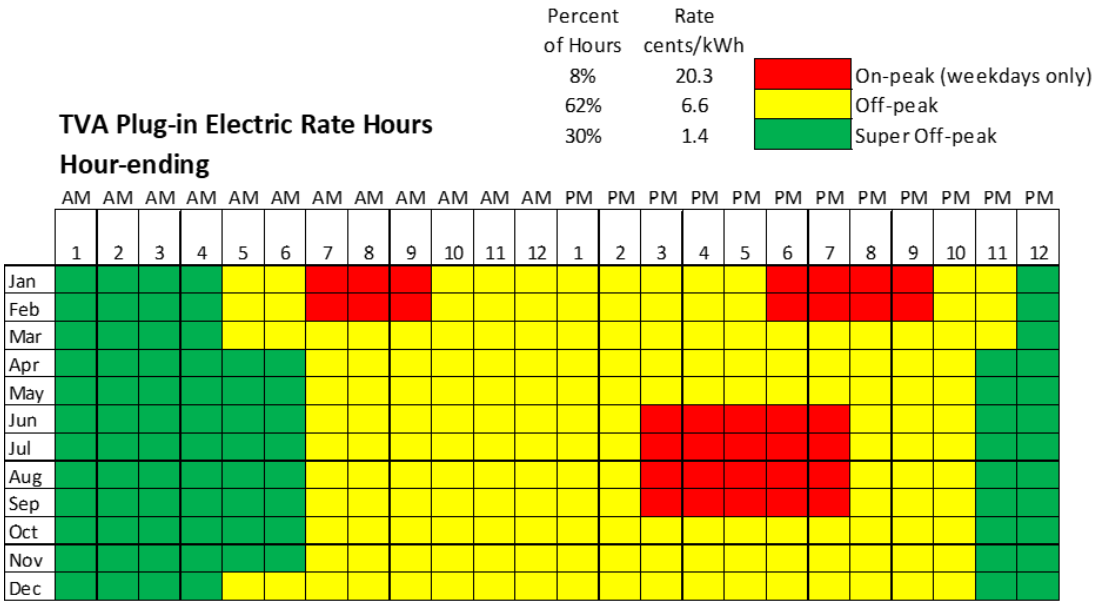


Figure C-3: Time-of-Use Rate Structure for Efficient EV and Battery Charging.

The impact of a time-of-use rate structure would be felt in electricity demand. Therefore, TVA forecasters developed a modified load forecast to simulate the modified load shapes resulting from a time-of-use rate incentive for EV and battery charging. This modified load forecast was only used when applying Strategy D.

C.2 Step 2: Determine Incentive Level to Apply in a Strategy

Except for the Base Case, all strategies used in the IRP promote increased DG adoption. Monetary incentives are used to increase penetration levels by reducing the payback period for a given resource. While resources can provide energy and capacity, IRP modeling takes a simplified approach to use marginal energy cost for most incentives, including for DG. A base incentive level aligns to no additional incentive beyond existing programs. Moderate incentives for distributed solar and CHP are modeled at 50 percent of marginal energy cost, whereas distributed storage is incented by matching 10 percent of the distributed solar capacity. As an example, for every 100 MW of distributed solar, an additional 10 MW of battery storage is included. Finally, high incentives for distributed solar and CHP are modeled at 100 percent of marginal energy cost, and distributed storage is incented by matching 25 percent of the distributed solar capacity. Distributed storage is handled differently from other resource types, as the technology is rapidly evolving and there was a desire to understand its impact in combination with distributed solar.

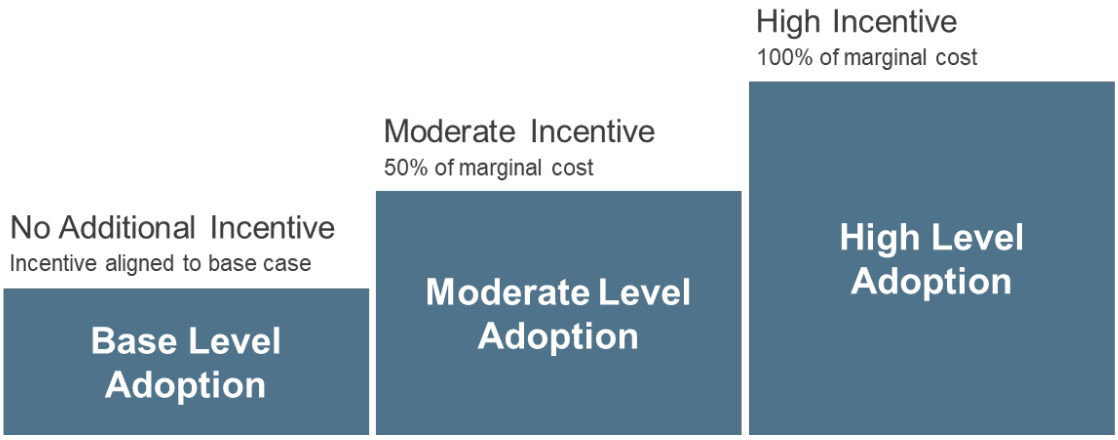


Figure C-4: Strategies Promote Higher Adoption Levels.

Applying various levels of incentives across the strategies allows TVA to test the impacts of increased DG penetration. The matrix shown in Figure C.5 shows the incentive levels by DG resource type for each strategy.

Strategy	Distributed Solar	Distributed Storage	Combined Heat & Power
Base Case	Base	Base	Base
Promote DER	High	Moderate	High
Promote Resiliency	Moderate	High	Moderate
Promote Efficient Load Shape	Base	Moderate	Base
Promote Renewables	Moderate	Moderate	Base

Figure C-5: IRP Distributed Generation Tier by Strategy.

For additional information on rationale behind incentive levels for DG in each strategy, see Appendix F: Strategy Design.

C.3 Step 3: Develop New Adoption Level based on Economics

Base, moderate, and high penetration levels for DG resources were determined using an adoption curve approach. The approach used is similar to National Renewable Energy Laboratory's (NREL) Distributed Market Demand Model, which simulates potential adoption of a given resource as a function of payback period. Factors specific to each scenario and strategy combination were fed into a TVA-developed DG model to create a unique adoption level for each resource for the 20-year planning horizon.

The key elements in NREL's model are the payback period, maximum market share and adoption curve. The payback period determines the maximum market share, or depth, for a DG technology. It also influences the pace of adoption. The concept behind the NREL model is illustrated in Figure C.6, and a simplified application of this model in the IRP is further explained in the following sections.

Appendix C: Distributed Generation Methodology

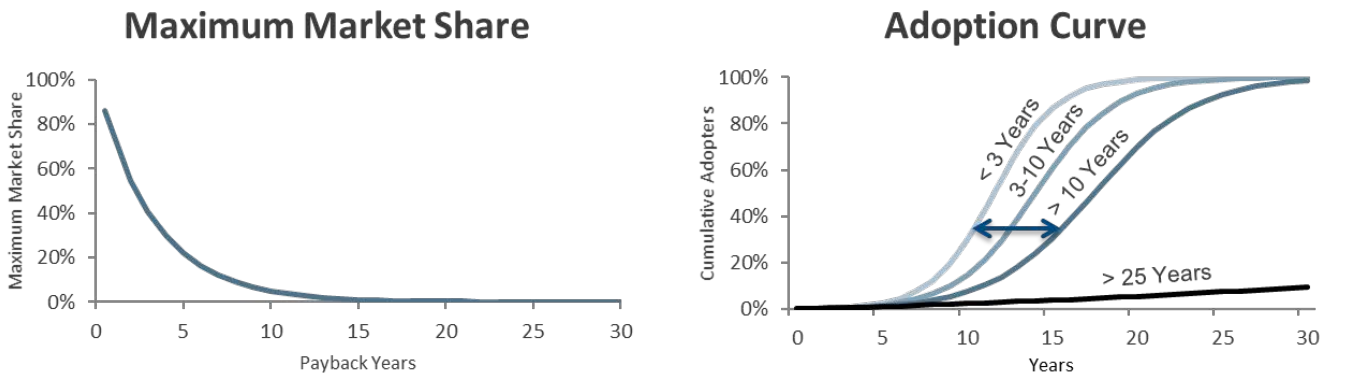


Figure C-6: Concept Illustration of NREL's Distributed Market Demand Model.

C.3.1 Payback Period

A key element in the model is the payback period, which is simply the number of years required for a consumer to recoup the upfront costs of an investment. Ignoring discount rates, an example project requiring an upfront capital investment of $10,000 that saves a net $1,000/year will have a payback period of 10 years. The lower the payback, the greater the market depth, as more Valley residents see value in adopting a particular technology. Even with an acceptable payback, not all consumers will adopt the technology at the same time. This occurs for a variety of reasons. Some consumers are more comfortable using new technologies than others and are likely to adopt sooner, while others will wait. Also, a consumer must have access to the capital required to cover the initial costs of the technology investment. Even with the necessary capital, whether or when a consumer purchases a technology depends on competing uses for the funds and other practical considerations. All these factors impact the pace of DG adoption, which happens over the course of years and is generally faster with quicker paybacks.

C.3.2 Payback Components

There are two primary components in calculating payback for a DG investment – electricity bill savings and DG investment. To estimate electricity bill savings, forecasts for residential and commercial average effective rates were applied to the average annual energy output of a DG system. Next, it was necessary to estimate projected prices for distributed solar, storage and CHP systems. Pricing information for DG resources was derived from a variety of sources, both internal and external to TVA. Distributed solar prices were obtained from Navigant Consulting, with references to NREL studies. These studies contained historical solar prices for all customer segments, up to 2017. These prices were then projected into the future, using pricing improvements TVA has seen in recent solar requests for information and proposals as a directional guide for near-term movements.

Distributed battery prices, including installation costs, were derived from market prices for Tesla Powerwall 2 systems. These prices were projected into the future using IEEE mid-range projections as a directional guide. CHP prices were derived from a combination of information sourced from the Southeast CHP Technical Assistance Partnership and internal TVA surveys of universities, hospitals and commercial entities. Escalation rates for all DG resources can vary by scenario, driven by assumptions around tax policy and pace of technology advancement. Figure C.7 shows assumptions for distributed solar and storage cost projections.

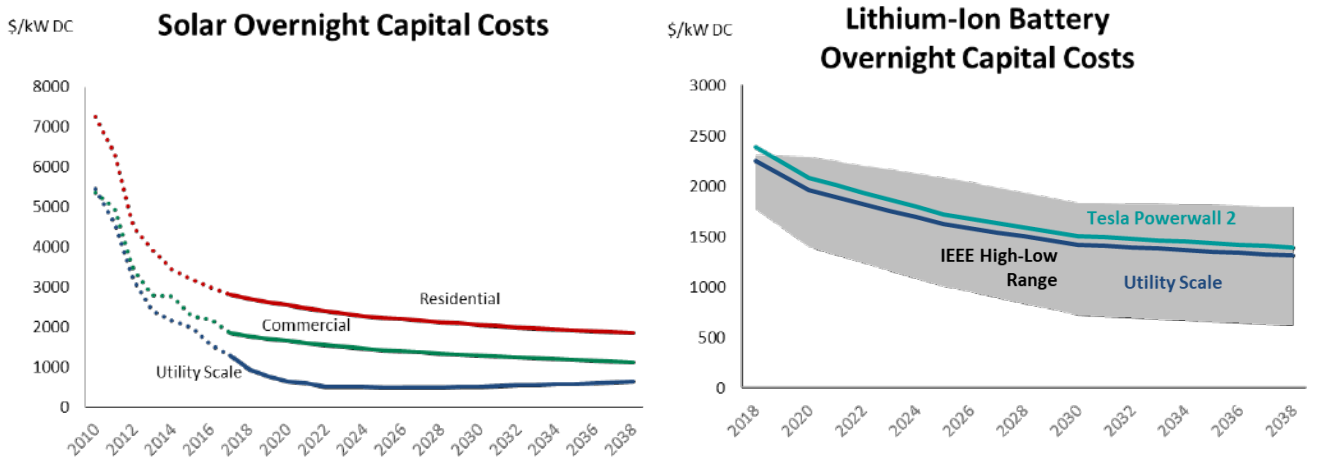


Figure C-7: Distributed Solar and Storage Price Forecast.

Further information about resource options and assumptions can be found in Chapter 5 and in Appendix A: Generating Resources.

C.3.3 Adoption Levels

Using assumptions for payback, considering assumptions unique to each scenario and strategy combination, the DG model provides forecasts for the following:

- Base levels of DG, considering TVA programs and payback without additional incentives
- Level of DG with moderate incentives
- Level of DG with high incentives

An example of the DG model output, specifically the resulting levels of DG adoption for Scenario 1 (Current Outlook), is shown in the figures below.

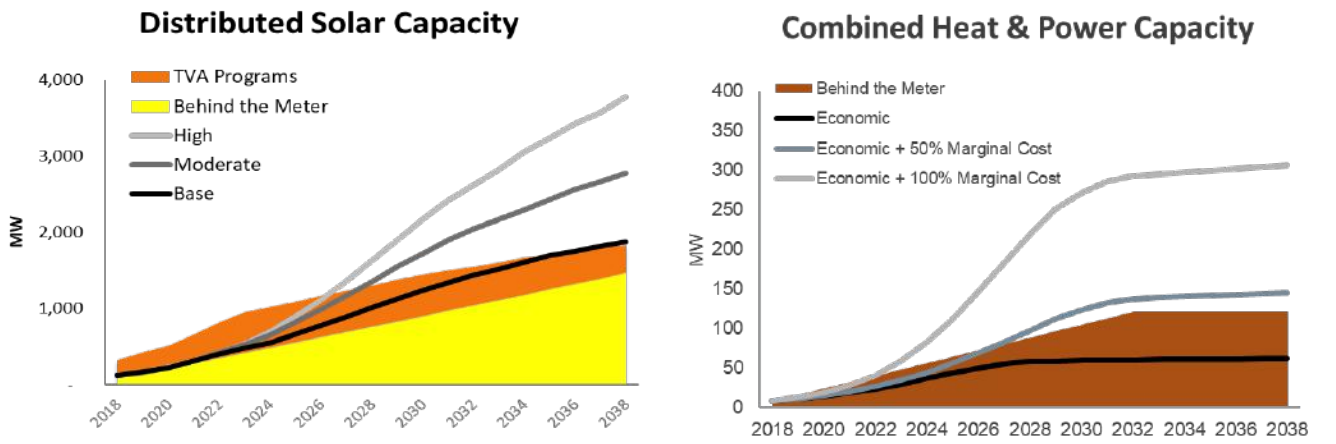


Figure C-8: Distributed Solar and CHP Capacity, Current Outlook Scenario.

Appendix C: Distributed Generation Methodology

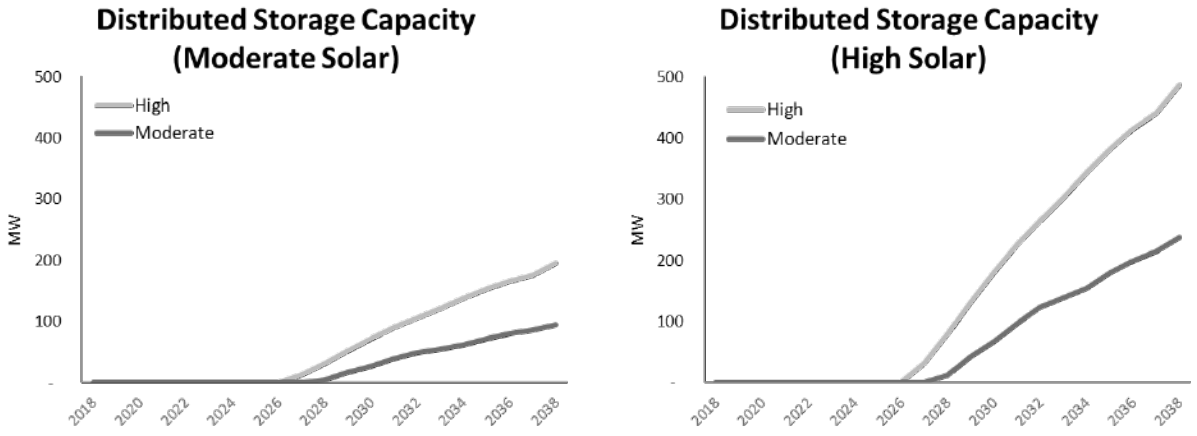


Figure C-9: Distributed Storage Capacity, Current Outlook Scenario.

C.4 Step 4: Enforce New Adoption Level in Expansion Model

Once the DG profiles are created for distributed solar, distributed storage and CHP, they are imported into the expansion model. A unique set of DG adoption levels is fed into the expansion model for each scenario and strategy combination. The DG adoption levels are treated as required resources, or effectively a constraint the model has to operate with prior to optimization of other resources.

C.5 Step 5: Optimize Balance of Resources for the Portfolio

After the DG profiles for distributed solar, distributed storage and CHP are imported into the expansion model as required resources, the expansion model will then be run to optimize the remainder of the portfolio. This action is performed for each scenario and strategy combination, considering the aims and bounds of the strategy and all available generation and programmatic resources. The Reserve Margin is an important consideration in this step, ensuring that the expansion path chosen results in a portfolio that meets or exceeds seasonal reserve margin requirements to support a reliable system at the lowest feasible cost for a given strategy.

C.6 Conclusion

TVA's 2019 IRP utilizes an innovative methodology to forecast the impact of different strategies on DG penetration across various future scenarios. The method simulated the effect of monetary incentives reducing payback and driving higher adoption of DG technologies. Results from the model allow TVA to gain insights into the impact that distributed generation could have on the TVA system under a variety of different future states. This knowledge will further inform future planning to meet TVA's mission of providing reliable, low-cost energy to the residents of the Tennessee Valley.

Appendix C: Distributed Generation Methodology

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Appendix D – Modeling Framework Enhancements

Appendix D – Modeling Framework Enhancements

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Appendix D - Modeling Framework Enhancements

D.1 Study Overview

In 2018, TVA conducted three studies to inform resource planning for an evolving system. These studies focused on reserve margin, intermittent resources, and system flexibility. TVA's system is essentially dual-peaking in the summer and winter, with a slightly higher forecast for the winter peak under normal weather conditions. With declining solar prices and increasing consumer demand for renewables, TVA anticipates thousands of additional solar megawatts will be added to the system over the next decade. Solar will not contribute to supply at the winter peak that typically happens early in the morning. Also, there may be benefit to adding highly flexible resources such as battery storage or aero-industry based combustion turbines (aero-derivatives) to support successful integration of additional renewables. The FY 2018 Resource Strategy Studies support planning for a future system that is low-cost, reliable, diverse, flexible and cleaner by:

- Updating reserve margins to support reliability in summer and winter peak seasons with more renewables expected on the system
- Recognizing sub-hourly costs driven by integrating intermittent resources onto the system
- Recognizing sub-hourly benefits driven by integrating highly flexible resources onto the system.

These three studies utilized the same dataset based on TVA's FY 2018 Budget Power Supply Plan. The reserve margin study was modeled at an hourly level. The intermittent resources and flexibility studies were modeled at a sub-hourly level to understand the impact of solar and wind variability at that granularity, as well as the ability of highly flexible resources to respond to sub-hourly fluctuations. TVA's capacity planning tool is an hourly model which considers operating characteristics of power resources at an hourly granularity. The relative flexibility (or inflexibility) of conventional resources such as nuclear, coal and gas units can be seen at an hourly level. Intermittent resources have hourly shapes but also have sub-hourly variability that cannot be seen in an hourly model. Likewise, highly flexible resources such as aero-derivatives and batteries provide sub-hourly flexibility, which cannot be seen in an hourly model. To fully capture characteristics of intermittent and highly flexible resources, additional study was needed. The studies will be used for both the 2019 IRP and annual capacity planning and will be repeated every few years or as changes in drivers warrant.

TVA used a third-party consultant, Astrapé Consulting, to run the Strategic Energy and Risk Valuation Model (SERVM), a state-of-the-art reliability and production cost simulation tool that employs a probabilistic view of costs and risks. SERVM was originally designed as a hybrid resource adequacy and production cost model by the Southern Company in the mid 1980s. Since then, the SERVM model has been used to identify planning and resource adequacy requirements, estimate the contribution of resources to reliability and flexibility requirements, as well as estimate the amount and operating characteristics of new resources to meet need. Astrapé Consulting provides resource adequacy studies for a number of large utilities nationwide. The implementation of SERVM for the FY 2018 Resource Strategy Studies included chronological simulations for the full 8,760 hours in a year with the following major inputs specific to the TVA system common across all three studies:

- Load: 30+ years of load shapes were developed using historical weather and current or projected weather/load relationships.
- Demand-side Resources: Program definitions with capacities, contractual constraints and dispatch rules were defined in the model. Typical constraints for demand response include hours per day, week, month, season and year, as well as call duration.
- Supply-side Resources: Supply side resources include nuclear, coal, combined cycle, combustion turbine, hydro, pumped storage and renewable resources within TVA's portfolio, as well as the opportunity to

purchase power from neighboring regions. Variable operating costs related to fuel, start-up, reagents, and operating and maintenance were modeled.

- Hydro Availability: Hydro resources were modeled to capture weather variations, operating range flexibility and ancillary service contribution. Input variables include monthly capacity and energy, as well as minimum and maximum flows on an hourly, daily, weekly and monthly basis.
- Ancillary Service Requirements: Regulation up, regulation down, spinning reserve requirements and targets, and non-spinning reserve requirements were defined by hour of day, month or year and as a function of load.
- Operating Reserve Requirements: TVA target operating reserve requirements of 3,050 MW include the following: 200 MW of regulating reserves at a five-minute response time, 1,350 MW of contingency reserves at a 15-minute response time, and 1,500 MW of replacement reserves at a 90-minute response time.
- Transmission: Import and export constraints for firm purchased power from neighboring regions were modeled for approximately 20 zones.

The following sections further explain the purpose, background, scope and approach, inputs, results, and conclusions stemming from each of the three studies.

D.2 Reserve Margin Study

D.2.1 Purpose

Every few years, TVA performs a Reserve Margin Study to determine appropriate reserve margin planning targets to ensure resource adequacy for serving electricity demand in the Valley. The 2018 study focused on determining reserve margins for both summer and winter, accounting for seasonal differences in demand and supply.

D.2.2 Background

TVA has a dual-peaking system, with additional thermal and hydro capacity in the winter but also greater weather-driven peak variability in that season. Meanwhile, declining prices and increasing consumer demand is driving increased solar capacity in the future. A study that considered seasonal differences in demand and in unit capabilities and performance, along with the potential for increased solar on the system, was needed to determine appropriate reserve margin planning targets for both summer and winter.

For the past several years, TVA used a 15 percent summer reserve margin target and a 20 percent winter reserve margin guideline, which translates to planning for at least 15 percent excess capacity over expected peak summer demand and at least 20 percent excess capacity over expected peak winter demand. Because prior studies for TVA focused on an annual reserve margin based on summer, this study was needed to inform targets for both peak seasons. Some regional peers are also exploring potential for using seasonal reserve margin targets. Every utility's reserve margin equation is unique given each system's supply and demand.

D.2.3 Study Scope and Approach

Astrapé ran SERVM to capture the uncertainty that arises from unplanned events due to weather, load forecast error, and plant outages which drive the need for a planning reserve margin. To account for the variability of temperature, economic cycles, and plant outages, the study utilized 37 years of weather data under recent usage intensities, seven load forecast error points and 100 unit outage draws. The study also considered the load diversity of neighboring utilities and the ability to purchase firm power from those utilities. Overall, this resulted in more than 25,000 8,760-hour simulations that provided a robust view of what the TVA system could experience five years into the future. The five-year look-ahead allows time to build or acquire a resource or power purchase agreement, if needed.

The objective function of the study was to determine reserve margin targets that support an industry best practice level of reliability in both summer and winter, considering the expectation of more solar on the system. Industry best practice level of reliability is typically expressed as one loss of load event (LOLE) every 10 years, or 0.1 LOLE for one year. Seasonal reserve margins were determined through two approaches: 1) a physical reliability evaluation to achieve an annual target of 0.1 LOLE, and 2) an

economic evaluation to achieve lowest system cost. The physical study was done in two ways, using a traditional approach adding back combustion turbines (CTs) and a revised approach adding back a combination of CTs and solar to reflect the expectation of solar growth in the Valley.

The study approaches are further described in Table D-1.

Table D-1: Study Approaches to Determine Seasonal Reserve Margins

Physical Reliability	Economic Evaluation
CT Approach: Modeled reduced capacity and then added CTs until seasonal risk balanced to achieve 0.1 LOLE annually, or about 0.05 in each peak season.	Performed an economic evaluation to determine the reserve margin target that results in lowest cost to customers at a 90 percent confidence level.
CT & Solar Approach: Modeled reduced capacity and then added CTs to achieve 0.05 LOLE in the winter and solar to achieve 0.05 LOLE in the summer, resulting in balanced seasonal risk and an annual 0.1 LOLE.	

D.2.4 Inputs

In addition to the common inputs mentioned in the Study Overview, the following inputs were included:

- Capacity reductions to model low reserve margin position (higher cost gas and coal units)
- 7 Load Forecast Error Points
- 100 Unit Outage Draws
- Incremental CT capacity (for CT Approach)
- Incremental CT and solar capacity (for CT & Solar Approach)
- Astrapé Consulting modeled neighboring utility systems, with excess capacity in the region available to support replacement reserves.

D.2.5 Results

D.2.5.1 Examination of Seasonal Differences

The study evaluated weather-driven variability around summer and winter peak loads, as shown in Figure D-1. While summer peak loads have varied up to 8 percent around weather-normal conditions, winter peak loads have varied up to 15 to 20 percent around weather-normal conditions. Results indicated that winter peak load variability due to weather is more unpredictable and that additional reserve margin is required to ensure reliability in winter.

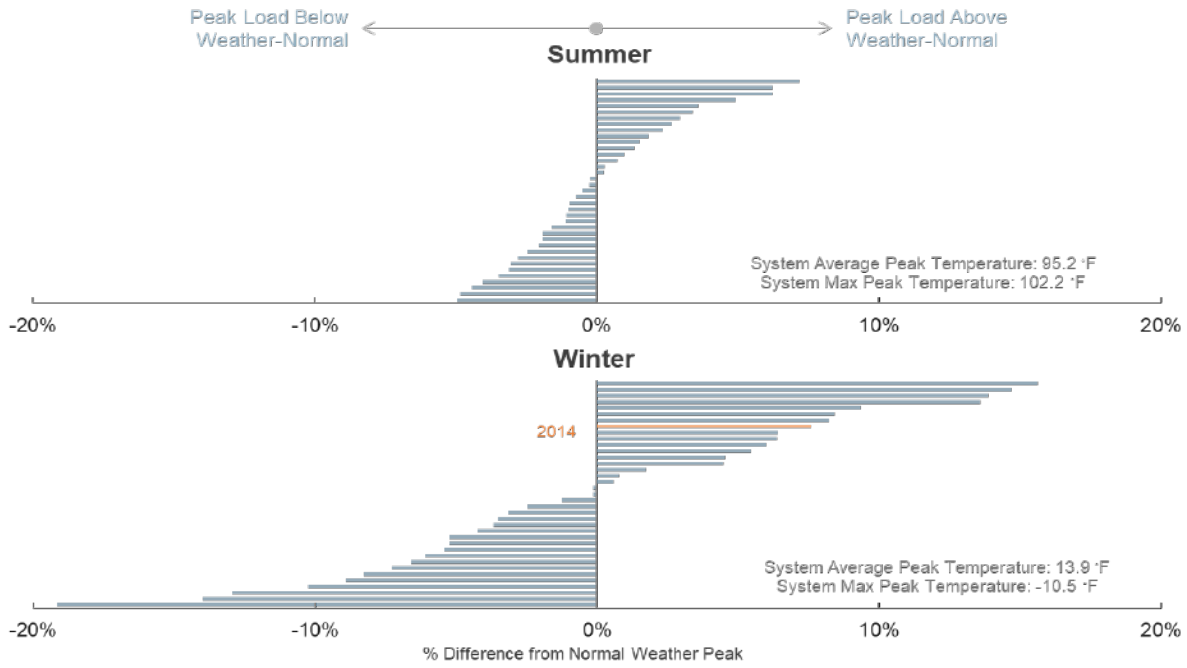


Figure D-1: Seasonal Peak Weather Variability.

Also, there are notable differences in seasonal capacity. As shown below in Figure D-2, all resource types except for solar have higher winter capacity. Thermal units operate more efficiently in cooler temperatures, and more hydro generation is typically available in the winter. Solar resources contribute to the summer peak, but do not contribute to the winter peak that typically happens around 7 a.m. With the expectation of increasing solar on the system, there may be less difference in overall system winter and summer capacities in the future.

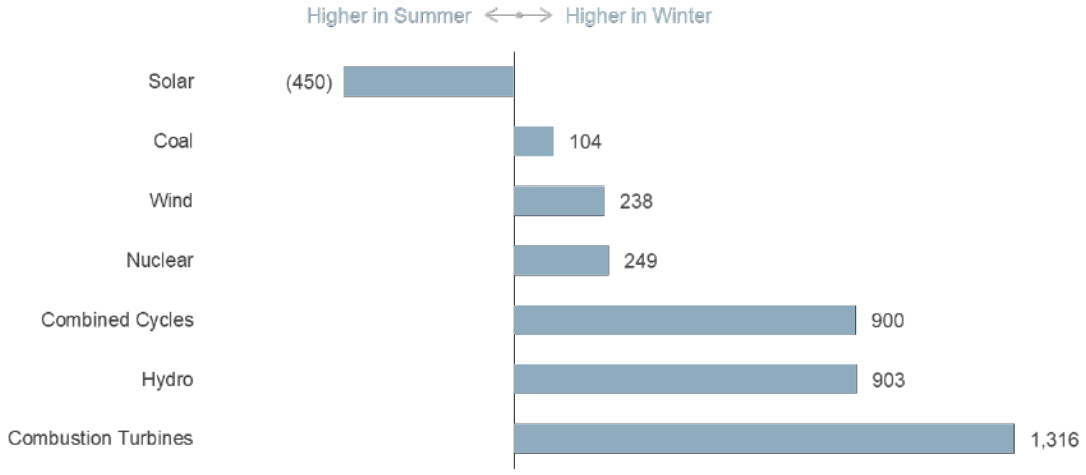


Figure D-2: Seasonal Capacity (MW).

Appendix D: Modeling Framework Enhancements

D.2.5.2 Physical Reliability

The physical reliability study indicates that TVA's previously held summer and winter reserve margins of 15 percent and 20 percent equate to one loss-of-load event every four years, or 0.25 LOLE compared to an industry best-practice level of 0.1 LOLE. Anticipating more solar on the system over the next decade, the CT & Solar approach was adopted. Results from the study are summarized below in Figure D-3. The curve shows the various combinations of summer and winter reserve margins that result in 0.1 LOLE, with about 2,500 MW of solar added in the simulation. Results indicate that a 17 percent summer reserve margin and a 25 percent winter reserve margin will achieve 0.1 LOLE and balance seasonal risk. The 2018 reserve margin position was approximately 20 percent in the summer and 30 percent in the winter. While the new reserve margin targets do not have an immediate impact, they will inform future resource decisions.

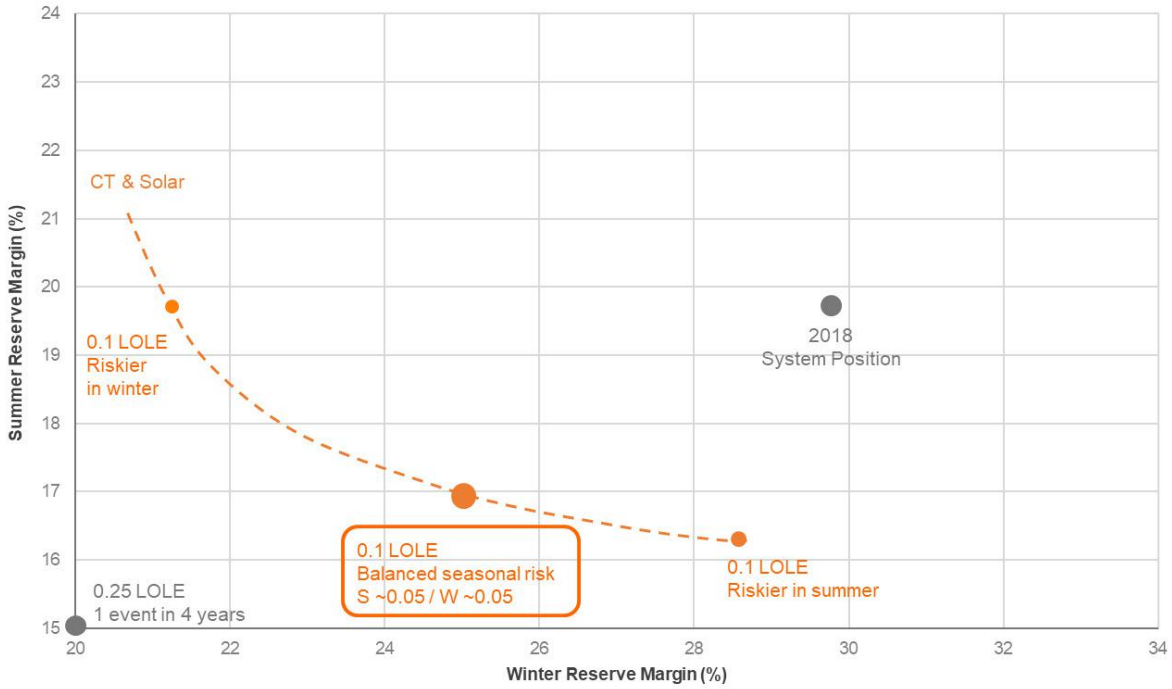


Figure D-3: Reserve Margin Combinations to Achieve Industry Best Practice LOLE of 0.1.

D.2.5.3 Economic Evaluation

The economic evaluation measured four cost components across various reserve margin levels in the study results to identify the reserve margin that would yield the minimum cost at a 90 percent confidence level. The four cost components are:

- Incremental Production Costs: Represents costs such as variable fuel, operations and maintenance costs that are incurred by conventional assets.
- Renewables: Represents costs associated with adding solar resources. As solar is added, incremental production costs decrease while renewable costs increase.
- Net Purchases: Represents the net cost of purchasing and selling energy from outside TVA's system. More generating capacity within the system reduces the need to purchase.
- Expected Unserved Energy: Represents the costs associated with an interruption in service, estimated at $15,000/MWh based on a London School of Economics study used by many utilities. The greater the reserve margin, the less likely an interruption is to occur.

Results from the economic evaluation (Figure D-4) indicate that the minimum cost occurs at a summer reserve margin of 16.75 percent, with negligible difference in cost (less than $1 million) between that level and the 17 percent target derived from the physical reliability approach.

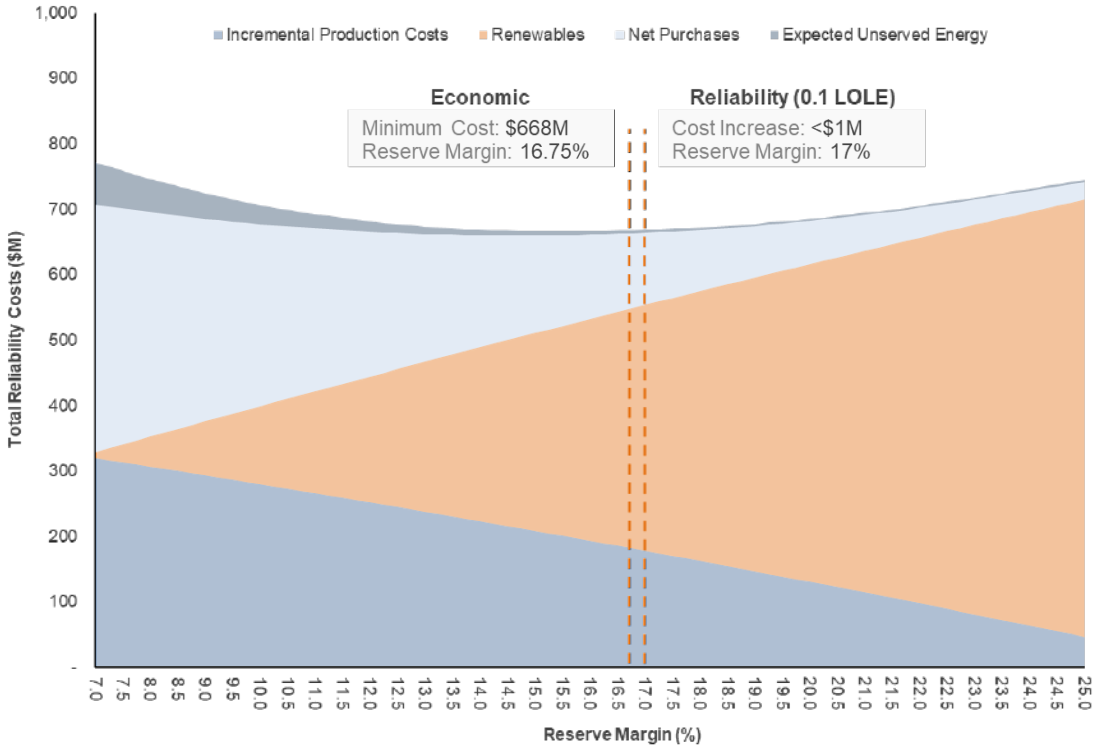


Figure D-4: Reserve Margin Economic Evaluation.

D.2.5.4 Reserve Margin Benchmarks

TVA's targets are in alignment with its neighbors, given differences in load and supply, shown in Figure D-5. While many systems only have one target reserve margin, according to NERC's 2018 Long-Term Reliability Assessment and other systems' IRPs, there is a growing trend in having seasonal separation in reserve margins.

Appendix D: Modeling Framework Enhancements



Figure D-5: Reserve Margin Benchmark Comparisons

D.2.6 Conclusion

Based on study results, TVA planning reserve margin targets of 17 percent in summer and 25 percent in winter were recommended for use in resource planning to align with industry best-practice LOLE of one event in 10 years, balance seasonal risk and achieve minimum cost.

Updated seasonal reserve margin targets better position TVA to ensure resource adequacy for our dual-peaking system with expectations for increased solar in the Valley. The summer and winter reserve margins are being used in the 2019 IRP as well as in annual resource planning. TVA expects to update the Reserve Margin Study before the next IRP or as changes in drivers warrant.

D.3 Intermittent Resources Study

D.3.1 Purpose

The purpose of the Intermittent Resources Study was to improve TVA's understanding of reliability and economic impacts to the portfolio as intermittent resource penetration increases. With declining solar costs and increasing consumer demand for renewables, TVA expects to see more solar on the system in the next decade. Whether solar is in front of or behind the wholesale meter, TVA's system will need to absorb intermittency impacts and maintain reliability. Specifically, the study sought to identify the net dependable capacity of solar and wind resources and the sub-hourly impacts of these resources at various penetration levels. The results from the study can be applied in hourly capacity planning models to more fully reflect the impacts of adding intermittent resources on the system.

D.3.2 Background

D.3.2.1 Net Dependable Capacity

As solar and wind generation is intermittent and has unique shapes, it is important to understand the dependability of this generation at TVA's summer and winter peaks. The seasonal capacity of intermittent resources can be represented by Net Dependable Capacity (NDC) or Effective Load Carrying Capacity (ELCC). NDC calculates a 75 percent confidence of capacity at the peak hour of the top 20 days of highest load. ELCC determines the equivalent capacity of wind or solar compared to a dispatchable plant's ability to avoid a loss of load event. This study evaluated both methods to determine the appropriate capacity for use in resource planning.

D.3.2.2 Integration Cost Components

The intermittency of solar and wind generation presents some operational challenges, such as requiring other generating units to provide additional load following and cycling to absorb sub-hourly fluctuations. The cost of these challenges is referred

to as an integration cost. For the past several years, TVA used a proxy for integration costs based on other utility studies, specifically $5/MWh for solar and $8/MWh for wind. A detailed study of TVA's system was needed to determine the additional cost of maintaining system reliability as more resource intermittency is introduced.

Integration costs were defined by the two components, additional operating costs and maintenance costs, explained further as follows[1]:

- Operating Costs: Costs incurred from additional load following, curtailments, and cycling of gas, coal, and hydro resources to maintain generation-load balance with sub-hourly fluctuations in intermittent resources.
- Maintenance Costs: Costs incurred for maintenance on boilers, turbines, generators and switchyards from the additional cycling of resources that help maintain generation-load balance.

D.3.3 Study Scope and Approach

To determine the impacts of introducing additional intermittent resources to the portfolio at various penetration levels, this study sought to:

- Define the seasonal capacity of intermittent resources by selecting either the Net Dependable Capacity (NDC) or Effective Load Carrying Capacity (ELCC) method
- Identify the sub-hourly integration cost for varying levels of intermittent resource penetration for use in hourly resource planning models.

The first step was to evaluate NDC and ELCC methods to determine the best approach for intermittent resource seasonal capacity. Since the NDC method is based on historical trends, TVA analyzed the capacity factor for each solar and wind contract for 30 historical years. In contrast, the ELCC method measures renewable capacity by replacing peaking capacity. Through a reliability model, solar or wind capacity is added to a reference case and peaking capacity is removed until the LOLE is equal to the reference case. ELCC is derived using the ratio of the renewable capacity to the peaking capacity.

The second step was to evaluate sub-hourly integration costs for solar and wind resources. This study sought to develop an integration cost curve specific to TVA's fleet that would represent the cost of maintaining system reliability as more intermittency is introduced to the portfolio. As intermittent resource penetration increases, it is expected that integration costs will increase. The objective was to determine the appropriate sub-hourly cost to use in resource planning given expected level of renewable penetration over the next decade, so that early and late additions would share equal burden. This approach is similar in concept to all houses in a new development sharing the cost of a sub-station transformer upgrade, rather than only the last few houses built bearing that cost.

To model integration costs, solar and wind resources were modeled at five-minute granularity to more fully capture intermittency patterns, and then these resources were added to the portfolio at various penetration levels (Figure D-6). The model was run at both an hourly and sub-hourly level, and then results from the sub-hourly run were subtracted from the hourly run to isolate the sub-hourly impacts of intermittency with no overlap with hourly energy benefits and impacts. The results from the run comparisons inform the integration cost curves.

D.3.4 Inputs

In addition to the common inputs mentioned in the Study Overview, the following inputs were included:

- Incremental solar capacity at 2,500 MW, 5,500 MW, and 9,500 MW penetration levels
- Wind capacity at 3,000 MW penetration level

D.3.5 Results

D.3.5.1 Net Dependable Capacity

[1] Integration cost components may also include flexible reserve costs, which include the carrying cost of additional flexible resources, and transmission costs, which include the cost of additional transmission system capability. These components were also analyzed in this study, but no costs were specifically identified.

Appendix D: Modeling Framework Enhancements

After evaluating both the NDC and ELCC methods to determine solar and wind capacity, study results indicate that a mixed approach is most suitable.

Peak capacity contribution of wind varies greatly from year to year. Thus, NDC is the preferred method because it considers every year of historical performance to determine capacity contribution, whereas ELCC only looks at the years of loss-of-load expectation due to high load or low plant availability. Using the NDC approach, wind capacity at peak would be valued at 14 percent in summer and 31 percent in winter. This result is similar to the results from a 2016 MISO study that evaluated dependable capacity of wind from a similar geographic region at a similar level of penetration.

As solar generation at the summer and winter peaks tends to be fairly consistent year to year, ELCC is the preferred method for solar peak capacity contribution. Using the ELCC approach, solar capacity at peak would be valued at 68 percent in summer and 0 percent in winter. The study found contribution to winter peak, typically around 7 a.m., to be less than 1 percent. Increasing solar penetration typically shifts the summer peak and reduces ELCC, as has occurred in regions with higher solar penetration, and future ELCC studies will be able to capture this impact.

D.3.5.2 Integration Costs

Study results for solar and wind integration costs at additional penetration levels are summarized in Figure D-6. The results also show the breakdown between additional operating and maintenance costs.

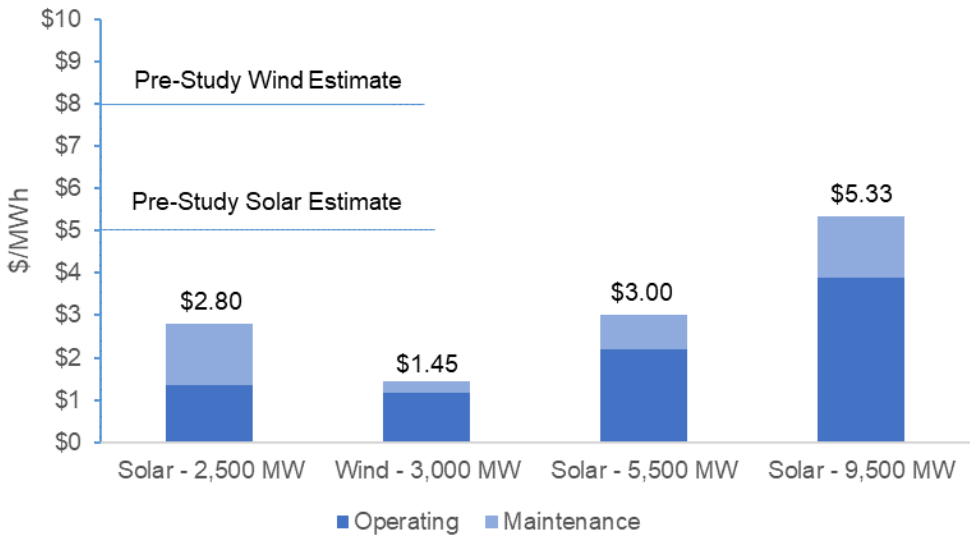


Figure D-6: Integration Costs at Additional Solar and Wind Penetration Levels.

Results overall were notably lower than pre-study estimates. Projected solar integration costs averaged about $3/MWh from 2,500 MW to 5,500 MW penetration, then began increasing up to about $5.5/MWh at 9,500 MW penetration. Projected wind integration costs were about $1.5/MWh at 3,000 MW additional penetration. With the diversity of the portfolio, including the ability to leverage the flexibility of conventional hydro assets, the TVA system is well positioned to absorb up to 5,500 MW of solar and 3,000 MW of wind at relatively small additional cost.

D.3.5.3 Peer Comparisons

Other utilities and Independent System Operators have conducted studies to evaluate the challenges and costs associated with integrating renewable resources. One of the most comprehensive studies was performed by Synapse in 2015. Synapse

researched integration costs and found that system operators implemented measures to integrate large amounts of wind and solar resources at costs generally less than $5/MWh of energy produced. At the time of this publication, more information about the Synapse study was available on the Synapse website at the following link:

http://www.synapse-energy.com/sites/default/files/Costs-of-Integrating-Renewables.pdf

Integration costs are only a piece of the equation, and other factors such as state renewable mandates or goals, declining solar prices, regional capacity factors, cost of competing resources, and consumer demand are playing into resource selection and timing. Understanding the impacts of intermittency also informs the need for flexible resources to support successful integration of renewables.

D.3.6 Conclusion

Based on study results, summer and winter net dependable capacities of 68 percent and 0 percent for solar and 14 percent and 31 percent for wind will be used. Given TVA's system is well-positioned to absorb up to 5,500 MW of solar and 3,000 MW of wind and current projections are within those bounds for the next decade, study results from those penetration levels informed the recommendation. Sub-hourly integration cost results were rounded to $3/MWh for solar and $2/MWh for wind for use as inputs in resource planning. These planning factors account for the contribution of solar and wind at TVA's summer and winter peaks and for the sub-hourly costs of intermittency that can be captured in TVA's hourly resource planning models.

Identifying net dependable capacities and sub-hourly integration costs for solar and wind resources provides a fuller picture of the operating characteristics of intermittent resources to inform resource selection. The following section further explores the relationship between increasing penetration of intermittent resources and the value of more flexible resources on TVA's system. The NDCs and integration costs are being used in the 2019 IRP as well as in annual resource planning. TVA expects to update the Intermittent Resources Study before the next IRP or as changes in drivers (including intermittent resource penetration) warrant.

D.4 Flexibility Study

D.4.1 Purpose

The purpose of the Flexibility Study was to understand the potential benefits of adding more flexible resources on the system and how those benefits may change as renewable penetration increases. The study sought to identify the sub-hourly impacts of introducing highly flexible resources to the portfolio at various levels of intermittent resource penetration. Study results can be applied in hourly capacity planning models to more fully reflect the impacts of adding more flexible resources to the portfolio.

D.4.2 Background

The Intermittent Resources Study and Flexibility Study go hand in hand, in that they reflect two sides of the same equation. While intermittent resources introduce additional sub-hourly variability in operations, highly flexible resources introduce additional sub-hourly flexibility in operations. Over the next decade, TVA expects to see more solar on the system, both behind and in front of the wholesale meter. It is important to understand the full value that highly flexible resources can offer now and in the future so that value can be proactively considered in capacity planning.

D.4.3 Study Scope and Approach

This study evaluated the benefit of highly flexible resources, specifically aero-derivative combustion turbines and lithium-ion batteries, with increased solar generation in TVA's system. Specifically, this study sought to:

- Identify sub-hourly flexibility benefits of adding aero-derivatives, batteries, hydro and pumped storage to the portfolio at varying levels of penetration
- Determine how this benefit changes at differing solar penetration levels.

This first step involved determining a set of operating parameters for aero-derivatives, batteries, hydro and pumped storage. Figure D-7 highlights study assumptions about aero-derivatives relative to frame combustion turbines (CTs), currently the most flexible resource in TVA's portfolio. Compared to frame CTs,

Appendix D: Modeling Framework Enhancements

aero-derivatives have more efficient heat rates, quicker ramping capability, and no start costs, which make them attractive from a flexibility perspective.

Parameter	Aero-derivative CT (LMS 100 6x)	Frame CT (4x)	Aero-derivative Comparison to Frame CT
Maximum Capacity (MW)	96	234	Smaller units
Minimum Capacity (MW)	25	100	Lower minimums
Operating Capacity Range (MW)	25-96 (25-100%)	140-234 (60-100%)	Higher range
Heat Rate at Maximum (btu/kWh)	9,130	10,132	More efficient
Ramp Rate (MW/minute)	60	5	Quicker ramping
Start Costs ($/start)	0	6,038	No start costs
Variable O&M ($/MWh)	1	11	Less expensive
Fixed O&M ($/kW-year)	10	4	Fixed service agreement

Figure D-7 Aero-derivative and Combustion Turbine Parameters

Figure D-8 highlights study assumptions for lithium-ion batteries. Batteries provide value in their ability to efficiently store energy for use at other times.

Parameter	Battery
Maximum Capacity (MW)	15
Operating Capacity Range (MW)	-100% to 100%
Efficiency (%)	88%
Ramp Rate (MW/minute)	15
Storage (Hours)	4
Efficiency (%)	87
Variable O&M ($/MWh)	0
Fixed O&M ($/kW-year)	108

Figure D-8: Battery Parameters.

Figure D-9 highlights study assumptions for conventional hydro and pumped storage facilities.

Parameter	Conventional Hydro	Pumped Storage
Maximum Capacity (MW)	3,000	4 x 424 (1,696 total in 2022)
Pumping Capacity (MW)		410 (100% only)
Operating Capacity Range (MW)	+/- 100 MW +/- 3%	-410 and +275 to 424 (65%-100%)
Efficiency Gen / Pump / Round Trip (%)		92% / 93% / 86%
Ramp Rate (MW/minute)	100	-
Start Cost ($)	0	0
Variable O&M ($/MWh)	3	3
Regulation Up/Down (MW)	20-80	20-50
Spinning (MW)	200	100

Figure D-9: Hydro and Pumped Storage Parameters.

The second step involved evaluating the sub-hourly flexibility benefits of existing hydro and pumped storage and potential aero-derivative and battery capacity. The objective was to determine the appropriate benefit to use in resource planning given expected level of renewable and flexible resource penetration over the next decade. To model flexibility benefits, SERVM was populated with TVA's load forecast and current portfolio of assets.

To analyze the benefit of the two existing technology types, hydro and pumped storage, their capacities were initially removed. About 2,500 MW of solar generation was added at five-minute granularity, aligning to base case penetration expectations evaluated in the Reserve Margin Study. Then, flexible capacity was added at various levels of penetration. Hydro capacity was modeled by mimicking historical sub-hourly profiles with +/-100 MW of operating flexibility within each hour. For pumped storage, each of TVA's four 424 MW pumped storage units was added incrementally. Capacity was modeled such that all units were in generating or pumping mode with one hour idle time required between changes in directional operation. A comparison of hourly and sub-hourly runs was used to identify the flexibility value of the existing hydro and pumped storage fleet.

For the two potential technology types, aero-derivatives and batteries, increasing amounts of capacity was added to evaluate the impacts on overall system operations and cost. Similar to the Intermittent Resources Study, the model was run at both an hourly and sub-hourly level. Then, results from the sub-hourly run were subtracted from the hourly run to isolate the sub-hourly impacts of flexibility with no overlap with hourly energy benefits and impacts. The analysis was also run at 5,500 MW of solar penetration to evaluate the relationship of increased intermittency and flexibility value. The results of the study inform the flexibility benefit curves at various flexible resource and intermittent resource penetration levels.

D.4.4 Inputs

In addition to the common inputs mentioned in the Study Overview, the following inputs were included:

- Aero-derivative Capacity (200 MW, 500 MW, and 1,000 MW) with study parameters
- Battery Capacity (200 MW, 500 MW, and 1,000 MW) with study parameters
- Conventional Hydro Capacity (3,000 MW) with study parameters
- Pumped Storage Capacity (1,696 MW added unit by unit) with study parameters
- Solar Capacity (2,500 MW, and 5,500 MW).

D.4.5 Results

The ability to leverage the flexibility of the current hydro and pumped storage fleet contributes benefits of $23/kW-year and $2.9/kW-year, respectively. Hydro provides flexibility every hour throughout the

year, and could provide additional savings if the operating range could be expanded. Simulations showed that, while pumped storage has a great deal of energy benefit hour to hour, its operating characteristics limit sub-hourly flexibility value.

At solar levels consistent with the Reserve Margin Study, the Flexibility Study indicated decreasing benefits with increasing penetration of new, highly flexible resources. Results show that adding 1,000 MW of aero-derivatives or batteries would drive benefits of about $9.5/kW-year and $1.7/kW-year, respectively. Simulations showed that aero-derivatives averaged two starts per day and an annual capacity factor of 23 percent, and that aero-derivative benefits may be higher in peak months and battery benefits may be higher in shoulder months. Flexibility values were derived by taking the net present value of the benefits achieved when operating the system more efficiently with the addition of more flexible resources. Solar integration costs of $3/MWh can also be expressed as $6.5/kW-year, as a relative comparison for these results.

Additionally, model results indicated that the flexibility benefit for aero-derivatives and batteries increased at higher levels of solar penetration. The flexibility value increased by a higher percentage for batteries than for aero-derivatives. Figure D-10 below summarizes the flexibility benefits of varying levels of aero-derivatives and batteries at two different solar penetration levels.

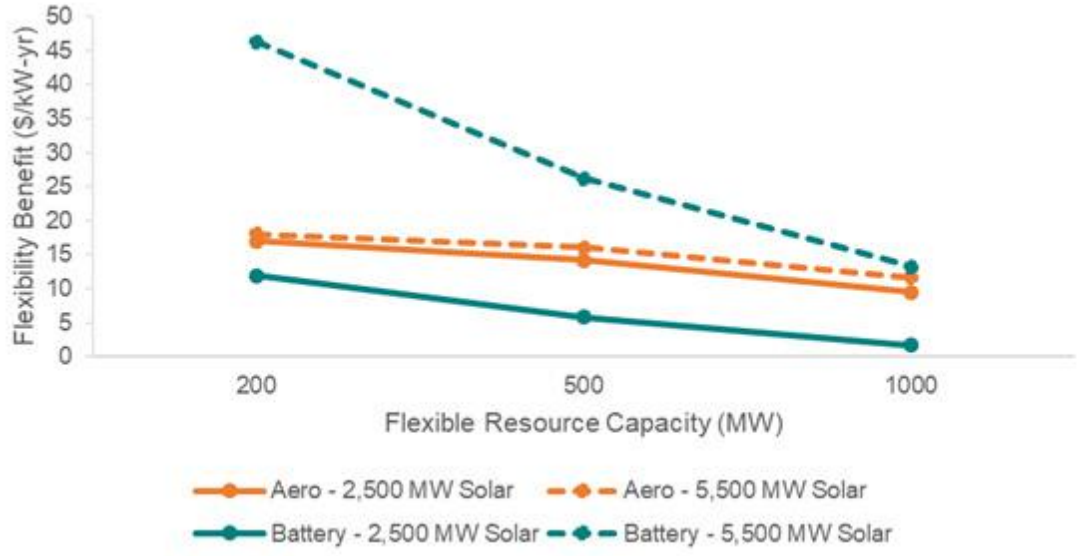


Figure D-10: Aero-derivative & Battery Flexibility Benefits

D.4.6 Conclusion

Based on study results, sub-hourly flexibility values of $9.5/kW-year for aero-derivatives, $1.7/kW-year for batteries, $23/kW-year for hydro, and $2.9/kW-year for pumped storage were recommended for use in resource planning. Hydro and pumped storage values would be applied on a pro-rata basis to expansion options that impact overall hydro system operating range or pumped storage capability. These planning factors account for the sub-hourly benefits of highly flexible resources that can be captured in TVA's hourly resource planning models.

Including a sub-hourly benefit for highly flexible resources provides a fuller picture of the operating characteristics of highly flexible resources to inform resource selection. This benefit would be expected to increase with increasing intermittent resources on the system. The flexibility benefit is being used in the 2019 IRP as well as in annual resource planning. TVA expects to update the Flexibility Study before the next IRP or as changes in drivers (including penetration of new flexible resources) warrant.

Appendix D: Modeling Framework Enhancements

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Appendix E – Scenario Design

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Appendix E - Scenario Design

E.1 Introduction to Scenario Design

With robust input from the IRP Working Group, TVA developed five different future environments that, coupled with the TVA's Current Outlook, constitute the six scenarios described in Figure E-1.

Current Outlook	•Economic outlook reflects slowing expected in 2020, transitioning to a long-term growth rate of 2 percent for TVA region GDP and 1.9 percent inflation •Demographic changes slow customer count growth, while declining household size and increasing efficiencies drive lower energy use per customer •Gas supply more than adequate to meet demand, and power prices follow seasonality of gas prices and volatility of weather
Economic Downturn	•Prolonged, stagnant economy results in weak growth and delayed expansion of new generation •Ballooning budget deficits and public debt hit record levels constraining federal economic policy actions •More tariffs on U.S. imports are followed by retaliatory tariffs on U.S. exports •Stringent environmental regulations delayed due to concerns of adding further pressure to economy •Weaker demand lowers cost of new plant construction
Valley Load Growth	•Technology-driven investment in automation and artificial intelligence raise electricity use, boosting labor productivity and economic growth while lowering inflation •Rapid economic growth, driven by migration into the Valley and growth in emerging markets and developing economies, translates into higher energy sales •Lower battery costs due to economies of scale drive electrification of transportation, magnifying growth •Preference for lower emissions, DER, and EE lowers demand for emitting generation, translating into lower gas and coal prices
Decarbonization	•Increasing climate-driven effects create strong federal push to curb greenhouse gas emissions, increasing CO_2 emission penalties for the utility industry and incentives for non-emitting technologies •Compliance with new rules increases energy prices and US-based industry becomes less competitive, resulting in lagging economic growth that fails to rebound to trend levels •Fracking regulations never materialize, but gas demand is impacted by CO_2 penalty •New gas expansion units are necessary to replace existing higher CO_2-emitting fleet
Rapid DER Expansion	•Growing consumer awareness of and preference for energy choice, coupled with rapid advances in energy technologies, drive high penetration of distributed generation, storage & energy management •Utilities are no longer the sole source of generation and multiple options are available to consumers •Market shift results in lower loads, decreased need for supply-side generation, but potential impacts to transmission and distribution planning and infrastructure
No Nuclear Extensions	•Driven by aging assets and desire for national energy security and resiliency, there is a regulatory challenge to relicensing of existing, and contruction of new, large scale nuclear plants. •National energy policy drives carbon regulation or legislation and promotes small modular reactor (SMR) technology through subsidies to drive advancements and improved economics

Figure E-1: 2019 IRP Scenario Narratives.

An overarching principle in the design of scenarios was to ensure a wide range of possible outcomes. To that end, the uncertainties that impact possible futures were altered in such a manner as to cause a range of

impacts from none to very low to very high, as shown in Figure E-2.

Uncertainties (Relative to Current Forecast)	Current Outlook	Economics		Regulatory		Technology
		Economic Downturn	Valley Load Growth	Decarbonization	No Nuclear Extensions	Rapid DER Adoption
Electricity Demand	Same	Low	Very High	Low	Same	Very Low
Market Power Price	Same	Low	High	Very High	High	Very Low
Natural Gas Prices	Same	Low	High	High	High	Very Low
Coal Prices	Same	Low	Same	Low	Same	Very Low
Solar Prices	Same	High	Same	Low	Same	Very Low
Storage Prices	Same	High	Same	Low	Same	Very Low
Regulations	Same	Low	High	Very High	High	Same
CO2 Regulation/Price	Same	Same	High	Very High	Same	Same
Distributed Generation Penetration	Same	Low	High	High	High	Very High
National Energy Efficiency Adoption	Same	Low	High	Very High	High	Same
Electrification	Same	Same	Very High	High	Same	High
Economic Outlook (National/Regional)	Same	Very Low	Very High	Low	Same	Same

Figure E-2: Scenario Uncertainties.

E.2 Varying Uncertainties to Stress Scenario Bounds

In each scenario, uncertainties were levered to reach the desired end-state. For example, in the Valley Load Growth scenario, a very high penetration rate of electric vehicles was used to reach “very high” outcomes for Electricity Demand and Electrification.

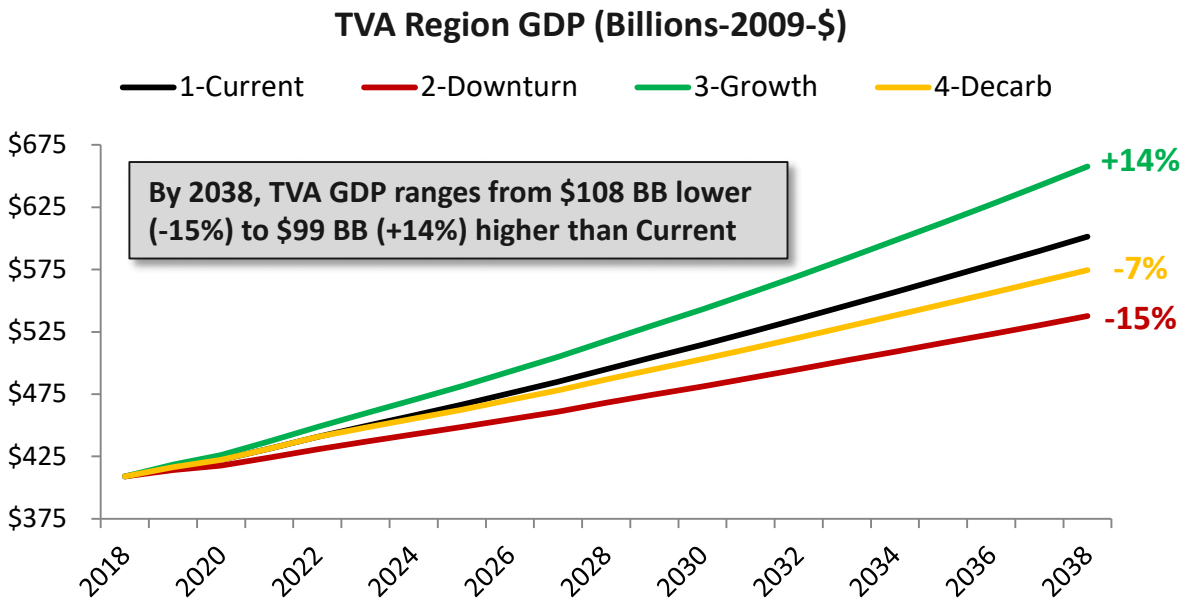
E.2.1 Electricity Demand

One of the major challenges to translating the uncertainties into model results is defining what is meant by the categories ranging from “very high” to “very low,” ascribing numbers to those definitions and then actually achieving the desired results. The uncertainties that affect electricity usage the most, and that are the focus of this section, are Economic Outlook, Electrification, and Distributed Generation Penetration, which are, in turn, affected by solar, storage and natural gas prices, and regulations.

Two of the scenarios were directly affected by economics - the Economic Downturn and Valley Load Growth scenarios. A third scenario, Decarbonization, saw economic impacts as a result of regulations and had a regional GDP growth rate midway between the Current Outlook and the Economic Downturn (See Figure E-3). The No Nuclear Extensions and Rapid DER Expansion cases both aligned with the Current Outlook trajectory. In all scenarios, the economic assumptions were applied for the full twenty years of the study period (2019-2038). In the Economic Downturn scenario, for example, normal business cycle effects were removed and low economic growth

Appendix E: Scenario Design

occurred in each of the twenty years. The same logic holds for the Valley Load Growth and Decarbonization cases. This approach was taken to help drive greater breadth of results.



Annual Growth Rate					
Current	Downturn	Growth	Decarb	DER	Nuclear
1.9%	1.4%	2.4%	1.7%	1.9%	1.9%

Figure E-3: Scenario Gross Regional Product (B$ - 2009).

The economic drivers mainly impact electricity demand by increasing or decreasing business or consumer investment. With anemic economic growth, weaker demand results in lower capital investment in manufacturing plants by businesses or distributed generation by individuals. In a growing economy, the opposite is true with larger investments in electrification, energy efficiency, business expansion and distributed generation.

The ability to invest was a significant driver to the large penetration of electric vehicles (EVs) in the Valley Load Growth scenario. In that case, every new vehicle sold by 2038 – light, medium and heavy duty along with transportation (buses) – will be electric, translating into almost five million EVs on the road in the Valley. Energy-wise, the lowest penetration occurred in the Current Outlook and No Nuclear Extensions cases because they only included light duty vehicles, which are less energy intensive. The Economic Downturn case had less than 500,000 EVs (see Figure E-4), but more energy usage because it had a mix of light, medium, heavy duty and buses. For the other two cases, the drivers to growth are dictated more by preference or regulation as outlined in the scenario narratives. Electric vehicles are the only representation of electrification in the residential sector.

Investment was also an important driver for business electrification and expansion as shown in Figure E-5. Large Commercial and Industrial (C&I) customers added the most electricity usage in the Valley Load Growth scenario with a very high 1.9 percent compound annual growth rate (CAGR) over the twenty years from 2018 to 2038. In that case, businesses expanded as a result of economic growth inside and outside the Valley. The Valley population grew faster than the nation as a whole because of in-migration to the TVA service territory from other parts

of the country. Also, large data centers came online in the Valley, adding even more electricity growth. The Current Outlook, Decarbonization, Rapid DER Expansion and No Nuclear Extensions cases showed modest Large C&I growth of 0.3 percent per year.

The Economic Downturn case showed Large C&I decline of 0.7 percent per year as businesses struggled. Residential customers also struggled and were more conscious of energy bills, driving additional energy conservation.

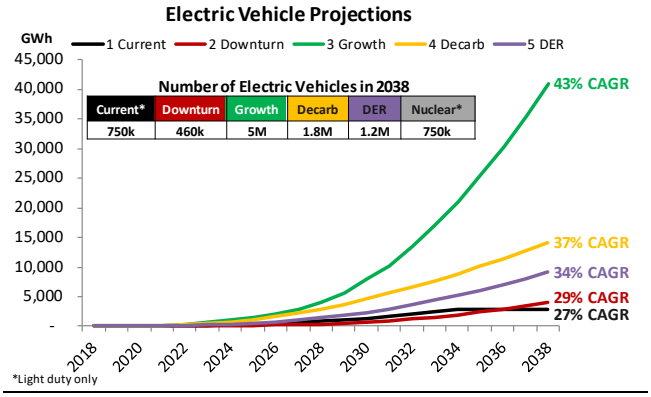


Figure E-4: Electric Vehicle Projections.

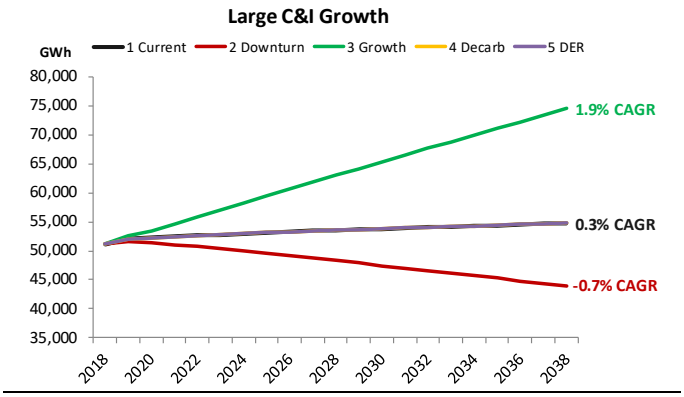


Figure E-5: Large Commercial and Industrial Customer Sales.

Distributed Generation penetration, represented by solar, battery storage and combined heat and power (CHP), was not only impacted by ability to invest but also by regulation, customer preference and natural gas prices. Renewable generation, attributed to only behind-the-meter (BTM) solar with batteries, was equal to or higher than the Current Outlook in every case (Figure E-6). The anticipated lower future prices of installed solar along with various incentives drove much of the increases. Batteries, reliant on excess solar generation to charge, were present in many of the cases as noted within the table in Figure E-6. The Rapid DER Expansion scenario had the highest impact from BTM solar by far because technology breakthroughs greatly decreased the cost. The penetration occurred both in the residential and Large C&I sectors, with some customers able to go off-grid and use TVA only for back-up power needs. The Decarbonization case had the next highest impact with penetration driven mainly by federal incentives, as well as lower cost. Cost was less of an issue in the Valley Load Growth scenario, but lower incentives meant the economics were less favorable, leading to lower renewable growth. Renewable growth for the Economic Downturn and No Nuclear Expansions cases was the same as for the Current Outlook.

Another aspect of distributed generation was combined heat and power (Figure E-7). The Current Outlook, as well as the Decarbonization and the No Nuclear Extensions cases, had eight MWs per year of CHP growth for the first ten years of the forecast and none thereafter. The Economic Downturn cut that in half, but the Valley Load Growth Scenario doubled the Current Outlook case. The largest impact occurred in the Rapid DER Adoption scenario, where an average of 90 MWs of CHP was installed per year for the 20-year period. The drivers to this significant increase were lower technology cost along with the lowest natural gas prices of all scenarios evaluated.

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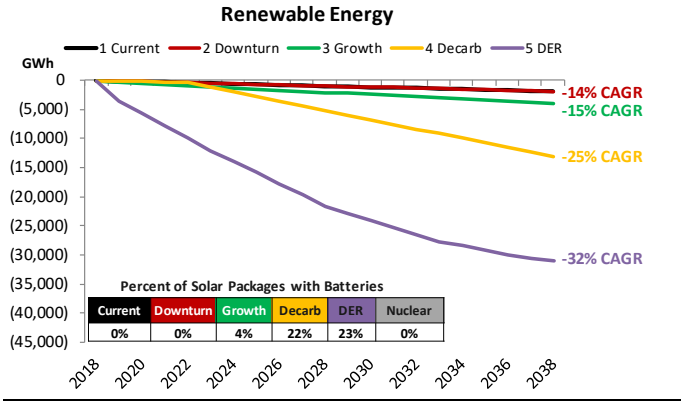


Figure E-6: Renewable Energy Projections.

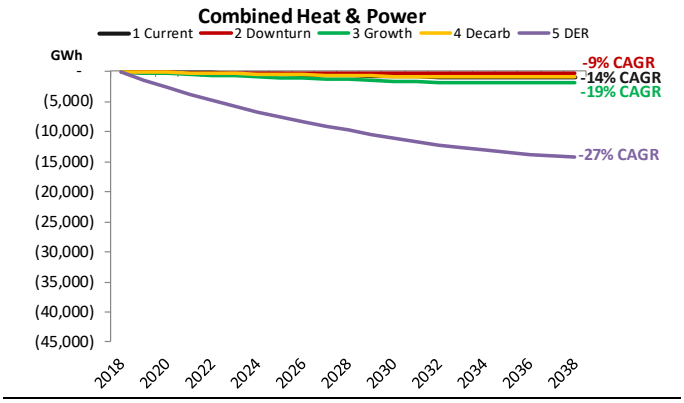


Figure E-7: Combined Heat & Power Projections.

The final uncertainty affecting the amount of electricity supplied by TVA was regulation through Department of Energy Codes and Standards for electrical appliances, motors, etc. In Figure E-8, the impacts are shown as change in efficiency gains from the Current Outlook, represented as the zero line. Not surprisingly, the Decarbonization case with its more stringent federal regulations was the scenario that showed the largest impact. Next came the Rapid DER Adoption, mainly driven by the lower cost of more efficient technology. The Valley Load Growth scenario also had more efficiency since more investment dollars were available. Conversely, the Economic Downturn case had less efficiency as equipment turnover slowed due to weak economics.

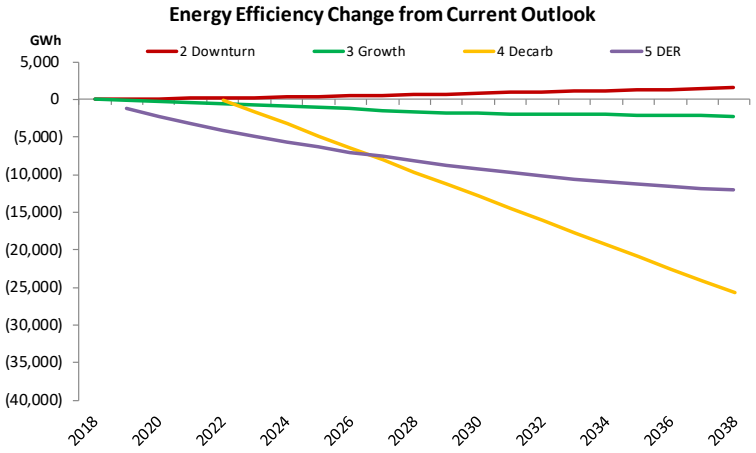


Figure E-8: Energy Efficiency Impacts to Scenarios.

To provide a view of the most impactful uncertainties or levers for each scenario, Figure E-9 shows the increase or decrease in gigawatt-hours of energy in 2038 for each scenario by driver, as compared to the Current Outlook. For the Economic Downturn scenario, Large C&I declines drove lower loads. In the Valley Load Growth case, the proliferation of EVs combined with data center and Large C&I growth caused load to grow faster than any other scenario. Regulations in the Decarbonization case drove higher levels of energy efficiency, mainly through DOE codes and standards. Penetration of solar and CHP behind the meter drove loads to their lowest levels overall in the Rapid DER Adoption case.

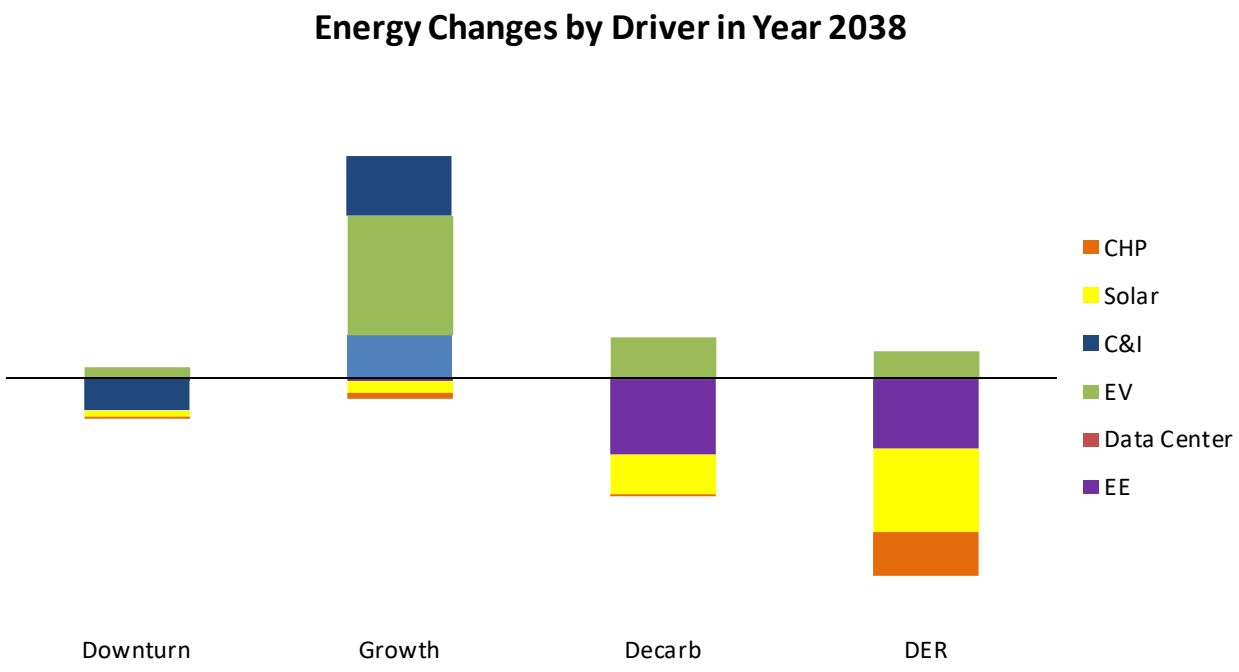
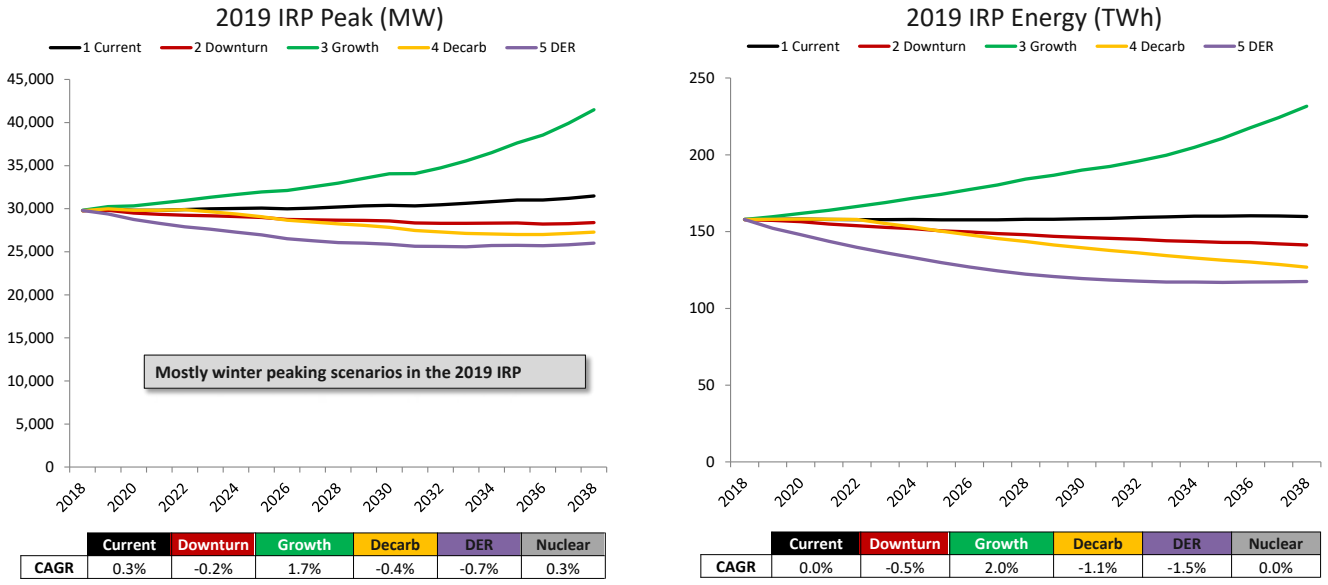


Figure E-9: Driver Impact to Energy in 2038 by Scenario.

Varying these uncertainties across scenarios resulted in a wide range of future peak load and energy requirements to be served by TVA (Figure E-10).



	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	0.3%	-0.2%	1.7%	-0.4%	-0.7%	0.3%

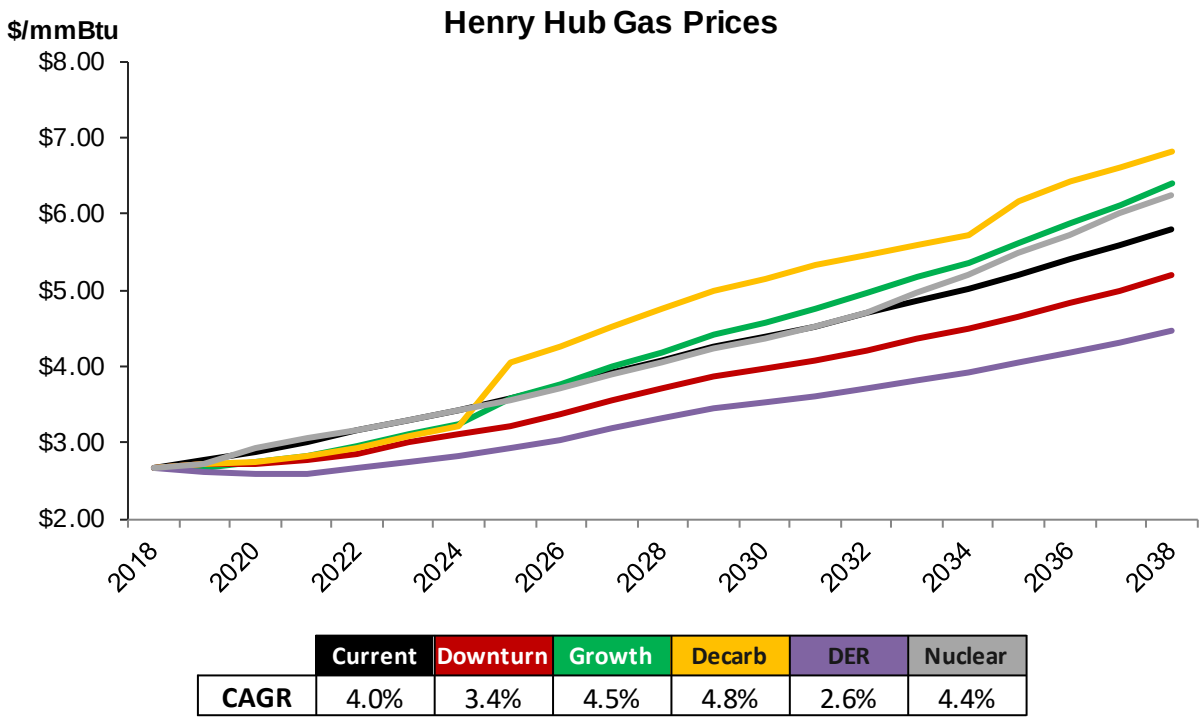
	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	0.0%	-0.5%	2.0%	-1.1%	-1.5%	0.0%

Figure E-10: Annual Peaks and Energy Requirements to be Served by TVA.

E.2.2 Commodities

Commodity prices include those for coal, natural gas, and carbon dioxide (CO_2). Some of the scenario narratives addressed the expected direction of prices explicitly. Electricity demand, and consequently fuel demand, was lower in all scenarios but the Valley Load Growth and No Nuclear Extension scenarios. Lower demands generally result in lower prices especially with no externality to constrain supply.

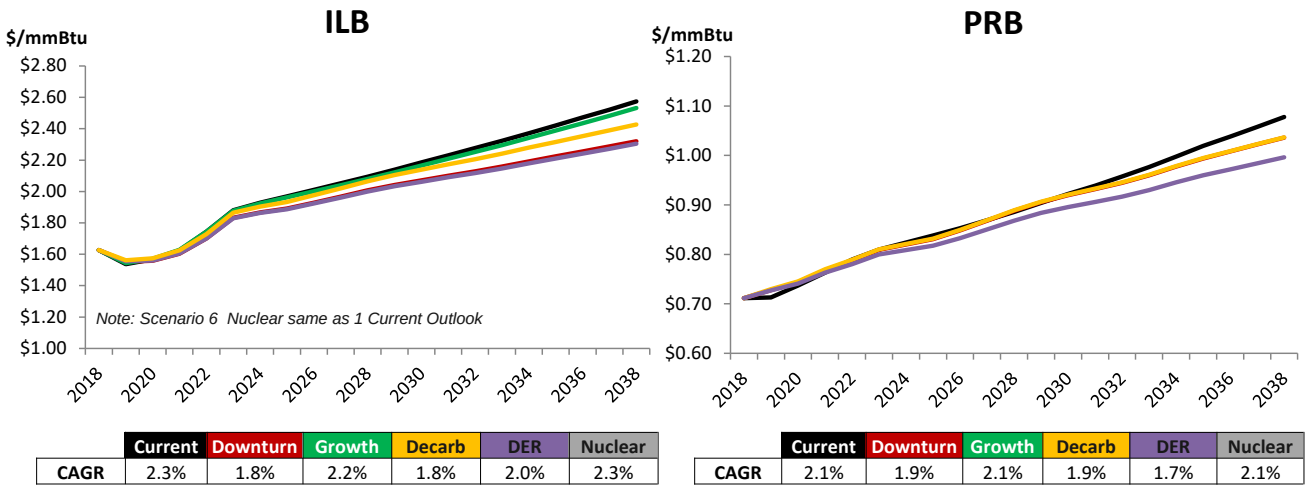
For natural gas (Figure E-11), the scenario narratives and uncertainty direction explain most of the movement. The Economic Downturn scenario saw demand and price declines relative to the Current Outlook. For the Valley Load Growth case, slightly higher demand coupled with the CO_2 penalty in 2025 drove prices higher, especially after 2025. The Decarbonization case had the highest CO_2 penalty and the highest gas prices with two, step increases: one in 2025 and the other in 2035, coinciding with the timing of the carbon penalty. For the Rapid DER Expansion scenario, loss of electricity demand because of high penetration of BTM generation resulted in the lowest demand for natural gas and the lowest prices. The No Nuclear Extension case had the same price trajectory at the Current Outlook until 2033 when the generation loss from retiring nuclear plants caused additional generation from natural gas plants



	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	4.0%	3.4%	4.5%	4.8%	2.6%	4.4%

Figure E-11: Henry Hub Natural Gas Price Projections.

While natural gas prices in the scenario range above and below the Current Outlook, coal prices in the long-term all fall at or below the Current Outlook (Figure E-12). The basic outlook for the coal markets was that no additional coal plants were to be constructed; hence, the aggressiveness of coal plant retirements impacted demand along with the shift to other technologies. In all cases, demand for coal was lower than the Current Outlook, which drove prices lower in all cases.



	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	2.3%	1.8%	2.2%	1.8%	2.0%	2.3%

	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	2.1%	1.9%	2.1%	1.9%	1.7%	2.1%

Figure E-12: Illinois Basin (ILB) and Powder River Basin (PRB) Coal Price Projections.

One externality addressed in this section is CO_2. Figure E-13 shows the price of CO_2, expressed as dollars per ton emitted, for the scenarios. Only the Valley Load Growth and Decarbonization cases had values different from the Current Outlook. In the Valley Load Growth scenario, the robust economic situation provided the money to pay for the preference for lower emissions that saw a CO_2 penalty of $5 per ton beginning in 2025, escalating at inflation. In the Decarbonization case, the stringent regulatory environment meant that a larger carbon penalty of $25 per ton commenced in 2025. That penalty escalated at the inflation rate, and in 2035, was ratcheted higher by another $10 per ton.

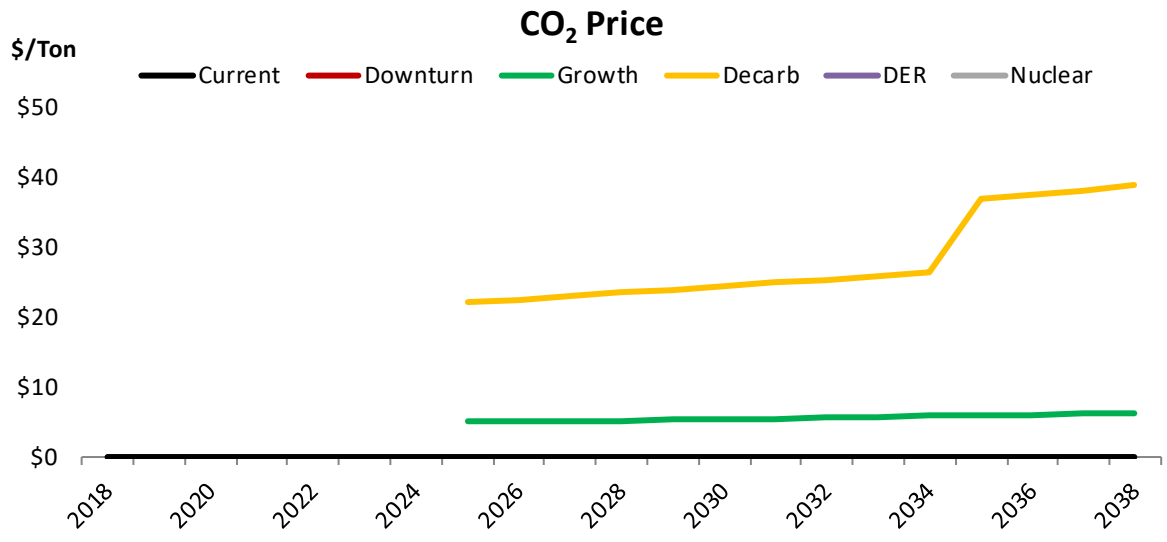


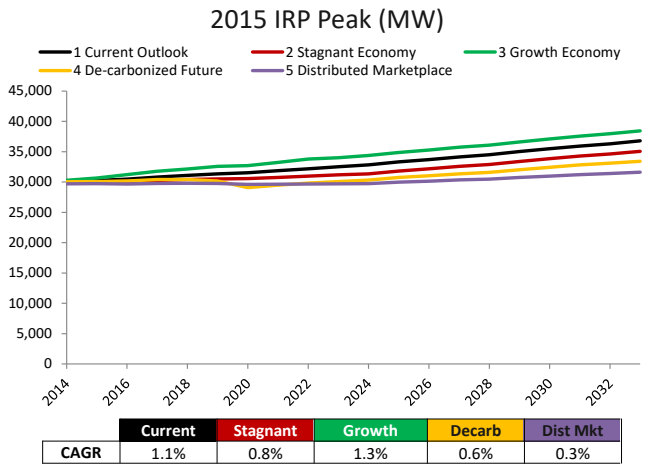
Figure E-13: CO_2 Price in Each Scenario.

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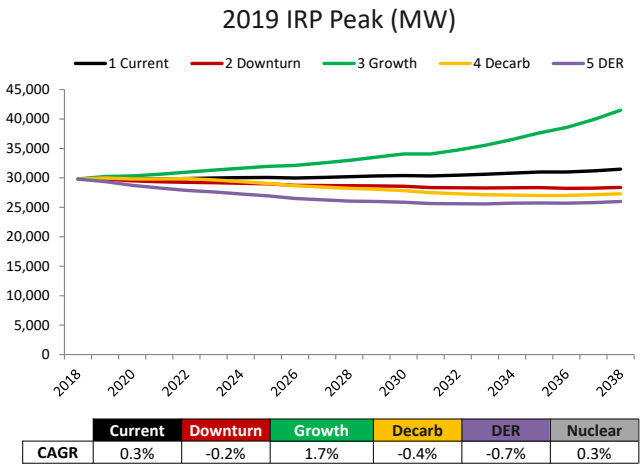
E.3 Results

As depicted previously in Figure E-10, one of the key outcomes desired from the scenarios was a wide range of future energy profiles for TVA to understand. Figures E-14 and E-15 show a comparison of the annual peaks and annual energy, respectively, for the 2015 and 2019 IRPs. For the annual peaks and energy, the 2015 IRP had no scenario where the annual peaks and energy at the end of the study period was lower than the first year (2014) of the study. In the 2019 IRP, half of the scenarios are lower in the twentieth year of the study as compared to the first year.

By the last year of the study period, the annual peak distribution is twice as wide in the 2019 IRP as the 2015 IRP, with the Valley Load Growth case 39 percent higher than the Current Outlook and the Rapid DER Adoption scenario 13 percent lower. Also, by the last study year, the annual energy distribution is two and a half times as wide for the 2019 IRP compared to the 2015 IRP, with the Valley Load Growth scenario 48 percent higher and the Rapid DER Adoption case 26 percent lower than the Current Outlook.

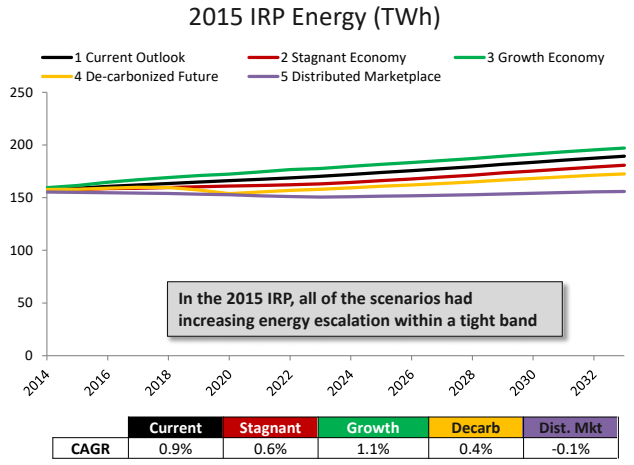


	Current	Stagnant	Growth	Decarb	Dist Mkt
CAGR	1.1%	0.8%	1.3%	0.6%	0.3%

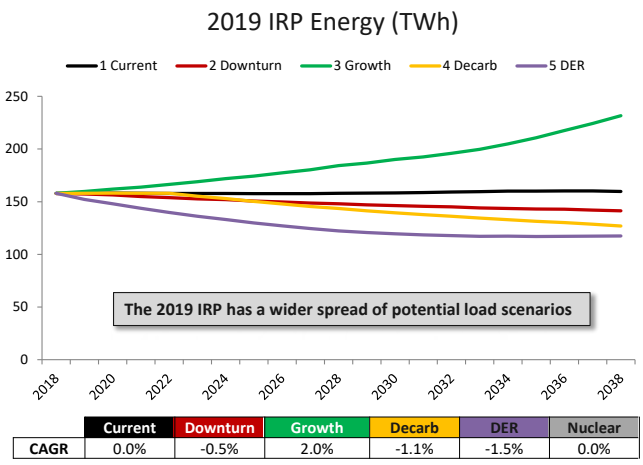


	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	0.3%	-0.2%	1.7%	-0.4%	-0.7%	0.3%

Figure E-14: Annual Peak Comparison between the 2015 and 2019 IRPs.



	Current	Stagnant	Growth	Decarb	Dist. Mkt
CAGR	0.9%	0.6%	1.1%	0.4%	-0.1%



	Current	Downturn	Growth	Decarb	DER	Nuclear
CAGR	0.0%	-0.5%	2.0%	-1.1%	-1.5%	0.0%

Figure E-15: Annual Energy Comparison between the 2015 and 2019 IRPs.

E.3.1 Conclusion

Developing wide ranges of possible outcomes through the use of various uncertainties provides the means for creating electricity usage outcomes that stretch the boundaries of our thinking and planning.

F

Appendix F – Strategy Design

Appendix F – Strategy Design

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Appendix F - Strategy Design

F.1 Introduction to Strategy Design

With input from the IRP Working Group, TVA developed different business strategies to be applied across various futures to gain insights into potential future resource portfolios. The combination of the six scenarios and five strategies being evaluated in the IRP will result in 30 unique resource portfolios.

For each strategy, a narrative was developed to describe the promotion or constraint of certain resource types. These narratives, summarized in Figure F-2, provide a general roadmap for how the strategies should be designed

Strategies	Description and Attributes
Base Case	• Planning Reserve margins for summer and winter peak seasons are applied, targeting an industry best-practice level of reliability. • No specific resource types are promoted beyond business as usual.
Promote DER	• DER is incented to achieve higher end of long-term penetration levels. • New coal is excluded. All other technologies are available while EE, demand response, distributed generation and storage are promoted.
Promote Resiliency	• Small, agile capacity is incented to maximize flexibility and promote ability to respond to short-term disruptions on the power system. • All technologies are available while small modular reactors (SMRs) and gas additions (aero-derivative turbines, reciprocating engines), demand response, storage and distributed generation are promoted. • Combinations of storage and distributed generation could be installed as microgrids. • Flexible loads and DERs are aggregated to provide synthetic reserves to the grid to promote resiliency.
Promote Efficient Load Shape	• Targeted electrification and demand and energy management are incented to minimize peaks and troughs and promote an efficient load shape. • All technologies are available but those that minimize load swings, including EE, DR and storage, are promoted. • Programs targeting low-income customers will be a part of EE promotion.
Promote Renewables	• Renewables at all scales are incented to meet growing prospective or existing customer demands for renewable energy. • New coal is excluded. All other technologies are available while renewables are promoted.

Figure F-1: Strategy Narratives.

F.2 Mechanism to Promote Resources

Two different mechanisms for promoting a resource were considered: 1) targeting a higher penetration level for a promoted resource or 2) applying an economic incentive that effectively reduces cost for the resource selection process. TVA opted to use an economic incentive approach, as a consistent incentive structure could be applied across the diverse set of resource options being promoted in the IRP. In practice, an economic incentive could be delivered in various ways, such as through a rebate, service, or pricing product. The incentive structure approach is shown in Figure F-3.

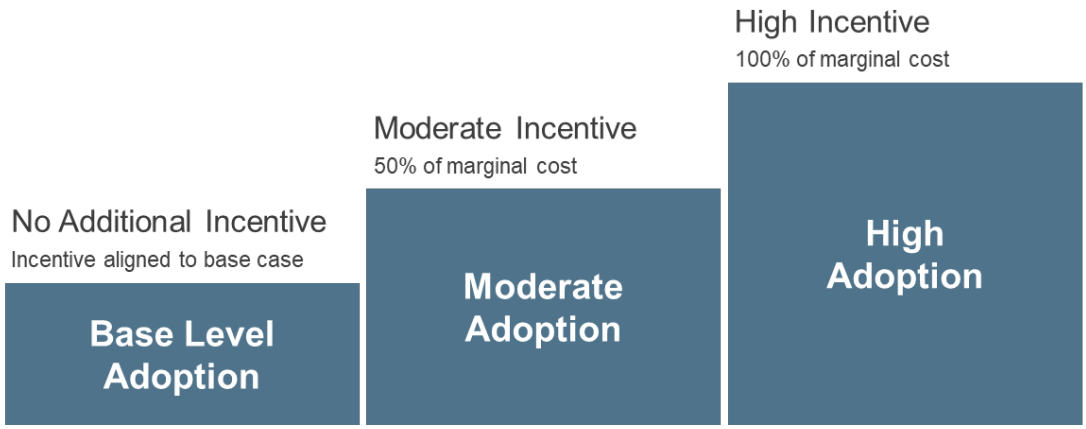


Figure F-2: Incentive Structure.

A base incentive level represents business as usual, or no additional incentive beyond continuation of existing programs. To promote adoption of a resource, a moderate or high incentive is applied. A moderate incentive is represented as 50 percent of marginal cost, and a high incentive is represented as 100 percent of marginal cost. For most resources, short-term marginal energy cost is used as the incentive, except for demand response, where short-term marginal capacity cost is used. The ability of a particular resource to provide capacity is still considered in the optimization model, even though the incentive is generally based on marginal energy cost. Another exception is storage, which is promoted based on the level of distributed or utility-scale solar incented in a portfolio at a 10 percent match for a moderate incentive and a 25 percent match for a high incentive. This incentive structure was applied across all promoted resources in the 30 unique scenario and strategy combinations.

F.3 Strategy Design Matrix

A Strategy Design Matrix (Figure F-4) was developed to translate the narratives into a plan for promoting resources. This matrix was used to guide the promotion of resources in the capacity planning model.

Strategy	Distributed Resources & Electrification						Utility Scale Resources					
	Distributed Solar	Distributed Storage	Combined Heat & Power	Energy Efficiency	Demand Response	Beneficial Electrification	Solar	Wind	Biomass & Biogas	Storage	Aero CTs & Recip Engines	Small Modular Reactors
Base Case	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Promote DER	High	Moderate	High	Moderate	Moderate	Base	Base	Base	Base	Base	Base	Base
Promote Resiliency	Moderate	High	Moderate	Base	Moderate	Base	Base	Base	Base	Moderate	Moderate	Moderate
Promote Efficient Load Shape	Base	Moderate	Base	High	High	Moderate	Base	Base	Base	High	Base	Base
Promote Renewables	Moderate	Moderate	Base	Base	Base	Base	Moderate	Moderate	Moderate	Moderate	Base	Base

Figure F-3: Strategy Design Matrix.

The Strategy Design Matrix includes resources promoted in one or more strategies across the top, along with a row for each strategy. A number of factors were considered in final strategy design, including IRP Working Group and Regional Energy Resource Council feedback, relative economics of promoted resources, alignment within a strategy, and differentiation across strategies.

Appendix F: Strategy Design

The Base Case strategy has no additional incentives beyond continuation of existing programs, so a "base" incentive level is listed for all resource types. Included in the Base Case is the continuation of the Low Income EE pilot program. Resources that are not promoted in the other strategies are also listed as "base" to indicate alignment to the Base Case. All the strategies except the Base Case promote a unique set of resources, in most cases with a combination of moderate and high incentives.

The Promote DER strategy includes an incentive for all types of distributed energy resources and energy efficiency. Distributed solar and CHP receive high incentives in this strategy, and a moderate incentive is applied to distributed storage, energy efficiency, and demand response. Low Income EE is a subset of energy efficiency programs, and in this strategy, the pilot program is expanded Valley-wide.

The Promote Resiliency strategy includes an incentive for small, agile resources that support system flexibility to respond to dynamically changing loads and those that support local resiliency. Distributed storage receives a high incentive in this strategy. A moderate incentive is applied to distributed solar, CHP, demand response, as well as to utility-scale storage, small gas assets (aero-derivatives and reciprocating engines), and small modular nuclear reactors.

The Promote Efficient Load Shape strategy includes incentives for resources that help shave peaks and fill valleys, making the overall system load shape more efficient. Utility-scale storage, along with energy efficiency and demand response, receive high incentives in this strategy. A moderate incentive is applied to distributed storage and beneficial electrification. Low Income EE is a subset of energy efficiency programs, and in this strategy, the pilot program is expanded Valley-wide and incentives are increased.

The Promote Renewables strategy includes incentives for renewables at all scales, as well as for storage to support integration of renewables. A moderate incentive is applied to distributed solar and storage, as well as to utility-scale solar, wind, biomass/biogas, and storage.

F.3.1 Distributed Generation Modeling Methodology

A number of strategies in the IRP explore promotion of distributed generation and storage. For the 2019 IRP, TVA developed an innovative way to model adoption of distributed generation (DG) technologies. Figure F- 5 provides a high level summary of the methodology.



Figure F-4: Distributed Generation Modeling Methodology.

Base, moderate and high penetration levels for DG resources were determined using an adoption curve approach. The approach used is similar to NREL's Distributed Market Demand Model, which simulates potential adoption of a given resource as a function of the number of payback years. Factors specific to each scenario and strategy combination were fed into a TVA-developed DG model to create a unique adoption level for each resource for the 20-year planning horizon. Further details about this innovative modeling approach can be found in Appendix C: Distributed Generation Methodology.

F.3.2 Conclusion

The narratives supply the roadmap for designing the strategies, and a consistent incentive structure provides the mechanism for promoting resources in each strategy. The Strategy Design Matrix (Figure F-4) brings the two together, showing how resources are being promoted across the strategies. Finally, innovation in DG modeling allows TVA to evaluate how a combination of DG and utility-scale resources might ultimately impact future resource portfolios.

G

Appendix G - Capacity Plan Summary Charts

Appendix G - Capacity Plan Summary Charts

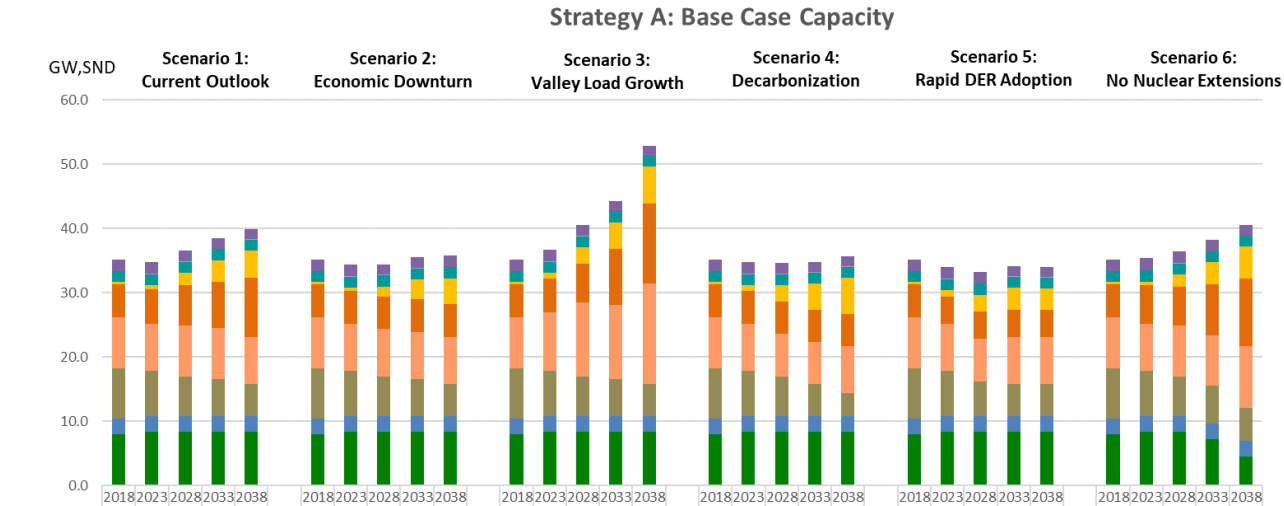
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Appendix G - Capacity Plan Summary Charts

G.1 Capacity & Energy Expansion Results

The capacity expansion plans are shown below by strategy. The capacity graphics show the total capacity grouped by resource type (i.e., nuclear, hydro, coal, etc.) over the planning horizon. The capacity is in gigawatts, which is 1,000 megawatts, and is based on the summer net dependable capacity value, which is the amount of capacity that TVA plans to have available to meet summer peak firm requirements.

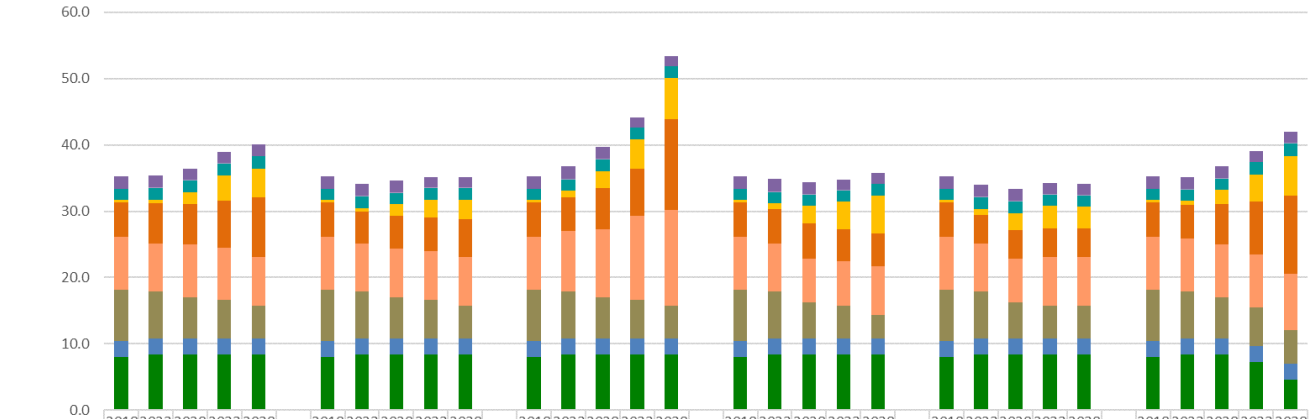
Total Capacity Expansion Plans:



	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
DR	1.8	1.8	1.7	1.7	1.6	1.8	1.8	1.6	1.7	1.8	1.8	1.9	1.7	1.6	1.6	1.8	1.8	1.7	1.5	1.6	1.8	1.8	1.7	1.6	1.6	1.8	1.8	1.8	1.8	1.7
EE	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Storage	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7
Renewables	0.3	0.6	1.9	3.4	4.3	0.3	0.6	1.6	3.1	4.1	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	3.4	3.3	0.3	0.6	1.9	3.4	5.0
Gas CT	5.3	5.5	6.2	7.2	9.2	5.3	5.1	5.1	5.1	5.1	5.3	5.1	6.0	8.8	12.5	5.3	5.1	5.0	5.0	5.0	5.3	4.3	4.3	4.3	4.3	5.3	6.1	6.0	7.9	10.4
Gas CC	7.9	7.2	7.9	7.9	7.3	7.9	7.2	7.3	7.3	7.3	7.9	9.1	11.5	11.5	15.6	7.9	7.2	6.6	6.6	7.3	7.9	7.2	6.6	7.3	7.3	7.9	7.2	7.9	7.9	9.7
Coal	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.0	3.6	7.8	7.1	5.4	5.0	5.0	7.8	7.1	6.2	5.8	5.0
Hydro	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5
Nuclear	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	7.2	4.6

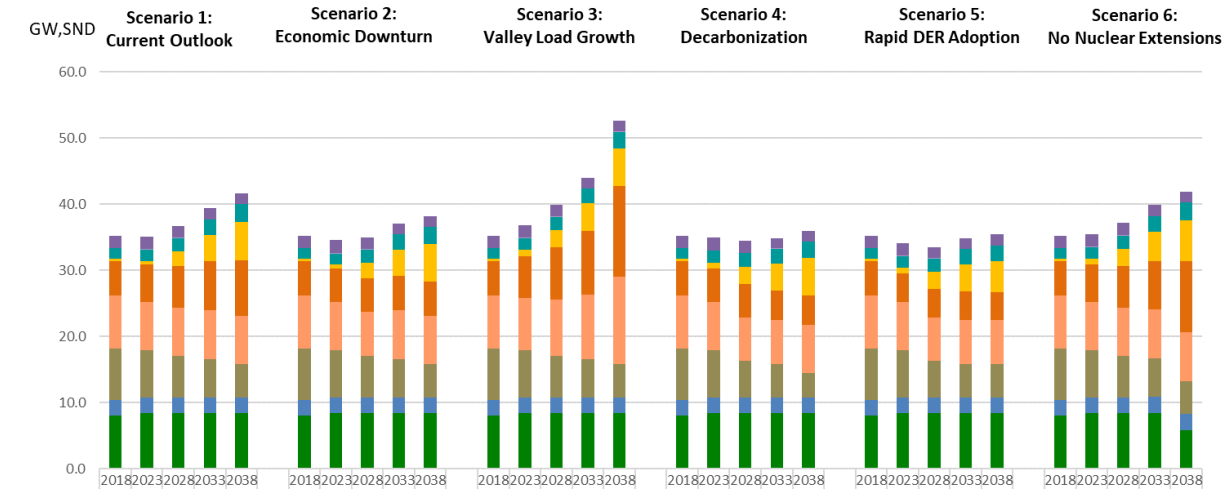
Appendix G: Capacity Plan Summary Charts

Strategy B: Promote DER Capacity



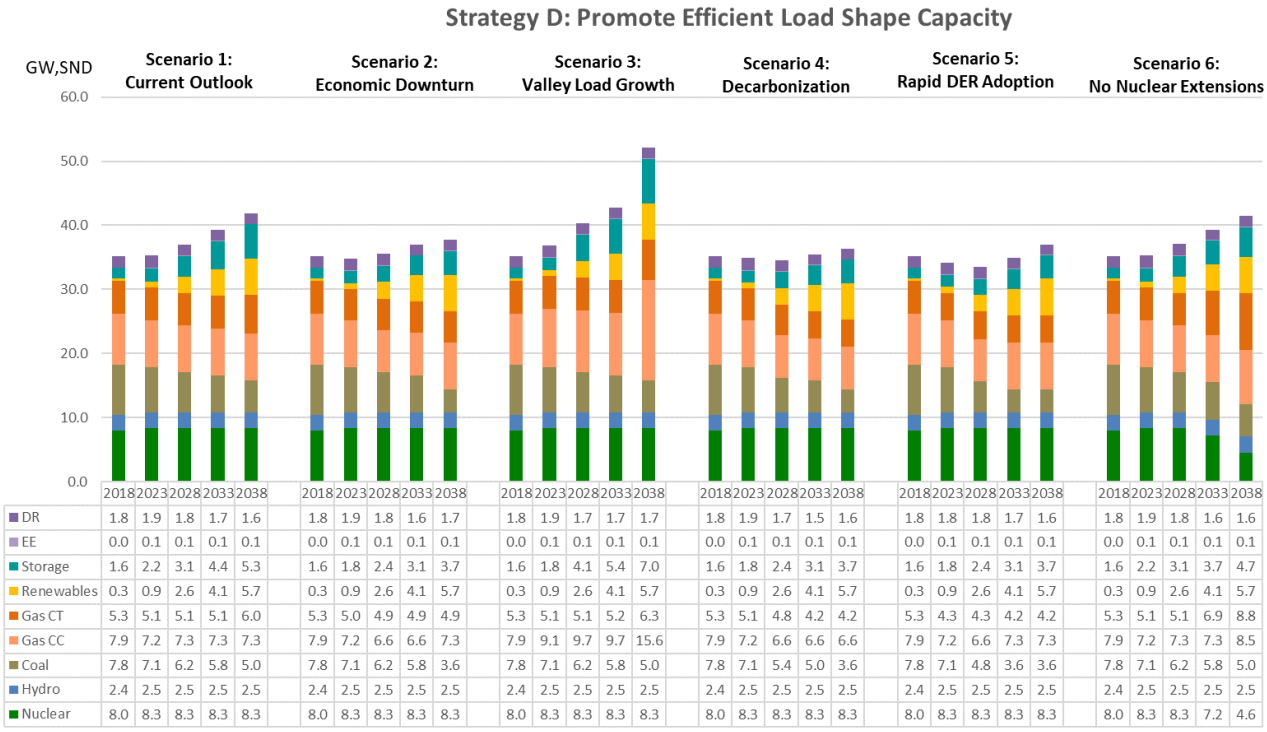
	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
DR	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.7	1.6	1.6	1.8	2.0	1.9	1.6	1.5	1.8	1.9	1.7	1.6	1.6	1.8	1.8	1.8	1.6	1.6	1.8	1.8	1.7	1.7	1.7
EE	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Storage	1.6	1.7	1.7	1.8	1.9	1.6	1.7	1.7	1.8	1.8	1.6	1.7	1.7	1.8	1.8	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.8	1.9
Renewables	0.3	0.6	1.8	3.7	4.3	0.3	0.6	1.8	2.7	2.8	0.3	0.9	2.6	4.4	6.2	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	3.4	3.3	0.3	0.6	2.1	4.1	6.0
Gas CT	5.3	6.1	6.1	7.1	9.0	5.3	4.8	4.9	5.1	5.7	5.3	5.1	6.1	7.1	13.6	5.3	5.1	5.4	4.9	5.0	5.3	4.3	4.3	4.3	4.3	5.3	5.1	6.1	8.0	11.8
Gas CC	7.9	7.2	7.9	7.9	7.3	7.9	7.2	7.3	7.3	7.3	7.9	9.1	10.3	12.7	14.4	7.9	7.2	6.6	6.6	7.3	7.9	7.2	6.6	7.3	7.3	7.9	7.9	7.9	7.9	8.5
Coal	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	5.4	5.0	3.6	7.8	7.1	5.4	5.0	5.0	7.8	7.1	6.2	5.8	5.0
Hydro	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5
Nuclear	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	7.2	4.6

Strategy C: Promote Resiliency Capacity

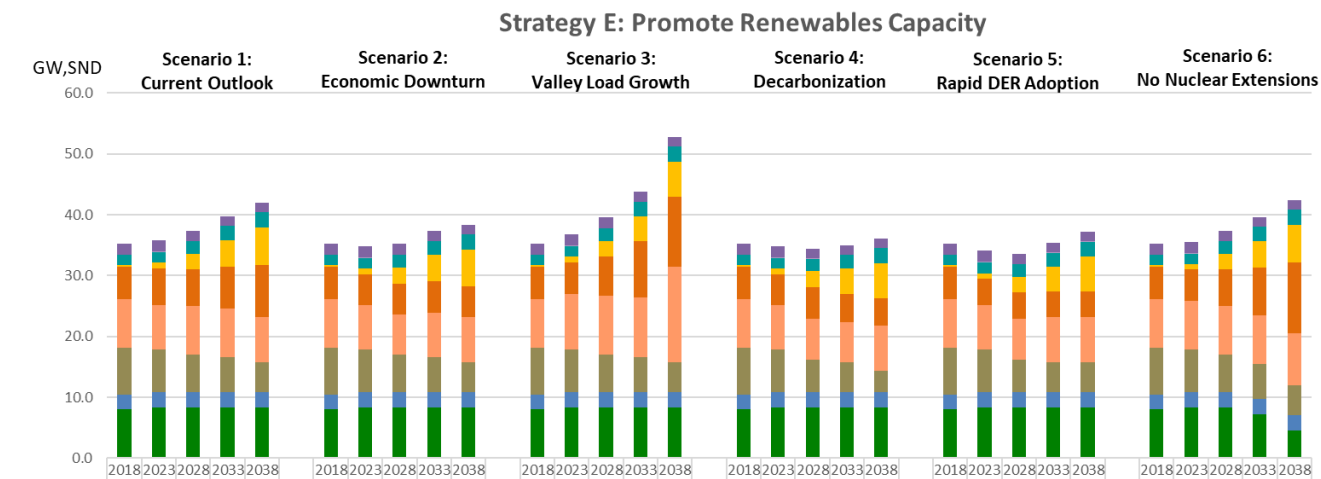


	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
DR	1.8	1.8	1.8	1.6	1.7	1.8	1.9	1.8	1.6	1.6	1.8	1.9	1.7	1.6	1.6	1.8	1.9	1.8	1.6	1.5	1.8	1.8	1.7	1.6	1.7	1.8	1.8	1.8	1.6	1.6
EE	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Storage	1.6	1.7	2.0	2.3	2.7	1.6	1.7	2.0	2.3	2.6	1.6	1.7	2.0	2.2	2.5	1.6	1.7	2.0	2.2	2.5	1.6	1.7	2.0	2.2	2.3	1.6	1.7	2.0	2.4	2.7
Renewables	0.3	0.6	2.3	4.0	5.8	0.3	0.6	2.3	4.0	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	4.7	0.3	0.9	2.6	4.4	6.1
Gas CT	5.3	5.7	6.2	7.4	8.4	5.3	5.1	5.1	5.2	5.2	5.3	6.3	7.9	9.7	13.7	5.3	5.1	5.1	4.5	4.4	5.3	4.3	4.3	4.4	4.3	5.3	5.7	6.2	7.4	10.8
Gas CC	7.9	7.2	7.3	7.3	7.3	7.9	7.2	6.6	7.3	7.3	7.9	7.9	8.5	9.7	13.2	7.9	7.2	6.6	6.6	7.3	7.9	7.2	6.6	6.6	6.6	7.9	7.2	7.3	7.3	7.3
Coal	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	5.4	5.0	3.6	7.8	7.1	5.4	5.0	5.0	7.8	7.1	6.2	5.8	5.0
Hydro	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5
Nuclear	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.4	5.8

Appendix G: Capacity Plan Summary Charts



	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
DR	1.8	1.9	1.8	1.7	1.6	1.8	1.9	1.8	1.6	1.7	1.8	1.9	1.7	1.7	1.7	1.8	1.9	1.7	1.5	1.6	1.8	1.8	1.8	1.7	1.6	1.8	1.9	1.8	1.6	1.6
EE	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Storage	1.6	2.2	3.1	4.4	5.3	1.6	1.8	2.4	3.1	3.7	1.6	1.8	4.1	5.4	7.0	1.6	1.8	2.4	3.1	3.7	1.6	1.8	2.4	3.1	3.7	1.6	2.2	3.1	3.7	4.7
Renewables	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7
Gas CT	5.3	5.1	5.1	5.1	6.0	5.3	5.0	4.9	4.9	4.9	5.3	5.1	5.1	5.2	6.3	5.3	5.1	4.8	4.2	4.2	5.3	4.3	4.3	4.2	4.2	5.3	5.1	5.1	6.9	8.8
Gas CC	7.9	7.2	7.3	7.3	7.3	7.9	7.2	6.6	6.6	7.3	7.9	9.1	9.7	9.7	15.6	7.9	7.2	6.6	6.6	6.6	7.9	7.2	6.6	7.3	7.3	7.9	7.2	7.3	7.3	8.5
Coal	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	3.6	7.8	7.1	6.2	5.8	5.0	7.8	7.1	5.4	5.0	3.6	7.8	7.1	4.8	3.6	3.6	7.8	7.1	6.2	5.8	5.0
Hydro	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5
Nuclear	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	7.2	4.6



	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
DR	1.8	1.8	1.7	1.6	1.6	1.8	1.9	1.8	1.6	1.5	1.8	1.9	1.8	1.7	1.6	1.8	1.8	1.7	1.6	1.5	1.8	1.8	1.6	1.5	1.5	1.8	1.8	1.6	1.6	1.6
EE	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Storage	1.6	1.7	2.0	2.3	2.6	1.6	1.7	2.0	2.3	2.6	1.6	1.7	2.0	2.2	2.5	1.6	1.7	2.0	2.2	2.5	1.6	1.7	2.0	2.2	2.5	1.6	1.7	2.0	2.3	2.6
Renewables	0.3	0.9	2.6	4.4	6.1	0.3	0.9	2.7	4.4	6.0	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.1	5.7	0.3	0.9	2.6	4.4	6.1
Gas CT	5.3	6.1	6.0	6.9	8.6	5.3	5.1	5.1	5.1	5.1	5.3	5.2	6.4	9.3	11.6	5.3	5.1	5.3	4.6	4.6	5.3	4.3	4.4	4.3	4.3	5.3	5.1	6.0	7.9	11.6
Gas CC	7.9	7.2	7.9	7.9	7.3	7.9	7.2	6.6	7.3	7.3	7.9	9.1	9.7	9.8	15.6	7.9	7.2	6.6	6.6	7.3	7.9	7.2	6.6	7.3	7.3	7.9	7.9	7.9	7.9	8.5
Coal	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	6.2	5.8	5.0	7.8	7.1	5.4	5.0	3.6	7.8	7.1	5.4	5.0	5.0	7.8	7.1	6.2	5.8	5.0
Hydro	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5
Nuclear	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	8.3	8.3	8.0	8.3	8.3	7.2	4.6

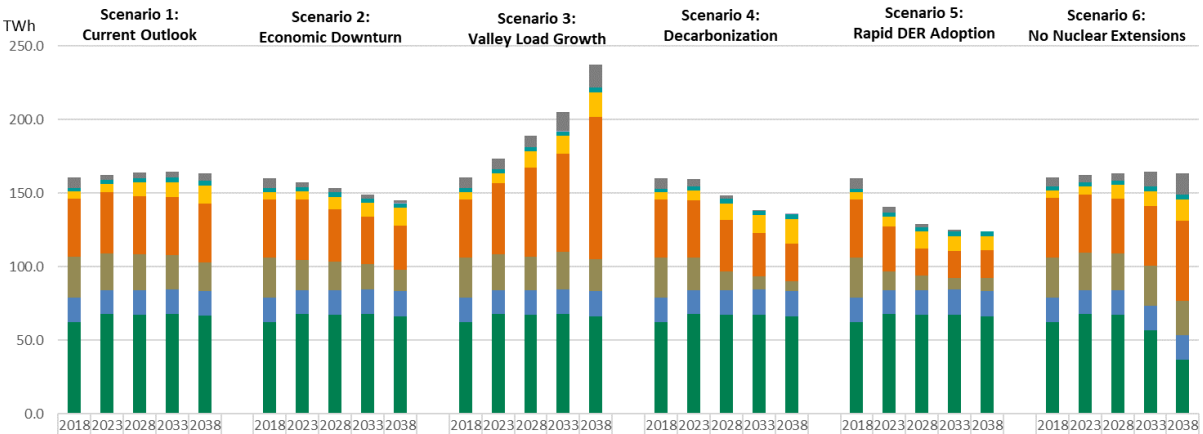
Figure G-1: Total Capacity Expansion Plans.

Appendix G: Capacity Plan Summary Charts

Total Energy Plans:

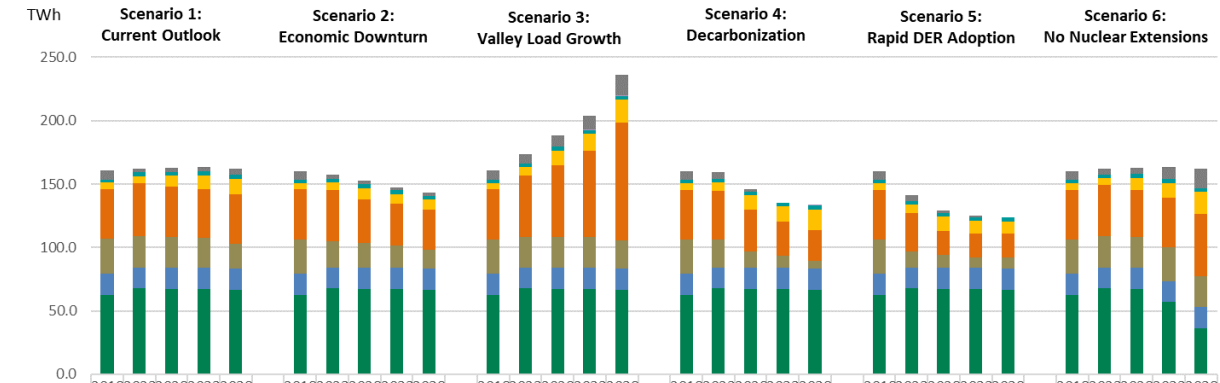
The total energy charts provided below correspond to the capacity expansion plans shown in the previous section. The energy charts show total energy grouped by resource type (i.e., nuclear, hydro, coal, etc.) over the planning horizon and are in terawatt hours, which is a 1,000 gigawatt hours.

Strategy A: Base Case Energy



	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
Net Purchases	7.1	3.1	3.4	4.2	5.1	6.9	3.2	2.9	2.5	1.8	7.3	7.3	7.8	12.6	15.7	7.2	5.3	2.1	0.6	-4.7	7.3	4.2	2.0	0.8	-0.9	6.5	4.8	4.8	10.1	14.6
EEDR	0.0	-1.0	-2.1	-1.3	0.1	0.0	-1.4	-2.0	-1.1	0.1	0.0	-0.6	-0.6	0.2	0.1	0.0	-1.0	-1.0	-0.3	0.1	0.0	-1.3	-2.9	-3.7	-1.6	0.0	-1.0	-1.6	-1.0	0.1
Storage	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2
Renewables	5.0	5.6	9.3	10.1	12.4	5.0	5.6	8.4	9.1	11.9	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	10.2	9.6	5.0	5.6	9.4	10.2	14.6
Gas	39.4	41.7	39.4	39.3	39.9	39.9	40.9	35.5	32.2	30.1	39.6	48.5	60.4	66.5	96.9	39.5	38.8	34.7	29.1	25.3	39.5	30.4	18.7	18.6	18.7	40.5	39.6	37.4	40.2	54.4
Coal	27.7	24.8	24.6	23.7	19.9	27.0	20.6	19.6	17.6	14.8	27.1	24.3	22.6	25.9	21.9	27.0	22.0	12.9	9.4	7.2	27.0	12.7	9.8	7.9	9.2	27.2	25.2	24.7	27.2	23.6
Hydro	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7
Nuclear	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	56.9	36.5

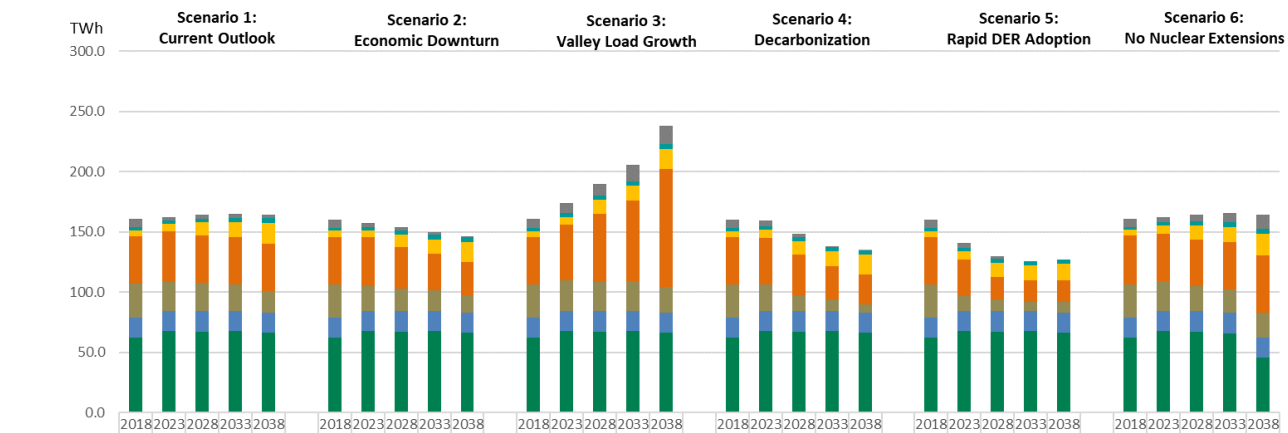
Strategy B: Promote DER Energy



	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
Net Purchases	7.1	3.1	3.3	3.9	4.8	6.9	3.2	2.7	2.5	2.2	7.3	7.2	8.8	10.	16.	7.2	5.2	2.1	0.0	-6.	7.3	4.2	2.2	0.8	-0.	7.3	4.7	4.4	9.3	15.
EEDR	0.0	-1.	-2.	-1.	0.1	0.0	-1.	-2.	-1.	-0.	0.0	-0.	-0.	0.1	0.2	0.0	-0.	-0.	0.0	0.2	0.0	-1.	-3.	-3.	-1.	0.0	-1.	-1.	-1.	0.2
Storage	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2	2.5	2.9	3.0	3.2	3.2
Renewables	5.0	5.6	8.9	10.	11.	5.0	5.6	8.9	7.6	7.6	5.0	6.6	11.	12.	17.	5.0	6.6	11.	12.	16.	5.0	6.6	11.	10.	9.6	5.0	5.6	9.9	11.	16.
Gas	39.	41.	39.	38.	39.	39.	40.	34.	32.	31.	39.	48.	56.	68.	93.	39.	38.	32.	26.	24.	39.	30.	18.	18.	18.	39.	40.	36.	39.	49.
Coal	27.	24.	24.	23.	19.	27.	20.	19.	17.	15.	27.	24.	24.	23.	22.	27.	21.	13.	9.3	6.4	27.	12.	9.8	7.9	9.2	27.	24.	24.	26.	24.
Hydro	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.
Nuclear	62.	67.	67.	67.	66.	62.	67.	67.	67.	66.	62.	67.	67.	67.	66.	62.	67.	67.	67.	66.	62.	67.	67.	67.	66.	62.	67.	67.	56.	36.

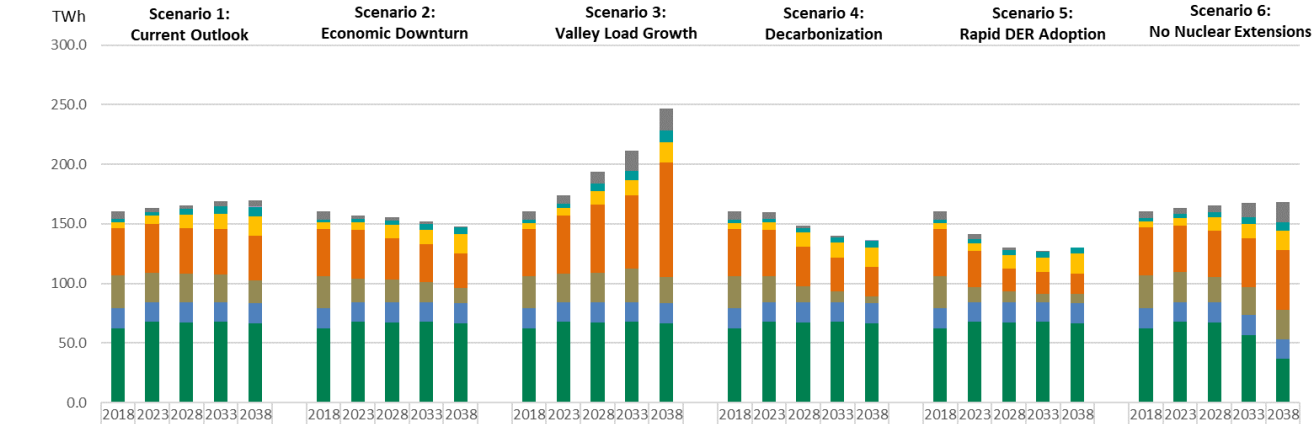
Appendix G: Capacity Plan Summary Charts

Strategy C: Promote Resiliency Energy



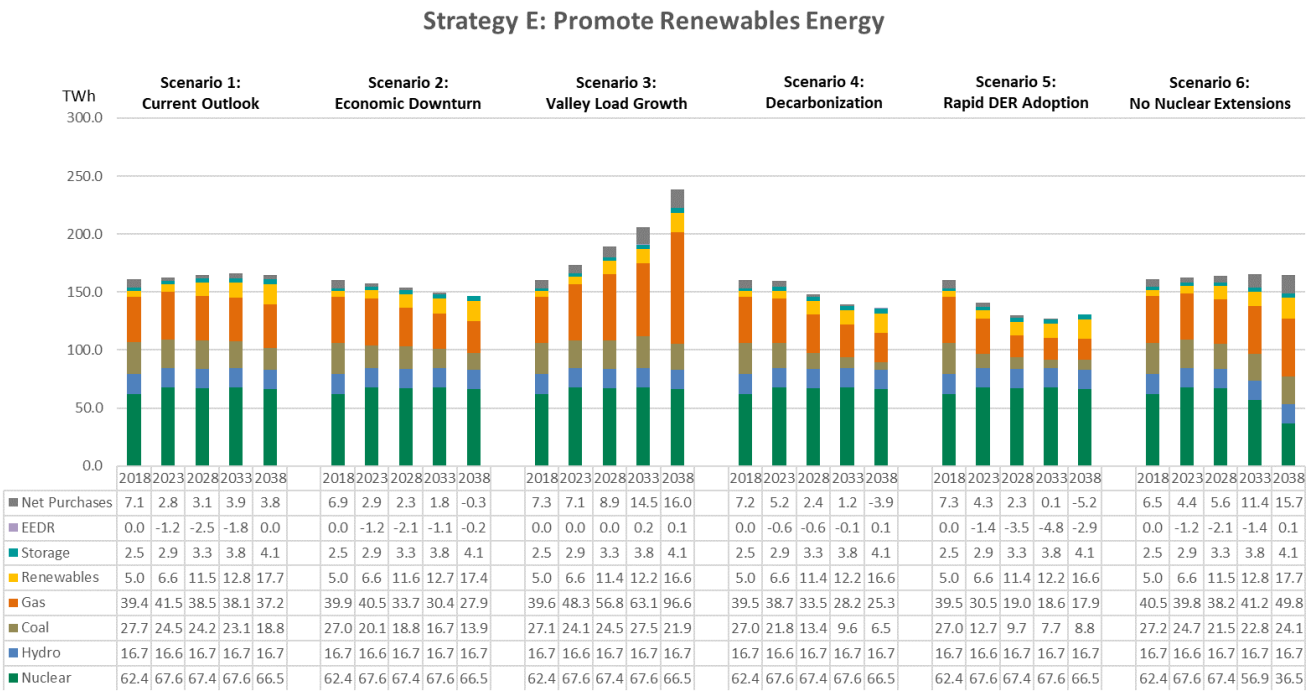
	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
Net Purchases	7.1	2.9	2.8	3.5	2.9	6.9	3.3	2.5	2.0	0.0	7.3	8.4	9.8	13.3	15.7	7.2	5.3	2.4	0.9	-4.4	7.3	4.3	2.3	-0.3	-3.4	6.5	4.4	5.3	7.4	12.0
EEDR	0.0	-1.2	-2.1	-1.3	0.1	0.0	-1.5	-2.5	-1.8	-0.4	0.0	-0.6	-0.6	0.1	0.1	0.0	-1.0	-1.0	-0.2	0.1	0.0	-1.4	-3.4	-3.7	-1.6	0.0	-1.2	-2.1	-1.4	0.1
Storage	2.5	2.9	3.3	3.7	4.0	2.5	2.9	3.3	3.7	4.0	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	3.9	2.5	2.9	3.3	3.8	4.1
Renewables	5.0	6.0	10.9	12.2	17.1	5.0	5.6	10.6	11.7	16.4	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	13.6	5.0	6.6	11.5	12.8	17.7
Gas	39.4	42.2	39.3	39.5	39.8	39.9	40.9	34.3	30.9	28.1	39.6	46.3	56.5	67.0	98.1	39.5	38.9	33.6	27.8	24.8	39.5	30.5	19.0	18.1	17.8	40.5	39.9	39.0	38.9	47.5
Coal	27.7	24.4	23.7	22.1	17.5	27.0	20.7	19.1	16.9	14.0	27.1	25.4	24.6	24.9	20.8	27.0	22.0	13.4	9.4	6.4	27.0	12.7	9.7	7.5	8.8	27.2	24.6	20.9	19.8	20.9
Hydro	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7
Nuclear	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	66.0	45.6

Strategy D: Promote Efficient Load Shape Energy



	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
Net Purchases	6.5	3.0	2.9	4.1	5.0	6.9	2.9	2.5	2.3	0.8	7.3	7.3	9.6	16.7	18.1	7.2	5.3	2.5	1.5	-2.5	7.3	4.3	2.5	0.5	-4.7	6.0	4.7	5.6	11.8	16.7
EEDR	0.0	-1.0	-1.5	-0.8	0.2	0.0	-1.2	-3.0	-2.5	-0.4	0.0	-0.6	-0.5	0.2	0.3	0.0	-0.8	-0.6	-0.1	0.3	0.0	-1.3	-3.3	-4.0	-1.8	0.0	-1.2	-1.7	-1.0	0.2
Storage	2.5	3.5	4.7	6.5	7.7	2.5	3.0	3.8	4.7	5.4	2.5	3.0	6.1	7.9	10.0	2.5	3.0	3.8	4.7	5.4	2.5	3.0	3.8	4.7	5.4	2.5	3.5	4.7	5.6	6.8
Renewables	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6
Gas	39.5	41.0	38.2	38.3	37.8	39.9	40.5	34.5	31.5	29.1	39.6	48.6	57.3	61.9	96.2	39.5	38.8	33.8	28.5	24.1	39.5	30.5	19.1	18.4	17.5	40.5	39.0	38.3	41.3	50.1
Coal	28.0	24.9	24.2	23.3	19.0	27.0	20.1	19.0	17.1	12.9	27.1	24.2	25.0	28.1	22.2	27.0	21.8	13.2	9.2	6.2	27.0	12.6	9.4	6.9	7.9	27.4	25.3	21.5	23.1	24.5
Hydro	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7
Nuclear	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	56.9	36.5

Appendix G: Capacity Plan Summary Charts



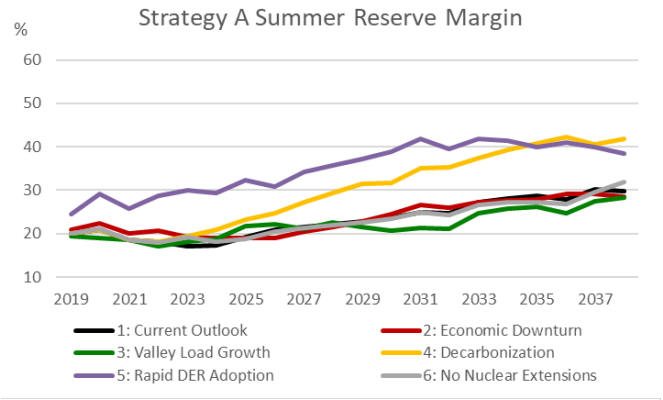
	Scenario 1: Current Outlook					Scenario 2: Economic Downturn					Scenario 3: Valley Load Growth					Scenario 4: Decarbonization					Scenario 5: Rapid DER Adoption					Scenario 6: No Nuclear Extensions				
	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038	2018	2023	2028	2033	2038
Net Purchases	7.1	2.8	3.1	3.9	3.8	6.9	2.9	2.3	1.8	-0.3	7.3	7.1	8.9	14.5	16.0	7.2	5.2	2.4	1.2	-3.9	7.3	4.3	2.3	0.1	-5.2	6.5	4.4	5.6	11.4	15.7
EEDR	0.0	-1.2	-2.5	-1.8	0.0	0.0	-1.2	-2.1	-1.1	-0.2	0.0	0.0	0.0	0.2	0.1	0.0	-0.6	-0.6	-0.1	0.1	0.0	-1.4	-3.5	-4.8	-2.9	0.0	-1.2	-2.1	-1.4	0.1
Storage	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1	2.5	2.9	3.3	3.8	4.1
Renewables	5.0	6.6	11.5	12.8	17.7	5.0	6.6	11.6	12.7	17.4	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.4	12.2	16.6	5.0	6.6	11.5	12.8	17.7
Gas	39.4	41.5	38.5	38.1	37.2	39.9	40.5	33.7	30.4	27.9	39.6	48.3	56.8	63.1	96.6	39.5	38.7	33.5	28.2	25.3	39.5	30.5	19.0	18.6	17.9	40.5	39.8	38.2	41.2	49.8
Coal	27.7	24.5	24.2	23.1	18.8	27.0	20.1	18.8	16.7	13.9	27.1	24.1	24.5	27.5	21.9	27.0	21.8	13.4	9.6	6.5	27.0	12.7	9.7	7.7	8.8	27.2	24.7	21.5	22.8	24.1
Hydro	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7	16.7	16.6	16.7	16.7	16.7
Nuclear	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	67.6	66.5	62.4	67.6	67.4	56.9	36.5

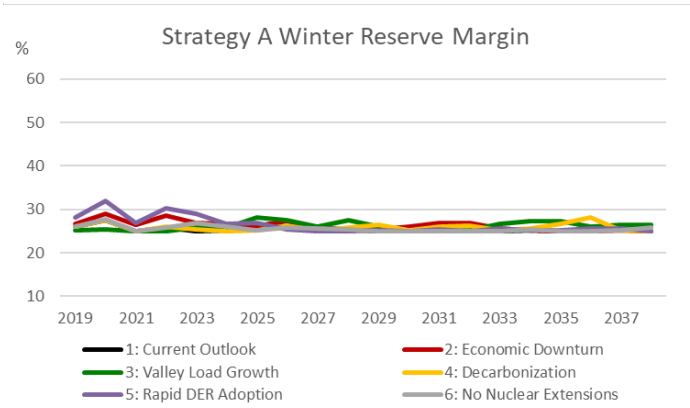
Figure G-2: Total Energy Plans.

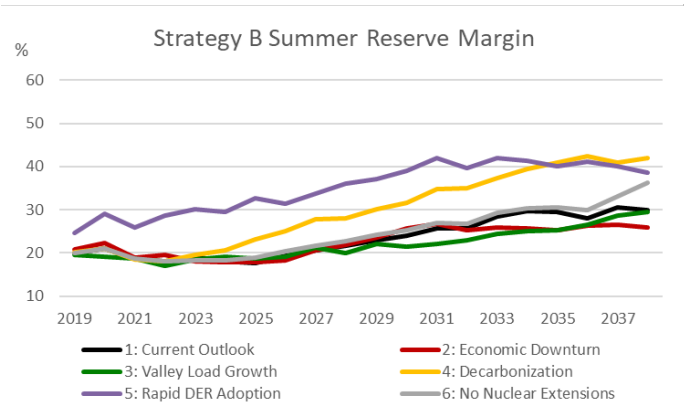
Appendix G: Capacity Plan Summary Charts

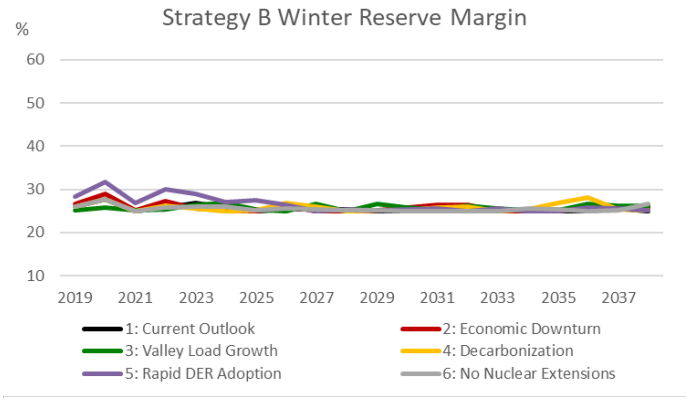
Summer and Winter Reserve Margins:

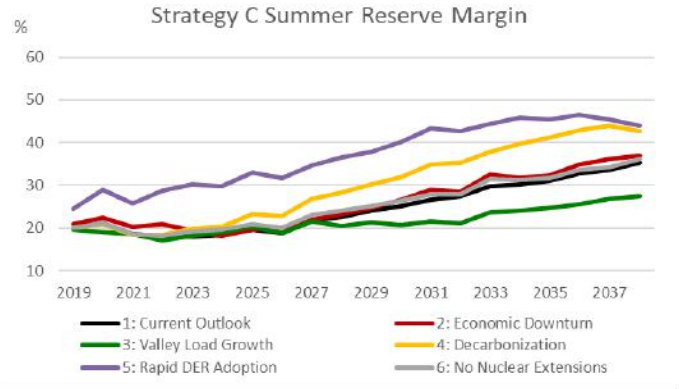
The reserve margin charts provided below for summer and winter correspond to the capacity expansion plans shown in the previous section. TVA established reserve margin targets of 17 percent for summer and 25 percent for winter for this IRP.













Summer and Winter Reserve Margins (continued)

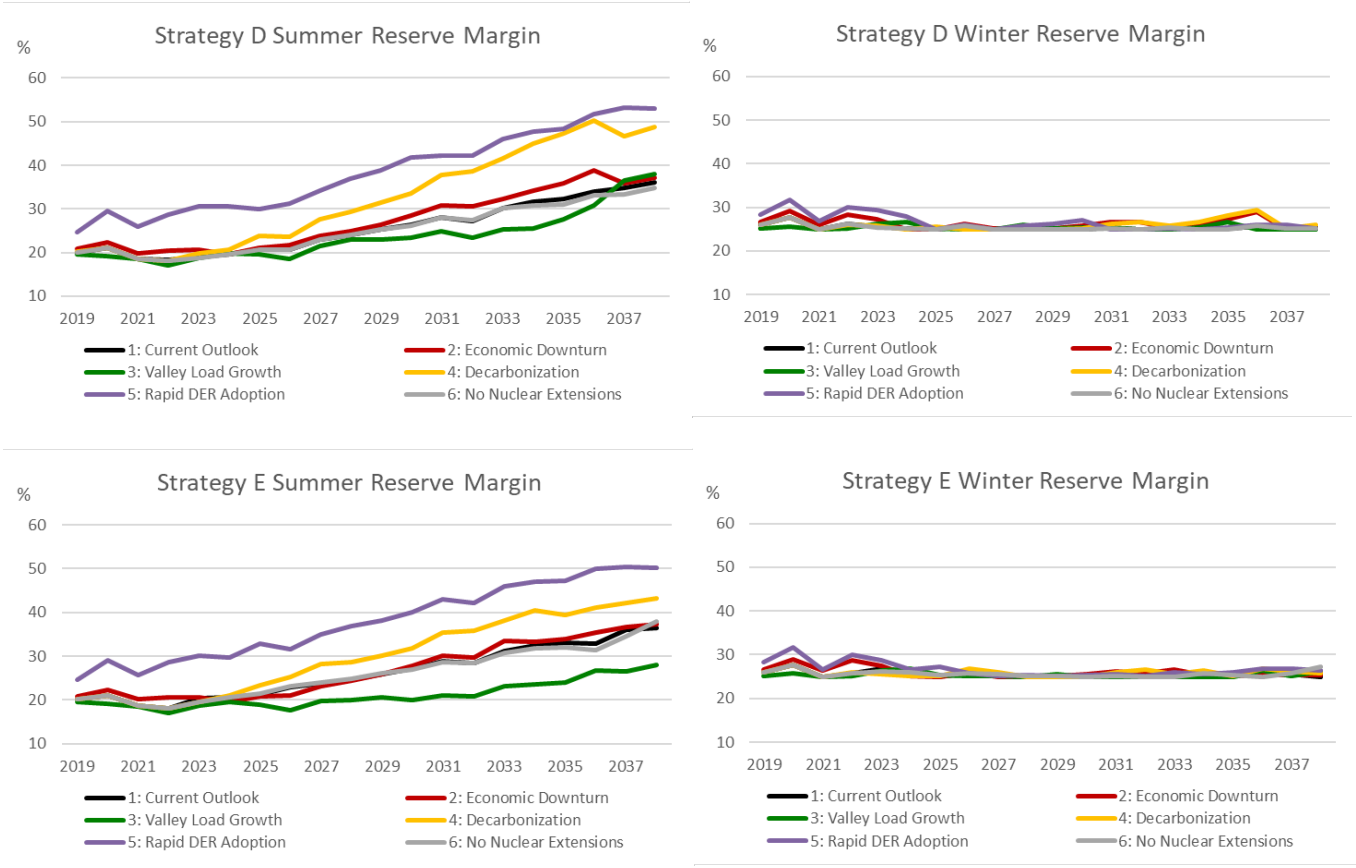


Figure G-3: Reserve Margins.

Appendix G: Capacity Plan Summary Charts

Annual Capacity Additions

The total capacity additions on a year by year basis are shown below for the five strategies in each scenario. Scenarios are represented by number (1 to 6) and strategies by letter (A to E). The data is shown in summer net dependable gigawatts (SND GW) and is grouped by resource type (i.e., nuclear, hydro, coal, etc.) over the planning horizon.

1A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.9	1.2	1.5	1.9	2.2	2.6	2.9	3.1	3.4	3.7	4.0	4.3	4.3	4.3
Gas	13.0	13.0	13.1	12.9	12.7	13.7	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.5	15.1	16.0	16.0	15.4	16.4	16.6
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6
Subtotal	34.0	34.0	33.4	33.3	33.1	33.2	33.9	34.2	34.6	34.9	35.2	35.6	35.8	35.9	36.8	37.3	37.6	37.3	38.1	38.3

1B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.9	1.3	1.8	2.2	2.6	3.1	3.4	3.7	4.1	4.2	4.3	4.3	4.3
Gas	13.0	13.0	13.1	12.9	13.3	14.0	14.0	14.1	14.1	14.1	14.1	14.1	14.1	14.3	15.0	16.0	16.0	15.4	16.3	16.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7
Subtotal	34.0	34.0	33.4	33.3	33.7	33.5	33.4	33.8	34.3	34.7	35.2	35.7	36.0	36.1	37.1	37.7	37.7	37.2	38.1	38.2

1C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.9	1.2	1.6	1.9	2.3	2.7	3.1	3.4	3.7	4.0	4.4	4.8	5.1	5.4	5.8
Gas	13.0	13.0	13.1	12.9	12.9	13.6	13.7	13.0	13.6	13.6	13.7	13.6	13.6	14.1	14.7	15.3	15.3	15.3	15.3	15.7
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.7
Subtotal	34.0	34.0	33.4	33.3	33.3	33.6	33.8	33.5	34.4	34.8	35.3	35.6	35.8	36.2	37.0	37.2	37.6	37.9	38.3	39.0

1D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.0	12.9	12.4	13.0	13.1	12.4	12.4	12.4	12.5	12.4	12.4	12.4	12.4	13.3	13.3	13.3	13.3	13.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.9	1.9	1.9	1.9	1.9	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6
Subtotal	34.0	34.1	33.3	33.3	33.2	33.3	33.6	33.3	33.6	33.9	34.4	34.6	34.8	34.6	34.9	35.3	35.6	35.9	36.2	36.5

1E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.1	4.4	4.8	5.1	5.5	5.8	6.1
Gas	13.0	13.0	13.1	12.9	13.3	14.0	14.0	14.0	14.0	13.9	14.0	14.0	14.0	14.2	14.9	15.8	15.8	15.2	15.9	15.9
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6
Subtotal	34.0	34.0	33.4	33.3	34.0	34.2	34.3	34.7	35.0	35.4	35.9	36.3	36.5	36.6	37.5	38.0	38.3	38.1	39.1	39.4

Annual Capacity Additions (continued)

2A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.9	1.2	1.6	1.9	2.3	2.6	2.8	3.1	3.4	3.7	4.1	4.1	4.1
Gas	13.0	13.0	12.9	12.9	12.4	13.0	13.0	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.9	12.7	12.4	12.4	12.4
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8
Subtotal	34.0	34.0	33.2	33.2	32.7	32.6	32.4	32.1	32.5	32.8	33.1	33.4	33.7	33.5	33.8	33.9	34.0	34.1	34.2	34.2

2B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.9	1.3	1.8	2.2	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8
Gas	13.0	13.0	12.6	12.6	12.0	12.8	12.8	12.2	12.3	12.2	12.3	12.3	12.3	12.3	12.4	13.0	13.0	13.0	13.0	13.0
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	32.9	32.9	32.4	32.3	32.1	31.9	32.5	32.8	33.3	33.8	33.7	33.3	33.4	33.3	33.3	33.2	33.2	33.3

2C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.9	1.2	1.6	1.9	2.3	2.7	3.1	3.4	3.7	4.0	4.4	4.7	5.1	5.3	5.7
Gas	13.0	13.0	12.9	12.9	12.4	12.3	12.3	11.7	11.9	11.7	11.7	11.8	11.8	11.8	12.5	12.6	12.5	12.5	12.5	12.5
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.9	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	33.2	33.3	32.8	32.3	32.5	32.2	32.7	33.0	33.4	33.7	33.9	33.7	34.7	34.4	34.6	34.9	35.2	35.6

2D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	12.8	12.8	12.2	12.2	12.2	11.6	11.7	11.5	11.5	11.5	11.5	11.5	11.5	12.2	12.2	12.2	12.2	12.2
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
Subtotal	34.0	34.0	33.1	33.2	33.0	32.5	32.7	32.4	32.9	33.1	33.3	33.7	33.8	33.6	33.9	34.1	34.5	34.9	33.8	34.1

2E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.7	3.0	3.4	3.8	4.0	4.4	4.7	5.1	5.4	5.7	6.0
Gas	13.0	13.0	12.9	12.9	12.4	12.3	12.3	11.7	11.8	11.7	11.7	11.7	11.7	11.7	12.4	12.7	12.6	12.4	12.4	12.4
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.6	1.5	1.5	1.5	1.5
Subtotal	34.0	34.0	33.2	33.3	33.1	32.6	32.8	32.6	33.0	33.3	33.7	34.0	34.2	34.0	35.0	34.8	35.1	35.2	35.4	35.8

Appendix G: Capacity Plan Summary Charts

Annual Capacity Additions (continued)

3A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.1	13.0	14.0	13.8	14.3	15.4	16.6	16.6	16.6	17.5	17.5	17.5	17.5	18.4	20.3	22.4	23.6	23.9	26.3	28.1
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.1	34.0	34.3	34.2	35.1	35.7	37.0	37.3	37.7	38.9	39.2	39.5	39.7	40.5	42.6	44.2	45.7	46.4	49.0	51.2

3B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.1	4.4	4.8	5.2	5.5	5.8	6.2
Gas	13.1	13.0	14.0	13.7	14.3	15.4	15.4	15.5	16.4	16.4	17.4	17.4	17.4	18.6	19.8	21.6	22.8	24.1	26.2	28.1
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.9	1.9	1.9	2.0	2.0	1.8	1.9	1.9	1.9	1.8	1.8	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5
Subtotal	34.1	34.1	34.3	34.2	35.1	35.8	36.0	36.4	37.7	38.0	39.4	39.8	40.0	41.0	42.4	43.9	45.4	47.0	49.4	51.6

3C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.1	13.0	14.0	13.8	14.2	15.4	16.0	15.3	16.5	16.5	17.0	17.0	17.0	17.8	19.4	21.1	22.3	23.5	25.2	26.9
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.1	34.1	34.3	34.3	35.0	35.6	36.4	36.1	37.6	37.9	38.8	39.1	39.3	39.9	41.7	43.0	44.5	46.0	48.0	50.1

3D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.1	13.0	14.0	13.8	14.3	15.4	15.4	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.9	15.9	15.9	17.1	19.5	21.9
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Subtotal	34.1	34.1	34.3	34.2	35.0	35.7	35.8	35.6	35.9	36.2	36.6	36.9	37.2	37.0	37.4	38.0	38.3	39.8	42.4	45.1

3E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.1	13.0	13.9	13.7	14.3	15.4	15.4	14.8	15.7	16.1	16.6	16.6	16.7	17.6	19.1	20.9	22.0	23.9	25.1	27.2
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.9	1.9	1.9	1.9	1.9	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6
Subtotal	34.1	34.0	34.2	34.2	35.1	35.7	35.9	35.6	37.0	37.7	38.5	38.8	39.1	39.8	41.5	42.8	44.3	46.4	47.9	50.3

Annual Capacity Additions (continued)

4A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	5.4	5.4	5.0	5.0	5.0	5.0	5.0	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.1	12.9	12.4	12.7	12.5	11.7	11.7	11.6	11.6	11.7	11.6	11.6	11.6	11.6	11.6	11.6	12.3	12.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6
Subtotal	34.0	34.0	33.4	33.3	33.1	33.0	32.9	32.5	32.8	33.0	33.3	32.9	33.0	32.8	33.1	33.4	33.7	34.0	33.6	34.0

4B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.0	12.9	12.4	12.7	12.5	11.8	11.9	12.0	11.9	11.6	11.5	11.5	11.5	11.5	11.6	11.6	12.3	12.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	33.3	33.3	33.1	33.0	32.9	32.6	33.0	32.7	32.9	33.0	33.0	32.8	33.0	33.4	33.7	34.1	33.7	34.1

4C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	5.0	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.0	12.9	12.4	12.4	12.3	11.7	12.0	11.7	11.6	11.3	11.1	11.1	11.1	11.1	11.0	11.0	11.0	11.7
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5
Subtotal	34.0	34.0	33.3	33.3	33.2	32.8	32.8	31.8	32.4	32.4	32.6	32.6	32.6	32.3	32.6	32.9	33.1	33.5	33.8	33.4

4D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.0	12.9	12.3	12.4	12.2	11.6	11.8	11.4	11.3	10.9	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.8	1.7	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6
Subtotal	34.0	34.1	33.3	33.3	33.1	32.7	32.7	31.6	32.2	32.1	32.3	32.3	32.4	32.1	32.4	32.7	33.0	33.4	32.3	32.6

4E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	5.4	5.4	5.4	5.4	5.0	5.0	5.0	3.6	3.6	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.1	12.9	12.4	12.7	12.4	11.7	11.7	11.9	11.7	11.3	11.2	11.2	11.2	11.2	11.9	11.9	11.9	11.9
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5
Subtotal	34.0	34.0	33.4	33.3	33.1	33.0	32.8	32.4	32.8	32.5	32.6	32.6	32.7	32.4	32.7	33.0	32.7	33.0	33.3	33.6

Appendix G: Capacity Plan Summary Charts

Annual Capacity Additions (continued)

5A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.5	3.4	3.4	3.4	3.4	3.3	3.3
Gas	13.0	13.0	12.2	12.1	11.6	11.5	11.5	10.9	11.1	10.9	11.0	10.9	10.9	10.9	11.6	11.6	11.6	11.6	11.6	11.6
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	32.4	32.5	32.3	31.8	31.9	30.8	31.4	31.5	32.0	32.2	32.4	31.9	32.5	32.5	32.4	32.4	32.3	32.3

5B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.5	3.4	3.4	3.4	3.4	3.3	3.3
Gas	13.0	13.0	12.2	12.1	11.6	11.5	11.5	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.6	11.6	11.6	11.6	11.6	11.6
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	32.4	32.5	32.3	31.8	32.0	31.0	31.4	31.7	32.0	32.3	32.5	31.9	32.5	32.5	32.4	32.4	32.4	32.4

5C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	4.8	4.7	4.7
Gas	13.0	13.0	12.2	12.1	11.6	11.5	11.5	10.9	11.0	10.9	10.9	10.9	10.9	10.9	11.0	11.0	10.9	10.9	10.9	10.9
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7
Subtotal	34.0	34.0	32.4	32.5	32.3	31.8	31.9	30.8	31.3	31.5	31.8	32.2	32.3	32.2	32.6	32.9	33.1	33.1	33.0	33.0

5D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	4.8	4.8	4.8	4.8	4.8	4.8	4.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	12.2	12.1	11.6	11.5	11.8	10.9	10.9	10.9	10.9	10.9	10.9	11.0	11.6	11.6	11.6	11.6	11.6	11.6
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.8	1.8	1.8	1.8	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.6	1.6
Subtotal	34.0	34.0	32.5	32.5	32.4	31.8	30.9	30.4	30.8	31.1	31.4	31.8	31.2	31.1	31.9	32.2	32.5	32.8	33.1	33.3

5E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	12.2	12.1	11.6	11.5	11.5	10.9	11.1	11.0	11.0	10.9	10.9	10.9	11.6	11.6	11.6	11.6	11.6	11.6
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Subtotal	34.0	34.0	32.4	32.5	32.3	31.8	31.9	30.8	31.4	31.6	31.9	32.1	32.3	32.1	33.1	33.4	33.7	34.1	34.3	34.6

Annual Capacity Additions (continued)

6A, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	7.2	6.0	5.8	4.7	4.6	4.6
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.1	3.4	3.8	4.1	4.4	4.7	5.0
Gas	13.0	13.0	13.1	12.9	13.3	14.0	14.0	14.0	14.0	13.9	13.9	13.9	13.9	14.1	15.8	17.9	17.9	18.5	19.4	20.1
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7
Subtotal	34.0	34.0	33.4	33.3	33.7	33.5	33.7	34.1	34.4	34.8	35.1	35.5	35.7	35.7	36.6	37.0	37.1	36.9	37.9	38.9

6B, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	7.2	6.0	5.8	4.7	4.6	4.6
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.6	0.6	0.9	1.2	1.7	2.1	2.6	3.0	3.4	3.7	4.1	4.5	4.9	5.3	5.6	6.0
Gas	13.0	13.0	13.1	12.9	13.1	14.0	14.0	14.1	14.1	14.1	14.2	14.1	14.1	14.3	16.0	18.1	18.1	18.4	19.4	20.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Subtotal	34.0	34.0	33.4	33.3	33.5	33.5	33.7	34.1	34.6	35.0	35.6	36.0	36.3	36.4	37.3	37.8	38.1	37.7	38.8	40.1

6C, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.4	7.2	7.0	5.9	5.8	5.8
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.1	4.4	4.8	5.1	5.5	5.8	6.1
Gas	13.0	13.0	13.1	12.9	12.9	13.6	13.7	13.0	13.6	13.6	13.6	13.6	13.6	13.9	14.7	16.4	16.4	17.6	17.7	18.2
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.7	1.6	1.6	1.6
Subtotal	34.0	34.0	33.4	33.3	33.7	33.9	34.2	33.8	34.8	35.1	35.5	35.9	36.1	36.3	37.5	37.5	37.7	38.1	38.4	39.2

6D, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	7.2	6.0	5.8	4.7	4.6	4.6
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.8	4.1	4.4	4.8	5.1	5.4	5.7
Gas	13.0	13.0	13.0	12.9	12.4	13.0	13.0	12.4	12.4	12.4	12.5	12.4	12.4	12.5	14.3	16.1	16.1	17.3	17.3	17.3
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DR	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.1	33.3	33.3	33.2	33.4	33.6	33.3	33.7	34.0	34.4	34.6	34.8	34.7	35.6	35.8	35.9	36.3	36.4	36.7

6E, SND GW	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Nuclear	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	7.2	6.0	5.8	4.7	4.6	4.6
Hydro	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Coal	7.9	7.9	7.1	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.8	5.8	5.0	5.0	5.0	5.0	5.0
Renewables	0.4	0.4	0.4	0.5	0.9	1.2	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.1	4.4	4.8	5.1	5.5	5.8	6.1
Gas	13.0	13.0	13.1	12.9	13.1	14.0	14.0	14.0	14.0	13.9	14.0	13.9	13.9	14.1	15.8	17.9	17.9	18.2	19.2	20.1
EE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
DR	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Subtotal	34.0	34.0	33.4	33.3	33.8	34.2	34.4	34.7	35.0	35.4	35.8	36.2	36.4	36.5	37.3	37.7	38.0	37.5	38.6	39.9

Figure G-4: Capacity Additions.

Appendix H - Stochastic Results for Cost Metrics

H

Appendix H - Stochastic Results for Cost Metrics

Appendix H - Stochastic Results for Cost Metrics

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Appendix H: Stochastic Results for Cost Metrics

Appendix H - Stochastic Results for Cost Metrics

H.1 Cost Metric Results

For the 2019 IRP, the three primary cost metrics selected are Present Value of Revenue Requirements (PVRR), System Average Cost and total resource cost (TRC). The charts in this section show the expected case (where colored bars meet) and the range of results around the expected case based on stochastic variation of the key planning variables for each portfolio

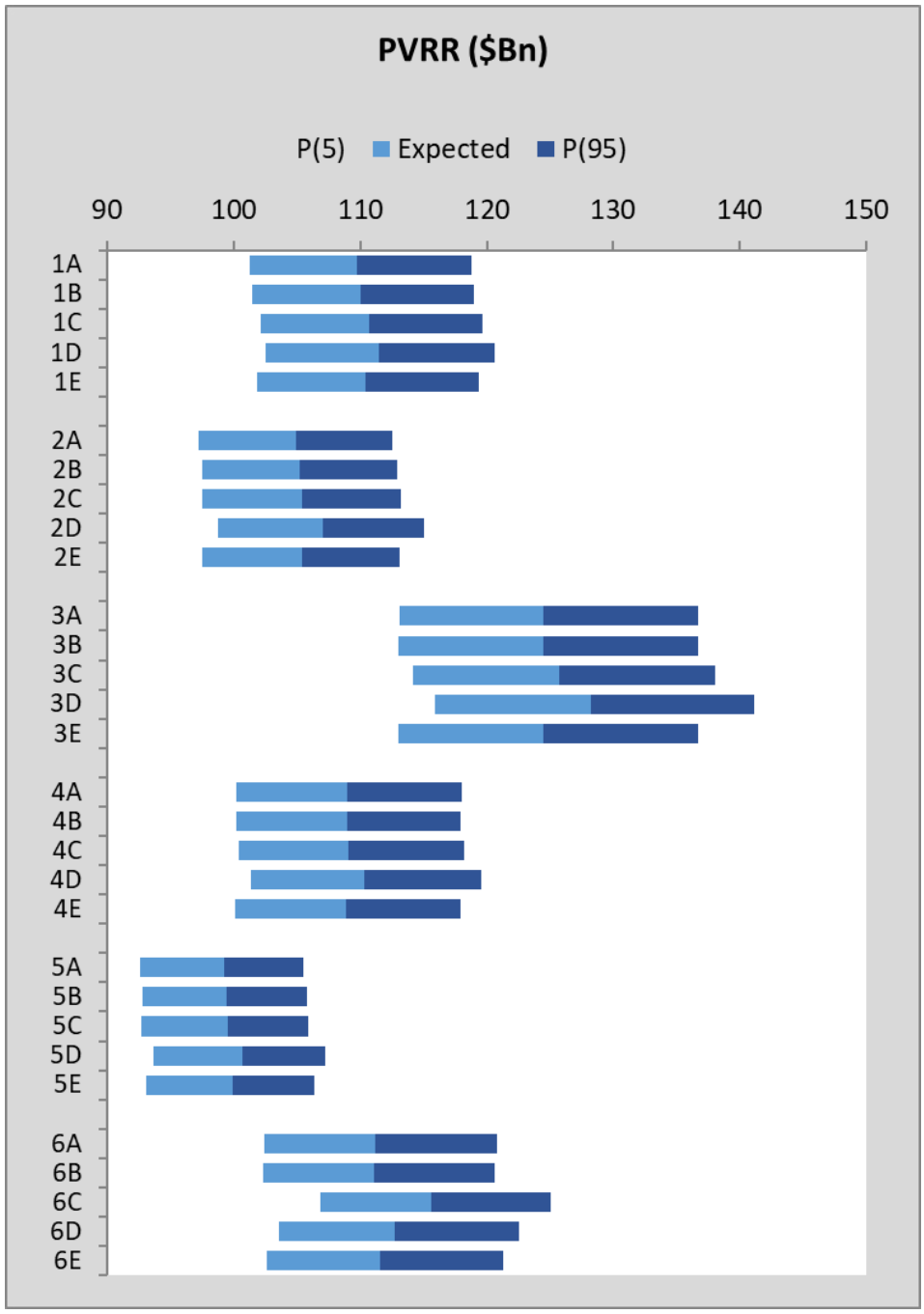


Figure H-1: Present Value of Revenue Requirements (PVRR).

Appendix H: Stochastic Results Cost Metrics

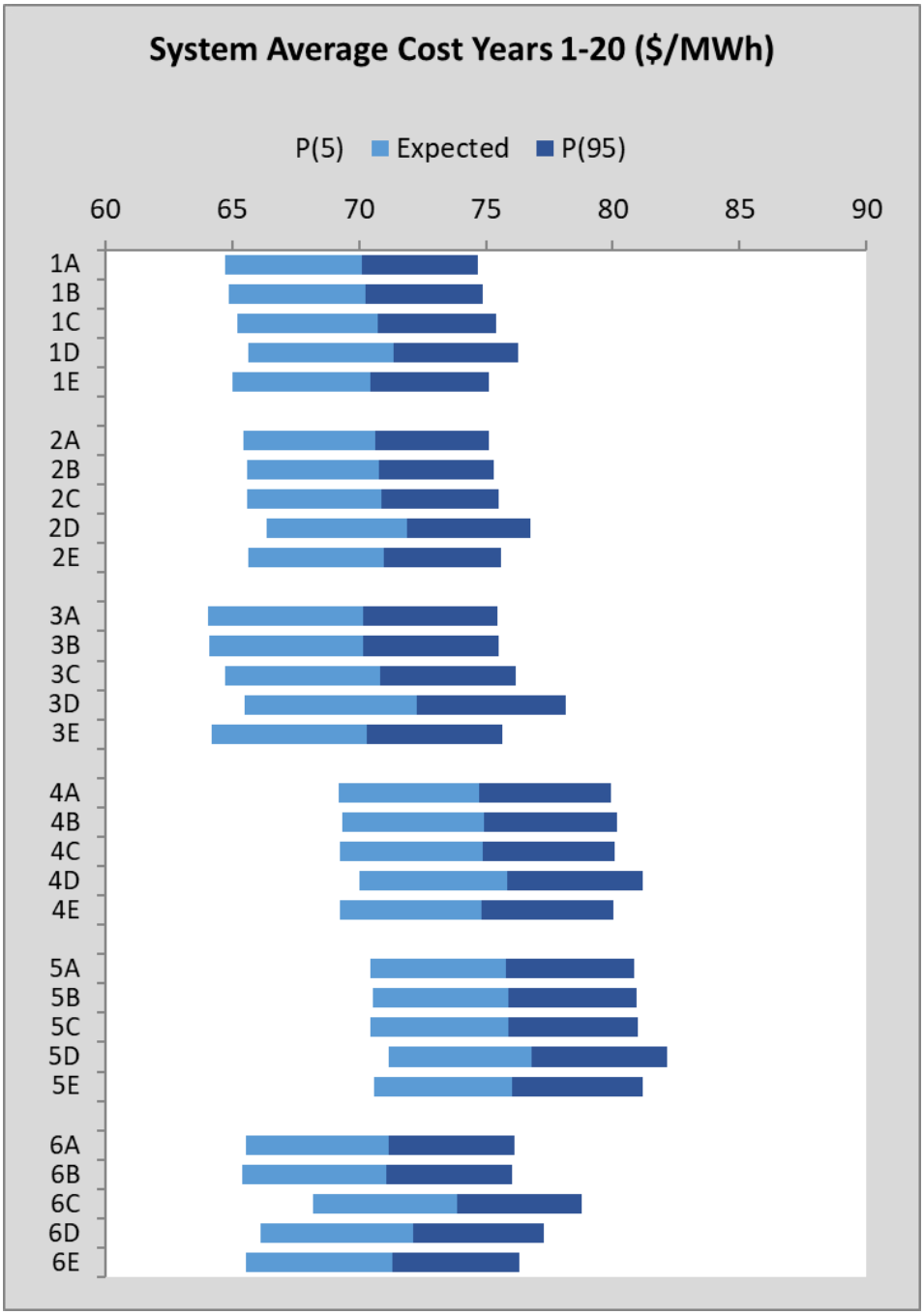


Figure H-2: System Average Cost.

Appendix H: Stochastic Results for Cost Metrics

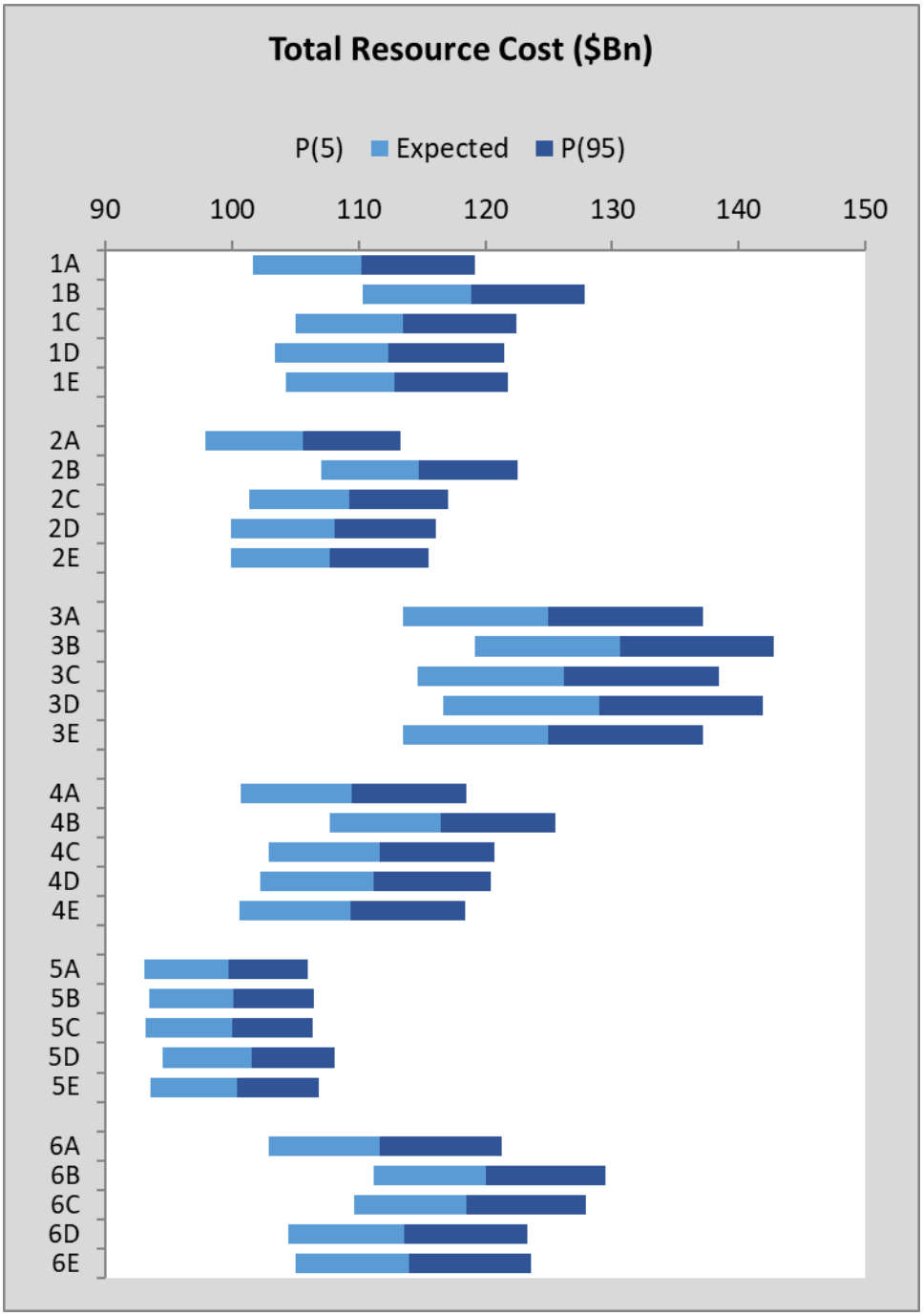


Figure H-3: Total Resource Cost (TRC).

Appendix H: Stochastic Results Cost Metrics

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Appendix I - Method for Computing Environmental Metrics

Appendix I - Method for Computing Environmental Metrics

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Appendix I - Method for Computing Environmental Metrics

I.1 Process

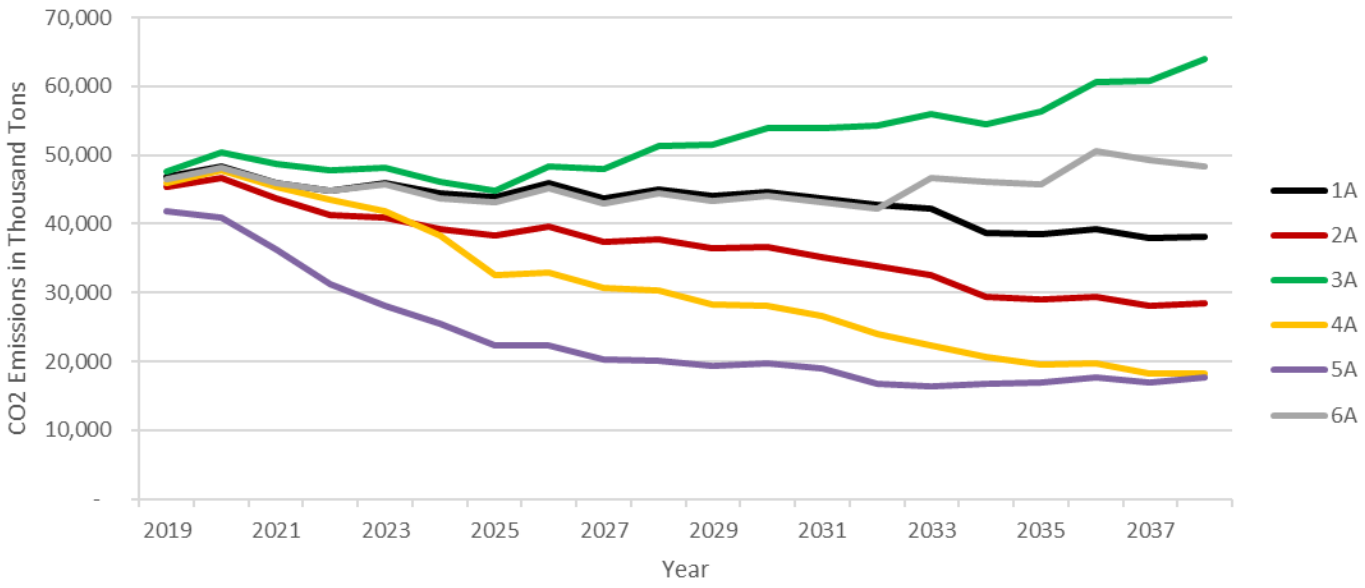
In developing the criteria for the environmental impact metrics, TVA wanted to create a set of metrics representative of the trade-offs between energy resources rather than identifying a single resource with “best” environmental performance. Consideration of air impacts, water consumption, waste production and land use in the IRP scorecard, coupled with the broader qualitative assessment of anticipated environmental impacts in the EIS, allowed TVA to make a robust comparison of the environmental footprint of the planning strategies that informed the selection of the recommended strategy.

For the 2019 IRP, five environmental impact metrics for air, water, waste and land use were selected.

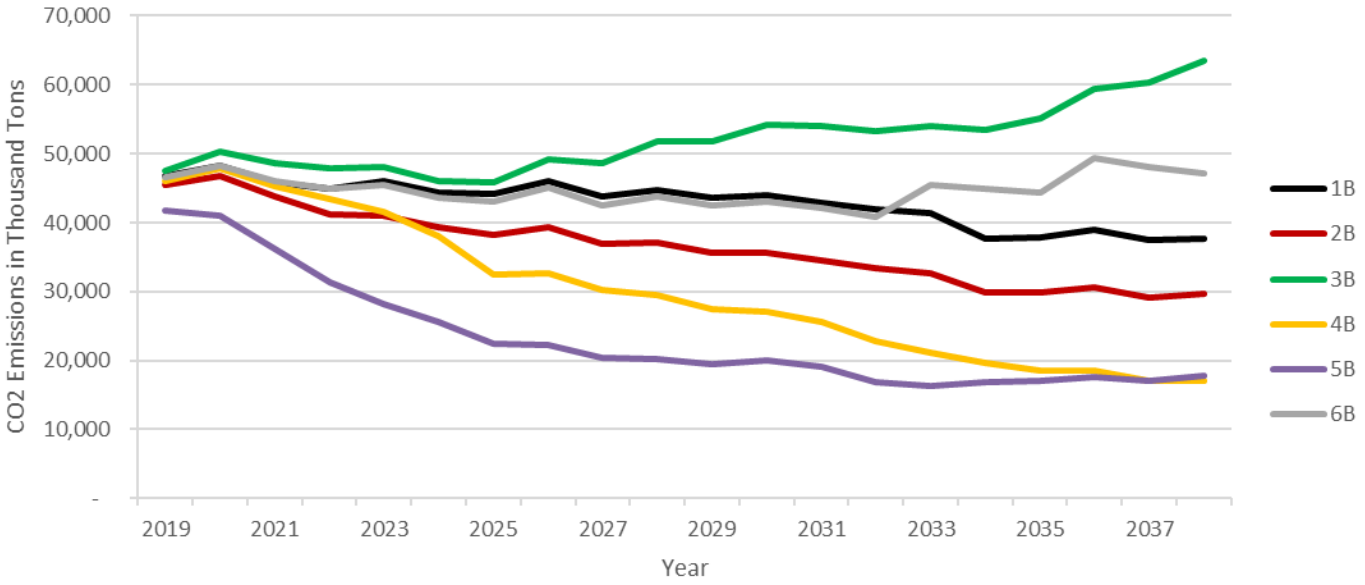
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I.2 Strategy Performance: Air Impact Metrics

CO_2 Metric Results:

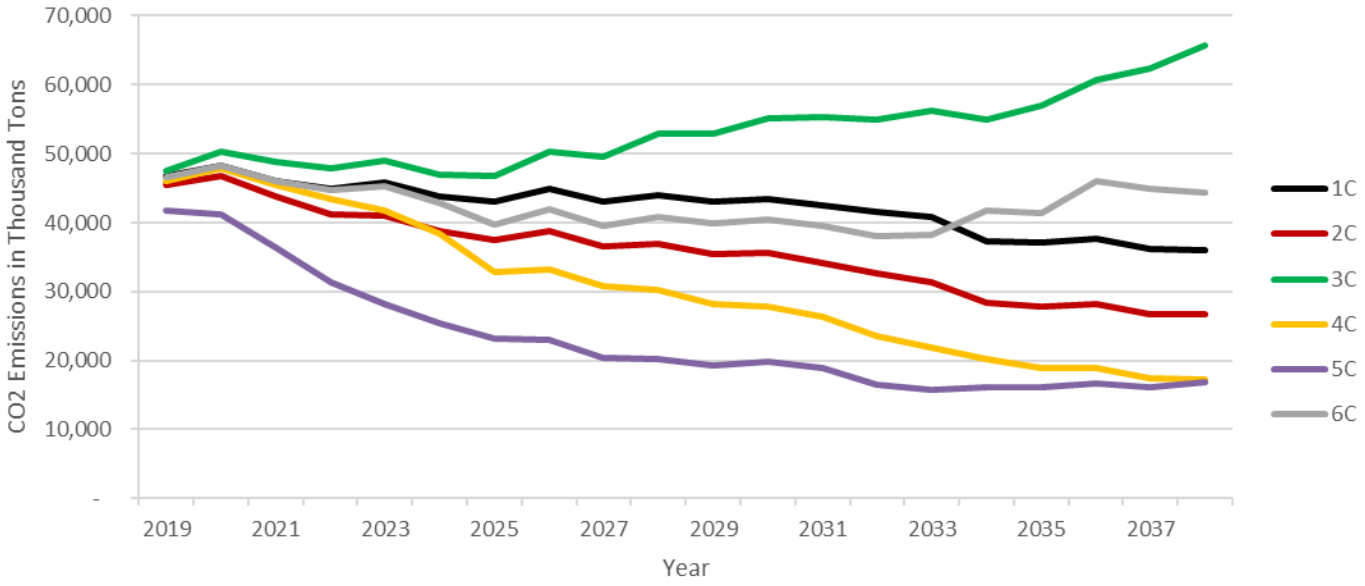


Strategy A: Base Case

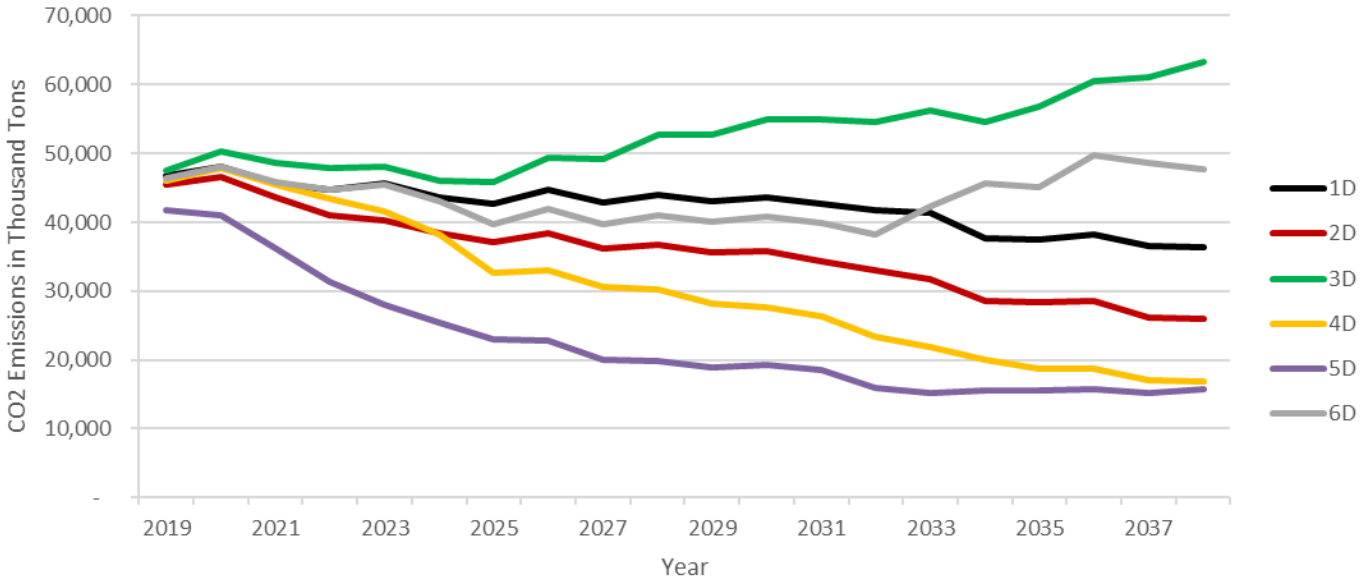


Strategy B: Promote DER

Appendix I: Method for Computing Environmental Metrics

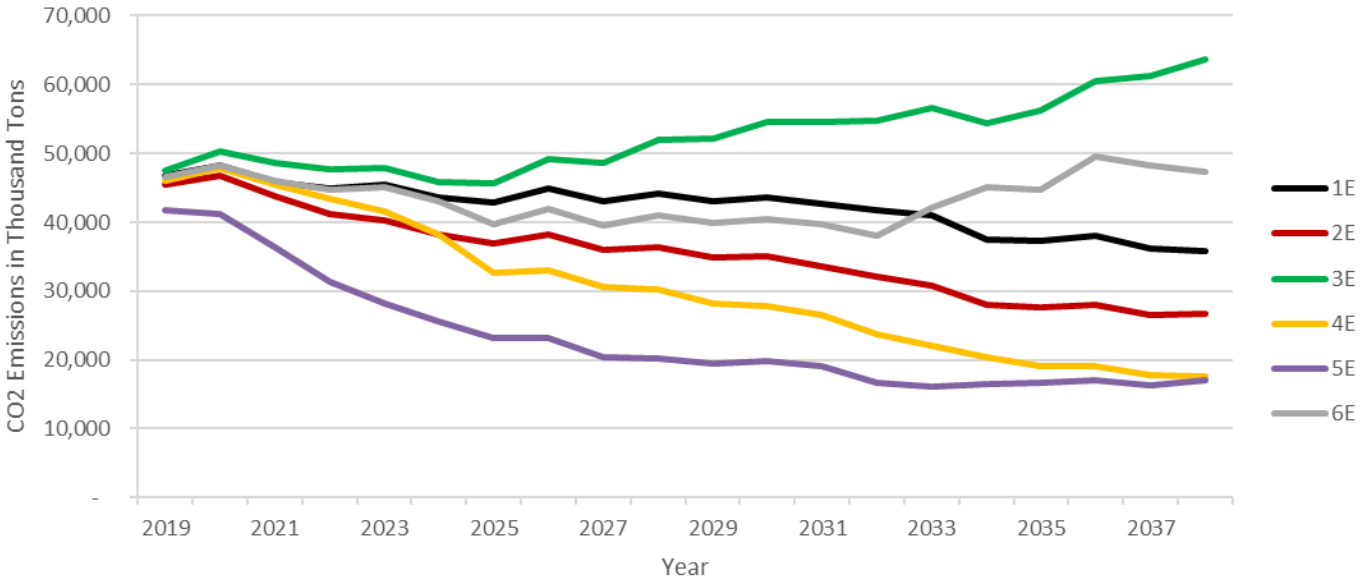


Strategy C: Promote Resiliency



Strategy D: Promote Efficient Load Shape

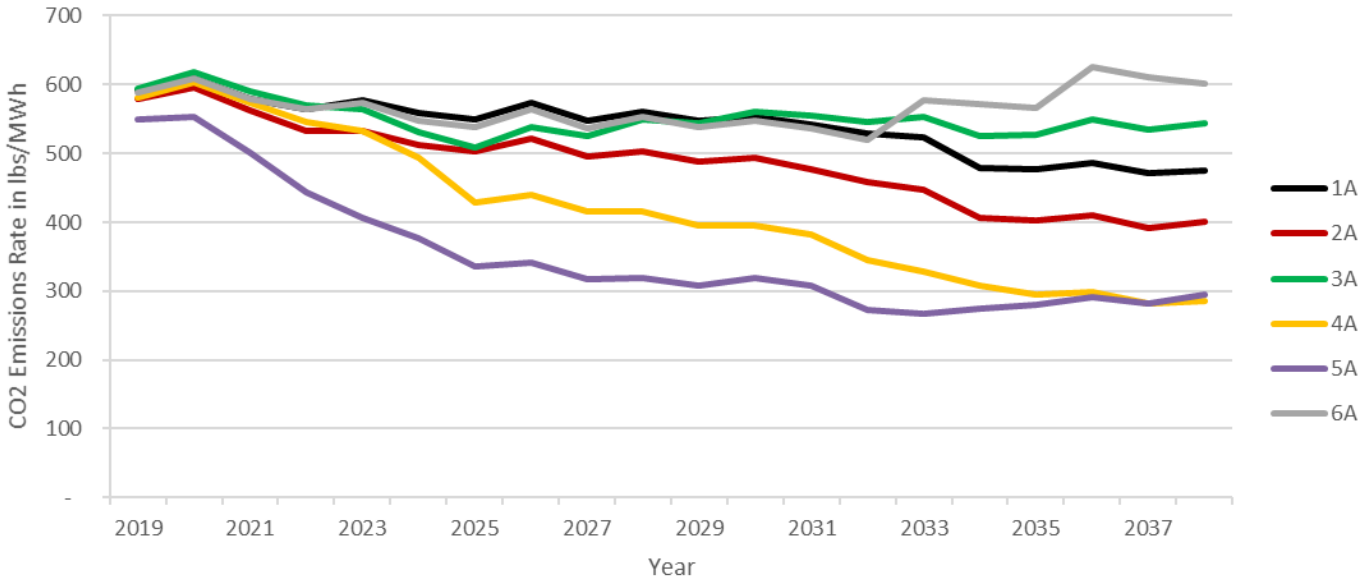
Appendix I: Method for Computing Environmental Metrics



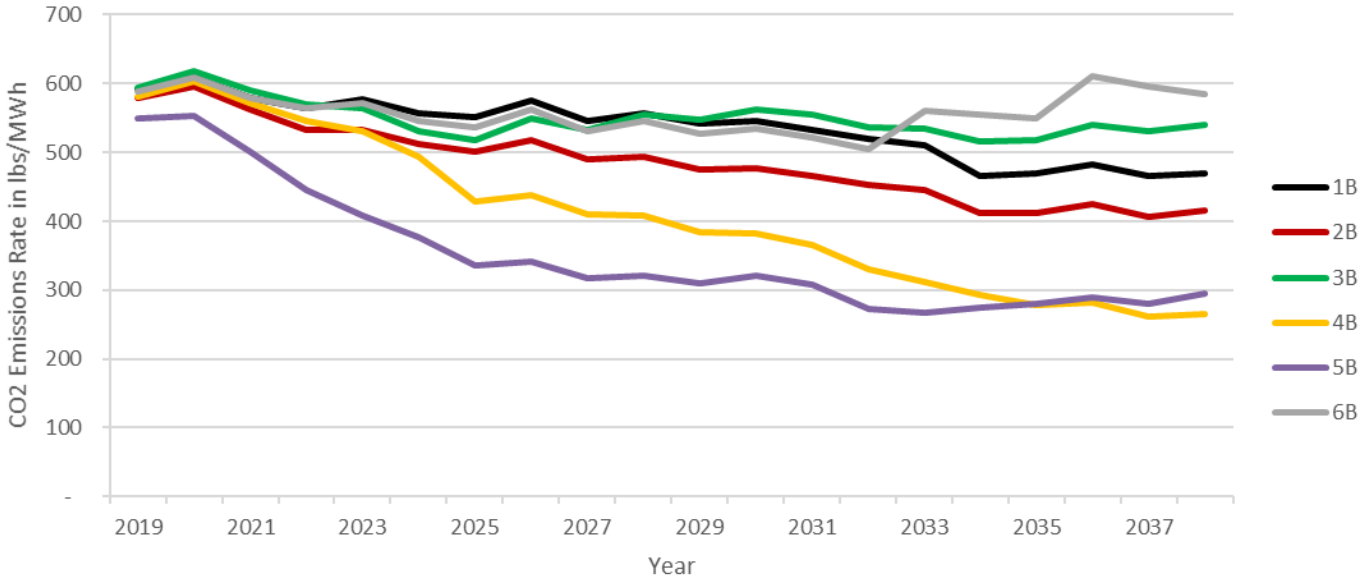
Strategy E: Promote Renewables

Appendix I: Method for Computing Environmental Metrics

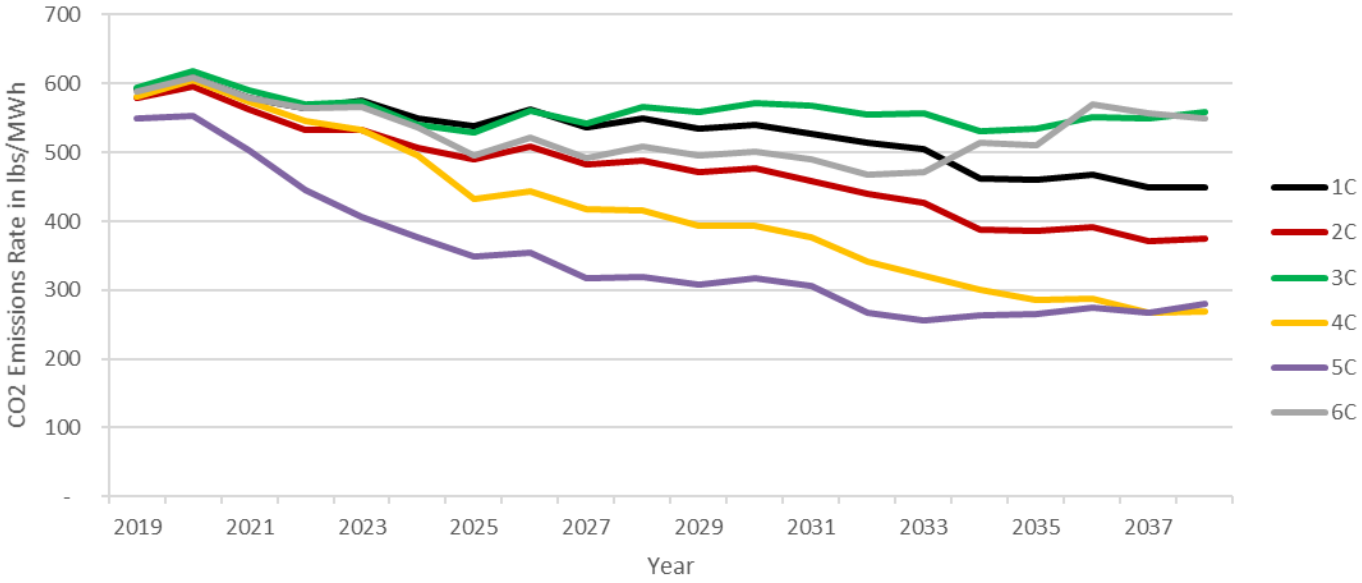
CO_2 Intensity Metric Results:



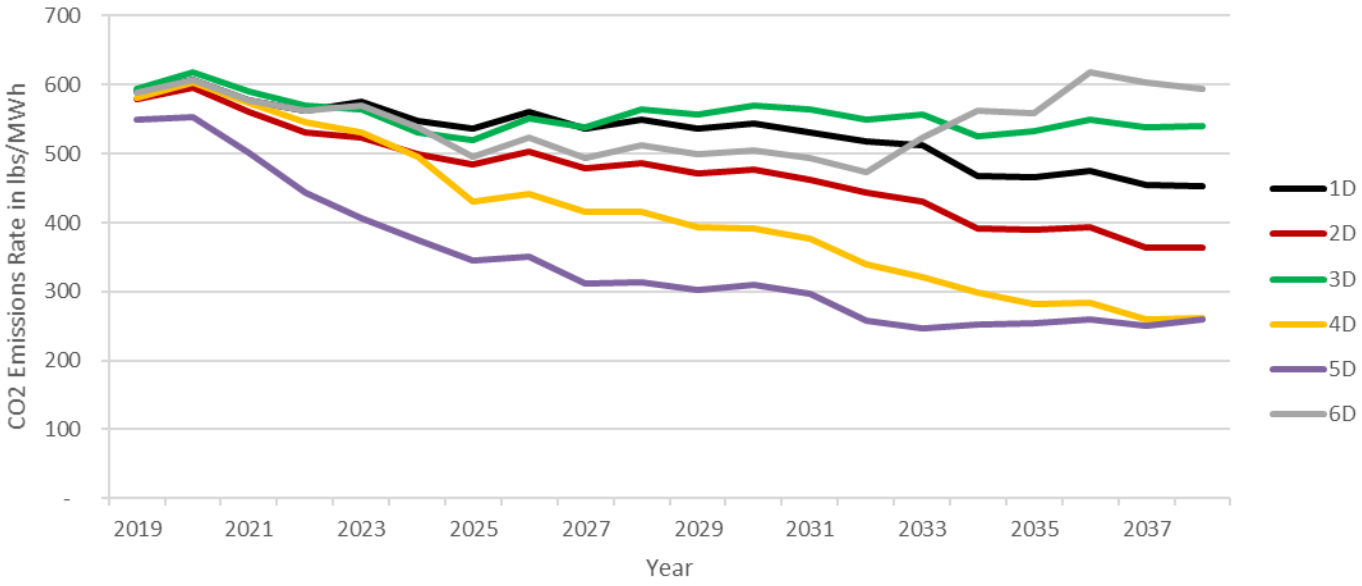
Strategy A: Base Case



Strategy B: Promote DER

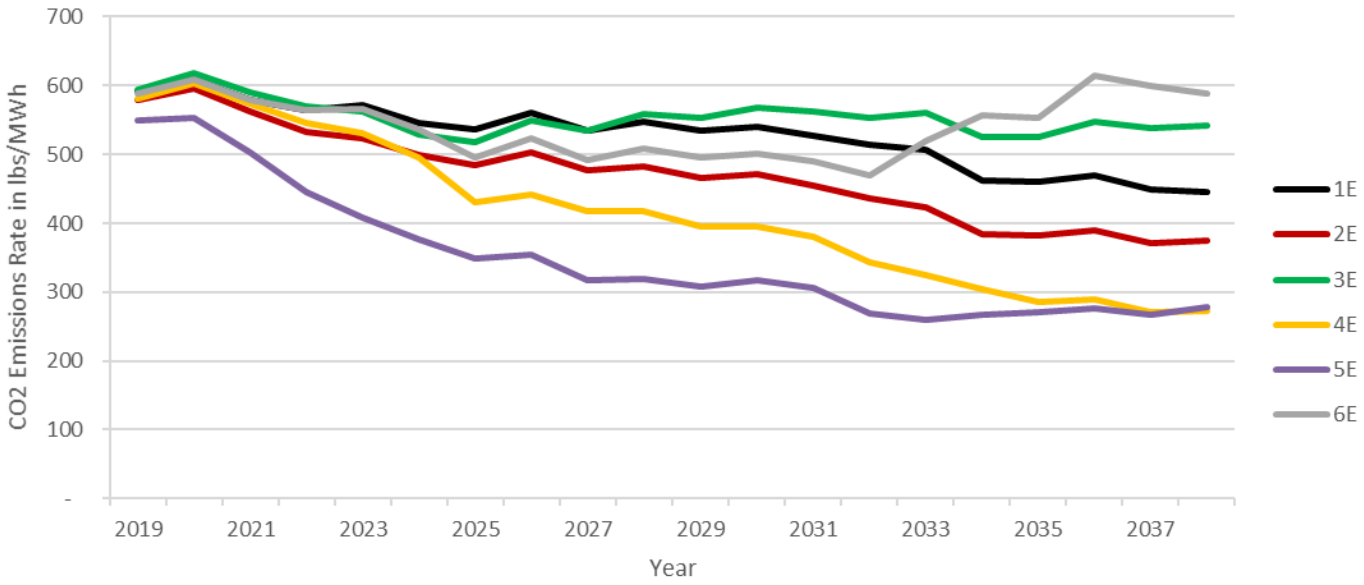


Strategy C: Promote Resiliency



Strategy D: Promote Efficient Load Shape

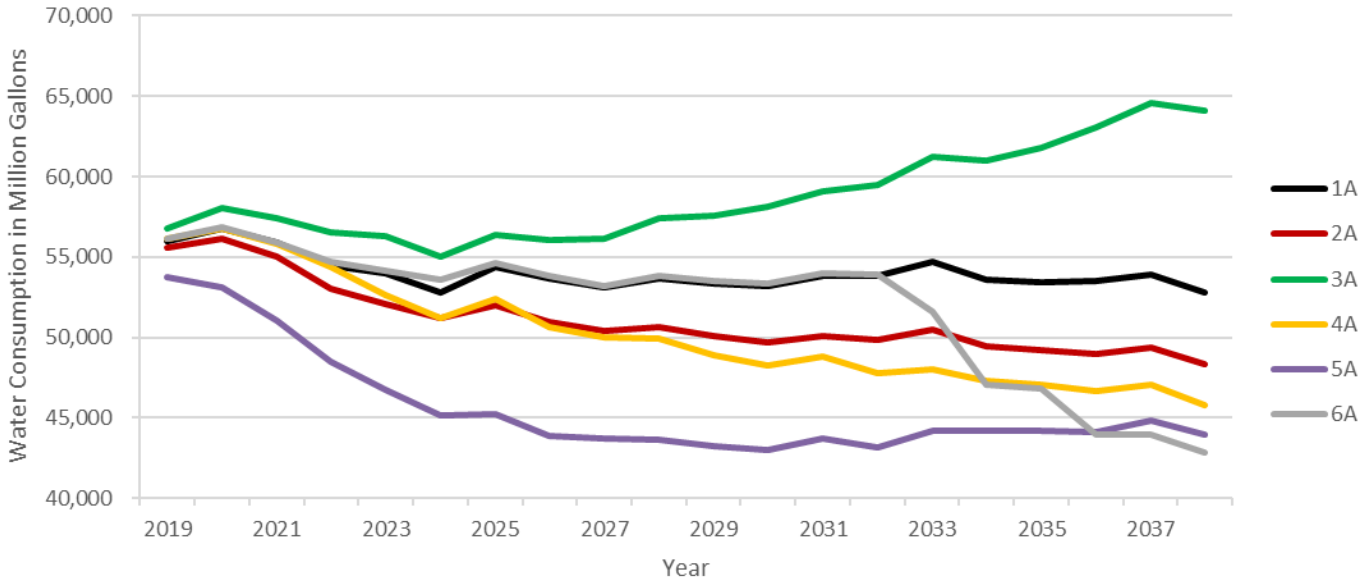
Appendix I: Method for Computing Environmental Metrics



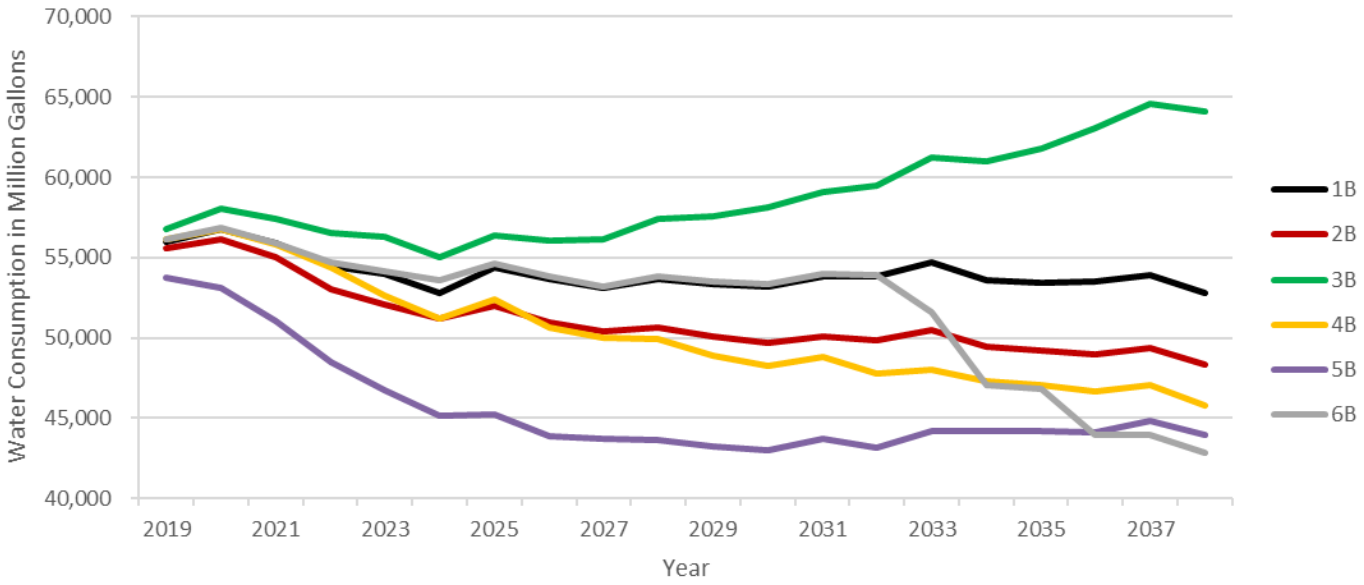
Strategy E: Promote Renewables

I.3 Strategy Performance: Water Consumption Metric

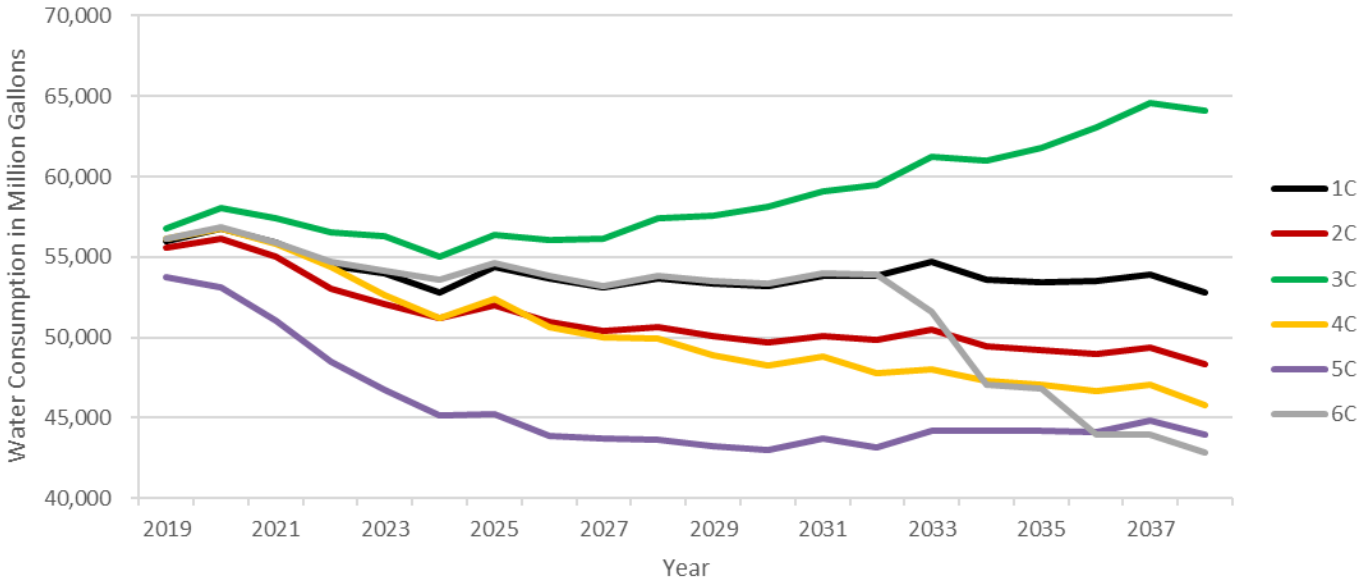
Water Consumption Metric Results:



Strategy A: Base Case

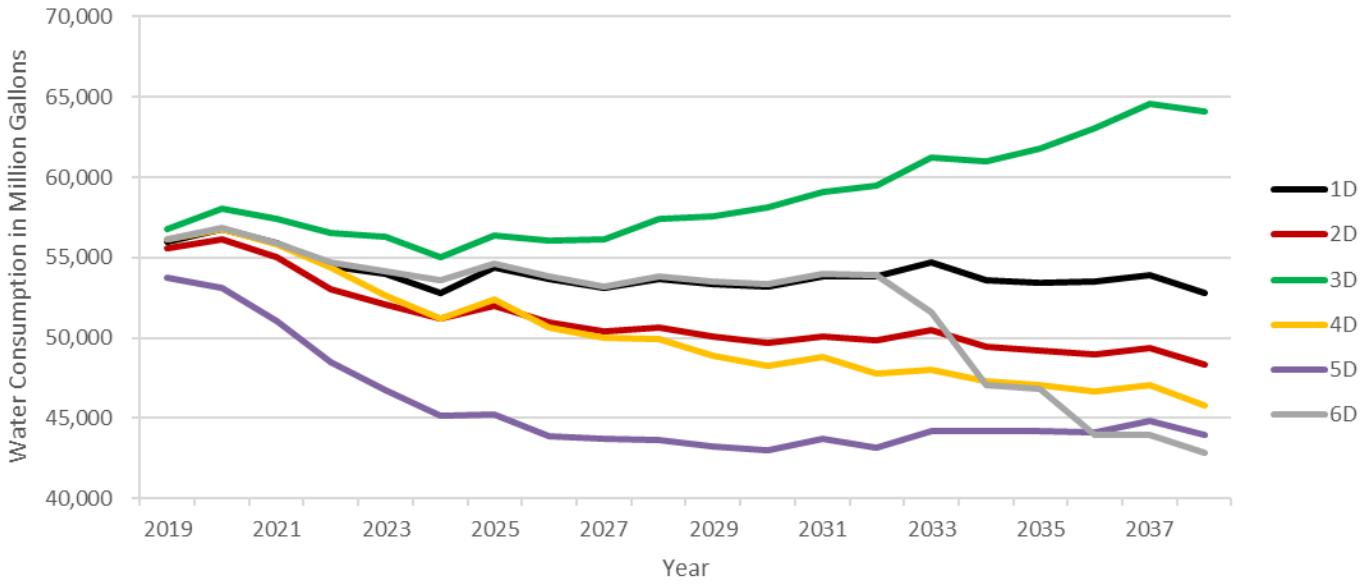


Strategy B: Promote DER

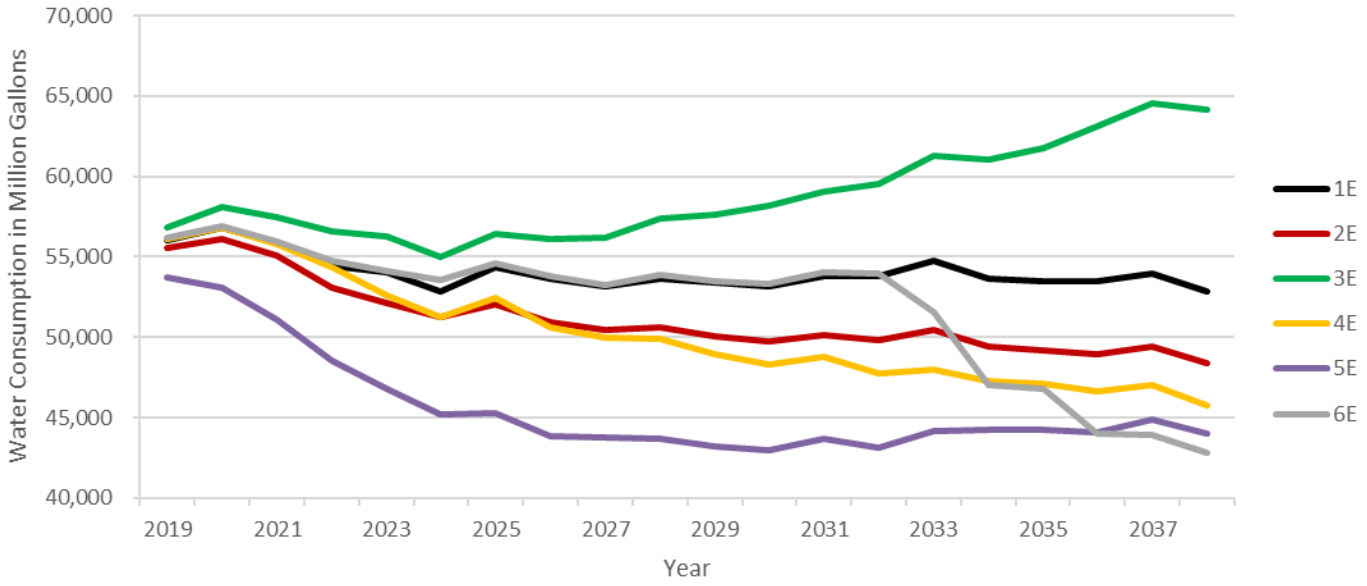


Strategy C: Promote Resiliency

Appendix I: Method for Computing Environmental Metrics



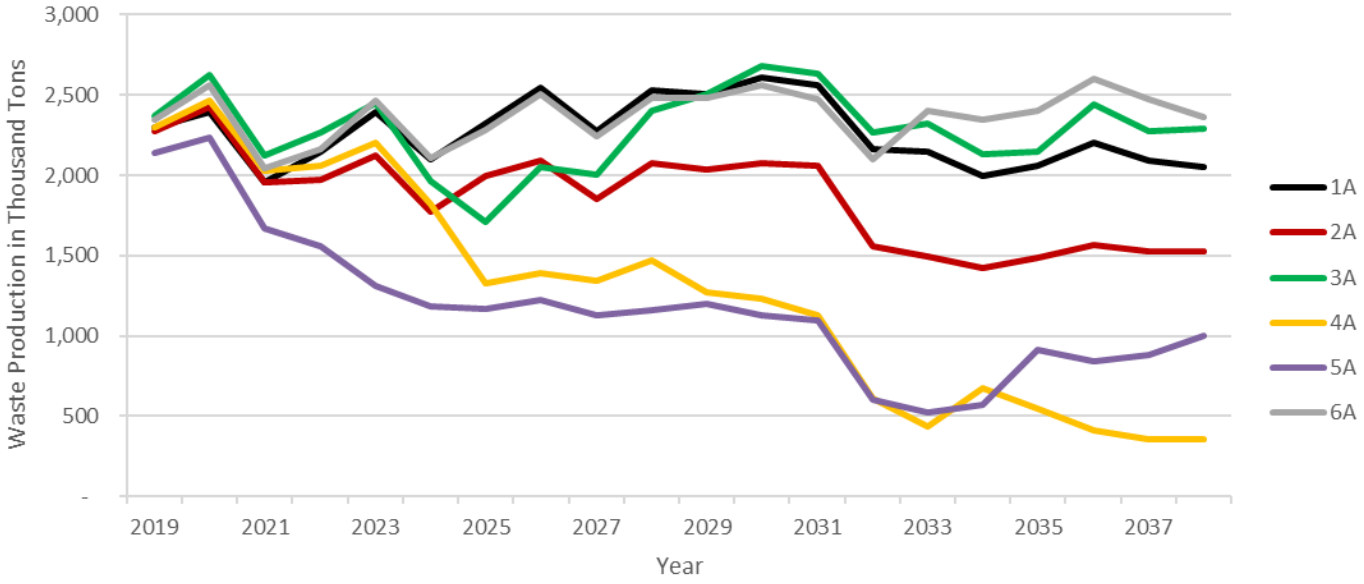
Strategy D: Promote Efficient Load Shape



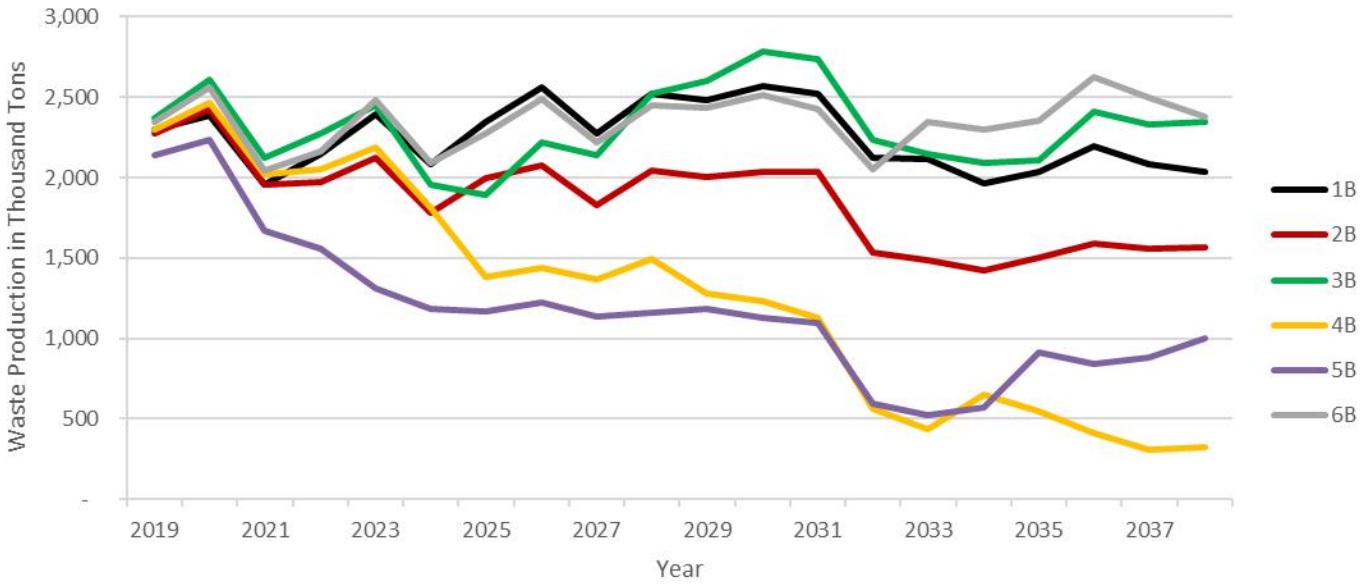
Strategy E: Promote Renewables

I.4 Strategy Performance: Waste Production Metric

Waste Metric Results:

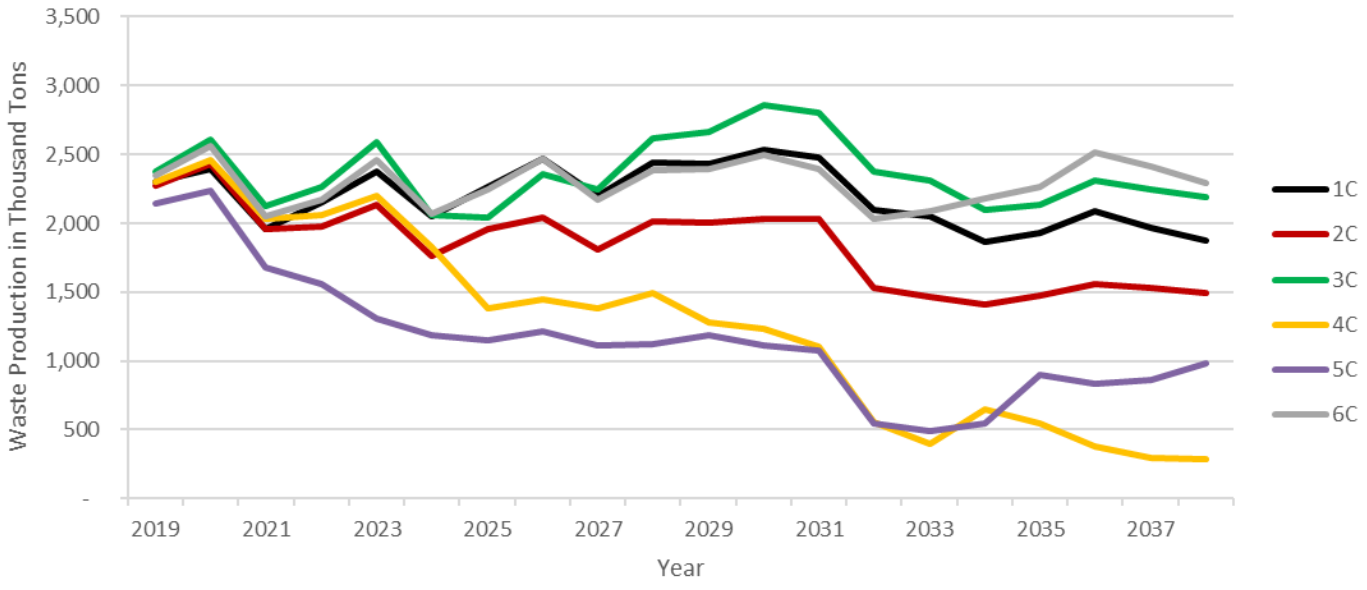


Strategy A: Base Case

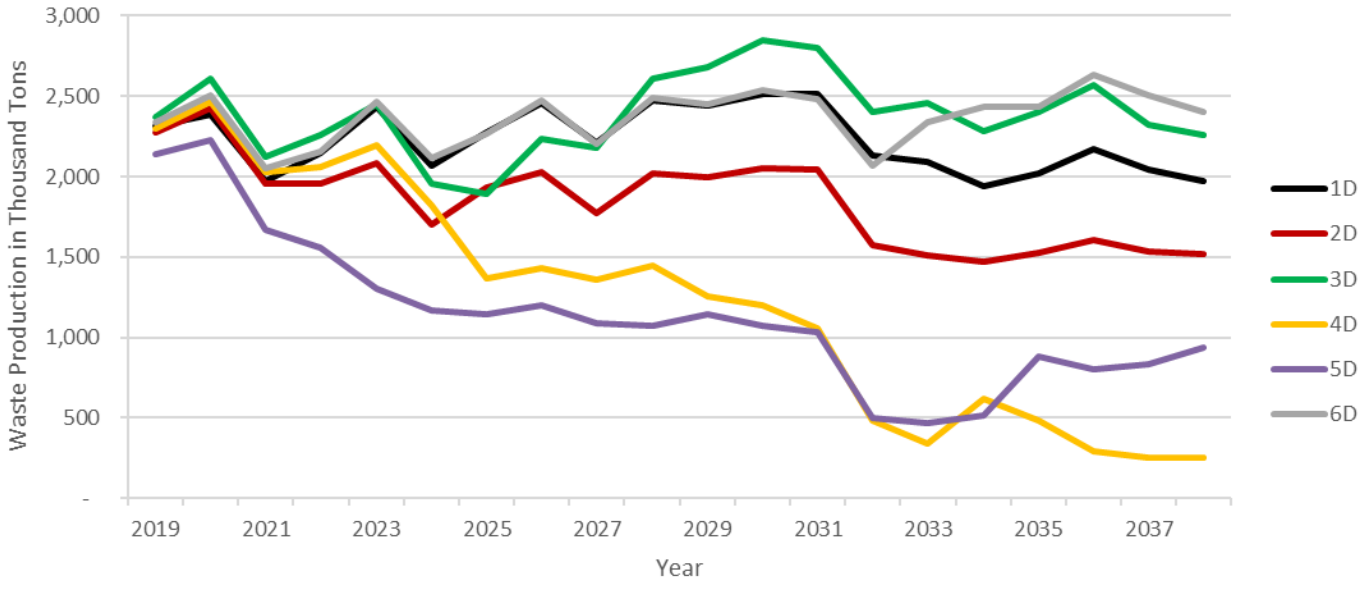


Strategy B: Promote DER

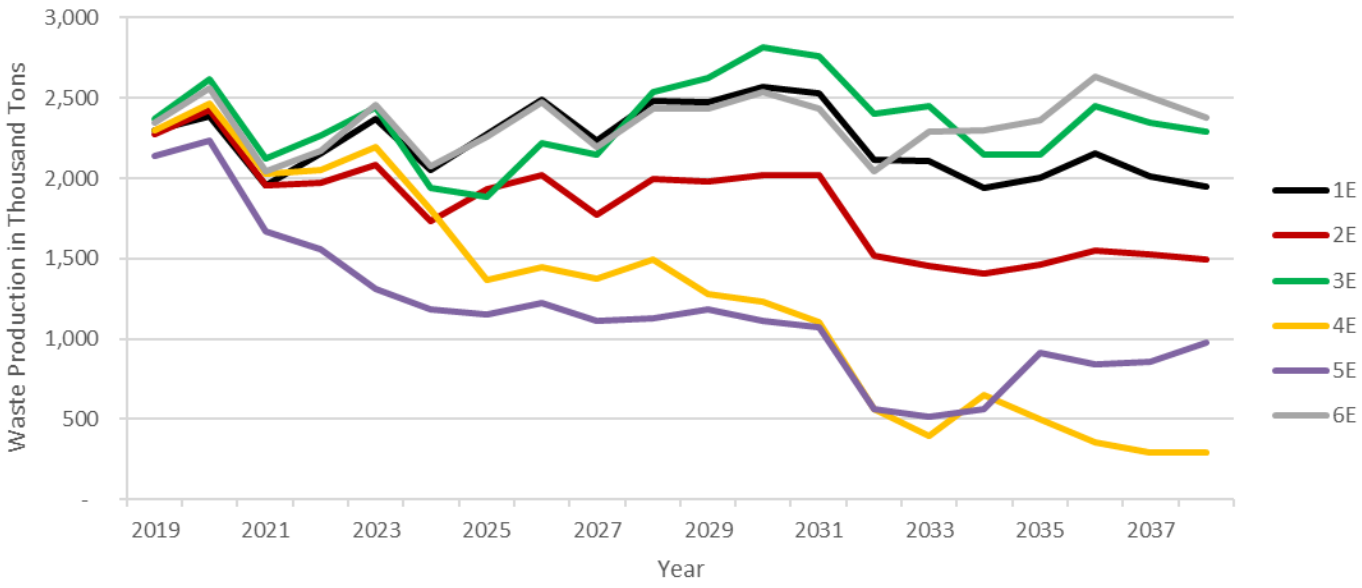
Appendix I: Method for Computing Environmental Metrics



Strategy C: Promote Resiliency



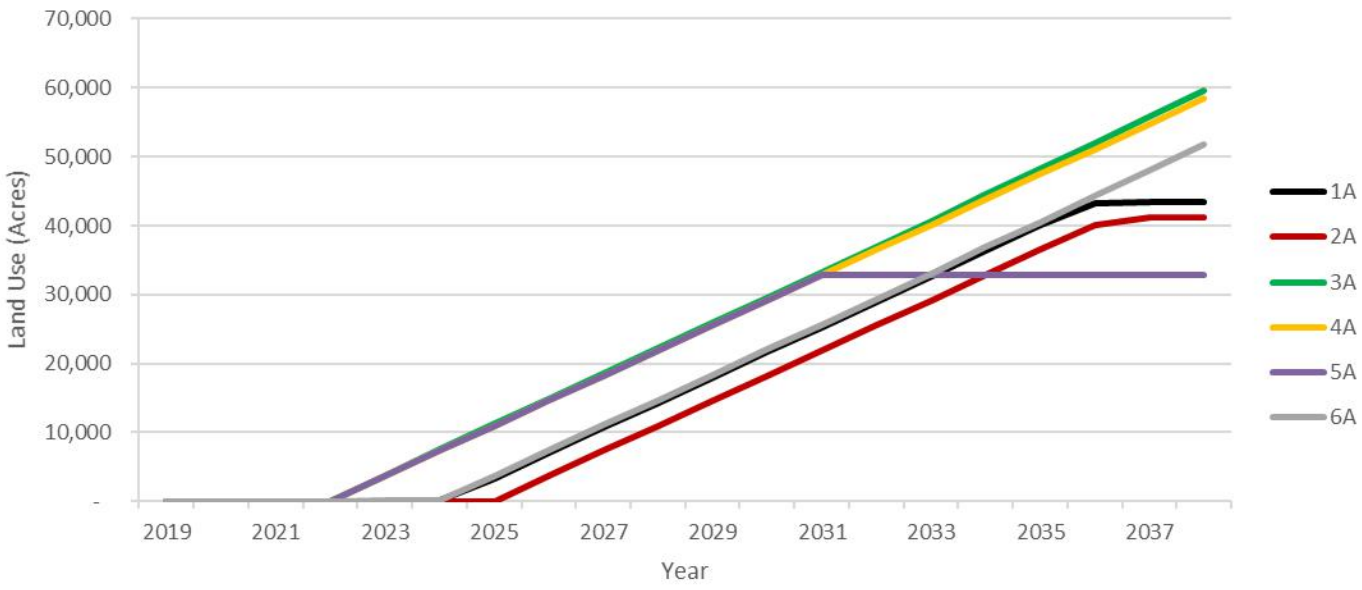
Strategy D: Promote Efficient Load Shape



Strategy E: Promote Renewables

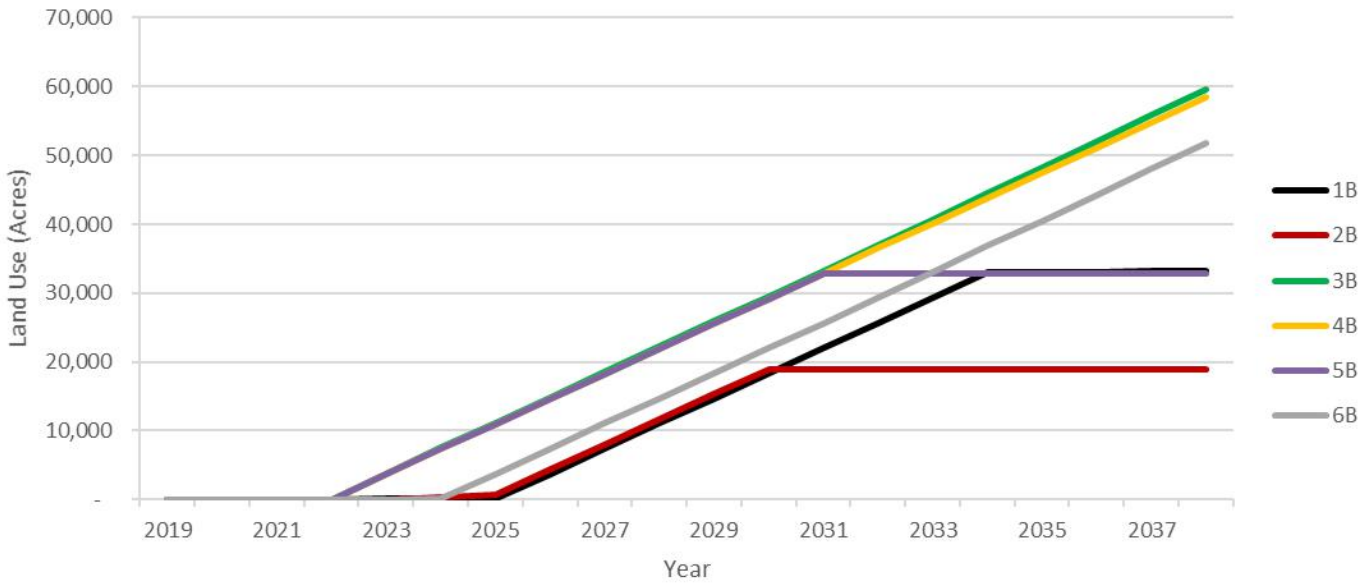
I.5 Strategy Performance: Land Use Metric

Land Use Metric Results:

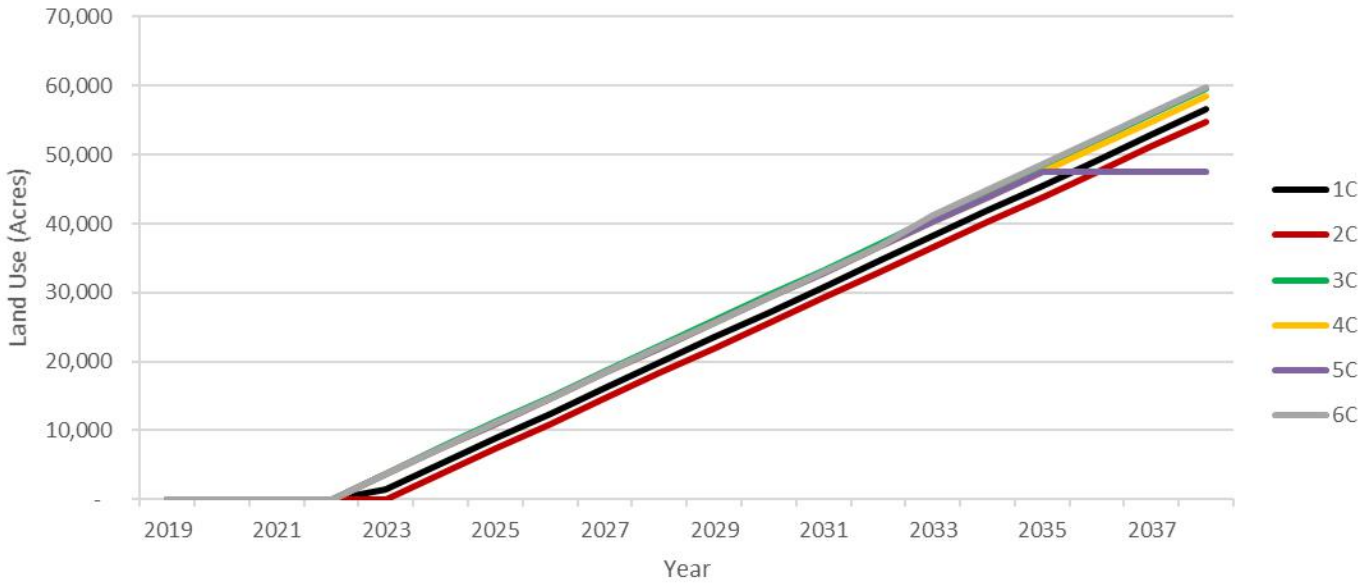


Strategy A: Base Case

Appendix I: Method for Computing Environmental Metrics

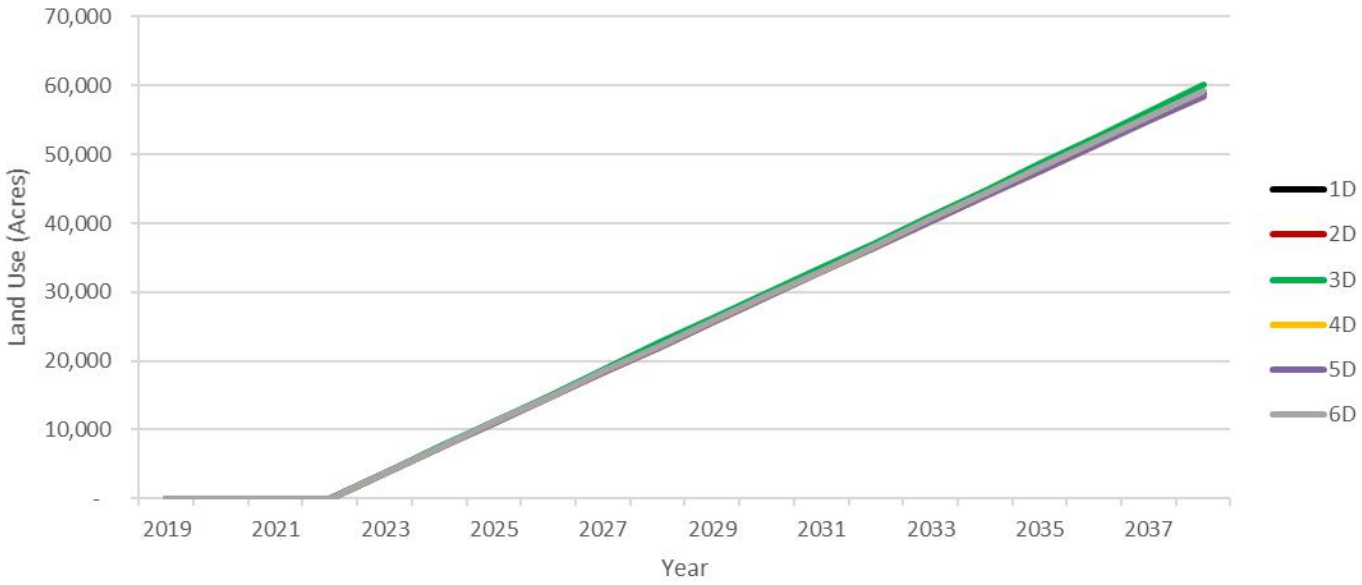


Strategy B: Promote DER

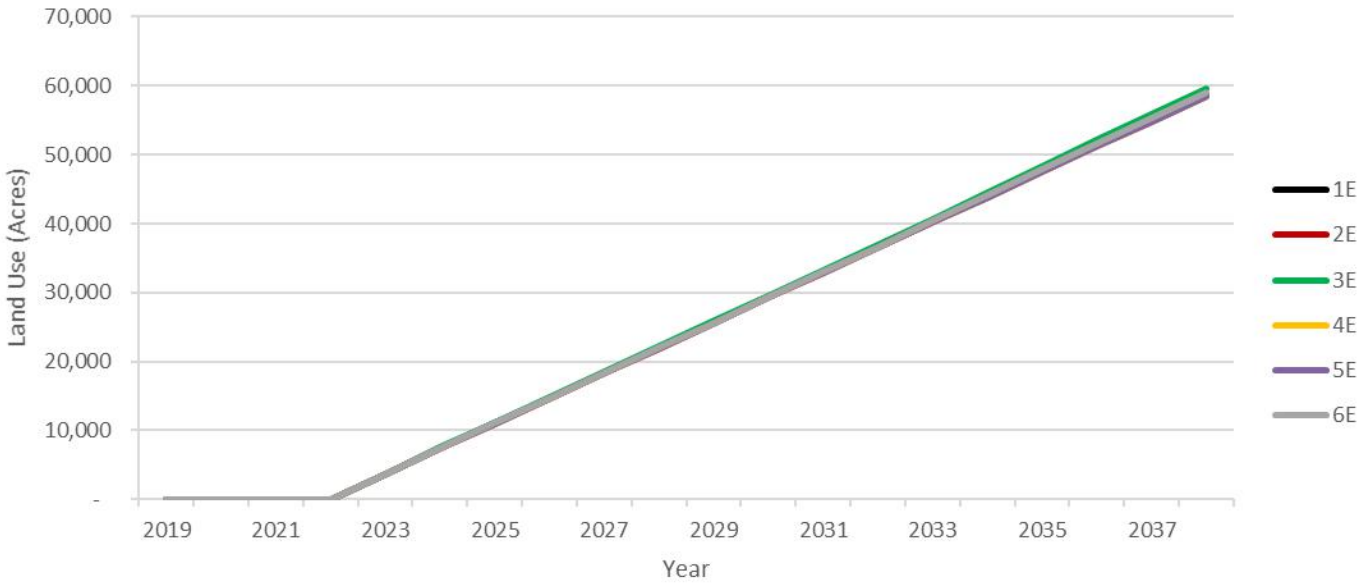


Strategy C: Promote Resiliency

Appendix I: Method for Computing Environmental Metrics



Strategy D: Promote Efficient Load Shape



Strategy E: Promote Renewables

Appendix I: Method for Computing Environmental Metrics

I.6 Environmental Metric Stochastic Results

Stochastic analysis was used to determine potential ranges of results for the Air and Water Impact metrics.

The charts in this section show the expected case (where colored bars meet) and the range of results around the expected case based on stochastic variation of the key planning variables for each portfolio

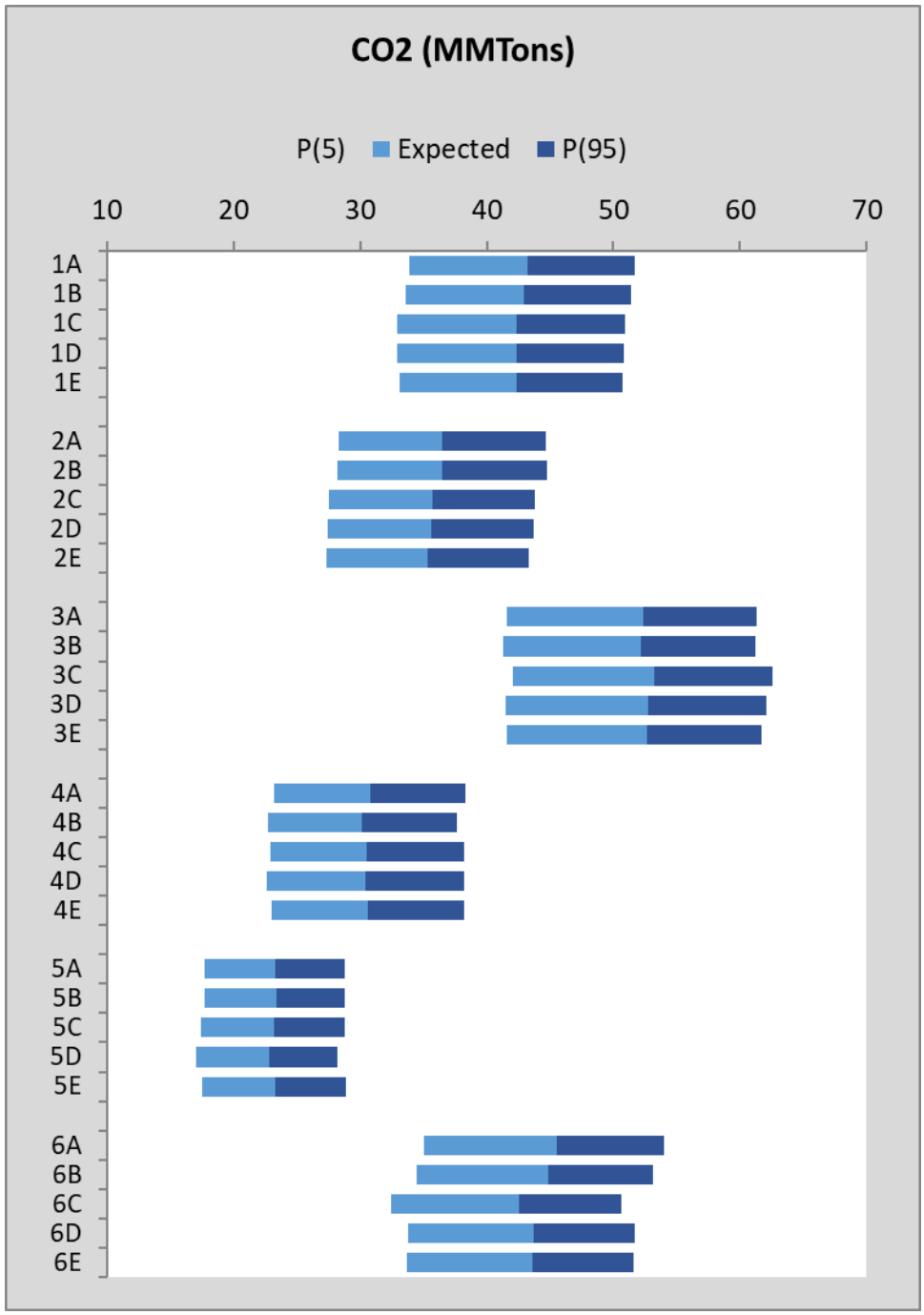


Figure I-1: CO_2 Emissions.

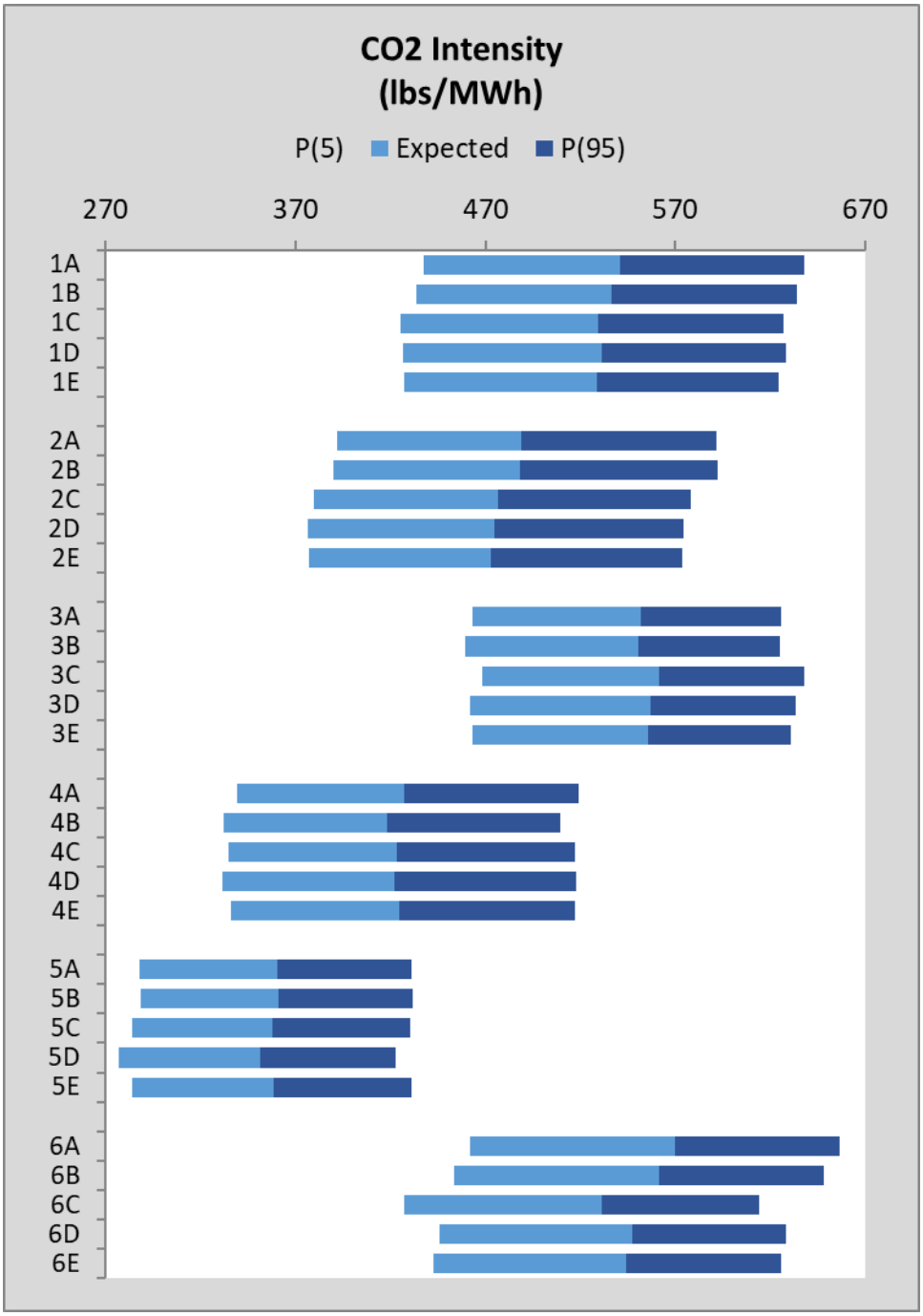


Figure I-2: CO_2 Intensity.

Appendix I: Method for Computing Environmental Metrics

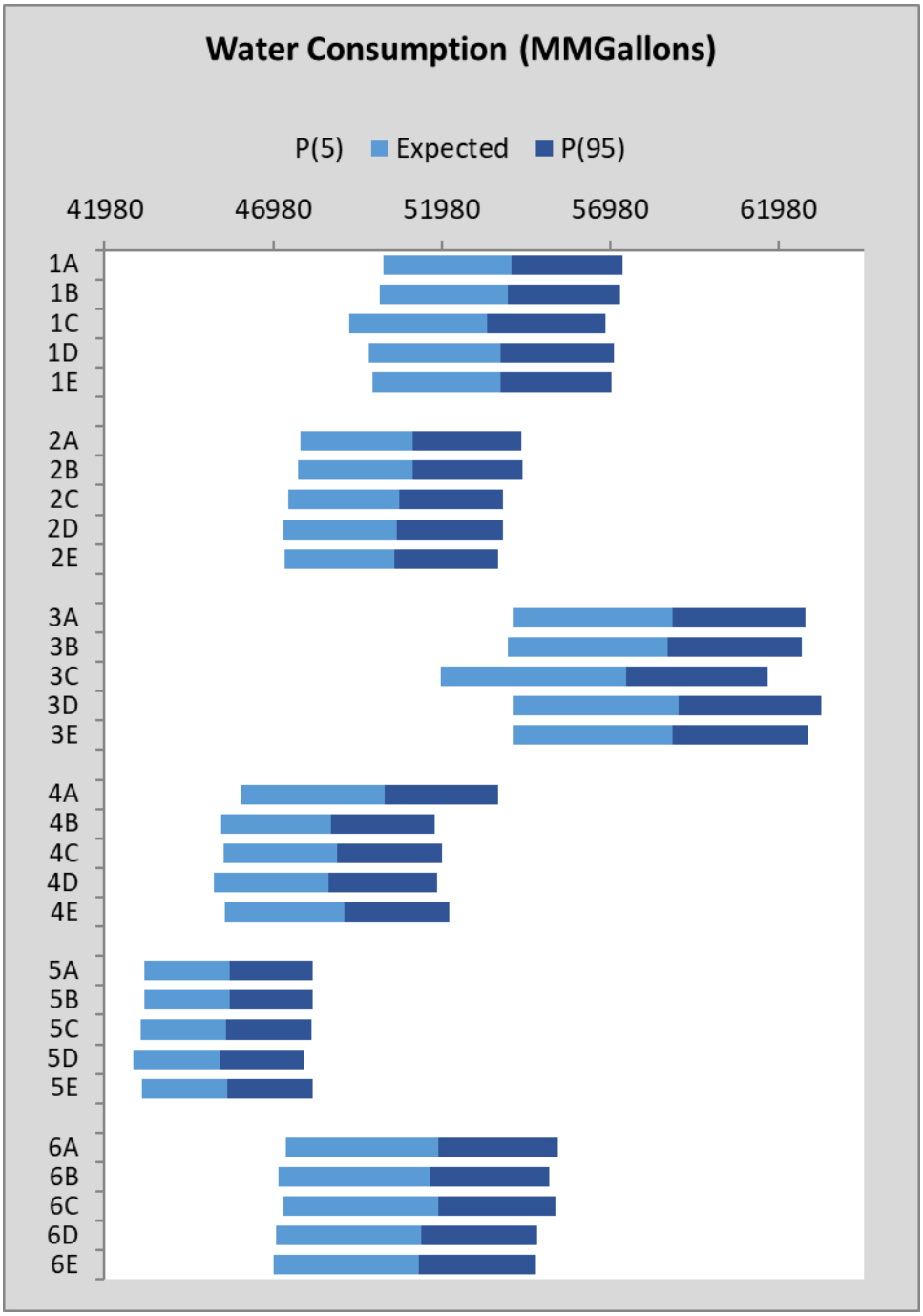


Figure I-3: Water Consumption.

Appendix I: Method for Computing Environmental Metrics

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Appendix J – Method for Computing Valley Economic Impacts

Appendix J – Method for Computing Valley Economic Impacts

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Appendix J - Method for Computing Valley Economic Impacts

J.1 Background

Because the TVA Act promotes agricultural and industrial development as a core TVA responsibility, the economic well-being of Tennessee Valley (hereafter Valley) residents has been part of the TVA's mission since 1933. In keeping with TVA's core mission, the IRP scorecard incorporates economic impact metrics for all portfolios, covering each scenario and strategy combination under consideration. Real per capita income and total non-farm employment within the Valley are calculated in order to assess the relative impact of each strategy on the general economic conditions in the TVA region. This appendix describes the process used to calculate these two metrics. It also includes supporting information related to manufacturing employment and total Valley population projections.

J.2 Process Overview

The U.S. Bureau of Economic Analysis provides a broad measure of real per capita income that reflects not just wage income but total compensation, such as employer contributions to health insurance and retirement accounts. Additionally, it includes other income sources, such as dividends and transfer payments. Thus, real per capita income provides a single metric that broadly reflects the general economic well-being of Valley residents and is readily understandable and relatable. It also reflects the net effect of each strategy's change in expenditures and electricity bills. Increases in TVA expenditures on labor, equipment, fuels, and construction materials stimulate the economy. At the same time, increases in consumers' electricity bills required to fund those operations and construction activities reduce consumers' discretionary income. Discretionary income reflects the share of income left over after paying for necessities such as rent (or mortgage payment), healthcare, food, clothing, transportation, and energy costs (including utilities). Lower discretionary income translates into reduced consumer purchases on other goods and services in the TVA region. Because strategies that involve increasing in-Valley expenditures tend to require higher electricity bills, their impacts tend to be offsetting.

The PI+ Model by Regional Economic Models, Inc., hereafter referred to as REMI, is used to model the multiplier effects of each strategy's expenditures that stimulate the regional economy and its electrical bills that dampen it. REMI is a general equilibrium model used by TVA for over 15 years and is currently in use by over 100 universities, state and local governments, utilities, and consulting firms throughout the U.S. and Europe. TVA's model has been tailored to the TVA region by county and optimized to capture the inter-industry and inter-regional linkages with surrounding counties and the rest of the United States. As shown in Figure J-1, the "direct effects," i.e., changes in TVA expenditures and retail electricity bills, are input into REMI, which capture any multiplier effects and interactions within the regional economy.

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Appendix J: Method for Computing Valley Economic Impacts

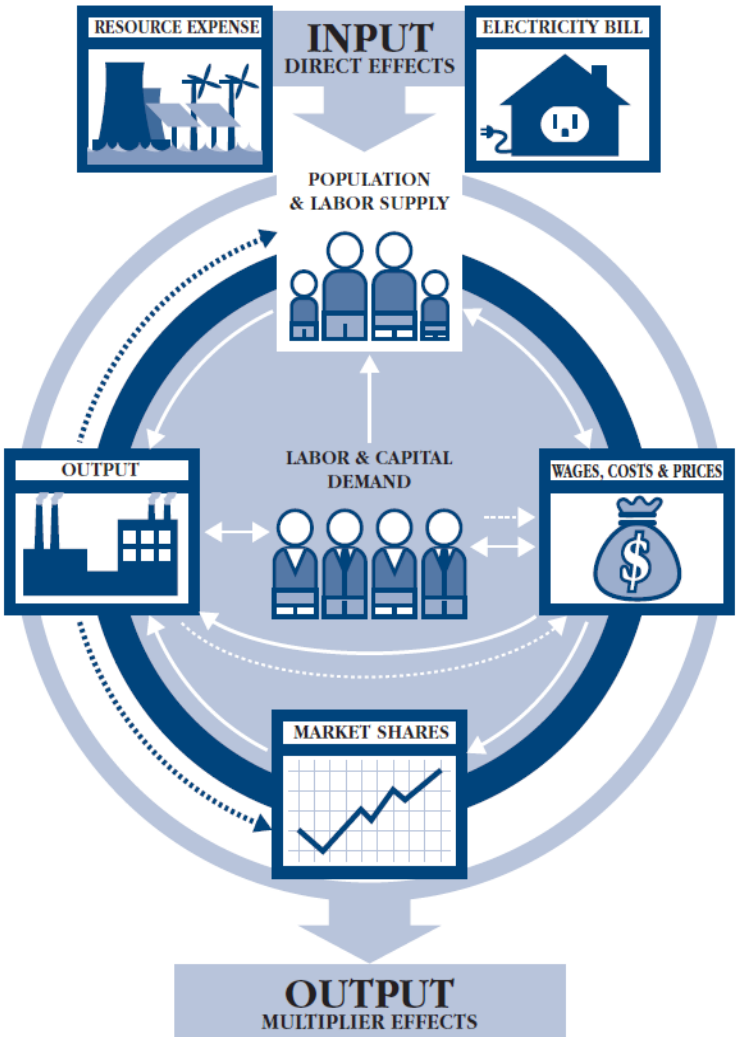


Figure J-1: Input and Output Impacts.

Strategy A of each scenario serves as the Base Case, so each strategy within each scenario is compared to Strategy A. Thus, increases in expenditures are only entered into REMI to the extent that they exceed Strategy A expenses. In this way REMI outputs are the impact on real per capita income relative to the Base Case in each scenario.

J.3 Methodology

Within a scenario, each strategy has a different annual revenue requirement needed to fund its construction, generation, and energy efficiency programs. The difference between the Base Case and the revenue requirements of other strategies are modeled as changes in the electricity bill for residential, commercial, and industrial customers. Ultimately, ratepayers must fund any increase in TVA expenditures.

While increases in the revenue requirements of a strategy tend to reduce consumers' ability to purchase goods and services, an increase in TVA expenditures stimulates economic activity, at least to the extent such goods and services are purchased within the TVA region. Expenditures that are almost exclusively sourced outside the TVA region, such as fuel or purchased wind power from the Midwest, are excluded from TVA region expenditures.

Because not all types of expenses have identical economic impacts, REMI is used to separately model the impact of renewable construction, non-renewable

construction, non-fuel operation and maintenance (O&M), and energy efficiency expenses. In this way REMI identifies the ability of the TVA regional economy to supply the necessary inputs and to what extent they must be sourced outside the region. Because most new non-renewable construction expenses are likely to be natural gas-fired power plants, REMI's custom construction industry for natural gas-fired power plants model is incorporated into the analysis. Similarly, since most new renewable construction in the TVA region will be solar installations, REMI's custom industry solar plant construction model is used. This delineation between types of construction expenditures enhanced the accuracy of the results, reflecting the nature of expansion in each portfolio.

While there are ongoing national codes and standards that increase energy efficiency, TVA implements programs that expedite the adoption of energy efficiency measures that are over and above the minimum required. The economic impact of TVA investments in energy efficiency programs is modeled as 7.52 new jobs in the TVA region for each $1 million spent in 2018-inflation-adjusted dollars. Of the jobs created, 20 percent fall within the utility industry, 20 percent in the construction industry, and 60 percent in professional/scientific employment categories. All differences from the Base Case are annual values, so changes in per capita income are generated by year. In economics, a real value of a good or other entity has been adjusted for inflation, enabling comparison of quantities as if prices had not changed. Changes in real terms therefore exclude the effect of inflation. In contrast with a real value, a nominal value has not been adjusted for inflation, and so changes in nominal value reflect at least in part the effect of inflation. The real per capita income output models the trajectory of economic impacts over time. In order to rank and compare alternative strategies, the present value of the changes in per capita income is evaluated by first deflating nominal per capita income values within each scenario by its projected consumer price index (hereafter CPI) over the 2019 to 2038 period to place the values in constant 2018-dollars, and then applying a 2 percent discount rate across the 20-year-horizon to account for the time value of money. REMI also accounts for the inflationary/deflationary impacts of alternative strategies on electricity prices within the Valley on that scenario's CPI. Average annual changes in non-farm employment are presented as well. In order to obtain further insight, this appendix also reports projected changes in manufacturing employment and total service-area population.

These results are based on the Present Value of Revenue Requirements (PVRR) over the 20-year study period (2019-2038). The 2019 IRP also considers Total Resource Cost (TRC) which takes into account the net participant cost borne by the end use customer. Consideration of these costs could also impact real per capita income and employment results, beyond PVRR-based impacts summarized in this appendix.

J.4 Overall Findings

Table J-1 provides changes in the TVA region's real per capita income caused by each strategy. The difference in all scenarios across all strategies is relatively small. From 2019 to 2038, the average percentage change in real per capita income ranged from -0.04 percent to +0.01 percent. The results are expected to be small for several reasons. First, TVA revenue is a small percentage of the total TVA region economy. In 2019, TVA revenues are expected to approach $11 billion, but the entire TVA region economy amounts to roughly $440 billion. Second, the proposed strategies result in relatively similar approaches to supplying the region's power needs, and generally do not dramatically change TVA revenue requirements in a given year. Changing from one approach to another or employing a combination of strategies should not result in significant impacts on the economy as a whole.

Appendix J: Method for Computing Valley Economic Impacts

Table J-1: Results – Real Per Capita Income.

Per Capita Income*
2019-2038

Avg. of Annual % Changes from Base Case	Scenario 1 Current Outlook	Scenario 2 Economic Downturn	Scenario 3 Valley Load Growth	Scenario 4 Decarbonization	Scenario 5 Rapid DER Adoption	Scenario 6 No Nuclear Extensions
B - Promote DER	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
C - Promote Resiliency	-0.01%	0.00%	-0.01%	0.00%	0.00%	-0.03%
D - Promote Efficient Load Shape	-0.01%	-0.02%	-0.04%	-0.02%	-0.02%	-0.01%
E - Promote Renewables	0.00%	0.00%	-0.01%	0.00%	-0.01%	0.00%
Present Value of Per Capita Income (2018-$)						
A- Base Case	$40,087	**$37,997**	$42,425	$39,302	**$40,140**	$40,075
B - Promote DER	**$40,088**	$37,997	**$42,428**	**$39,302**	$40,139	**$40,077**
C - Promote Resiliency	$40,085	$37,996	$42,420	$39,301	$40,139	$40,065
D - Promote Efficient Load Shape	$40,082	$37,990	$42,407	$39,295	$40,132	$40,071
E - Promote Renewables	$40,086	$37,996	$42,422	$39,301	$40,136	$40,074

* U.S. Bureau of Economic Analysis definition reflects total compensation that includes wages and benefits and transfer payments, such as Medicare and Medicaid.

Across the six scenarios, there are meaningfully different assumptions about economic conditions nationwide that impact the TVA region's standard of living, especially across Scenarios 1 – 4. Real per capita incomes (hereafter PCI) are not, however, comparable across scenarios because the varying scenario assumptions generally overwhelm strategy-driven impacts.

Table J-2: Results – Total Non-Farm Employment.

Total Non-Farm Employment
2019-2038

Avg. of Annual % Changes from Base Case	Scenario 1 Current Outlook	Scenario 2 Economic Downturn	Scenario 3 Valley Load Growth	Scenario 4 Decarbonization	Scenario 5 Rapid DER Adoption	Scenario 6 No Nuclear Extensions
B - Promote DER	0.01%	0.00%	0.01%	0.01%	0.10%	0.00%
C - Promote Resiliency	0.01%	0.01%	0.01%	0.01%	0.10%	0.01%
D - Promote Efficient Load Shape	0.02%	0.01%	0.01%	0.01%	0.11%	0.00%
E - Promote Renewables	0.01%	0.01%	0.00%	0.00%	0.10%	0.00%
Average Change from Base Case (Thousands)						
A- Base Case	**4,405**	**4,243**	**4,674**	**4,332**	**4,410**	**4,405**
B - Promote DER	0.395	0.075	0.283	0.495	4.404	(0.182)
C - Promote Resiliency	0.473	0.333	0.268	0.284	4.453	**0.622**
D - Promote Efficient Load Shape	**0.885**	**0.629**	**0.613**	**0.581**	**4.725**	(0.013)
E - Promote Renewables	0.521	0.315	0.053	0.090	4.414	(0.203)

Table J-2 presents the average change in the TVA region's total non-farm employment due to each strategy. Once again, the difference in all scenarios across all strategies is quite small. From 2019 to 2038 the average percentage change in non-farm employment ranges from 0.00 percent (actually -0.005 percent) to +0.11 percent. In a region with an employment base of roughly 4.4 million, these

Appendix J: Method for Computing Valley Economic Impacts

investment changes are not of sufficient magnitude to substantially move the needle. Additionally, increases in total employment can occur in conjunction with declines in manufacturing employment (which generally possess higher average wage rates than in non-manufacturing sectors) and more than proportionate increases in population, suggesting that migration into the Valley may more than offset any resulting increase in employment in some cases. Resulting labor force participation rates, unemployment rates, and income on a real per capita basis may not materially improve from Base Case conditions.

Table J-3: Results – Manufacturing Employment.

Manufacturing Employment
2019-2038

Avg. of Annual % Changes from Base Case	Scenario 1 Current Outlook	Scenario 2 Economic Downturn	Scenario 3 Valley Load Growth	Scenario 4 Decarbonization	Scenario 5 Rapid DER Adoption	Scenario 6 No Nuclear Extensions
B - Promote DER	0.00%	0.00%	0.00%	0.00%	0.08%	-0.01%
C - Promote Resiliency	0.00%	0.00%	0.00%	0.00%	0.08%	-0.03%
D - Promote Efficient Load Shape	-0.01%	-0.01%	-0.02%	-0.01%	0.07%	-0.02%
E - Promote Renewables	0.00%	0.00%	0.00%	0.00%	0.08%	-0.01%
Average Change from Base Case (Thousands)						
A- Base Case	**512**	**461**	**588**	**439**	**512**	**512**
B - Promote DER	**0.010**	(0.012)	**0.015**	**0.009**	**0.410**	(0.030)
C - Promote Resiliency	(0.017)	(0.011)	(0.027)	(0.003)	0.404	(0.150)
D - Promote Efficient Load Shape	(0.042)	(0.064)	(0.088)	(0.051)	0.358	(0.083)
E - Promote Renewables	0.001	(0.008)	(0.026)	(0.010)	0.390	(0.050)

Table J-3 presents the average change in the TVA region's manufacturing employment due to each strategy. The differences in all scenarios across the strategies are modest. From 2019 to 2038, the average percentage change in manufacturing employment range from -0.03 percent to +0.08 percent. In absolute terms this translates into a decline of 150 manufacturing jobs in one of the No Nuclear Extensions cases to a gain of over 400 manufacturing jobs in one of the Rapid DER Adoption cases. Manufacturing employment generally increases (or does not decline much) in the Promote DER strategy cases, as these cases generally entail the smallest relative change in TVA revenue requirements. The largest upside in employment, either total non-farm or manufacturing, occurs in the Rapid DER cases. This scenario assumes that a technological leap forward in DER technology would drive gains in labor demand as the resulting energy cost savings boosts discretionary income, thereby stimulating spending on other goods and services.

Appendix J: Method for Computing Valley Economic Impacts

Table J-4: Results – Total Population.

Total Population
2019-2038

Avg. of Annual % Changes from Base Case	Scenario 1 Current Outlook	Scenario 2 Economic Downturn	Scenario 3 Valley Load Growth	Scenario 4 Decarbonization	Scenario 5 Rapid DER Adoption	Scenario 6 No Nuclear Extensions
B - Promote DER	0.01%	0.00%	0.00%	0.01%	0.10%	0.00%
C - Promote Resiliency	0.00%	0.00%	0.00%	0.00%	0.10%	-0.02%
D - Promote Efficient Load Shape	0.00%	-0.01%	-0.01%	0.00%	0.10%	-0.01%
E - Promote Renewables	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%
Average Change from Base Case (Thousands)						
A- Base Case	**10,462**	**10,266**	**10,599**	**10,364**	**10,472**	**10,461**
B - Promote DER	**0.536**	(0.078)	**0.461**	**0.554**	**10.721**	(0.123)
C - Promote Resiliency	(0.175)	**0.034**	(0.284)	0.182	10.574	(1.908)
D - Promote Efficient Load Shape	(0.249)	(0.690)	(1.008)	(0.460)	10.022	(0.943)
E - Promote Renewables	0.303	0.019	(0.470)	(0.165)	10.360	(0.520)

Table J-4 presents the average change in the total population of the TVA region as a result of each strategy. The differences in all scenarios across the strategies tend to parallel the changes in employment described above. From 2019 to 2038, the average percentage change in population ranges from -0.02 percent to +0.10 percent. In absolute terms, this ranges from a decline of about 1,900 people in one No Nuclear Extensions case to a gain of 10,720 in the Rapid DER Adoption case. Once again, the largest increases in population occur in the Rapid DER Adoption cases, though it appears as though the non-farm employment gains described above are generally matched by proportionate increases in population (accounting for typical household size of roughly 2.42 persons per household over this same time period).

J.5 Results – Current Outlook Scenario

The Current Outlook scenario reflects TVA's expected Base Case assumptions with respect to the general state of the economy and power markets. Table J-5 below depicts the cumulative Revenue Requirements (RR, i.e. the change in electricity cost for each strategy relative to the Base Case) in proportion to the cumulative In-Valley capital expenditures, fixed O&M spending, and spending on energy efficiency programs within each strategy, all in 2018-inflation-adjusted dollars.

Table J-5: Current Outlook - Rev. Req. vs In-Valley Spend.

Current Outlook - 1*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	$35	$1,241	3%
C - Promote Resiliency	$2,364	$3,479	68%
D - Promote Efficient Load Shape	$4,837	$6,602	73%
E - Promote Renewables	$1,535	$3,140	49%

*all values in Mil. 2018-$

Note that Strategy B (Promote DER) reflects the smallest increase in RR, both in absolute terms and relative to capital, fixed O&M, and EE expenditures among the various strategies. An alternative way to think about this is that any change in TVA's revenue requirements impacts ALL customers via higher

Appendix J: Method for Computing Valley Economic Impacts

electricity costs, whereas a change in program spending on DER, EE, and renewable programs directly impacts program participants by lowering their electricity costs. However, the indirect impacts—reduced electricity sales on the part of TVA—reduce TVA's variable costs, but do not necessarily lower TVA's fixed costs (at least in the short-run), which must now be spread across a smaller sales base.

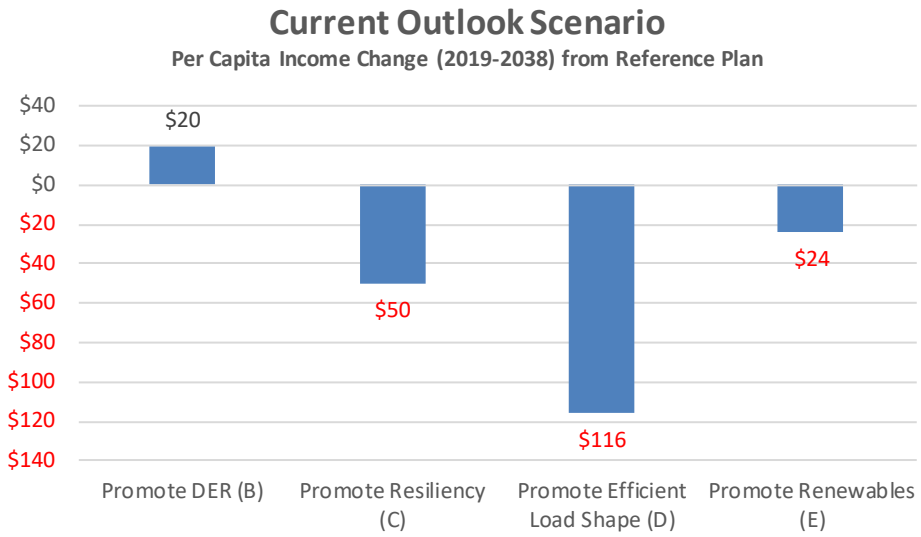


Figure J-2: Current Outlook PCI.

In the Current Outlook scenario, Strategy B, Promote DER, is the most beneficial from the perspective of maximizing PCI; however, the resulting change in PCI is modest at roughly $1 per person per year, or $20 over the 2019 to 2038 period (in 2018 $).

J.6 Results – Economic Downturn Scenario

The Economic Downturn scenario models a world in which economic growth stagnates and underlying inflation escalates. In this case, none of the alternative strategies translates into an increase in PCI, though the strategy with the smallest increase in RR (2B), or smallest ratio of RR change to total expenditure change (2E), translates into the least negative impact on PCI. (See Table J-6 and Figure J-3) Given the relatively weaker overall state of the economy in this scenario, an increase in electricity costs of any magnitude exerts a negative impact on economic well-being across the Valley.

Table J-6: Economic Downturn - Revenue Requirements vs In-Valley Spend.

Economic Downturn - 2*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	$493	$459	108%
C - Promote Resiliency	$1,445	$2,252	64%
D - Promote Efficient Load Shape	$5,397	$5,888	92%
E - Promote Renewables	$1,165	$2,015	58%

*all values in Mil. 2018-$

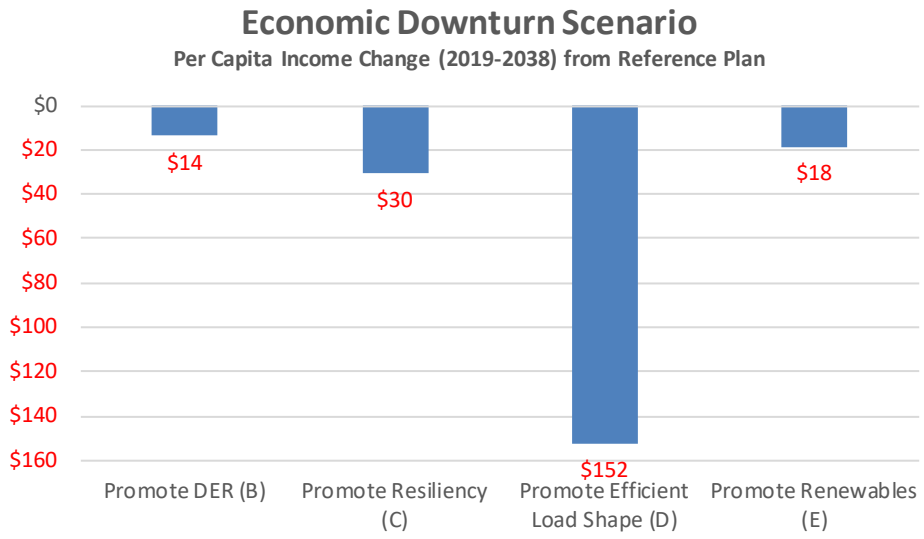


Figure J-3: Economic Downturn PCI.

J.7 Results – Valley Load Growth Scenario

The Valley Load Growth Scenario models an environment of sustained, robust economic growth and growing demand for power. Once again, the optimal outcome in this scenario occurs under Strategy B, Promote DER. Under this strategy, TVA's revenue requirements actually decline over the 2019 – 2038 timeframe. This is accompanied by a slight increase in overall spending on in-Valley DER and EE programs. (See Table J-7 and Figure J-4) The second most attractive alternative, albeit with a decline in PCI, is Strategy E – Promote Renewables, as it reflects the smallest absolute increase in revenue requirements among the three remaining cases.

Table J-7: Valley Load Growth - Revenue Requirements vs In-Valley Spend.

Growth Economy - 3*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	($716)	$319	-225%
C - Promote Resiliency	$2,734	$2,811	97%
D - Promote Efficient Load Shape	$9,341	$8,838	106%
E - Promote Renewables	$1,755	$1,633	107%

*all values in Mil. 2018-$

Appendix J: Method for Computing Valley Economic Impacts

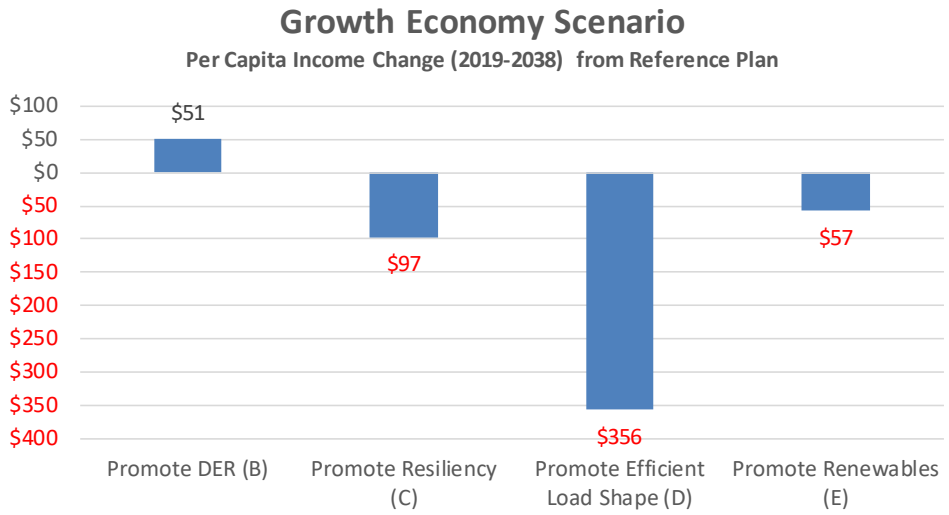


Figure J-4: Valley Load Growth PCI.

J.8 Results – Decarbonization Scenario

The Decarbonization Scenario models a regulatory environment in which there are significant carbon taxes that impact the relative efficiency of alternative strategies. These taxes translate into generally slower economic growth, although not as severe as in the Economic Downturn case.

Table J-8: Decarbonization - Revenue Requirements vs In-Valley Spend.

De-Carbonized Future - 4*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	$318	$1,789	18%
C - Promote Resiliency	$841	$1,554	54%
D - Promote Efficient Load Shape	$4,501	$5,153	87%
E - Promote Renewables	$730	$938	78%

*all values in Mil. 2018-$

In the scenario, Strategy B – Promote DER, provides a positive boost to PCI as shown in the following figure. It reflects the smallest level of increased revenue requirements yet the second highest program spending level of all the Decarbonization cases. This translates into a modest increase in average PCI over the forecast period. (See Table J-8 and Figure J-5)

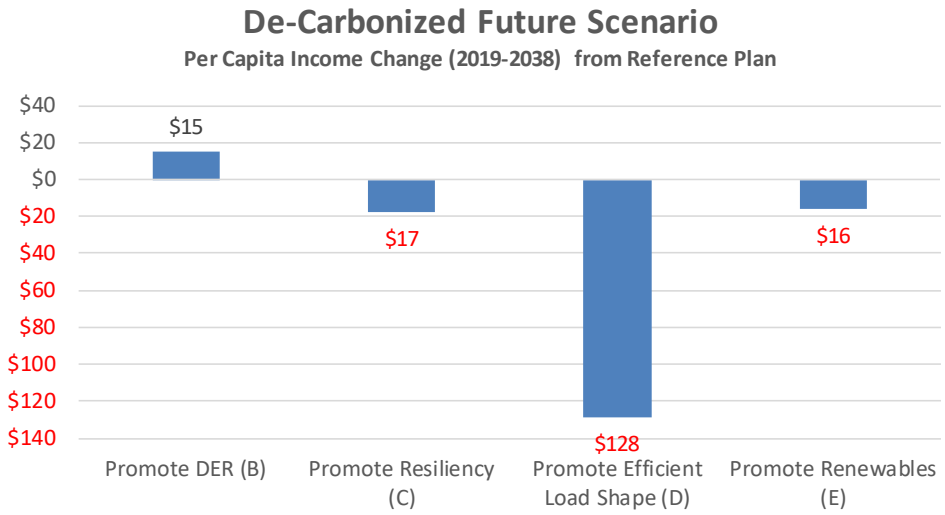


Figure J-5: De-Carbonized Future PCI.

J.9 Results – Rapid DER Scenario

The Rapid DER Scenario models a world in which there is a dramatic leap forward in technology which drives a strong shift toward distributed energy resources, both from a generation, energy storage, and efficiency perspective. Given the nature of the material technological shift in this scenario, none of the four strategies improves upon the Base Case results from an economic impact perspective, likely because with a rapid private sector shift in DER investment, any incremental TVA expenditures do not have as significant an impact on the Valley economy. However, Strategy B, which entails the smallest increase in RR, translates into the smallest absolute decline in PCI across these strategies. (See Table J-9 and Figure J-6)

Table J-9: Rapid DER - Revenue Requirements vs In-Valley Spend.

Rapid DER - 5*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	$337	$276	122%
C - Promote Resiliency	$995	$1,292	77%
D - Promote Efficient Load Shape	$4,398	$4,589	96%
E - Promote Renewables	$2,131	$2,006	106%

*all values in Mil. 2018-$

Appendix J: Method for Computing Valley Economic Impacts

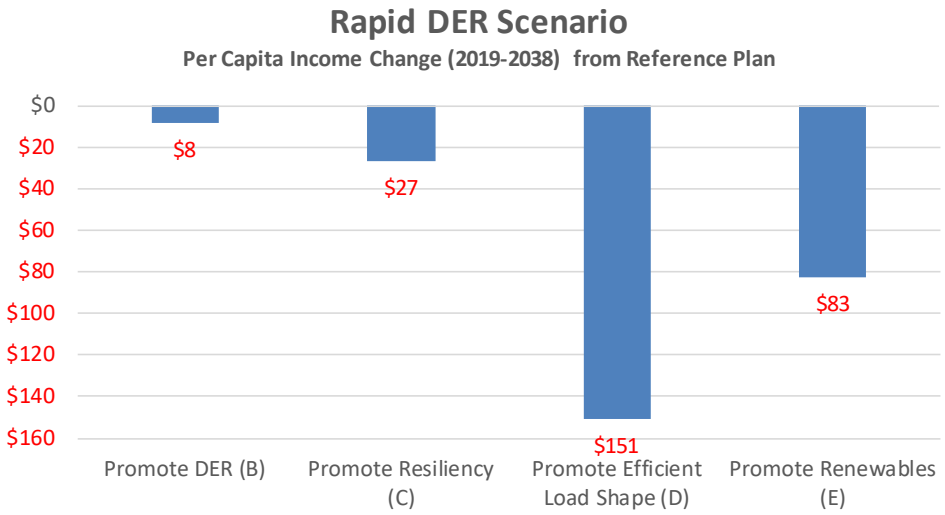


Figure J-6: Rapid DER PCI.

J.10 Results – No Nuclear Extensions Scenario

The No Nuclear Extensions Scenario models a world in which TVA is unable to relicense its Browns Ferry units, and must rely upon investments in small modular reactors and increased utility and/or customer-owned supply options. As a result of the increase in generation costs in this Base Case, PCI generally declines in all these cases. However, Strategy B does reflect a small decrease in RR, translating into a slight rebound in PCI relative to the Base Case. Given the material shortfall in TVA generation due to the loss of a major base load nuclear resource, the paybacks to a small increment of DER spend is positive. (See Table J-10 and Figure J-7)

Table J-10: Nuclear Retirement - Revenue Requirements vs In-Valley Spend.

Nuclear Retirements - 6*	Revenue Requirements	In-Valley Capital, Fixed O&M, & EE	Ratio RR vs Spend
B - Promote DER	($129)	$724	-18%
C - Promote Resiliency	$9,102	$10,686	85%
D - Promote Efficient Load Shape	$3,433	$3,704	93%
E - Promote Renewables	$1,205	$1,850	65%

*all values in Mil. 2018-$

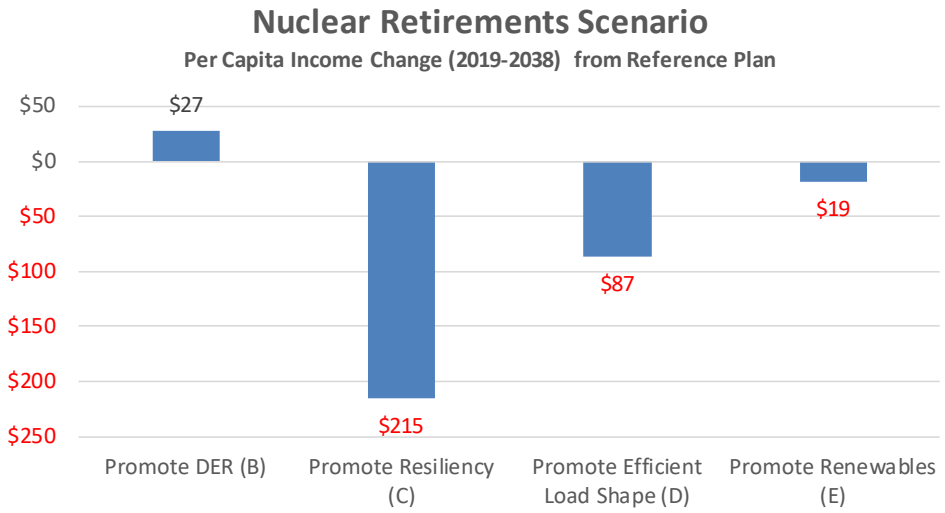


Figure J-7: Nuclear Retirement PCI.

J.11 Conclusion

There are multiple approaches to meeting the TVA region's power needs. This analysis compared the economic impact of alternative strategies to that of the Base Case for each respective scenario. Each strategy involved changing the level of in-Valley expenditures and the magnitude of electricity bills required to satisfy each strategy's funding needs. Using REMI's PI+ general equilibrium model tailored to the TVA service territory, the impact on real per capita income of alternative strategies for meeting power demand was evaluated. By using custom industry models and base REMI capabilities, the impacts of different types of expenditures (e.g., renewable construction, non-renewable construction, non-fuel O&M) were modeled explicitly.

Under most scenarios Strategy B, Promote DER, generated the largest gains in real per capita income over and above the Base Case. These programs generally entailed the smallest change in RR. However, Strategy B results in the highest Total Resource Cost due to the increased net participant cost from distributed resources not directly reflected in the estimation of the economic impact metrics. Overall, the impact of all alternative strategies on real per capita income was very small. Across all scenarios and strategies the average percentage change in real per capita income from 2019 through 2038 ranged from -0.04 percent to 0.01 percent. The present value of the stream of annual differences is small as well. The inherent forecast uncertainty in the economic projections alone will likely far exceed these magnitudes of change across the various strategies. Any material increase in program spending on TVA's part, while generating spin-off economic impacts, also entails increased RR to fund it. This results in secondary impacts on regional inflation, population migration patterns, and manufacturing employment, which tend to mitigate the resulting impacts on inflation-adjusted (real) per capita income for the region.



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Power Contract

See Supp 21, 10/1/89

TV-47356A

See TV-47356A Supp. No. 28 6/21/91

See TV-47356A, S. 29, 3-1-92

See Supp 41, 3/1/96. See Supp. No. 48, 10/2/96

POWER CONTRACT
Between
TENNESSEE VALLEY AUTHORITY
And
CITY OF JACKSON, TENNESSEE

THIS CONTRACT, made and entered into as of the 12th day of August, 1977, by and between TENNESSEE VALLEY AUTHORITY (hereinafter called "TVA"), a corporation created and existing under and by virtue of the Tennessee Valley Authority Act of 1933, as amended (hereinafter called "TVA Act"), and CITY OF JACKSON (hereinafter called "Municipality"), a municipal corporation duly created, organized, and existing under and by virtue of the laws of the State of Tennessee;

W I T N E S S E T H:

WHEREAS, the TVA Act authorizes TVA to sell the power generated by it and not used in its operations to States, counties, municipalities, corporations, partnerships, or individuals according to the policies therein set forth; and

WHEREAS, the TVA Act provides that the sale of such power shall be primarily for the benefit of the people of the section as a whole and particularly the domestic and rural consumers, to whom it is desired to make power available at the lowest possible rates; and

WHEREAS, Municipality owns an electric system which is managed and operated by a board of utility commissioners (hereinafter called "Board") and in the operation thereof is presently purchasing and desires to continue to purchase its entire power requirements from TVA; and

WHEREAS, the parties wish to enter into a new contract to replace their present power contract;

NOW, THEREFORE, in consideration of the mutual promises herein contained and subject to the provisions of the TVA Act, the parties agree as follows:

1. Purpose of Contract. It is hereby recognized and declared that, pursuant to the obligations imposed by the TVA Act, Municipality's operation of a municipal electric system and TVA's wholesale service thereto are primarily for the benefit of the consumers of electricity. Toward that end, Municipality agrees that the electric system shall be operated on a nonprofit basis, and that electric system funds and accounts shall not be mingled with other funds or accounts of Municipality. Municipality may, as hereinafter provided, receive from the operation thereof for the benefit of its general funds only an amount in lieu of taxes representing a fair share of the cost of government properly to be borne by such system. In accordance with these principles, which are mutually recognized as of the essence of this contract, Municipality agrees that the electric system shall be operated and the system's financial accounts and affairs shall be maintained in full and strict accordance with the provisions of this contract.

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2. Power Supply.

(a) Subject to the other provisions of this contract, TVA shall produce and deliver to Municipality at the delivery point or points specified in or hereafter established under section 3 hereof and Municipality shall take and distribute the electric power required for service to Municipality's customers. Municipality shall keep TVA currently informed of any important developments affecting its probable future loads or service arrangements. TVA shall take account of all available information in making its forecasts of the loads of Municipality and of TVA's other customers. TVA shall make every reasonable effort to increase the generating capacity of its system and to provide the transmission facilities required to deliver the output thereof so as to be in a position to supply additional power therefrom when and to the extent needed to meet increases in their loads.

(b) Municipality shall be entitled to use the power made available hereunder to serve all consumers to whom the resale rate schedules specified in section 5(b) hereof are applicable except those TVA is entitled to serve directly, as provided below. TVA shall be entitled to serve directly any consumer to whom said resale rate schedules are not applicable, any federal installations excepting those with loads less than 5,000 kilowatts served from a general delivery point, and any consumer whose energy requirements in any month are more than 10 million kilowatthours plus the amount of energy, if any, delivered by Municipality to residential consumers under billings for the preceding June and received from TVA at the delivery point through which Municipality would receive the energy for such consumer if it were served by Municipality. The supply of power by TVA to Municipality for resale to any consumer which has a supply of 5,000 kilowatts or more of power other than that furnished by Municipality under said resale rate schedules, and the contract for such resale between Municipality and such consumer, shall be subject to such special arrangements as TVA may reasonably require. Nothing herein shall be construed as preventing Municipality and TVA from agreeing upon special arrangements for service to any consumer.

(c) It is recognized that from time to time there may be a consumer served by one party hereto which, because of changed conditions, may become a consumer which the other party is entitled to serve under the provisions of subsection (b) of this section. In any such case the parties hereto, unless otherwise agreed, shall make such arrangements (including making appropriate allowance for any otherwise unrecoverable investment made to serve such consumer) as may be necessary to transfer as soon as practicable such consumer to the party entitled to serve the consumer hereunder and the party originally serving said consumer shall cooperate in every way with the party entitled to serve the consumer in making arrangements for the latter to undertake such service including, without limitation, releasing the consumer from any then existing power contract from and after the effective date for initiating service under any contract between such consumer and the party entitled to serve it.

(d) Municipality shall keep TVA informed of any prospective developments affecting any individual load which uses or will use 5,000 kilowatts or more. As soon as practicable after receipt of information from Municipality regarding the prospective addition of, or increase in, any load of 5,000 kilowatts or larger which Municipality would be entitled to serve hereunder, TVA

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shall notify Municipality of the time schedule upon which the additional power required for such service could be made available to Municipality at the wholesale rates then in effect hereunder and, upon request, of any terms under which it could supply any power in advance of said schedule. Municipality shall not take and deliver such additional power for said load in advance of or in amounts larger than specified in said schedule except to the extent that it has made special arrangements with TVA to do so. TVA, by notice in writing to Municipality, may change the designated amount of 5,000 kilowatts appearing in this subsection (d) to such other amount as TVA deems necessary.

(e) The area limitations in the first three paragraphs of subsection (a) of section 15d of the TVA Act are incorporated herein by reference as fully as though set out herein, and this contract shall not be construed as permitting any arrangement by Municipality which would be inconsistent with those limitations.

(f) Notwithstanding any other provision of this section, TVA may, as a condition precedent to TVA's obligation to make power available, require Municipality to provide such assurances of revenue to TVA as in TVA's judgment may be necessary to justify the reservation, alteration, or installation by TVA of additional generation, transmission, or transformation facilities for the purpose of supplying power to Municipality.

3. Delivery and Receipt of Power. The power to be supplied hereunder shall be delivered at the delivery points designated below and, under normal operating conditions, shall be within commercial limits of 60 hertz and within 3 percent above or below the normal wholesale delivery voltage specified below for each delivery point; provided, however, that any normal wholesale delivery voltage of 46 kV or higher specified below may be changed by TVA from time to time upon notice to Municipality to a voltage level not more than 5 percent higher or lower than the voltage so specified. Substation transformers with a high-side voltage rating of 46 kV or above will be equipped with taps or other suitable means for adjusting for the changes in normal voltage set forth herein. The operating representatives of the parties may by mutual agreement provide for variations in wholesale delivery voltage other than those provided for herein when in their judgment such variations are necessary or desirable.

161-KV SIDE of the CARRIAGE HOUSE 161-KV SUBSTATION 161,000 (SUPP. 47, 6/21/96)

Delivery Point	Normal Wholesale Delivery Voltage
161-KV bus connection at TVA's Madison West 161-KV Switching Station 161,000, dated 5/6/98, Supp. 55	
46-kV side of TVA's South Jackson 161-kV Substation	46,000

* It is recognized that load growth and development and the maintenance of high quality service in Municipality's area may require new delivery points from time to time. Such new delivery points will be established by mutual agreement. In reaching such agreement Municipality and TVA shall be guided by the policy of providing the most economical of the practical combinations of transmission and distribution facilities, considering all pertinent factors, including any unusual factors applicable to the area involved.

* Point of connection of Municipality's Oakfield [illegible] to TVA [illegible] facilities

(See S# 18, dated 4-8-88)

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Neither party shall be responsible for installing at any delivery point equipment for the protection of the other's facilities, or for damages to the other's system resulting from the failure of its own protective devices, but each party agrees so to design, construct, and operate its system as not to cause undue hazards to the other's system.

4. Wholesale Rate. Attached hereto and made a part hereof is a "Schedule of Rates and Charges" wherein Municipality is referred to as "Distributor." Subject to the other provisions of this contract, Municipality shall pay for the power and energy supplied by TVA in accordance with the provisions of Wholesale Power Rate--Schedule WS.

The payments to be made hereunder shall be made solely and exclusively from the revenues of the electric system and shall not be a charge upon Municipality's general funds.

5. Resale Rates. In distributing electric energy in the area served by Municipality, the parties agree as follows:

(a) Municipality agrees that the power purchased hereunder shall be sold and distributed to the ultimate consumer without discrimination among consumers of the same class, and that no discriminatory rate, rebate, or other special concession will be made or given to any consumer, directly or indirectly.

(b) Municipality agrees to serve consumers, including all municipal and governmental customers and departments, at and in accordance with the rates, charges, and provisions set forth for the several classes thereof in Schedules RS-10, GS-10, and LS of said Schedule of Rates and Charges, and not to depart therefrom except as the parties hereto may agree upon surcharges, special minimum bills, or additional resale schedules for special classes of consumers or special uses of electric energy, and except as provided in subsection (c) next following.

For the purpose of uniform application, within the classes of consumers, of the provisions of the paragraph entitled "Payment" of said resale schedules, Municipality shall designate in its standard policy a period of not less than 10 days nor more than 20 days after date of the bill during which period the bill is payable as computed by application of the charges for service under the appropriate resale schedule, and shall further designate in said policy the percentage or percentages, if any, not to exceed 10 percent of the bill, computed as above provided, which will be added to the bill as additional charges for payment after the period so designated.

(c) If the rates and charges provided for in said resale schedules do not produce revenues sufficient to provide for the operation and maintenance of the electric system on a self-supporting and financially sound basis, including requirements for interest and principal payments on indebtedness incurred or assumed by Municipality for the acquisition, extension, or improvement of the electric system (hereinafter called "System Indebtedness"), Board and TVA shall agree upon, and Municipality shall put into effect promptly, such

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changes in rates and charges as will provide the increased revenues necessary to place the system upon a self-supporting and financially sound basis. If the rates and charges in effect at any time provide revenues that are more than sufficient for such purposes, as more particularly described in section 6 hereof, Board and TVA shall agree upon a reduction in said rates and charges, and Municipality shall promptly put such reduced rates and charges into effect.

6. Use of Revenues.

(a) Municipality agrees to use the gross revenues from electric operations for the following purposes:

(1) Current electric system operating expenses, including salaries, wages, cost of materials and supplies, power at wholesale, and insurance;

(2) Current payments of interest on System Indebtedness, and the payment of principal amounts, including sinking fund payments, when due;

(3) From any remaining revenues, reasonable reserves for renewals, replacements, and contingencies; and cash working capital adequate to cover operating expenses for a reasonable number of weeks; and

(4) From any revenues then remaining, tax equivalent payments into Municipality's general funds, as more particularly provided in section 2 of the Schedule of Terms and Conditions hereinafter referred to.

(b) All revenues remaining over and above the requirements described in subsection (a) of this section shall be considered surplus revenues and may be used for new electric system construction or the retirement of System Indebtedness prior to maturity; provided, however, that resale rates and charges shall be reduced from time to time to the lowest practicable levels considering such factors as future circumstances affecting the probable level of earnings, the need or desirability of financing a reasonable share of new construction from such surplus revenues, and fluctuations in debt service requirements.

7. Equal Opportunity. It is the policy of the federal government to provide equal employment opportunity, and in furtherance of that policy, it is the policy of TVA, as an agency of the federal government, to encourage equal employment opportunity in the various aspects of its programs, including the sale and distribution of TVA power. Accordingly, during the term of this power contract:

(a) Municipality will not discriminate against any employee or applicant for employment with its electric system because of race, color, religion, sex, or national origin. Municipality will take such affirmative action as is necessary to insure that all applicants are considered for employment and that all employees are treated in all aspects of employment without regard to their race, color, religion, sex, or national origin.

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(b) Municipality will, in all solicitations or advertisements for employees placed by or on behalf of the electric system, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) Municipality will cooperate and participate with TVA in the development of training and apprenticeship programs which will provide opportunities for applicants and prospective applicants for employment with the electric system to become qualified for such employment, and such cooperation will include access by authorized TVA representatives to its electric system's books, records, and accounts pertaining to training, apprenticeship, recruitment, and employment practices and procedures.

8. Terms and Conditions. Certain additional provisions of this contract are set forth in a "Schedule of Terms and Conditions," which is attached hereto and made a part hereof.

9. Rules and Regulations. Municipality hereby adopts the "Schedule of Rules and Regulations" attached hereto, in which Municipality is referred to as "Distributor." Such Rules and Regulations may be amended, supplemented, or repealed by Municipality at any time upon 30 days' written notice to TVA setting forth the nature of and reason for the proposed change. No change shall be made in said schedule, however, which is in violation of or inconsistent with any of the provisions of this contract.

10. Use of Lines for Transmission Purposes. TVA is hereby granted the privilege of using any electric lines of Municipality, to the extent of their capacity in excess of the requirements of Municipality, for the purpose of transmitting electric energy between adjoining portions of TVA's facilities or to other customers of TVA. TVA shall be obligated to pay Municipality the additional cost, including any additional fixed charges and operating and maintenance costs, imposed on Municipality by permitting use of its facilities to serve other customers of TVA, and to indemnify and save harmless Municipality from any damage or injury caused by TVA's exercise of such use.

11. Waiver of Defaults. Any waiver at any time by either party hereto of its rights with respect to any default of the other party or with respect to any other matter arising in connection with this contract shall not be considered a waiver with respect to any subsequent default or matter.

12. Transfer of Contract. Neither this contract nor any interest herein shall be transferable or assignable by Municipality without the consent of TVA.

13. Restriction of Benefits. No member of or delegate to Congress or resident commissioner or any agent or employee of TVA shall be admitted to any share or part of this contract or to any benefit to arise therefrom. However, nothing contained in this section shall be construed to extend to any citizen of Municipality under arrangements for the general benefit of Municipality.

14. Termination of Existing Contracts. It is hereby agreed that the power contract dated April 1, 1957, and numbered TV-19330A, as supplemented and amended, between the parties is terminated as of the effective date of this contract; provided, however, that nothing herein contained shall be construed as

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effecting the termination of (1) Lease-Purchase Agreement TV-19330A, Supplement No. 12, dated November 30, 1976, between the parties hereto relative to the lease and eventual purchase by Municipality of sections of TVA's South Jackson-Humboldt and South Jackson-Morris 46-kV Transmission Lines and (2) section 3 of Agreement TV-19330A, Supplement No. 10, dated December 28, 1976, between the parties hereto relative to application of a monthly facilities rental credit to billings under Wholesale Power Rate--Schedule WS, it being the intention of the parties that each of said agreements, or portions thereof, shall remain in full force and effect for the term of this contract unless sooner terminated in accordance with the provisions of each agreement. All references in said agreements or portions thereof, to the power contract dated April 1, 1957, shall be deemed to refer to this contract.

15. Term of Contract. This contract shall become effective as of September 1, 1977, and shall continue in effect for 20 years from said date, subject to termination by either party, effective not earlier than 10 years from said date, on not less than four years' prior written notice. If Municipality should give notice of termination hereunder, TVA shall be under no obligation from the date of receipt of such notice to make or complete any additions to or changes in any transformation or transmission facilities for service to Municipality unless Municipality agrees to reimburse TVA for its nonrecoverable costs in connection with the making or completion of such additions or changes.

IN WITNESS WHEREOF, the parties hereto have caused this contract to be executed by their duly authorized officers, as of the day and year first above written.

Approved by TVA
Board of Directors
AUG 25 1977

Attest: (SEAL)

s/ M.E.
Assistant Secretary

TENNESSEE VALLEY AUTHORITY

s/ Madge Evans
Assistant Secretary

By s/ Lynn Seeber
General Manager

s/ JMc
Law

Attest:

CITY OF JACKSON, TENNESSEE
By Board of Utility Commissioners

s/ Joe H. Exum
(Title) General Manager

By s/ James W. Hoppers
Chairman

Attest:

Approved:
CITY OF JACKSON, TENNESSEE

s/ James A. Wolfe, Jr.
(Title) City Recorder

By s/ Robert D. Conger
Mayor

EAS000905

Outdoor Lighting

OUTDOOR LIGHTING RATE--SCHEDULE LS
(October 1976)

Availability

Available for service to street and park lighting systems, traffic signal systems, athletic field lighting installations (during prescribed use-period), and outdoor lighting for individual customers.

Service under this schedule is for a term of not less than one year.

PART A—CHARGES FOR STREET AND PARK LIGHTING SYSTEMS, TRAFFIC SIGNAL SYSTEMS, AND ATHLETIC FIELD LIGHTING INSTALLATIONS

I. Energy Charge: 1.984 cents per kilowatthour as increased or decreased in accordance with Appendix I to the Schedule of Rates and Charges

Adjustment

The customer's bill for each month shall be increased or decreased in accordance with the current Adjustment Addendum published by TVA.

II. Investment Charge

The annual investment charge shall be 10 percent of the installed cost to Distributor's electric system of the facilities devoted to street and park lighting service specified in this Part A. Such installed cost shall be recomputed on July 1 of each year, or more often if substantial changes in the facilities are made. Each month, one-twelfth of the then total annual investment charge shall be billed to the customer. If any part of the facilities has not been provided at the electric system's expense or if the installed cost of any portion thereof is reflected on the books of another municipality or agency or department, the annual investment charge shall be adjusted to reflect properly the remaining cost to be borne by the electric system.

Traffic signal systems and athletic field lighting installations shall be provided, owned, and maintained by and at the expense of the customer, except as Distributor may agree otherwise in accordance with the provisions of the paragraph next following in this Section II. The facilities necessary to provide service to such systems and installations shall be provided by and at the expense of Distributor's electric system, and the annual investment charge provided for first above in this Section II shall apply to the installed cost of such facilities.

When so authorized by policy duly adopted by Distributor's governing board, traffic signal systems and athletic field lighting installations may be provided, owned, and maintained by Distributor's electric system for the customer's benefit. In such cases Distributor may require reimbursement from the customer for a portion of the initial installed cost of any such system or installation and shall require payment by the customer of an investment charge sufficient to cover all of Distributor's costs (except reimbursed costs), including appropriate overheads, of providing, owning, and maintaining such system or installation; provided that, for athletic field lighting installations, such investment charge shall in no case be less than 12 percent per year of such costs. Said investment charge shall be in addition to the annual investment charge on the facilities necessary to provide service to such system or installation as provided for in the preceding paragraph. Replacement of lamps and related glassware for traffic signal systems and athletic field lighting installations provided under this paragraph shall be paid for under the provisions of paragraph A in Section III.

III. Replacement of Lamps and Related Glassware - Street and park lighting.

Customer shall be billed and shall pay for replacements as provided in paragraph A below, which shall be applied to all service for street and park lighting.

A. Distributor shall bill the customer monthly for such replacements during each month at Distributor's cost of materials, including appropriate storeroom expense.

B. Distributor shall bill the customer monthly for one-twelfth of the amount by which Distributor's cost of materials, including appropriate storeroom expense, exceeds the product of 3 mills multiplied by the number of kilowatthours used for street and park lighting during the fiscal year immediately preceding the fiscal year in which such month occurs.

EAS000907

Metering

For any billing month or part of such month in which the energy is not metered or for which a meter reading is found to be in error or a meter is found to have failed, the energy for billing purposes for that billing month or part of such month shall be computed from the rated capacity of the lamps (including ballast) plus 5 percent of such capacity to reflect secondary circuit losses, multiplied by the number of hours of use.

Use-Period For Athletic Field Lighting

Service to athletic field lighting installations under this rate schedule shall not commence earlier than 7 p.m., except that the customer may be permitted to use up to 10 percent (not to exceed 10 kilowatts) of the total installed lighting capacity prior to commencement of such period. In the event the customer fails to restrict service in accordance with these requirements, it shall be billed under the General Power Rate.

Revenue and Cost Review

Distributor's costs of providing service under Part A of this rate schedule are subject to review at any time and from time to time to determine if Distributor's revenues from the charges being applied are sufficient to cover said costs. If any such review discloses that revenues are either less or more than sufficient to cover said costs, Distributor shall revise the above investment charges so that revenues will be sufficient to cover said costs. Any such revision of the annual investment charge provided for first above in Section II of Part A of this rate schedule shall be by agreement between Distributor and TVA.

PART B--CHARGES FOR OUTDOOR LIGHTING FOR INDIVIDUAL CUSTOMERS

Charge Per Fixture

Type of Fixture	Lamp Size (Watts)	Base Monthly Charge
Mercury Vapor or Incandescent*	175	$ 3.00
	250	3.50
	400	4.75
	700	7.75
	1,000	10.00
High Pressure Sodium	100	3.50
	150	3.75
	250	5.00
	400	6.50
	1,000	14.00

*Incandescent fixtures not offered for new service.

The above charges in this Part B are limited to service from a photoelectrically controlled standard street lighting fixture installed on a pole already in place. If the customer wishes to have the fixture installed at a location other than on a pole already in place, Distributor may apply a monthly charge not to exceed $2.00 per pole for additional poles required to serve the fixture from Distributor's nearest available source. Distributor may uniformly adjust the above base monthly charges up or down by an amount not to exceed $1.00.

When so authorized by policy duly adopted by Distributor's governing board, special outdoor lighting installations may be provided, owned, and maintained by Distributor's electric system. In such cases Distributor may require reimbursement from the customer for a portion of the initial installed cost of any such installation and shall require payment by the customer of monthly charges sufficient to cover all of Distributor's costs (except reimbursed costs), including appropriate overheads, of providing, owning, and maintaining such installations.

Lamp Replacements

Replacements of lamps and related glassware will be made in accordance with replacement policies of Distributor without additional charge to the customer.

Payment

Bills under this rate schedule will be rendered monthly. Any amount of bill unpaid after due date specified on bill may be subject to additional charges under Distributor's standard policy.

Service is subject to Rules and Regulations of Distributor.

EAS000908

GENERAL POWER RATE--SCHEDULE GS-10
(October 1976)

Availability

This rate shall apply to the firm power requirements for electric service to commercial, industrial, and governmental customers; institutional customers including, without limitation, churches, clubs, fraternities, orphanages, nursing homes, rooming or boarding houses, and like customers; and other customers except those to whom service is available under other resale rate schedules.

Character of Service

Alternating current, single or three-phase, 60 hertz. Under A below power shall be delivered at a voltage available in the vicinity or agreed to by Distributor. Under B below power shall be delivered at a transmission voltage of 161 kV or, if such transmission voltage is not available, at the highest voltage available in the vicinity, unless at the customer's request a lower standard voltage is agreed upon.

Base Charges

A. If the customer's demand for the month and its contract demand, if any, are each 5,000 kilowatts or less:

Customer Charge: $3.10 per delivery point per month

Demand Charge:

First 50 kilowatts of demand per month, no demand charge
Next 50 kilowatts of demand per month, at $1.90 per kilowatt
Excess over 100 kilowatts of demand per month, at $2.20 per kilowatt

Energy Charge:

First 500 kilowatthours	per	month	at	2.523	cents	per	kWh*
Next 14,500	"	"	"	2.103	"	"	kWh*
Next 25,000	"	"	"	1.237	"	"	kWh*
Next 60,000	"	"	"	1.147	"	"	kWh*
Next 400,000	"	"	"	1.047	"	"	kWh*
Additional	"	"	"	1.007	"	"	kWh*

*as increased or decreased in accordance with Appendix I to the Schedule of Rates and Charges

B. If either the customer's demand for the month or its contract demand is greater than 5,000 kilowatts:

Customer Charge: $1,000 per delivery point per month

Demand Charge: $1.91 per kilowatt of demand per month

Additional charge for any demand in excess of customer's contract demand: $1.91 per kilowatt per month

Energy Charge: 0.993 cent per kilowatthour per month as increased or decreased in accordance with Appendix I to the Schedule of Rates and Charges

Facilities Rental Charge Applicable Under B Above

There shall be no facilities rental charge under this rate schedule for delivery at bulk transmission voltage levels of 161 kV or higher. For delivery at less than 161 kV, there shall be added to the customer's bill a facilities rental charge. This charge shall be 20 cents per kW per month except for delivery at voltages below 46 kV, in which case the charge shall be 55 cents per kW per month for the first 10,000 kW and 30 cents per kW per month for the excess over 10,000 kW. Such charge shall be applied to the customer's currently effective contract demand and shall be in addition to all other charges under this rate schedule including minimum bill charges.

Adjustment

The customer's bill for each month shall be increased or decreased in accordance with the current Adjustment Addendum published by TVA.

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Determination of Demand

Distributor shall measure the demands in kilowatts of all customers having loads in excess of 50 kilowatts. The demand for any month shall be the higher of the highest average during any 30-consecutive-minute period of the month of (a) the load measured in kilowatts or (b) 85 percent of the load in kVA plus an additional 10 percent for that part of the load over 5,000 kVA, and such amount shall be used as the billing demand except that, under B above, the billing demand for any month shall in no case be less than the sum of (1) 40 percent of the first 5,000 kilowatts, (2) 70 percent of the next 45,000 kilowatts, and (3) 90 percent of all kilowatts in excess of 50,000 kilowatts of the higher of the currently effective contract demand or the highest billing demand established during the preceding 12 months.

Minimum Bill

The monthly bill under A above shall [illegible]

RESIDENTIAL RATE--SCHEDULE RS-10
(October 1976)

Availability

This rate shall apply only to electric service to a single family dwelling and its appurtenances, where the major use of electricity is for domestic purposes such as lighting, household appliances, and the personal comfort and convenience of those residing therein. Any such dwelling in which space is occasionally used for the conduct of business by a person residing therein may be served under this rate. Where a portion of a dwelling is used regularly for the conduct of business, the electricity consumed in that portion so used shall be separately metered and billed under the General Power Rate; if separate circuits are not provided by the customer, service to the entire premises shall be billed under the General Power Rate.

Character of Service

Alternating current, single-phase, 60 hertz. Voltage supplied shall be at the discretion of Distributor and shall be determined by the voltage available from distribution lines in the vicinity and/or other conditions. Multi-phase service shall be supplied in accordance with Distributor's standard policy.

Base Charges

Customer Charge: $2.10 per delivery point per month

Energy Charge:
First 500 kilowatthours per month at 1.847 cents per kilowatthour*
Additional " " " " 1.717 " " kilowatthour*

*as increased or decreased in accordance with Appendix I to the Schedule of Rates and Charges

Adjustment

The customer's bill for each month shall be increased or decreased in accordance with the current Adjustment Addendum published by TVA.

Minimum Monthly Bill

The customer charge constitutes the minimum monthly bill for all customers served under this rate schedule except those customers for which a higher minimum monthly bill is required under Distributor's standard policy because of special circumstances affecting Distributor's cost of rendering service.

Payment

Bills under this rate schedule will be rendered monthly. Any amount of bill unpaid after due date specified on bill may be subject to additional charges under Distributor's standard policy.

Single-Point Delivery

The charges under this rate schedule are based upon the supply of service through a single delivery and metering point, and at a single voltage. If service is supplied to the same customer through more than one point of delivery or at different voltages, the supply of service at each delivery and metering point and at each different voltage shall be separately metered and billed under this rate schedule.

Service is subject to Rules and Regulations of Distributor.

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TENNESSEE VALLEY AUTHORITY
SCHEDULE OF RATES AND CHARGES

WHOLESALE POWER RATE--SCHEDULE WS
(October 1976)

Availability

Firm power available under long-term contracts with, and for distribution and resale by, States, counties, municipalities, and cooperative organizations of citizens or farmers, all referred to herein as "Distributor."

Base Charges

Delivery Point Charge:	$1,500 per delivery point per month
Demand Charge:	$1.81 per kilowatt of demand per month
Energy Charge:	0.950 cent per kilowatthour per month as increased or decreased in accordance with Appendix I to the Schedule of Rates and Charges

Adjustments

1. Distributor's bill for each month shall be increased or decreased in accordance with the current Adjustment Addendum published by TVA.

2. Distributor's bill for each month shall be adjusted by adding to the bill 10 cents per kW and 0.02 cent per kWh for power and energy resold by Distributor in the preceding month to any consumer which has a billing demand of more than 10,000 kW or which uses more than 5 million kWh (herein referred to as a large load), except that such adjustment shall not apply to any portion of a large load up to the following respective amounts: 10,000 kW plus an amount (not to exceed 20,000 kW) equal to that portion of Distributor's demand at the TVA delivery point from which such large load is served by Distributor which is in excess of the sum of the billing demands of all large loads served by Distributor from that delivery point; 5 million kWh plus an amount (not to exceed 15 million kWh) equal to that portion of Distributor's purchases of energy at the TVA delivery point from which such large load is served by Distributor which is in excess of the energy resold to all large loads served by Distributor from that delivery point.

Determination of Demand

The demand for any month shall be the highest average during any 60-consecutive-minute period of the month of (a) the load measured in kilowatts or (b) 85 percent of the load in kVA plus 10 percent of the excess over 5,000 kVA of the maximum kVA demand for the month for each individual consumer, whichever is the higher.

Facilities Rental

There shall be no facilities rental charge under this rate schedule for delivery at bulk transmission voltage levels of 161 kV or higher. For delivery at less than 161 kV, there shall be added to Distributor's bill a facilities rental charge. This charge shall be 20 cents per kW per month, except for delivery at voltages below 46 kV, in which case the charge shall be 55 cents per kW per month for the first 10,000 kW and 30 cents per kW per month for the excess over 10,000 kW. Such charge shall be applied to the highest billing demand established at each delivery point during the latest 12-consecutive-month period and shall be in addition to all other charges under this rate schedule including minimum bill charges.

Minimum Bill

The monthly bill, exclusive of Adjustment 2, shall not be less than the higher of (1) the base delivery point charge or (2) 70 percent of the highest billing demand established during the previous 36 months multiplied by the base demand charge (adjusted for the portion of the current Adjustment Addendum applicable to the Distributor's billing demand as provided in Adjustment 1 above). At Distributor's request, in lieu of such minimum bill being applied individually in the case of two or more delivery points through each of which less than half of the energy taken by Distributor is resold to lighting and power consumers with demands of 50 kW or more, the minimum bill, exclusive of Adjustment 2, for any month for such delivery points, considered together, shall instead be an amount equal to the sum of the minimum bills which would otherwise have been applicable to such delivery points for such month; provided, however, that a special minimum bill shall be applied for any delivery point through which more than 75 percent of the energy taken by Distributor is resold to lighting and power consumers with demands of 50 kW or more.

Single-Point Delivery

The charges under this rate schedule are based upon the supply of service through a single delivery and metering point, and at a single voltage. If service is supplied to Distributor through more than one point of delivery or at different voltages, the supply of service at each delivery and metering point and at each different voltage shall be separately metered and billed under this rate schedule.

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Schedule of Terms

SCHEDULE OF TERMS AND CONDITIONS

1. Financial and Accounting Policy. Municipality agrees to be bound by the following statement of financial and accounting policy:

(a) Except as hereinafter provided, Municipality shall administer, operate, and maintain the electric system as a separate department in all respects, shall establish and maintain a separate fund for the revenues from electric operations, and shall not directly or indirectly mingle electric system funds or accounts, or otherwise consolidate or combine the financing of the electric system, with those of any other of its operations. The restrictions of this subsection include, but are not limited to, prohibitions against furnishing, advancing, lending, pledging, or otherwise diverting electric system funds, revenues, credit or property to other operations of Municipality, the purchase or payment of, or providing security for, indebtedness or other obligations applicable to such other operations, and payment of greater than standardized or market prices for property or services from other departments of Municipality. In the interest of efficiency and economy, Municipality may use property and personnel jointly for the electric system and other operations, subject to agreement between Municipality and TVA as to appropriate allocations, based on direction of effort, relative use, or similar standards, of any and all joint investments, salaries and other expenses, funds, or use of property or facilities.

(b) Municipality shall keep the general books of accounts of the electric system according to the Federal Power Commission Uniform System of Accounts. Municipality shall allow the duly authorized agents of TVA to have free access at all reasonable times to all books and records relating to electric system operations. TVA may provide advisory accounting service, in reasonable amount, to help assure the proper setting up and administering of such accounts.

(c) Municipality shall supply TVA not later than August 15 of each year with an annual financial report in such form as may be requested, of electric system transactions for the preceding year ending June 30 and of electric system assets and liabilities as of June 30. Municipality shall furnish promptly to TVA such monthly operating, statistical, and financial statements relating to electric system operations as may reasonably be requested by TVA. In the event of failure to furnish promptly such statements TVA, following written notification to Municipality of intention so to do, may with its own staff perform at Municipality's expense all work necessary to collect such data.

(d) Municipality shall have the electric system financial statements examined annually by independent certified public accountants in accordance with generally accepted auditing standards and shall publish the financial statements, along with the auditor's certificate, in a newspaper of general circulation in the area.

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2. Payments in Lieu of Taxes. Municipality may pay or cause to be paid from its electric system revenues for each year beginning July 1 (hereinafter called "fiscal year," the first such fiscal year for purposes hereof being the year beginning July 1, 1969), an amount for payments in lieu of taxes (hereinafter called "tax equivalents") on its electric system and electric operations which, in the judgment of Municipality's governing body after consultation with the supervisory body, shall represent the fair share of the cost of government properly to be borne thereby, subject, however, to the following conditions and limitations:

(a) The total amount so paid as tax equivalents for each fiscal year shall not exceed a maximum equal to the sum of the following:

(1) One and one-half times the weighted average effective tax rates of the respective taxing jurisdictions as of the beginning of each fiscal year, determined as hereinafter provided in this section, multiplied by the net plant values of the electric plant in service and the book values of materials and supplies within the respective taxing jurisdictions in which Municipality's electric system is located as of the beginning of such fiscal year; and

(2) Two and one-half percent of the adjusted net distribution plant value of electric plant in service within the corporate limits of Municipality and of any other city taxing jurisdiction as of the beginning of each fiscal year; and

(3) One and one-half percent of the adjusted net distribution plant value of electric plant in service outside the corporate limits of Municipality and of any other city taxing jurisdictions as of the beginning of each fiscal year.

(b) Notwithstanding the foregoing, until the first fiscal year in which the aforesaid maximum amount for payments in lieu of taxes calculated as provided in subparagraph (a) of this section exceeds the total of (1) and (2) of this subparagraph (b), the maximum total tax equivalent that may be paid for any fiscal year shall not be less than the sum of the following:

(1) The highest total annual amount in lieu of taxes taken or paid from Municipality's electric system funds prior to April 1, 1969, for any one of the three consecutive calendar years ending with calendar year 1968, increased by the same percentage as that by which the net plant value has increased from December 31, 1968, through June 30, 1969; and

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(2) The amount by which the result of the calculation of item (1) in subparagraph (a) of this section for such fiscal year exceeds the result of such a calculation for the year ending with June 30, 1969.

Thereafter, such maximum for any fiscal year shall not exceed the aforesaid maximum calculated as provided in subparagraph (a) of this section. All such maximum amounts shall be subject to the conditions and limitations of subparagraphs (c), (d), and (e) of this section.

(c) Such tax equivalent payments shall be made only from current electric system revenues remaining after payment of or making reasonable provision for payment of (i) current operating expenses of the electric system, including without limitation salaries, wages, cost of materials and supplies, cost of power, and insurance; (ii) current payments of interest on electric system indebtedness, and payment of principal thereof, including amortization, reserve and sinking fund payments, when due; and (iii) reasonable reserves for renewals, replacements, and contengencies and for cash working capital.

(d) The total tax equivalent to be paid for each fiscal year shall be in lieu of all State, county, city, and other local taxes or charges on Municipality's electric system and electric operations except as provided in subparagraph (f) of this section. Accordingly, after initial determination of such total tax equivalent to be paid in the absence of any such taxes or charges, such total tax equivalent shall be reduced by the aggregate amount of any taxes or other charges imposed for such fiscal year on Municipality's electric system or electric operations for the benefit of the respective taxing jurisdictions (including Municipality) in which Municipality's electric system is located and in which such electric operations are conducted, whether or not such taxes or other charges were imposed by the respective taxing jurisdictions receiving the benefit thereof. It shall be the responsibility of Municipality to provide for allocation of such total tax equivalent among the taxing jurisdictions in which Municipality's electric system is located in accordance with applicable law or contracts, but any amount so allocated to any such taxing jurisdiction shall be reduced by the aggregate amount of any such tax or other charges imposed for that fiscal year for the benefit of that taxing jurisdiction. Only the respective amounts remaining after the aforesaid allocated amounts have been so reduced shall be actually paid to Municipality and to such other taxing jurisdictions.

(e) The amounts to be paid for each fiscal year to Municipality and to each other taxing jurisdiction, determined in accordance with and subject to the provisions of this section 2, shall be set forth in a resolution adopted by Municipality's governing

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body after consultation with the supervisory body, and Municipality's electric system shall pay such amounts to Municipality and the other taxing jurisdictions as provided in said resolution. Such determination shall be made as early in such fiscal year as possible and shall become final at the end of such year; provided, however, that any reductions in such amounts required by subsection (d) above, to the extent not made during such year, shall be made in the succeeding years until the full adjustments are completed.

(f) Notwithstanding anything in the foregoing which might be construed to the contrary, properly authorized retail sales or use taxes on electric power or energy at the same rates applicable generally to sales or use of personal property or services, including natural or artificial gas, coal, and fuel oil as well as electric power or energy, imposed upon the vendees or users thereof by the State, a county, or a city (including Municipality) on a statewide, countywide, or citywide basis, respectively, shall not be considered a tax or charge on Municipality's electric system or its electric operations or properties for purposes of this section 2.

For purposes of this section 2, the following terms shall have the following meanings:

(a) "Electric system" shall mean all tangible and intangible property and resources of every kind and description used or held for use in the purchase, transmission, distribution, and sale, but not the generation, of electric energy.

(b) "Electric operations" shall mean all activities associated with the establishment, development, and administration of an electric system and the business of supplying electricity and associated services to the public, including without limitation the generation, purchase, and sale of electric energy and the purchase, use, and consumption thereof by ultimate consumers.

(c) "Supervisory body" shall mean any board or other agency of Municipality established to supervise the management and operation of its electric system and electric operations, or, in the absence thereof, the governing body of Municipality.

(d) The term "weighted average effective tax rate" of any taxing jurisdiction shall mean the actual ad valorem real property tax rate in effect multiplied by the weighted average ratio of the assessed value to market value of all classes or real property within such taxing jurisdiction. Said weighted average ratio of assessed to market value for any taxing jurisdiction shall be determined by dividing (1) the total actual assessed valuation of all classes of taxable real

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property within such jurisdiction, by (2) the total market value of the same classes of taxable real property within the jurisdiction included in (1), calculated from the assessment ratios determined and published by any authorized agency of the State of Tennessee or, in the absence thereof, by the Tennessee Taxpayers Association, or, if such information is unavailable from either of these sources, from the best information available. For purposes of this section 2, the weighted average effective tax rate in effect at the beginning of any fiscal year for any taxing jurisdiction shall be deemed to be the weighted average effective tax rate of such taxing jurisdiction determined as provided in this paragraph for the tax year (calendar year) immediately preceding such fiscal year using the actual property tax rate and assessment ratios of such taxing jurisdiction in effect for such tax year.

(e) "Net plant value" shall mean the depreciated original cost of electric plant in service used and held for use in the transmission and distribution, but not the generation, of electricity as shown on the books of the electric system from time to time.

(f) "Adjusted net distribution plant value" shall mean net plant value less the depreciated original cost of (1) underground plant in service and (2) electric lines and equipment in service designed for operation at voltages in excess of 26,000 volts.

(g) "Electric plant in service" or "plant in service" shall have the meanings defined or ascribed to them in the Federal Power Commission's Uniform System of Accounts.

3. Municipality's Lines and Equipment. All lines and substations from the point or points of delivery (as defined in section 3 of the contract of which these Terms and Conditions are a part), and all electrical equipment, except metering equipment of TVA, located on Municipality's side of such point or points of delivery shall be furnished and maintained by Municipality. Municipality's electrical facilities shall conform to accepted modern standards. Failure to inspect for or to object to defects in such facilities shall not render TVA liable or responsible for any loss or damage resulting therefrom or from violation of the contract of which these Terms and Conditions are a part, or from accidents which may occur upon Municipality's premises.

4. Responsibility for Property of the Other Party. All equipment furnished by each party shall be and remain its property. Each party shall exercise proper care to protect any property of the other on its premises, and shall bear the cost of any necessary repairs or replacements arising from its neglect to exercise such proper care. The authorized employees of each party shall have access at all reasonable times to any of its facilities on the other's premises, for such purposes as reading its meters, and testing, repairing, or replacing its equipment.

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5. Measurement of Demand, Energy, and Power Factor. TVA will, at its own expense, install and maintain or cause to be installed and maintained the necessary metering equipment for measuring the maximum demand and the amount of energy furnished Municipality at each point of delivery. If, for economy or convenience, such equipment is located elsewhere than at the point of delivery, the readings shall be adjusted to reflect the quantities delivered at the point of delivery and such adjusted amounts shall be deemed to be the measured amounts for purposes of billing under Wholesale Rate Schedule WS. TVA may also, at its option, provide equipment to determine power factor. Municipality shall permit the use of its housing facilities, ducts and supports for TVA's metering equipment.

Municipality shall have the right at its own expense to install, equip, and maintain check meters in a mutually satisfactory location.

TVA will make periodical tests and inspections of its metering equipment in order to maintain a high standard of accuracy, and will make additional tests or inspections of its metering equipment at the request of Municipality. Municipality shall have the right to have representatives present at tests and meter readings. If any test shows that the metering equipment is accurate within two percent no adjustment of past readings will be made and, if the test was requested by Municipality, the testing charge will be paid by Municipality; all other tests shall be at TVA's expense. In case any test shows the meter reading to be in error more than two percent, a corresponding adjustment shall be made in Municipality's bills for any agreed period of error; in the absence of such agreement, the adjustment shall be limited to the current billing period. Should the metering equipment fail, the deliveries will be estimated by TVA from the best information available.

6. Billing. Payment for power and energy used in any monthly period shall become due fifteen days after TVA's meter reading date or seven days after the date of bill from TVA, whichever is later. To any amount remaining unpaid fifteen days after the due date, there shall be added a charge of one percent and an additional one percent shall be added for each succeeding thirty-day period until the amount is paid in full. Upon failure of Municipality to pay for the power and energy used in any monthly period within sixty days after due date, TVA shall have the right, upon reasonable notice, to discontinue the supply of power and energy and refuse to resume delivery so long as any part thereof remains unpaid. Discontinuance of supply under this section will not relieve Municipality of its liability for the agreed minimum monthly payment during the time the supply of energy is so discontinued. All payments shall be made to TVA at its offices at Chattanooga, Tennessee, or at such other place as TVA may from time to time designate. For purposes of billing, the term "month" in Wholesale Power Rate--Schedule WS and the term "monthly period" in this section are defined as the period from the meter reading time in one month to the meter reading time in the next month; provided, however, that with respect to the determination of demand said period shall begin and end at midnight prior to said meter reading times. Subject to such changes in TVA's meter reading scheduling as it deems necessary, meters shall be read on the same day of each month.

7. Adjustment and Change of Wholesale Rate and Resale Rates. The wholesale rate and resale rates provided in sections 4 and 5 of the contract shall

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be subject to adjustment and change from time to time in accordance with this section in order to assure TVA's ability to continue to supply the power requirements of Municipality and TVA's other customers on a financially sound basis with due regard for the primary objectives of the TVA Act, including the objective that power shall be sold at rates as low as feasible, and to assure Municipality's ability to continue to operate on a financially sound basis.

Wholesale power rates and charges shall be sufficient to produce revenue from TVA's wholesale power customers which, together with revenue from its other power customers, will assure TVA's ability each fiscal year to:

(a) meet the requirements of the TVA Act including particularly section 15d(f) thereof which provides in part that:

> The Corporation shall charge rates for power which will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to States and counties in lieu of taxes; debt service on outstanding bonds, including provision and maintenance of reserve funds and other funds established in connection therewith; payments to the Treasury as a return on the appropriation investment pursuant to subsection (e) hereof; payment to the Treasury of the repayment sums specified in subsection (e) hereof; and such additional margin as the Board may consider desirable for investment in power system assets, retirement of outstanding bonds in advance of maturity, additional reduction of appropriation investment, and other purposes connected with the Corporation's power business, having due regard for the primary objectives of the Act, including the objective that power shall be sold at rates as low as are feasible.

and (b) meet all tests and comply with the provisions of TVA's bond resolutions as from time to time adopted and amended in such a manner as to assure its ability to continue to finance and operate its power program at the lowest feasible cost.

Adjustment. TVA will review with Municipality or its representative, at least 30 days prior to the first day of each of the months of October, January, April, and July pertinent data concerning the current and anticipated conditions and costs affecting TVA's operations and the adequacy of its revenues from both wholesale and other power customers to meet the requirements of the TVA Act and the tests and provisions of its bond resolutions as provided in the second paragraph of this section. At least fifteen days prior to the first day of each of the aforesaid months, TVA will determine what adjustments, if any, are required in the demand and energy charges provided for in the then effective Schedule of Rates and Charges to assure (a) revenues to TVA adequate to meet the requirements of the TVA Act and the tests and provisions of its bond resolutions as provided in the second paragraph of this section and (b) revenues to Municipality adequate to compensate for changes, if any, in the cost of power to Municipality resulting from adjustments to Wholesale Power Rate--Schedule WS made under the provisions of this section. Such adjustments as TVA determines are required shall be incorporated by TVA in Adjustment Addendums to Wholesale Power Rate--Schedule WS and to the resale schedules of the Schedule of

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Rates and Charges, which Adjustment Addendums shall be promptly published by TVA by mailing the same to Municipality by registered mail and shall be applicable to bills rendered from meter readings taken for TVA and Municipality billing cycles scheduled to begin on or after the effective date of said Adjustment Addendum; provided that any adjustment determined by TVA to be necessary as hereinbefore provided shall not be conditioned upon or be postponed pending the review provided for in the first sentence of this paragraph or the completion of such review. Municipality shall pay for power and energy in accordance with Wholesale Power Rate--Schedule WS of the Schedule of Rates and Charges as so adjusted from time to time by any such Adjustment Addendums published by TVA as above provided, and shall adjust the charges in the resale schedules of the Schedule of Rates and Charges applicable to its customers in accordance with such Adjustment Addendums and the provisions of such resale schedules.

Change. Whenever any adjustment or adjustments made under the preceding paragraph, or the costs of TVA's service to Municipality and TVA's other customers, or the costs of Municipality's service to customers, or any other factors are believed by either party to warrant general or major changes in the Schedule of Rates and Charges, either party or its representative may request that the parties or their representatives meet and endeavor to reach agreement upon such changes. If within 180 days after any request for such changes the representatives of the parties for any reason have not agreed upon such changes, TVA may thereafter, upon not less than 30 days' notice by registered mail in which the basis for each change is set forth, place into effect such changes in the Schedule of Rates and Charges as it determines will enable TVA to carry out the objectives of the TVA Act and meet the requirements and tests and comply with the provisions of its bond resolutions as outlined in the second paragraph of this section and enable Municipality to continue on a financially sound basis as provided in section 5(c) of the contract and Municipality shall thereafter pay and charge for power and energy in accordance with the Schedule of Rates and Charges as so changed; provided, however, that unless the parties agree otherwise, any adjustment determined by TVA to be required under the provisions of the preceding paragraph of this section shall become effective without reference to, and shall not be delayed or postponed pending completion of, any actions under this paragraph.

8. Compensation for Additional Tax or in Lieu of Tax Payments. It is recognized that among the costs which the rates specified in Wholesale Power Rate--Schedule WS were designed to cover are annual payments in lieu of taxes by TVA in an aggregate sum equivalent to 5 percent of its gross proceeds from sales of power exclusive of sales to agencies of the Government of the United States. If at any time TVA is compelled by law to pay during any fiscal year ending June 30 taxes and payments in lieu of taxes in an aggregate amount which shall exceed 5 percent of such proceeds, TVA may, if it so elects, increase the billing amounts during the succeeding fiscal year by the number of percentage points (to the nearest 0.1 point) by which said aggregate amount exceeded 5 percent of said proceeds.

9. Interference with Availability or Use of Power. Neither TVA nor Municipality shall be liable for damages or breach of contract when and to the extent that the availability or use of power, respectively, is interrupted, curtailed or interfered with or the performance of any other obligation hereunder is prevented by circumstances reasonably beyond the control of the party affected,

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15. Conflict. In case of conflict between any express provision of the body of this contract or any provision of the Schedule of Rates and Charges and these Terms and Conditions, the former shall govern.

16. Section Headings. The section headings in this contract are only for convenience of reference and are not a part of the contract between the parties.

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Schedule of Rules and Regulations

SCHEDULE OF RULES AND REGULATIONS

1. Application for Service. Each prospective Customer desiring electric service may be required to sign Distributor's standard form of application for service or contract before service is supplied by the Distributor.

2. Deposit. A deposit or suitable guarantee approximately equal to twice the average monthly bill may be required of any Customer before electric service is supplied. Distributor may at its option return deposit to Customer after one year. Upon termination of service, deposit may be applied by Distributor against unpaid bills of Customer, and if any balance remains after such application is made, said balance shall be refunded to Customer.

3. Point of Delivery. The point of delivery is the point, as designated by Distributor, on Customer's premises where current is to be delivered to building or premises. All wiring and equipment beyond this point of delivery shall be provided and maintained by Customer at no expense to Distributor.

4. Customer's Wiring--Standards. All wiring of Customer must conform to Distributor's requirements and accepted modern standards, as exemplified by the requirements of the National Electrical Safety Code and the National Electrical Code.

5. Inspections. Distributor shall have the right, but shall not be obligated, to inspect any installation before electricity is introduced or at any later time, and reserves the right to reject any wiring or appliances not in accordance with Distributor's standards; but such inspection or failure to inspect or reject shall not render Distributor liable or responsible for any loss or damage resulting from defects in the installation, wiring, or appliances, or from violation of Distributor's rules, or from accidents which may occur upon Customer's premises.

6. Underground Service Lines. Customers desiring underground service lines from Distributor's overhead system must bear the excess cost incident thereto. Specifications and terms for such construction will be furnished by Distributor on request

7. Customer's Responsibility for Distributor's Property. All meters, service connections, and other equipment furnished by Distributor shall be, and remain, the property of Distributor. Customer shall provide a space for and exercise proper care to protect the property of Distributor on its premises, and, in the event of loss or damage to Distributor's property arising from neglect of Customer to care for same, the cost of the necessary repairs or replacements shall be paid by Customer.

8. Right of Access. Distributor's identified employees shall have access to Customer's premises at all reasonable times for the purpose of

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reading meters, testing, repairing, removing, or exchanging any or all equipment belonging to Distributor.

9. Billing. Bills will be rendered monthly and shall be paid at the office of Distributor or at other locations designated by Distributor. Failure to receive bill will not release Customer from payment obligation. Should bills not be paid as above, Distributor may at any time thereafter, upon five (5) days' written notice to Customer, discontinue service. Bills paid after due date specified on bill may be subject to additional charges. Should the due date of bill fall on a Sunday or holiday, the business day next following the due date will be held as a day of grace for delivery of payment. Remittances received by mail after the due date will not be subject to such additional charges if the incoming envelope bears United States Postal Service date stamp of the due date or any late prior thereto.

10. Discontinuance of Service by Distributor. Distributor may refuse to connect or may discontinue service for the violation of any of its Rules and Regulations, or for violation of any of the provisions of the Schedule of Rates and Charges, or of the application of Customer or contract with Customer. Distributor may discontinue service to Customer for the theft of current or the appearance of current theft devices on the premises of Customer. The discontinuance of service by Distributor for any causes as stated in this rule does not release Customer from his obligation to Distributor for the payment of minimum bills as specified in application of Customer or contract with Customer.

11. Connection, Reconnection, and Disconnection Charges. Distributor may establish and collect standard charges to cover the reasonable average cost, including administration, of connecting or reconnecting service, or disconnecting service as provided above. Higher charges may be established and collected when connections and reconnections are performed after normal office hours, or when special circumstances warrant.

12. Termination of Contract by Customer. Customers who have fulfilled their contract terms and wish to discontinue service must give at least three (3) days' written notice to that effect, unless contract specifies otherwise. Notice to discontinue service prior to expiration of contract term will not relieve Customer from any minimum or guaranteed payment under any contract or rate.

13. Service Charges for Temporary Service. Customers requiring electric service on a temporary basis may be required by Distributor to pay all costs for connection and disconnection incidental to the supplying and removing of service. This rule applies to circuses, carnivals, fairs, temporary construction, and the like.

14. Interruption of Service. Distributor will use reasonable diligence in supplying current, but shall not be liable for breach of contract in the event of, or for loss, injury, or damage to persons or property resulting from, interruptions in service, excessive or inadequate voltage, single-phasing, or otherwise unsatisfactory service, whether or not caused by negligence.

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15. Shortage of Electricity. In the event of an emergency or other condition causing a shortage in the amount of electricity for Distributor to meet the demand on its system, Distributor may, by an allocation method deemed equitable by Distributor, fix the amount of electricity to be made available for use by Customer and/or may otherwise restrict the time during which Customer may make use of electricity and the uses which Customer may make of electricity. If such actions become necessary, Customer may request a variance because of unusual circumstances including matters adversely affecting the public health, safety and welfare. If Customer fails to comply with such allocation or restriction, Distributor may take such remedial actions as it deems appropriate under the circumstances including temporarily disconnecting electric service and charging additional amounts because of the excess use of electricity. The provisions of the Section entitled Interruption of Service of this Schedule of Rules and Regulations are applicable to any such allocation or restriction.

16. Voltage Fluctuations Caused by Customer. Electric service must not be used in such a manner as to cause unusual fluctuations or disturbances to Distributor's system. Distributor may require Customer, at his own expense, to install suitable apparatus which will reasonably limit such fluctuations.

17. Additional Load. The service connection, transformers, meters, and equipment supplied by Distributor for each Customer have definite capacity, and no addition to the equipment or load connected thereto will be allowed except by consent of Distributor. Failure to give notice of additions or changes in load, and to obtain Distributor's consent for same, shall render Customer liable for any damage to any of Distributor's lines or equipment caused by the additional or changed installation.

18. Standby and Resale Service. All purchased electric service (other than emergency or standby service) used on the premises of Customer shall be supplied exclusively by Distributor, and Customer shall not, directly or indirectly, sell, sublet, assign, or otherwise dispose of the electric service or any part thereof.

19. Notice of Trouble. Customer shall notify Distributor immediately should the service be unsatisfactory for any reason, or should there be any defects, trouble, or accidents affecting the supply of electricity. Such notices, if verbal, should be confirmed in writing.

20. Non-Standard Service. Customer shall pay the cost of any special installation necessary to meet his peculiar requirements for service at other than standard voltages, or for the supply of closer voltage regulation than required by standard practice.

21. Meter Tests. Distributor will, at its own expense, make periodical tests and inspections of its meters in order to maintain a high standard of accuracy. Distributor will make additional tests or inspections of its meters at the request of Customer. If tests made at Customer's request show that the meter is accurate within two percent (2%), slow or fast, no adjustment will be made in Customer's bill, and Distributor's standard testing

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charge will be paid by Customer. In case the test shows meter to be in excess of two percent (2%) fast or slow, an adjustment shall be made in Customer's bill over a period of not over thirty (30) days prior to date of such test, and cost of making test shall be borne by Distributor.

22. Relocation of Outdoor Lighting Facilities. Distributor shall, at the request of Customer, relocate or change existing Distributor-owned equipment. Customer shall reimburse Distributor for such changes at actual cost including appropriate overheads.

23. Billing Adjusted to Standard Periods. The demand charges and the blocks in the energy charges set forth in the rate schedules are based on billing periods of approximately one month. In the case of the first billing of new accounts (temporary service, cotton gins, and other seasonal customers excepted) and final billings of all accounts (temporary service excepted) where the period covered by the billing involves fractions of a month, the demand charges and the blocks of the energy charge will be adjusted to a basis proportionate with the period of time during which service is extended.

24. Scope. This Schedule of Rules and Regulations is a part of all contracts for receiving electric service from Distributor, and applies to all service received from Distributor, whether the service is based upon contract, agreement, signed application, or otherwise. A copy of this schedule, together with a copy of Distributor's Schedule of Rates and Charges, shall be kept open to inspection at the offices of Distributor.

25. Revisions. These Rules and Regulations may be revised, amended, supplemented, or otherwise changed from time to time, without notice. Such changes, when effective, shall have the same force as the present Rules and Regulations.

26. Conflict. In case of conflict between any provision of any rate schedule and the Schedule of Rules and Regulations, the rate schedule shall apply.

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Assignment Agreement

ASSIGNMENT AGREEMENT
Among
CITY OF JACKSON, TENNESSEE,
JACKSON ENERGY AUTHORITY,
And
TENNESSEE VALLEY AUTHORITY

Date: November 1, 2001 TV-47356A, Supp. No. 68

THIS AGREEMENT, made and entered into by and among CITY OF JACKSON, TENNESSEE (Municipality), a municipal corporation created and existing under and by virtue of the laws of the State of Tennessee; JACKSON ENERGY AUTHORITY (Assignee), a public corporation created and existing under and by virtue of the laws of the State of Tennessee; and TENNESSEE VALLEY AUTHORITY (TVA), a corporation created and existing under and by virtue of the Tennessee Valley Authority Act of 1933, as amended;

W I T N E S S E T H:

WHEREAS, TVA and Municipality have heretofore entered into Power Contract TV-47356A, dated August 12, 1977, as amended (1977 Contract), and related agreements under which Municipality purchases its entire requirements for electric power and energy from TVA for resale; and

WHEREAS, Assignee is in the process of acquiring and plans to operate the electric utility system of Municipality as provided for by Chapter 55 of the Tennessee Private Acts of 2001 (2001 Act); and

WHEREAS, Municipality has requested TVA's consent to the assignment of the 1977 Contract and related agreements from Municipality to Assignee; and

WHEREAS, TVA is willing to consent to this assignment subject to the terms and conditions set forth below;

NOW, THEREFORE, for and in consideration of the premises and of the mutual agreements set forth below, and subject to the provisions of the Tennessee Valley Authority Act of 1933, as amended, the parties agree as follows:

1. Effective as of the date first above written (Effective Date), Municipality hereby assigns to Assignee the 1977 Contract, including all rights and obligations included therein, and TVA hereby consents to such assignment in accordance with the provisions of section 12 of the 1977 Contract.

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2. Municipality hereby also assigns to Assignee (and TVA consents to such assignment) the following agreements, including all rights and obligations included therein:

(a) Industrial Development Contract TV-58454A, dated December 21, 1981.

(b) Letter Agreement TV-71888A, dated July 14, 1987.

(c) Letter Agreement TV- 74673A, dated February 4, 1988.

(d) Letter Agreement TV-75737A, dated August 10, 1988.

(e) Mobile Spare Transformer Program Agreement TV-80220U, dated November 27, 1989.

(f) Power Supply Contract TV-85861U, dated March 1, 1992.

(g) Power Supply Contract TV-98618U, dated May 1, 1995.

(h) Comprehensive Services Program Agreement TV-99211U, dated July 1, 1995.

(i) Purchase Agreement TV-98678U, dated January 1, 1996.

(j) Energy Right Residential Program Agreement 98PCG-227153, dated October 1, 1997.

(k) Direct Load Control Agreement 98PCG-231567, dated October 1, 1997.

(l) Power Supply Contract 01PCG-267209, dated September 1, 2000.

(m) Power Supply Contract 00PCG-266825, dated September 25, 2000.

(n) Power Supply Contract 00PCG-264479, dated April 1, 2000.

(o) Power Supply Contract 01PCG-268921, dated November 1, 2000.

3. Assignee, by virtue of said assignment, becomes bound for the full performance of the 1977 Contract.

4. In the event that Assignee shall cease to exist as addressed by section 25 of the 2001 Act or otherwise, all rights and obligations of Assignee under the 1977 Contract shall become the rights and obligations of Municipality without further action by TVA, Municipality, or Assignee.

5. The 1977 Contract is amended in all respects necessary to make all references to Municipality refer to Assignee except for the references with respect to payments in lieu of taxes in the third sentence of section 1, section 6(a)(4), and section 2 of the Schedule of Terms and Conditions, which shall continue to refer to the City of Jackson.

IN WITNESS WHEREOF, the parties to this agreement have caused it to be executed by their duly authorized representatives, as of the day and year first above written.

CITY OF JACKSON, TENNESSEE

By _____
Title:

JACKSON ENERGY AUTHORITY

By _____
Title: President

TENNESSEE VALLEY AUTHORITY

By _____
Executive Vice President
Customer Service and Marketing

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION

IN RE: THE APPLICATION OF JACKSON SUSTAINABILITY COOPERATIVE FOR A DETERMINATION OF EXEMPTION AND IN THE ALTERNATIVE, FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	**)**	**DOCKET NO. 21-00061**

DIRECT TESTIMONY OF DENNIS EMBERLING, PART II

Part I of the direct testimony of Dennis Emberling was filed with the Petition.

This is a continuation of Mr. Emberling's direct testimony.

Q. How was Jackson, Tennessee selected for the Solar Project?

A. In late 2019, two people from Jackson came up with an idea for a way to help the city redevelop and improve the lives of its citizens. One, a retired, disabled Army Lieutenant Colonel, West Point graduate, and professor of mathematics, has been working for some time on building affordable housing in East Jackson for other veterans and seniors. The other is the owner of several small businesses in Jackson who knows the area's problems first hand.

Both these Jacksonians were particularly focused on the plight of East Jackson. Although it is home to many businesses that employ thousands of people, the area is in the worst shape of any of Jackson's redevelopment districts. It is the only one classified as "deteriorated." The population is 88% black, and the median household income in 2019 was under $19,000 per year. It is the 24th poorest census tract in Tennessee. Its housing and infrastructure are extremely poor.

Q. Is Jackson, Tennessee at risk of losing national manufacturers? Why?

A. Many national companies have manufacturing facilities in East Jackson. Most of these national companies either already have or will soon have mandatory sustainability goals that require them to switch all or in large part to renewable energy by a date certain. These corporate goals represent corporate responsibility to change the impact on the environment and play a significant role in diverting an obvious future environmental crisis, and lead federal and state government into recognizing the need for legislative action to create supporting policies for the inevitable move to renewable energy sources.

These sustainability policies prevent national companies from expanding in cities where renewable energy is not available. They could eventually force companies to leave such cities altogether, taking advantage of offers from cities where renewable energy is available. Other companies looking for locations to build facilities are unlikely to consider cities without renewable energy. All this bodes ill for Jackson.

Q. Other than accomplishing corporate sustainability goals, do manufacturers in Jackson, TN have other reasons they need solar energy?

A. We are told by electrical contractors who service the heavy machinery of these manufacturers in Jackson that they suffer from poor power quality from the grid. Fluctuations in frequency and voltage, which are especially common when demand surges, increase maintenance and repair costs and shorten the life of expensive machinery. See "Using Distributed Energy Resources," by the Federal Energy Management Program of the U. S. Department of Energy's Office of Energy Efficiency and Renewable Energy, page 8, for the causes and effects of poor power quality, https://www.nrel.gov/docs/fy02osti/31570.pdf. When the grid fails, manufacturers must send workers home, wait for the grid to be restored, then go through lengthy restart protocols and recall workers. This is very expensive for such businesses. Naturally, having reliable, uninterruptible power is very important to them, but presently unavailable. See "Seven Steps for a Successful Shutdown," www.plantengineering.com/articles/seven-steps-for-a-successful-shutdown.

Right now, Jackson has little to offer manufacturers to cope with these problems. As of July 15, 2021, only 16% of TVA's electricity generation came from renewables (EIA). For Jackson manufacturers, installing their own renewable generation, such as solar, is impractical and uneconomical for many reasons: lack of incentives from TVA or the state of Tennessee (not even net metering), inadequate suitable land or roof space, sub-optimal weather, capital costs, inability to take advantage of tax benefits, and lack of experience with acquiring, operating, and maintaining solar and storage facilities. That's why there is so little individually-owned commercial solar in Tennessee. And manufacturers have no good solution to the problems of frequency and voltage fluctuations or grid failures.

This is partly why Jackson, which desperately needs more good-paying jobs, decent housing, and infrastructure improvements, isn't growing, isn't attracting new businesses, and isn't seeing present businesses expand. Worse, it means Jackson is in danger of losing some of the businesses it has if it can't help major employers meet their corporate sustainability goals and offer reliable, high-quality, uninterruptible power. Other cities will be glad to offer these

companies large incentives to relocate, bringing thousands of jobs with them.

Q. How is the local municipal service provider limited in its ability to respond to these issues?

A. The City of Jackson is an economically distressed community. It cannot afford to pay for building renewable energy generation facilities for its municipally-owned utility, Jackson Energy Authority ("JEA"). Additionally, TVA's contracts with its resellers such as JEA forbid resellers from buying electricity from anyone besides TVA or using their distribution systems to conduct non-TVA electricity to customers. This means JEA cannot buy significant amounts of renewable energy from anyone else either. That's a major reason why some of TVA's resellers, including JEA, are refusing to sign TVA's new long-term agreements and considering not renewing their current TVA contracts - so that they can look elsewhere for renewables.

Like all utilities, JEA's electric service to its customers suffers from frequent voltage sags, swells, and spikes, as well as frequency variations, momentary outages, harmonic distortion, and unbalanced voltages and currents between the three phases of the system. These are unavoidable for a large power utility, for well-known reasons within the energy industry, such as changes in load, changes in generation source (e.g., from suddenly bringing a new fossil-fuel generator on line to meet higher demand, equipment switching, and electronically-controlled loads.

These power-quality events make motors vibrate, overheat, or stall. They occur without warning. Power quality is not commonly warrantied by utilities to their customers. Customers have to install uninterruptible power systems, battery systems, other storage technologies, motor-generator sets, isolation transformers, voltage regulators, line conditioners, filters, shielding and grounding techniques, and surge suppressors to forestall and cope with these power-quality problems. All these are expensive to the customer. Because they do not address the power-quality issues at their source (the input of electricity to the building), they cannot fully prevent excess wear and tear on expensive machinery or shortening its lifespan.

Nor can JEA provide uninterruptible power to all its customers. It would be cost prohibitive.
Thus, it is economically impossible under current contracts for JEA to offer significant percentages of renewable energy to its customers, provide consistently high-quality power, or avoid power outages. To a manufacturer, this means Jackson is not a very desirable place to locate or expand, especially as corporate sustainability goals take effect.

Q. What steps did the concerned citizens take to bring solar energy to manufacturers in Jackson, Tennessee?

A. For all these reasons, the two Jacksonians came up with the idea of bringing solar to Jackson. They asked my partner, David Shimon, a solar dealer in Florida they knew through mutual acquaintances, to investigate Jackson's potential for solar. He brought in several large solar developers to research feasibility, and they concluded it was economically impossible because of the opposition of TVA and JEA and the lack of incentive programs.

He then asked me to look into it, and, with help from my friends and colleagues in the solar industry, I discovered a way to make it work, with no interconnection to JEA's grid, no violation of Tennessee law, and no capital cost to the city of Jackson, the manufacturers who would use the renewable energy, JEA or TVA. So David and I set up a joint venture partnership with our Jackson friends called Community Development Enterprises - Jackson I to develop the project on vacant land located close to several manufacturers in East Jackson.

Q. How does benefitting manufacturing citizens help all citizens in Jackson?

A. My talks with people in the solar and storage industries led to discussions with foundations eager to help in Jackson. Some offered to bring free educational programs in the renewable energy field to Jackson's high schools and its four colleges, along with internships to prepare students for careers in the industry. Others offered to bring job training and other services to the Jackson community. We and our partners committed to contribute a share of the project's revenue to help redevelop East Jackson, upgrade its housing, and improve its dilapidated infrastructure.
We commissioned a professional Economic Impact Study from SynEnergy, Inc. which showed the project having a total impact of $231M on the area, with 678 temporary full-time equivalent jobs and 28 permanent full-time-equivalent jobs.

This is why so many companies, organizations, individuals, advocacy groups, and governmental agencies have been so eager to help with this project, and why the people and businesses of Jackson are so enthusiastic: because it is so worthwhile for everyone. It makes solar possible in East Jackson where it is presently unobtainable. It offers tremendous benefits to manufacturers and the local community. And its is privately financed, with no out of pocket cost to the city.

Q. Were the Tennessee Valley Authority ("TVA") and Jackson Energy Authority ("JEA") willing to work with you?

A. We reached out to TVA and JEA when first researching the project. We offered to collaborate with them, help them move into solar in the future, help them meet their difficult peak demand needs, and work cooperatively with them in many ways, all without cost to them. They totally refused.

In fact, the project's only opponents are TVA and its affiliates. They seem to think the project competes with them and diminishes their profits. In this, they are totally wrong. It does exactly the opposite.

H. We discussed benefits to manufacturers, are there ways JSC benefits JEA and TVA?

First, meeting peak demand for electricity is very costly for utilities. As the generator of electricity for JEA, TVA must maintain expensive stand-by reserves to kick in quickly when demand spikes. The rest of the time, that generation capacity sits idle. If peak demand from its retailers rises, TVA must build additional power facilities, as it is doing now, to be able to meet this demand, plus satisfy legal reserve requirements. The higher the peak demand, the more ancillary and transmission equipment TVA needs, and the higher its fixed costs for this equipment.

TVA tries to cover these costs by charging its retailers, like JEA, a heavy surcharge for peak demand. But whether these surcharges fully cover the costs to TVA of higher peak demand is uncertain. It is a complicated calculation. It is likely that only TVA knows the answer. We have demanded from TVA its actual profit margin on demand charges.

In turn, the higher the peak demand from its customers, the higher JEA's monthly peak demand is from TVA, so the higher TVA's surcharges to JEA for that month's peak demand. These are heavy costs to JEA each month. If JEA's monthly demand peak is lowered, so are these costs it must pay TVA. JEA tries to recover these costs by charging its customers a heavy surcharge for their peak demand each month. Whether these surcharges fully cover the costs it must pay TVA for this peak demand is something only JEA knows. We have demanded from JEA its actual profit margin on demand charges.

But at the very least, lowering the monthly peak demand of a few of JEA's manufacturing customers will lower JEA's total monthly peak demand, and therefore lower its peak demand surcharges from TVA. Whether that alone will increase or decrease JEA's net profits is to be determined, but it is clear that the effect cannot be large. We have the potential to help JEA meet its other peak demand as well. See https://www.enertiv.com/resources/faq/

what-is-peak-demand; https://www.forbes.com/sites/baininsights/2017/05/01/can-utilities-profit-from-distributed-energy-resources/?sh=31263f6f1dbf; https://www.seia.org/initiatives/utility-rate-design-complementary-policies

Second, demand surges are very hard on transmission and distribution equipment. TVA and JEA both incur significant expenses for maintenance and repair of their systems. JEA alone spent over $3.2M last year on maintenance expenses. These peak demands and surges will be reduced by the new solar facility, thereby reducing losses on peak demand and lessening their repair, maintenance, and replacement costs for power lines and equipment. Overall, JEA's and TVA's revenue will decrease slightly, but their expenses decrease by even more, improving their profitability.

Third, the manufacturers who belong to the co-op remain customers of JEA/TVA, not just for electricity but for all other utility services. If solar encourages them not to leave Jackson, that prevents a reduction of profits for JEA/TVA. If solar encourages them to expand, JEA/TVA's profits go up. If solar encourages new businesses to locate in Jackson, they will become new JEA/TVA customers as well.

Taking all these benefits to JEA/TVA into account, it is clear that our supplementing electricity to members for their mutual benefit, is a net benefit to JEA/TVA, and far from a drag on their profits. Any perceived negative effects are short-sighted, and fail to put the benefits in context.

Q. How can a manufacturer participate in the benefits of renewable energy?

A. The only way right now for businesses that need a lot of electricity to get uninterruptible, high-quality, renewable energy is to share a facility with other similar companies. This solves the problem of optimal siting and brings the costs way down through economies of scale and making many more tax benefits available.

The most natural way in Tennessee for organizations to collaborate is through cooperatives, because they are offered many advantages in Tennessee law. Exemption from Public Utilities Commission regulation and monopolistic utility restrictions are only some of them. Therefore, it makes sense for manufacturers who want to share the renewable, uninterruptible power from a solar facility to form a nonprofit co-operative corporation for this purpose.

Such a co-operative also serves its members as a useful nonprofit vehicle to contribute in many ways to the redevelopment and economic improvement of their

community, which in turn benefits the member companies. As the labor pool expands and gains more skills, they can expand their businesses, knowing they can find the workers they need. As the quality of the community improves, their working environment and amenities improve, all to the benefit of the companies as well.

Since all these goals fit perfectly with what we and our partners want to do for Jackson, we launched the co-operative, to be controlled by its members. It will lease the entire solar facility, on-site and off-site, from the developer, Community Development Enterprises. It will distribute the electricity generated to its members through a smart controller that directs the flow to members according to their immediate demand, as well as to and from battery storage.

Q. How will the Co-op's system exist with JEA's grid?

A. Because Jackson is subject to severe storms, the entire facility will be storm-hardened, with all wiring underground. In this way, it will be able to continue to supply power when the grid fails. Its electricity is tightly regulated for frequency and voltage, so the members will no longer experience surges, spikes, or dips that damage their equipment. The power will supplement electricity they continue to receive from JEA's grid, coming on only when their demand rises. They will pay the co-operative for the electricity they use at rates guaranteed always to be lower than what they would have paid JEA had the solar not been available.

They will receive new smart meters and electrical panels that allow them to monitor their usage by individual circuit, enabling them to make improvements in energy efficiency. They can also prioritize their circuits to make sure the most important ones get power first in case the grid fails and there isn't sufficient sunlight or battery capacity to power all their circuits. All this without any capital expense to the manufacturers.

The electricity from the solar facility will be completely isolated from JEA's grid, so it can never backflow onto their grid when it is down. Nor can any power from JEA's grid ever flow onto the solar facilities system. It will come on and off seamlessly to the users just when they need it.

Q. Is membership in Jackson Sustainability Cooperative limited?

Because their site can only support so much solar power, the coop is limited allowing only a few manufacturers to participate in the project. Because the power must be distributed among the manufacturers according to their demand, the weather, the time of day, and the limits of our battery storage, we can

only serve manufacturers whose electrical usage profiles fit effectively with each other and fall within the limits of what we can supply.

Therefore, our engineers must carefully consider all the circumstances that affect each manufacturer's electrical usage and select from the candidates just those few that form a workable set of users that fit our facility's capability. That is why co-op membership is not open to the public, or even to all nearby companies. The requirements for membership in the co-op are very severe, and only our engineers can choose the group of companies that we can serve.

Q: How does Jackson Sustainability Cooperative determine whether an entity is eligible to participate as a member of the cooperative?

A. When initial research by Jackson Sustainability Cooperative indicates that a commercial entity's characteristics may be a suitable fit with those of other potential members, Jackson Sustainability Cooperative initiates a discussion with that entity. If the entity indicates a desire to become a member, it is given a Conditional Member Agreement to sign and required to provide Jackson Sustainability Cooperative with all the electricity usage information needed to evaluate its suitability for membership. This Conditional Member Agreement is non-binding, and provides for confidentiality of the electrical information supplied.

Q: When you review a conditional member's electric bills and energy profile, what elements are essential to allow discussions to continue on possible membership?

A. As stated in the Jackson Sustainability Cooperative Bylaws, Article II, Section 2.1, "An Entity becomes a conditional member of the Cooperative if it signs a Conditional Member Agreement. The Cooperative will analyze the energy profile and energy demands of the conditional Member to see if the conditional Member's electricity needs are a suitable fit with the other members and the Solar project. Qualifying conditional Members may be invited to become full Members who receive supplemental energy after they sign a Full Member Agreement (such person being a "Member" and the Member being in a "Membership"). An applicant may be eligible for conditional Membership if its plant and facility (1) annually requires or is expected to annually require at least 100,000 kilowatt-hours (kWh) of electric energy; and, (2) uses electric energy on a demand curve consistent with the Cooperative's requirements."

No entity is entitled to become a member of Jackson Sustainability Cooperative. Membership is by invitation from Jackson Sustainability Cooperative. There is no such thing as "qualifying" for membership. Jackson Sustainability Cooperative's shared services are not offered to the general public or to any categories of users. No public or private entity can demand service from Jackson Sustainability Cooperative. The cooperative service is of no use to the public in general, but only to those few manufacturers that Jackson Sustainability Cooperative specifically invites to participate in sharing supplemental solar energy under the Bylaws and Full Member Agreement with Jackson Sustainability Cooperative.

Jackson Sustainability Cooperative represents its members when holding itself out as facilitating supplemental electricity to members who share the common objective of using energy from renewable sources. Jackson Sustainability Cooperative does not hold itself out to the public in general or any limited portion of the public in general. It represents a collaborative effort of neighboring commercial and industrial concerns with a strong desire to increase their use of energy from renewable sources. Its offers of membership are made directly to selected neighboring manufacturers. The general public has no interest in Jackson Sustainability Cooperative, since the public is not and cannot connect to the solar facility. Even if entities strongly prefer solar energy, there is no way of receiving supplemental energy from Jackson Sustainability Cooperative. Jackson Sustainability Cooperative can only facilitate a few of the requests for membership, and only from neighboring manufacturers who are approved.

The membership factors Jackson Sustainability Cooperative considers include, but are not limited to, the location, number of buildings, number of meters, site wiring, building wiring, historical and projected electrical consumption profile, historical and projected peak electrical demand profile, maintenance and repair costs for machinery caused by voltage or frequency surges or dips, historical costs associated with power outages, shut down processes, sending workers home, lost productivity, and restart protocols, publically stated corporate goals for use of energy from renewable sources, and time lines for sustainability, reduction of emissions, and shifting to renewable energy, acceptance of mutually agreeable terms of full membership, credit worthiness, and a willingness to participate in and contribute to the charitable and public works of Jackson Sustainability Cooperative for the benefit of the Jackson community and the East Jackson development district. In addition, from the group of interested members, Jackson Sustainability Cooperative will invite only a small subgroup whose electrical profiles fit well together in terms of consumption and peak demand, so as to maximize the ability of the solar facility to serve the mutual benefit of members economically and to their satisfaction.

This restriction to a few members chosen by Jackson Sustainability Cooperative according to practical considerations demonstrates that Jackson Sustainability Cooperative is not in actual or potential competition with public utilities. Its sole service is to supplement the electricity provided by JEA to a few manufacturers. A competitor would be an alternative to JEA, not a supplement to it. When the grid fails and Jackson Sustainability Cooperative continues to provide power, it is not competing with JEA, it is helping JEA with its mission of providing energy to local employers.

Although it will reduce JEA's revenue in peak demand charges from those manufacturers, it will also reduce JEA's acquisition costs for that peak demand electricity from TVA. JEA's cost of assuring it meets peak demand is both in the form of payments to TVA for the capacity to deliver peak demand electricity and for the wear and tear on JEA's transmission system that peak demand imposes. The net result will likely be an increase in JEA's profit from those manufacturers. In addition, expansion of existing Jackson businesses and attraction of additional businesses to Jackson as a result of Jackson Sustainability Cooperative's contributions to Jackson will increase the number of customers of JEA and their increase total consumption, thereby increasing JEA's revenue and profits. There is no competitive loss or

disadvantage to JEA from Jackson Sustainability Cooperative's collaborative efforts to provide supplemental services.

Q: Describe the process by which a Conditional Member becomes a Full Member of the Cooperative?

A. Once Northern Reliability informs Jackson Sustainability Cooperative that sufficient electrical usage information from a sufficient number of Conditional Members has been received, Northern Reliability begins to analyze all relevant information submitted by all Conditional Members. Northern Reliability then selects a set of Conditional Members whose electrical usage patterns form a good fit for the capabilities of the solar facility. Jackson Sustainability Cooperative then offers these selected Conditional Members the opportunity to sign Full Member Agreements. If all sign, they become the only Full Members. If one or more do not sign, Northern Reliability selects replacements for them from the set of Conditional Members, and these newly selected Conditional Members are then offered Full Membership. Once a complete set of Full Members, according to Northern Reliability's analysis of the fit between members' usage and the facility's production, is achieved, membership is complete.

Q: Mr. Emberling, you have described two member agreements, why are there two steps before an entity becomes a member eligible for supplemental renewable solar energy?

A. The process of choosing the set of members is a type of problem in mathematics called "optimizing a set of interdependent variables." It proceeds recursively. One must start with a trial set, analyze it, change it, re-analyze it, and continue until the set reaches optimum in value. Therefore, potential members must first be identified, then evaluated, then formed into a well-fitting, optimized set. This requires securing their electrical usage profiles and other relevant information before membership can be offered, because which candidates fit best together cannot be determined until after evaluation and recursive attempts at fitting. Only when the set is optimized can membership be offered and the second membership step completed.

Q: Who regulates the proposed Jackson Solar Facility?

A. Electric utilities that deliver all the requirements for retail electric service to consumers are, in most states, regulated by state, federal, and local agencies. These agencies primarily govern the prices utilities charge, the terms of their service to consumers, their budgets and their construction plans. Two broad, fundamental principles justify governmental oversight of these utilities. First, because a utility provides essential services for the well being of society, the public interest is best supported by having one large provider charged with meeting the overall demand of the community. Second, the theory is that this can be accomplished more cheaply through a monopoly given to a single provider rather than having a competition among smaller providers.

Small providers cannot thrive under these conditions, so eventually all firms but one will exit the market or fail. The survivor is a natural monopoly.

Given these two conditions, economic regulation is explicit governmental intervention into a market. It is necessary to achieve public benefits that the market fails to achieve on its own. In recent years, we have seen telephone services, cable services, and other services give way to competitive pressure. In Tennessee, other than filing a financial report, a municipal electric energy acquisition utility is excluded from economic regulation by the Public Utility Commission. For example, Jackson Electric Authority is not required to submit its rates or its building projects to the Tennessee Public Utility Commission for approval. Local Commissioners regulate Jackson Electric Authority. The theory is that the public who benefits locally can elect Commissioners to direct the municipal service provider.

By contrast, Jackson Sustainability Cooperative provides supplemental electric energy for the mutual benefit of its members. Jackson Sustainability Cooperative does not replace the municipal provider. Jackson Sustainability Cooperative is not open to the public. However, it is locally owned and will ultimately be controlled by its members who are manufacturers who benefit from its supplemental solar energy. Much like the municipal provider and the consumer with its own equipment, in Tennessee the government does not regulate cooperative providers to its consumer-members. Cooperative providers are accountable to their members and must comply with the local electrical codes.

The proposed Jackson Solar Project is currently exempt from regulation under federal laws because it does not interconnect to the public utility grid.

Q: How will Jackson Sustainability Cooperative deliver supplemental energy without affecting the existing connection with JEA?

A: Smart electric meters will be installed at each member's facility. Energy from the Solar Facility will flow to these smart meters. The controller technology intelligently allocates power to and from the batteries and to members, taking all factors into account to optimize power delivery. Members will draw power seamlessly from both JEA and JSC's controller, but no power will ever be able to backflow onto JEA's grid. The controller is designed to deliver supplemental energy when demand is high and the energy is most needed. When a JEA or TVA grid outage occurs, members will draw all their electricity from the Solar Facility for short periods of time and/or for priority usage until grid power is restored.

Q: Has the Jackson Sustainability Cooperative solar energy facility received any national recognition?

A. The Jackson Solar Project received an award from the U. S. Department of Energy's National Community Solar Partnership for innovation and contribution to making solar available in areas of the country where it is presently uneconomical.

Q. How will Jackson Sustainability Cooperative finance the Jackson Solar Project?

A. Jackson Sustainability Cooperative will lease all equipment necessary for the production of solar energy for its members. The Lessor is Community Development Enterprises - Jackson I, who is the on site developer. Jackson Sustainability Cooperative has a purchase option. Therefore , if the members of Jackson Sustainability Cooperative can find more favorable finance terms, they can acquire the leased equipment.

Q. Who will maintain the operation of the solar facility for Jackson Sustainability Cooperative?

A. Maintenance of the facility will initially be handled by Northern Reliability, Inc.

Q. In summary, what steps has JSC accomplished to date?

Since beginning work on this project a year and a half ago, we have completed the following:

- Site research, survey, and acquisition
- Feasibility study
- Due diligence: environmental, regulatory, permitting, and utility
- Received all 6 environmental approvals needed
- Preliminary design of the facility
- Selecting equipment needed

- Selecting and contracting with companies to design, engineer, and construct the project
- Selecting local contractors for construction and electrical work, preferring local labor
- All civil engineering site work
- Approval of the site plan design by the Jackson Planning Commission
- Held neighborhood meetings to explain the project to people living nearby, receiving near-unanimous approval
- Arranging for insurance during and after construction
- Beginning funding negotiations with select tax-equity investment banks and investors

Once we are assured that we are in compliance with the law, we will be ready to complete our financing, obtain a building permit, and begin construction

of the Jackson Solar Project.

I swear that the foregoing testimony is true and correct to the best of my knowledge.

_____
Dennis Emberling, President

Respectfully submitted this _____ day of September, 2021.

STATE OF TENNESSEE)
)
COUNTY OF DAVIDSON)

Subscribed and sworn to me a Notary Public, in his capacity as President of JSC this this _____ of _____, 2021.

_____
Notary Public

Commission Expires: _____

Definition of an "Opportunity Zone"

U.S. Economic Development Administration, part of U.S. Dept. of Commerce
June 29, 2020

An Opportunity Zone is an **economically-distressed community** where **private investments**, under certain conditions, may be **eligible for capital gain tax incentives**.

Opportunity Zones were created under the 2017 Tax Cuts and Jobs Act, signed into law by President Donald J. Trump on December 22, 2017, to stimulate economic development and job creation, by incentivizing long- term investments in low-income neighborhoods.

There are **more than 8,760 designated Qualified Opportunity Zones** (PDF) located in all 50 States, the District of Columbia, and five United States territories. **Investors can defer tax on any prior gains invested in a Qualified Opportunity Fund (QOF)** until the earlier of the date on which the investment in a QOF is sold or exchanged or until December 31, 2026.
EDA and Opportunity Zones

The Economic Development Administration (EDA) provides strategic investments through competitive grants that foster job creation and attract private investment to support development in economically distressed areas of the United States.

EDA is encouraging our economic development partners to think of Opportunity Zone investment as a new arrow in their quiver to not only enhance ROI for business interests, but also to encourage the public/private partnerships needed to drive private investment to distressed areas. Steps EDA has taken to prioritize Opportunity Zones, include:

In FY18, EDA issued a Notice of Funding Opportunity that made Opportunity Zones eligible for funding from EDA, through its special needs category, even if the area would not meet EDA's economic distress criteria.

In June 2019, EDA added Opportunity Zones as one of its five Investment Priorities to help significantly increase the number of catalytic Opportunity Zone-related projects we can fund.

As part of the White House Opportunity and Revitalization Council (WHORC), EDA provides an overview of our role in the initiative at Opportunity Zone roundtables that are bringing together local elected officials, business leaders, community groups, and others across the country.

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION

IN RE: THE APPLICATION OF JACKSON SUSTAINABILITY COOPERATIVE FOR A DETERMINATION OF EXEMPTION AND IN THE ALTERNATIVE, FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	**)**	**DOCKET NO. 21-00061**

DIRECT TESTIMONY OF DENNIS EMBERLING, PART II

Part I of the direct testimony of Dennis Emberling was filed with the Petition.

This is a continuation of Mr. Emberling's direct testimony.

Q. How was Jackson, Tennessee selected for the Solar Project?

A. In late 2019, two people from Jackson came up with an idea for a way to help the city redevelop and improve the lives of its citizens. One, a retired, disabled Army Lieutenant Colonel, West Point graduate, and professor of mathematics, has been working for some time on building affordable housing in East Jackson for other veterans and seniors. The other is the owner of several small businesses in Jackson who knows the area's problems first hand.

Both these Jacksonians were particularly focused on the plight of East Jackson. Although it is home to many businesses that employ thousands of people, the area is in the worst shape of any of Jackson's redevelopment districts. It is the only one classified as "deteriorated." The population is 88% black, and the median household income in 2019 was under $19,000 per year. It is the 24th poorest census tract in Tennessee. Its housing and infrastructure are extremely poor.

Q. Is Jackson, Tennessee at risk of losing national manufacturers? Why?

A. Many national companies have manufacturing facilities in East Jackson. Most of these national companies either already have or will soon have mandatory sustainability goals that require them to switch all or in large part to renewable energy by a date certain. These corporate goals represent corporate responsibility to change the impact on the environment and play a significant role in diverting an obvious future environmental crisis, and lead federal and state government into recognizing the need for legislative action to create supporting policies for the inevitable move to renewable energy sources.

These sustainability policies prevent national companies from expanding in cities where renewable energy is not available. They could eventually force companies to leave such cities altogether, taking advantage of offers from cities where renewable energy is available. Other companies looking for locations to build facilities are unlikely to consider cities without renewable energy. All this bodes ill for Jackson.

Q. Other than accomplishing corporate sustainability goals, do manufacturers in Jackson, TN have other reasons they need solar energy?

A. We are told by electrical contractors who service the heavy machinery of these manufacturers in Jackson that they suffer from poor power quality from the grid. Fluctuations in frequency and voltage, which are especially common when demand surges, increase maintenance and repair costs and shorten the life of expensive machinery. See "Using Distributed Energy Resources," by the Federal Energy Management Program of the U. S. Department of Energy's Office of Energy Efficiency and Renewable Energy, page 8, for the causes and effects of poor power quality, https://www.nrel.gov/docs/fy02osti/31570.pdf. When the grid fails, manufacturers must send workers home, wait for the grid to be restored, then go through lengthy restart protocols and recall workers. This is very expensive for such businesses. Naturally, having reliable, uninterruptible power is very important to them, but presently unavailable. See "Seven Steps for a Successful Shutdown," www.plantengineering.com/articles/seven-steps-for-a-successful-shutdown.

Right now, Jackson has little to offer manufacturers to cope with these problems. As of July 15, 2021, only 16% of TVA's electricity generation came from renewables (EIA). For Jackson manufacturers, installing their own renewable generation, such as solar, is impractical and uneconomical for many reasons: lack of incentives from TVA or the state of Tennessee (not even net metering), inadequate suitable land or roof space, sub-optimal weather, capital costs, inability to take advantage of tax benefits, and lack of experience with acquiring, operating, and maintaining solar and storage facilities. That's why there is so little individually-owned commercial solar in Tennessee. And manufacturers have no good solution to the problems of frequency and voltage fluctuations or grid failures.

This is partly why Jackson, which desperately needs more good-paying jobs, decent housing, and infrastructure improvements, isn't growing, isn't attracting new businesses, and isn't seeing present businesses expand. Worse, it means Jackson is in danger of losing some of the businesses it has if it can't help major employers meet their corporate sustainability goals and offer reliable, high-quality, uninterruptible power. Other cities will be glad to offer these

companies large incentives to relocate, bringing thousands of jobs with them.

Q. How is the local municipal service provider limited in its ability to respond to these issues?

A. The City of Jackson is an economically distressed community. It cannot afford to pay for building renewable energy generation facilities for its municipally-owned utility, Jackson Energy Authority ("JEA"). Additionally, TVA's contracts with its resellers such as JEA forbid resellers from buying electricity from anyone besides TVA or using their distribution systems to conduct non-TVA electricity to customers. This means JEA cannot buy significant amounts of renewable energy from anyone else either. That's a major reason why some of TVA's resellers, including JEA, are refusing to sign TVA's new long-term agreements and considering not renewing their current TVA contracts - so that they can look elsewhere for renewables.

Like all utilities, JEA's electric service to its customers suffers from frequent voltage sags, swells, and spikes, as well as frequency variations, momentary outages, harmonic distortion, and unbalanced voltages and currents between the three phases of the system. These are unavoidable for a large power utility, for well-known reasons within the energy industry, such as changes in load, changes in generation source (e.g., from suddenly bringing a new fossil-fuel generator on line to meet higher demand, equipment switching, and electronically-controlled loads.

These power-quality events make motors vibrate, overheat, or stall. They occur without warning. Power quality is not commonly warrantied by utilities to their customers. Customers have to install uninterruptible power systems, battery systems, other storage technologies, motor-generator sets, isolation transformers, voltage regulators, line conditioners, filters, shielding and grounding techniques, and surge suppressors to forestall and cope with these power-quality problems. All these are expensive to the customer. Because they do not address the power-quality issues at their source (the input of electricity to the building), they cannot fully prevent excess wear and tear on expensive machinery or shortening its lifespan.

Nor can JEA provide uninterruptible power to all its customers. It would be cost prohibitive.
Thus, it is economically impossible under current contracts for JEA to offer significant percentages of renewable energy to its customers, provide consistently high-quality power, or avoid power outages. To a manufacturer, this means Jackson is not a very desirable place to locate or expand, especially as corporate sustainability goals take effect.

Q. What steps did the concerned citizens take to bring solar energy to manufacturers in Jackson, Tennessee?

A. For all these reasons, the two Jacksonians came up with the idea of bringing solar to Jackson. They asked my partner, David Shimon, a solar dealer in Florida they knew through mutual acquaintances, to investigate Jackson's potential for solar. He brought in several large solar developers to research feasibility, and they concluded it was economically impossible because of the opposition of TVA and JEA and the lack of incentive programs.

He then asked me to look into it, and, with help from my friends and colleagues in the solar industry, I discovered a way to make it work, with no interconnection to JEA's grid, no violation of Tennessee law, and no capital cost to the city of Jackson, the manufacturers who would use the renewable energy, JEA or TVA. So David and I set up a joint venture partnership with our Jackson friends called Community Development Enterprises - Jackson I to develop the project on vacant land located close to several manufacturers in East Jackson.

Q. How does benefitting manufacturing citizens help all citizens in Jackson?

A. My talks with people in the solar and storage industries led to discussions with foundations eager to help in Jackson. Some offered to bring free educational programs in the renewable energy field to Jackson's high schools and its four colleges, along with internships to prepare students for careers in the industry. Others offered to bring job training and other services to the Jackson community. We and our partners committed to contribute a share of the project's revenue to help redevelop East Jackson, upgrade its housing, and improve its dilapidated infrastructure.
We commissioned a professional Economic Impact Study from SynEnergy, Inc. which showed the project having a total impact of $231M on the area, with 678 temporary full-time equivalent jobs and 28 permanent full-time-equivalent jobs.

This is why so many companies, organizations, individuals, advocacy groups, and governmental agencies have been so eager to help with this project, and why the people and businesses of Jackson are so enthusiastic: because it is so worthwhile for everyone. It makes solar possible in East Jackson where it is presently unobtainable. It offers tremendous benefits to manufacturers and the local community. And its is privately financed, with no out of pocket cost to the city.

Q. Were the Tennessee Valley Authority ("TVA") and Jackson Energy Authority ("JEA") willing to work with you?

A. We reached out to TVA and JEA when first researching the project. We offered to collaborate with them, help them move into solar in the future, help them meet their difficult peak demand needs, and work cooperatively with them in many ways, all without cost to them. They totally refused.

In fact, the project's only opponents are TVA and its affiliates. They seem to think the project competes with them and diminishes their profits. In this, they are totally wrong. It does exactly the opposite.

H. We discussed benefits to manufacturers, are there ways JSC benefits JEA and TVA?

First, meeting peak demand for electricity is very costly for utilities. As the generator of electricity for JEA, TVA must maintain expensive stand-by reserves to kick in quickly when demand spikes. The rest of the time, that generation capacity sits idle. If peak demand from its retailers rises, TVA must build additional power facilities, as it is doing now, to be able to meet this demand, plus satisfy legal reserve requirements. The higher the peak demand, the more ancillary and transmission equipment TVA needs, and the higher its fixed costs for this equipment.

TVA tries to cover these costs by charging its retailers, like JEA, a heavy surcharge for peak demand. But whether these surcharges fully cover the costs to TVA of higher peak demand is uncertain. It is a complicated calculation. It is likely that only TVA knows the answer. We have demanded from TVA its actual profit margin on demand charges.

In turn, the higher the peak demand from its customers, the higher JEA's monthly peak demand is from TVA, so the higher TVA's surcharges to JEA for that month's peak demand. These are heavy costs to JEA each month. If JEA's monthly demand peak is lowered, so are these costs it must pay TVA. JEA tries to recover these costs by charging its customers a heavy surcharge for their peak demand each month. Whether these surcharges fully cover the costs it must pay TVA for this peak demand is something only JEA knows. We have demanded from JEA its actual profit margin on demand charges.

But at the very least, lowering the monthly peak demand of a few of JEA's manufacturing customers will lower JEA's total monthly peak demand, and therefore lower its peak demand surcharges from TVA. Whether that alone will increase or decrease JEA's net profits is to be determined, but it is clear that the effect cannot be large. We have the potential to help JEA meet its other peak demand as well. See https://www.enertiv.com/resources/faq/

what-is-peak-demand; https://www.forbes.com/sites/baininsights/2017/05/01/can-utilities-profit-from-distributed-energy-resources/?sh=31263f6f1dbf; https://www.seia.org/initiatives/utility-rate-design-complementary-policies

Second, demand surges are very hard on transmission and distribution equipment. TVA and JEA both incur significant expenses for maintenance and repair of their systems. JEA alone spent over $3.2M last year on maintenance expenses. These peak demands and surges will be reduced by the new solar facility, thereby reducing losses on peak demand and lessening their repair, maintenance, and replacement costs for power lines and equipment. Overall, JEA's and TVA's revenue will decrease slightly, but their expenses decrease by even more, improving their profitability.

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Because their site can only support so much solar power, the coop is limited allowing only a few manufacturers to participate in the project. Because the power must be distributed among the manufacturers according to their demand, the weather, the time of day, and the limits of our battery storage, we can

only serve manufacturers whose electrical usage profiles fit effectively with each other and fall within the limits of what we can supply.

Therefore, our engineers must carefully consider all the circumstances that affect each manufacturer's electrical usage and select from the candidates just those few that form a workable set of users that fit our facility's capability. That is why co-op membership is not open to the public, or even to all nearby companies. The requirements for membership in the co-op are very severe, and only our engineers can choose the group of companies that we can serve.

Q: How does Jackson Sustainability Cooperative determine whether an entity is eligible to participate as a member of the cooperative?

A. When initial research by Jackson Sustainability Cooperative indicates that a commercial entity's characteristics may be a suitable fit with those of other potential members, Jackson Sustainability Cooperative initiates a discussion with that entity. If the entity indicates a desire to become a member, it is given a Conditional Member Agreement to sign and required to provide Jackson Sustainability Cooperative with all the electricity usage information needed to evaluate its suitability for membership. This Conditional Member Agreement is non-binding, and provides for confidentiality of the electrical information supplied.

Q: When you review a conditional member's electric bills and energy profile, what elements are essential to allow discussions to continue on possible membership?

A. As stated in the Jackson Sustainability Cooperative Bylaws, Article II, Section 2.1, "An Entity becomes a conditional member of the Cooperative if it signs a Conditional Member Agreement. The Cooperative will analyze the energy profile and energy demands of the conditional Member to see if the conditional Member's electricity needs are a suitable fit with the other members and the Solar project. Qualifying conditional Members may be invited to become full Members who receive supplemental energy after they sign a Full Member Agreement (such person being a "Member" and the Member being in a "Membership"). An applicant may be eligible for conditional Membership if its plant and facility (1) annually requires or is expected to annually require at least 100,000 kilowatt-hours (kWh) of electric energy; and, (2) uses electric energy on a demand curve consistent with the Cooperative's requirements."

No entity is entitled to become a member of Jackson Sustainability Cooperative. Membership is by invitation from Jackson Sustainability Cooperative. There is no such thing as "qualifying" for membership. Jackson Sustainability Cooperative's shared services are not offered to the general public or to any categories of users. No public or private entity can demand service from Jackson Sustainability Cooperative. The cooperative service is of no use to the public in general, but only to those few manufacturers that Jackson Sustainability Cooperative specifically invites to participate in sharing supplemental solar energy under the Bylaws and Full Member Agreement with Jackson Sustainability Cooperative.

Jackson Sustainability Cooperative represents its members when holding itself out as facilitating supplemental electricity to members who share the common objective of using energy from renewable sources. Jackson Sustainability Cooperative does not hold itself out to the public in general or any limited portion of the public in general. It represents a collaborative effort of neighboring commercial and industrial concerns with a strong desire to increase their use of energy from renewable sources. Its offers of membership are made directly to selected neighboring manufacturers. The general public has no interest in Jackson Sustainability Cooperative, since the public is not and cannot connect to the solar facility. Even if entities strongly prefer solar energy, there is no way of receiving supplemental energy from Jackson Sustainability Cooperative. Jackson Sustainability Cooperative can only facilitate a few of the requests for membership, and only from neighboring manufacturers who are approved.

The membership factors Jackson Sustainability Cooperative considers include, but are not limited to, the location, number of buildings, number of meters, site wiring, building wiring, historical and projected electrical consumption profile, historical and projected peak electrical demand profile, maintenance and repair costs for machinery caused by voltage or frequency surges or dips, historical costs associated with power outages, shut down processes, sending workers home, lost productivity, and restart protocols, publically stated corporate goals for use of energy from renewable sources, and time lines for sustainability, reduction of emissions, and shifting to renewable energy, acceptance of mutually agreeable terms of full membership, credit worthiness, and a willingness to participate in and contribute to the charitable and public works of Jackson Sustainability Cooperative for the benefit of the Jackson community and the East Jackson development district. In addition, from the group of interested members, Jackson Sustainability Cooperative will invite only a small subgroup whose electrical profiles fit well together in terms of consumption and peak demand, so as to maximize the ability of the solar facility to serve the mutual benefit of members economically and to their satisfaction.

This restriction to a few members chosen by Jackson Sustainability Cooperative according to practical considerations demonstrates that Jackson Sustainability Cooperative is not in actual or potential competition with public utilities. Its sole service is to supplement the electricity provided by JEA to a few manufacturers. A competitor would be an alternative to JEA, not a supplement to it. When the grid fails and Jackson Sustainability Cooperative continues to provide power, it is not competing with JEA, it is helping JEA with its mission of providing energy to local employers.

Although it will reduce JEA's revenue in peak demand charges from those manufacturers, it will also reduce JEA's acquisition costs for that peak demand electricity from TVA. JEA's cost of assuring it meets peak demand is both in the form of payments to TVA for the capacity to deliver peak demand electricity and for the wear and tear on JEA's transmission system that peak demand imposes. The net result will likely be an increase in JEA's profit from those manufacturers. In addition, expansion of existing Jackson businesses and attraction of additional businesses to Jackson as a result of Jackson Sustainability Cooperative's contributions to Jackson will increase the number of customers of JEA and their increase total consumption, thereby increasing JEA's revenue and profits. There is no competitive loss or

disadvantage to JEA from Jackson Sustainability Cooperative's collaborative efforts to provide supplemental services.

Q: Describe the process by which a Conditional Member becomes a Full Member of the Cooperative?

A. Once Northern Reliability informs Jackson Sustainability Cooperative that sufficient electrical usage information from a sufficient number of Conditional Members has been received, Northern Reliability begins to analyze all relevant information submitted by all Conditional Members. Northern Reliability then selects a set of Conditional Members whose electrical usage patterns form a good fit for the capabilities of the solar facility. Jackson Sustainability Cooperative then offers these selected Conditional Members the opportunity to sign Full Member Agreements. If all sign, they become the only Full Members. If one or more do not sign, Northern Reliability selects replacements for them from the set of Conditional Members, and these newly selected Conditional Members are then offered Full Membership. Once a complete set of Full Members, according to Northern Reliability's analysis of the fit between members' usage and the facility's production, is achieved, membership is complete.

Q: Mr. Emberling, you have described two member agreements, why are there two steps before an entity becomes a member eligible for supplemental renewable solar energy?

A. The process of choosing the set of members is a type of problem in mathematics called "optimizing a set of interdependent variables." It proceeds recursively. One must start with a trial set, analyze it, change it, re-analyze it, and continue until the set reaches optimum in value. Therefore, potential members must first be identified, then evaluated, then formed into a well-fitting, optimized set. This requires securing their electrical usage profiles and other relevant information before membership can be offered, because which candidates fit best together cannot be determined until after evaluation and recursive attempts at fitting. Only when the set is optimized can membership be offered and the second membership step completed.

Q: Who regulates the proposed Jackson Solar Facility?

A. Electric utilities that deliver all the requirements for retail electric service to consumers are, in most states, regulated by state, federal, and local agencies. These agencies primarily govern the prices utilities charge, the terms of their service to consumers, their budgets and their construction plans. Two broad, fundamental principles justify governmental oversight of these utilities. First, because a utility provides essential services for the well being of society, the public interest is best supported by having one large provider charged with meeting the overall demand of the community. Second, the theory is that this can be accomplished more cheaply through a monopoly given to a single provider rather than having a competition among smaller providers.

Small providers cannot thrive under these conditions, so eventually all firms but one will exit the market or fail. The survivor is a natural monopoly.

Given these two conditions, economic regulation is explicit governmental intervention into a market. It is necessary to achieve public benefits that the market fails to achieve on its own. In recent years, we have seen telephone services, cable services, and other services give way to competitive pressure. In Tennessee, other than filing a financial report, a municipal electric energy acquisition utility is excluded from economic regulation by the Public Utility Commission. For example, Jackson Electric Authority is not required to submit its rates or its building projects to the Tennessee Public Utility Commission for approval. Local Commissioners regulate Jackson Electric Authority. The theory is that the public who benefits locally can elect Commissioners to direct the municipal service provider.

By contrast, Jackson Sustainability Cooperative provides supplemental electric energy for the mutual benefit of its members. Jackson Sustainability Cooperative does not replace the municipal provider. Jackson Sustainability Cooperative is not open to the public. However, it is locally owned and will ultimately be controlled by its members who are manufacturers who benefit from its supplemental solar energy. Much like the municipal provider and the consumer with its own equipment, in Tennessee the government does not regulate cooperative providers to its consumer-members. Cooperative providers are accountable to their members and must comply with the local electrical codes.

The proposed Jackson Solar Project is currently exempt from regulation under federal laws because it does not interconnect to the public utility grid.

Q: How will Jackson Sustainability Cooperative deliver supplemental energy without affecting the existing connection with JEA?

A: Smart electric meters will be installed at each member's facility. Energy from the Solar Facility will flow to these smart meters. The controller technology intelligently allocates power to and from the batteries and to members, taking all factors into account to optimize power delivery. Members will draw power seamlessly from both JEA and JSC's controller, but no power will ever be able to backflow onto JEA's grid. The controller is designed to deliver supplemental energy when demand is high and the energy is most needed. When a JEA or TVA grid outage occurs, members will draw all their electricity from the Solar Facility for short periods of time and/or for priority usage until grid power is restored.

Q: Has the Jackson Sustainability Cooperative solar energy facility received any national recognition?

A. The Jackson Solar Project received an award from the U. S. Department of Energy's National Community Solar Partnership for innovation and contribution to making solar available in areas of the country where it is presently uneconomical.

Q. How will Jackson Sustainability Cooperative finance the Jackson Solar Project?

A. Jackson Sustainability Cooperative will lease all equipment necessary for the production of solar energy for its members. The Lessor is Community Development Enterprises - Jackson I, who is the on site developer. Jackson Sustainability Cooperative has a purchase option. Therefore , if the members of Jackson Sustainability Cooperative can find more favorable finance terms, they can acquire the leased equipment.

Q. Who will maintain the operation of the solar facility for Jackson Sustainability Cooperative?

A. Maintenance of the facility will initially be handled by Northern Reliability, Inc.

Q. In summary, what steps has JSC accomplished to date?

Since beginning work on this project a year and a half ago, we have completed the following:

- Site research, survey, and acquisition
- Feasibility study
- Due diligence: environmental, regulatory, permitting, and utility
- Received all 6 environmental approvals needed
- Preliminary design of the facility
- Selecting equipment needed

- Selecting and contracting with companies to design, engineer, and construct the project
- Selecting local contractors for construction and electrical work, preferring local labor
- All civil engineering site work
- Approval of the site plan design by the Jackson Planning Commission
- Held neighborhood meetings to explain the project to people living nearby, receiving near-unanimous approval
- Arranging for insurance during and after construction
- Beginning funding negotiations with select tax-equity investment banks and investors

Once we are assured that we are in compliance with the law, we will be ready to complete our financing, obtain a building permit, and begin construction

of the Jackson Solar Project.

I swear that the foregoing testimony is true and correct to the best of my knowledge.

_____
Dennis Emberling, President

Respectfully submitted this _____ day of September, 2021.

STATE OF TENNESSEE)
)
COUNTY OF DAVIDSON)

Subscribed and sworn to me a Notary Public, in his capacity as President of JSC this this _____ of _____, 2021.

_____
Notary Public

Commission Expires: _____

DEALFLOW

kWh analytics

EXCLUSIVE INSIGHTS ON SOLAR ASSETS: Q3 & Q4 2020

The DealFlow newsletter is part of a suite of exclusive content created by kWh Analytics. Others in the series include the Solar Lendscape, a listing of all active lenders and tax-equity providers in the solar market, the #Solar100, our interview series with luminaries and thought leaders on emerging topics in the solar finance ecosystem, and the Solar Risk Assessment, an industry-leading report produced in collaboration with 9 other solar industry experts to share the latest insights on solar risk with the industry.

Despite the pandemic, the second half of 2020 proved to be an active market with 30+ separate M&A-related transactions, 40+ asset and corporate financings, and 15+ new corporate PPAs.

For more of the inside scoop, check out kWh Analytics in Norton Rose Fulbright's Currents Episode 149, "2020 Lendscape Update: The Refinancing Boom" and CleanCapital's Expert's Only Episode 87, "Solar Risk Management with Jason Kaminsky," our COO. The episodes spotlight trends to watch in 2021, including upcoming project refinancing opportunities and the adoption of Solar Technology Asset Risk (STAR) reports by banks and asset managers for project financings, M&A, and ongoing asset management.

CORPORATE AND ASSET M&A TRANSACTIONS

Date	Seller	Buyer	Size	Description
6/23/20	First Solar	Goldman Sachs Renewable Power	123 MW	Goldman Sachs Renewable Power acquired the 123 MW American Kings Solar project in June 2020. The project is backed by a 15-year PPA with Southern California Edison.
6/30/20	Osaka Gas Co	Axium Infrastructure	74 MW	Osaka Gas Co., Ltd., has sold its indirect 50% equity ownership of the Aurora Solar portfolio to Axium Infrastructure, an independent portfolio management firm that invests in core infrastructure assets. The 74MW, nine-project solar portfolio has operating facilities located in Ontario, Canada. CohnReznick Capital advised this deal.
7/1/20	Coronal	Capital Dynamics	353 MW	Capital Dynamics completes the acquisition of a 353 MW operating solar portfolio from Coronal Energy. The portfolio comprises of 16 operating plants located in Arizona, California, Florida, Virginia, Tennessee, and Ontario. MUFG Union Bank, Sumitomo Mitsui Banking Corp., and Commonwealth Bank of Australia served as coordinating lead arrangers for the acquisition financing.
7/2/20	Macquarie Capital		3.6 GW	Macquarie Capital's Green Investment Group put up for sale its Class A equity interest in Candela Renewables. Candela has a 3.6 GW development pipeline of utility-scale projects
7/2/20	Oak Leaf Energy	Distributed Solar Development	7.9 MW	Distributed Solar Development successfully acquires community solar portfolio from Oak Leaf Energy Partners. The portfolio comprises of four solar projects located in the greater Denver area.
7/7/20	DIF Capital Partners		37 MW	DIF Capital Partners is selling 50% of its stake in two utility-scale solar projects it co-owns with EDP Renewables. The projects, Lone Valley I and Lone Valley II are located in San Bernardino county California and combined are 37 MWs. Both assets have investment-grade offtakers for 14 remaining years.
7/8/20	D.E. Shaw Renewable Investments		402 MW	D.E. Shaw Renewable Investments (DESRI) is putting up for sale a 502 MW portfolio of operating and contracted solar projects in California, Mississippi, Oregon and Texas.

7/9/20	Longroad Energy	Ørsted	294 MW	Longroad completes the financing and sale of Muscle Shoals Solar, a 294 MW project located in Alabama to Ørsted. The project is expected to come online in 2021. Wells Fargo is the sole tax equity investor in the project.
7/14/20	NextEra Energy		187.5 MW	NextEra Energy is considering sale of part or entire equity interest in its Project Rocket City solar project, a 187.5 MW project located near Huntsville, Alabama. Marathon Capital is advising on the sale process. The project is expected to COD in December 2021.
7/21/20	Ameresco	Greenbacker	5.9 MW	Greenbacker successfully acquired a 5.9 MW portfolio of solar projects form Ameresco.
7/27/20	Goldman Sachs Renewable Power	First Solar	123 MW	Goldman Sachs Renewable Power acquires 123 MW American Kings Solar project in California from First Solar at the end of June 2020.
7/31/20	Public Service Enterprise Group (PSEG)		480 MW	PSEG announces decision to consider the sale of its solar portfolio, which consists of 480 MWdc across 25 states.
8/14/20	Kruger Energy	Ecoplexus	537 MW	CohnReznick Capital advised Kruger Energy on its successful deal to sell a 523 MW development-stage solar portfolio comprised of five assets in Georgia and Tennessee to Ecoplexus.
8/17/20	Cypress Creek Renewables	Dominion Energy	62.5 MW	Dominion acquired 62.5 MW Madison Solar project in Orange County, Virginia from Cypress Creek Renewables. The project is expected to be placed in service in Q2 2022. The project will power Northrop Grumman's manufacturing and office operations.
8/25/20		ReneSola Power	200 MW	ReneSola Power acquired 200 MW of utility projects in Pennsylvania, California, New York, Maine, Illinois, and Arizona for $8mm from an undisclosed US-based developer.
9/2/20	Cypress Creek Renewables	Helios Infrastructure	195 MW	Helios Infrastructure, a joint Nationwide and Sol Systems venture, purchased four operating projects in Texas and 20 projects in North Carolina from Cypress Creek Renewables, totaling the 195 MW.
9/14/20	Solar Frontier	X-Elio	66 MW	Solar Frontier Americas Development sold its 66 MW Midway I project in Imperial County to X-Elio.
9/28/20	LS Power	Capital Dynamics	316 MW	Clean Energy Infrastructure, a part of Capital Dynamics, acquired three solar projects from LS Power in Q4 2020. The portfolio includes 316 MW of operating projects in California, Arizona, Delaware.
10/8/20	Vivint	Sunrun	$3.2bn	Sunrun acquired Vivint Solar. The deal was completed in Q3 of 2020 worth $3.2bn. Sunrun acquired Vivint Solar in an all-stock transaction. The combined company owns 3 GW of solar.
10/21/20	PNM Resources	Avangrid	$8.3bn	Avangrid and PNM announced plans to merge. The resulting merger will include 10 regulated utilities in six states and renewable operations in 24 states. The transaction represents a combined $8.3bn enterprise value.
10/26/20	Capital Dynamics	Alliant	115 MW	Alliant acquired a 115 MW solar portfolio from Capital Dynamics. The portfolio includes two projects in Wisconsin that will become operational by 2023.
11/3/20	NextEra Energy	NextEra Energy Partners	1,000 MW	NextEra Energy sold a 90% interest in a 1,000 MW portfolio of renewable assets for $1.3bn to NextEra Energy Partners and a consortium of private infrastructure investors led by KKR in two

				transactions. The projects are located in Texas, Oklahoma, Florida, Arizona, Maine, and Kansas.
11/3/20	8minute	Skyline Renewables	250 MW	Skyline Renewables acquired the 250 MW Galloway solar project in Texas from 8minute Solar Energy. The solar project will come online by the end of 2021.
11/10/20	GE Renewable Energy	BlackRock Real Assets		Blackrock acquired the remaining 20% stake in Distributed Solar Development (DSD). Blackrock now owns 100% of DSD. The investment will allow BlackRock to fund near-term growth.
11/16/20	Broad Reach Power	Greenbacker Renewable Energy Company	80 MW	Greenbacker Renewable Energy Company (GREC) purchased a 80 MW solar project in South Dakota from Broad Reach Power. The project will reach COD by the end of 2022.
11/17/20	NRG	Spruce Finance	60 MW	Spruce Finance acquired a portfolio of 8,984 rooftop solar systems from NRG. The portfolio totals 60 MW.
11/17/20	WEC Energy Group	Spruce Finance	277 MW	Spruce Finance acquired a portfolio of 1,047 solar rooftop assets, which Spruce had already been managing.
11/24/20	Renewable Energy Systems	Cubico Sustainable Investments	270 MW	Cubico acquired two solar PV projects, totaling 270 MW in Mississippi and Arkansas from Renewable Energy Systems (RES).
12/3/20	Cypress Creek Renewables	CarVal Investors	6.35 MW	Cypress Creek Renewables sold two community solar projects to CarVal Investors. The projects total 6.35 MW and were developed under the Solar Massachusetts Renewable Target (SMART) program.
12/9/20	BayWa r.e.	Energy Infrastructure Partners	$642.3mm	BayWa r.e. sold a 49% stake of its company to Energy Infrastructure Partners for $642.3mm. BayWa AG will remain the group's majority shareholder with a 51% stake.
12/10/20	Exelon	Brookfield	360 MW	Exelon Generation sold 360 MW of solar generation in operation or under construction for $810mm.
12/14/20	DIF Capital Partners	Munich Re	30 MW	DIF Capital Partners sold a 50% stake in two solar projects in San Bernardino County, California.
12/22/20	rPlus Energies	Greenbacker Renewable Energy Company	80 MW	Greenbacker Renewable Energy Company (GREC) purchased a 80 MW solar project in Carbon County, Utah. The project will reach commercial operations in late 2021 and will provide power to Facebook via a PPA.
12/23/20		Altus Power	100 MW	Altus Power acquired 100 MW of distributed solar assets in California, Maryland, Massachusetts, Minnesota, New York and Vermont.

CORPORATE & ASSET FINANCING

Date	Developer	Financier	Size	Description
6/1/20	Sunnova	Undisclosed	47MW	Sunnova Energy International Inc. closed on a tax equity investment for the 47 MW TEPIV D fund of residential solar projects across the U.S. CohnReznick Capital advised the successful deal.
6/26/20	Copenhagen Infrastructure Partners	Undisclosed	347MW	Copenhagen Infrastructure Partners closed on a tax equity investment for a 347 MW utility-scale solar project in Texas. CohnReznick advised the deal.
7/2/20	ENGIE	Hannon Armstrong Sustainable	$150mm	Hannon Armstrong Sustainable Infrastructure Capital (HASI) has completed an initial $150mm investment into a partnership with ENGIE. The initial investment will be supplemented with an additional $390mm in contemplated investments. The investment

		Infrastructure Capital		provides HASI with a preferred equity interest and 49% of distributions to a portfolio of 2.3 GW of wind and utility-scale solar assets.
7/7/20	Sunrun and Vivint Solar		$3.2bn	Sunrun has agreed to acquire Vivint Solar for an enterprise value of $3.2bn. The acquisition is expected to save $90mm a year in expenses and support Sunrun's growth into residential storage and long-term grid services play.
7/7/20	Standard Solar	Fifth Third Bank, National Association and IBERIABANK	$105mm	Standard Solar closed a tax equity commitment of $105mm to finance 9 distributed generation solar projects across Arizona, California, Massachusetts, New York and Rhode Island. Tax equity commitments came from Fifth Third Bank, National Association and IBERIABANK.
7/8/20	Global Atlantic Financial Group	KKR	$4.4bn	KKR & Co. agrees to acquire Global Atlantic Financial Group for $4.4bn. Global Atlantic Financial Group currently manages $70bn of assets, which will bring KKR's total assets under management to $207bn.
7/9/20	Longroad Energy	Wells Fargo	294 MW	Wells Fargo is the sole tax equity investor in Longroad Energy's 294 MW Muscle Shoals Solar project, located in Alabama.
7/10/20	sPower	Undisclosed	620MW	CohnReznick advised sPower on its closing of a $700 million credit facility for the Spotsylvania Solar Energy Center in Spotsylvania County, Virginia. At 620 MW, this is the largest solar project east of the Rockies and the largest single-asset financing in sPower's history.
7/14/20	Wunder Capital	Ares Management, Cyrus Capital Partners and Keyframe Capital Partner	$100mm	Standard Solar closed a tax equity commitment of $105mm to finance 9 distributed generation solar projects across Arizona, California, Massachusetts, New York and Rhode Island. Tax equity commitments came from Fifth Third Bank, National Association and Iberiabank.
7/15/20	Recurrent Energy	Nord/LB	$282mm	Recurrent Energy closed a construction loan of $282mm from Nord/LB to fund its 310 MW Maplewood solar project in Texas. While Nord/LB served as coordinating lead arranger, BayernLB, EDC, National Bank of Canada and Rabobank also participated in the debt arrangement.
7/17/20	sPower	HSBC	618 MW	sPower closed a $704mm debt financing round to support its 618 MW Highlander solar project in Virginia. HSBC led the syndication with eight other lenders, including CaixaBank, CIBC, Citi, Credit Agricole, Helaba, National Bank of Canada, Societe Generale and Banco Sabadell.
7/20/20	Pine Gate Renewables	CIT Group	$126mm	Pine Gate Renewables closed a $126mm financing round for its 108 MW Trent River Solar project in North Carolina. CIT Led the financing.
7/27/20	sPower	HSBC	$700mm	sPower closed a $700mm term loan financing for its 620 MW Spotsylvania Solar Energy Center in Virginia. HSBC led the financing. Other lenders included La Caixa, CIBC, National Bank of Canada, Citibank, Societe Generale, Landesbank, and Banco de Sabadell.
7/27/20	DE Shaw Renewable Investments	Credit Suisse		DE Shaw Renewable Investments (DESRI) obtained long-term debt for an unspecified amount to finance future acquisitions. Credit Suisse led the financing, which also included Zions Bancorporation NA.
8/5/20	True Green Capital Management	Investec	550 MW	True Green Capital Management signed a revolving credit facility with Investec to support its distributed power generation portfolio build out.
8/5/20	Stonepeak		$2.5bn	Stonepeak raised an additional $2.5bn for its fourth flagship infrastructure fund and its maiden renewables vehicle. They're expected to reach final close in Q1 2021.

8/13/20	EDF North America	Masdar	1.6 GW	Masdar acquired a 50 percent stake in EDF North America's 1.6 GW portfolio of wind, solar, and storage projects.
8/19/20	Duke Energy	Goldman Sachs	$109.4mm	Duke Energy Renewables announced a closing of $109.4mm in preferred tax equity from Goldman Sachs' Alternative Energy Investing Group on its portfolio of 75 MW of solar and solar plus storage projects in Arizona, California, Colorado, Hawaii, Massachusetts, and Texas.
8/19/20	Recurrent Energy	CIT	$162mm	CIT led a $162mm financing round for Recurrent Energy's Pflugerville Solar Farm, a 144 MW solar project. The project will provide electricity to Austin Energy.
8/25/20	Pattern Energy	RBC Community Investments, ING	105 MW	Pattern Energy completed financing and started construction on its 105 MW Phoenix Solar Project in Fannin County, Texas. ING provided construction and term project financing and RBC Community Investments provided tax equity.
8/27/20	Recurrent Energy	Nomura	$75mm	Nomura provided a $75mm loan to Recurrent Energy to accelerate its development activities in the US and Canada.
8/28/20	Longroad Energy	US Bank, CIT	331 MW	Longroad Energy Holdings closed financing and started construction on its Prospero 2 Solar Project, a 33 MW project in in TX. The project will come online in Q2 of 2021. US Bank provided tax equity and CIT led the construction and term lending. Other lenders include Zions, Rabobank, HSBC, Commerzbank, Siemens, and National Australia Bank.
8/28/20	Terra-Gen	First Stake Investments		First State Investments (FSI) acquired a 40% stake in Terra Gen from Energy Capital Partners.
9/23/20	SunPower	Hannon Armstrong Sustainable Infrastructure Capital, Bank of America		SunPower secured financing commitments from Hannon Armstrong Sustainable Infrastructure Capital and other providers for its residential solar lease program and its new solar plus storage program. The fund will help meet customer demand through mid-2021. Bank of America acted as the sole structuring and placement agent for the multi-draw term loan.
9/24/20	Palladium Energy	Inverdale Energy Partners	500 MW	Palladium Energy entered into a joint venture agreement with Inverdale Energy Partners to form Palladium Energy Development. This company will develop an initial portfolio of 500 MW of utility-scale solar and solar plus storage projects in the US.
9/25/20	Amp	US Bank, KeyBank	$100mm	Amp announced it closed financing on its 29.4 MW Massachusetts Community Solar portfolio, valued at $100mm. KeyBank will provide construction and term debt and US Bank will invest the tax equity for the portfolio.
10/2/20	Lightsource BP	Undisclosed	300 MW	Lightsource bp closed on a tax equity investment for the 300MW Bighorn Solar facility on a deal advised by CohnReznick Capital. Located in Pueblo, Colorado, the project is currently under construction and will generate power for the local steel mill upon commercial operation in late 2021.
10/21/20	Capital Dynamics, Sol Systems	Bank of America	76 MW	Bank of America will provide tax equity to finance Capital Dynamics and Sol System's portfolio of solar projects. The portfolio totals 76 MW. The tax equity commitment will be delivered in two tranches.
10/30/20	Cypress Creek Renewables	BNP Paribas	92 MW	Cypress Creek Renewables announced it completed a tax equity buyout and refinancing of a project-level debt for 92 MW of its solar portfolio in North Carolina. The move makes Cypress Creek the sole owner of these projects. BNP Paribas acted as the primary lender and lead arranger for the transaction.
11/13/20	Cypress Creek Renewables	Investec Power and Infrastructure Finance	$200mm	Cypress Creek Renewables completed a $200mm debt financing deal for the holding company that owns its 1.6 GW of solar parks across the US. The portfolio includes 200 solar plants and energy storage facilities across 13 states. Investec Power and

				Infrastructure provided debt. Others involved include Credit Agricole, East West Bank, and Silicon Valley Bank.
11/13/20	Ameresco	Fifth Third Bank	$30mm	Ameresco closed a $30mm construction loan facility to finance solar projects and assets. Fifth Third Bank provided the loan.
11/18/20	sPower, AES			AES Corporation announced an agreement with Alberta Investment Management Corporation (AIMCo) to merge sPower with AES's clean energy development business. Future projects developed from the combined 12 GW pipeline will be owned 75% by AES and 25% by AIMCo.
11/18/20	Summit Ridge Energy	Undisclosed	27 MW	Summit Ridge Energy secured tax equity financing for a 27MW community solar portfolio. CohnReznick Capital advised this deal.
11/24/20	Nautilus	Credit Suisse	$95mm	Nautilus Solar Energy closed a $95mm tax equity financing commitment with an affiliate of Credit Suisse. The facility will provide competitive long-term financing for 14 community solar projects across Rhode Island, Maryland, New York, and Minnesota, totaling 55 MW. All projects will be in service in 2020.
12/1/20	Loanpal	Goldman Sachs, Blackstone Credit, Goodfinch	$434mm	Loanpal closed a securitization of $434mm of Loanpal solar loans previously purchased by Goldman Sachs, Blackstone Credit, and Goodfinch. This represents the largest securitization of residential solar loans to date.
12/4/20	Capital Dynamics	MUFG	$327mm	Capital Dynamics closed financing for a solar project on the Moapa River Indian Reservation in Nevada. The financing included $327mm in credit led by MUFG Union Bank. This includes $202mm construction to term loan facility with a tenor of construction plus five years.
12/4/20	7X Energy	Undisclosed	250 MW	CohnReznick Capital advised 7X Energy, Inc. on its successful closing of a tax equity commitment for its 250MW Taygete I solar project. Located in Pecos County, Texas, Taygete I is expected to reach full commercial operation in early 2021.
12/8/20	Engie	Hannon Armstrong	$172mm	Engie announced a partnership with Hannon Armstrong to jointly invest in a portfolio of DG solar and solar plus storage assets across the US. The portfolio includes community solar and commercial and industrial projects across the US.
12/10/20	Tokyo Gas Americas	Undisclosed	631 MW	CohnReznick Capital advised Tokyo Gas America on its successful closing of a tax equity investment for the 631MW Aktina Solar Project, located in Texas.
12/11/20	Swell	Ares Management, Aligned Climate Capital	$450mm	Swell Energy created a VPP Financing Vehicle to support up to $450mm of capital investment for its nationwide VPP portfolio in partnership with Ares Management Corporation and Aligned Capital Climate.
12/18/20	Apex	Zoma Capital, Plexus Solutions	$200mm	Apex Clean Energy closed its financing round with $200mm to develop more utility-scale wind, solar and storage projects in the US. Financing was led by Zoma Capital and Plexus Solutions.
12/21/20	Invenergy	Caisse de dépôt et placement du Québec (CDPQ)	$1bn	Canadian pension fund Caisse de dépôt et placement du Québec (CDPQ) invested $1bn in Invenergy Renewables.
12/23/20	Clearway	Hannon Armstrong	$950mm	Hannon Armstrong and Clearway Energy jointly invested $950mm in a nearly 2 GW portfolio of existing and new wind, solar, and energy storage projects.
12/30/20	Lightsource BP	Undisclosed	316 MW	CohnReznick Capital advised Lightsource bp on its closing of a tax equity investment for a 316MW solar portfolio. The portfolio consists of two projects located near Dallas, TX – Elm Branch Solar (163MW) and Briar Creek Solar (153MW).

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EXCLUSIVE INSIGHTS ON SOLAR ASSETS: Q3 & Q4 2020

POWER PURCHASE AGREEMENTS (PPAs)

Date	Developer	Financier	Size	Description
7/8/20	Duke Energy, NRG Energy, NativeEnergy and Birdseye Renewable Energy	Bank of America	200 MW	Bank of America signed 10 solar purchase agreements to power its operations in North Carolina, Texas and South Carolina. Deals were completed with several developers to support Bank of America's commitments to being carbon neutral.
7/20/20	NextEra	Northern Indiana Public Service Company (NIPSCO)	300 MW	Northern Indiana Public Service Company (NIPSCO) signed two 20-year PPAs with NextEra for solar projects in central Indiana. The projects were selected via a Request for Proposal (RFP).
7/20/20	Origis Energy	Gainesville Regional Utilities	50 MW	Gainesville Regional Utilities (GRU) signed a PPA for a 50 MW solar project that includes 12 MW of storage. The project will be completed in late 2022.
7/21/20	Sol Systems	Microsoft	500 MW	Sol Systems and Microsoft announced an initiative to develop a portfolio of over 500 MW of solar projects. Sol Systems will finance, develop and operate the portfolio and Microsoft will be the offtaker. As part of the initiative, Sol Systems and Microsoft will invest $50mm for community-led grants and investments.
7/30/20	EDF	NV Energy	200 MW	NV Energy signed a PPA with EDF for a 200 MW solar project with 180 MW battery storage. The project is located in Nevada and will come online by the end of 2023.
7/31/20	Bullfrog Power, BluEarth Renewables	RBC	39 MW	RBC signed a PPA to receive power from two solar farms, totaling 19 MW and 20 MW respectively. Construction will begin in April 2021.
9/10/20	DE Shaw Renewable Investments	Facebook, PacifiCorp	155 MW	DE Shaw Renewable Investments announced Facebook and Rocky Mountain Power signed PPAs for solar projects in Utah. The projects total 155 MW and will be in operation in 2022.
9/10/20	8minute	Clean Power Alliance	400 MW	Clean Power Alliance signed a 15-year PPA with 8minute Solar Energy. The PPA will provide 400 MW of energy to Californians. The project will be operational in 2023.
9/15/20	Duke Energy	Duke University	101 MW	Duke University signs a new agreement with Duke Energy to source renewable power from three solar projects across North Carolina, totaling 101 MWs.
9/22/20	Lightsource	L3Harris Technologies	100 MW	L3Harris Technologies signed a Virtual PPA (VPPA) with Lightsource BP for up to 100 MW of capacity from a new solar farm in Texas. The project is expected to be in operation in 2H21.
9/29/20	DE Shaw Renewable Investments	Massachusetts and Rhode Island Municipal Utilities	50 MW	DE Shaw Renewable Investments executed PPAs with 19 Massachusetts and Rhode Island municipal utilities. The deal was facilitated by Energy New England. The 25-year agreement will supply 50 MW of energy to the utilities when it comes online in 2023.
10/21/20	Capital Power	Duke Energy Carolinas	160 MW	Duke Energy Carolinas signed a 20-year PPA with Capital Power Corporation for three solar projects totaling 160 MW in North Carolina.
10/21/20	EDP		100 MW	EDP executed a 15-year PPAs for two solar farms totaling 100 MW. EDP did not release the details of the electricity purchaser. The projects will come online in 2022.
12/1/20	Sunpin Solar	Constellation New Energy	70 MW	Constellation New Energy signed at 12-year PPA with Sunpin for 70 MWs from its Titan Solar 1 project in Imperial County, California.
12/4/20	Savion	Dominion Energy	75 MW	Savion signed a PPA for 75 MW of renewable energy from a solar project in Southwest Virginia owned by Dominion Energy.

12/18/20	Capital Dynamics	Northern Indiana Public Service Company	280 MW	Northern Indiana Public Service Company (NIPSCO) signed a PPA with Capital Dynamics for 280 MW of solar.

Part III. Administrative, Procedural, and Miscellaneous

Designated Qualified Opportunity Zones under Internal Revenue Code § 1400Z–2

Notice 2018–48

PURPOSE

This notice lists the population census tracts the Secretary of the Treasury (Secretary) designates as qualified opportunity zones (Zones).

BACKGROUND

Section 13823 of "An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for the fiscal year 2018," P.L. 115–97, which was enacted December 22, 2017, amended the Internal Revenue Code (Code) by adding §§ 1400Z–1 and 1400Z–2. Section 1400Z–1(b)(1)(A) of the Code allows the Chief Executive Officer (CEO) of each State to nominate a limited number of population census tracts to be designated as Zones for purposes of §§ 1400Z–1 and 1400Z–2.

Revenue Procedure 2018–16, 2018–9 I.R.B. 383, provided guidance to State CEOs on the procedure for making these nominations. Section 1400Z–1(b)(1)(B) of the Code provides that after the Secretary receives notice of the nominations, the Secretary may certify the nominations and designate the nominated tracts as Zones.

LIST OF DESIGNATED QUALIFIED OPPORTUNITY ZONES

Following is the complete list of all population census tracts that the Secretary designated as Zones for purposes of §§ 1400Z–1 and 1400Z–2. The Internal Revenue Service will be governed by this list in administering § 1400Z–2.

State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Autauga	01001020700	Low-Income Community	2011–2015
Alabama	Baldwin	01003010200	Low-Income Community	2011–2015
Alabama	Baldwin	01003010400	Non-LIC Contiguous	2011–2015
Alabama	Baldwin	01003010500	Low-Income Community	2011–2015
Alabama	Baldwin	01003010600	Low-Income Community	2011–2015
Alabama	Baldwin	01003011501	Non-LIC Contiguous	2011–2015
Alabama	Baldwin	01003011502	Low-Income Community	2011–2015
Alabama	Barbour	01005950100	Low-Income Community	2011–2015
Alabama	Bibb	01007010002	Low-Income Community	2011–2015
Alabama	Blount	01009050500	Low-Income Community	2011–2015
Alabama	Bullock	01011952200	Low-Income Community	2011–2015
Alabama	Butler	01013952800	Low-Income Community	2012–2016
Alabama	Calhoun	01015000700	Low-Income Community	2011–2015
Alabama	Calhoun	01015000800	Low-Income Community	2011–2015
Alabama	Calhoun	01015002101	Low-Income Community	2011–2015
Alabama	Chambers	01017954300	Low-Income Community	2011–2015
Alabama	Cherokee	01019955900	Low-Income Community	2011–2015
Alabama	Chilton	01021060102	Low-Income Community	2011–2015
Alabama	Choctaw	01023956800	Low-Income Community	2011–2015
Alabama	Clarke	01025957902	Low-Income Community	2011–2015
Alabama	Clay	01027959000	Low-Income Community	2011–2015
Alabama	Cleburne	01029959600	Low-Income Community	2011–2015
Alabama	Coffee	01031010900	Low-Income Community	2011–2015
Alabama	Colbert	01033020200	Low-Income Community	2011–2015
Alabama	Conecuh	01035960400	Low-Income Community	2011–2015
Alabama	Coosa	01037961000	Low-Income Community	2011–2015
Alabama	Covington	01039962000	Low-Income Community	2011–2015
Alabama	Covington	01039962700	Low-Income Community	2011–2015
Alabama	Crenshaw	01041963700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Cullman	01043964800	Low-Income Community	2011–2015
Alabama	Cullman	01043965000	Low-Income Community	2011–2015
Alabama	Dale	01045020700	Low-Income Community	2011–2015
Alabama	Dallas	01047956500	Low-Income Community	2011–2015
Alabama	DeKalb	01049960900	Low-Income Community	2011–2015
Alabama	Elmore	01051031000	Low-Income Community	2011–2015
Alabama	Elmore	01051031300	Low-Income Community	2011–2015
Alabama	Escambia	01053970400	Low-Income Community	2011–2015
Alabama	Etowah	01055001200	Low-Income Community	2011–2015
Alabama	Fayette	01057020300	Low-Income Community	2011–2015
Alabama	Franklin	01059973700	Low-Income Community	2011–2015
Alabama	Geneva	01061050300	Low-Income Community	2011–2015
Alabama	Greene	01063060200	Low-Income Community	2011–2015
Alabama	Hale	01065040400	Low-Income Community	2011–2015
Alabama	Henry	01067030200	Low-Income Community	2011–2015
Alabama	Houston	01069041500	Low-Income Community	2011–2015
Alabama	Jackson	01071950600	Low-Income Community	2011–2015
Alabama	Jefferson	01073000100	Low-Income Community	2011–2015
Alabama	Jefferson	01073000300	Low-Income Community	2011–2015
Alabama	Jefferson	01073000400	Low-Income Community	2011–2015
Alabama	Jefferson	01073000500	Low-Income Community	2011–2015
Alabama	Jefferson	01073000700	Low-Income Community	2011–2015
Alabama	Jefferson	01073000800	Low-Income Community	2011–2015
Alabama	Jefferson	01073001200	Low-Income Community	2011–2015
Alabama	Jefferson	01073001400	Low-Income Community	2011–2015
Alabama	Jefferson	01073001500	Low-Income Community	2011–2015
Alabama	Jefferson	01073001600	Low-Income Community	2011–2015
Alabama	Jefferson	01073001902	Low-Income Community	2011–2015
Alabama	Jefferson	01073002200	Low-Income Community	2011–2015
Alabama	Jefferson	01073002303	Low-Income Community	2011–2015
Alabama	Jefferson	01073002400	Low-Income Community	2011–2015
Alabama	Jefferson	01073002700	Low-Income Community	2011–2015
Alabama	Jefferson	01073002900	Low-Income Community	2011–2015
Alabama	Jefferson	01073003001	Low-Income Community	2011–2015
Alabama	Jefferson	01073003002	Low-Income Community	2011–2015
Alabama	Jefferson	01073003200	Low-Income Community	2011–2015
Alabama	Jefferson	01073003900	Low-Income Community	2011–2015
Alabama	Jefferson	01073004200	Low-Income Community	2011–2015
Alabama	Jefferson	01073004500	Low-Income Community	2011–2015
Alabama	Jefferson	01073010200	Low-Income Community	2011–2015
Alabama	Jefferson	01073011209	Low-Income Community	2011–2015
Alabama	Jefferson	01073011705	Non-LIC Contiguous	2011–2015
Alabama	Jefferson	01073012002	Low-Income Community	2011–2015
Alabama	Jefferson	01073012701	Low-Income Community	2011–2015
Alabama	Jefferson	01073013100	Low-Income Community	2011–2015
Alabama	Lamar	01075030100	Low-Income Community	2011–2015
Alabama	Lauderdale	01077010100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Lauderdale	01077010900	Low-Income Community	2011–2015
Alabama	Lawrence	01079979100	Low-Income Community	2011–2015
Alabama	Lee	01081040200	Low-Income Community	2011–2015
Alabama	Lee	01081040300	Low-Income Community	2011–2015
Alabama	Lee	01081040604	Low-Income Community	2011–2015
Alabama	Lee	01081040700	Low-Income Community	2011–2015
Alabama	Lee	01081040800	Low-Income Community	2011–2015
Alabama	Lee	01081041100	Low-Income Community	2011–2015
Alabama	Lee	01081041300	Low-Income Community	2011–2015
Alabama	Limestone	01083020201	Low-Income Community	2011–2015
Alabama	Limestone	01083020600	Low-Income Community	2011–2015
Alabama	Limestone	01083020700	Low-Income Community	2011–2015
Alabama	Lowndes	01085780800	Low-Income Community	2011–2015
Alabama	Macon	01087231500	Low-Income Community	2011–2015
Alabama	Macon	01087231603	Low-Income Community	2011–2015
Alabama	Macon	01087232200	Low-Income Community	2011–2015
Alabama	Madison	01089000201	Low-Income Community	2011–2015
Alabama	Madison	01089000202	Low-Income Community	2011–2015
Alabama	Madison	01089001301	Low-Income Community	2011–2015
Alabama	Madison	01089001402	Low-Income Community	2011–2015
Alabama	Madison	01089001500	Low-Income Community	2011–2015
Alabama	Madison	01089002100	Low-Income Community	2011–2015
Alabama	Madison	01089002501	Low-Income Community	2011–2015
Alabama	Madison	01089003000	Low-Income Community	2011–2015
Alabama	Madison	01089003100	Low-Income Community	2011–2015
Alabama	Madison	01089010622	Low-Income Community	2011–2015
Alabama	Marengo	01091972900	Low-Income Community	2011–2015
Alabama	Marion	01093964400	Low-Income Community	2011–2015
Alabama	Marion	01093964500	Non-LIC Contiguous	2011–2015
Alabama	Marshall	01095030100	Low-Income Community	2011–2015
Alabama	Mobile	01097000200	Low-Income Community	2011–2015
Alabama	Mobile	01097000401	Low-Income Community	2011–2015
Alabama	Mobile	01097000600	Low-Income Community	2011–2015
Alabama	Mobile	01097001002	Low-Income Community	2011–2015
Alabama	Mobile	01097001200	Low-Income Community	2011–2015
Alabama	Mobile	01097001302	Low-Income Community	2011–2015
Alabama	Mobile	01097001400	Low-Income Community	2011–2015
Alabama	Mobile	01097001501	Low-Income Community	2011–2015
Alabama	Mobile	01097001502	Low-Income Community	2011–2015
Alabama	Mobile	01097002600	Low-Income Community	2011–2015
Alabama	Mobile	01097002800	Low-Income Community	2011–2015
Alabama	Mobile	01097003402	Low-Income Community	2011–2015
Alabama	Mobile	01097006403	Low-Income Community	2011–2015
Alabama	Mobile	01097007400	Low-Income Community	2011–2015
Alabama	Monroe	01099076000	Low-Income Community	2011–2015
Alabama	Montgomery	01101000100	Low-Income Community	2011–2015
Alabama	Montgomery	01101000200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Alabama	Montgomery	01101000300	Low-Income Community	2011–2015
Alabama	Montgomery	01101000500	Low-Income Community	2011–2015
Alabama	Montgomery	01101000600	Low-Income Community	2011–2015
Alabama	Montgomery	01101001000	Low-Income Community	2011–2015
Alabama	Montgomery	01101001100	Low-Income Community	2011–2015
Alabama	Montgomery	01101002100	Low-Income Community	2011–2015
Alabama	Montgomery	01101002900	Low-Income Community	2011–2015
Alabama	Montgomery	01101005603	Low-Income Community	2011–2015
Alabama	Montgomery	01101005902	Low-Income Community	2011–2015
Alabama	Montgomery	01101006000	Low-Income Community	2011–2015
Alabama	Morgan	01103000100	Low-Income Community	2011–2015
Alabama	Perry	01105687000	Low-Income Community	2011–2015
Alabama	Pickens	01107050100	Low-Income Community	2011–2015
Alabama	Pike	01109189100	Low-Income Community	2011–2015
Alabama	Randolph	01111000500	Low-Income Community	2011–2015
Alabama	Russell	01113030200	Low-Income Community	2011–2015
Alabama	St. Clair	01115040203	Low-Income Community	2011–2015
Alabama	Shelby	01117030703	Low-Income Community	2011–2015
Alabama	Sumter	01119011300	Low-Income Community	2011–2015
Alabama	Talladega	01121010900	Low-Income Community	2011–2015
Alabama	Tallapoosa	01123962300	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125010403	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125010404	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011600	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011701	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125011800	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012100	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012303	Non-LIC Contiguous	2011–2015
Alabama	Tuscaloosa	01125012405	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012600	Low-Income Community	2011–2015
Alabama	Tuscaloosa	01125012800	Low-Income Community	2011–2015
Alabama	Walker	01127020400	Low-Income Community	2011–2015
Alabama	Washington	01129044200	Low-Income Community	2011–2015
Alabama	Wilcox	01131035100	Low-Income Community	2011–2015
Alabama	Winston	01133965700	Low-Income Community	2011–2015
Alaska	Aleutians East	02013000100	Low-Income Community	2011–2015
Alaska	Aleutians West	02016000100	Low-Income Community	2011–2015
Alaska	Anchorage	02020000300	Low-Income Community	2011–2015
Alaska	Anchorage	02020000600	Low-Income Community	2011–2015
Alaska	Anchorage	02020000702	Low-Income Community	2011–2015
Alaska	Anchorage	02020000703	Low-Income Community	2011–2015
Alaska	Anchorage	02020001000	Low-Income Community	2011–2015
Alaska	Anchorage	02020001900	Low-Income Community	2011–2015
Alaska	Anchorage	02020002000	Low-Income Community	2011–2015
Alaska	Bethel	02050000300	Low-Income Community	2011–2015
Alaska	Fairbanks North Star	02090000100	Low-Income Community	2011–2015
Alaska	Fairbanks North Star	02090000200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Alaska	Fairbanks North Star	02090001100	Low-Income Community	2011–2015
Alaska	Haines	02100000100	Low-Income Community	2012–2016
Alaska	Hoonah-Angoon	02105000300	Low-Income Community	2011–2015
Alaska	Kenai Peninsula	02122000100	Low-Income Community	2011–2015
Alaska	Matanuska-Susitna	02170000401	Low-Income Community	2011–2015
Alaska	Matanuska-Susitna	02170000701	Low-Income Community	2012–2016
Alaska	Nome	02180000100	Low-Income Community	2011–2015
Alaska	North Slope	02185000200	Low-Income Community	2011–2015
Alaska	Northwest Arctic	02188000100	Low-Income Community	2011–2015
Alaska	Prince of Wales-Hyder	02198000100	Low-Income Community	2011–2015
Alaska	Prince of Wales-Hyder	02198940100	Low-Income Community	2011–2015
Alaska	Wrangell	02275000300	Low-Income Community	2011–2015
Alaska	Yukon-Koyukuk	02290000200	Low-Income Community	2011–2015
American Samoa	Eastern	60010950100	Low-Income Community	2011–2015
American Samoa	Eastern	60010950200	Low-Income Community	2011–2015
American Samoa	Eastern	60010950300	Low-Income Community	2011–2015
American Samoa	Eastern	60010950500	Low-Income Community	2011–2015
American Samoa	Eastern	60010950600	Low-Income Community	2011–2015
American Samoa	Eastern	60010950700	Low-Income Community	2011–2015
American Samoa	Eastern	60010950900	Low-Income Community	2011–2015
American Samoa	Manu'a	60020951800	Low-Income Community	2011–2015
American Samoa	Western	60050951000	Low-Income Community	2011–2015
American Samoa	Western	60050951100	Low-Income Community	2011–2015
American Samoa	Western	60050951201	Low-Income Community	2011–2015
American Samoa	Western	60050951202	Low-Income Community	2011–2015
American Samoa	Western	60050951203	Low-Income Community	2011–2015
American Samoa	Western	60050951300	Low-Income Community	2011–2015
American Samoa	Western	60050951500	Low-Income Community	2011–2015
American Samoa	Western	60050951600	Low-Income Community	2011–2015
Arizona	Apache	04001945100	Low-Income Community	2011–2015
Arizona	Apache	04001970200	Low-Income Community	2011–2015
Arizona	Apache	04001970502	Non-LIC Contiguous	2011–2015
Arizona	Cochise	04003000301	Low-Income Community	2011–2015
Arizona	Cochise	04003000600	Low-Income Community	2011–2015
Arizona	Cochise	04003001100	Low-Income Community	2011–2015
Arizona	Cochise	04003001702	Low-Income Community	2011–2015
Arizona	Coconino	04005000900	Low-Income Community	2011–2015
Arizona	Coconino	04005002200	Non-LIC Contiguous	2011–2015
Arizona	Coconino	04005002300	Low-Income Community	2011–2015
Arizona	Coconino	04005942202	Low-Income Community	2011–2015
Arizona	Coconino	04005945000	Low-Income Community	2011–2015
Arizona	Coconino	04005945100	Low-Income Community	2011–2015
Arizona	Coconino	04005945200	Low-Income Community	2011–2015
Arizona	Gila	04007000900	Low-Income Community	2011–2015
Arizona	Gila	04007001100	Low-Income Community	2012–2016
Arizona	Gila	04007940400	Low-Income Community	2011–2015
Arizona	Graham	04009961201	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Greenlee	04011960100	Non-LIC Contiguous	2011–2015
Arizona	Greenlee	04011960300	Low-Income Community	2011–2015
Arizona	La Paz	04012020100	Low-Income Community	2011–2015
Arizona	La Paz	04012940300	Low-Income Community	2011–2015
Arizona	Maricopa	04013040502	Low-Income Community	2011–2015
Arizona	Maricopa	04013050604	Low-Income Community	2011–2015
Arizona	Maricopa	04013050607	Low-Income Community	2011–2015
Arizona	Maricopa	04013050609	Low-Income Community	2011–2015
Arizona	Maricopa	04013060801	Low-Income Community	2011–2015
Arizona	Maricopa	04013060902	Low-Income Community	2011–2015
Arizona	Maricopa	04013061024	Non-LIC Contiguous	2011–2015
Arizona	Maricopa	04013061200	Low-Income Community	2011–2015
Arizona	Maricopa	04013061300	Low-Income Community	2011–2015
Arizona	Maricopa	04013071910	Low-Income Community	2011–2015
Arizona	Maricopa	04013071913	Low-Income Community	2011–2015
Arizona	Maricopa	04013082024	Low-Income Community	2011–2015
Arizona	Maricopa	04013082208	Low-Income Community	2011–2015
Arizona	Maricopa	04013092401	Low-Income Community	2011–2015
Arizona	Maricopa	04013092500	Low-Income Community	2011–2015
Arizona	Maricopa	04013092600	Low-Income Community	2011–2015
Arizona	Maricopa	04013092900	Low-Income Community	2011–2015
Arizona	Maricopa	04013093001	Low-Income Community	2011–2015
Arizona	Maricopa	04013093104	Low-Income Community	2011–2015
Arizona	Maricopa	04013103210	Low-Income Community	2011–2015
Arizona	Maricopa	04013104205	Low-Income Community	2011–2015
Arizona	Maricopa	04013104401	Low-Income Community	2011–2015
Arizona	Maricopa	04013104402	Low-Income Community	2011–2015
Arizona	Maricopa	04013105501	Low-Income Community	2011–2015
Arizona	Maricopa	04013105502	Low-Income Community	2011–2015
Arizona	Maricopa	04013105503	Low-Income Community	2011–2015
Arizona	Maricopa	04013106003	Low-Income Community	2011–2015
Arizona	Maricopa	04013106802	Low-Income Community	2011–2015
Arizona	Maricopa	04013107201	Low-Income Community	2011–2015
Arizona	Maricopa	04013107300	Low-Income Community	2011–2015
Arizona	Maricopa	04013107400	Low-Income Community	2011–2015
Arizona	Maricopa	04013108902	Low-Income Community	2011–2015
Arizona	Maricopa	04013109002	Low-Income Community	2011–2015
Arizona	Maricopa	04013109003	Low-Income Community	2011–2015
Arizona	Maricopa	04013109200	Low-Income Community	2011–2015
Arizona	Maricopa	04013109300	Low-Income Community	2011–2015
Arizona	Maricopa	04013110100	Low-Income Community	2011–2015
Arizona	Maricopa	04013111700	Low-Income Community	2011–2015
Arizona	Maricopa	04013112100	Low-Income Community	2011–2015
Arizona	Maricopa	04013112509	Low-Income Community	2011–2015
Arizona	Maricopa	04013112512	Low-Income Community	2011–2015
Arizona	Maricopa	04013112513	Low-Income Community	2011–2015
Arizona	Maricopa	04013113100	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Maricopa	04013113203	Low-Income Community	2011–2015
Arizona	Maricopa	04013113300	Low-Income Community	2011–2015
Arizona	Maricopa	04013113801	Low-Income Community	2011–2015
Arizona	Maricopa	04013113900	Low-Income Community	2011–2015
Arizona	Maricopa	04013114000	Low-Income Community	2011–2015
Arizona	Maricopa	04013114100	Low-Income Community	2011–2015
Arizona	Maricopa	04013114200	Low-Income Community	2011–2015
Arizona	Maricopa	04013114800	Low-Income Community	2011–2015
Arizona	Maricopa	04013114900	Low-Income Community	2011–2015
Arizona	Maricopa	04013115200	Low-Income Community	2011–2015
Arizona	Maricopa	04013115300	Low-Income Community	2011–2015
Arizona	Maricopa	04013115400	Low-Income Community	2011–2015
Arizona	Maricopa	04013115801	Low-Income Community	2011–2015
Arizona	Maricopa	04013116500	Low-Income Community	2011–2015
Arizona	Maricopa	04013116900	Low-Income Community	2011–2015
Arizona	Maricopa	04013117200	Low-Income Community	2011–2015
Arizona	Maricopa	04013117300	Low-Income Community	2011–2015
Arizona	Maricopa	04013217201	Low-Income Community	2011–2015
Arizona	Maricopa	04013218000	Low-Income Community	2011–2015
Arizona	Maricopa	04013318400	Low-Income Community	2011–2015
Arizona	Maricopa	04013318800	Low-Income Community	2011–2015
Arizona	Maricopa	04013319104	Low-Income Community	2011–2015
Arizona	Maricopa	04013319202	Low-Income Community	2011–2015
Arizona	Maricopa	04013319705	Low-Income Community	2011–2015
Arizona	Maricopa	04013420206	Low-Income Community	2011–2015
Arizona	Maricopa	04013421302	Low-Income Community	2011–2015
Arizona	Maricopa	04013421303	Low-Income Community	2011–2015
Arizona	Maricopa	04013421304	Low-Income Community	2011–2015
Arizona	Maricopa	04013421400	Low-Income Community	2011–2015
Arizona	Maricopa	04013421501	Low-Income Community	2011–2015
Arizona	Maricopa	04013421502	Low-Income Community	2011–2015
Arizona	Maricopa	04013422203	Low-Income Community	2011–2015
Arizona	Maricopa	04013422401	Low-Income Community	2011–2015
Arizona	Maricopa	04013422641	Non-LIC Contiguous	2011–2015
Arizona	Maricopa	04013522800	Low-Income Community	2011–2015
Arizona	Maricopa	04013523102	Low-Income Community	2011–2015
Arizona	Maricopa	04013523104	Low-Income Community	2011–2015
Arizona	Maricopa	04013614700	Low-Income Community	2011–2015
Arizona	Maricopa	04013723305	Low-Income Community	2011–2015
Arizona	Maricopa	04013817600	Low-Income Community	2011–2015
Arizona	Maricopa	04013941100	Low-Income Community	2011–2015
Arizona	Maricopa	04013941300	Low-Income Community	2011–2015
Arizona	Mohave	04015940400	Low-Income Community	2011–2015
Arizona	Mohave	04015951602	Low-Income Community	2011–2015
Arizona	Mohave	04015951900	Low-Income Community	2011–2015
Arizona	Mohave	04015952400	Low-Income Community	2011–2015
Arizona	Mohave	04015953900	Non-LIC Contiguous	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Mohave	04015954800	Low-Income Community	2011–2015
Arizona	Mohave	04015955000	Low-Income Community	2011–2015
Arizona	Navajo	04017960500	Low-Income Community	2011–2015
Arizona	Navajo	04017963300	Low-Income Community	2011–2015
Arizona	Navajo	04017965300	Low-Income Community	2011–2015
Arizona	Pima	04019000100	Low-Income Community	2011–2015
Arizona	Pima	04019000200	Low-Income Community	2011–2015
Arizona	Pima	04019000300	Low-Income Community	2011–2015
Arizona	Pima	04019000400	Low-Income Community	2011–2015
Arizona	Pima	04019000800	Low-Income Community	2011–2015
Arizona	Pima	04019001200	Low-Income Community	2011–2015
Arizona	Pima	04019001302	Low-Income Community	2011–2015
Arizona	Pima	04019001303	Low-Income Community	2011–2015
Arizona	Pima	04019001801	Low-Income Community	2011–2015
Arizona	Pima	04019002201	Low-Income Community	2011–2015
Arizona	Pima	04019002202	Low-Income Community	2011–2015
Arizona	Pima	04019002300	Low-Income Community	2011–2015
Arizona	Pima	04019002501	Low-Income Community	2011–2015
Arizona	Pima	04019002901	Low-Income Community	2011–2015
Arizona	Pima	04019003501	Low-Income Community	2011–2015
Arizona	Pima	04019003802	Low-Income Community	2011–2015
Arizona	Pima	04019004011	Low-Income Community	2011–2015
Arizona	Pima	04019004067	Low-Income Community	2011–2015
Arizona	Pima	04019004112	Low-Income Community	2011–2015
Arizona	Pima	04019004115	Low-Income Community	2011–2015
Arizona	Pima	04019004116	Low-Income Community	2011–2015
Arizona	Pima	04019004117	Low-Income Community	2011–2015
Arizona	Pima	04019004122	Low-Income Community	2011–2015
Arizona	Pima	04019004504	Low-Income Community	2011–2015
Arizona	Pima	04019004613	Low-Income Community	2011–2015
Arizona	Pima	04019410502	Non-LIC Contiguous	2011–2015
Arizona	Pima	04019940900	Low-Income Community	2011–2015
Arizona	Pima	04019941000	Low-Income Community	2011–2015
Arizona	Pinal	04021000310	Low-Income Community	2011–2015
Arizona	Pinal	04021000400	Low-Income Community	2012–2016
Arizona	Pinal	04021000700	Low-Income Community	2011–2015
Arizona	Pinal	04021000901	Low-Income Community	2011–2015
Arizona	Pinal	04021001000	Low-Income Community	2011–2015
Arizona	Pinal	04021001500	Low-Income Community	2011–2015
Arizona	Pinal	04021001900	Low-Income Community	2011–2015
Arizona	Pinal	04021002103	Low-Income Community	2011–2015
Arizona	Pinal	04021002300	Non-LIC Contiguous	2011–2015
Arizona	Santa Cruz	04023966302	Low-Income Community	2011–2015
Arizona	Santa Cruz	04023966402	Low-Income Community	2011–2015
Arizona	Yavapai	04025000606	Low-Income Community	2011–2015
Arizona	Yavapai	04025000900	Low-Income Community	2011–2015
Arizona	Yavapai	04025001601	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Arizona	Yavapai	04025002100	Low-Income Community	2011–2015
Arizona	Yuma	04027000100	Low-Income Community	2011–2015
Arizona	Yuma	04027000700	Low-Income Community	2011–2015
Arizona	Yuma	04027010913	Low-Income Community	2011–2015
Arizona	Yuma	04027011202	Low-Income Community	2011–2015
Arizona	Yuma	04027011403	Low-Income Community	2011–2015
Arizona	Yuma	04027011501	Low-Income Community	2011–2015
Arizona	Yuma	04027011600	Low-Income Community	2011–2015
Arizona	Yuma	04027012100	Low-Income Community	2011–2015
Arkansas	Arkansas	05001480400	Low-Income Community	2011–2015
Arkansas	Ashley	05003960600	Low-Income Community	2011–2015
Arkansas	Benton	05007020301	Low-Income Community	2011–2015
Arkansas	Benton	05007021101	Low-Income Community	2011–2015
Arkansas	Boone	05009790501	Low-Income Community	2011–2015
Arkansas	Bradley	05011950300	Low-Income Community	2011–2015
Arkansas	Carroll	05015950300	Low-Income Community	2011–2015
Arkansas	Chicot	05017080300	Low-Income Community	2011–2015
Arkansas	Clark	05019953900	Low-Income Community	2011–2015
Arkansas	Cleburne	05023480300	Low-Income Community	2011–2015
Arkansas	Columbia	05027950200	Low-Income Community	2011–2015
Arkansas	Conway	05029950300	Low-Income Community	2011–2015
Arkansas	Craighead	05031000101	Low-Income Community	2011–2015
Arkansas	Craighead	05031000502	Low-Income Community	2011–2015
Arkansas	Craighead	05031000602	Low-Income Community	2011–2015
Arkansas	Crawford	05033020501	Low-Income Community	2011–2015
Arkansas	Crittenden	05035030600	Low-Income Community	2011–2015
Arkansas	Crittenden	05035030703	Low-Income Community	2011–2015
Arkansas	Dallas	05039970300	Low-Income Community	2011–2015
Arkansas	Desha	05041950100	Low-Income Community	2011–2015
Arkansas	Desha	05041950200	Low-Income Community	2011–2015
Arkansas	Drew	05043490300	Low-Income Community	2011–2015
Arkansas	Drew	05043490400	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030403	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030702	Low-Income Community	2011–2015
Arkansas	Faulkner	05045030900	Low-Income Community	2011–2015
Arkansas	Franklin	05047950200	Low-Income Community	2011–2015
Arkansas	Garland	05051010700	Low-Income Community	2011–2015
Arkansas	Garland	05051010800	Low-Income Community	2011–2015
Arkansas	Garland	05051011500	Low-Income Community	2011–2015
Arkansas	Grant	05053470300	Low-Income Community	2011–2015
Arkansas	Greene	05055480500	Low-Income Community	2011–2015
Arkansas	Greene	05055480700	Low-Income Community	2011–2015
Arkansas	Hempstead	05057480300	Low-Income Community	2011–2015
Arkansas	Hot Spring	05059020200	Low-Income Community	2011–2015
Arkansas	Howard	05061950300	Low-Income Community	2011–2015
Arkansas	Independence	05063490200	Low-Income Community	2011–2015
Arkansas	Independence	05063490600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Arkansas	Jackson	05067480400	Low-Income Community	2011–2015
Arkansas	Jefferson	05069000502	Low-Income Community	2011–2015
Arkansas	Jefferson	05069001000	Low-Income Community	2011–2015
Arkansas	Jefferson	05069002400	Non-LIC Contiguous	2011–2015
Arkansas	Jefferson	05069002500	Low-Income Community	2011–2015
Arkansas	Johnson	05071952000	Low-Income Community	2011–2015
Arkansas	Lafayette	05073470100	Low-Income Community	2011–2015
Arkansas	Lawrence	05075470100	Low-Income Community	2011–2015
Arkansas	Little River	05081030102	Low-Income Community	2011–2015
Arkansas	Logan	05083950500	Low-Income Community	2011–2015
Arkansas	Marion	05089960202	Low-Income Community	2011–2015
Arkansas	Miller	05091020500	Low-Income Community	2011–2015
Arkansas	Mississippi	05093010700	Non-LIC Contiguous	2011–2015
Arkansas	Mississippi	05093010800	Low-Income Community	2011–2015
Arkansas	Mississippi	05093011100	Low-Income Community	2011–2015
Arkansas	Nevada	05099090200	Low-Income Community	2011–2015
Arkansas	Ouachita	05103950200	Low-Income Community	2011–2015
Arkansas	Ouachita	05103950600	Low-Income Community	2011–2015
Arkansas	Phillips	05107480400	Low-Income Community	2011–2015
Arkansas	Phillips	05107480600	Low-Income Community	2011–2015
Arkansas	Polk	05113950400	Low-Income Community	2011–2015
Arkansas	Pope	05115951300	Low-Income Community	2011–2015
Arkansas	Pope	05115951600	Low-Income Community	2011–2015
Arkansas	Pulaski	05119000200	Low-Income Community	2011–2015
Arkansas	Pulaski	05119001800	Low-Income Community	2011–2015
Arkansas	Pulaski	05119002500	Low-Income Community	2011–2015
Arkansas	Pulaski	05119002800	Low-Income Community	2011–2015
Arkansas	Pulaski	05119003001	Low-Income Community	2011–2015
Arkansas	Pulaski	05119003605	Low-Income Community	2011–2015
Arkansas	Pulaski	05119004600	Low-Income Community	2011–2015
Arkansas	Pulaski	05119004700	Low-Income Community	2011–2015
Arkansas	St. Francis	05123960400	Low-Income Community	2011–2015
Arkansas	St. Francis	05123960600	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000200	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000300	Low-Income Community	2011–2015
Arkansas	Sebastian	05131000800	Low-Income Community	2011–2015
Arkansas	Sevier	05133080300	Low-Income Community	2011–2015
Arkansas	Union	05139950900	Low-Income Community	2011–2015
Arkansas	Union	05139951000	Low-Income Community	2011–2015
Arkansas	Van Buren	05141460200	Low-Income Community	2011–2015
Arkansas	Washington	05143010200	Low-Income Community	2011–2015
Arkansas	Washington	05143010301	Low-Income Community	2011–2015
Arkansas	Washington	05143010302	Low-Income Community	2011–2015
Arkansas	Washington	05143010600	Low-Income Community	2011–2015
Arkansas	Washington	05143011101	Low-Income Community	2011–2015
Arkansas	Washington	05143011200	Low-Income Community	2011–2015
Arkansas	White	05145070800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Alameda	06001401000	Low-Income Community	2011–2015
California	Alameda	06001401400	Low-Income Community	2011–2015
California	Alameda	06001401500	Low-Income Community	2011–2015
California	Alameda	06001401600	Low-Income Community	2011–2015
California	Alameda	06001401700	Low-Income Community	2011–2015
California	Alameda	06001402200	Low-Income Community	2011–2015
California	Alameda	06001402400	Low-Income Community	2011–2015
California	Alameda	06001402500	Low-Income Community	2011–2015
California	Alameda	06001402600	Low-Income Community	2011–2015
California	Alameda	06001402700	Low-Income Community	2011–2015
California	Alameda	06001402800	Low-Income Community	2011–2015
California	Alameda	06001403300	Low-Income Community	2011–2015
California	Alameda	06001405901	Low-Income Community	2011–2015
California	Alameda	06001405902	Low-Income Community	2011–2015
California	Alameda	06001406000	Low-Income Community	2011–2015
California	Alameda	06001406100	Low-Income Community	2011–2015
California	Alameda	06001406201	Low-Income Community	2011–2015
California	Alameda	06001406202	Low-Income Community	2011–2015
California	Alameda	06001407200	Low-Income Community	2011–2015
California	Alameda	06001407300	Low-Income Community	2011–2015
California	Alameda	06001408400	Low-Income Community	2011–2015
California	Alameda	06001408500	Low-Income Community	2011–2015
California	Alameda	06001408600	Low-Income Community	2011–2015
California	Alameda	06001408700	Low-Income Community	2011–2015
California	Alameda	06001408800	Low-Income Community	2011–2015
California	Alameda	06001408900	Low-Income Community	2011–2015
California	Alameda	06001409000	Low-Income Community	2011–2015
California	Alameda	06001409500	Low-Income Community	2011–2015
California	Alameda	06001409700	Low-Income Community	2011–2015
California	Alameda	06001410500	Low-Income Community	2011–2015
California	Alameda	06001422900	Low-Income Community	2011–2015
California	Alameda	06001423200	Low-Income Community	2011–2015
California	Alameda	06001423500	Low-Income Community	2011–2015
California	Alameda	06001423901	Non-LIC Contiguous	2011–2015
California	Alameda	06001424001	Low-Income Community	2011–2015
California	Alameda	06001433102	Low-Income Community	2011–2015
California	Alameda	06001433700	Low-Income Community	2011–2015
California	Alameda	06001433800	Low-Income Community	2011–2015
California	Alameda	06001434000	Low-Income Community	2011–2015
California	Alameda	06001435400	Low-Income Community	2011–2015
California	Alameda	06001435602	Low-Income Community	2011–2015
California	Alameda	06001437500	Low-Income Community	2011–2015
California	Alameda	06001437600	Low-Income Community	2011–2015
California	Alameda	06001437701	Low-Income Community	2011–2015
California	Alameda	06001438201	Low-Income Community	2011–2015
California	Alameda	06001441923	Low-Income Community	2011–2015
California	Alameda	06001451404	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Alpine	06003010000	Non-LIC Contiguous	2011–2015
California	Amador	06005000102	Low-Income Community	2012–2016
California	Butte	06007000502	Low-Income Community	2011–2015
California	Butte	06007000604	Low-Income Community	2011–2015
California	Butte	06007001000	Low-Income Community	2011–2015
California	Butte	06007001100	Low-Income Community	2011–2015
California	Butte	06007001200	Low-Income Community	2011–2015
California	Butte	06007001300	Low-Income Community	2011–2015
California	Butte	06007002800	Low-Income Community	2011–2015
California	Butte	06007003001	Low-Income Community	2011–2015
California	Butte	06007003002	Low-Income Community	2011–2015
California	Calaveras	06009000400	Low-Income Community	2011–2015
California	Colusa	06011000300	Low-Income Community	2011–2015
California	Colusa	06011000500	Low-Income Community	2011–2015
California	Contra Costa	06013306002	Low-Income Community	2011–2015
California	Contra Costa	06013307201	Low-Income Community	2011–2015
California	Contra Costa	06013307202	Low-Income Community	2011–2015
California	Contra Costa	06013307205	Low-Income Community	2011–2015
California	Contra Costa	06013312000	Low-Income Community	2011–2015
California	Contra Costa	06013313101	Low-Income Community	2011–2015
California	Contra Costa	06013313206	Low-Income Community	2011–2015
California	Contra Costa	06013314103	Low-Income Community	2011–2015
California	Contra Costa	06013314104	Low-Income Community	2011–2015
California	Contra Costa	06013328000	Low-Income Community	2011–2015
California	Contra Costa	06013336101	Low-Income Community	2011–2015
California	Contra Costa	06013336202	Low-Income Community	2011–2015
California	Contra Costa	06013337200	Low-Income Community	2011–2015
California	Contra Costa	06013365002	Low-Income Community	2011–2015
California	Contra Costa	06013369001	Low-Income Community	2011–2015
California	Contra Costa	06013376000	Low-Income Community	2011–2015
California	Contra Costa	06013386000	Low-Income Community	2011–2015
California	Del Norte	06015000101	Low-Income Community	2011–2015
California	Del Norte	06015000102	Low-Income Community	2011–2015
California	El Dorado	06017030302	Low-Income Community	2011–2015
California	El Dorado	06017031600	Low-Income Community	2011–2015
California	El Dorado	06017031900	Low-Income Community	2011–2015
California	Fresno	06019000100	Low-Income Community	2011–2015
California	Fresno	06019000200	Low-Income Community	2011–2015
California	Fresno	06019000300	Low-Income Community	2011–2015
California	Fresno	06019000400	Low-Income Community	2011–2015
California	Fresno	06019000501	Low-Income Community	2011–2015
California	Fresno	06019000502	Low-Income Community	2011–2015
California	Fresno	06019000600	Low-Income Community	2011–2015
California	Fresno	06019000700	Low-Income Community	2011–2015
California	Fresno	06019000800	Low-Income Community	2011–2015
California	Fresno	06019000901	Low-Income Community	2011–2015
California	Fresno	06019000902	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Fresno	06019001000	Low-Income Community	2011–2015
California	Fresno	06019001100	Low-Income Community	2011–2015
California	Fresno	06019001201	Low-Income Community	2011–2015
California	Fresno	06019001202	Low-Income Community	2011–2015
California	Fresno	06019001301	Low-Income Community	2011–2015
California	Fresno	06019001303	Low-Income Community	2011–2015
California	Fresno	06019001407	Low-Income Community	2011–2015
California	Fresno	06019001410	Low-Income Community	2011–2015
California	Fresno	06019001411	Low-Income Community	2011–2015
California	Fresno	06019001500	Low-Income Community	2011–2015
California	Fresno	06019001700	Low-Income Community	2011–2015
California	Fresno	06019001800	Low-Income Community	2011–2015
California	Fresno	06019001900	Low-Income Community	2011–2015
California	Fresno	06019002000	Low-Income Community	2011–2015
California	Fresno	06019002300	Low-Income Community	2011–2015
California	Fresno	06019002400	Low-Income Community	2011–2015
California	Fresno	06019002501	Low-Income Community	2011–2015
California	Fresno	06019002602	Low-Income Community	2011–2015
California	Fresno	06019002702	Low-Income Community	2011–2015
California	Fresno	06019002800	Low-Income Community	2011–2015
California	Fresno	06019002903	Low-Income Community	2011–2015
California	Fresno	06019003500	Low-Income Community	2011–2015
California	Fresno	06019004505	Low-Income Community	2011–2015
California	Fresno	06019004901	Low-Income Community	2011–2015
California	Fresno	06019005000	Low-Income Community	2011–2015
California	Fresno	06019005100	Low-Income Community	2011–2015
California	Fresno	06019005403	Low-Income Community	2011–2015
California	Fresno	06019005408	Low-Income Community	2011–2015
California	Fresno	06019006201	Low-Income Community	2011–2015
California	Fresno	06019006202	Low-Income Community	2011–2015
California	Fresno	06019006501	Low-Income Community	2011–2015
California	Fresno	06019006602	Low-Income Community	2011–2015
California	Fresno	06019007802	Low-Income Community	2011–2015
California	Fresno	06019008200	Low-Income Community	2011–2015
California	Fresno	06019008302	Low-Income Community	2011–2015
California	Fresno	06019008501	Low-Income Community	2011–2015
California	Glenn	06021010100	Low-Income Community	2011–2015
California	Glenn	06021010200	Low-Income Community	2011–2015
California	Humboldt	06023000100	Low-Income Community	2011–2015
California	Humboldt	06023000300	Low-Income Community	2011–2015
California	Humboldt	06023000500	Low-Income Community	2011–2015
California	Humboldt	06023001300	Low-Income Community	2011–2015
California	Humboldt	06023010102	Low-Income Community	2011–2015
California	Humboldt	06023010501	Low-Income Community	2011–2015
California	Humboldt	06023940000	Low-Income Community	2011–2015
California	Imperial	06025010400	Low-Income Community	2011–2015
California	Imperial	06025010900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Imperial	06025011300	Low-Income Community	2011–2015
California	Imperial	06025011400	Low-Income Community	2011–2015
California	Imperial	06025011900	Low-Income Community	2011–2015
California	Imperial	06025012100	Low-Income Community	2011–2015
California	Imperial	06025012200	Low-Income Community	2011–2015
California	Inyo	06027000400	Low-Income Community	2011–2015
California	Inyo	06027000800	Low-Income Community	2011–2015
California	Kern	06029000200	Low-Income Community	2011–2015
California	Kern	06029000300	Low-Income Community	2011–2015
California	Kern	06029000400	Low-Income Community	2011–2015
California	Kern	06029000600	Low-Income Community	2011–2015
California	Kern	06029001202	Low-Income Community	2011–2015
California	Kern	06029001400	Low-Income Community	2011–2015
California	Kern	06029001600	Low-Income Community	2011–2015
California	Kern	06029001902	Low-Income Community	2011–2015
California	Kern	06029002000	Low-Income Community	2011–2015
California	Kern	06029002100	Low-Income Community	2011–2015
California	Kern	06029002200	Low-Income Community	2011–2015
California	Kern	06029002301	Low-Income Community	2011–2015
California	Kern	06029002302	Low-Income Community	2011–2015
California	Kern	06029002400	Low-Income Community	2011–2015
California	Kern	06029002500	Low-Income Community	2011–2015
California	Kern	06029002600	Low-Income Community	2011–2015
California	Kern	06029003103	Low-Income Community	2011–2015
California	Kern	06029003121	Low-Income Community	2011–2015
California	Kern	06029003303	Low-Income Community	2011–2015
California	Kern	06029003500	Low-Income Community	2011–2015
California	Kern	06029004101	Low-Income Community	2011–2015
California	Kern	06029004401	Low-Income Community	2011–2015
California	Kern	06029004402	Low-Income Community	2011–2015
California	Kern	06029004701	Low-Income Community	2011–2015
California	Kern	06029004800	Low-Income Community	2011–2015
California	Kern	06029005003	Low-Income Community	2011–2015
California	Kern	06029005300	Low-Income Community	2011–2015
California	Kern	06029005507	Low-Income Community	2011–2015
California	Kern	06029005600	Low-Income Community	2011–2015
California	Kern	06029005802	Low-Income Community	2011–2015
California	Kern	06029005900	Low-Income Community	2011–2015
California	Kern	06029006100	Low-Income Community	2011–2015
California	Kern	06029006303	Low-Income Community	2011–2015
California	Kern	06029006304	Low-Income Community	2011–2015
California	Kern	06029006401	Low-Income Community	2011–2015
California	Kings	06031001100	Low-Income Community	2011–2015
California	Kings	06031001300	Low-Income Community	2011–2015
California	Kings	06031001402	Low-Income Community	2011–2015
California	Kings	06031001601	Low-Income Community	2011–2015
California	Kings	06031001701	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Lake	06033000702	Low-Income Community	2011–2015
California	Lake	06033000801	Low-Income Community	2011–2015
California	Lake	06033000802	Low-Income Community	2011–2015
California	Lassen	06035040303	Low-Income Community	2011–2015
California	Lassen	06035040304	Low-Income Community	2011–2015
California	Los Angeles	06037102105	Low-Income Community	2011–2015
California	Los Angeles	06037104201	Low-Income Community	2011–2015
California	Los Angeles	06037104203	Low-Income Community	2011–2015
California	Los Angeles	06037104310	Low-Income Community	2011–2015
California	Los Angeles	06037104320	Low-Income Community	2011–2015
California	Los Angeles	06037104404	Low-Income Community	2011–2015
California	Los Angeles	06037104701	Low-Income Community	2011–2015
California	Los Angeles	06037104703	Low-Income Community	2011–2015
California	Los Angeles	06037104704	Low-Income Community	2011–2015
California	Los Angeles	06037106520	Low-Income Community	2011–2015
California	Los Angeles	06037106604	Low-Income Community	2011–2015
California	Los Angeles	06037113233	Low-Income Community	2011–2015
California	Los Angeles	06037113234	Low-Income Community	2011–2015
California	Los Angeles	06037113421	Low-Income Community	2011–2015
California	Los Angeles	06037115103	Low-Income Community	2011–2015
California	Los Angeles	06037115201	Low-Income Community	2011–2015
California	Los Angeles	06037120010	Low-Income Community	2011–2015
California	Los Angeles	06037120020	Low-Income Community	2011–2015
California	Los Angeles	06037120030	Low-Income Community	2011–2015
California	Los Angeles	06037120103	Low-Income Community	2011–2015
California	Los Angeles	06037121101	Low-Income Community	2011–2015
California	Los Angeles	06037121801	Low-Income Community	2011–2015
California	Los Angeles	06037121900	Low-Income Community	2011–2015
California	Los Angeles	06037122120	Low-Income Community	2011–2015
California	Los Angeles	06037122121	Low-Income Community	2011–2015
California	Los Angeles	06037122122	Low-Income Community	2011–2015
California	Los Angeles	06037122200	Non-LIC Contiguous	2011–2015
California	Los Angeles	06037122410	Low-Income Community	2011–2015
California	Los Angeles	06037123020	Low-Income Community	2011–2015
California	Los Angeles	06037123103	Low-Income Community	2011–2015
California	Los Angeles	06037123203	Low-Income Community	2011–2015
California	Los Angeles	06037123205	Low-Income Community	2011–2015
California	Los Angeles	06037123206	Low-Income Community	2011–2015
California	Los Angeles	06037123303	Low-Income Community	2011–2015
California	Los Angeles	06037123420	Low-Income Community	2011–2015
California	Los Angeles	06037123901	Low-Income Community	2011–2015
California	Los Angeles	06037124102	Low-Income Community	2011–2015
California	Los Angeles	06037124103	Low-Income Community	2011–2015
California	Los Angeles	06037124104	Low-Income Community	2011–2015
California	Los Angeles	06037124105	Low-Income Community	2011–2015
California	Los Angeles	06037124204	Low-Income Community	2011–2015
California	Los Angeles	06037125310	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037125320	Low-Income Community	2011–2015
California	Los Angeles	06037127210	Low-Income Community	2011–2015
California	Los Angeles	06037127300	Low-Income Community	2011–2015
California	Los Angeles	06037127400	Low-Income Community	2011–2015
California	Los Angeles	06037127520	Low-Income Community	2011–2015
California	Los Angeles	06037127712	Low-Income Community	2011–2015
California	Los Angeles	06037127803	Low-Income Community	2011–2015
California	Los Angeles	06037127804	Low-Income Community	2011–2015
California	Los Angeles	06037127805	Low-Income Community	2011–2015
California	Los Angeles	06037127806	Low-Income Community	2011–2015
California	Los Angeles	06037127910	Low-Income Community	2011–2015
California	Los Angeles	06037128210	Low-Income Community	2011–2015
California	Los Angeles	06037128302	Low-Income Community	2011–2015
California	Los Angeles	06037128303	Low-Income Community	2011–2015
California	Los Angeles	06037132300	Low-Income Community	2011–2015
California	Los Angeles	06037134305	Low-Income Community	2011–2015
California	Los Angeles	06037134520	Low-Income Community	2011–2015
California	Los Angeles	06037134521	Low-Income Community	2011–2015
California	Los Angeles	06037134522	Low-Income Community	2011–2015
California	Los Angeles	06037134903	Low-Income Community	2011–2015
California	Los Angeles	06037135114	Low-Income Community	2012–2016
California	Los Angeles	06037185203	Low-Income Community	2011–2015
California	Los Angeles	06037185320	Low-Income Community	2011–2015
California	Los Angeles	06037186401	Low-Income Community	2011–2015
California	Los Angeles	06037186404	Low-Income Community	2011–2015
California	Los Angeles	06037187102	Low-Income Community	2011–2015
California	Los Angeles	06037187200	Low-Income Community	2011–2015
California	Los Angeles	06037190100	Low-Income Community	2011–2015
California	Los Angeles	06037190201	Low-Income Community	2011–2015
California	Los Angeles	06037190202	Low-Income Community	2011–2015
California	Los Angeles	06037190510	Low-Income Community	2011–2015
California	Los Angeles	06037190700	Low-Income Community	2011–2015
California	Los Angeles	06037190801	Low-Income Community	2011–2015
California	Los Angeles	06037190802	Low-Income Community	2011–2015
California	Los Angeles	06037190901	Low-Income Community	2011–2015
California	Los Angeles	06037190902	Low-Income Community	2011–2015
California	Los Angeles	06037191000	Low-Income Community	2011–2015
California	Los Angeles	06037191110	Low-Income Community	2011–2015
California	Los Angeles	06037191120	Low-Income Community	2011–2015
California	Los Angeles	06037191201	Low-Income Community	2011–2015
California	Los Angeles	06037191203	Low-Income Community	2011–2015
California	Los Angeles	06037191204	Low-Income Community	2011–2015
California	Los Angeles	06037191410	Low-Income Community	2011–2015
California	Los Angeles	06037191420	Low-Income Community	2011–2015
California	Los Angeles	06037191500	Low-Income Community	2011–2015
California	Los Angeles	06037191710	Low-Income Community	2011–2015
California	Los Angeles	06037191720	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037191810	Low-Income Community	2011–2015
California	Los Angeles	06037191820	Low-Income Community	2011–2015
California	Los Angeles	06037192610	Low-Income Community	2011–2015
California	Los Angeles	06037192620	Low-Income Community	2011–2015
California	Los Angeles	06037192700	Low-Income Community	2011–2015
California	Los Angeles	06037199000	Low-Income Community	2011–2015
California	Los Angeles	06037199120	Low-Income Community	2011–2015
California	Los Angeles	06037199201	Low-Income Community	2011–2015
California	Los Angeles	06037199202	Low-Income Community	2011–2015
California	Los Angeles	06037199700	Low-Income Community	2011–2015
California	Los Angeles	06037199800	Low-Income Community	2011–2015
California	Los Angeles	06037199900	Low-Income Community	2011–2015
California	Los Angeles	06037201402	Low-Income Community	2011–2015
California	Los Angeles	06037201700	Low-Income Community	2011–2015
California	Los Angeles	06037203300	Low-Income Community	2011–2015
California	Los Angeles	06037203500	Low-Income Community	2011–2015
California	Los Angeles	06037204920	Low-Income Community	2011–2015
California	Los Angeles	06037205120	Low-Income Community	2011–2015
California	Los Angeles	06037206020	Low-Income Community	2011–2015
California	Los Angeles	06037206031	Non-LIC Contiguous	2011–2015
California	Los Angeles	06037206032	Low-Income Community	2011–2015
California	Los Angeles	06037206200	Low-Income Community	2011–2015
California	Los Angeles	06037206300	Low-Income Community	2011–2015
California	Los Angeles	06037208801	Low-Income Community	2011–2015
California	Los Angeles	06037208902	Low-Income Community	2011–2015
California	Los Angeles	06037208903	Low-Income Community	2011–2015
California	Los Angeles	06037209401	Low-Income Community	2011–2015
California	Los Angeles	06037211120	Low-Income Community	2011–2015
California	Los Angeles	06037211122	Low-Income Community	2011–2015
California	Los Angeles	06037211201	Low-Income Community	2011–2015
California	Los Angeles	06037211202	Low-Income Community	2011–2015
California	Los Angeles	06037211310	Low-Income Community	2011–2015
California	Los Angeles	06037211320	Low-Income Community	2011–2015
California	Los Angeles	06037211802	Low-Income Community	2011–2015
California	Los Angeles	06037212101	Low-Income Community	2011–2015
California	Los Angeles	06037212102	Low-Income Community	2011–2015
California	Los Angeles	06037212203	Low-Income Community	2011–2015
California	Los Angeles	06037212204	Low-Income Community	2011–2015
California	Los Angeles	06037212303	Low-Income Community	2011–2015
California	Los Angeles	06037212304	Low-Income Community	2011–2015
California	Los Angeles	06037212410	Low-Income Community	2011–2015
California	Los Angeles	06037213201	Low-Income Community	2011–2015
California	Los Angeles	06037213310	Low-Income Community	2011–2015
California	Los Angeles	06037213320	Low-Income Community	2011–2015
California	Los Angeles	06037213402	Low-Income Community	2011–2015
California	Los Angeles	06037218300	Low-Income Community	2011–2015
California	Los Angeles	06037218400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037218500	Low-Income Community	2011–2015
California	Los Angeles	06037218702	Low-Income Community	2011–2015
California	Los Angeles	06037219300	Low-Income Community	2011–2015
California	Los Angeles	06037219800	Low-Income Community	2011–2015
California	Los Angeles	06037219901	Low-Income Community	2011–2015
California	Los Angeles	06037219902	Low-Income Community	2011–2015
California	Los Angeles	06037220000	Low-Income Community	2011–2015
California	Los Angeles	06037220100	Low-Income Community	2011–2015
California	Los Angeles	06037222700	Low-Income Community	2011–2015
California	Los Angeles	06037224010	Low-Income Community	2011–2015
California	Los Angeles	06037224020	Low-Income Community	2011–2015
California	Los Angeles	06037224200	Low-Income Community	2011–2015
California	Los Angeles	06037224600	Low-Income Community	2011–2015
California	Los Angeles	06037224700	Low-Income Community	2011–2015
California	Los Angeles	06037226001	Low-Income Community	2011–2015
California	Los Angeles	06037226002	Low-Income Community	2011–2015
California	Los Angeles	06037226410	Low-Income Community	2011–2015
California	Los Angeles	06037226420	Low-Income Community	2011–2015
California	Los Angeles	06037227010	Low-Income Community	2011–2015
California	Los Angeles	06037228600	Low-Income Community	2011–2015
California	Los Angeles	06037231100	Low-Income Community	2011–2015
California	Los Angeles	06037231210	Low-Income Community	2011–2015
California	Los Angeles	06037231220	Low-Income Community	2011–2015
California	Los Angeles	06037231300	Low-Income Community	2011–2015
California	Los Angeles	06037231400	Low-Income Community	2011–2015
California	Los Angeles	06037231500	Low-Income Community	2011–2015
California	Los Angeles	06037231600	Low-Income Community	2011–2015
California	Los Angeles	06037231800	Low-Income Community	2011–2015
California	Los Angeles	06037232400	Low-Income Community	2011–2015
California	Los Angeles	06037232500	Low-Income Community	2011–2015
California	Los Angeles	06037234501	Low-Income Community	2011–2015
California	Los Angeles	06037234502	Low-Income Community	2011–2015
California	Los Angeles	06037234600	Low-Income Community	2011–2015
California	Los Angeles	06037236100	Low-Income Community	2011–2015
California	Los Angeles	06037237202	Low-Income Community	2011–2015
California	Los Angeles	06037239202	Low-Income Community	2011–2015
California	Los Angeles	06037239330	Low-Income Community	2011–2015
California	Los Angeles	06037241001	Low-Income Community	2011–2015
California	Los Angeles	06037242000	Low-Income Community	2011–2015
California	Los Angeles	06037242100	Low-Income Community	2011–2015
California	Los Angeles	06037242200	Low-Income Community	2011–2015
California	Los Angeles	06037242300	Low-Income Community	2011–2015
California	Los Angeles	06037242600	Low-Income Community	2011–2015
California	Los Angeles	06037243000	Low-Income Community	2011–2015
California	Los Angeles	06037243100	Low-Income Community	2011–2015
California	Los Angeles	06037292000	Low-Income Community	2011–2015
California	Los Angeles	06037293201	Low-Income Community	2012–2016

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037294120	Low-Income Community	2011–2015
California	Los Angeles	06037294620	Low-Income Community	2011–2015
California	Los Angeles	06037294701	Low-Income Community	2011–2015
California	Los Angeles	06037294820	Low-Income Community	2011–2015
California	Los Angeles	06037294830	Low-Income Community	2011–2015
California	Los Angeles	06037296210	Low-Income Community	2011–2015
California	Los Angeles	06037296220	Low-Income Community	2011–2015
California	Los Angeles	06037296500	Low-Income Community	2011–2015
California	Los Angeles	06037296600	Low-Income Community	2011–2015
California	Los Angeles	06037402304	Low-Income Community	2011–2015
California	Los Angeles	06037402702	Low-Income Community	2011–2015
California	Los Angeles	06037403200	Low-Income Community	2011–2015
California	Los Angeles	06037404201	Low-Income Community	2011–2015
California	Los Angeles	06037408138	Low-Income Community	2011–2015
California	Los Angeles	06037408800	Low-Income Community	2011–2015
California	Los Angeles	06037433302	Low-Income Community	2011–2015
California	Los Angeles	06037433403	Low-Income Community	2011–2015
California	Los Angeles	06037433501	Low-Income Community	2011–2015
California	Los Angeles	06037433901	Low-Income Community	2011–2015
California	Los Angeles	06037501803	Low-Income Community	2011–2015
California	Los Angeles	06037530902	Low-Income Community	2011–2015
California	Los Angeles	06037531301	Low-Income Community	2011–2015
California	Los Angeles	06037532304	Low-Income Community	2011–2015
California	Los Angeles	06037532606	Low-Income Community	2011–2015
California	Los Angeles	06037532800	Low-Income Community	2011–2015
California	Los Angeles	06037532900	Low-Income Community	2011–2015
California	Los Angeles	06037533103	Low-Income Community	2011–2015
California	Los Angeles	06037533104	Low-Income Community	2011–2015
California	Los Angeles	06037533105	Low-Income Community	2011–2015
California	Los Angeles	06037533403	Low-Income Community	2011–2015
California	Los Angeles	06037533701	Low-Income Community	2011–2015
California	Los Angeles	06037534202	Low-Income Community	2011–2015
California	Los Angeles	06037534301	Low-Income Community	2011–2015
California	Los Angeles	06037534404	Low-Income Community	2011–2015
California	Los Angeles	06037535002	Low-Income Community	2011–2015
California	Los Angeles	06037535101	Low-Income Community	2011–2015
California	Los Angeles	06037535102	Low-Income Community	2011–2015
California	Los Angeles	06037540201	Low-Income Community	2011–2015
California	Los Angeles	06037540202	Low-Income Community	2011–2015
California	Los Angeles	06037540400	Low-Income Community	2011–2015
California	Los Angeles	06037541400	Low-Income Community	2011–2015
California	Los Angeles	06037541603	Low-Income Community	2011–2015
California	Los Angeles	06037541604	Low-Income Community	2011–2015
California	Los Angeles	06037542105	Low-Income Community	2011–2015
California	Los Angeles	06037542106	Low-Income Community	2011–2015
California	Los Angeles	06037542501	Low-Income Community	2011–2015
California	Los Angeles	06037542502	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Los Angeles	06037542601	Low-Income Community	2011–2015
California	Los Angeles	06037550000	Low-Income Community	2011–2015
California	Los Angeles	06037570603	Low-Income Community	2011–2015
California	Los Angeles	06037571600	Low-Income Community	2011–2015
California	Los Angeles	06037571704	Low-Income Community	2011–2015
California	Los Angeles	06037572500	Low-Income Community	2011–2015
California	Los Angeles	06037572800	Low-Income Community	2011–2015
California	Los Angeles	06037573002	Low-Income Community	2011–2015
California	Los Angeles	06037573004	Low-Income Community	2011–2015
California	Los Angeles	06037573300	Low-Income Community	2011–2015
California	Los Angeles	06037575102	Low-Income Community	2011–2015
California	Los Angeles	06037575202	Low-Income Community	2011–2015
California	Los Angeles	06037575401	Low-Income Community	2011–2015
California	Los Angeles	06037575801	Low-Income Community	2011–2015
California	Los Angeles	06037575802	Low-Income Community	2011–2015
California	Los Angeles	06037575803	Low-Income Community	2011–2015
California	Los Angeles	06037575901	Low-Income Community	2011–2015
California	Los Angeles	06037576200	Low-Income Community	2011–2015
California	Los Angeles	06037576401	Low-Income Community	2011–2015
California	Los Angeles	06037576403	Low-Income Community	2011–2015
California	Los Angeles	06037576901	Low-Income Community	2011–2015
California	Los Angeles	06037600100	Low-Income Community	2011–2015
California	Los Angeles	06037600202	Low-Income Community	2011–2015
California	Los Angeles	06037600303	Low-Income Community	2011–2015
California	Los Angeles	06037600304	Low-Income Community	2011–2015
California	Los Angeles	06037601202	Low-Income Community	2011–2015
California	Los Angeles	06037601700	Low-Income Community	2011–2015
California	Los Angeles	06037601801	Low-Income Community	2011–2015
California	Los Angeles	06037602505	Low-Income Community	2011–2015
California	Los Angeles	06037602801	Low-Income Community	2011–2015
California	Los Angeles	06037604100	Low-Income Community	2011–2015
California	Los Angeles	06037900501	Low-Income Community	2011–2015
California	Los Angeles	06037900606	Low-Income Community	2011–2015
California	Los Angeles	06037900607	Low-Income Community	2011–2015
California	Los Angeles	06037900703	Low-Income Community	2011–2015
California	Los Angeles	06037900704	Low-Income Community	2011–2015
California	Los Angeles	06037900806	Low-Income Community	2011–2015
California	Los Angeles	06037910402	Low-Income Community	2011–2015
California	Los Angeles	06037910403	Low-Income Community	2011–2015
California	Los Angeles	06037910501	Low-Income Community	2011–2015
California	Los Angeles	06037910504	Low-Income Community	2011–2015
California	Los Angeles	06037910601	Low-Income Community	2011–2015
California	Los Angeles	06037910602	Low-Income Community	2011–2015
California	Los Angeles	06037980014	Low-Income Community	2011–2015
California	Madera	06039000103	Low-Income Community	2011–2015
California	Madera	06039000202	Non-LIC Contiguous	2011–2015
California	Madera	06039000503	Non-LIC Contiguous	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Madera	06039000506	Low-Income Community	2011–2015
California	Madera	06039000800	Low-Income Community	2011–2015
California	Marin	06041112201	Low-Income Community	2011–2015
California	Mariposa	06043000101	Low-Income Community	2011–2015
California	Mariposa	06043000102	Low-Income Community	2011–2015
California	Mendocino	06045010100	Low-Income Community	2011–2015
California	Mendocino	06045011300	Low-Income Community	2011–2015
California	Mendocino	06045011500	Low-Income Community	2011–2015
California	Merced	06047000503	Low-Income Community	2011–2015
California	Merced	06047000602	Low-Income Community	2011–2015
California	Merced	06047000603	Low-Income Community	2011–2015
California	Merced	06047001301	Low-Income Community	2011–2015
California	Merced	06047001302	Low-Income Community	2011–2015
California	Merced	06047001401	Low-Income Community	2011–2015
California	Merced	06047001501	Low-Income Community	2011–2015
California	Merced	06047001601	Low-Income Community	2011–2015
California	Merced	06047001602	Low-Income Community	2011–2015
California	Merced	06047001700	Low-Income Community	2011–2015
California	Merced	06047002201	Low-Income Community	2011–2015
California	Modoc	06049000100	Low-Income Community	2011–2015
California	Modoc	06049000300	Low-Income Community	2011–2015
California	Monterey	06053000400	Low-Income Community	2011–2015
California	Monterey	06053000502	Low-Income Community	2011–2015
California	Monterey	06053001300	Low-Income Community	2011–2015
California	Monterey	06053001802	Low-Income Community	2011–2015
California	Monterey	06053011302	Low-Income Community	2011–2015
California	Monterey	06053013500	Low-Income Community	2011–2015
California	Monterey	06053013700	Low-Income Community	2011–2015
California	Monterey	06053014102	Low-Income Community	2011–2015
California	Monterey	06053014500	Low-Income Community	2011–2015
California	Napa	06055200202	Low-Income Community	2011–2015
California	Napa	06055200804	Low-Income Community	2011–2015
California	Nevada	06057000600	Low-Income Community	2011–2015
California	Nevada	06057000900	Low-Income Community	2011–2015
California	Orange	06059001801	Low-Income Community	2011–2015
California	Orange	06059011601	Low-Income Community	2011–2015
California	Orange	06059011602	Low-Income Community	2011–2015
California	Orange	06059011720	Low-Income Community	2011–2015
California	Orange	06059011721	Low-Income Community	2011–2015
California	Orange	06059042107	Low-Income Community	2011–2015
California	Orange	06059042312	Low-Income Community	2011–2015
California	Orange	06059063605	Low-Income Community	2011–2015
California	Orange	06059063701	Low-Income Community	2011–2015
California	Orange	06059074403	Low-Income Community	2011–2015
California	Orange	06059074405	Low-Income Community	2011–2015
California	Orange	06059074406	Low-Income Community	2011–2015
California	Orange	06059074602	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Orange	06059074802	Low-Income Community	2011–2015
California	Orange	06059075002	Low-Income Community	2011–2015
California	Orange	06059075003	Low-Income Community	2011–2015
California	Orange	06059075100	Low-Income Community	2011–2015
California	Orange	06059075201	Low-Income Community	2011–2015
California	Orange	06059086405	Low-Income Community	2011–2015
California	Orange	06059087403	Low-Income Community	2011–2015
California	Orange	06059087405	Low-Income Community	2011–2015
California	Orange	06059087505	Low-Income Community	2011–2015
California	Orange	06059087803	Low-Income Community	2011–2015
California	Orange	06059088201	Low-Income Community	2011–2015
California	Orange	06059089104	Low-Income Community	2011–2015
California	Orange	06059089105	Low-Income Community	2011–2015
California	Orange	06059099402	Low-Income Community	2011–2015
California	Placer	06061020401	Low-Income Community	2011–2015
California	Placer	06061020901	Low-Income Community	2011–2015
California	Placer	06061021603	Low-Income Community	2011–2015
California	Plumas	06063000202	Low-Income Community	2011–2015
California	Plumas	06063000400	Low-Income Community	2011–2015
California	Riverside	06065030103	Low-Income Community	2011–2015
California	Riverside	06065030300	Low-Income Community	2011–2015
California	Riverside	06065030400	Low-Income Community	2011–2015
California	Riverside	06065030501	Low-Income Community	2011–2015
California	Riverside	06065030502	Low-Income Community	2011–2015
California	Riverside	06065031300	Low-Income Community	2011–2015
California	Riverside	06065040203	Low-Income Community	2011–2015
California	Riverside	06065041101	Low-Income Community	2011–2015
California	Riverside	06065041410	Low-Income Community	2011–2015
California	Riverside	06065041703	Low-Income Community	2011–2015
California	Riverside	06065042010	Low-Income Community	2011–2015
California	Riverside	06065042209	Low-Income Community	2011–2015
California	Riverside	06065042210	Low-Income Community	2011–2015
California	Riverside	06065042404	Low-Income Community	2011–2015
California	Riverside	06065042505	Low-Income Community	2011–2015
California	Riverside	06065042506	Low-Income Community	2011–2015
California	Riverside	06065042514	Low-Income Community	2011–2015
California	Riverside	06065042515	Low-Income Community	2011–2015
California	Riverside	06065042723	Low-Income Community	2011–2015
California	Riverside	06065042800	Low-Income Community	2011–2015
California	Riverside	06065042903	Low-Income Community	2011–2015
California	Riverside	06065042904	Low-Income Community	2011–2015
California	Riverside	06065043307	Low-Income Community	2011–2015
California	Riverside	06065043310	Low-Income Community	2011–2015
California	Riverside	06065043401	Low-Income Community	2011–2015
California	Riverside	06065043403	Low-Income Community	2011–2015
California	Riverside	06065043405	Low-Income Community	2011–2015
California	Riverside	06065043601	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Riverside	06065043602	Low-Income Community	2011–2015
California	Riverside	06065044101	Low-Income Community	2011–2015
California	Riverside	06065044200	Low-Income Community	2011–2015
California	Riverside	06065044507	Low-Income Community	2011–2015
California	Riverside	06065044509	Low-Income Community	2011–2015
California	Riverside	06065044510	Low-Income Community	2011–2015
California	Riverside	06065044702	Low-Income Community	2011–2015
California	Riverside	06065044915	Low-Income Community	2011–2015
California	Riverside	06065045000	Low-Income Community	2011–2015
California	Riverside	06065045303	Low-Income Community	2011–2015
California	Riverside	06065045502	Low-Income Community	2011–2015
California	Riverside	06065045604	Low-Income Community	2011–2015
California	Riverside	06065045605	Low-Income Community	2011–2015
California	Riverside	06065045609	Low-Income Community	2011–2015
California	Riverside	06065045703	Low-Income Community	2011–2015
California	Riverside	06065045705	Low-Income Community	2011–2015
California	Riverside	06065045706	Low-Income Community	2011–2015
California	Riverside	06065046102	Low-Income Community	2011–2015
California	Riverside	06065046200	Low-Income Community	2011–2015
California	Riverside	06065046500	Low-Income Community	2011–2015
California	Riverside	06065051100	Low-Income Community	2011–2015
California	Sacramento	06067000500	Low-Income Community	2011–2015
California	Sacramento	06067000700	Low-Income Community	2011–2015
California	Sacramento	06067001101	Low-Income Community	2011–2015
California	Sacramento	06067002100	Low-Income Community	2011–2015
California	Sacramento	06067002200	Low-Income Community	2011–2015
California	Sacramento	06067002800	Low-Income Community	2011–2015
California	Sacramento	06067003700	Low-Income Community	2011–2015
California	Sacramento	06067004100	Low-Income Community	2011–2015
California	Sacramento	06067004203	Low-Income Community	2011–2015
California	Sacramento	06067004402	Low-Income Community	2011–2015
California	Sacramento	06067004501	Low-Income Community	2011–2015
California	Sacramento	06067004502	Low-Income Community	2011–2015
California	Sacramento	06067004601	Low-Income Community	2011–2015
California	Sacramento	06067004701	Low-Income Community	2011–2015
California	Sacramento	06067004802	Low-Income Community	2011–2015
California	Sacramento	06067004903	Low-Income Community	2011–2015
California	Sacramento	06067004905	Low-Income Community	2011–2015
California	Sacramento	06067005101	Low-Income Community	2011–2015
California	Sacramento	06067005205	Low-Income Community	2011–2015
California	Sacramento	06067005301	Low-Income Community	2011–2015
California	Sacramento	06067005502	Low-Income Community	2011–2015
California	Sacramento	06067005505	Low-Income Community	2011–2015
California	Sacramento	06067005601	Low-Income Community	2011–2015
California	Sacramento	06067005605	Low-Income Community	2011–2015
California	Sacramento	06067006201	Low-Income Community	2011–2015
California	Sacramento	06067006202	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Sacramento	06067006300	Low-Income Community	2011–2015
California	Sacramento	06067006500	Low-Income Community	2011–2015
California	Sacramento	06067006600	Low-Income Community	2011–2015
California	Sacramento	06067006702	Low-Income Community	2011–2015
California	Sacramento	06067006900	Low-Income Community	2011–2015
California	Sacramento	06067007004	Low-Income Community	2011–2015
California	Sacramento	06067007019	Low-Income Community	2011–2015
California	Sacramento	06067007204	Low-Income Community	2011–2015
California	Sacramento	06067007301	Low-Income Community	2011–2015
California	Sacramento	06067007423	Low-Income Community	2011–2015
California	Sacramento	06067008909	Low-Income Community	2011–2015
California	Sacramento	06067008910	Low-Income Community	2011–2015
California	Sacramento	06067008911	Low-Income Community	2011–2015
California	Sacramento	06067009006	Low-Income Community	2011–2015
California	Sacramento	06067009201	Low-Income Community	2011–2015
California	Sacramento	06067009634	Low-Income Community	2011–2015
California	Sacramento	06067009800	Low-Income Community	2011–2015
California	San Benito	06069000200	Low-Income Community	2011–2015
California	San Benito	06069000701	Low-Income Community	2011–2015
California	San Bernardino	06071000823	Low-Income Community	2011–2015
California	San Bernardino	06071001400	Low-Income Community	2011–2015
California	San Bernardino	06071001503	Low-Income Community	2011–2015
California	San Bernardino	06071001504	Low-Income Community	2011–2015
California	San Bernardino	06071001600	Low-Income Community	2011–2015
California	San Bernardino	06071002804	Low-Income Community	2011–2015
California	San Bernardino	06071003000	Low-Income Community	2011–2015
California	San Bernardino	06071003102	Low-Income Community	2011–2015
California	San Bernardino	06071003510	Low-Income Community	2011–2015
California	San Bernardino	06071003606	Low-Income Community	2011–2015
California	San Bernardino	06071003609	Low-Income Community	2011–2015
California	San Bernardino	06071003612	Low-Income Community	2011–2015
California	San Bernardino	06071003700	Low-Income Community	2011–2015
California	San Bernardino	06071004201	Low-Income Community	2011–2015
California	San Bernardino	06071004202	Low-Income Community	2011–2015
California	San Bernardino	06071004302	Low-Income Community	2011–2015
California	San Bernardino	06071004404	Low-Income Community	2011–2015
California	San Bernardino	06071004507	Low-Income Community	2011–2015
California	San Bernardino	06071004604	Low-Income Community	2011–2015
California	San Bernardino	06071004700	Low-Income Community	2011–2015
California	San Bernardino	06071004800	Low-Income Community	2011–2015
California	San Bernardino	06071004900	Low-Income Community	2011–2015
California	San Bernardino	06071005400	Low-Income Community	2011–2015
California	San Bernardino	06071005500	Low-Income Community	2011–2015
California	San Bernardino	06071005600	Low-Income Community	2011–2015
California	San Bernardino	06071005701	Low-Income Community	2011–2015
California	San Bernardino	06071005800	Low-Income Community	2011–2015
California	San Bernardino	06071006203	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Bernardino	06071006204	Low-Income Community	2011–2015
California	San Bernardino	06071006301	Low-Income Community	2011–2015
California	San Bernardino	06071006302	Low-Income Community	2011–2015
California	San Bernardino	06071006401	Low-Income Community	2011–2015
California	San Bernardino	06071006402	Low-Income Community	2011–2015
California	San Bernardino	06071006500	Low-Income Community	2011–2015
California	San Bernardino	06071007107	Low-Income Community	2011–2015
California	San Bernardino	06071007200	Low-Income Community	2011–2015
California	San Bernardino	06071007303	Low-Income Community	2011–2015
California	San Bernardino	06071007407	Low-Income Community	2011–2015
California	San Bernardino	06071007601	Low-Income Community	2011–2015
California	San Bernardino	06071008002	Low-Income Community	2011–2015
California	San Bernardino	06071008710	Low-Income Community	2011–2015
California	San Bernardino	06071009112	Low-Income Community	2011–2015
California	San Bernardino	06071009116	Low-Income Community	2011–2015
California	San Bernardino	06071009117	Low-Income Community	2011–2015
California	San Bernardino	06071009400	Low-Income Community	2011–2015
California	San Bernardino	06071009500	Low-Income Community	2011–2015
California	San Bernardino	06071009716	Low-Income Community	2011–2015
California	San Bernardino	06071009800	Low-Income Community	2011–2015
California	San Bernardino	06071009904	Low-Income Community	2011–2015
California	San Bernardino	06071009905	Low-Income Community	2011–2015
California	San Bernardino	06071009912	Low-Income Community	2011–2015
California	San Bernardino	06071009913	Low-Income Community	2011–2015
California	San Bernardino	06071010014	Low-Income Community	2011–2015
California	San Bernardino	06071010423	Low-Income Community	2011–2015
California	San Bernardino	06071010700	Low-Income Community	2011–2015
California	San Bernardino	06071012400	Low-Income Community	2011–2015
California	San Bernardino	06071012500	Low-Income Community	2011–2015
California	San Diego	06073000900	Low-Income Community	2011–2015
California	San Diego	06073001600	Low-Income Community	2011–2015
California	San Diego	06073002201	Low-Income Community	2011–2015
California	San Diego	06073002202	Low-Income Community	2011–2015
California	San Diego	06073002301	Low-Income Community	2011–2015
California	San Diego	06073002302	Low-Income Community	2011–2015
California	San Diego	06073002401	Low-Income Community	2011–2015
California	San Diego	06073002601	Low-Income Community	2011–2015
California	San Diego	06073002707	Low-Income Community	2011–2015
California	San Diego	06073002708	Low-Income Community	2011–2015
California	San Diego	06073002709	Low-Income Community	2011–2015
California	San Diego	06073002710	Low-Income Community	2011–2015
California	San Diego	06073003001	Non-LIC Contiguous	2011–2015
California	San Diego	06073003004	Low-Income Community	2011–2015
California	San Diego	06073003101	Low-Income Community	2011–2015
California	San Diego	06073003111	Low-Income Community	2011–2015
California	San Diego	06073003303	Low-Income Community	2011–2015
California	San Diego	06073003304	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Diego	06073003305	Low-Income Community	2011–2015
California	San Diego	06073003401	Low-Income Community	2011–2015
California	San Diego	06073003404	Low-Income Community	2011–2015
California	San Diego	06073003501	Low-Income Community	2011–2015
California	San Diego	06073003502	Low-Income Community	2011–2015
California	San Diego	06073003601	Low-Income Community	2011–2015
California	San Diego	06073003602	Low-Income Community	2011–2015
California	San Diego	06073003901	Low-Income Community	2011–2015
California	San Diego	06073003902	Low-Income Community	2011–2015
California	San Diego	06073004000	Low-Income Community	2011–2015
California	San Diego	06073004100	Low-Income Community	2011–2015
California	San Diego	06073004700	Low-Income Community	2011–2015
California	San Diego	06073004800	Low-Income Community	2011–2015
California	San Diego	06073004900	Low-Income Community	2011–2015
California	San Diego	06073005000	Low-Income Community	2011–2015
California	San Diego	06073005100	Low-Income Community	2011–2015
California	San Diego	06073010013	Low-Income Community	2011–2015
California	San Diego	06073011700	Low-Income Community	2011–2015
California	San Diego	06073011801	Low-Income Community	2011–2015
California	San Diego	06073013104	Low-Income Community	2011–2015
California	San Diego	06073013205	Low-Income Community	2011–2015
California	San Diego	06073013206	Low-Income Community	2011–2015
California	San Diego	06073015701	Low-Income Community	2011–2015
California	San Diego	06073015703	Low-Income Community	2011–2015
California	San Diego	06073015801	Low-Income Community	2011–2015
California	San Diego	06073015802	Low-Income Community	2011–2015
California	San Diego	06073015901	Low-Income Community	2011–2015
California	San Diego	06073019503	Low-Income Community	2011–2015
California	San Diego	06073020214	Low-Income Community	2011–2015
California	San Francisco	06075017902	Low-Income Community	2011–2015
California	San Francisco	06075023103	Low-Income Community	2011–2015
California	San Francisco	06075023400	Low-Income Community	2011–2015
California	San Francisco	06075026001	Low-Income Community	2011–2015
California	San Francisco	06075026004	Low-Income Community	2011–2015
California	San Francisco	06075026100	Low-Income Community	2011–2015
California	San Francisco	06075026301	Low-Income Community	2011–2015
California	San Francisco	06075026404	Low-Income Community	2011–2015
California	San Francisco	06075060502	Low-Income Community	2011–2015
California	San Francisco	06075061200	Low-Income Community	2011–2015
California	San Francisco	06075980600	Low-Income Community	2011–2015
California	San Joaquin	06077000100	Low-Income Community	2011–2015
California	San Joaquin	06077000300	Low-Income Community	2011–2015
California	San Joaquin	06077000402	Low-Income Community	2011–2015
California	San Joaquin	06077000500	Low-Income Community	2011–2015
California	San Joaquin	06077000600	Low-Income Community	2011–2015
California	San Joaquin	06077000700	Low-Income Community	2011–2015
California	San Joaquin	06077000801	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	San Joaquin	06077000900	Low-Income Community	2011–2015
California	San Joaquin	06077001200	Low-Income Community	2011–2015
California	San Joaquin	06077001500	Low-Income Community	2011–2015
California	San Joaquin	06077001600	Low-Income Community	2011–2015
California	San Joaquin	06077001900	Low-Income Community	2011–2015
California	San Joaquin	06077002100	Low-Income Community	2011–2015
California	San Joaquin	06077002201	Low-Income Community	2011–2015
California	San Joaquin	06077002202	Low-Income Community	2011–2015
California	San Joaquin	06077002800	Low-Income Community	2011–2015
California	San Joaquin	06077003307	Low-Income Community	2011–2015
California	San Joaquin	06077003700	Low-Income Community	2011–2015
California	San Joaquin	06077003803	Low-Income Community	2011–2015
California	San Joaquin	06077004403	Low-Income Community	2011–2015
California	San Luis Obispo	06079010102	Low-Income Community	2011–2015
California	San Luis Obispo	06079010902	Low-Income Community	2011–2015
California	San Luis Obispo	06079012200	Low-Income Community	2011–2015
California	San Mateo	06081600200	Low-Income Community	2011–2015
California	San Mateo	06081610201	Low-Income Community	2011–2015
California	San Mateo	06081610500	Low-Income Community	2011–2015
California	San Mateo	06081612100	Low-Income Community	2011–2015
California	Santa Barbara	06083002101	Low-Income Community	2011–2015
California	Santa Barbara	06083002403	Low-Income Community	2011–2015
California	Santa Barbara	06083002404	Low-Income Community	2011–2015
California	Santa Barbara	06083002502	Low-Income Community	2011–2015
California	Santa Barbara	06083002702	Low-Income Community	2011–2015
California	Santa Barbara	06083002705	Low-Income Community	2011–2015
California	Santa Barbara	06083002706	Low-Income Community	2011–2015
California	Santa Clara	06085500800	Low-Income Community	2011–2015
California	Santa Clara	06085500901	Low-Income Community	2011–2015
California	Santa Clara	06085501000	Low-Income Community	2011–2015
California	Santa Clara	06085501401	Low-Income Community	2011–2015
California	Santa Clara	06085501600	Low-Income Community	2011–2015
California	Santa Clara	06085503110	Low-Income Community	2011–2015
California	Santa Clara	06085503122	Low-Income Community	2011–2015
California	Santa Clara	06085503305	Low-Income Community	2011–2015
California	Santa Clara	06085503401	Low-Income Community	2011–2015
California	Santa Clara	06085503601	Low-Income Community	2011–2015
California	Santa Clara	06085505100	Low-Income Community	2011–2015
California	Santa Clara	06085512603	Low-Income Community	2011–2015
California	Santa Clara	06085512604	Low-Income Community	2011–2015
California	Santa Cruz	06087100800	Low-Income Community	2011–2015
California	Santa Cruz	06087101000	Low-Income Community	2011–2015
California	Santa Cruz	06087121402	Low-Income Community	2011–2015
California	Santa Cruz	06087121600	Low-Income Community	2011–2015
California	Shasta	06089010100	Low-Income Community	2011–2015
California	Shasta	06089010200	Low-Income Community	2011–2015
California	Shasta	06089010704	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Shasta	06089011209	Low-Income Community	2011–2015
California	Shasta	06089012000	Low-Income Community	2011–2015
California	Shasta	06089012500	Low-Income Community	2011–2015
California	Sierra	06091010000	Non-LIC Contiguous	2011–2015
California	Siskiyou	06093000500	Low-Income Community	2011–2015
California	Siskiyou	06093000702	Low-Income Community	2011–2015
California	Siskiyou	06093000703	Low-Income Community	2011–2015
California	Solano	06095250801	Low-Income Community	2011–2015
California	Solano	06095250900	Low-Income Community	2011–2015
California	Solano	06095251100	Low-Income Community	2011–2015
California	Solano	06095251500	Low-Income Community	2011–2015
California	Solano	06095251600	Low-Income Community	2011–2015
California	Solano	06095251802	Low-Income Community	2011–2015
California	Solano	06095252605	Low-Income Community	2011–2015
California	Solano	06095252606	Low-Income Community	2011–2015
California	Solano	06095252607	Low-Income Community	2011–2015
California	Sonoma	06097150305	Low-Income Community	2011–2015
California	Sonoma	06097152000	Low-Income Community	2011–2015
California	Sonoma	06097153104	Low-Income Community	2011–2015
California	Stanislaus	06099001400	Low-Income Community	2011–2015
California	Stanislaus	06099001603	Low-Income Community	2011–2015
California	Stanislaus	06099001604	Low-Income Community	2011–2015
California	Stanislaus	06099001700	Low-Income Community	2011–2015
California	Stanislaus	06099001800	Low-Income Community	2011–2015
California	Stanislaus	06099002002	Low-Income Community	2011–2015
California	Stanislaus	06099002100	Low-Income Community	2011–2015
California	Stanislaus	06099002200	Low-Income Community	2011–2015
California	Stanislaus	06099002301	Low-Income Community	2011–2015
California	Stanislaus	06099002402	Low-Income Community	2011–2015
California	Stanislaus	06099002501	Low-Income Community	2011–2015
California	Stanislaus	06099002602	Low-Income Community	2011–2015
California	Stanislaus	06099003002	Low-Income Community	2011–2015
California	Stanislaus	06099003201	Low-Income Community	2011–2015
California	Stanislaus	06099003400	Low-Income Community	2011–2015
California	Stanislaus	06099003802	Low-Income Community	2011–2015
California	Stanislaus	06099003803	Low-Income Community	2011–2015
California	Sutter	06101050102	Low-Income Community	2011–2015
California	Sutter	06101050201	Low-Income Community	2011–2015
California	Sutter	06101050202	Low-Income Community	2011–2015
California	Sutter	06101050302	Low-Income Community	2011–2015
California	Tehama	06103001100	Low-Income Community	2011–2015
California	Trinity	06105000101	Low-Income Community	2011–2015
California	Trinity	06105000300	Low-Income Community	2011–2015
California	Tulare	06107000201	Low-Income Community	2011–2015
California	Tulare	06107000302	Low-Income Community	2011–2015
California	Tulare	06107000502	Low-Income Community	2011–2015
California	Tulare	06107000900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
California	Tulare	06107001003	Low-Income Community	2012–2016
California	Tulare	06107001100	Low-Income Community	2011–2015
California	Tulare	06107001400	Low-Income Community	2011–2015
California	Tulare	06107002202	Low-Income Community	2011–2015
California	Tulare	06107002800	Low-Income Community	2011–2015
California	Tulare	06107002901	Low-Income Community	2011–2015
California	Tulare	06107003200	Low-Income Community	2011–2015
California	Tulare	06107003400	Low-Income Community	2011–2015
California	Tulare	06107003802	Low-Income Community	2011–2015
California	Tulare	06107004101	Low-Income Community	2011–2015
California	Tulare	06107004102	Low-Income Community	2011–2015
California	Tulare	06107004200	Low-Income Community	2011–2015
California	Tulare	06107004300	Low-Income Community	2011–2015
California	Tuolumne	06109001200	Low-Income Community	2011–2015
California	Tuolumne	06109004200	Low-Income Community	2011–2015
California	Ventura	06111000304	Low-Income Community	2011–2015
California	Ventura	06111000600	Low-Income Community	2011–2015
California	Ventura	06111001302	Low-Income Community	2011–2015
California	Ventura	06111003201	Low-Income Community	2011–2015
California	Ventura	06111004305	Low-Income Community	2011–2015
California	Ventura	06111004715	Low-Income Community	2011–2015
California	Ventura	06111004902	Low-Income Community	2011–2015
California	Ventura	06111009100	Low-Income Community	2011–2015
California	Yolo	06113010101	Low-Income Community	2011–2015
California	Yolo	06113010201	Low-Income Community	2011–2015
California	Yolo	06113010203	Low-Income Community	2011–2015
California	Yolo	06113010204	Low-Income Community	2011–2015
California	Yolo	06113010602	Low-Income Community	2011–2015
California	Yolo	06113010800	Low-Income Community	2011–2015
California	Yolo	06113011102	Low-Income Community	2011–2015
California	Yuba	06115040301	Low-Income Community	2011–2015
California	Yuba	06115040302	Low-Income Community	2011–2015
California	Yuba	06115040400	Low-Income Community	2011–2015
Colorado	Adams	08001008100	Low-Income Community	2011–2015
Colorado	Adams	08001008353	Low-Income Community	2011–2015
Colorado	Adams	08001008606	Low-Income Community	2011–2015
Colorado	Adams	08001008901	Low-Income Community	2011–2015
Colorado	Adams	08001009202	Low-Income Community	2011–2015
Colorado	Adams	08001009321	Low-Income Community	2011–2015
Colorado	Adams	08001009604	Low-Income Community	2011–2015
Colorado	Adams	08001009606	Low-Income Community	2011–2015
Colorado	Adams	08001015000	Low-Income Community	2011–2015
Colorado	Alamosa	08003960000	Low-Income Community	2011–2015
Colorado	Alamosa	08003960200	Low-Income Community	2011–2015
Colorado	Alamosa	08003960300	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005551	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005552	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Arapahoe	08005005700	Low-Income Community	2011–2015
Colorado	Arapahoe	08005005951	Low-Income Community	2011–2015
Colorado	Arapahoe	08005006000	Low-Income Community	2011–2015
Colorado	Arapahoe	08005006200	Low-Income Community	2011–2015
Colorado	Arapahoe	08005007301	Low-Income Community	2011–2015
Colorado	Arapahoe	08005007302	Low-Income Community	2011–2015
Colorado	Arapahoe	08005081100	Low-Income Community	2011–2015
Colorado	Archuleta	08007974400	Low-Income Community	2011–2015
Colorado	Baca	08009964700	Low-Income Community	2011–2015
Colorado	Bent	08011966700	Low-Income Community	2011–2015
Colorado	Boulder	08013012203	Low-Income Community	2011–2015
Colorado	Boulder	08013013302	Low-Income Community	2011–2015
Colorado	Boulder	08013013401	Low-Income Community	2011–2015
Colorado	Boulder	08013060800	Low-Income Community	2011–2015
Colorado	Chaffee	08015000401	Non-LIC Contiguous	2011–2015
Colorado	Chaffee	08015000402	Low-Income Community	2011–2015
Colorado	Cheyenne	08017960600	Low-Income Community	2011–2015
Colorado	Clear Creek	08019014800	Low-Income Community	2011–2015
Colorado	Costilla	08023972600	Low-Income Community	2011–2015
Colorado	Crowley	08025969600	Low-Income Community	2011–2015
Colorado	Delta	08029964600	Low-Income Community	2011–2015
Colorado	Delta	08029964800	Low-Income Community	2012–2016
Colorado	Delta	08029965100	Low-Income Community	2011–2015
Colorado	Denver	08031000702	Low-Income Community	2011–2015
Colorado	Denver	08031000800	Low-Income Community	2011–2015
Colorado	Denver	08031003500	Low-Income Community	2011–2015
Colorado	Denver	08031003602	Low-Income Community	2011–2015
Colorado	Denver	08031004101	Low-Income Community	2011–2015
Colorado	Denver	08031004102	Low-Income Community	2011–2015
Colorado	Denver	08031004403	Low-Income Community	2011–2015
Colorado	Denver	08031004404	Low-Income Community	2011–2015
Colorado	Denver	08031004505	Low-Income Community	2011–2015
Colorado	Denver	08031008312	Low-Income Community	2011–2015
Colorado	Dolores	08033000100	Low-Income Community	2011–2015
Colorado	Eagle	08037000503	Low-Income Community	2011–2015
Colorado	El Paso	08041000302	Low-Income Community	2011–2015
Colorado	El Paso	08041002000	Low-Income Community	2011–2015
Colorado	El Paso	08041002200	Low-Income Community	2011–2015
Colorado	El Paso	08041002300	Low-Income Community	2011–2015
Colorado	El Paso	08041004008	Low-Income Community	2011–2015
Colorado	El Paso	08041004501	Low-Income Community	2011–2015
Colorado	El Paso	08041005000	Low-Income Community	2011–2015
Colorado	El Paso	08041006302	Low-Income Community	2011–2015
Colorado	Fremont	08043978200	Low-Income Community	2011–2015
Colorado	Fremont	08043978300	Low-Income Community	2011–2015
Colorado	Fremont	08043978800	Low-Income Community	2011–2015
Colorado	Garfield	08045951600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Garfield	08045951702	Low-Income Community	2012–2016
Colorado	Garfield	08045951901	Low-Income Community	2011–2015
Colorado	Gunnison	08051963700	Low-Income Community	2011–2015
Colorado	Huerfano	08055960600	Low-Income Community	2011–2015
Colorado	Jefferson	08059009831	Low-Income Community	2011–2015
Colorado	Jefferson	08059010100	Low-Income Community	2011–2015
Colorado	Jefferson	08059010402	Low-Income Community	2011–2015
Colorado	Jefferson	08059010902	Low-Income Community	2011–2015
Colorado	Jefferson	08059011550	Low-Income Community	2011–2015
Colorado	Kit Carson	08063962100	Low-Income Community	2011–2015
Colorado	Lake	08065961900	Non-LIC Contiguous	2011–2015
Colorado	La Plata	08067940400	Non-LIC Contiguous	2011–2015
Colorado	La Plata	08067971100	Low-Income Community	2011–2015
Colorado	Larimer	08069001305	Low-Income Community	2011–2015
Colorado	Larimer	08069001306	Low-Income Community	2011–2015
Colorado	Larimer	08069002007	Low-Income Community	2011–2015
Colorado	Larimer	08069002802	Low-Income Community	2011–2015
Colorado	Las Animas	08071000200	Non-LIC Contiguous	2011–2015
Colorado	Las Animas	08071000500	Low-Income Community	2011–2015
Colorado	Las Animas	08071000800	Non-LIC Contiguous	2011–2015
Colorado	Lincoln	08073961700	Low-Income Community	2011–2015
Colorado	Logan	08075966100	Low-Income Community	2011–2015
Colorado	Logan	08075966300	Low-Income Community	2012–2016
Colorado	Logan	08075966400	Low-Income Community	2011–2015
Colorado	Mesa	08077000200	Low-Income Community	2011–2015
Colorado	Mesa	08077000400	Low-Income Community	2011–2015
Colorado	Mesa	08077000500	Low-Income Community	2011–2015
Colorado	Mesa	08077000700	Low-Income Community	2011–2015
Colorado	Mesa	08077000800	Low-Income Community	2011–2015
Colorado	Mesa	08077000900	Low-Income Community	2011–2015
Colorado	Mesa	08077001800	Non-LIC Contiguous	2011–2015
Colorado	Moffat	08081000400	Low-Income Community	2011–2015
Colorado	Montezuma	08083941100	Low-Income Community	2011–2015
Colorado	Montrose	08085966100	Low-Income Community	2011–2015
Colorado	Montrose	08085966202	Low-Income Community	2011–2015
Colorado	Montrose	08085966300	Low-Income Community	2011–2015
Colorado	Montrose	08085966503	Low-Income Community	2011–2015
Colorado	Morgan	08087000500	Low-Income Community	2011–2015
Colorado	Morgan	08087000700	Low-Income Community	2011–2015
Colorado	Otero	08089968300	Low-Income Community	2011–2015
Colorado	Otero	08089968600	Low-Income Community	2011–2015
Colorado	Phillips	08095967600	Low-Income Community	2011–2015
Colorado	Prowers	08099000200	Low-Income Community	2011–2015
Colorado	Prowers	08099000300	Low-Income Community	2011–2015
Colorado	Prowers	08099000700	Low-Income Community	2011–2015
Colorado	Pueblo	08101001400	Low-Income Community	2011–2015
Colorado	Pueblo	08101001900	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Colorado	Pueblo	08101002000	Low-Income Community	2011–2015
Colorado	Pueblo	08101002300	Low-Income Community	2011–2015
Colorado	Pueblo	08101002600	Low-Income Community	2011–2015
Colorado	Pueblo	08101002901	Low-Income Community	2011–2015
Colorado	Pueblo	08101003103	Low-Income Community	2011–2015
Colorado	Pueblo	08101003106	Low-Income Community	2011–2015
Colorado	Pueblo	08101003500	Low-Income Community	2011–2015
Colorado	Rio Blanco	08103951100	Low-Income Community	2011–2015
Colorado	Rio Grande	08105976700	Low-Income Community	2011–2015
Colorado	Saguache	08109977700	Low-Income Community	2011–2015
Colorado	San Juan	08111972600	Low-Income Community	2011–2015
Colorado	San Miguel	08113968200	Non-LIC Contiguous	2011–2015
Colorado	Washington	08121924200	Low-Income Community	2011–2015
Colorado	Weld	08123000100	Low-Income Community	2011–2015
Colorado	Weld	08123001004	Low-Income Community	2011–2015
Colorado	Weld	08123001902	Low-Income Community	2011–2015
Colorado	Weld	08123002004	Low-Income Community	2011–2015
Colorado	Yuma	08125963100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001020100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001021400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001021802	Low-Income Community	2011–2015
Connecticut	Fairfield	09001022200	Low-Income Community	2011–2015
Connecticut	Fairfield	09001022300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001043400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001043700	Low-Income Community	2011–2015
Connecticut	Fairfield	09001044100	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070500	Low-Income Community	2011–2015
Connecticut	Fairfield	09001070600	Low-Income Community	2011–2015
Connecticut	Fairfield	09001073800	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074000	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074300	Low-Income Community	2011–2015
Connecticut	Fairfield	09001074400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001080400	Low-Income Community	2011–2015
Connecticut	Fairfield	09001210100	Low-Income Community	2011–2015
Connecticut	Hartford	09003406100	Low-Income Community	2011–2015
Connecticut	Hartford	09003415300	Low-Income Community	2011–2015
Connecticut	Hartford	09003415900	Low-Income Community	2011–2015
Connecticut	Hartford	09003417100	Low-Income Community	2011–2015
Connecticut	Hartford	09003473800	Low-Income Community	2011–2015
Connecticut	Hartford	09003496100	Low-Income Community	2011–2015
Connecticut	Hartford	09003500300	Low-Income Community	2011–2015
Connecticut	Hartford	09003500400	Low-Income Community	2011–2015
Connecticut	Hartford	09003502500	Low-Income Community	2011–2015
Connecticut	Hartford	09003502700	Low-Income Community	2011–2015
Connecticut	Hartford	09003502800	Low-Income Community	2011–2015
Connecticut	Hartford	09003503700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Connecticut	Hartford	09003503800	Low-Income Community	2011–2015
Connecticut	Hartford	09003504900	Low-Income Community	2011–2015
Connecticut	Hartford	09003510200	Low-Income Community	2011–2015
Connecticut	Hartford	09003510400	Low-Income Community	2011–2015
Connecticut	Hartford	09003510500	Low-Income Community	2011–2015
Connecticut	Hartford	09003510600	Low-Income Community	2011–2015
Connecticut	Hartford	09003510800	Low-Income Community	2011–2015
Connecticut	Hartford	09003514500	Low-Income Community	2011–2015
Connecticut	Hartford	09003514700	Low-Income Community	2011–2015
Connecticut	Hartford	09003524400	Low-Income Community	2011–2015
Connecticut	Hartford	09003524600	Low-Income Community	2011–2015
Connecticut	Litchfield	09005310300	Low-Income Community	2011–2015
Connecticut	Middlesex	09007541100	Low-Income Community	2011–2015
Connecticut	Middlesex	09007541600	Low-Income Community	2011–2015
Connecticut	New Haven	09009125200	Low-Income Community	2011–2015
Connecticut	New Haven	09009140200	Low-Income Community	2011–2015
Connecticut	New Haven	09009140300	Low-Income Community	2011–2015
Connecticut	New Haven	09009141500	Low-Income Community	2011–2015
Connecticut	New Haven	09009141600	Low-Income Community	2011–2015
Connecticut	New Haven	09009142200	Low-Income Community	2011–2015
Connecticut	New Haven	09009142300	Low-Income Community	2011–2015
Connecticut	New Haven	09009142400	Low-Income Community	2011–2015
Connecticut	New Haven	09009154100	Low-Income Community	2011–2015
Connecticut	New Haven	09009154500	Low-Income Community	2011–2015
Connecticut	New Haven	09009165500	Low-Income Community	2011–2015
Connecticut	New Haven	09009170100	Low-Income Community	2011–2015
Connecticut	New Haven	09009170200	Low-Income Community	2011–2015
Connecticut	New Haven	09009170900	Low-Income Community	2011–2015
Connecticut	New Haven	09009345100	Non-LIC Contiguous	2011–2015
Connecticut	New Haven	09009350100	Low-Income Community	2011–2015
Connecticut	New Haven	09009350500	Low-Income Community	2011–2015
Connecticut	New Haven	09009351500	Low-Income Community	2011–2015
Connecticut	New Haven	09009351700	Low-Income Community	2011–2015
Connecticut	New London	09011690500	Low-Income Community	2011–2015
Connecticut	New London	09011690700	Low-Income Community	2011–2015
Connecticut	New London	09011696700	Low-Income Community	2011–2015
Connecticut	New London	09011696800	Low-Income Community	2011–2015
Connecticut	New London	09011697000	Low-Income Community	2011–2015
Connecticut	New London	09011870200	Low-Income Community	2011–2015
Connecticut	New London	09011870300	Low-Income Community	2011–2015
Connecticut	Tolland	09013881300	Low-Income Community	2011–2015
Connecticut	Windham	09015800600	Low-Income Community	2011–2015
Connecticut	Windham	09015903100	Low-Income Community	2011–2015
Delaware	Kent	10001040201	Low-Income Community	2011–2015
Delaware	Kent	10001041300	Low-Income Community	2011–2015
Delaware	Kent	10001041400	Low-Income Community	2011–2015
Delaware	Kent	10001042500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Delaware	Kent	10001043300	Low-Income Community	2011–2015
Delaware	New Castle	10003000601	Low-Income Community	2011–2015
Delaware	New Castle	10003000602	Low-Income Community	2011–2015
Delaware	New Castle	10003001902	Low-Income Community	2011–2015
Delaware	New Castle	10003002100	Low-Income Community	2011–2015
Delaware	New Castle	10003002700	Low-Income Community	2011–2015
Delaware	New Castle	10003002800	Low-Income Community	2011–2015
Delaware	New Castle	10003002900	Low-Income Community	2011–2015
Delaware	New Castle	10003003002	Low-Income Community	2011–2015
Delaware	New Castle	10003010101	Low-Income Community	2011–2015
Delaware	New Castle	10003010104	Low-Income Community	2011–2015
Delaware	New Castle	10003010702	Low-Income Community	2011–2015
Delaware	New Castle	10003012900	Low-Income Community	2011–2015
Delaware	New Castle	10003014402	Low-Income Community	2011–2015
Delaware	New Castle	10003015502	Low-Income Community	2011–2015
Delaware	New Castle	10003015802	Low-Income Community	2011–2015
Delaware	Sussex	10005050401	Non-LIC Contiguous	2011–2015
Delaware	Sussex	10005050405	Low-Income Community	2011–2015
Delaware	Sussex	10005050406	Low-Income Community	2011–2015
Delaware	Sussex	10005050503	Low-Income Community	2011–2015
Delaware	Sussex	10005051802	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001002101	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001003400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001006400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001006804	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007304	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007401	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007407	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007503	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007601	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007603	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007604	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007709	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007803	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007804	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007806	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001007808	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001008904	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009102	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009204	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009601	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009602	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001009603	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010300	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010400	Low-Income Community	2011–2015
District of Columbia	District of Columbia	11001010900	Low-Income Community	2011–2015
Florida	Alachua	12001000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Alachua	12001000302	Low-Income Community	2011–2015
Florida	Alachua	12001000400	Low-Income Community	2011–2015
Florida	Alachua	12001000500	Low-Income Community	2011–2015
Florida	Alachua	12001000600	Low-Income Community	2011–2015
Florida	Alachua	12001000700	Low-Income Community	2011–2015
Florida	Alachua	12001001400	Low-Income Community	2011–2015
Florida	Alachua	12001002000	Low-Income Community	2011–2015
Florida	Baker	12003040201	Low-Income Community	2011–2015
Florida	Bay	12005001600	Low-Income Community	2011–2015
Florida	Bay	12005001800	Low-Income Community	2011–2015
Florida	Bay	12005002000	Low-Income Community	2011–2015
Florida	Bradford	12007000400	Low-Income Community	2011–2015
Florida	Brevard	12009060700	Low-Income Community	2011–2015
Florida	Brevard	12009062106	Low-Income Community	2011–2015
Florida	Brevard	12009062302	Low-Income Community	2011–2015
Florida	Brevard	12009062400	Low-Income Community	2011–2015
Florida	Brevard	12009062600	Low-Income Community	2011–2015
Florida	Brevard	12009064700	Low-Income Community	2011–2015
Florida	Brevard	12009064902	Low-Income Community	2011–2015
Florida	Brevard	12009065124	Low-Income Community	2011–2015
Florida	Brevard	12009065234	Low-Income Community	2011–2015
Florida	Broward	12011010304	Low-Income Community	2011–2015
Florida	Broward	12011020412	Low-Income Community	2011–2015
Florida	Broward	12011030402	Low-Income Community	2011–2015
Florida	Broward	12011030600	Low-Income Community	2011–2015
Florida	Broward	12011040801	Low-Income Community	2011–2015
Florida	Broward	12011040901	Low-Income Community	2011–2015
Florida	Broward	12011041000	Low-Income Community	2011–2015
Florida	Broward	12011041100	Low-Income Community	2011–2015
Florida	Broward	12011041200	Low-Income Community	2011–2015
Florida	Broward	12011041300	Low-Income Community	2011–2015
Florida	Broward	12011041400	Low-Income Community	2011–2015
Florida	Broward	12011041500	Low-Income Community	2011–2015
Florida	Broward	12011041600	Low-Income Community	2011–2015
Florida	Broward	12011041700	Low-Income Community	2011–2015
Florida	Broward	12011050207	Low-Income Community	2011–2015
Florida	Broward	12011050301	Low-Income Community	2011–2015
Florida	Broward	12011050308	Low-Income Community	2011–2015
Florida	Broward	12011050310	Low-Income Community	2011–2015
Florida	Broward	12011050311	Low-Income Community	2011–2015
Florida	Broward	12011050312	Low-Income Community	2011–2015
Florida	Broward	12011050702	Low-Income Community	2011–2015
Florida	Broward	12011060303	Low-Income Community	2011–2015
Florida	Broward	12011080500	Low-Income Community	2011–2015
Florida	Broward	12011091902	Low-Income Community	2011–2015
Florida	Broward	12011100201	Low-Income Community	2011–2015
Florida	Broward	12011100300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Broward	12011100502	Low-Income Community	2011–2015
Florida	Broward	12011100700	Low-Income Community	2011–2015
Florida	Broward	12011100801	Low-Income Community	2011–2015
Florida	Broward	12011110501	Low-Income Community	2011–2015
Florida	Calhoun	12013010300	Low-Income Community	2011–2015
Florida	Charlotte	12015010100	Low-Income Community	2011–2015
Florida	Charlotte	12015020700	Low-Income Community	2011–2015
Florida	Charlotte	12015030401	Low-Income Community	2011–2015
Florida	Citrus	12017450202	Low-Income Community	2011–2015
Florida	Citrus	12017450800	Low-Income Community	2011–2015
Florida	Citrus	12017451502	Low-Income Community	2011–2015
Florida	Clay	12019030102	Low-Income Community	2011–2015
Florida	Clay	12019030104	Low-Income Community	2011–2015
Florida	Collier	12021010411	Low-Income Community	2011–2015
Florida	Collier	12021010802	Low-Income Community	2011–2015
Florida	Collier	12021011205	Low-Income Community	2011–2015
Florida	Collier	12021011301	Low-Income Community	2011–2015
Florida	Collier	12021011400	Low-Income Community	2011–2015
Florida	Columbia	12023110300	Low-Income Community	2011–2015
Florida	DeSoto	12027010200	Low-Income Community	2011–2015
Florida	DeSoto	12027010301	Low-Income Community	2011–2015
Florida	Dixie	12029970101	Low-Income Community	2011–2015
Florida	Duval	12031000600	Low-Income Community	2011–2015
Florida	Duval	12031001000	Low-Income Community	2011–2015
Florida	Duval	12031001300	Low-Income Community	2011–2015
Florida	Duval	12031001400	Low-Income Community	2011–2015
Florida	Duval	12031001600	Low-Income Community	2011–2015
Florida	Duval	12031002600	Low-Income Community	2011–2015
Florida	Duval	12031002901	Low-Income Community	2011–2015
Florida	Duval	12031010700	Low-Income Community	2011–2015
Florida	Duval	12031011000	Low-Income Community	2011–2015
Florida	Duval	12031011300	Low-Income Community	2011–2015
Florida	Duval	12031011500	Low-Income Community	2011–2015
Florida	Duval	12031011600	Low-Income Community	2011–2015
Florida	Duval	12031011800	Low-Income Community	2011–2015
Florida	Duval	12031012200	Low-Income Community	2011–2015
Florida	Duval	12031012400	Low-Income Community	2011–2015
Florida	Duval	12031012601	Low-Income Community	2011–2015
Florida	Duval	12031012602	Low-Income Community	2011–2015
Florida	Duval	12031013800	Low-Income Community	2011–2015
Florida	Duval	12031013901	Low-Income Community	2011–2015
Florida	Duval	12031015502	Low-Income Community	2011–2015
Florida	Duval	12031017400	Low-Income Community	2011–2015
Florida	Escambia	12033000400	Low-Income Community	2011–2015
Florida	Escambia	12033001300	Low-Income Community	2011–2015
Florida	Escambia	12033001600	Low-Income Community	2011–2015
Florida	Escambia	12033001700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Escambia	12033001900	Low-Income Community	2011–2015
Florida	Escambia	12033002803	Low-Income Community	2011–2015
Florida	Escambia	12033004000	Low-Income Community	2011–2015
Florida	Flagler	12035060213	Low-Income Community	2011–2015
Florida	Franklin	12037970200	Low-Income Community	2011–2015
Florida	Gadsden	12039020102	Low-Income Community	2011–2015
Florida	Gilchrist	12041950100	Low-Income Community	2011–2015
Florida	Gilchrist	12041950201	Low-Income Community	2011–2015
Florida	Glades	12043000200	Low-Income Community	2011–2015
Florida	Glades	12043000300	Low-Income Community	2011–2015
Florida	Gulf	12045960200	Low-Income Community	2011–2015
Florida	Hamilton	12047960100	Low-Income Community	2011–2015
Florida	Hamilton	12047960300	Low-Income Community	2011–2015
Florida	Hardee	12049970102	Low-Income Community	2011–2015
Florida	Hendry	12051000200	Low-Income Community	2011–2015
Florida	Hernando	12053040400	Low-Income Community	2011–2015
Florida	Hernando	12053040502	Low-Income Community	2011–2015
Florida	Hernando	12053041104	Low-Income Community	2011–2015
Florida	Hernando	12053041204	Low-Income Community	2011–2015
Florida	Hernando	12053041302	Low-Income Community	2011–2015
Florida	Highlands	12055960103	Low-Income Community	2011–2015
Florida	Highlands	12055960300	Low-Income Community	2011–2015
Florida	Highlands	12055961200	Low-Income Community	2011–2015
Florida	Highlands	12055961700	Low-Income Community	2011–2015
Florida	Hillsborough	12057000102	Low-Income Community	2011–2015
Florida	Hillsborough	12057000201	Low-Income Community	2011–2015
Florida	Hillsborough	12057000202	Low-Income Community	2011–2015
Florida	Hillsborough	12057000300	Low-Income Community	2011–2015
Florida	Hillsborough	12057000700	Low-Income Community	2011–2015
Florida	Hillsborough	12057001002	Low-Income Community	2011–2015
Florida	Hillsborough	12057001800	Low-Income Community	2011–2015
Florida	Hillsborough	12057002600	Low-Income Community	2011–2015
Florida	Hillsborough	12057002900	Low-Income Community	2011–2015
Florida	Hillsborough	12057003000	Low-Income Community	2011–2015
Florida	Hillsborough	12057003100	Low-Income Community	2011–2015
Florida	Hillsborough	12057003200	Low-Income Community	2011–2015
Florida	Hillsborough	12057003300	Low-Income Community	2011–2015
Florida	Hillsborough	12057003400	Low-Income Community	2011–2015
Florida	Hillsborough	12057003500	Low-Income Community	2011–2015
Florida	Hillsborough	12057003600	Low-Income Community	2011–2015
Florida	Hillsborough	12057003900	Low-Income Community	2011–2015
Florida	Hillsborough	12057004000	Low-Income Community	2011–2015
Florida	Hillsborough	12057004200	Low-Income Community	2011–2015
Florida	Hillsborough	12057004300	Low-Income Community	2011–2015
Florida	Hillsborough	12057004500	Low-Income Community	2011–2015
Florida	Hillsborough	12057005101	Low-Income Community	2011–2015
Florida	Hillsborough	12057010203	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Hillsborough	12057010805	Low-Income Community	2011–2015
Florida	Hillsborough	12057010815	Low-Income Community	2011–2015
Florida	Hillsborough	12057010816	Low-Income Community	2011–2015
Florida	Hillsborough	12057010818	Low-Income Community	2011–2015
Florida	Hillsborough	12057012002	Low-Income Community	2011–2015
Florida	Hillsborough	12057013503	Low-Income Community	2011–2015
Florida	Hillsborough	12057013504	Low-Income Community	2011–2015
Florida	Hillsborough	12057013505	Low-Income Community	2011–2015
Florida	Hillsborough	12057013604	Low-Income Community	2011–2015
Florida	Holmes	12059960200	Low-Income Community	2011–2015
Florida	Indian River	12061050904	Low-Income Community	2011–2015
Florida	Jackson	12063210200	Low-Income Community	2011–2015
Florida	Jackson	12063210500	Low-Income Community	2011–2015
Florida	Jefferson	12065250101	Low-Income Community	2011–2015
Florida	Lafayette	12067960100	Low-Income Community	2011–2015
Florida	Lake	12069030102	Low-Income Community	2011–2015
Florida	Lake	12069030107	Low-Income Community	2011–2015
Florida	Lake	12069030206	Low-Income Community	2011–2015
Florida	Lake	12069030502	Low-Income Community	2011–2015
Florida	Lake	12069030504	Low-Income Community	2011–2015
Florida	Lake	12069031205	Low-Income Community	2011–2015
Florida	Lee	12071000502	Low-Income Community	2011–2015
Florida	Lee	12071000503	Low-Income Community	2011–2015
Florida	Lee	12071000600	Low-Income Community	2011–2015
Florida	Lee	12071001910	Low-Income Community	2011–2015
Florida	Lee	12071010201	Low-Income Community	2011–2015
Florida	Lee	12071010302	Low-Income Community	2011–2015
Florida	Lee	12071010307	Low-Income Community	2011–2015
Florida	Lee	12071020201	Low-Income Community	2011–2015
Florida	Lee	12071020300	Low-Income Community	2011–2015
Florida	Lee	12071020502	Low-Income Community	2011–2015
Florida	Lee	12071040122	Low-Income Community	2011–2015
Florida	Lee	12071040308	Low-Income Community	2011–2015
Florida	Lee	12071040313	Low-Income Community	2011–2015
Florida	Lee	12071040314	Low-Income Community	2011–2015
Florida	Lee	12071050103	Low-Income Community	2011–2015
Florida	Leon	12073000400	Low-Income Community	2011–2015
Florida	Leon	12073000500	Low-Income Community	2011–2015
Florida	Leon	12073000600	Low-Income Community	2011–2015
Florida	Leon	12073001002	Low-Income Community	2011–2015
Florida	Leon	12073001101	Low-Income Community	2011–2015
Florida	Leon	12073001401	Low-Income Community	2011–2015
Florida	Leon	12073002003	Low-Income Community	2011–2015
Florida	Leon	12073002005	Low-Income Community	2011–2015
Florida	Levy	12075970101	Low-Income Community	2011–2015
Florida	Levy	12075970102	Low-Income Community	2011–2015
Florida	Liberty	12077950200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Madison	12079110302	Low-Income Community	2011–2015
Florida	Manatee	12081000103	Low-Income Community	2011–2015
Florida	Manatee	12081000105	Low-Income Community	2011–2015
Florida	Manatee	12081000106	Low-Income Community	2011–2015
Florida	Manatee	12081000306	Low-Income Community	2011–2015
Florida	Manatee	12081000601	Low-Income Community	2011–2015
Florida	Manatee	12081000703	Low-Income Community	2011–2015
Florida	Marion	12083000401	Low-Income Community	2011–2015
Florida	Marion	12083000601	Low-Income Community	2011–2015
Florida	Marion	12083001204	Low-Income Community	2011–2015
Florida	Marion	12083001401	Low-Income Community	2011–2015
Florida	Marion	12083001500	Low-Income Community	2011–2015
Florida	Marion	12083001800	Low-Income Community	2011–2015
Florida	Marion	12083001900	Low-Income Community	2011–2015
Florida	Marion	12083002002	Low-Income Community	2011–2015
Florida	Marion	12083002602	Low-Income Community	2011–2015
Florida	Martin	12085000501	Low-Income Community	2011–2015
Florida	Martin	12085001801	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000109	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000134	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000206	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000209	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000404	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000405	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000408	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000409	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000807	Low-Income Community	2011–2015
Florida	Miami-Dade	12086000903	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001002	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001004	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001005	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001006	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001401	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001402	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001605	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001606	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001701	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001702	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001801	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001802	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001803	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001901	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001903	Low-Income Community	2011–2015
Florida	Miami-Dade	12086001904	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Miami-Dade	12086002001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002003	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002004	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002201	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002300	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002402	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002404	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002501	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086002702	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003100	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086003601	Low-Income Community	2011–2015
Florida	Miami-Dade	12086005502	Low-Income Community	2011–2015
Florida	Miami-Dade	12086005701	Low-Income Community	2011–2015
Florida	Miami-Dade	12086007200	Low-Income Community	2011–2015
Florida	Miami-Dade	12086007603	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008208	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008304	Low-Income Community	2011–2015
Florida	Miami-Dade	12086008309	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009100	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009307	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009308	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009807	Low-Income Community	2011–2015
Florida	Miami-Dade	12086009904	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010011	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010015	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010016	Low-Income Community	2011–2015
Florida	Miami-Dade	12086010609	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011001	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011005	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011101	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011300	Low-Income Community	2011–2015
Florida	Miami-Dade	12086011403	Low-Income Community	2011–2015
Florida	Miami-Dade	12086013400	Low-Income Community	2011–2015
Florida	Miami-Dade	12086980800	Low-Income Community	2011–2015
Florida	Monroe	12087971100	Low-Income Community	2011–2015
Florida	Nassau	12089050302	Low-Income Community	2011–2015
Florida	Nassau	12089050303	Low-Income Community	2011–2015
Florida	Okaloosa	12091021900	Low-Income Community	2011–2015
Florida	Okeechobee	12093910300	Low-Income Community	2011–2015
Florida	Okeechobee	12093910401	Low-Income Community	2011–2015
Florida	Orange	12095010400	Low-Income Community	2011–2015
Florida	Orange	12095010500	Low-Income Community	2011–2015
Florida	Orange	12095011701	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Orange	12095011702	Low-Income Community	2011–2015
Florida	Orange	12095012000	Low-Income Community	2011–2015
Florida	Orange	12095012100	Low-Income Community	2011–2015
Florida	Orange	12095012202	Low-Income Community	2011–2015
Florida	Orange	12095012304	Low-Income Community	2011–2015
Florida	Orange	12095012305	Low-Income Community	2011–2015
Florida	Orange	12095012307	Low-Income Community	2011–2015
Florida	Orange	12095012402	Low-Income Community	2011–2015
Florida	Orange	12095013402	Low-Income Community	2011–2015
Florida	Orange	12095013406	Low-Income Community	2011–2015
Florida	Orange	12095014605	Low-Income Community	2011–2015
Florida	Orange	12095014608	Low-Income Community	2011–2015
Florida	Orange	12095014904	Low-Income Community	2011–2015
Florida	Orange	12095015202	Low-Income Community	2011–2015
Florida	Orange	12095016724	Low-Income Community	2011–2015
Florida	Orange	12095017600	Low-Income Community	2011–2015
Florida	Orange	12095018000	Low-Income Community	2011–2015
Florida	Orange	12095018300	Low-Income Community	2011–2015
Florida	Orange	12095018400	Low-Income Community	2011–2015
Florida	Orange	12095018500	Low-Income Community	2011–2015
Florida	Orange	12095018700	Low-Income Community	2011–2015
Florida	Osceola	12097041100	Low-Income Community	2011–2015
Florida	Osceola	12097042300	Low-Income Community	2011–2015
Florida	Osceola	12097042701	Low-Income Community	2011–2015
Florida	Osceola	12097042900	Low-Income Community	2011–2015
Florida	Osceola	12097043500	Low-Income Community	2011–2015
Florida	Palm Beach	12099001302	Low-Income Community	2011–2015
Florida	Palm Beach	12099001402	Low-Income Community	2011–2015
Florida	Palm Beach	12099001403	Low-Income Community	2011–2015
Florida	Palm Beach	12099001404	Low-Income Community	2011–2015
Florida	Palm Beach	12099001600	Low-Income Community	2011–2015
Florida	Palm Beach	12099001700	Low-Income Community	2011–2015
Florida	Palm Beach	12099001801	Low-Income Community	2011–2015
Florida	Palm Beach	12099001911	Low-Income Community	2011–2015
Florida	Palm Beach	12099002200	Low-Income Community	2011–2015
Florida	Palm Beach	12099003102	Low-Income Community	2011–2015
Florida	Palm Beach	12099004009	Low-Income Community	2011–2015
Florida	Palm Beach	12099004201	Low-Income Community	2011–2015
Florida	Palm Beach	12099005102	Low-Income Community	2011–2015
Florida	Palm Beach	12099005701	Low-Income Community	2011–2015
Florida	Palm Beach	12099006100	Low-Income Community	2011–2015
Florida	Palm Beach	12099006700	Low-Income Community	2011–2015
Florida	Palm Beach	12099006801	Low-Income Community	2011–2015
Florida	Palm Beach	12099006802	Low-Income Community	2011–2015
Florida	Palm Beach	12099007746	Low-Income Community	2011–2015
Florida	Palm Beach	12099007833	Low-Income Community	2011–2015
Florida	Palm Beach	12099008001	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Palm Beach	12099008002	Low-Income Community	2011–2015
Florida	Palm Beach	12099008201	Low-Income Community	2011–2015
Florida	Palm Beach	12099008202	Low-Income Community	2011–2015
Florida	Palm Beach	12099008301	Low-Income Community	2011–2015
Florida	Palm Beach	12099008302	Low-Income Community	2011–2015
Florida	Pasco	12101030102	Low-Income Community	2011–2015
Florida	Pasco	12101030407	Low-Income Community	2011–2015
Florida	Pasco	12101030410	Low-Income Community	2011–2015
Florida	Pasco	12101030903	Low-Income Community	2011–2015
Florida	Pasco	12101031013	Low-Income Community	2011–2015
Florida	Pasco	12101031102	Low-Income Community	2011–2015
Florida	Pasco	12101031206	Low-Income Community	2011–2015
Florida	Pasco	12101031405	Low-Income Community	2011–2015
Florida	Pasco	12101031406	Low-Income Community	2011–2015
Florida	Pasco	12101031408	Low-Income Community	2011–2015
Florida	Pasco	12101031807	Low-Income Community	2011–2015
Florida	Pasco	12101031809	Low-Income Community	2011–2015
Florida	Pasco	12101032803	Low-Income Community	2011–2015
Florida	Pasco	12101032904	Low-Income Community	2011–2015
Florida	Pasco	12101033007	Low-Income Community	2011–2015
Florida	Pasco	12101033008	Low-Income Community	2011–2015
Florida	Pasco	12101033011	Low-Income Community	2011–2015
Florida	Pinellas	12103020500	Low-Income Community	2011–2015
Florida	Pinellas	12103020600	Low-Income Community	2011–2015
Florida	Pinellas	12103020800	Low-Income Community	2011–2015
Florida	Pinellas	12103021200	Low-Income Community	2011–2015
Florida	Pinellas	12103021600	Low-Income Community	2011–2015
Florida	Pinellas	12103021900	Low-Income Community	2011–2015
Florida	Pinellas	12103024510	Low-Income Community	2011–2015
Florida	Pinellas	12103024602	Low-Income Community	2011–2015
Florida	Pinellas	12103025115	Low-Income Community	2011–2015
Florida	Pinellas	12103025305	Low-Income Community	2011–2015
Florida	Pinellas	12103025417	Low-Income Community	2011–2015
Florida	Pinellas	12103025602	Low-Income Community	2011–2015
Florida	Pinellas	12103025603	Low-Income Community	2011–2015
Florida	Pinellas	12103025900	Low-Income Community	2011–2015
Florida	Pinellas	12103027402	Low-Income Community	2011–2015
Florida	Pinellas	12103028700	Low-Income Community	2011–2015
Florida	Polk	12105010900	Low-Income Community	2011–2015
Florida	Polk	12105011000	Low-Income Community	2011–2015
Florida	Polk	12105011100	Low-Income Community	2011–2015
Florida	Polk	12105011202	Low-Income Community	2011–2015
Florida	Polk	12105011204	Low-Income Community	2011–2015
Florida	Polk	12105011501	Low-Income Community	2011–2015
Florida	Polk	12105011721	Low-Income Community	2011–2015
Florida	Polk	12105012305	Low-Income Community	2011–2015
Florida	Polk	12105012804	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Polk	12105013002	Low-Income Community	2011–2015
Florida	Polk	12105013300	Low-Income Community	2011–2015
Florida	Polk	12105013500	Low-Income Community	2011–2015
Florida	Polk	12105013701	Low-Income Community	2011–2015
Florida	Polk	12105014301	Low-Income Community	2011–2015
Florida	Polk	12105014501	Low-Income Community	2011–2015
Florida	Polk	12105015702	Low-Income Community	2011–2015
Florida	Polk	12105016002	Low-Income Community	2011–2015
Florida	Polk	12105016100	Low-Income Community	2011–2015
Florida	Polk	12105016400	Low-Income Community	2011–2015
Florida	Putnam	12107950800	Low-Income Community	2011–2015
Florida	Putnam	12107950900	Low-Income Community	2011–2015
Florida	Putnam	12107951401	Low-Income Community	2011–2015
Florida	St. Johns	12109020400	Low-Income Community	2011–2015
Florida	St. Johns	12109021003	Low-Income Community	2011–2015
Florida	St. Lucie	12111380200	Low-Income Community	2011–2015
Florida	St. Lucie	12111380300	Low-Income Community	2011–2015
Florida	St. Lucie	12111380901	Low-Income Community	2011–2015
Florida	St. Lucie	12111382009	Low-Income Community	2011–2015
Florida	Santa Rosa	12113010600	Low-Income Community	2011–2015
Florida	Sarasota	12115000102	Low-Income Community	2011–2015
Florida	Sarasota	12115000200	Low-Income Community	2011–2015
Florida	Sarasota	12115000300	Low-Income Community	2011–2015
Florida	Sarasota	12115000406	Low-Income Community	2011–2015
Florida	Sarasota	12115002721	Low-Income Community	2011–2015
Florida	Seminole	12117020102	Low-Income Community	2011–2015
Florida	Seminole	12117020401	Low-Income Community	2011–2015
Florida	Seminole	12117020901	Low-Income Community	2011–2015
Florida	Seminole	12117022001	Low-Income Community	2011–2015
Florida	Sumter	12119910602	Low-Income Community	2011–2015
Florida	Sumter	12119911000	Low-Income Community	2011–2015
Florida	Suwannee	12121970301	Low-Income Community	2011–2015
Florida	Suwannee	12121970500	Low-Income Community	2011–2015
Florida	Taylor	12123950300	Low-Income Community	2011–2015
Florida	Union	12125960200	Low-Income Community	2011–2015
Florida	Volusia	12127081000	Low-Income Community	2011–2015
Florida	Volusia	12127081700	Low-Income Community	2011–2015
Florida	Volusia	12127081800	Low-Income Community	2011–2015
Florida	Volusia	12127082000	Low-Income Community	2011–2015
Florida	Volusia	12127082100	Low-Income Community	2011–2015
Florida	Volusia	12127082301	Low-Income Community	2011–2015
Florida	Volusia	12127082401	Low-Income Community	2011–2015
Florida	Volusia	12127082415	Low-Income Community	2011–2015
Florida	Volusia	12127082511	Low-Income Community	2011–2015
Florida	Volusia	12127083008	Low-Income Community	2011–2015
Florida	Volusia	12127090500	Low-Income Community	2011–2015
Florida	Volusia	12127090600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Wakulla	12129010202	Low-Income Community	2011–2015
Florida	Walton	12131950301	Low-Income Community	2011–2015
Florida	Washington	12133970104	Low-Income Community	2011–2015
Georgia	Atkinson	13003960100	Low-Income Community	2011–2015
Georgia	Baldwin	13009970200	Low-Income Community	2011–2015
Georgia	Baldwin	13009970400	Low-Income Community	2011–2015
Georgia	Baldwin	13009970500	Low-Income Community	2011–2015
Georgia	Baldwin	13009970600	Low-Income Community	2011–2015
Georgia	Baldwin	13009970701	Low-Income Community	2011–2015
Georgia	Baldwin	13009970702	Low-Income Community	2011–2015
Georgia	Barrow	13013180205	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960100	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960300	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960400	Low-Income Community	2011–2015
Georgia	Ben Hill	13017960500	Low-Income Community	2011–2015
Georgia	Berrien	13019970400	Low-Income Community	2011–2015
Georgia	Bibb	13021010100	Low-Income Community	2011–2015
Georgia	Bibb	13021010400	Low-Income Community	2011–2015
Georgia	Bibb	13021010500	Low-Income Community	2011–2015
Georgia	Bibb	13021011000	Low-Income Community	2011–2015
Georgia	Bibb	13021011100	Low-Income Community	2011–2015
Georgia	Bibb	13021011500	Low-Income Community	2011–2015
Georgia	Bibb	13021012300	Low-Income Community	2011–2015
Georgia	Bibb	13021012400	Low-Income Community	2011–2015
Georgia	Bibb	13021012500	Low-Income Community	2011–2015
Georgia	Bibb	13021012600	Low-Income Community	2011–2015
Georgia	Bibb	13021012700	Low-Income Community	2011–2015
Georgia	Bibb	13021012800	Low-Income Community	2011–2015
Georgia	Bibb	13021012900	Low-Income Community	2011–2015
Georgia	Bibb	13021013800	Low-Income Community	2011–2015
Georgia	Bibb	13021013900	Low-Income Community	2011–2015
Georgia	Bleckley	13023790200	Low-Income Community	2011–2015
Georgia	Brooks	13027960300	Low-Income Community	2011–2015
Georgia	Brooks	13027960400	Low-Income Community	2011–2015
Georgia	Bulloch	13031110200	Low-Income Community	2011–2015
Georgia	Bulloch	13031110401	Low-Income Community	2011–2015
Georgia	Bulloch	13031110403	Low-Income Community	2011–2015
Georgia	Bulloch	13031110404	Low-Income Community	2011–2015
Georgia	Bulloch	13031110500	Low-Income Community	2011–2015
Georgia	Bulloch	13031110602	Low-Income Community	2011–2015
Georgia	Burke	13033950100	Low-Income Community	2011–2015
Georgia	Burke	13033950200	Low-Income Community	2011–2015
Georgia	Burke	13033950400	Low-Income Community	2011–2015
Georgia	Calhoun	13037950100	Low-Income Community	2011–2015
Georgia	Calhoun	13037950200	Low-Income Community	2011–2015
Georgia	Candler	13043950100	Low-Income Community	2011–2015
Georgia	Candler	13043950300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Carroll	13045910501	Low-Income Community	2011–2015
Georgia	Carroll	13045910502	Low-Income Community	2011–2015
Georgia	Chatham	13051000100	Low-Income Community	2011–2015
Georgia	Chatham	13051000601	Low-Income Community	2011–2015
Georgia	Chatham	13051001100	Low-Income Community	2011–2015
Georgia	Chatham	13051001200	Low-Income Community	2011–2015
Georgia	Chatham	13051002100	Low-Income Community	2011–2015
Georgia	Chatham	13051002700	Low-Income Community	2011–2015
Georgia	Chatham	13051003301	Low-Income Community	2011–2015
Georgia	Chatham	13051010101	Low-Income Community	2011–2015
Georgia	Chatham	13051010901	Low-Income Community	2011–2015
Georgia	Clay	13061960300	Low-Income Community	2011–2015
Georgia	Clayton	13063040303	Low-Income Community	2011–2015
Georgia	Clayton	13063040306	Low-Income Community	2011–2015
Georgia	Clayton	13063040415	Low-Income Community	2011–2015
Georgia	Clinch	13065970100	Low-Income Community	2011–2015
Georgia	Cobb	13067030411	Low-Income Community	2011–2015
Georgia	Cobb	13067030412	Low-Income Community	2011–2015
Georgia	Cobb	13067030800	Low-Income Community	2011–2015
Georgia	Cobb	13067031001	Low-Income Community	2011–2015
Georgia	Cobb	13067031113	Low-Income Community	2011–2015
Georgia	Coffee	13069010500	Low-Income Community	2011–2015
Georgia	Coffee	13069010700	Low-Income Community	2011–2015
Georgia	Coffee	13069010802	Low-Income Community	2011–2015
Georgia	Colquitt	13071970300	Low-Income Community	2011–2015
Georgia	Colquitt	13071970400	Low-Income Community	2011–2015
Georgia	Colquitt	13071970702	Low-Income Community	2011–2015
Georgia	Colquitt	13071970800	Low-Income Community	2011–2015
Georgia	Cook	13075960200	Low-Income Community	2011–2015
Georgia	Coweta	13077170305	Low-Income Community	2011–2015
Georgia	Coweta	13077170601	Low-Income Community	2011–2015
Georgia	Crisp	13081010100	Low-Income Community	2011–2015
Georgia	Crisp	13081010201	Low-Income Community	2011–2015
Georgia	Crisp	13081010202	Low-Income Community	2011–2015
Georgia	Decatur	13087970400	Low-Income Community	2011–2015
Georgia	DeKalb	13089020600	Low-Income Community	2011–2015
Georgia	DeKalb	13089021204	Low-Income Community	2011–2015
Georgia	DeKalb	13089021409	Low-Income Community	2011–2015
Georgia	DeKalb	13089021908	Low-Income Community	2011–2015
Georgia	DeKalb	13089021911	Low-Income Community	2011–2015
Georgia	DeKalb	13089022007	Low-Income Community	2011–2015
Georgia	DeKalb	13089022008	Low-Income Community	2011–2015
Georgia	DeKalb	13089022010	Low-Income Community	2011–2015
Georgia	DeKalb	13089023108	Low-Income Community	2011–2015
Georgia	DeKalb	13089023112	Low-Income Community	2011–2015
Georgia	DeKalb	13089023504	Low-Income Community	2011–2015
Georgia	DeKalb	13089023700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Dodge	13091960200	Low-Income Community	2011–2015
Georgia	Dooly	13093970100	Low-Income Community	2011–2015
Georgia	Dooly	13093970300	Low-Income Community	2011–2015
Georgia	Dougherty	13095000200	Low-Income Community	2011–2015
Georgia	Dougherty	13095000800	Low-Income Community	2011–2015
Georgia	Dougherty	13095001000	Low-Income Community	2011–2015
Georgia	Dougherty	13095001100	Low-Income Community	2011–2015
Georgia	Dougherty	13095001403	Low-Income Community	2011–2015
Georgia	Dougherty	13095001500	Low-Income Community	2011–2015
Georgia	Dougherty	13095010302	Low-Income Community	2011–2015
Georgia	Dougherty	13095010601	Low-Income Community	2011–2015
Georgia	Dougherty	13095010700	Low-Income Community	2011–2015
Georgia	Dougherty	13095011400	Low-Income Community	2011–2015
Georgia	Douglas	13097080201	Low-Income Community	2011–2015
Georgia	Douglas	13097080202	Low-Income Community	2011–2015
Georgia	Early	13099090400	Low-Income Community	2011–2015
Georgia	Early	13099090500	Low-Income Community	2011–2015
Georgia	Echols	13101880100	Low-Income Community	2011–2015
Georgia	Elbert	13105000400	Low-Income Community	2011–2015
Georgia	Emanuel	13107970100	Low-Income Community	2011–2015
Georgia	Emanuel	13107970300	Low-Income Community	2011–2015
Georgia	Emanuel	13107970400	Low-Income Community	2011–2015
Georgia	Emanuel	13107970600	Low-Income Community	2011–2015
Georgia	Evans	13109970300	Low-Income Community	2011–2015
Georgia	Floyd	13115001100	Low-Income Community	2011–2015
Georgia	Floyd	13115001600	Low-Income Community	2011–2015
Georgia	Fulton	13121002500	Low-Income Community	2011–2015
Georgia	Fulton	13121002600	Low-Income Community	2011–2015
Georgia	Fulton	13121004200	Low-Income Community	2011–2015
Georgia	Fulton	13121004300	Low-Income Community	2011–2015
Georgia	Fulton	13121005502	Low-Income Community	2011–2015
Georgia	Fulton	13121006300	Low-Income Community	2011–2015
Georgia	Fulton	13121006400	Low-Income Community	2011–2015
Georgia	Fulton	13121006601	Low-Income Community	2011–2015
Georgia	Fulton	13121007200	Low-Income Community	2011–2015
Georgia	Fulton	13121007400	Low-Income Community	2011–2015
Georgia	Fulton	13121007500	Low-Income Community	2011–2015
Georgia	Fulton	13121007602	Low-Income Community	2011–2015
Georgia	Fulton	13121007603	Low-Income Community	2011–2015
Georgia	Fulton	13121007704	Low-Income Community	2011–2015
Georgia	Fulton	13121007705	Low-Income Community	2011–2015
Georgia	Fulton	13121007807	Low-Income Community	2011–2015
Georgia	Fulton	13121008000	Low-Income Community	2011–2015
Georgia	Fulton	13121008102	Low-Income Community	2011–2015
Georgia	Fulton	13121008201	Low-Income Community	2011–2015
Georgia	Fulton	13121008400	Low-Income Community	2011–2015
Georgia	Fulton	13121008500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Fulton	13121008601	Low-Income Community	2011–2015
Georgia	Fulton	13121010603	Low-Income Community	2011–2015
Georgia	Fulton	13121011000	Low-Income Community	2011–2015
Georgia	Fulton	13121011800	Low-Income Community	2011–2015
Georgia	Fulton	13121011900	Low-Income Community	2011–2015
Georgia	Fulton	13121012000	Low-Income Community	2011–2015
Georgia	Gilmer	13123080300	Low-Income Community	2011–2015
Georgia	Glynn	13127000504	Low-Income Community	2011–2015
Georgia	Glynn	13127000700	Low-Income Community	2011–2015
Georgia	Glynn	13127000800	Low-Income Community	2011–2015
Georgia	Grady	13131950300	Low-Income Community	2011–2015
Georgia	Grady	13131950500	Low-Income Community	2011–2015
Georgia	Greene	13133950200	Low-Income Community	2011–2015
Georgia	Greene	13133950303	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050306	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050319	Low-Income Community	2011–2015
Georgia	Gwinnett	13135050320	Low-Income Community	2011–2015
Georgia	Hall	13139000800	Low-Income Community	2011–2015
Georgia	Hall	13139001003	Low-Income Community	2011–2015
Georgia	Hall	13139001101	Low-Income Community	2011–2015
Georgia	Hancock	13141480400	Low-Income Community	2011–2015
Georgia	Jefferson	13163960300	Low-Income Community	2011–2015
Georgia	Jefferson	13163960400	Low-Income Community	2011–2015
Georgia	Jenkins	13165960100	Low-Income Community	2011–2015
Georgia	Laurens	13175950300	Low-Income Community	2011–2015
Georgia	Laurens	13175950400	Low-Income Community	2011–2015
Georgia	Laurens	13175950800	Low-Income Community	2011–2015
Georgia	Laurens	13175950900	Low-Income Community	2011–2015
Georgia	Lincoln	13181970100	Low-Income Community	2011–2015
Georgia	Lowndes	13185010500	Low-Income Community	2011–2015
Georgia	Lowndes	13185010800	Low-Income Community	2011–2015
Georgia	Lowndes	13185010900	Low-Income Community	2011–2015
Georgia	Lowndes	13185011000	Low-Income Community	2011–2015
Georgia	Lowndes	13185011301	Low-Income Community	2011–2015
Georgia	Lowndes	13185011302	Low-Income Community	2011–2015
Georgia	McDuffie	13189950200	Low-Income Community	2011–2015
Georgia	McDuffie	13189950400	Low-Income Community	2011–2015
Georgia	Macon	13193000300	Low-Income Community	2011–2015
Georgia	Macon	13193000400	Low-Income Community	2011–2015
Georgia	Miller	13201950100	Low-Income Community	2011–2015
Georgia	Miller	13201950200	Low-Income Community	2011–2015
Georgia	Mitchell	13205090100	Low-Income Community	2011–2015
Georgia	Mitchell	13205090200	Low-Income Community	2011–2015
Georgia	Mitchell	13205090300	Low-Income Community	2011–2015
Georgia	Muscogee	13215000300	Low-Income Community	2011–2015
Georgia	Muscogee	13215001400	Low-Income Community	2011–2015
Georgia	Muscogee	13215001600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Muscogee	13215001800	Low-Income Community	2011–2015
Georgia	Muscogee	13215002200	Low-Income Community	2011–2015
Georgia	Muscogee	13215002500	Low-Income Community	2011–2015
Georgia	Muscogee	13215002700	Low-Income Community	2011–2015
Georgia	Muscogee	13215002800	Low-Income Community	2011–2015
Georgia	Muscogee	13215002902	Low-Income Community	2011–2015
Georgia	Muscogee	13215003000	Low-Income Community	2011–2015
Georgia	Muscogee	13215003200	Low-Income Community	2011–2015
Georgia	Muscogee	13215003302	Low-Income Community	2011–2015
Georgia	Muscogee	13215003400	Low-Income Community	2011–2015
Georgia	Muscogee	13215011100	Low-Income Community	2011–2015
Georgia	Muscogee	13215011200	Low-Income Community	2011–2015
Georgia	Muscogee	13215011400	Low-Income Community	2011–2015
Georgia	Newton	13217100700	Low-Income Community	2011–2015
Georgia	Peach	13225040200	Low-Income Community	2011–2015
Georgia	Peach	13225040302	Low-Income Community	2011–2015
Georgia	Peach	13225040400	Low-Income Community	2011–2015
Georgia	Pierce	13229960300	Low-Income Community	2011–2015
Georgia	Polk	13233010400	Low-Income Community	2011–2015
Georgia	Randolph	13243790200	Low-Income Community	2011–2015
Georgia	Richmond	13245000200	Low-Income Community	2011–2015
Georgia	Richmond	13245000300	Low-Income Community	2011–2015
Georgia	Richmond	13245000600	Low-Income Community	2011–2015
Georgia	Richmond	13245000700	Low-Income Community	2011–2015
Georgia	Richmond	13245000900	Low-Income Community	2011–2015
Georgia	Richmond	13245001000	Low-Income Community	2011–2015
Georgia	Richmond	13245001400	Low-Income Community	2011–2015
Georgia	Richmond	13245001500	Low-Income Community	2011–2015
Georgia	Richmond	13245010400	Low-Income Community	2011–2015
Georgia	Richmond	13245010504	Low-Income Community	2011–2015
Georgia	Richmond	13245010600	Low-Income Community	2011–2015
Georgia	Richmond	13245010710	Low-Income Community	2011–2015
Georgia	Richmond	13245011000	Low-Income Community	2011–2015
Georgia	Screven	13251970400	Low-Income Community	2011–2015
Georgia	Spalding	13255160300	Low-Income Community	2011–2015
Georgia	Spalding	13255160400	Low-Income Community	2011–2015
Georgia	Spalding	13255160700	Low-Income Community	2011–2015
Georgia	Spalding	13255160800	Low-Income Community	2011–2015
Georgia	Spalding	13255160900	Low-Income Community	2011–2015
Georgia	Stewart	13259950100	Low-Income Community	2011–2015
Georgia	Stewart	13259950400	Low-Income Community	2011–2015
Georgia	Sumter	13261950200	Low-Income Community	2011–2015
Georgia	Sumter	13261950300	Low-Income Community	2011–2015
Georgia	Sumter	13261950600	Low-Income Community	2011–2015
Georgia	Sumter	13261950700	Low-Income Community	2011–2015
Georgia	Taliaferro	13265010200	Low-Income Community	2011–2015
Georgia	Tattnall	13267950201	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Georgia	Tattnall	13267950202	Low-Income Community	2011–2015
Georgia	Taylor	13269950300	Low-Income Community	2011–2015
Georgia	Telfair	13271950100	Low-Income Community	2011–2015
Georgia	Terrell	13273120300	Low-Income Community	2011–2015
Georgia	Terrell	13273120400	Low-Income Community	2011–2015
Georgia	Thomas	13275960100	Low-Income Community	2011–2015
Georgia	Thomas	13275960700	Low-Income Community	2011–2015
Georgia	Tift	13277960600	Low-Income Community	2011–2015
Georgia	Tift	13277960700	Low-Income Community	2011–2015
Georgia	Tift	13277960800	Low-Income Community	2011–2015
Georgia	Toombs	13279970100	Low-Income Community	2011–2015
Georgia	Troup	13285960501	Low-Income Community	2011–2015
Georgia	Troup	13285960600	Low-Income Community	2011–2015
Georgia	Troup	13285960800	Low-Income Community	2011–2015
Georgia	Troup	13285960901	Low-Income Community	2011–2015
Georgia	Upson	13293010201	Low-Income Community	2011–2015
Georgia	Upson	13293010500	Low-Income Community	2011–2015
Georgia	Walker	13295020200	Low-Income Community	2011–2015
Georgia	Walton	13297110400	Low-Income Community	2011–2015
Georgia	Ware	13299950400	Low-Income Community	2011–2015
Georgia	Ware	13299950500	Low-Income Community	2011–2015
Georgia	Ware	13299950700	Low-Income Community	2011–2015
Georgia	Ware	13299950800	Low-Income Community	2011–2015
Georgia	Ware	13299950900	Low-Income Community	2011–2015
Georgia	Warren	13301970400	Low-Income Community	2011–2015
Georgia	Washington	13303950400	Low-Income Community	2011–2015
Georgia	Washington	13303950700	Low-Income Community	2011–2015
Georgia	Wayne	13305970500	Low-Income Community	2011–2015
Guam	Guam	66010950300	Non-LIC Contiguous	2011–2015
Guam	Guam	66010950401	Low-Income Community	2011–2015
Guam	Guam	66010950402	Low-Income Community	2011–2015
Guam	Guam	66010950501	Low-Income Community	2011–2015
Guam	Guam	66010950502	Low-Income Community	2011–2015
Guam	Guam	66010950900	Non-LIC Contiguous	2011–2015
Guam	Guam	66010951000	Low-Income Community	2011–2015
Guam	Guam	66010951600	Low-Income Community	2011–2015
Guam	Guam	66010951800	Low-Income Community	2011–2015
Guam	Guam	66010951901	Low-Income Community	2011–2015
Guam	Guam	66010951902	Low-Income Community	2011–2015
Guam	Guam	66010952400	Low-Income Community	2011–2015
Guam	Guam	66010952800	Low-Income Community	2011–2015
Guam	Guam	66010952900	Low-Income Community	2011–2015
Guam	Guam	66010953000	Low-Income Community	2011–2015
Guam	Guam	66010953300	Low-Income Community	2011–2015
Guam	Guam	66010953400	Low-Income Community	2011–2015
Guam	Guam	66010953900	Low-Income Community	2011–2015
Guam	Guam	66010954400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Guam	Guam	66010954800	Low-Income Community	2011–2015
Guam	Guam	66010955300	Low-Income Community	2011–2015
Guam	Guam	66010955400	Low-Income Community	2011–2015
Guam	Guam	66010955600	Low-Income Community	2011–2015
Guam	Guam	66010955700	Low-Income Community	2011–2015
Guam	Guam	66010956000	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020300	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020400	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020500	Low-Income Community	2011–2015
Hawaii	Hawaii	15001020600	Low-Income Community	2011–2015
Hawaii	Hawaii	15001021504	Low-Income Community	2011–2015
Hawaii	Hawaii	15001021601	Non-LIC Contiguous	2011–2015
Hawaii	Honolulu	15003005200	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005300	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005500	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005700	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005800	Low-Income Community	2011–2015
Hawaii	Honolulu	15003005900	Low-Income Community	2011–2015
Hawaii	Honolulu	15003007504	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008001	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008003	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008502	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008702	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008703	Low-Income Community	2011–2015
Hawaii	Honolulu	15003008914	Low-Income Community	2011–2015
Hawaii	Kauai	15007040104	Low-Income Community	2011–2015
Hawaii	Kauai	15007040604	Low-Income Community	2011–2015
Hawaii	Maui	15009030404	Low-Income Community	2011–2015
Hawaii	Maui	15009030901	Low-Income Community	2011–2015
Hawaii	Maui	15009031700	Low-Income Community	2011–2015
Hawaii	Maui	15009031900	Non-LIC Contiguous	2011–2015
Idaho	Ada	16001002000	Low-Income Community	2011–2015
Idaho	Ada	16001010321	Low-Income Community	2011–2015
Idaho	Adams	16003950100	Non-LIC Contiguous	2011–2015
Idaho	Bannock	16005001601	Low-Income Community	2011–2015
Idaho	Benewah	16009950100	Low-Income Community	2011–2015
Idaho	Bonner	16017950300	Low-Income Community	2011–2015
Idaho	Boundary	16021970200	Low-Income Community	2011–2015
Idaho	Canyon	16027020200	Low-Income Community	2011–2015
Idaho	Canyon	16027022100	Low-Income Community	2011–2015
Idaho	Canyon	16027022200	Low-Income Community	2011–2015
Idaho	Clearwater	16035940000	Non-LIC Contiguous	2011–2015
Idaho	Clearwater	16035970100	Low-Income Community	2011–2015
Idaho	Elmore	16039960300	Low-Income Community	2011–2015
Idaho	Gooding	16047960100	Low-Income Community	2011–2015
Idaho	Idaho	16049940000	Low-Income Community	2011–2015
Idaho	Idaho	16049960400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Idaho	Jerome	16053970400	Low-Income Community	2011–2015
Idaho	Kootenai	16055000602	Low-Income Community	2011–2015
Idaho	Latah	16057005100	Low-Income Community	2011–2015
Idaho	Latah	16057005400	Low-Income Community	2011–2015
Idaho	Lewis	16061940001	Low-Income Community	2011–2015
Idaho	Minidoka	16067970500	Low-Income Community	2011–2015
Idaho	Nez Perce	16069960300	Low-Income Community	2011–2015
Idaho	Payette	16075960200	Low-Income Community	2011–2015
Idaho	Shoshone	16079960300	Low-Income Community	2011–2015
Idaho	Twin Falls	16083000400	Low-Income Community	2011–2015
Idaho	Twin Falls	16083001100	Low-Income Community	2011–2015
Idaho	Valley	16085970300	Low-Income Community	2011–2015
Illinois	Adams	17001000800	Low-Income Community	2011–2015
Illinois	Alexander	17003957900	Low-Income Community	2011–2015
Illinois	Bond	17005951300	Low-Income Community	2011–2015
Illinois	Boone	17007010100	Low-Income Community	2011–2015
Illinois	Bureau	17011965600	Low-Income Community	2011–2015
Illinois	Carroll	17015960300	Low-Income Community	2011–2015
Illinois	Cass	17017960500	Low-Income Community	2011–2015
Illinois	Champaign	17019000301	Low-Income Community	2011–2015
Illinois	Champaign	17019000401	Low-Income Community	2011–2015
Illinois	Champaign	17019000402	Low-Income Community	2011–2015
Illinois	Champaign	17019000901	Low-Income Community	2011–2015
Illinois	Champaign	17019005300	Low-Income Community	2011–2015
Illinois	Champaign	17019005900	Low-Income Community	2011–2015
Illinois	Christian	17021958900	Low-Income Community	2011–2015
Illinois	Clark	17023060200	Low-Income Community	2011–2015
Illinois	Clay	17025972100	Low-Income Community	2011–2015
Illinois	Clinton	17027900401	Low-Income Community	2011–2015
Illinois	Coles	17029000500	Low-Income Community	2011–2015
Illinois	Cook	17031230600	Low-Income Community	2011–2015
Illinois	Cook	17031231200	Low-Income Community	2011–2015
Illinois	Cook	17031231500	Low-Income Community	2011–2015
Illinois	Cook	17031251300	Low-Income Community	2011–2015
Illinois	Cook	17031251500	Low-Income Community	2011–2015
Illinois	Cook	17031251800	Low-Income Community	2011–2015
Illinois	Cook	17031251900	Low-Income Community	2011–2015
Illinois	Cook	17031260200	Low-Income Community	2011–2015
Illinois	Cook	17031260600	Low-Income Community	2011–2015
Illinois	Cook	17031270500	Low-Income Community	2011–2015
Illinois	Cook	17031271200	Low-Income Community	2011–2015
Illinois	Cook	17031271300	Low-Income Community	2011–2015
Illinois	Cook	17031271800	Low-Income Community	2011–2015
Illinois	Cook	17031280400	Low-Income Community	2011–2015
Illinois	Cook	17031280900	Low-Income Community	2011–2015
Illinois	Cook	17031290900	Low-Income Community	2011–2015
Illinois	Cook	17031291200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031292200	Low-Income Community	2011–2015
Illinois	Cook	17031292500	Low-Income Community	2011–2015
Illinois	Cook	17031301200	Low-Income Community	2011–2015
Illinois	Cook	17031340600	Low-Income Community	2011–2015
Illinois	Cook	17031350100	Low-Income Community	2011–2015
Illinois	Cook	17031351100	Low-Income Community	2011–2015
Illinois	Cook	17031351400	Low-Income Community	2011–2015
Illinois	Cook	17031351500	Low-Income Community	2011–2015
Illinois	Cook	17031380100	Low-Income Community	2011–2015
Illinois	Cook	17031380500	Low-Income Community	2011–2015
Illinois	Cook	17031381400	Low-Income Community	2011–2015
Illinois	Cook	17031390300	Low-Income Community	2011–2015
Illinois	Cook	17031400300	Low-Income Community	2011–2015
Illinois	Cook	17031400400	Low-Income Community	2011–2015
Illinois	Cook	17031400500	Low-Income Community	2011–2015
Illinois	Cook	17031400800	Low-Income Community	2011–2015
Illinois	Cook	17031420500	Low-Income Community	2011–2015
Illinois	Cook	17031420600	Low-Income Community	2011–2015
Illinois	Cook	17031420700	Low-Income Community	2011–2015
Illinois	Cook	17031420800	Low-Income Community	2011–2015
Illinois	Cook	17031430101	Low-Income Community	2011–2015
Illinois	Cook	17031430200	Low-Income Community	2011–2015
Illinois	Cook	17031430300	Low-Income Community	2011–2015
Illinois	Cook	17031430400	Low-Income Community	2011–2015
Illinois	Cook	17031430600	Low-Income Community	2011–2015
Illinois	Cook	17031430900	Low-Income Community	2011–2015
Illinois	Cook	17031431301	Low-Income Community	2011–2015
Illinois	Cook	17031431302	Low-Income Community	2011–2015
Illinois	Cook	17031440201	Low-Income Community	2011–2015
Illinois	Cook	17031460100	Low-Income Community	2011–2015
Illinois	Cook	17031460200	Low-Income Community	2011–2015
Illinois	Cook	17031460301	Low-Income Community	2011–2015
Illinois	Cook	17031460302	Low-Income Community	2011–2015
Illinois	Cook	17031460400	Low-Income Community	2011–2015
Illinois	Cook	17031460500	Low-Income Community	2011–2015
Illinois	Cook	17031470100	Low-Income Community	2011–2015
Illinois	Cook	17031490901	Low-Income Community	2011–2015
Illinois	Cook	17031491300	Low-Income Community	2011–2015
Illinois	Cook	17031491400	Low-Income Community	2011–2015
Illinois	Cook	17031500100	Low-Income Community	2011–2015
Illinois	Cook	17031500200	Low-Income Community	2011–2015
Illinois	Cook	17031500300	Low-Income Community	2011–2015
Illinois	Cook	17031520200	Low-Income Community	2011–2015
Illinois	Cook	17031530200	Low-Income Community	2011–2015
Illinois	Cook	17031530502	Low-Income Community	2011–2015
Illinois	Cook	17031540101	Low-Income Community	2011–2015
Illinois	Cook	17031611000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031611100	Low-Income Community	2011–2015
Illinois	Cook	17031611200	Low-Income Community	2011–2015
Illinois	Cook	17031611600	Low-Income Community	2011–2015
Illinois	Cook	17031611700	Low-Income Community	2011–2015
Illinois	Cook	17031611800	Low-Income Community	2011–2015
Illinois	Cook	17031611900	Low-Income Community	2011–2015
Illinois	Cook	17031660301	Low-Income Community	2011–2015
Illinois	Cook	17031660600	Low-Income Community	2011–2015
Illinois	Cook	17031660700	Low-Income Community	2011–2015
Illinois	Cook	17031660800	Low-Income Community	2011–2015
Illinois	Cook	17031660900	Low-Income Community	2011–2015
Illinois	Cook	17031670100	Low-Income Community	2011–2015
Illinois	Cook	17031670200	Low-Income Community	2011–2015
Illinois	Cook	17031670400	Low-Income Community	2011–2015
Illinois	Cook	17031670500	Low-Income Community	2011–2015
Illinois	Cook	17031670600	Low-Income Community	2011–2015
Illinois	Cook	17031670700	Low-Income Community	2011–2015
Illinois	Cook	17031670800	Low-Income Community	2011–2015
Illinois	Cook	17031671100	Low-Income Community	2011–2015
Illinois	Cook	17031671200	Low-Income Community	2011–2015
Illinois	Cook	17031671400	Low-Income Community	2011–2015
Illinois	Cook	17031671500	Low-Income Community	2011–2015
Illinois	Cook	17031671600	Low-Income Community	2011–2015
Illinois	Cook	17031671800	Low-Income Community	2011–2015
Illinois	Cook	17031680500	Low-Income Community	2011–2015
Illinois	Cook	17031680600	Low-Income Community	2011–2015
Illinois	Cook	17031680900	Low-Income Community	2011–2015
Illinois	Cook	17031681000	Low-Income Community	2011–2015
Illinois	Cook	17031681200	Low-Income Community	2011–2015
Illinois	Cook	17031681300	Low-Income Community	2011–2015
Illinois	Cook	17031690300	Low-Income Community	2011–2015
Illinois	Cook	17031691000	Low-Income Community	2011–2015
Illinois	Cook	17031691100	Low-Income Community	2011–2015
Illinois	Cook	17031691300	Low-Income Community	2011–2015
Illinois	Cook	17031691400	Low-Income Community	2011–2015
Illinois	Cook	17031691500	Low-Income Community	2011–2015
Illinois	Cook	17031710100	Low-Income Community	2011–2015
Illinois	Cook	17031710200	Low-Income Community	2011–2015
Illinois	Cook	17031710300	Low-Income Community	2011–2015
Illinois	Cook	17031710500	Low-Income Community	2011–2015
Illinois	Cook	17031711000	Low-Income Community	2011–2015
Illinois	Cook	17031711400	Low-Income Community	2011–2015
Illinois	Cook	17031750600	Low-Income Community	2011–2015
Illinois	Cook	17031803606	Low-Income Community	2011–2015
Illinois	Cook	17031811600	Low-Income Community	2011–2015
Illinois	Cook	17031813400	Low-Income Community	2011–2015
Illinois	Cook	17031813900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031814200	Low-Income Community	2011–2015
Illinois	Cook	17031814400	Low-Income Community	2011–2015
Illinois	Cook	17031814900	Low-Income Community	2011–2015
Illinois	Cook	17031817200	Low-Income Community	2011–2015
Illinois	Cook	17031817300	Low-Income Community	2011–2015
Illinois	Cook	17031817500	Low-Income Community	2011–2015
Illinois	Cook	17031817700	Low-Income Community	2011–2015
Illinois	Cook	17031820400	Low-Income Community	2011–2015
Illinois	Cook	17031820605	Low-Income Community	2011–2015
Illinois	Cook	17031821200	Low-Income Community	2011–2015
Illinois	Cook	17031821401	Low-Income Community	2011–2015
Illinois	Cook	17031821500	Low-Income Community	2011–2015
Illinois	Cook	17031822400	Low-Income Community	2011–2015
Illinois	Cook	17031823703	Low-Income Community	2011–2015
Illinois	Cook	17031823705	Low-Income Community	2011–2015
Illinois	Cook	17031824800	Low-Income Community	2011–2015
Illinois	Cook	17031825501	Low-Income Community	2011–2015
Illinois	Cook	17031825600	Low-Income Community	2011–2015
Illinois	Cook	17031825801	Low-Income Community	2011–2015
Illinois	Cook	17031825900	Low-Income Community	2011–2015
Illinois	Cook	17031826000	Low-Income Community	2011–2015
Illinois	Cook	17031826100	Low-Income Community	2011–2015
Illinois	Cook	17031826202	Low-Income Community	2011–2015
Illinois	Cook	17031826303	Low-Income Community	2011–2015
Illinois	Cook	17031826402	Low-Income Community	2011–2015
Illinois	Cook	17031826500	Low-Income Community	2011–2015
Illinois	Cook	17031826600	Low-Income Community	2011–2015
Illinois	Cook	17031826700	Low-Income Community	2011–2015
Illinois	Cook	17031826800	Low-Income Community	2011–2015
Illinois	Cook	17031826901	Low-Income Community	2011–2015
Illinois	Cook	17031827000	Low-Income Community	2011–2015
Illinois	Cook	17031827100	Low-Income Community	2011–2015
Illinois	Cook	17031827400	Low-Income Community	2011–2015
Illinois	Cook	17031827500	Low-Income Community	2011–2015
Illinois	Cook	17031827600	Low-Income Community	2011–2015
Illinois	Cook	17031828504	Low-Income Community	2011–2015
Illinois	Cook	17031829000	Low-Income Community	2011–2015
Illinois	Cook	17031829302	Low-Income Community	2011–2015
Illinois	Cook	17031829401	Low-Income Community	2011–2015
Illinois	Cook	17031829700	Low-Income Community	2011–2015
Illinois	Cook	17031830007	Low-Income Community	2011–2015
Illinois	Cook	17031830300	Low-Income Community	2011–2015
Illinois	Cook	17031834000	Low-Income Community	2011–2015
Illinois	Cook	17031834200	Low-Income Community	2011–2015
Illinois	Cook	17031834300	Low-Income Community	2011–2015
Illinois	Cook	17031834400	Low-Income Community	2011–2015
Illinois	Cook	17031834500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Cook	17031834600	Low-Income Community	2011–2015
Illinois	Cook	17031834700	Low-Income Community	2011–2015
Illinois	Cook	17031834800	Low-Income Community	2011–2015
Illinois	Cook	17031834900	Low-Income Community	2011–2015
Illinois	Cook	17031835000	Low-Income Community	2011–2015
Illinois	Cook	17031835500	Low-Income Community	2011–2015
Illinois	Cook	17031835900	Low-Income Community	2011–2015
Illinois	Cook	17031836000	Low-Income Community	2011–2015
Illinois	Cook	17031836100	Low-Income Community	2011–2015
Illinois	Cook	17031836900	Low-Income Community	2011–2015
Illinois	Cook	17031837000	Low-Income Community	2011–2015
Illinois	Cook	17031838600	Low-Income Community	2011–2015
Illinois	Cook	17031838700	Low-Income Community	2011–2015
Illinois	Cook	17031838800	Low-Income Community	2011–2015
Illinois	Cook	17031841000	Low-Income Community	2012–2016
Illinois	Cook	17031841400	Low-Income Community	2011–2015
Illinois	Cook	17031841500	Low-Income Community	2011–2015
Illinois	Cook	17031841800	Low-Income Community	2011–2015
Illinois	Cook	17031842100	Low-Income Community	2011–2015
Illinois	Cook	17031842900	Low-Income Community	2011–2015
Illinois	Cook	17031843000	Low-Income Community	2011–2015
Illinois	Cook	17031843300	Low-Income Community	2011–2015
Illinois	Cook	17031843600	Low-Income Community	2011–2015
Illinois	Crawford	17033880400	Low-Income Community	2011–2015
Illinois	Cumberland	17035972400	Low-Income Community	2011–2015
Illinois	DeKalb	17037001001	Low-Income Community	2011–2015
Illinois	DeKalb	17037001002	Low-Income Community	2011–2015
Illinois	DeKalb	17037002200	Low-Income Community	2011–2015
Illinois	De Witt	17039971800	Low-Income Community	2011–2015
Illinois	Douglas	17041952000	Low-Income Community	2011–2015
Illinois	DuPage	17043840104	Low-Income Community	2011–2015
Illinois	Edgar	17045070300	Low-Income Community	2011–2015
Illinois	Edwards	17047957100	Low-Income Community	2011–2015
Illinois	Effingham	17049950800	Low-Income Community	2011–2015
Illinois	Fayette	17051950900	Low-Income Community	2011–2015
Illinois	Franklin	17055040600	Low-Income Community	2011–2015
Illinois	Fulton	17057953500	Low-Income Community	2011–2015
Illinois	Gallatin	17059972800	Low-Income Community	2011–2015
Illinois	Greene	17061973900	Low-Income Community	2011–2015
Illinois	Hamilton	17065973200	Low-Income Community	2011–2015
Illinois	Hancock	17067954100	Low-Income Community	2011–2015
Illinois	Hardin	17069970900	Low-Income Community	2011–2015
Illinois	Henderson	17071973500	Low-Income Community	2011–2015
Illinois	Henry	17073030800	Low-Income Community	2011–2015
Illinois	Iroquois	17075950400	Low-Income Community	2011–2015
Illinois	Jackson	17077011200	Low-Income Community	2011–2015
Illinois	Jackson	17077011400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Jackson	17077011700	Low-Income Community	2011–2015
Illinois	Jasper	17079977400	Low-Income Community	2011–2015
Illinois	Jefferson	17081051000	Low-Income Community	2011–2015
Illinois	Jersey	17083010402	Low-Income Community	2011–2015
Illinois	Jo Daviess	17085020500	Low-Income Community	2011–2015
Illinois	Johnson	17087977800	Low-Income Community	2011–2015
Illinois	Kane	17089850202	Low-Income Community	2011–2015
Illinois	Kane	17089850301	Low-Income Community	2011–2015
Illinois	Kane	17089851400	Low-Income Community	2011–2015
Illinois	Kane	17089851600	Low-Income Community	2011–2015
Illinois	Kane	17089851904	Low-Income Community	2011–2015
Illinois	Kane	17089853200	Low-Income Community	2011–2015
Illinois	Kane	17089853400	Low-Income Community	2011–2015
Illinois	Kane	17089853600	Low-Income Community	2011–2015
Illinois	Kane	17089854301	Low-Income Community	2011–2015
Illinois	Kane	17089854400	Low-Income Community	2011–2015
Illinois	Kankakee	17091011500	Low-Income Community	2011–2015
Illinois	Kankakee	17091011600	Low-Income Community	2011–2015
Illinois	Kankakee	17091011700	Low-Income Community	2011–2015
Illinois	Kankakee	17091012300	Low-Income Community	2011–2015
Illinois	Knox	17095001100	Low-Income Community	2011–2015
Illinois	Lake	17097860302	Low-Income Community	2011–2015
Illinois	Lake	17097862300	Low-Income Community	2011–2015
Illinois	Lake	17097862605	Low-Income Community	2011–2015
Illinois	Lake	17097862700	Low-Income Community	2011–2015
Illinois	Lake	17097862901	Low-Income Community	2011–2015
Illinois	LaSalle	17099964300	Low-Income Community	2011–2015
Illinois	Lawrence	17101880800	Low-Income Community	2011–2015
Illinois	Lee	17103000600	Low-Income Community	2011–2015
Illinois	Livingston	17105960500	Low-Income Community	2011–2015
Illinois	Logan	17107953100	Low-Income Community	2011–2015
Illinois	McDonough	17109010500	Low-Income Community	2011–2015
Illinois	McHenry	17111870301	Low-Income Community	2011–2015
Illinois	McLean	17113000200	Low-Income Community	2011–2015
Illinois	Macon	17115000200	Low-Income Community	2011–2015
Illinois	Macon	17115000300	Low-Income Community	2011–2015
Illinois	Macon	17115000500	Low-Income Community	2011–2015
Illinois	Macon	17115000900	Low-Income Community	2011–2015
Illinois	Macon	17115003100	Low-Income Community	2011–2015
Illinois	Macoupin	17117956900	Low-Income Community	2011–2015
Illinois	Madison	17119400200	Low-Income Community	2011–2015
Illinois	Madison	17119400600	Low-Income Community	2011–2015
Illinois	Madison	17119400700	Low-Income Community	2011–2015
Illinois	Madison	17119402200	Low-Income Community	2011–2015
Illinois	Madison	17119404000	Low-Income Community	2011–2015
Illinois	Marion	17121952700	Low-Income Community	2011–2015
Illinois	Marshall	17123961500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Mason	17125956500	Low-Income Community	2011–2015
Illinois	Massac	17127970200	Low-Income Community	2011–2015
Illinois	Montgomery	17135958000	Low-Income Community	2011–2015
Illinois	Morgan	17137952000	Low-Income Community	2011–2015
Illinois	Moultrie	17139977200	Low-Income Community	2011–2015
Illinois	Ogle	17141961100	Low-Income Community	2011–2015
Illinois	Peoria	17143000300	Low-Income Community	2011–2015
Illinois	Peoria	17143000900	Low-Income Community	2011–2015
Illinois	Peoria	17143001200	Low-Income Community	2011–2015
Illinois	Peoria	17143002100	Low-Income Community	2011–2015
Illinois	Peoria	17143005000	Low-Income Community	2011–2015
Illinois	Perry	17145030400	Low-Income Community	2011–2015
Illinois	Pike	17149952700	Low-Income Community	2011–2015
Illinois	Pope	17151971300	Low-Income Community	2011–2015
Illinois	Pulaski	17153971100	Low-Income Community	2011–2015
Illinois	Randolph	17157950600	Low-Income Community	2011–2015
Illinois	Richland	17159978000	Low-Income Community	2011–2015
Illinois	Rock Island	17161023500	Low-Income Community	2011–2015
Illinois	Rock Island	17161023600	Low-Income Community	2011–2015
Illinois	St. Clair	17163500500	Low-Income Community	2011–2015
Illinois	St. Clair	17163500900	Low-Income Community	2011–2015
Illinois	St. Clair	17163501300	Low-Income Community	2011–2015
Illinois	St. Clair	17163501603	Low-Income Community	2011–2015
Illinois	St. Clair	17163502700	Low-Income Community	2011–2015
Illinois	St. Clair	17163504500	Low-Income Community	2011–2015
Illinois	St. Clair	17163504600	Low-Income Community	2011–2015
Illinois	Saline	17165955900	Low-Income Community	2011–2015
Illinois	Sangamon	17167000800	Low-Income Community	2011–2015
Illinois	Sangamon	17167000900	Low-Income Community	2011–2015
Illinois	Sangamon	17167001600	Low-Income Community	2011–2015
Illinois	Sangamon	17167001700	Low-Income Community	2011–2015
Illinois	Sangamon	17167002400	Low-Income Community	2011–2015
Illinois	Schuyler	17169970100	Low-Income Community	2011–2015
Illinois	Shelby	17173959300	Low-Income Community	2011–2015
Illinois	Stephenson	17177000800	Low-Income Community	2011–2015
Illinois	Stephenson	17177001300	Low-Income Community	2011–2015
Illinois	Tazewell	17179021101	Low-Income Community	2011–2015
Illinois	Union	17181950400	Low-Income Community	2011–2015
Illinois	Vermilion	17183000200	Low-Income Community	2011–2015
Illinois	Vermilion	17183000400	Low-Income Community	2011–2015
Illinois	Vermilion	17183011200	Low-Income Community	2011–2015
Illinois	Warren	17187870500	Low-Income Community	2011–2015
Illinois	Washington	17189950300	Low-Income Community	2011–2015
Illinois	Wayne	17191955000	Low-Income Community	2011–2015
Illinois	White	17193958000	Low-Income Community	2011–2015
Illinois	Whiteside	17195001500	Low-Income Community	2011–2015
Illinois	Will	17197881200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Illinois	Will	17197881900	Low-Income Community	2011–2015
Illinois	Will	17197882000	Low-Income Community	2011–2015
Illinois	Will	17197882400	Low-Income Community	2011–2015
Illinois	Will	17197882500	Low-Income Community	2011–2015
Illinois	Williamson	17199020400	Low-Income Community	2011–2015
Illinois	Winnebago	17201001000	Low-Income Community	2011–2015
Illinois	Winnebago	17201002100	Low-Income Community	2011–2015
Illinois	Winnebago	17201002500	Low-Income Community	2011–2015
Illinois	Winnebago	17201002600	Low-Income Community	2011–2015
Illinois	Winnebago	17201003200	Low-Income Community	2011–2015
Indiana	Adams	18001030700	Low-Income Community	2011–2015
Indiana	Allen	18003000500	Low-Income Community	2011–2015
Indiana	Allen	18003000600	Low-Income Community	2011–2015
Indiana	Allen	18003000701	Low-Income Community	2011–2015
Indiana	Allen	18003001100	Low-Income Community	2011–2015
Indiana	Allen	18003001200	Low-Income Community	2011–2015
Indiana	Allen	18003001300	Low-Income Community	2011–2015
Indiana	Allen	18003002000	Low-Income Community	2011–2015
Indiana	Allen	18003002100	Low-Income Community	2011–2015
Indiana	Allen	18003004000	Low-Income Community	2011–2015
Indiana	Allen	18003980001	Low-Income Community	2011–2015
Indiana	Bartholomew	18005010800	Low-Income Community	2011–2015
Indiana	Blackford	18009975100	Low-Income Community	2011–2015
Indiana	Boone	18011810400	Low-Income Community	2011–2015
Indiana	Carroll	18015959600	Low-Income Community	2011–2015
Indiana	Clark	18019050100	Low-Income Community	2011–2015
Indiana	Clark	18019050401	Low-Income Community	2011–2015
Indiana	Clark	18019050903	Low-Income Community	2011–2015
Indiana	Crawford	18025952100	Low-Income Community	2011–2015
Indiana	Daviess	18027954700	Low-Income Community	2011–2015
Indiana	DeKalb	18033020500	Low-Income Community	2011–2015
Indiana	DeKalb	18033020602	Non-LIC Contiguous	2011–2015
Indiana	Delaware	18035000600	Low-Income Community	2011–2015
Indiana	Delaware	18035000700	Low-Income Community	2011–2015
Indiana	Delaware	18035001300	Low-Income Community	2011–2015
Indiana	Delaware	18035002800	Low-Income Community	2011–2015
Indiana	Dubois	18037953800	Low-Income Community	2011–2015
Indiana	Elkhart	18039000100	Low-Income Community	2011–2015
Indiana	Elkhart	18039000302	Low-Income Community	2011–2015
Indiana	Elkhart	18039001601	Low-Income Community	2011–2015
Indiana	Elkhart	18039002300	Low-Income Community	2011–2015
Indiana	Elkhart	18039002900	Non-LIC Contiguous	2011–2015
Indiana	Fayette	18041954100	Low-Income Community	2011–2015
Indiana	Floyd	18043070400	Low-Income Community	2011–2015
Indiana	Floyd	18043070500	Low-Income Community	2011–2015
Indiana	Franklin	18047969700	Low-Income Community	2011–2015
Indiana	Gibson	18051050502	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Grant	18053000100	Low-Income Community	2011–2015
Indiana	Hendricks	18063210607	Low-Income Community	2011–2015
Indiana	Henry	18065976100	Low-Income Community	2011–2015
Indiana	Howard	18067000200	Low-Income Community	2011–2015
Indiana	Huntington	18069961600	Low-Income Community	2011–2015
Indiana	Jackson	18071967901	Low-Income Community	2011–2015
Indiana	Jennings	18079960302	Low-Income Community	2011–2015
Indiana	Johnson	18081610802	Low-Income Community	2011–2015
Indiana	Knox	18083955300	Low-Income Community	2011–2015
Indiana	Knox	18083955400	Low-Income Community	2011–2015
Indiana	Lake	18089010201	Low-Income Community	2011–2015
Indiana	Lake	18089010203	Low-Income Community	2011–2015
Indiana	Lake	18089010205	Low-Income Community	2011–2015
Indiana	Lake	18089010304	Low-Income Community	2011–2015
Indiana	Lake	18089010500	Low-Income Community	2011–2015
Indiana	Lake	18089011000	Low-Income Community	2011–2015
Indiana	Lake	18089011500	Low-Income Community	2011–2015
Indiana	Lake	18089012300	Low-Income Community	2011–2015
Indiana	Lake	18089020200	Low-Income Community	2011–2015
Indiana	Lake	18089020400	Low-Income Community	2011–2015
Indiana	Lake	18089020600	Low-Income Community	2011–2015
Indiana	Lake	18089030300	Low-Income Community	2011–2015
Indiana	Lake	18089030400	Low-Income Community	2011–2015
Indiana	Lake	18089030600	Low-Income Community	2011–2015
Indiana	Lake	18089030700	Low-Income Community	2011–2015
Indiana	LaPorte	18091040300	Low-Income Community	2011–2015
Indiana	LaPorte	18091040800	Low-Income Community	2011–2015
Indiana	LaPorte	18091042100	Low-Income Community	2011–2015
Indiana	LaPorte	18091043000	Low-Income Community	2011–2015
Indiana	Lawrence	18093950900	Low-Income Community	2011–2015
Indiana	Madison	18095000500	Low-Income Community	2011–2015
Indiana	Madison	18095001000	Low-Income Community	2011–2015
Indiana	Madison	18095001700	Low-Income Community	2011–2015
Indiana	Madison	18095011900	Low-Income Community	2011–2015
Indiana	Marion	18097310306	Low-Income Community	2011–2015
Indiana	Marion	18097322000	Low-Income Community	2011–2015
Indiana	Marion	18097322600	Low-Income Community	2011–2015
Indiana	Marion	18097330805	Low-Income Community	2011–2015
Indiana	Marion	18097340102	Low-Income Community	2011–2015
Indiana	Marion	18097340108	Low-Income Community	2011–2015
Indiana	Marion	18097340400	Low-Income Community	2011–2015
Indiana	Marion	18097341600	Low-Income Community	2011–2015
Indiana	Marion	18097342101	Low-Income Community	2011–2015
Indiana	Marion	18097342400	Low-Income Community	2011–2015
Indiana	Marion	18097351200	Low-Income Community	2011–2015
Indiana	Marion	18097351700	Low-Income Community	2011–2015
Indiana	Marion	18097352600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Marion	18097352700	Low-Income Community	2011–2015
Indiana	Marion	18097352800	Low-Income Community	2011–2015
Indiana	Marion	18097353300	Low-Income Community	2011–2015
Indiana	Marion	18097353500	Low-Income Community	2011–2015
Indiana	Marion	18097353600	Low-Income Community	2011–2015
Indiana	Marion	18097354200	Low-Income Community	2011–2015
Indiana	Marion	18097354400	Low-Income Community	2011–2015
Indiana	Marion	18097354500	Low-Income Community	2011–2015
Indiana	Marion	18097354900	Low-Income Community	2011–2015
Indiana	Marion	18097355000	Low-Income Community	2011–2015
Indiana	Marion	18097355600	Low-Income Community	2011–2015
Indiana	Marion	18097355700	Low-Income Community	2011–2015
Indiana	Marion	18097356200	Non-LIC Contiguous	2011–2015
Indiana	Marion	18097356400	Low-Income Community	2011–2015
Indiana	Marion	18097361200	Low-Income Community	2011–2015
Indiana	Marion	18097361300	Low-Income Community	2011–2015
Indiana	Marion	18097380200	Low-Income Community	2011–2015
Indiana	Marion	18097380300	Low-Income Community	2011–2015
Indiana	Marion	18097390600	Low-Income Community	2011–2015
Indiana	Marion	18097390700	Low-Income Community	2011–2015
Indiana	Marion	18097390800	Low-Income Community	2011–2015
Indiana	Marion	18097390900	Low-Income Community	2011–2015
Indiana	Marion	18097391000	Low-Income Community	2011–2015
Indiana	Marshall	18099020500	Low-Income Community	2011–2015
Indiana	Miami	18103952200	Low-Income Community	2011–2015
Indiana	Miami	18103952900	Low-Income Community	2011–2015
Indiana	Monroe	18105000100	Low-Income Community	2011–2015
Indiana	Monroe	18105000401	Low-Income Community	2011–2015
Indiana	Monroe	18105000501	Low-Income Community	2011–2015
Indiana	Monroe	18105001101	Low-Income Community	2011–2015
Indiana	Montgomery	18107957000	Low-Income Community	2011–2015
Indiana	Morgan	18109510701	Low-Income Community	2011–2015
Indiana	Newton	18111100700	Low-Income Community	2011–2015
Indiana	Orange	18117951500	Low-Income Community	2011–2015
Indiana	Perry	18123952600	Low-Income Community	2011–2015
Indiana	Pike	18125954000	Low-Income Community	2011–2015
Indiana	Porter	18127050900	Low-Income Community	2011–2015
Indiana	Putnam	18133956500	Low-Income Community	2011–2015
Indiana	Randolph	18135951600	Low-Income Community	2011–2015
Indiana	Rush	18139974400	Low-Income Community	2011–2015
Indiana	St. Joseph	18141000900	Low-Income Community	2011–2015
Indiana	St. Joseph	18141001000	Low-Income Community	2011–2015
Indiana	St. Joseph	18141001700	Low-Income Community	2011–2015
Indiana	St. Joseph	18141002700	Low-Income Community	2011–2015
Indiana	St. Joseph	18141002900	Low-Income Community	2011–2015
Indiana	St. Joseph	18141010200	Low-Income Community	2011–2015
Indiana	St. Joseph	18141011100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Indiana	Scott	18143967000	Low-Income Community	2011–2015
Indiana	Shelby	18145710400	Low-Income Community	2011–2015
Indiana	Shelby	18145710601	Low-Income Community	2011–2015
Indiana	Starke	18149953700	Low-Income Community	2011–2015
Indiana	Steuben	18151971300	Low-Income Community	2011–2015
Indiana	Switzerland	18155965700	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157000400	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157000700	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157010203	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157010500	Low-Income Community	2011–2015
Indiana	Tippecanoe	18157011100	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001200	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001500	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001800	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163001900	Low-Income Community	2011–2015
Indiana	Vanderburgh	18163002000	Low-Income Community	2011–2015
Indiana	Vermillion	18165020500	Low-Income Community	2011–2015
Indiana	Vigo	18167000300	Low-Income Community	2011–2015
Indiana	Vigo	18167010600	Low-Income Community	2011–2015
Indiana	Vigo	18167011100	Low-Income Community	2011–2015
Indiana	Wabash	18169102600	Low-Income Community	2011–2015
Indiana	Washington	18175967500	Low-Income Community	2011–2015
Indiana	Wayne	18177000200	Low-Income Community	2011–2015
Indiana	Wayne	18177000900	Low-Income Community	2011–2015
Indiana	Wells	18179040600	Low-Income Community	2011–2015
Iowa	Appanoose	19007950100	Low-Income Community	2011–2015
Iowa	Appanoose	19007950300	Low-Income Community	2011–2015
Iowa	Benton	19011960300	Low-Income Community	2011–2015
Iowa	Black Hawk	19013000100	Low-Income Community	2011–2015
Iowa	Black Hawk	19013000700	Low-Income Community	2011–2015
Iowa	Black Hawk	19013001000	Low-Income Community	2011–2015
Iowa	Buena Vista	19021960400	Low-Income Community	2011–2015
Iowa	Calhoun	19025950200	Low-Income Community	2011–2015
Iowa	Cass	19029190200	Low-Income Community	2011–2015
Iowa	Cass	19029190500	Low-Income Community	2011–2015
Iowa	Cerro Gordo	19033950300	Low-Income Community	2011–2015
Iowa	Cherokee	19035080100	Low-Income Community	2011–2015
Iowa	Clinton	19045000100	Low-Income Community	2011–2015
Iowa	Clinton	19045000300	Low-Income Community	2011–2015
Iowa	Crawford	19047070400	Low-Income Community	2011–2015
Iowa	Dallas	19049050400	Low-Income Community	2011–2015
Iowa	Davis	19051080200	Low-Income Community	2011–2015
Iowa	Decatur	19053960200	Low-Income Community	2011–2015
Iowa	Decatur	19053960300	Low-Income Community	2011–2015
Iowa	Des Moines	19057000200	Low-Income Community	2011–2015
Iowa	Des Moines	19057000300	Low-Income Community	2011–2015
Iowa	Des Moines	19057000400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Iowa	Dubuque	19061000100	Low-Income Community	2011–2015
Iowa	Dubuque	19061000500	Low-Income Community	2011–2015
Iowa	Emmet	19063070300	Low-Income Community	2011–2015
Iowa	Floyd	19067480400	Low-Income Community	2011–2015
Iowa	Hamilton	19079960300	Low-Income Community	2011–2015
Iowa	Ida	19093090300	Low-Income Community	2011–2015
Iowa	Jackson	19097950600	Low-Income Community	2011–2015
Iowa	Johnson	19103000200	Low-Income Community	2011–2015
Iowa	Johnson	19103000302	Low-Income Community	2011–2015
Iowa	Johnson	19103001400	Non-LIC Contiguous	2011–2015
Iowa	Johnson	19103001700	Low-Income Community	2011–2015
Iowa	Lee	19111490200	Low-Income Community	2011–2015
Iowa	Lee	19111490800	Low-Income Community	2011–2015
Iowa	Lee	19111490900	Low-Income Community	2011–2015
Iowa	Linn	19113001900	Low-Income Community	2011–2015
Iowa	Linn	19113002200	Low-Income Community	2011–2015
Iowa	Linn	19113002700	Low-Income Community	2011–2015
Iowa	Lucas	19117950300	Low-Income Community	2011–2015
Iowa	Madison	19121060200	Low-Income Community	2011–2015
Iowa	Marshall	19127950900	Low-Income Community	2011–2015
Iowa	Muscatine	19139050700	Low-Income Community	2011–2015
Iowa	Muscatine	19139051000	Low-Income Community	2011–2015
Iowa	Page	19145490200	Low-Income Community	2011–2015
Iowa	Plymouth	19149970200	Low-Income Community	2011–2015
Iowa	Pocahontas	19151780100	Low-Income Community	2011–2015
Iowa	Polk	19153001100	Low-Income Community	2011–2015
Iowa	Polk	19153002600	Low-Income Community	2011–2015
Iowa	Polk	19153011001	Low-Income Community	2011–2015
Iowa	Pottawattamie	19155030900	Low-Income Community	2011–2015
Iowa	Pottawattamie	19155031300	Low-Income Community	2011–2015
Iowa	Poweshiek	19157370400	Low-Income Community	2011–2015
Iowa	Scott	19163010600	Low-Income Community	2011–2015
Iowa	Scott	19163010900	Low-Income Community	2011–2015
Iowa	Shelby	19165960400	Low-Income Community	2011–2015
Iowa	Union	19175190200	Low-Income Community	2011–2015
Iowa	Webster	19187000700	Low-Income Community	2011–2015
Iowa	Woodbury	19193000100	Low-Income Community	2011–2015
Iowa	Woodbury	19193001500	Low-Income Community	2011–2015
Iowa	Woodbury	19193003600	Low-Income Community	2011–2015
Iowa	Worth	19195690100	Low-Income Community	2011–2015
Kansas	Allen	20001952900	Low-Income Community	2011–2015
Kansas	Anderson	20003953600	Low-Income Community	2011–2015
Kansas	Atchison	20005081900	Low-Income Community	2011–2015
Kansas	Barton	20009971400	Low-Income Community	2011–2015
Kansas	Barton	20009971700	Low-Income Community	2011–2015
Kansas	Butler	20015020400	Low-Income Community	2011–2015
Kansas	Cloud	20029977200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kansas	Cowley	20035493700	Low-Income Community	2011–2015
Kansas	Cowley	20035493800	Low-Income Community	2011–2015
Kansas	Crawford	20037956600	Low-Income Community	2011–2015
Kansas	Crawford	20037956900	Non-LIC Contiguous	2011–2015
Kansas	Crawford	20037957500	Low-Income Community	2011–2015
Kansas	Crawford	20037957600	Low-Income Community	2011–2015
Kansas	Douglas	20045000200	Low-Income Community	2011–2015
Kansas	Douglas	20045000400	Low-Income Community	2011–2015
Kansas	Finney	20055960501	Low-Income Community	2011–2015
Kansas	Finney	20055960600	Low-Income Community	2011–2015
Kansas	Ford	20057961800	Low-Income Community	2011–2015
Kansas	Ford	20057962101	Low-Income Community	2011–2015
Kansas	Franklin	20059954200	Low-Income Community	2011–2015
Kansas	Franklin	20059954400	Low-Income Community	2011–2015
Kansas	Gove	20063955100	Low-Income Community	2011–2015
Kansas	Gove	20063955200	Low-Income Community	2011–2015
Kansas	Graham	20065952100	Low-Income Community	2011–2015
Kansas	Greeley	20071958100	Low-Income Community	2011–2015
Kansas	Jewell	20089576100	Low-Income Community	2011–2015
Kansas	Jewell	20089576200	Low-Income Community	2011–2015
Kansas	Johnson	20091052102	Low-Income Community	2011–2015
Kansas	Johnson	20091052417	Low-Income Community	2011–2015
Kansas	Johnson	20091053555	Low-Income Community	2011–2015
Kansas	Johnson	20091053557	Low-Income Community	2011–2015
Kansas	Johnson	20091053601	Low-Income Community	2011–2015
Kansas	Labette	20099950400	Low-Income Community	2011–2015
Kansas	Lane	20101956600	Non-LIC Contiguous	2011–2015
Kansas	Leavenworth	20103070100	Low-Income Community	2011–2015
Kansas	Lyon	20111000500	Low-Income Community	2011–2015
Kansas	Miami	20121100700	Low-Income Community	2011–2015
Kansas	Montgomery	20125950200	Low-Income Community	2011–2015
Kansas	Montgomery	20125951200	Low-Income Community	2011–2015
Kansas	Montgomery	20125951300	Low-Income Community	2011–2015
Kansas	Norton	20137951700	Non-LIC Contiguous	2011–2015
Kansas	Osage	20139010400	Low-Income Community	2011–2015
Kansas	Reno	20155000600	Low-Income Community	2011–2015
Kansas	Reno	20155000700	Low-Income Community	2011–2015
Kansas	Reno	20155001000	Low-Income Community	2011–2015
Kansas	Reno	20155001300	Low-Income Community	2011–2015
Kansas	Republic	20157978300	Low-Income Community	2011–2015
Kansas	Riley	20161000500	Low-Income Community	2011–2015
Kansas	Riley	20161000801	Low-Income Community	2011–2015
Kansas	Riley	20161001100	Low-Income Community	2011–2015
Kansas	Rooks	20163974600	Low-Income Community	2011–2015
Kansas	Rooks	20163974700	Non-LIC Contiguous	2011–2015
Kansas	Saline	20169000100	Low-Income Community	2011–2015
Kansas	Saline	20169000600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kansas	Sedgwick	20173000400	Low-Income Community	2011–2015
Kansas	Sedgwick	20173000900	Low-Income Community	2011–2015
Kansas	Sedgwick	20173001100	Low-Income Community	2011–2015
Kansas	Sedgwick	20173002600	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003200	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003700	Low-Income Community	2011–2015
Kansas	Sedgwick	20173003800	Low-Income Community	2011–2015
Kansas	Sedgwick	20173004300	Low-Income Community	2011–2015
Kansas	Sedgwick	20173006300	Low-Income Community	2011–2015
Kansas	Shawnee	20177000700	Low-Income Community	2011–2015
Kansas	Shawnee	20177000800	Low-Income Community	2011–2015
Kansas	Shawnee	20177004000	Low-Income Community	2011–2015
Kansas	Sherman	20181453700	Low-Income Community	2011–2015
Kansas	Stafford	20185470600	Low-Income Community	2011–2015
Kansas	Wyandotte	20209041800	Low-Income Community	2011–2015
Kansas	Wyandotte	20209042200	Low-Income Community	2011–2015
Kansas	Wyandotte	20209043905	Low-Income Community	2011–2015
Kansas	Wyandotte	20209044101	Low-Income Community	2011–2015
Kansas	Wyandotte	20209045100	Low-Income Community	2011–2015
Kansas	Wyandotte	20209045200	Low-Income Community	2011–2015
Kentucky	Adair	21001970500	Low-Income Community	2011–2015
Kentucky	Ballard	21007950200	Low-Income Community	2011–2015
Kentucky	Ballard	21007950300	Non-LIC Contiguous	2011–2015
Kentucky	Barren	21009950200	Low-Income Community	2011–2015
Kentucky	Bath	21011970200	Low-Income Community	2011–2015
Kentucky	Bell	21013960600	Low-Income Community	2011–2015
Kentucky	Boone	21015070311	Low-Income Community	2011–2015
Kentucky	Boyd	21019030200	Low-Income Community	2011–2015
Kentucky	Boyd	21019031001	Low-Income Community	2011–2015
Kentucky	Boyle	21021930300	Low-Income Community	2011–2015
Kentucky	Bracken	21023950100	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920100	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920300	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920500	Low-Income Community	2011–2015
Kentucky	Breathitt	21025920600	Low-Income Community	2011–2015
Kentucky	Bullitt	21029020701	Low-Income Community	2011–2015
Kentucky	Bullitt	21029020800	Non-LIC Contiguous	2011–2015
Kentucky	Butler	21031930300	Low-Income Community	2011–2015
Kentucky	Calloway	21035010400	Low-Income Community	2011–2015
Kentucky	Campbell	21037050500	Low-Income Community	2011–2015
Kentucky	Carlisle	21039960200	Low-Income Community	2011–2015
Kentucky	Carroll	21041950200	Low-Income Community	2011–2015
Kentucky	Carter	21043960100	Low-Income Community	2011–2015
Kentucky	Casey	21045950300	Low-Income Community	2011–2015
Kentucky	Christian	21047200300	Low-Income Community	2011–2015
Kentucky	Clark	21049020106	Low-Income Community	2011–2015
Kentucky	Clay	21051950300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Clay	21051950400	Low-Income Community	2011–2015
Kentucky	Clinton	21053970202	Low-Income Community	2011–2015
Kentucky	Cumberland	21057950100	Low-Income Community	2011–2015
Kentucky	Daviess	21059000200	Low-Income Community	2011–2015
Kentucky	Daviess	21059000300	Low-Income Community	2011–2015
Kentucky	Edmonson	21061980100	Low-Income Community	2011–2015
Kentucky	Estill	21065920200	Low-Income Community	2011–2015
Kentucky	Estill	21065920300	Low-Income Community	2011–2015
Kentucky	Fayette	21067000101	Low-Income Community	2011–2015
Kentucky	Fayette	21067000102	Low-Income Community	2011–2015
Kentucky	Fayette	21067000200	Low-Income Community	2011–2015
Kentucky	Fayette	21067000300	Low-Income Community	2011–2015
Kentucky	Fayette	21067000900	Low-Income Community	2011–2015
Kentucky	Fayette	21067001100	Low-Income Community	2011–2015
Kentucky	Fayette	21067001300	Low-Income Community	2011–2015
Kentucky	Fleming	21069920100	Low-Income Community	2011–2015
Kentucky	Floyd	21071920100	Low-Income Community	2011–2015
Kentucky	Franklin	21073071200	Low-Income Community	2011–2015
Kentucky	Fulton	21075960100	Low-Income Community	2011–2015
Kentucky	Gallatin	21077960101	Low-Income Community	2011–2015
Kentucky	Grant	21081920300	Low-Income Community	2011–2015
Kentucky	Graves	21083020100	Low-Income Community	2011–2015
Kentucky	Green	21087930200	Low-Income Community	2011–2015
Kentucky	Greenup	21089040501	Non-LIC Contiguous	2011–2015
Kentucky	Greenup	21089040502	Low-Income Community	2011–2015
Kentucky	Harlan	21095970100	Low-Income Community	2011–2015
Kentucky	Hart	21099970400	Low-Income Community	2011–2015
Kentucky	Henderson	21101020602	Low-Income Community	2011–2015
Kentucky	Hopkins	21107971100	Low-Income Community	2011–2015
Kentucky	Jackson	21109960100	Low-Income Community	2011–2015
Kentucky	Jefferson	21111000200	Low-Income Community	2011–2015
Kentucky	Jefferson	21111000600	Low-Income Community	2011–2015
Kentucky	Jefferson	21111001500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111001800	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002300	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002400	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002700	Low-Income Community	2011–2015
Kentucky	Jefferson	21111002800	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003000	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111003700	Low-Income Community	2011–2015
Kentucky	Jefferson	21111004900	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005000	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005100	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005300	Low-Income Community	2011–2015
Kentucky	Jefferson	21111005900	Low-Income Community	2011–2015
Kentucky	Jefferson	21111006200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Jefferson	21111006500	Low-Income Community	2011–2015
Kentucky	Jefferson	21111007100	Low-Income Community	2011–2015
Kentucky	Jessamine	21113060504	Low-Income Community	2011–2015
Kentucky	Johnson	21115960400	Low-Income Community	2011–2015
Kentucky	Kenton	21117060700	Low-Income Community	2011–2015
Kentucky	Kenton	21117060900	Low-Income Community	2011–2015
Kentucky	Kenton	21117063800	Low-Income Community	2011–2015
Kentucky	Kenton	21117067000	Low-Income Community	2011–2015
Kentucky	Kenton	21117067100	Low-Income Community	2011–2015
Kentucky	Knott	21119960100	Low-Income Community	2011–2015
Kentucky	Knox	21121930500	Low-Income Community	2011–2015
Kentucky	Larue	21123960102	Low-Income Community	2011–2015
Kentucky	Leslie	21131920100	Low-Income Community	2011–2015
Kentucky	Letcher	21133950100	Low-Income Community	2011–2015
Kentucky	Lewis	21135930300	Low-Income Community	2011–2015
Kentucky	Lincoln	21137920101	Low-Income Community	2011–2015
Kentucky	Lincoln	21137920103	Low-Income Community	2011–2015
Kentucky	Logan	21141960500	Low-Income Community	2011–2015
Kentucky	McCracken	21145030300	Low-Income Community	2011–2015
Kentucky	McCracken	21145030400	Low-Income Community	2011–2015
Kentucky	McCreary	21147960300	Low-Income Community	2011–2015
Kentucky	Madison	21151010701	Low-Income Community	2011–2015
Kentucky	Madison	21151010800	Non-LIC Contiguous	2011–2015
Kentucky	Madison	21151010903	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970100	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970200	Low-Income Community	2011–2015
Kentucky	Magoffin	21153970400	Low-Income Community	2011–2015
Kentucky	Martin	21159950100	Low-Income Community	2011–2015
Kentucky	Martin	21159950200	Low-Income Community	2011–2015
Kentucky	Mason	21161960100	Low-Income Community	2011–2015
Kentucky	Menifee	21165960100	Low-Income Community	2011–2015
Kentucky	Metcalfe	21169960300	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920200	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920302	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920400	Low-Income Community	2011–2015
Kentucky	Montgomery	21173920500	Low-Income Community	2011–2015
Kentucky	Morgan	21175950300	Low-Income Community	2011–2015
Kentucky	Muhlenberg	21177960200	Low-Income Community	2011–2015
Kentucky	Muhlenberg	21177960400	Non-LIC Contiguous	2011–2015
Kentucky	Nicholas	21181960200	Low-Income Community	2011–2015
Kentucky	Ohio	21183920300	Low-Income Community	2011–2015
Kentucky	Ohio	21183920500	Low-Income Community	2011–2015
Kentucky	Owen	21187970200	Low-Income Community	2011–2015
Kentucky	Owsley	21189930100	Low-Income Community	2011–2015
Kentucky	Perry	21193970500	Low-Income Community	2011–2015
Kentucky	Perry	21193970600	Low-Income Community	2011–2015
Kentucky	Perry	21193971000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Kentucky	Pike	21195930100	Low-Income Community	2011–2015
Kentucky	Pike	21195930300	Low-Income Community	2011–2015
Kentucky	Pike	21195930400	Low-Income Community	2011–2015
Kentucky	Pike	21195930500	Low-Income Community	2011–2015
Kentucky	Pike	21195931100	Low-Income Community	2011–2015
Kentucky	Pike	21195931800	Low-Income Community	2011–2015
Kentucky	Pike	21195931900	Low-Income Community	2011–2015
Kentucky	Powell	21197970200	Low-Income Community	2011–2015
Kentucky	Pulaski	21199930100	Low-Income Community	2011–2015
Kentucky	Pulaski	21199931102	Low-Income Community	2011–2015
Kentucky	Robertson	21201970100	Low-Income Community	2011–2015
Kentucky	Rowan	21205950200	Low-Income Community	2011–2015
Kentucky	Russell	21207960102	Low-Income Community	2011–2015
Kentucky	Simpson	21213970400	Low-Income Community	2011–2015
Kentucky	Taylor	21217920500	Low-Income Community	2011–2015
Kentucky	Todd	21219950300	Low-Income Community	2011–2015
Kentucky	Union	21225950201	Low-Income Community	2011–2015
Kentucky	Warren	21227010200	Low-Income Community	2011–2015
Kentucky	Wayne	21231920400	Low-Income Community	2011–2015
Kentucky	Webster	21233960400	Low-Income Community	2011–2015
Kentucky	Whitley	21235920500	Low-Income Community	2011–2015
Kentucky	Whitley	21235920600	Low-Income Community	2011–2015
Kentucky	Wolfe	21237930200	Low-Income Community	2011–2015
Louisiana	Acadia	22001960100	Low-Income Community	2011–2015
Louisiana	Allen	22003950300	Low-Income Community	2011–2015
Louisiana	Ascension	22005030900	Low-Income Community	2011–2015
Louisiana	Ascension	22005031000	Low-Income Community	2011–2015
Louisiana	Assumption	22007050100	Low-Income Community	2011–2015
Louisiana	Avoyelles	22009030600	Low-Income Community	2011–2015
Louisiana	Avoyelles	22009030900	Low-Income Community	2011–2015
Louisiana	Beauregard	22011960300	Low-Income Community	2011–2015
Louisiana	Bienville	22013970100	Low-Income Community	2011–2015
Louisiana	Bienville	22013970200	Low-Income Community	2011–2015
Louisiana	Bossier	22015010601	Low-Income Community	2011–2015
Louisiana	Caddo	22017023400	Low-Income Community	2011–2015
Louisiana	Caddo	22017023800	Low-Income Community	2011–2015
Louisiana	Caddo	22017024303	Low-Income Community	2011–2015
Louisiana	Caddo	22017024601	Low-Income Community	2011–2015
Louisiana	Caddo	22017024900	Non-LIC Contiguous	2011–2015
Louisiana	Caddo	22017025100	Low-Income Community	2011–2015
Louisiana	Caddo	22017025300	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000100	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000200	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019000400	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019001500	Low-Income Community	2011–2015
Louisiana	Calcasieu	22019001600	Low-Income Community	2011–2015
Louisiana	Concordia	22029000300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	De Soto	22031950300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000100	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000500	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000602	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033000900	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033001000	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033001104	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002200	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033002500	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003000	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003101	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003103	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003300	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033003400	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004011	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004201	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033004203	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005100	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005200	Low-Income Community	2011–2015
Louisiana	East Baton Rouge	22033005300	Low-Income Community	2011–2015
Louisiana	East Carroll	22035000200	Low-Income Community	2011–2015
Louisiana	East Feliciana	22037951502	Low-Income Community	2011–2015
Louisiana	Evangeline	22039950500	Low-Income Community	2011–2015
Louisiana	Evangeline	22039950600	Low-Income Community	2011–2015
Louisiana	Iberia	22045030500	Low-Income Community	2011–2015
Louisiana	Iberia	22045030900	Low-Income Community	2011–2015
Louisiana	Iberia	22045031000	Low-Income Community	2011–2015
Louisiana	Iberia	22045031100	Low-Income Community	2011–2015
Louisiana	Iberville	22047953000	Low-Income Community	2011–2015
Louisiana	Jackson	22049970300	Non-LIC Contiguous	2011–2015
Louisiana	Jefferson	22051020201	Low-Income Community	2011–2015
Louisiana	Jefferson	22051020202	Low-Income Community	2011–2015
Louisiana	Jefferson	22051020600	Low-Income Community	2011–2015
Louisiana	Jefferson	22051024600	Low-Income Community	2011–2015
Louisiana	Jefferson	22051025900	Low-Income Community	2011–2015
Louisiana	Jefferson	22051026900	Low-Income Community	2011–2015
Louisiana	Jefferson	22051028200	Low-Income Community	2011–2015
Louisiana	Jefferson Davis	22053000500	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000100	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000700	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000800	Low-Income Community	2011–2015
Louisiana	Lafayette	22055000900	Low-Income Community	2011–2015
Louisiana	Lafayette	22055001001	Low-Income Community	2011–2015
Louisiana	Lafayette	22055001100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	Lafayette	22055002200	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020400	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020702	Low-Income Community	2011–2015
Louisiana	Lafourche	22057020900	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960300	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960400	Low-Income Community	2011–2015
Louisiana	Lincoln	22061960900	Low-Income Community	2011–2015
Louisiana	Livingston	22063040401	Low-Income Community	2011–2015
Louisiana	Livingston	22063040402	Non-LIC Contiguous	2011–2015
Louisiana	Livingston	22063040700	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950400	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950500	Low-Income Community	2011–2015
Louisiana	Morehouse	22067950600	Low-Income Community	2011–2015
Louisiana	Natchitoches	22069000600	Low-Income Community	2011–2015
Louisiana	Natchitoches	22069000700	Low-Income Community	2011–2015
Louisiana	Orleans	22071000200	Low-Income Community	2011–2015
Louisiana	Orleans	22071000605	Low-Income Community	2011–2015
Louisiana	Orleans	22071000904	Low-Income Community	2011–2015
Louisiana	Orleans	22071001730	Low-Income Community	2011–2015
Louisiana	Orleans	22071001736	Low-Income Community	2011–2015
Louisiana	Orleans	22071001751	Low-Income Community	2011–2015
Louisiana	Orleans	22071002700	Low-Income Community	2011–2015
Louisiana	Orleans	22071002900	Low-Income Community	2011–2015
Louisiana	Orleans	22071003307	Low-Income Community	2011–2015
Louisiana	Orleans	22071003400	Low-Income Community	2011–2015
Louisiana	Orleans	22071004000	Low-Income Community	2011–2015
Louisiana	Orleans	22071004401	Low-Income Community	2011–2015
Louisiana	Orleans	22071004900	Low-Income Community	2011–2015
Louisiana	Orleans	22071006000	Low-Income Community	2011–2015
Louisiana	Orleans	22071006300	Low-Income Community	2011–2015
Louisiana	Orleans	22071007101	Low-Income Community	2011–2015
Louisiana	Orleans	22071007200	Low-Income Community	2011–2015
Louisiana	Orleans	22071007700	Non-LIC Contiguous	2011–2015
Louisiana	Orleans	22071008400	Low-Income Community	2011–2015
Louisiana	Orleans	22071009400	Low-Income Community	2011–2015
Louisiana	Orleans	22071011100	Low-Income Community	2011–2015
Louisiana	Orleans	22071013400	Low-Income Community	2011–2015
Louisiana	Orleans	22071013700	Low-Income Community	2011–2015
Louisiana	Orleans	22071014000	Low-Income Community	2011–2015
Louisiana	Orleans	22071014300	Low-Income Community	2011–2015
Louisiana	Ouachita	22073000600	Low-Income Community	2011–2015
Louisiana	Ouachita	22073001400	Low-Income Community	2011–2015
Louisiana	Ouachita	22073010603	Low-Income Community	2011–2015
Louisiana	Ouachita	22073010900	Low-Income Community	2011–2015
Louisiana	Pointe Coupee	22077951900	Low-Income Community	2011–2015
Louisiana	Pointe Coupee	22077952300	Low-Income Community	2011–2015
Louisiana	Rapides	22079010500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Louisiana	Rapides	22079011300	Low-Income Community	2011–2015
Louisiana	Rapides	22079013900	Low-Income Community	2011–2015
Louisiana	Richland	22083970500	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030300	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030400	Low-Income Community	2011–2015
Louisiana	St. Bernard	22087030800	Low-Income Community	2011–2015
Louisiana	St. Charles	22089062700	Low-Income Community	2011–2015
Louisiana	St. Helena	22091951100	Low-Income Community	2011–2015
Louisiana	St. James	22093040400	Low-Income Community	2011–2015
Louisiana	St. James	22093040500	Low-Income Community	2011–2015
Louisiana	St. John the Baptist	22095071100	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961100	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961300	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961400	Low-Income Community	2011–2015
Louisiana	St. Landry	22097961600	Low-Income Community	2011–2015
Louisiana	St. Martin	22099020501	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040300	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040400	Low-Income Community	2011–2015
Louisiana	St. Mary	22101040500	Low-Income Community	2011–2015
Louisiana	St. Mary	22101041200	Low-Income Community	2011–2015
Louisiana	St. Tammany	22103040704	Low-Income Community	2011–2015
Louisiana	Tangipahoa	22105953600	Low-Income Community	2011–2015
Louisiana	Tangipahoa	22105953800	Low-Income Community	2011–2015
Louisiana	Terrebonne	22109000101	Non-LIC Contiguous	2011–2015
Louisiana	Terrebonne	22109000500	Low-Income Community	2011–2015
Louisiana	Vermilion	22113950700	Low-Income Community	2011–2015
Louisiana	Vernon	22115950400	Low-Income Community	2011–2015
Louisiana	Washington	22117950500	Low-Income Community	2011–2015
Louisiana	Washington	22117951000	Low-Income Community	2011–2015
Louisiana	Webster	22119031200	Low-Income Community	2011–2015
Louisiana	West Baton Rouge	22121020200	Low-Income Community	2011–2015
Louisiana	Winn	22127960200	Low-Income Community	2011–2015
Maine	Androscoggin	23001010500	Low-Income Community	2011–2015
Maine	Androscoggin	23001020300	Low-Income Community	2011–2015
Maine	Aroostook	23003950100	Low-Income Community	2011–2015
Maine	Aroostook	23003950300	Non-LIC Contiguous	2011–2015
Maine	Aroostook	23003951000	Low-Income Community	2011–2015
Maine	Aroostook	23003951600	Low-Income Community	2011–2015
Maine	Cumberland	23005000300	Low-Income Community	2011–2015
Maine	Cumberland	23005002800	Low-Income Community	2011–2015
Maine	Cumberland	23005003000	Low-Income Community	2011–2015
Maine	Cumberland	23005011100	Low-Income Community	2011–2015
Maine	Hancock	23009965503	Low-Income Community	2011–2015
Maine	Kennebec	23011010300	Low-Income Community	2011–2015
Maine	Kennebec	23011024102	Low-Income Community	2011–2015
Maine	Oxford	23017965500	Low-Income Community	2011–2015
Maine	Oxford	23017965600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Maine	Oxford	23017966200	Low-Income Community	2011–2015
Maine	Penobscot	23019000300	Low-Income Community	2011–2015
Maine	Penobscot	23019004100	Low-Income Community	2011–2015
Maine	Penobscot	23019007100	Low-Income Community	2011–2015
Maine	Penobscot	23019027000	Low-Income Community	2011–2015
Maine	Penobscot	23019028000	Low-Income Community	2011–2015
Maine	Penobscot	23019030000	Low-Income Community	2011–2015
Maine	Penobscot	23019031000	Low-Income Community	2011–2015
Maine	Piscataquis	23021960301	Low-Income Community	2011–2015
Maine	Sagadahoc	23023970600	Low-Income Community	2011–2015
Maine	Somerset	23025965900	Low-Income Community	2011–2015
Maine	Somerset	23025966500	Low-Income Community	2011–2015
Maine	Waldo	23027043000	Low-Income Community	2011–2015
Maine	Washington	23029955400	Non-LIC Contiguous	2011–2015
Maine	Washington	23029955500	Low-Income Community	2011–2015
Maine	Washington	23029955900	Low-Income Community	2011–2015
Maine	York	23031005200	Low-Income Community	2011–2015
Maryland	Allegany	24001000800	Low-Income Community	2011–2015
Maryland	Allegany	24001001000	Low-Income Community	2011–2015
Maryland	Allegany	24001001100	Low-Income Community	2011–2015
Maryland	Allegany	24001001800	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003740603	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750101	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750102	Low-Income Community	2011–2015
Maryland	Anne Arundel	24003750201	Low-Income Community	2011–2015
Maryland	Baltimore	24005401507	Low-Income Community	2011–2015
Maryland	Baltimore	24005402406	Low-Income Community	2011–2015
Maryland	Baltimore	24005404102	Low-Income Community	2011–2015
Maryland	Baltimore	24005404202	Low-Income Community	2011–2015
Maryland	Baltimore	24005421102	Low-Income Community	2011–2015
Maryland	Baltimore	24005421300	Low-Income Community	2011–2015
Maryland	Baltimore	24005450501	Low-Income Community	2011–2015
Maryland	Baltimore	24005450800	Low-Income Community	2011–2015
Maryland	Baltimore	24005451600	Low-Income Community	2011–2015
Maryland	Baltimore	24005492500	Low-Income Community	2011–2015
Maryland	Calvert	24009860703	Low-Income Community	2011–2015
Maryland	Calvert	24009861003	Non-LIC Contiguous	2011–2015
Maryland	Calvert	24009861004	Low-Income Community	2011–2015
Maryland	Caroline	24011955302	Low-Income Community	2011–2015
Maryland	Caroline	24011955600	Low-Income Community	2011–2015
Maryland	Carroll	24013507601	Low-Income Community	2011–2015
Maryland	Cecil	24015030400	Low-Income Community	2011–2015
Maryland	Cecil	24015030505	Low-Income Community	2011–2015
Maryland	Cecil	24015030906	Low-Income Community	2011–2015
Maryland	Charles	24017850202	Low-Income Community	2011–2015
Maryland	Charles	24017850709	Non-LIC Contiguous	2011–2015
Maryland	Charles	24017850802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Dorchester	24019970400	Low-Income Community	2011–2015
Maryland	Dorchester	24019970600	Low-Income Community	2011–2015
Maryland	Frederick	24021750300	Low-Income Community	2011–2015
Maryland	Frederick	24021751003	Low-Income Community	2011–2015
Maryland	Frederick	24021765100	Low-Income Community	2011–2015
Maryland	Frederick	24021772200	Low-Income Community	2011–2015
Maryland	Frederick	24021775400	Low-Income Community	2011–2015
Maryland	Garrett	24023000200	Low-Income Community	2011–2015
Maryland	Garrett	24023000600	Low-Income Community	2011–2015
Maryland	Garrett	24023000700	Low-Income Community	2011–2015
Maryland	Harford	24025301302	Low-Income Community	2011–2015
Maryland	Harford	24025302902	Low-Income Community	2011–2015
Maryland	Harford	24025306100	Low-Income Community	2011–2015
Maryland	Harford	24025306200	Low-Income Community	2011–2015
Maryland	Howard	24027601107	Low-Income Community	2011–2015
Maryland	Kent	24029950300	Low-Income Community	2011–2015
Maryland	Montgomery	24031700713	Low-Income Community	2011–2015
Maryland	Montgomery	24031700723	Low-Income Community	2011–2015
Maryland	Montgomery	24031700724	Low-Income Community	2011–2015
Maryland	Montgomery	24031700813	Low-Income Community	2011–2015
Maryland	Montgomery	24031700830	Low-Income Community	2011–2015
Maryland	Montgomery	24031700904	Low-Income Community	2011–2015
Maryland	Montgomery	24031701421	Low-Income Community	2011–2015
Maryland	Montgomery	24031701509	Low-Income Community	2011–2015
Maryland	Montgomery	24031701703	Low-Income Community	2011–2015
Maryland	Montgomery	24031702000	Low-Income Community	2011–2015
Maryland	Montgomery	24031702301	Low-Income Community	2011–2015
Maryland	Montgomery	24031702500	Low-Income Community	2011–2015
Maryland	Montgomery	24031702601	Low-Income Community	2011–2015
Maryland	Montgomery	24031703800	Low-Income Community	2011–2015
Maryland	Prince George's	24033801500	Low-Income Community	2011–2015
Maryland	Prince George's	24033801600	Low-Income Community	2011–2015
Maryland	Prince George's	24033801802	Low-Income Community	2011–2015
Maryland	Prince George's	24033801807	Low-Income Community	2011–2015
Maryland	Prince George's	24033802204	Non-LIC Contiguous	2011–2015
Maryland	Prince George's	24033802405	Low-Income Community	2011–2015
Maryland	Prince George's	24033802700	Low-Income Community	2011–2015
Maryland	Prince George's	24033802803	Low-Income Community	2011–2015
Maryland	Prince George's	24033802804	Low-Income Community	2011–2015
Maryland	Prince George's	24033802901	Low-Income Community	2011–2015
Maryland	Prince George's	24033803508	Low-Income Community	2011–2015
Maryland	Prince George's	24033803514	Low-Income Community	2011–2015
Maryland	Prince George's	24033803519	Non-LIC Contiguous	2011–2015
Maryland	Prince George's	24033803525	Low-Income Community	2011–2015
Maryland	Prince George's	24033803602	Low-Income Community	2011–2015
Maryland	Prince George's	24033803605	Low-Income Community	2011–2015
Maryland	Prince George's	24033803612	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Prince George's	24033804102	Low-Income Community	2011–2015
Maryland	Prince George's	24033804600	Low-Income Community	2011–2015
Maryland	Prince George's	24033805601	Low-Income Community	2011–2015
Maryland	Prince George's	24033805908	Low-Income Community	2011–2015
Maryland	Prince George's	24033806000	Low-Income Community	2011–2015
Maryland	Prince George's	24033806601	Low-Income Community	2011–2015
Maryland	Prince George's	24033807000	Low-Income Community	2011–2015
Maryland	Prince George's	24033807200	Low-Income Community	2011–2015
Maryland	Queen Anne's	24035810300	Low-Income Community	2011–2015
Maryland	St. Mary's	24037876001	Low-Income Community	2011–2015
Maryland	Somerset	24039930101	Low-Income Community	2011–2015
Maryland	Somerset	24039930500	Low-Income Community	2011–2015
Maryland	Somerset	24039930600	Low-Income Community	2011–2015
Maryland	Talbot	24041960300	Low-Income Community	2011–2015
Maryland	Talbot	24041960400	Low-Income Community	2011–2015
Maryland	Washington	24043000400	Low-Income Community	2011–2015
Maryland	Washington	24043000500	Low-Income Community	2011–2015
Maryland	Washington	24043000700	Low-Income Community	2011–2015
Maryland	Washington	24043000800	Low-Income Community	2011–2015
Maryland	Washington	24043010802	Low-Income Community	2011–2015
Maryland	Wicomico	24045000100	Low-Income Community	2011–2015
Maryland	Wicomico	24045000200	Low-Income Community	2011–2015
Maryland	Wicomico	24045000500	Low-Income Community	2011–2015
Maryland	Wicomico	24045010101	Low-Income Community	2011–2015
Maryland	Wicomico	24045010102	Low-Income Community	2011–2015
Maryland	Wicomico	24045010502	Low-Income Community	2011–2015
Maryland	Wicomico	24045010603	Low-Income Community	2011–2015
Maryland	Worcester	24047950000	Low-Income Community	2011–2015
Maryland	Worcester	24047951000	Low-Income Community	2011–2015
Maryland	Worcester	24047951300	Low-Income Community	2011–2015
Maryland	Baltimore	24510030100	Low-Income Community	2011–2015
Maryland	Baltimore	24510040100	Low-Income Community	2011–2015
Maryland	Baltimore	24510070400	Low-Income Community	2011–2015
Maryland	Baltimore	24510080200	Low-Income Community	2011–2015
Maryland	Baltimore	24510080400	Low-Income Community	2011–2015
Maryland	Baltimore	24510080700	Low-Income Community	2011–2015
Maryland	Baltimore	24510080800	Low-Income Community	2011–2015
Maryland	Baltimore	24510090800	Low-Income Community	2011–2015
Maryland	Baltimore	24510100100	Low-Income Community	2011–2015
Maryland	Baltimore	24510120500	Low-Income Community	2011–2015
Maryland	Baltimore	24510130200	Low-Income Community	2011–2015
Maryland	Baltimore	24510130300	Low-Income Community	2011–2015
Maryland	Baltimore	24510140200	Low-Income Community	2011–2015
Maryland	Baltimore	24510140300	Low-Income Community	2011–2015
Maryland	Baltimore	24510150100	Low-Income Community	2011–2015
Maryland	Baltimore	24510150400	Low-Income Community	2011–2015
Maryland	Baltimore	24510150500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Maryland	Baltimore	24510150600	Low-Income Community	2011–2015
Maryland	Baltimore	24510160400	Low-Income Community	2011–2015
Maryland	Baltimore	24510160500	Low-Income Community	2011–2015
Maryland	Baltimore	24510170200	Low-Income Community	2011–2015
Maryland	Baltimore	24510180100	Low-Income Community	2011–2015
Maryland	Baltimore	24510180300	Low-Income Community	2011–2015
Maryland	Baltimore	24510200100	Low-Income Community	2011–2015
Maryland	Baltimore	24510200200	Low-Income Community	2011–2015
Maryland	Baltimore	24510210100	Low-Income Community	2011–2015
Maryland	Baltimore	24510230300	Low-Income Community	2011–2015
Maryland	Baltimore	24510250203	Low-Income Community	2011–2015
Maryland	Baltimore	24510250204	Low-Income Community	2011–2015
Maryland	Baltimore	24510250205	Low-Income Community	2011–2015
Maryland	Baltimore	24510250207	Low-Income Community	2011–2015
Maryland	Baltimore	24510250301	Low-Income Community	2011–2015
Maryland	Baltimore	24510250401	Low-Income Community	2011–2015
Maryland	Baltimore	24510250500	Low-Income Community	2011–2015
Maryland	Baltimore	24510260404	Low-Income Community	2011–2015
Maryland	Baltimore	24510260501	Low-Income Community	2011–2015
Maryland	Baltimore	24510260605	Low-Income Community	2011–2015
Maryland	Baltimore	24510260700	Low-Income Community	2011–2015
Maryland	Baltimore	24510270903	Low-Income Community	2011–2015
Maryland	Baltimore	24510271600	Low-Income Community	2011–2015
Maryland	Baltimore	24510271700	Low-Income Community	2011–2015
Maryland	Baltimore	24510280500	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001010100	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001011600	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001012002	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001014100	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001014500	Low-Income Community	2011–2015
Massachusetts	Barnstable	25001015300	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003900100	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003900200	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003921400	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003922100	Low-Income Community	2011–2015
Massachusetts	Berkshire	25003922300	Low-Income Community	2012–2016
Massachusetts	Berkshire	25003935300	Low-Income Community	2011–2015
Massachusetts	Bristol	25005613800	Low-Income Community	2011–2015
Massachusetts	Bristol	25005630101	Low-Income Community	2011–2015
Massachusetts	Bristol	25005630102	Low-Income Community	2011–2015
Massachusetts	Bristol	25005641101	Low-Income Community	2011–2015
Massachusetts	Bristol	25005641200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005642000	Low-Income Community	2011–2015
Massachusetts	Bristol	25005644200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651200	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651300	Low-Income Community	2011–2015
Massachusetts	Bristol	25005651800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Bristol	25005651900	Low-Income Community	2011–2015
Massachusetts	Bristol	25005655300	Low-Income Community	2012–2016
Massachusetts	Essex	25009204200	Low-Income Community	2011–2015
Massachusetts	Essex	25009204701	Low-Income Community	2011–2015
Massachusetts	Essex	25009206100	Low-Income Community	2011–2015
Massachusetts	Essex	25009206800	Low-Income Community	2011–2015
Massachusetts	Essex	25009207000	Low-Income Community	2011–2015
Massachusetts	Essex	25009207200	Low-Income Community	2011–2015
Massachusetts	Essex	25009208102	Low-Income Community	2011–2015
Massachusetts	Essex	25009210700	Low-Income Community	2011–2015
Massachusetts	Essex	25009210800	Low-Income Community	2011–2015
Massachusetts	Essex	25009217400	Low-Income Community	2012–2016
Massachusetts	Essex	25009221400	Low-Income Community	2011–2015
Massachusetts	Essex	25009221500	Low-Income Community	2011–2015
Massachusetts	Essex	25009250100	Low-Income Community	2011–2015
Massachusetts	Essex	25009250300	Low-Income Community	2011–2015
Massachusetts	Essex	25009250800	Low-Income Community	2011–2015
Massachusetts	Essex	25009251600	Low-Income Community	2011–2015
Massachusetts	Essex	25009252300	Low-Income Community	2011–2015
Massachusetts	Essex	25009252400	Low-Income Community	2011–2015
Massachusetts	Essex	25009260200	Low-Income Community	2011–2015
Massachusetts	Essex	25009260800	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040100	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040400	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040501	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040502	Low-Income Community	2011–2015
Massachusetts	Franklin	25011040701	Low-Income Community	2011–2015
Massachusetts	Franklin	25011041300	Low-Income Community	2011–2015
Massachusetts	Franklin	25011041400	Low-Income Community	2011–2015
Massachusetts	Hampden	25013800600	Low-Income Community	2011–2015
Massachusetts	Hampden	25013800900	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801101	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801200	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801700	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801800	Low-Income Community	2011–2015
Massachusetts	Hampden	25013801902	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810300	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810403	Low-Income Community	2011–2015
Massachusetts	Hampden	25013810800	Low-Income Community	2011–2015
Massachusetts	Hampden	25013811400	Low-Income Community	2011–2015
Massachusetts	Hampden	25013811700	Low-Income Community	2011–2015
Massachusetts	Hampden	25013812300	Low-Income Community	2011–2015
Massachusetts	Hampden	25013812702	Low-Income Community	2011–2015
Massachusetts	Hampden	25013813207	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015820102	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015820300	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015821100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Hampshire	25015821602	Low-Income Community	2012–2016
Massachusetts	Hampshire	25015821903	Low-Income Community	2011–2015
Massachusetts	Hampshire	25015822402	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017310100	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311600	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311700	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311800	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017311900	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017321200	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017321300	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017339700	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017341200	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017341300	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017342400	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017350103	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017351500	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017354900	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017383101	Low-Income Community	2011–2015
Massachusetts	Middlesex	25017383102	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021417701	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021417901	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021420202	Non-LIC Contiguous	2011–2015
Massachusetts	Norfolk	25021420301	Low-Income Community	2011–2015
Massachusetts	Norfolk	25021422502	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023502200	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510503	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510700	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023510900	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023511000	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023545400	Low-Income Community	2011–2015
Massachusetts	Plymouth	25023561200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040300	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025040801	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025060700	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025061000	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025061101	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025080500	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025080601	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025081200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025090901	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025160200	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025160400	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025170501	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025170702	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025180500	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025980101	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Massachusetts	Suffolk	25025980300	Low-Income Community	2011–2015
Massachusetts	Suffolk	25025981100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027703100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027703200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027707200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027707300	Low-Income Community	2011–2015
Massachusetts	Worcester	25027709400	Low-Income Community	2011–2015
Massachusetts	Worcester	25027709600	Low-Income Community	2011–2015
Massachusetts	Worcester	25027710600	Low-Income Community	2011–2015
Massachusetts	Worcester	25027710700	Low-Income Community	2011–2015
Massachusetts	Worcester	25027716200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027716300	Low-Income Community	2012–2016
Massachusetts	Worcester	25027726200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027730500	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731300	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731400	Low-Income Community	2011–2015
Massachusetts	Worcester	25027731700	Low-Income Community	2011–2015
Massachusetts	Worcester	25027732500	Low-Income Community	2011–2015
Massachusetts	Worcester	25027732801	Low-Income Community	2011–2015
Massachusetts	Worcester	25027754200	Low-Income Community	2011–2015
Massachusetts	Worcester	25027757100	Low-Income Community	2011–2015
Massachusetts	Worcester	25027757300	Low-Income Community	2011–2015
Michigan	Alcona	26001970400	Low-Income Community	2011–2015
Michigan	Alger	26003000100	Low-Income Community	2011–2015
Michigan	Allegan	26005032401	Low-Income Community	2011–2015
Michigan	Alpena	26007000400	Low-Income Community	2011–2015
Michigan	Antrim	26009960700	Low-Income Community	2011–2015
Michigan	Arenac	26011970500	Low-Income Community	2011–2015
Michigan	Baraga	26013000100	Low-Income Community	2011–2015
Michigan	Barry	26015011300	Low-Income Community	2011–2015
Michigan	Bay	26017286500	Low-Income Community	2011–2015
Michigan	Bay	26017286600	Low-Income Community	2011–2015
Michigan	Berrien	26021000400	Low-Income Community	2011–2015
Michigan	Berrien	26021002100	Low-Income Community	2011–2015
Michigan	Berrien	26021002500	Low-Income Community	2011–2015
Michigan	Berrien	26021010300	Low-Income Community	2011–2015
Michigan	Berrien	26021020500	Low-Income Community	2011–2015
Michigan	Branch	26023951600	Low-Income Community	2011–2015
Michigan	Calhoun	26025000200	Low-Income Community	2011–2015
Michigan	Calhoun	26025003400	Low-Income Community	2011–2015
Michigan	Calhoun	26025004000	Low-Income Community	2011–2015
Michigan	Calhoun	26025004100	Low-Income Community	2011–2015
Michigan	Cass	26027002100	Low-Income Community	2011–2015
Michigan	Charlevoix	26029001100	Low-Income Community	2011–2015
Michigan	Cheboygan	26031960200	Low-Income Community	2011–2015
Michigan	Chippewa	26033970200	Low-Income Community	2011–2015
Michigan	Chippewa	26033970500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Clare	26035000600	Low-Income Community	2011–2015
Michigan	Clare	26035001300	Low-Income Community	2011–2015
Michigan	Clinton	26037010801	Low-Income Community	2011–2015
Michigan	Crawford	26039960200	Non-LIC Contiguous	2011–2015
Michigan	Delta	26041970800	Low-Income Community	2011–2015
Michigan	Dickinson	26043950400	Low-Income Community	2011–2015
Michigan	Eaton	26045020901	Low-Income Community	2011–2015
Michigan	Emmet	26047970100	Low-Income Community	2011–2015
Michigan	Genesee	26049000300	Low-Income Community	2011–2015
Michigan	Genesee	26049000500	Low-Income Community	2011–2015
Michigan	Genesee	26049001500	Low-Income Community	2011–2015
Michigan	Genesee	26049001600	Low-Income Community	2011–2015
Michigan	Genesee	26049001700	Low-Income Community	2011–2015
Michigan	Genesee	26049002200	Low-Income Community	2011–2015
Michigan	Genesee	26049002800	Low-Income Community	2011–2015
Michigan	Genesee	26049003700	Low-Income Community	2011–2015
Michigan	Genesee	26049010501	Low-Income Community	2011–2015
Michigan	Genesee	26049010502	Low-Income Community	2011–2015
Michigan	Genesee	26049010912	Low-Income Community	2011–2015
Michigan	Genesee	26049011210	Low-Income Community	2011–2015
Michigan	Genesee	26049011212	Low-Income Community	2011–2015
Michigan	Genesee	26049011508	Low-Income Community	2011–2015
Michigan	Genesee	26049012202	Low-Income Community	2011–2015
Michigan	Genesee	26049013600	Low-Income Community	2011–2015
Michigan	Gladwin	26051000700	Low-Income Community	2011–2015
Michigan	Gladwin	26051000800	Low-Income Community	2011–2015
Michigan	Gogebic	26053950600	Low-Income Community	2011–2015
Michigan	Grand Traverse	26055551300	Low-Income Community	2011–2015
Michigan	Gratiot	26057000500	Low-Income Community	2011–2015
Michigan	Hillsdale	26059050700	Low-Income Community	2011–2015
Michigan	Hillsdale	26059050800	Low-Income Community	2011–2015
Michigan	Houghton	26061000800	Low-Income Community	2011–2015
Michigan	Huron	26063951000	Low-Income Community	2011–2015
Michigan	Ingham	26065003301	Low-Income Community	2011–2015
Michigan	Ingham	26065003602	Low-Income Community	2011–2015
Michigan	Ingham	26065003700	Low-Income Community	2011–2015
Michigan	Ingham	26065004301	Low-Income Community	2011–2015
Michigan	Ingham	26065005100	Low-Income Community	2011–2015
Michigan	Ingham	26065005303	Low-Income Community	2011–2015
Michigan	Ingham	26065005402	Low-Income Community	2011–2015
Michigan	Ingham	26065006600	Low-Income Community	2011–2015
Michigan	Ingham	26065006700	Low-Income Community	2011–2015
Michigan	Ionia	26067031700	Low-Income Community	2011–2015
Michigan	Iosco	26069000400	Low-Income Community	2011–2015
Michigan	Iosco	26069000500	Low-Income Community	2011–2015
Michigan	Iron	26071000300	Low-Income Community	2011–2015
Michigan	Isabella	26073940400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Isabella	26073940500	Low-Income Community	2011–2015
Michigan	Jackson	26075000600	Low-Income Community	2011–2015
Michigan	Jackson	26075001000	Low-Income Community	2011–2015
Michigan	Jackson	26075001200	Low-Income Community	2011–2015
Michigan	Jackson	26075005500	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000201	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000202	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077000900	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077001000	Low-Income Community	2011–2015
Michigan	Kalamazoo	26077001905	Low-Income Community	2011–2015
Michigan	Kalkaska	26079950400	Low-Income Community	2011–2015
Michigan	Kent	26081002600	Low-Income Community	2011–2015
Michigan	Kent	26081002800	Low-Income Community	2011–2015
Michigan	Kent	26081003000	Low-Income Community	2011–2015
Michigan	Kent	26081003200	Low-Income Community	2011–2015
Michigan	Kent	26081003500	Low-Income Community	2011–2015
Michigan	Kent	26081003600	Low-Income Community	2011–2015
Michigan	Kent	26081003700	Low-Income Community	2011–2015
Michigan	Kent	26081003800	Low-Income Community	2011–2015
Michigan	Kent	26081013500	Low-Income Community	2011–2015
Michigan	Kent	26081014200	Low-Income Community	2011–2015
Michigan	Keweenaw	26083000100	Low-Income Community	2011–2015
Michigan	Lake	26085961100	Low-Income Community	2011–2015
Michigan	Lapeer	26087337500	Low-Income Community	2011–2015
Michigan	Lenawee	26091061600	Low-Income Community	2011–2015
Michigan	Livingston	26093722300	Low-Income Community	2011–2015
Michigan	Luce	26095960100	Low-Income Community	2011–2015
Michigan	Mackinac	26097950500	Low-Income Community	2011–2015
Michigan	Macomb	26099230300	Low-Income Community	2011–2015
Michigan	Macomb	26099230500	Low-Income Community	2011–2015
Michigan	Macomb	26099240000	Low-Income Community	2011–2015
Michigan	Macomb	26099241600	Low-Income Community	2011–2015
Michigan	Macomb	26099241700	Low-Income Community	2011–2015
Michigan	Macomb	26099245000	Low-Income Community	2011–2015
Michigan	Macomb	26099256200	Low-Income Community	2011–2015
Michigan	Macomb	26099256300	Low-Income Community	2011–2015
Michigan	Macomb	26099256600	Low-Income Community	2011–2015
Michigan	Macomb	26099256700	Low-Income Community	2011–2015
Michigan	Macomb	26099258300	Low-Income Community	2011–2015
Michigan	Macomb	26099258900	Low-Income Community	2011–2015
Michigan	Macomb	26099262800	Low-Income Community	2011–2015
Michigan	Macomb	26099262900	Low-Income Community	2011–2015
Michigan	Macomb	26099264000	Low-Income Community	2011–2015
Michigan	Macomb	26099268400	Low-Income Community	2011–2015
Michigan	Macomb	26099982200	Low-Income Community	2011–2015
Michigan	Manistee	26101000900	Low-Income Community	2011–2015
Michigan	Marquette	26103000600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Marquette	26103000700	Low-Income Community	2011–2015
Michigan	Mason	26105950500	Low-Income Community	2011–2015
Michigan	Mecosta	26107960500	Low-Income Community	2011–2015
Michigan	Mecosta	26107960600	Low-Income Community	2011–2015
Michigan	Menominee	26109960200	Low-Income Community	2011–2015
Michigan	Midland	26111290100	Low-Income Community	2011–2015
Michigan	Midland	26111290200	Low-Income Community	2011–2015
Michigan	Missaukee	26113960200	Low-Income Community	2011–2015
Michigan	Monroe	26115831400	Low-Income Community	2011–2015
Michigan	Monroe	26115831800	Low-Income Community	2011–2015
Michigan	Montcalm	26117970800	Low-Income Community	2011–2015
Michigan	Montcalm	26117971200	Low-Income Community	2011–2015
Michigan	Montmorency	26119910200	Low-Income Community	2011–2015
Michigan	Muskegon	26121000800	Low-Income Community	2011–2015
Michigan	Muskegon	26121000900	Low-Income Community	2011–2015
Michigan	Muskegon	26121001300	Low-Income Community	2011–2015
Michigan	Muskegon	26121004200	Low-Income Community	2011–2015
Michigan	Muskegon	26121004300	Low-Income Community	2011–2015
Michigan	Newaygo	26123971200	Low-Income Community	2011–2015
Michigan	Oakland	26125133100	Low-Income Community	2011–2015
Michigan	Oakland	26125141500	Low-Income Community	2011–2015
Michigan	Oakland	26125141600	Low-Income Community	2011–2015
Michigan	Oakland	26125142200	Low-Income Community	2011–2015
Michigan	Oakland	26125142400	Low-Income Community	2011–2015
Michigan	Oakland	26125145900	Low-Income Community	2011–2015
Michigan	Oakland	26125160400	Low-Income Community	2011–2015
Michigan	Oakland	26125160900	Low-Income Community	2011–2015
Michigan	Oakland	26125162200	Low-Income Community	2011–2015
Michigan	Oakland	26125171500	Low-Income Community	2011–2015
Michigan	Oakland	26125173400	Low-Income Community	2011–2015
Michigan	Oakland	26125175000	Low-Income Community	2011–2015
Michigan	Oakland	26125181000	Low-Income Community	2011–2015
Michigan	Oakland	26125194500	Low-Income Community	2011–2015
Michigan	Oakland	26125197600	Low-Income Community	2011–2015
Michigan	Oceana	26127010400	Low-Income Community	2011–2015
Michigan	Ogemaw	26129950100	Low-Income Community	2011–2015
Michigan	Ogemaw	26129950500	Low-Income Community	2011–2015
Michigan	Ontonagon	26131970200	Low-Income Community	2011–2015
Michigan	Osceola	26133970400	Low-Income Community	2011–2015
Michigan	Oscoda	26135970300	Low-Income Community	2011–2015
Michigan	Otsego	26137950300	Low-Income Community	2011–2015
Michigan	Ottawa	26139024900	Low-Income Community	2011–2015
Michigan	Presque Isle	26141950200	Low-Income Community	2011–2015
Michigan	Roscommon	26143970300	Low-Income Community	2011–2015
Michigan	Roscommon	26143971200	Low-Income Community	2011–2015
Michigan	Saginaw	26145000100	Low-Income Community	2011–2015
Michigan	Saginaw	26145000400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Saginaw	26145000600	Low-Income Community	2011–2015
Michigan	Saginaw	26145001700	Low-Income Community	2011–2015
Michigan	Saginaw	26145001800	Low-Income Community	2011–2015
Michigan	Saginaw	26145010200	Low-Income Community	2011–2015
Michigan	Saginaw	26145011000	Low-Income Community	2011–2015
Michigan	St. Clair	26147620000	Low-Income Community	2011–2015
Michigan	St. Clair	26147624000	Low-Income Community	2011–2015
Michigan	St. Clair	26147625000	Low-Income Community	2011–2015
Michigan	St. Joseph	26149040300	Low-Income Community	2011–2015
Michigan	St. Joseph	26149040700	Low-Income Community	2011–2015
Michigan	Sanilac	26151970400	Low-Income Community	2011–2015
Michigan	Schoolcraft	26153000300	Low-Income Community	2011–2015
Michigan	Shiawassee	26155030600	Low-Income Community	2011–2015
Michigan	Tuscola	26157000600	Low-Income Community	2011–2015
Michigan	Van Buren	26159011300	Low-Income Community	2011–2015
Michigan	Van Buren	26159011800	Low-Income Community	2011–2015
Michigan	Washtenaw	26161405600	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410300	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410500	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410600	Low-Income Community	2011–2015
Michigan	Washtenaw	26161410800	Low-Income Community	2011–2015
Michigan	Washtenaw	26161411700	Low-Income Community	2011–2015
Michigan	Washtenaw	26161411900	Low-Income Community	2011–2015
Michigan	Washtenaw	26161412000	Low-Income Community	2011–2015
Michigan	Washtenaw	26161414000	Low-Income Community	2011–2015
Michigan	Washtenaw	26161446200	Low-Income Community	2011–2015
Michigan	Washtenaw	26161984000	Low-Income Community	2011–2015
Michigan	Wayne	26163501400	Low-Income Community	2011–2015
Michigan	Wayne	26163501800	Low-Income Community	2011–2015
Michigan	Wayne	26163504700	Low-Income Community	2011–2015
Michigan	Wayne	26163504800	Low-Income Community	2011–2015
Michigan	Wayne	26163505500	Low-Income Community	2011–2015
Michigan	Wayne	26163508000	Low-Income Community	2011–2015
Michigan	Wayne	26163510500	Low-Income Community	2011–2015
Michigan	Wayne	26163511000	Low-Income Community	2011–2015
Michigan	Wayne	26163511200	Low-Income Community	2011–2015
Michigan	Wayne	26163511900	Low-Income Community	2011–2015
Michigan	Wayne	26163512900	Low-Income Community	2011–2015
Michigan	Wayne	26163513200	Low-Income Community	2011–2015
Michigan	Wayne	26163513700	Low-Income Community	2011–2015
Michigan	Wayne	26163515200	Low-Income Community	2011–2015
Michigan	Wayne	26163515300	Low-Income Community	2011–2015
Michigan	Wayne	26163515400	Low-Income Community	2011–2015
Michigan	Wayne	26163515600	Low-Income Community	2011–2015
Michigan	Wayne	26163515700	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163516100	Low-Income Community	2011–2015
Michigan	Wayne	26163516200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Wayne	26163516400	Low-Income Community	2011–2015
Michigan	Wayne	26163516500	Low-Income Community	2011–2015
Michigan	Wayne	26163516600	Low-Income Community	2011–2015
Michigan	Wayne	26163516900	Low-Income Community	2011–2015
Michigan	Wayne	26163517000	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163517100	Low-Income Community	2011–2015
Michigan	Wayne	26163517200	Low-Income Community	2011–2015
Michigan	Wayne	26163517300	Low-Income Community	2011–2015
Michigan	Wayne	26163517500	Low-Income Community	2011–2015
Michigan	Wayne	26163518000	Low-Income Community	2011–2015
Michigan	Wayne	26163518400	Low-Income Community	2011–2015
Michigan	Wayne	26163518800	Low-Income Community	2011–2015
Michigan	Wayne	26163518900	Low-Income Community	2011–2015
Michigan	Wayne	26163520200	Low-Income Community	2011–2015
Michigan	Wayne	26163520300	Low-Income Community	2011–2015
Michigan	Wayne	26163520400	Low-Income Community	2011–2015
Michigan	Wayne	26163520700	Low-Income Community	2011–2015
Michigan	Wayne	26163520800	Low-Income Community	2011–2015
Michigan	Wayne	26163521100	Low-Income Community	2011–2015
Michigan	Wayne	26163521400	Low-Income Community	2011–2015
Michigan	Wayne	26163521500	Low-Income Community	2011–2015
Michigan	Wayne	26163522400	Low-Income Community	2011–2015
Michigan	Wayne	26163522500	Low-Income Community	2011–2015
Michigan	Wayne	26163523100	Low-Income Community	2011–2015
Michigan	Wayne	26163523300	Low-Income Community	2011–2015
Michigan	Wayne	26163523400	Low-Income Community	2011–2015
Michigan	Wayne	26163524000	Low-Income Community	2011–2015
Michigan	Wayne	26163524900	Low-Income Community	2011–2015
Michigan	Wayne	26163525000	Low-Income Community	2011–2015
Michigan	Wayne	26163527300	Low-Income Community	2011–2015
Michigan	Wayne	26163530300	Low-Income Community	2011–2015
Michigan	Wayne	26163532400	Low-Income Community	2011–2015
Michigan	Wayne	26163532600	Low-Income Community	2011–2015
Michigan	Wayne	26163532700	Low-Income Community	2011–2015
Michigan	Wayne	26163533900	Low-Income Community	2011–2015
Michigan	Wayne	26163535300	Low-Income Community	2011–2015
Michigan	Wayne	26163536100	Low-Income Community	2011–2015
Michigan	Wayne	26163538500	Low-Income Community	2011–2015
Michigan	Wayne	26163538600	Low-Income Community	2011–2015
Michigan	Wayne	26163538900	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163541200	Low-Income Community	2011–2015
Michigan	Wayne	26163541400	Low-Income Community	2011–2015
Michigan	Wayne	26163542700	Low-Income Community	2011–2015
Michigan	Wayne	26163542900	Non-LIC Contiguous	2011–2015
Michigan	Wayne	26163543000	Low-Income Community	2011–2015
Michigan	Wayne	26163543400	Low-Income Community	2011–2015
Michigan	Wayne	26163546900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Michigan	Wayne	26163552300	Low-Income Community	2011–2015
Michigan	Wayne	26163553600	Low-Income Community	2011–2015
Michigan	Wayne	26163554100	Low-Income Community	2011–2015
Michigan	Wayne	26163555100	Low-Income Community	2011–2015
Michigan	Wayne	26163555300	Low-Income Community	2011–2015
Michigan	Wayne	26163565300	Low-Income Community	2011–2015
Michigan	Wayne	26163566500	Low-Income Community	2011–2015
Michigan	Wayne	26163568800	Low-Income Community	2011–2015
Michigan	Wayne	26163570400	Low-Income Community	2011–2015
Michigan	Wayne	26163571600	Low-Income Community	2011–2015
Michigan	Wayne	26163572100	Low-Income Community	2011–2015
Michigan	Wayne	26163572600	Low-Income Community	2011–2015
Michigan	Wayne	26163573400	Low-Income Community	2011–2015
Michigan	Wayne	26163573500	Low-Income Community	2011–2015
Michigan	Wayne	26163574100	Low-Income Community	2011–2015
Michigan	Wayne	26163577000	Low-Income Community	2011–2015
Michigan	Wayne	26163577500	Low-Income Community	2011–2015
Michigan	Wayne	26163579100	Low-Income Community	2011–2015
Michigan	Wayne	26163583000	Low-Income Community	2011–2015
Michigan	Wayne	26163583200	Low-Income Community	2011–2015
Michigan	Wayne	26163584500	Low-Income Community	2011–2015
Michigan	Wayne	26163585900	Low-Income Community	2011–2015
Michigan	Wayne	26163586200	Low-Income Community	2011–2015
Michigan	Wayne	26163588100	Low-Income Community	2011–2015
Michigan	Wayne	26163985100	Low-Income Community	2011–2015
Michigan	Wayne	26163985300	Low-Income Community	2011–2015
Michigan	Wayne	26163985900	Low-Income Community	2011–2015
Michigan	Wexford	26165380700	Low-Income Community	2011–2015
Minnesota	Aitkin	27001770300	Low-Income Community	2011–2015
Minnesota	Aitkin	27001770400	Low-Income Community	2011–2015
Minnesota	Anoka	27003050402	Low-Income Community	2011–2015
Minnesota	Anoka	27003050606	Low-Income Community	2011–2015
Minnesota	Anoka	27003051501	Low-Income Community	2011–2015
Minnesota	Becker	27005450500	Low-Income Community	2011–2015
Minnesota	Beltrami	27007450702	Low-Income Community	2011–2015
Minnesota	Beltrami	27007940001	Low-Income Community	2011–2015
Minnesota	Benton	27009021200	Low-Income Community	2011–2015
Minnesota	Big Stone	27011950300	Low-Income Community	2011–2015
Minnesota	Blue Earth	27013170300	Low-Income Community	2011–2015
Minnesota	Blue Earth	27013170700	Low-Income Community	2011–2015
Minnesota	Carlton	27017940000	Low-Income Community	2011–2015
Minnesota	Cass	27021940002	Low-Income Community	2011–2015
Minnesota	Chippewa	27023950600	Low-Income Community	2011–2015
Minnesota	Chisago	27025110301	Low-Income Community	2011–2015
Minnesota	Clay	27027020300	Low-Income Community	2011–2015
Minnesota	Clearwater	27029000100	Low-Income Community	2011–2015
Minnesota	Cook	27031480100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	Cottonwood	27033270400	Low-Income Community	2011–2015
Minnesota	Crow Wing	27035951100	Low-Income Community	2011–2015
Minnesota	Crow Wing	27035951200	Low-Income Community	2011–2015
Minnesota	Dakota	27037060104	Low-Income Community	2011–2015
Minnesota	Dakota	27037060105	Low-Income Community	2011–2015
Minnesota	Dakota	27037060301	Low-Income Community	2011–2015
Minnesota	Douglas	27041450600	Low-Income Community	2011–2015
Minnesota	Faribault	27043460400	Low-Income Community	2011–2015
Minnesota	Fillmore	27045960500	Low-Income Community	2011–2015
Minnesota	Freeborn	27047180600	Low-Income Community	2011–2015
Minnesota	Goodhue	27049080200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053005902	Low-Income Community	2011–2015
Minnesota	Hennepin	27053007700	Low-Income Community	2011–2015
Minnesota	Hennepin	27053009500	Low-Income Community	2011–2015
Minnesota	Hennepin	27053020200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053020804	Low-Income Community	2011–2015
Minnesota	Hennepin	27053021300	Low-Income Community	2011–2015
Minnesota	Hennepin	27053023400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053025100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053026810	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100500	Low-Income Community	2011–2015
Minnesota	Hennepin	27053100900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053102900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053103400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104000	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104100	Low-Income Community	2011–2015
Minnesota	Hennepin	27053104800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053106000	Low-Income Community	2011–2015
Minnesota	Hennepin	27053106200	Low-Income Community	2011–2015
Minnesota	Hennepin	27053107400	Low-Income Community	2011–2015
Minnesota	Hennepin	27053125800	Low-Income Community	2011–2015
Minnesota	Hennepin	27053125900	Low-Income Community	2011–2015
Minnesota	Hennepin	27053126000	Low-Income Community	2011–2015
Minnesota	Hubbard	27057070600	Low-Income Community	2011–2015
Minnesota	Isanti	27059130301	Low-Income Community	2011–2015
Minnesota	Itasca	27061480300	Low-Income Community	2011–2015
Minnesota	Itasca	27061480500	Low-Income Community	2011–2015
Minnesota	Jackson	27063480400	Low-Income Community	2011–2015
Minnesota	Kanabec	27065480300	Low-Income Community	2011–2015
Minnesota	Kandiyohi	27067780800	Low-Income Community	2011–2015
Minnesota	Koochiching	27071790100	Low-Income Community	2011–2015
Minnesota	Lake	27075370300	Low-Income Community	2011–2015
Minnesota	Lake of the Woods	27077460300	Low-Income Community	2011–2015
Minnesota	Lyon	27083360500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	Mahnomen	27087940100	Low-Income Community	2011–2015
Minnesota	Martin	27091790600	Low-Income Community	2011–2015
Minnesota	Meeker	27093560300	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095170500	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095970100	Low-Income Community	2011–2015
Minnesota	Mille Lacs	27095970200	Low-Income Community	2011–2015
Minnesota	Morrison	27097780600	Low-Income Community	2011–2015
Minnesota	Mower	27099000410	Low-Income Community	2011–2015
Minnesota	Nobles	27105105400	Low-Income Community	2011–2015
Minnesota	Olmsted	27109000100	Low-Income Community	2011–2015
Minnesota	Olmsted	27109000600	Low-Income Community	2011–2015
Minnesota	Otter Tail	27111960300	Low-Income Community	2011–2015
Minnesota	Pennington	27113090200	Low-Income Community	2011–2015
Minnesota	Pennington	27113090400	Low-Income Community	2011–2015
Minnesota	Pine	27115950400	Low-Income Community	2011–2015
Minnesota	Pine	27115950500	Low-Income Community	2011–2015
Minnesota	Pine	27115950700	Low-Income Community	2011–2015
Minnesota	Pipestone	27117460200	Low-Income Community	2011–2015
Minnesota	Polk	27119021000	Low-Income Community	2011–2015
Minnesota	Ramsey	27123030400	Low-Income Community	2011–2015
Minnesota	Ramsey	27123030500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031600	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031701	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031702	Low-Income Community	2011–2015
Minnesota	Ramsey	27123031900	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123032700	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033400	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033500	Low-Income Community	2011–2015
Minnesota	Ramsey	27123033700	Low-Income Community	2011–2015
Minnesota	Ramsey	27123034201	Low-Income Community	2011–2015
Minnesota	Ramsey	27123034701	Low-Income Community	2011–2015
Minnesota	Ramsey	27123036000	Non-LIC Contiguous	2011–2015
Minnesota	Ramsey	27123037100	Low-Income Community	2011–2015
Minnesota	Ramsey	27123041602	Low-Income Community	2011–2015
Minnesota	Redwood	27127750300	Low-Income Community	2011–2015
Minnesota	Renville	27129790500	Low-Income Community	2011–2015
Minnesota	Rice	27131070700	Low-Income Community	2011–2015
Minnesota	Rock	27133570300	Low-Income Community	2011–2015
Minnesota	St. Louis	27137001700	Low-Income Community	2011–2015
Minnesota	St. Louis	27137001900	Low-Income Community	2011–2015
Minnesota	St. Louis	27137002000	Low-Income Community	2011–2015
Minnesota	St. Louis	27137012400	Low-Income Community	2011–2015
Minnesota	St. Louis	27137013100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Minnesota	St. Louis	27137015300	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015500	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015600	Low-Income Community	2011–2015
Minnesota	St. Louis	27137015800	Low-Income Community	2011–2015
Minnesota	Sherburne	27141031500	Low-Income Community	2011–2015
Minnesota	Stearns	27145011600	Low-Income Community	2011–2015
Minnesota	Steele	27147960400	Low-Income Community	2011–2015
Minnesota	Stevens	27149480200	Low-Income Community	2011–2015
Minnesota	Swift	27151960400	Low-Income Community	2011–2015
Minnesota	Todd	27153790600	Low-Income Community	2011–2015
Minnesota	Wabasha	27157490300	Low-Income Community	2011–2015
Minnesota	Wadena	27159480300	Low-Income Community	2011–2015
Minnesota	Waseca	27161790500	Low-Income Community	2011–2015
Minnesota	Winona	27169670500	Low-Income Community	2011–2015
Minnesota	Yellow Medicine	27173970100	Low-Income Community	2011–2015
Mississippi	Adams	28001000200	Low-Income Community	2011–2015
Mississippi	Adams	28001000700	Low-Income Community	2011–2015
Mississippi	Adams	28001000800	Low-Income Community	2011–2015
Mississippi	Alcorn	28003950500	Low-Income Community	2011–2015
Mississippi	Alcorn	28003950600	Low-Income Community	2011–2015
Mississippi	Attala	28007060600	Low-Income Community	2011–2015
Mississippi	Bolivar	28011950701	Low-Income Community	2011–2015
Mississippi	Chickasaw	28017950300	Low-Income Community	2011–2015
Mississippi	Choctaw	28019950200	Low-Income Community	2011–2015
Mississippi	Claiborne	28021950300	Low-Income Community	2011–2015
Mississippi	Coahoma	28027950300	Low-Income Community	2011–2015
Mississippi	Covington	28031950200	Low-Income Community	2011–2015
Mississippi	DeSoto	28033070101	Low-Income Community	2011–2015
Mississippi	DeSoto	28033070610	Low-Income Community	2011–2015
Mississippi	Forrest	28035000600	Low-Income Community	2011–2015
Mississippi	Forrest	28035000800	Low-Income Community	2011–2015
Mississippi	Forrest	28035010200	Low-Income Community	2011–2015
Mississippi	Forrest	28035010500	Low-Income Community	2011–2015
Mississippi	Forrest	28035010600	Low-Income Community	2011–2015
Mississippi	Forrest	28035010700	Low-Income Community	2011–2015
Mississippi	Hancock	28045030100	Low-Income Community	2011–2015
Mississippi	Hancock	28045030300	Low-Income Community	2011–2015
Mississippi	Harrison	28047000100	Low-Income Community	2011–2015
Mississippi	Harrison	28047001400	Low-Income Community	2011–2015
Mississippi	Harrison	28047003206	Low-Income Community	2011–2015
Mississippi	Harrison	28047003301	Non-LIC Contiguous	2011–2015
Mississippi	Harrison	28047003404	Non-LIC Contiguous	2011–2015
Mississippi	Harrison	28047003600	Low-Income Community	2011–2015
Mississippi	Harrison	28047003800	Low-Income Community	2012–2016
Mississippi	Harrison	28047003900	Low-Income Community	2011–2015
Mississippi	Hinds	28049001100	Low-Income Community	2011–2015
Mississippi	Hinds	28049001300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Mississippi	Hinds	28049001600	Low-Income Community	2011–2015
Mississippi	Hinds	28049002100	Low-Income Community	2011–2015
Mississippi	Hinds	28049002700	Low-Income Community	2011–2015
Mississippi	Hinds	28049003000	Low-Income Community	2011–2015
Mississippi	Hinds	28049010500	Low-Income Community	2011–2015
Mississippi	Hinds	28049010902	Low-Income Community	2011–2015
Mississippi	Hinds	28049011001	Low-Income Community	2011–2015
Mississippi	Hinds	28049011500	Low-Income Community	2011–2015
Mississippi	Jackson	28059041300	Low-Income Community	2011–2015
Mississippi	Jackson	28059042900	Low-Income Community	2011–2015
Mississippi	Jones	28067950500	Low-Income Community	2011–2015
Mississippi	Jones	28067950600	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950201	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950202	Low-Income Community	2011–2015
Mississippi	Lafayette	28071950401	Low-Income Community	2011–2015
Mississippi	Lamar	28073020600	Low-Income Community	2011–2015
Mississippi	Lauderdale	28075000700	Low-Income Community	2011–2015
Mississippi	Lauderdale	28075010700	Low-Income Community	2011–2015
Mississippi	Lee	28081950401	Low-Income Community	2011–2015
Mississippi	Lee	28081950500	Low-Income Community	2011–2015
Mississippi	Lee	28081950602	Low-Income Community	2011–2015
Mississippi	Lee	28081950700	Low-Income Community	2011–2015
Mississippi	Lee	28081951002	Low-Income Community	2011–2015
Mississippi	Leflore	28083950400	Low-Income Community	2011–2015
Mississippi	Leflore	28083950800	Low-Income Community	2011–2015
Mississippi	Lincoln	28085950200	Low-Income Community	2011–2015
Mississippi	Lincoln	28085950600	Low-Income Community	2011–2015
Mississippi	Lowndes	28087000900	Low-Income Community	2011–2015
Mississippi	Lowndes	28087001000	Non-LIC Contiguous	2011–2015
Mississippi	Madison	28089030106	Low-Income Community	2011–2015
Mississippi	Madison	28089030500	Low-Income Community	2011–2015
Mississippi	Madison	28089030600	Low-Income Community	2011–2015
Mississippi	Marion	28091950200	Low-Income Community	2011–2015
Mississippi	Marion	28091950400	Low-Income Community	2011–2015
Mississippi	Marion	28091950500	Low-Income Community	2011–2015
Mississippi	Marshall	28093950100	Non-LIC Contiguous	2011–2015
Mississippi	Marshall	28093950300	Low-Income Community	2011–2015
Mississippi	Monroe	28095950400	Low-Income Community	2011–2015
Mississippi	Neshoba	28099940100	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950100	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950500	Low-Income Community	2011–2015
Mississippi	Oktibbeha	28105950602	Low-Income Community	2011–2015
Mississippi	Panola	28107950300	Low-Income Community	2011–2015
Mississippi	Pearl River	28109950600	Low-Income Community	2011–2015
Mississippi	Pike	28113950500	Low-Income Community	2011–2015
Mississippi	Pike	28113950600	Low-Income Community	2011–2015
Mississippi	Pike	28113950700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Mississippi	Rankin	28121020207	Non-LIC Contiguous	2011–2015
Mississippi	Rankin	28121020401	Low-Income Community	2011–2015
Mississippi	Rankin	28121020701	Low-Income Community	2011–2015
Mississippi	Simpson	28127950200	Low-Income Community	2011–2015
Mississippi	Simpson	28127950500	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950300	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950402	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950500	Low-Income Community	2011–2015
Mississippi	Sunflower	28133950600	Low-Income Community	2011–2015
Mississippi	Tate	28137950400	Low-Income Community	2011–2015
Mississippi	Tishomingo	28141950300	Low-Income Community	2011–2015
Mississippi	Tunica	28143950100	Low-Income Community	2011–2015
Mississippi	Union	28145950500	Low-Income Community	2011–2015
Mississippi	Warren	28149950100	Low-Income Community	2012–2016
Mississippi	Warren	28149950300	Low-Income Community	2011–2015
Mississippi	Warren	28149950500	Low-Income Community	2011–2015
Mississippi	Washington	28151000300	Low-Income Community	2011–2015
Mississippi	Washington	28151000600	Low-Income Community	2011–2015
Mississippi	Wayne	28153950200	Low-Income Community	2011–2015
Mississippi	Winston	28159950300	Low-Income Community	2011–2015
Mississippi	Winston	28159950400	Low-Income Community	2011–2015
Missouri	Adair	29001950300	Low-Income Community	2011–2015
Missouri	Adair	29001950400	Non-LIC Contiguous	2011–2015
Missouri	Adair	29001950500	Low-Income Community	2011–2015
Missouri	Adair	29001950900	Low-Income Community	2011–2015
Missouri	Audrain	29007950400	Low-Income Community	2011–2015
Missouri	Barry	29009960300	Low-Income Community	2011–2015
Missouri	Benton	29015460300	Low-Income Community	2011–2015
Missouri	Benton	29015460700	Low-Income Community	2011–2015
Missouri	Boone	29019001502	Low-Income Community	2011–2015
Missouri	Buchanan	29021001200	Low-Income Community	2011–2015
Missouri	Buchanan	29021003000	Low-Income Community	2011–2015
Missouri	Butler	29023950400	Low-Income Community	2011–2015
Missouri	Butler	29023950500	Low-Income Community	2011–2015
Missouri	Butler	29023950800	Low-Income Community	2011–2015
Missouri	Caldwell	29025950200	Low-Income Community	2011–2015
Missouri	Camden	29029951200	Low-Income Community	2011–2015
Missouri	Cape Girardeau	29031881400	Low-Income Community	2011–2015
Missouri	Cape Girardeau	29031881600	Low-Income Community	2011–2015
Missouri	Clay	29047021701	Low-Income Community	2011–2015
Missouri	Clay	29047021702	Low-Income Community	2011–2015
Missouri	Clay	29047022100	Low-Income Community	2011–2015
Missouri	Cole	29051010500	Low-Income Community	2011–2015
Missouri	Cole	29051010600	Low-Income Community	2011–2015
Missouri	Cole	29051020700	Low-Income Community	2011–2015
Missouri	Dallas	29059480200	Low-Income Community	2011–2015
Missouri	Dunklin	29069360500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	Dunklin	29069360600	Low-Income Community	2011–2015
Missouri	Greene	29077000100	Low-Income Community	2011–2015
Missouri	Greene	29077000600	Low-Income Community	2011–2015
Missouri	Greene	29077000700	Low-Income Community	2011–2015
Missouri	Greene	29077001200	Non-LIC Contiguous	2011–2015
Missouri	Greene	29077001500	Low-Income Community	2011–2015
Missouri	Greene	29077002200	Low-Income Community	2011–2015
Missouri	Greene	29077003600	Low-Income Community	2011–2015
Missouri	Greene	29077004302	Non-LIC Contiguous	2011–2015
Missouri	Greene	29077004400	Low-Income Community	2011–2015
Missouri	Greene	29077005600	Low-Income Community	2011–2015
Missouri	Howell	29091090300	Low-Income Community	2011–2015
Missouri	Howell	29091090700	Low-Income Community	2011–2015
Missouri	Jackson	29095000900	Low-Income Community	2011–2015
Missouri	Jackson	29095001000	Low-Income Community	2011–2015
Missouri	Jackson	29095001800	Low-Income Community	2011–2015
Missouri	Jackson	29095001900	Low-Income Community	2011–2015
Missouri	Jackson	29095002100	Low-Income Community	2011–2015
Missouri	Jackson	29095003700	Low-Income Community	2011–2015
Missouri	Jackson	29095003800	Low-Income Community	2011–2015
Missouri	Jackson	29095004300	Low-Income Community	2011–2015
Missouri	Jackson	29095005200	Low-Income Community	2011–2015
Missouri	Jackson	29095005400	Low-Income Community	2011–2015
Missouri	Jackson	29095005500	Low-Income Community	2011–2015
Missouri	Jackson	29095005601	Low-Income Community	2011–2015
Missouri	Jackson	29095005602	Low-Income Community	2011–2015
Missouri	Jackson	29095006100	Low-Income Community	2011–2015
Missouri	Jackson	29095006300	Low-Income Community	2011–2015
Missouri	Jackson	29095007700	Low-Income Community	2011–2015
Missouri	Jackson	29095007802	Low-Income Community	2011–2015
Missouri	Jackson	29095008000	Low-Income Community	2011–2015
Missouri	Jackson	29095011000	Low-Income Community	2011–2015
Missouri	Jackson	29095011100	Low-Income Community	2011–2015
Missouri	Jackson	29095011200	Low-Income Community	2011–2015
Missouri	Jackson	29095011600	Low-Income Community	2011–2015
Missouri	Jackson	29095011700	Low-Income Community	2011–2015
Missouri	Jackson	29095011800	Low-Income Community	2011–2015
Missouri	Jackson	29095012501	Low-Income Community	2011–2015
Missouri	Jackson	29095012600	Low-Income Community	2011–2015
Missouri	Jackson	29095013401	Low-Income Community	2011–2015
Missouri	Jackson	29095013405	Low-Income Community	2011–2015
Missouri	Jackson	29095015100	Non-LIC Contiguous	2011–2015
Missouri	Jackson	29095015300	Low-Income Community	2011–2015
Missouri	Jackson	29095015400	Low-Income Community	2011–2015
Missouri	Jackson	29095015500	Low-Income Community	2011–2015
Missouri	Jackson	29095015600	Low-Income Community	2011–2015
Missouri	Jackson	29095015900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	Jackson	29095016000	Low-Income Community	2011–2015
Missouri	Jackson	29095016100	Low-Income Community	2011–2015
Missouri	Jackson	29095016200	Low-Income Community	2011–2015
Missouri	Jackson	29095016300	Low-Income Community	2011–2015
Missouri	Jackson	29095016600	Low-Income Community	2011–2015
Missouri	Jackson	29095016900	Low-Income Community	2011–2015
Missouri	Jackson	29095017200	Low-Income Community	2011–2015
Missouri	Jackson	29095017400	Low-Income Community	2011–2015
Missouri	Jasper	29097010100	Low-Income Community	2011–2015
Missouri	Johnson	29101960400	Low-Income Community	2011–2015
Missouri	Johnson	29101960600	Low-Income Community	2011–2015
Missouri	Laclede	29105960100	Low-Income Community	2011–2015
Missouri	Laclede	29105960400	Low-Income Community	2011–2015
Missouri	Laclede	29105960500	Low-Income Community	2011–2015
Missouri	Laclede	29105960600	Low-Income Community	2011–2015
Missouri	Lafayette	29107090100	Low-Income Community	2011–2015
Missouri	Lafayette	29107090300	Low-Income Community	2011–2015
Missouri	Marion	29127960800	Low-Income Community	2011–2015
Missouri	Montgomery	29139970200	Low-Income Community	2011–2015
Missouri	Montgomery	29139970300	Non-LIC Contiguous	2011–2015
Missouri	New Madrid	29143960100	Non-LIC Contiguous	2011–2015
Missouri	New Madrid	29143960200	Low-Income Community	2011–2015
Missouri	New Madrid	29143960300	Low-Income Community	2011–2015
Missouri	New Madrid	29143960400	Low-Income Community	2011–2015
Missouri	New Madrid	29143960600	Low-Income Community	2011–2015
Missouri	Newton	29145020200	Non-LIC Contiguous	2011–2015
Missouri	Newton	29145020800	Low-Income Community	2011–2015
Missouri	Nodaway	29147470300	Low-Income Community	2011–2015
Missouri	Nodaway	29147470400	Low-Income Community	2011–2015
Missouri	Pemiscot	29155470400	Low-Income Community	2011–2015
Missouri	Polk	29167960100	Low-Income Community	2011–2015
Missouri	Polk	29167960400	Non-LIC Contiguous	2011–2015
Missouri	Pulaski	29169470101	Low-Income Community	2011–2015
Missouri	Pulaski	29169470102	Low-Income Community	2011–2015
Missouri	Randolph	29175490300	Low-Income Community	2011–2015
Missouri	Ripley	29181870300	Low-Income Community	2011–2015
Missouri	St. Louis	29189211402	Low-Income Community	2011–2015
Missouri	St. Louis	29189211500	Low-Income Community	2011–2015
Missouri	St. Louis	29189212001	Low-Income Community	2011–2015
Missouri	St. Louis	29189212002	Low-Income Community	2011–2015
Missouri	St. Louis	29189212101	Low-Income Community	2011–2015
Missouri	St. Louis	29189212400	Low-Income Community	2011–2015
Missouri	St. Louis	29189212700	Low-Income Community	2011–2015
Missouri	St. Louis	29189213700	Low-Income Community	2011–2015
Missouri	St. Louis	29189213900	Low-Income Community	2011–2015
Missouri	St. Louis	29189214100	Low-Income Community	2011–2015
Missouri	St. Louis	29189215600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Missouri	St. Louis	29189215700	Low-Income Community	2011–2015
Missouri	St. Louis	29189220200	Low-Income Community	2011–2015
Missouri	St. Louis	29189221800	Low-Income Community	2011–2015
Missouri	Saline	29195090100	Low-Income Community	2011–2015
Missouri	Saline	29195090400	Low-Income Community	2011–2015
Missouri	Scott	29201780600	Low-Income Community	2011–2015
Missouri	Sullivan	29211480100	Low-Income Community	2011–2015
Missouri	Sullivan	29211480300	Low-Income Community	2011–2015
Missouri	Taney	29213480105	Low-Income Community	2011–2015
Missouri	Warren	29219820101	Low-Income Community	2011–2015
Missouri	Warren	29219820102	Low-Income Community	2011–2015
Missouri	Washington	29221460300	Low-Income Community	2011–2015
Missouri	Washington	29221460400	Low-Income Community	2011–2015
Missouri	Wayne	29223690300	Low-Income Community	2011–2015
Missouri	St. Louis	29510101800	Low-Income Community	2011–2015
Missouri	St. Louis	29510106100	Low-Income Community	2011–2015
Missouri	St. Louis	29510106200	Low-Income Community	2011–2015
Missouri	St. Louis	29510106300	Low-Income Community	2011–2015
Missouri	St. Louis	29510106600	Low-Income Community	2011–2015
Missouri	St. Louis	29510109600	Low-Income Community	2011–2015
Missouri	St. Louis	29510109700	Low-Income Community	2011–2015
Missouri	St. Louis	29510111100	Low-Income Community	2011–2015
Missouri	St. Louis	29510111200	Low-Income Community	2011–2015
Missouri	St. Louis	29510112200	Low-Income Community	2011–2015
Missouri	St. Louis	29510112300	Low-Income Community	2011–2015
Missouri	St. Louis	29510115300	Low-Income Community	2011–2015
Missouri	St. Louis	29510115500	Low-Income Community	2011–2015
Missouri	St. Louis	29510118100	Low-Income Community	2011–2015
Missouri	St. Louis	29510118600	Low-Income Community	2011–2015
Missouri	St. Louis	29510119300	Low-Income Community	2011–2015
Missouri	St. Louis	29510121100	Low-Income Community	2011–2015
Missouri	St. Louis	29510124600	Low-Income Community	2011–2015
Missouri	St. Louis	29510125600	Low-Income Community	2011–2015
Missouri	St. Louis	29510125700	Low-Income Community	2011–2015
Missouri	St. Louis	29510126600	Low-Income Community	2011–2015
Missouri	St. Louis	29510126700	Low-Income Community	2011–2015
Missouri	St. Louis	29510126900	Low-Income Community	2011–2015
Missouri	St. Louis	29510127000	Low-Income Community	2011–2015
Missouri	St. Louis	29510127100	Low-Income Community	2011–2015
Missouri	St. Louis	29510127400	Low-Income Community	2011–2015
Missouri	St. Louis	29510127500	Low-Income Community	2011–2015
Montana	Big Horn	30003940600	Low-Income Community	2011–2015
Montana	Blaine	30005940100	Low-Income Community	2011–2015
Montana	Carbon	30009000300	Low-Income Community	2011–2015
Montana	Cascade	30013010800	Low-Income Community	2011–2015
Montana	Custer	30017962000	Low-Income Community	2011–2015
Montana	Deer Lodge	30023000300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Montana	Fergus	30027030200	Low-Income Community	2011–2015
Montana	Flathead	30029001100	Low-Income Community	2011–2015
Montana	Gallatin	30031001102	Low-Income Community	2011–2015
Montana	Glacier	30035940400	Low-Income Community	2011–2015
Montana	Hill	30041940300	Low-Income Community	2011–2015
Montana	Lewis and Clark	30049000800	Low-Income Community	2011–2015
Montana	Lincoln	30053000200	Low-Income Community	2011–2015
Montana	Meagher	30059000100	Low-Income Community	2011–2015
Montana	Mineral	30061964600	Low-Income Community	2011–2015
Montana	Missoula	30063000201	Low-Income Community	2011–2015
Montana	Ravalli	30081000600	Low-Income Community	2011–2015
Montana	Roosevelt	30085940002	Low-Income Community	2011–2015
Montana	Rosebud	30087940400	Low-Income Community	2011–2015
Montana	Sanders	30089000200	Low-Income Community	2011–2015
Montana	Sanders	30089940300	Low-Income Community	2011–2015
Montana	Silver Bow	30093000100	Low-Income Community	2011–2015
Montana	Toole	30101000200	Low-Income Community	2011–2015
Montana	Wheatland	30107000100	Low-Income Community	2011–2015
Montana	Yellowstone	30111000402	Low-Income Community	2011–2015
Nebraska	Adams	31001966000	Low-Income Community	2011–2015
Nebraska	Buffalo	31019969300	Low-Income Community	2011–2015
Nebraska	Buffalo	31019969600	Low-Income Community	2011–2015
Nebraska	Colfax	31037964800	Low-Income Community	2011–2015
Nebraska	Dakota	31043010100	Low-Income Community	2011–2015
Nebraska	Dawson	31047968300	Low-Income Community	2011–2015
Nebraska	Dawson	31047968400	Low-Income Community	2011–2015
Nebraska	Dodge	31053963800	Low-Income Community	2011–2015
Nebraska	Dodge	31053964400	Low-Income Community	2011–2015
Nebraska	Douglas	31055000500	Low-Income Community	2011–2015
Nebraska	Douglas	31055000700	Low-Income Community	2011–2015
Nebraska	Douglas	31055000800	Low-Income Community	2011–2015
Nebraska	Douglas	31055001100	Low-Income Community	2011–2015
Nebraska	Douglas	31055001600	Low-Income Community	2011–2015
Nebraska	Douglas	31055001800	Non-LIC Contiguous	2011–2015
Nebraska	Douglas	31055001900	Low-Income Community	2011–2015
Nebraska	Douglas	31055003900	Low-Income Community	2011–2015
Nebraska	Douglas	31055004000	Low-Income Community	2011–2015
Nebraska	Douglas	31055004300	Low-Income Community	2011–2015
Nebraska	Douglas	31055004400	Low-Income Community	2012–2016
Nebraska	Douglas	31055005200	Low-Income Community	2011–2015
Nebraska	Douglas	31055005902	Low-Income Community	2011–2015
Nebraska	Douglas	31055007001	Low-Income Community	2011–2015
Nebraska	Douglas	31055007459	Low-Income Community	2011–2015
Nebraska	Garfield	31071973200	Low-Income Community	2011–2015
Nebraska	Hall	31079000400	Low-Income Community	2011–2015
Nebraska	Hall	31079000900	Low-Income Community	2011–2015
Nebraska	Lancaster	31109000500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Nebraska	Lancaster	31109000700	Low-Income Community	2011–2015
Nebraska	Lancaster	31109001800	Low-Income Community	2011–2015
Nebraska	Lancaster	31109001900	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002001	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002002	Low-Income Community	2011–2015
Nebraska	Lancaster	31109002100	Low-Income Community	2011–2015
Nebraska	Lancaster	31109003003	Low-Income Community	2011–2015
Nebraska	Lincoln	31111960200	Low-Income Community	2011–2015
Nebraska	Madison	31119960700	Low-Income Community	2011–2015
Nebraska	Madison	31119961100	Low-Income Community	2012–2016
Nebraska	Merrick	31121966800	Low-Income Community	2011–2015
Nebraska	Red Willow	31145963300	Low-Income Community	2011–2015
Nebraska	Scotts Bluff	31157953700	Low-Income Community	2011–2015
Nebraska	Thurston	31173940200	Low-Income Community	2011–2015
Nebraska	Valley	31175971400	Low-Income Community	2011–2015
Nebraska	York	31185969700	Low-Income Community	2011–2015
Nevada	Churchill	32001950500	Low-Income Community	2011–2015
Nevada	Clark	32003000103	Low-Income Community	2011–2015
Nevada	Clark	32003000105	Low-Income Community	2011–2015
Nevada	Clark	32003000106	Low-Income Community	2011–2015
Nevada	Clark	32003000201	Low-Income Community	2011–2015
Nevada	Clark	32003000203	Low-Income Community	2011–2015
Nevada	Clark	32003000301	Low-Income Community	2011–2015
Nevada	Clark	32003000401	Low-Income Community	2011–2015
Nevada	Clark	32003000402	Low-Income Community	2011–2015
Nevada	Clark	32003000403	Low-Income Community	2011–2015
Nevada	Clark	32003000510	Low-Income Community	2011–2015
Nevada	Clark	32003000520	Low-Income Community	2011–2015
Nevada	Clark	32003000521	Low-Income Community	2011–2015
Nevada	Clark	32003000522	Low-Income Community	2011–2015
Nevada	Clark	32003000523	Low-Income Community	2011–2015
Nevada	Clark	32003000600	Low-Income Community	2011–2015
Nevada	Clark	32003000700	Low-Income Community	2011–2015
Nevada	Clark	32003000800	Low-Income Community	2011–2015
Nevada	Clark	32003001100	Low-Income Community	2011–2015
Nevada	Clark	32003001300	Low-Income Community	2011–2015
Nevada	Clark	32003001501	Low-Income Community	2011–2015
Nevada	Clark	32003001607	Low-Income Community	2011–2015
Nevada	Clark	32003001801	Low-Income Community	2011–2015
Nevada	Clark	32003001901	Low-Income Community	2011–2015
Nevada	Clark	32003002201	Low-Income Community	2011–2015
Nevada	Clark	32003002403	Low-Income Community	2011–2015
Nevada	Clark	32003002404	Low-Income Community	2011–2015
Nevada	Clark	32003002405	Low-Income Community	2011–2015
Nevada	Clark	32003002506	Low-Income Community	2011–2015
Nevada	Clark	32003002603	Low-Income Community	2011–2015
Nevada	Clark	32003002847	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Nevada	Clark	32003002905	Low-Income Community	2011–2015
Nevada	Clark	32003002962	Low-Income Community	2011–2015
Nevada	Clark	32003003006	Low-Income Community	2011–2015
Nevada	Clark	32003003616	Low-Income Community	2011–2015
Nevada	Clark	32003003700	Low-Income Community	2011–2015
Nevada	Clark	32003003800	Low-Income Community	2011–2015
Nevada	Clark	32003004000	Low-Income Community	2011–2015
Nevada	Clark	32003004302	Low-Income Community	2011–2015
Nevada	Clark	32003005005	Low-Income Community	2011–2015
Nevada	Clark	32003005200	Low-Income Community	2011–2015
Nevada	Clark	32003005421	Low-Income Community	2011–2015
Nevada	Clark	32003005422	Low-Income Community	2011–2015
Nevada	Clark	32003005438	Low-Income Community	2011–2015
Nevada	Clark	32003006800	Low-Income Community	2011–2015
Nevada	Clark	32003007800	Low-Income Community	2011–2015
Nevada	Elko	32007951500	Low-Income Community	2011–2015
Nevada	Lyon	32019960103	Low-Income Community	2011–2015
Nevada	Lyon	32019960201	Low-Income Community	2011–2015
Nevada	Nye	32023960401	Low-Income Community	2011–2015
Nevada	Washoe	32031000101	Low-Income Community	2011–2015
Nevada	Washoe	32031000102	Low-Income Community	2011–2015
Nevada	Washoe	32031000201	Low-Income Community	2011–2015
Nevada	Washoe	32031000202	Low-Income Community	2011–2015
Nevada	Washoe	32031000900	Low-Income Community	2011–2015
Nevada	Washoe	32031001009	Low-Income Community	2011–2015
Nevada	Washoe	32031001502	Low-Income Community	2011–2015
Nevada	Washoe	32031003101	Low-Income Community	2011–2015
Nevada	Washoe	32031940200	Low-Income Community	2011–2015
Nevada	Carson City	32510000600	Low-Income Community	2011–2015
Nevada	Storey	32029970200	Non-LIC Contiguous	2012–2016
New Hampshire	Belknap	33001966000	Low-Income Community	2011–2015
New Hampshire	Carroll	33003955300	Low-Income Community	2011–2015
New Hampshire	Carroll	33003955400	Low-Income Community	2011–2015
New Hampshire	Cheshire	33005971401	Low-Income Community	2011–2015
New Hampshire	Coos	33007950200	Low-Income Community	2011–2015
New Hampshire	Coos	33007950300	Low-Income Community	2011–2015
New Hampshire	Coos	33007950400	Low-Income Community	2011–2015
New Hampshire	Coos	33007950500	Low-Income Community	2011–2015
New Hampshire	Coos	33007950600	Low-Income Community	2011–2015
New Hampshire	Grafton	33009960100	Low-Income Community	2011–2015
New Hampshire	Grafton	33009960400	Low-Income Community	2011–2015
New Hampshire	Grafton	33009961000	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011010700	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011010800	Low-Income Community	2011–2015
New Hampshire	Hillsborough	33011200400	Low-Income Community	2011–2015
New Hampshire	Merrimack	33013043001	Low-Income Community	2011–2015
New Hampshire	Merrimack	33013043002	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Hampshire	Rockingham	33015003500	Low-Income Community	2011–2015
New Hampshire	Rockingham	33015055002	Low-Income Community	2011–2015
New Hampshire	Rockingham	33015063001	Low-Income Community	2011–2015
New Hampshire	Strafford	33017080203	Low-Income Community	2011–2015
New Hampshire	Strafford	33017081400	Low-Income Community	2011–2015
New Hampshire	Strafford	33017083001	Low-Income Community	2011–2015
New Hampshire	Strafford	33017084300	Low-Income Community	2011–2015
New Hampshire	Strafford	33017084400	Low-Income Community	2011–2015
New Hampshire	Sullivan	33019975400	Low-Income Community	2011–2015
New Hampshire	Sullivan	33019975800	Low-Income Community	2011–2015
New Jersey	Atlantic	34001000400	Low-Income Community	2011–2015
New Jersey	Atlantic	34001001900	Low-Income Community	2011–2015
New Jersey	Atlantic	34001002300	Low-Income Community	2011–2015
New Jersey	Atlantic	34001002400	Low-Income Community	2011–2015
New Jersey	Atlantic	34001010600	Low-Income Community	2011–2015
New Jersey	Atlantic	34001011702	Low-Income Community	2011–2015
New Jersey	Atlantic	34001012100	Low-Income Community	2011–2015
New Jersey	Atlantic	34001012702	Low-Income Community	2011–2015
New Jersey	Bergen	34003006300	Low-Income Community	2011–2015
New Jersey	Bergen	34003015400	Low-Income Community	2011–2015
New Jersey	Bergen	34003018200	Low-Income Community	2011–2015
New Jersey	Bergen	34003021200	Low-Income Community	2011–2015
New Jersey	Bergen	34003021500	Low-Income Community	2011–2015
New Jersey	Bergen	34003021600	Low-Income Community	2011–2015
New Jersey	Bergen	34003023100	Low-Income Community	2011–2015
New Jersey	Bergen	34003023200	Low-Income Community	2012–2016
New Jersey	Bergen	34003023402	Low-Income Community	2011–2015
New Jersey	Bergen	34003030100	Low-Income Community	2011–2015
New Jersey	Bergen	34003030300	Low-Income Community	2011–2015
New Jersey	Bergen	34003036100	Low-Income Community	2011–2015
New Jersey	Burlington	34005700104	Low-Income Community	2011–2015
New Jersey	Burlington	34005700703	Low-Income Community	2011–2015
New Jersey	Burlington	34005701204	Low-Income Community	2011–2015
New Jersey	Burlington	34005702207	Low-Income Community	2011–2015
New Jersey	Burlington	34005702807	Low-Income Community	2011–2015
New Jersey	Camden	34007600200	Low-Income Community	2011–2015
New Jersey	Camden	34007600700	Low-Income Community	2011–2015
New Jersey	Camden	34007601300	Low-Income Community	2011–2015
New Jersey	Camden	34007601500	Low-Income Community	2011–2015
New Jersey	Camden	34007601800	Low-Income Community	2011–2015
New Jersey	Camden	34007607702	Low-Income Community	2011–2015
New Jersey	Camden	34007608504	Low-Income Community	2011–2015
New Jersey	Camden	34007610300	Low-Income Community	2011–2015
New Jersey	Camden	34007610400	Low-Income Community	2011–2015
New Jersey	Camden	34007610600	Low-Income Community	2011–2015
New Jersey	Camden	34007610800	Low-Income Community	2011–2015
New Jersey	Cape May	34009021400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Cape May	34009021804	Low-Income Community	2011–2015
New Jersey	Cumberland	34011020100	Low-Income Community	2011–2015
New Jersey	Cumberland	34011020503	Low-Income Community	2011–2015
New Jersey	Cumberland	34011030100	Low-Income Community	2011–2015
New Jersey	Cumberland	34011040500	Low-Income Community	2011–2015
New Jersey	Cumberland	34011041100	Low-Income Community	2011–2015
New Jersey	Essex	34013001400	Low-Income Community	2011–2015
New Jersey	Essex	34013004100	Low-Income Community	2011–2015
New Jersey	Essex	34013004802	Low-Income Community	2011–2015
New Jersey	Essex	34013005000	Low-Income Community	2011–2015
New Jersey	Essex	34013006800	Low-Income Community	2011–2015
New Jersey	Essex	34013007400	Low-Income Community	2011–2015
New Jersey	Essex	34013007501	Low-Income Community	2011–2015
New Jersey	Essex	34013007502	Low-Income Community	2011–2015
New Jersey	Essex	34013008000	Low-Income Community	2011–2015
New Jersey	Essex	34013008100	Low-Income Community	2011–2015
New Jersey	Essex	34013009600	Low-Income Community	2011–2015
New Jersey	Essex	34013010600	Low-Income Community	2011–2015
New Jersey	Essex	34013010900	Low-Income Community	2011–2015
New Jersey	Essex	34013011300	Low-Income Community	2011–2015
New Jersey	Essex	34013013100	Low-Income Community	2011–2015
New Jersey	Essex	34013013200	Low-Income Community	2011–2015
New Jersey	Essex	34013013300	Low-Income Community	2011–2015
New Jersey	Essex	34013018300	Low-Income Community	2011–2015
New Jersey	Essex	34013018600	Low-Income Community	2011–2015
New Jersey	Essex	34013018700	Low-Income Community	2011–2015
New Jersey	Essex	34013018900	Low-Income Community	2011–2015
New Jersey	Essex	34013022900	Low-Income Community	2011–2015
New Jersey	Essex	34013023100	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501001	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501101	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501402	Low-Income Community	2011–2015
New Jersey	Gloucester	34015501406	Low-Income Community	2011–2015
New Jersey	Hudson	34017001900	Low-Income Community	2011–2015
New Jersey	Hudson	34017002000	Low-Income Community	2011–2015
New Jersey	Hudson	34017002900	Low-Income Community	2011–2015
New Jersey	Hudson	34017004102	Low-Income Community	2011–2015
New Jersey	Hudson	34017004600	Low-Income Community	2011–2015
New Jersey	Hudson	34017004700	Low-Income Community	2011–2015
New Jersey	Hudson	34017004800	Low-Income Community	2011–2015
New Jersey	Hudson	34017005200	Low-Income Community	2011–2015
New Jersey	Hudson	34017006000	Low-Income Community	2011–2015
New Jersey	Hudson	34017006300	Low-Income Community	2011–2015
New Jersey	Hudson	34017006800	Low-Income Community	2011–2015
New Jersey	Hudson	34017010300	Low-Income Community	2011–2015
New Jersey	Hudson	34017010800	Low-Income Community	2012–2016
New Jersey	Hudson	34017012700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Hudson	34017014600	Low-Income Community	2011–2015
New Jersey	Hudson	34017014800	Low-Income Community	2011–2015
New Jersey	Hudson	34017015500	Low-Income Community	2011–2015
New Jersey	Hudson	34017016200	Low-Income Community	2011–2015
New Jersey	Hudson	34017016400	Low-Income Community	2011–2015
New Jersey	Hudson	34017016900	Low-Income Community	2011–2015
New Jersey	Hudson	34017017800	Low-Income Community	2011–2015
New Jersey	Hunterdon	34019011400	Low-Income Community	2011–2015
New Jersey	Mercer	34021000100	Low-Income Community	2011–2015
New Jersey	Mercer	34021000200	Low-Income Community	2011–2015
New Jersey	Mercer	34021000800	Low-Income Community	2011–2015
New Jersey	Mercer	34021000900	Low-Income Community	2011–2015
New Jersey	Mercer	34021001000	Low-Income Community	2011–2015
New Jersey	Mercer	34021002000	Low-Income Community	2011–2015
New Jersey	Mercer	34021002100	Low-Income Community	2011–2015
New Jersey	Mercer	34021002902	Low-Income Community	2011–2015
New Jersey	Middlesex	34023003600	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004500	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004600	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023004900	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005300	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005500	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005602	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005700	Low-Income Community	2011–2015
New Jersey	Middlesex	34023005800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023006800	Low-Income Community	2011–2015
New Jersey	Middlesex	34023008300	Low-Income Community	2011–2015
New Jersey	Middlesex	34023009300	Low-Income Community	2011–2015
New Jersey	Monmouth	34025803400	Low-Income Community	2011–2015
New Jersey	Monmouth	34025805800	Low-Income Community	2011–2015
New Jersey	Monmouth	34025806000	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807003	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807300	Low-Income Community	2011–2015
New Jersey	Monmouth	34025807600	Low-Income Community	2011–2015
New Jersey	Monmouth	34025808100	Low-Income Community	2011–2015
New Jersey	Monmouth	34025810900	Low-Income Community	2011–2015
New Jersey	Morris	34027044800	Low-Income Community	2011–2015
New Jersey	Morris	34027044900	Low-Income Community	2011–2015
New Jersey	Morris	34027045000	Low-Income Community	2011–2015
New Jersey	Morris	34027045100	Low-Income Community	2012–2016
New Jersey	Ocean	34029715000	Low-Income Community	2011–2015
New Jersey	Ocean	34029715200	Low-Income Community	2011–2015
New Jersey	Ocean	34029715402	Low-Income Community	2011–2015
New Jersey	Ocean	34029715500	Low-Income Community	2011–2015
New Jersey	Ocean	34029715600	Low-Income Community	2011–2015
New Jersey	Ocean	34029715800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Jersey	Ocean	34029720101	Low-Income Community	2011–2015
New Jersey	Ocean	34029720102	Low-Income Community	2011–2015
New Jersey	Ocean	34029720202	Low-Income Community	2011–2015
New Jersey	Ocean	34029731101	Low-Income Community	2011–2015
New Jersey	Ocean	34029731205	Low-Income Community	2011–2015
New Jersey	Passaic	34031124601	Low-Income Community	2011–2015
New Jersey	Passaic	34031125100	Low-Income Community	2011–2015
New Jersey	Passaic	34031175200	Low-Income Community	2011–2015
New Jersey	Passaic	34031175301	Low-Income Community	2011–2015
New Jersey	Passaic	34031175402	Low-Income Community	2011–2015
New Jersey	Passaic	34031175900	Low-Income Community	2011–2015
New Jersey	Passaic	34031181500	Low-Income Community	2011–2015
New Jersey	Passaic	34031181800	Low-Income Community	2011–2015
New Jersey	Passaic	34031182302	Low-Income Community	2011–2015
New Jersey	Passaic	34031182500	Low-Income Community	2011–2015
New Jersey	Passaic	34031182800	Low-Income Community	2011–2015
New Jersey	Passaic	34031182900	Low-Income Community	2011–2015
New Jersey	Passaic	34031183200	Low-Income Community	2011–2015
New Jersey	Passaic	34031203600	Low-Income Community	2011–2015
New Jersey	Passaic	34031264200	Low-Income Community	2011–2015
New Jersey	Salem	34033020600	Low-Income Community	2011–2015
New Jersey	Salem	34033022100	Low-Income Community	2011–2015
New Jersey	Somerset	34035051100	Low-Income Community	2011–2015
New Jersey	Somerset	34035051200	Low-Income Community	2011–2015
New Jersey	Somerset	34035051700	Low-Income Community	2011–2015
New Jersey	Sussex	34037371200	Low-Income Community	2011–2015
New Jersey	Union	34039031100	Low-Income Community	2011–2015
New Jersey	Union	34039031200	Low-Income Community	2011–2015
New Jersey	Union	34039031602	Low-Income Community	2011–2015
New Jersey	Union	34039032400	Low-Income Community	2011–2015
New Jersey	Union	34039035300	Low-Income Community	2011–2015
New Jersey	Union	34039035400	Low-Income Community	2011–2015
New Jersey	Union	34039036000	Low-Income Community	2011–2015
New Jersey	Union	34039039000	Low-Income Community	2011–2015
New Jersey	Union	34039039300	Low-Income Community	2011–2015
New Jersey	Union	34039039800	Low-Income Community	2011–2015
New Jersey	Union	34039039900	Low-Income Community	2011–2015
New Jersey	Warren	34041030700	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001000124	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001001200	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001001600	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002100	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002500	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001002700	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001003400	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001003736	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004001	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Mexico	Bernalillo	35001004300	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004736	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004741	Low-Income Community	2011–2015
New Mexico	Bernalillo	35001004744	Non-LIC Contiguous	2011–2015
New Mexico	Bernalillo	35001940600	Low-Income Community	2011–2015
New Mexico	Chaves	35005000700	Low-Income Community	2011–2015
New Mexico	Chaves	35005001101	Low-Income Community	2011–2015
New Mexico	Chaves	35005001300	Low-Income Community	2011–2015
New Mexico	Cibola	35006946100	Low-Income Community	2011–2015
New Mexico	Cibola	35006974400	Low-Income Community	2011–2015
New Mexico	Colfax	35007950500	Low-Income Community	2011–2015
New Mexico	Curry	35009000400	Low-Income Community	2011–2015
New Mexico	Curry	35009000603	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013000102	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013000500	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001000	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001303	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001500	Non-LIC Contiguous	2011–2015
New Mexico	Doña Ana	35013001701	Low-Income Community	2011–2015
New Mexico	Doña Ana	35013001705	Low-Income Community	2011–2015
New Mexico	Eddy	35015000100	Low-Income Community	2011–2015
New Mexico	Eddy	35015000800	Low-Income Community	2011–2015
New Mexico	Grant	35017964400	Low-Income Community	2011–2015
New Mexico	Hidalgo	35023970200	Low-Income Community	2011–2015
New Mexico	Lea	35025000300	Low-Income Community	2011–2015
New Mexico	Luna	35029000500	Low-Income Community	2011–2015
New Mexico	McKinley	35031943902	Low-Income Community	2011–2015
New Mexico	McKinley	35031945200	Low-Income Community	2011–2015
New Mexico	McKinley	35031946000	Low-Income Community	2011–2015
New Mexico	Quay	35037958601	Low-Income Community	2011–2015
New Mexico	Rio Arriba	35039000300	Low-Income Community	2011–2015
New Mexico	Rio Arriba	35039941000	Low-Income Community	2011–2015
New Mexico	Roosevelt	35041000300	Low-Income Community	2011–2015
New Mexico	Sandoval	35043940500	Low-Income Community	2011–2015
New Mexico	Sandoval	35043940900	Low-Income Community	2011–2015
New Mexico	San Juan	35045000401	Low-Income Community	2011–2015
New Mexico	San Juan	35045000402	Low-Income Community	2011–2015
New Mexico	San Juan	35045000705	Low-Income Community	2011–2015
New Mexico	San Juan	35045943000	Low-Income Community	2011–2015
New Mexico	San Juan	35045943201	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001002	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001103	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001202	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001302	Low-Income Community	2011–2015
New Mexico	Santa Fe	35049001304	Low-Income Community	2011–2015
New Mexico	Sierra	35051962300	Low-Income Community	2011–2015
New Mexico	Sierra	35051962401	Non-LIC Contiguous	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New Mexico	Taos	35055952300	Low-Income Community	2011–2015
New Mexico	Torrance	35057963202	Low-Income Community	2011–2015
New Mexico	Torrance	35057963600	Low-Income Community	2011–2015
New Mexico	Valencia	35061970401	Low-Income Community	2011–2015
New Mexico	Valencia	35061971000	Low-Income Community	2011–2015
New Mexico	Valencia	35061971300	Low-Income Community	2011–2015
New Mexico	Valencia	35061971400	Non-LIC Contiguous	2011–2015
New York	Albany	36001000200	Low-Income Community	2011–2015
New York	Albany	36001001100	Low-Income Community	2011–2015
New York	Albany	36001002100	Low-Income Community	2011–2015
New York	Albany	36001002300	Low-Income Community	2011–2015
New York	Albany	36001002500	Low-Income Community	2011–2015
New York	Albany	36001002600	Low-Income Community	2011–2015
New York	Allegany	36003950700	Low-Income Community	2011–2015
New York	Allegany	36003950800	Low-Income Community	2011–2015
New York	Bronx	36005001900	Low-Income Community	2011–2015
New York	Bronx	36005002300	Low-Income Community	2011–2015
New York	Bronx	36005002500	Low-Income Community	2011–2015
New York	Bronx	36005002701	Low-Income Community	2011–2015
New York	Bronx	36005002702	Low-Income Community	2011–2015
New York	Bronx	36005002800	Low-Income Community	2011–2015
New York	Bronx	36005003500	Low-Income Community	2011–2015
New York	Bronx	36005003900	Low-Income Community	2011–2015
New York	Bronx	36005004100	Low-Income Community	2011–2015
New York	Bronx	36005004300	Low-Income Community	2011–2015
New York	Bronx	36005005001	Low-Income Community	2011–2015
New York	Bronx	36005005100	Low-Income Community	2011–2015
New York	Bronx	36005005200	Low-Income Community	2011–2015
New York	Bronx	36005005902	Low-Income Community	2011–2015
New York	Bronx	36005006100	Low-Income Community	2011–2015
New York	Bronx	36005006300	Low-Income Community	2011–2015
New York	Bronx	36005006500	Low-Income Community	2011–2015
New York	Bronx	36005006700	Low-Income Community	2011–2015
New York	Bronx	36005007100	Low-Income Community	2011–2015
New York	Bronx	36005007500	Low-Income Community	2011–2015
New York	Bronx	36005008700	Low-Income Community	2011–2015
New York	Bronx	36005008900	Low-Income Community	2011–2015
New York	Bronx	36005009000	Low-Income Community	2011–2015
New York	Bronx	36005009300	Low-Income Community	2011–2015
New York	Bronx	36005009600	Low-Income Community	2011–2015
New York	Bronx	36005011502	Low-Income Community	2011–2015
New York	Bronx	36005011700	Low-Income Community	2011–2015
New York	Bronx	36005011900	Low-Income Community	2011–2015
New York	Bronx	36005012101	Low-Income Community	2011–2015
New York	Bronx	36005012102	Low-Income Community	2011–2015
New York	Bronx	36005012300	Low-Income Community	2011–2015
New York	Bronx	36005012701	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Bronx	36005012901	Low-Income Community	2011–2015
New York	Bronx	36005013100	Low-Income Community	2011–2015
New York	Bronx	36005014100	Low-Income Community	2011–2015
New York	Bronx	36005014500	Low-Income Community	2011–2015
New York	Bronx	36005014900	Low-Income Community	2011–2015
New York	Bronx	36005015700	Low-Income Community	2011–2015
New York	Bronx	36005016100	Low-Income Community	2011–2015
New York	Bronx	36005016500	Low-Income Community	2011–2015
New York	Bronx	36005016700	Low-Income Community	2011–2015
New York	Bronx	36005017500	Low-Income Community	2011–2015
New York	Bronx	36005017701	Low-Income Community	2011–2015
New York	Bronx	36005018102	Low-Income Community	2011–2015
New York	Bronx	36005018301	Low-Income Community	2011–2015
New York	Bronx	36005018900	Low-Income Community	2011–2015
New York	Bronx	36005019300	Low-Income Community	2011–2015
New York	Bronx	36005019500	Low-Income Community	2011–2015
New York	Bronx	36005019700	Low-Income Community	2011–2015
New York	Bronx	36005019900	Low-Income Community	2011–2015
New York	Bronx	36005020100	Low-Income Community	2011–2015
New York	Bronx	36005020501	Low-Income Community	2011–2015
New York	Bronx	36005020502	Low-Income Community	2011–2015
New York	Bronx	36005021502	Low-Income Community	2011–2015
New York	Bronx	36005023100	Low-Income Community	2011–2015
New York	Bronx	36005024300	Low-Income Community	2011–2015
New York	Bronx	36005024501	Low-Income Community	2011–2015
New York	Bronx	36005024502	Low-Income Community	2011–2015
New York	Bronx	36005024700	Low-Income Community	2011–2015
New York	Bronx	36005025100	Low-Income Community	2011–2015
New York	Bronx	36005025500	Low-Income Community	2011–2015
New York	Bronx	36005025700	Low-Income Community	2011–2015
New York	Bronx	36005028400	Low-Income Community	2011–2015
New York	Bronx	36005036100	Low-Income Community	2011–2015
New York	Bronx	36005036502	Low-Income Community	2011–2015
New York	Bronx	36005037504	Low-Income Community	2011–2015
New York	Bronx	36005038302	Low-Income Community	2011–2015
New York	Bronx	36005038500	Low-Income Community	2011–2015
New York	Bronx	36005038900	Low-Income Community	2011–2015
New York	Bronx	36005039100	Low-Income Community	2011–2015
New York	Bronx	36005039300	Low-Income Community	2011–2015
New York	Bronx	36005039500	Low-Income Community	2011–2015
New York	Bronx	36005043100	Low-Income Community	2011–2015
New York	Bronx	36005046201	Low-Income Community	2011–2015
New York	Bronx	36005046202	Low-Income Community	2011–2015
New York	Broome	36007000200	Low-Income Community	2011–2015
New York	Broome	36007000400	Low-Income Community	2011–2015
New York	Broome	36007000500	Low-Income Community	2011–2015
New York	Broome	36007013400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Broome	36007013500	Low-Income Community	2011–2015
New York	Broome	36007013900	Low-Income Community	2011–2015
New York	Cattaraugus	36009960600	Low-Income Community	2011–2015
New York	Cattaraugus	36009961600	Low-Income Community	2011–2015
New York	Cattaraugus	36009961700	Low-Income Community	2011–2015
New York	Cayuga	36011041300	Low-Income Community	2011–2015
New York	Chautauqua	36013030500	Low-Income Community	2011–2015
New York	Chautauqua	36013035400	Low-Income Community	2011–2015
New York	Chautauqua	36013035500	Low-Income Community	2011–2015
New York	Chautauqua	36013035600	Low-Income Community	2011–2015
New York	Chautauqua	36013035700	Low-Income Community	2011–2015
New York	Chautauqua	36013035800	Low-Income Community	2011–2015
New York	Chautauqua	36013037300	Low-Income Community	2011–2015
New York	Chemung	36015000600	Low-Income Community	2011–2015
New York	Chemung	36015000700	Low-Income Community	2011–2015
New York	Chemung	36015001000	Low-Income Community	2011–2015
New York	Chenango	36017970400	Low-Income Community	2011–2015
New York	Clinton	36019101300	Low-Income Community	2011–2015
New York	Clinton	36019101600	Low-Income Community	2011–2015
New York	Columbia	36021001200	Low-Income Community	2011–2015
New York	Columbia	36021001300	Low-Income Community	2011–2015
New York	Cortland	36023970600	Low-Income Community	2011–2015
New York	Cortland	36023970900	Low-Income Community	2011–2015
New York	Delaware	36025970400	Low-Income Community	2011–2015
New York	Delaware	36025970500	Low-Income Community	2011–2015
New York	Delaware	36025970600	Low-Income Community	2011–2015
New York	Dutchess	36027210101	Low-Income Community	2011–2015
New York	Dutchess	36027220100	Low-Income Community	2011–2015
New York	Dutchess	36027221100	Low-Income Community	2011–2015
New York	Dutchess	36027640002	Low-Income Community	2011–2015
New York	Erie	36029000110	Low-Income Community	2011–2015
New York	Erie	36029000500	Low-Income Community	2011–2015
New York	Erie	36029001600	Low-Income Community	2011–2015
New York	Erie	36029002502	Low-Income Community	2011–2015
New York	Erie	36029003100	Low-Income Community	2011–2015
New York	Erie	36029003400	Low-Income Community	2011–2015
New York	Erie	36029004001	Low-Income Community	2011–2015
New York	Erie	36029004700	Low-Income Community	2011–2015
New York	Erie	36029005600	Low-Income Community	2011–2015
New York	Erie	36029006100	Low-Income Community	2011–2015
New York	Erie	36029006702	Low-Income Community	2011–2015
New York	Erie	36029008300	Low-Income Community	2011–2015
New York	Erie	36029008400	Low-Income Community	2011–2015
New York	Erie	36029009200	Low-Income Community	2011–2015
New York	Erie	36029012300	Low-Income Community	2011–2015
New York	Erie	36029016300	Low-Income Community	2011–2015
New York	Erie	36029016400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Erie	36029016500	Low-Income Community	2011–2015
New York	Erie	36029016800	Low-Income Community	2011–2015
New York	Erie	36029017000	Low-Income Community	2011–2015
New York	Erie	36029017100	Low-Income Community	2011–2015
New York	Erie	36029017200	Low-Income Community	2011–2015
New York	Erie	36029017400	Low-Income Community	2011–2015
New York	Franklin	36033950501	Low-Income Community	2011–2015
New York	Fulton	36035970700	Low-Income Community	2011–2015
New York	Fulton	36035970800	Low-Income Community	2011–2015
New York	Fulton	36035971200	Low-Income Community	2011–2015
New York	Genesee	36037950600	Low-Income Community	2011–2015
New York	Genesee	36037951000	Low-Income Community	2011–2015
New York	Greene	36039081000	Low-Income Community	2011–2015
New York	Herkimer	36043010702	Low-Income Community	2011–2015
New York	Herkimer	36043011200	Low-Income Community	2011–2015
New York	Jefferson	36045061300	Low-Income Community	2011–2015
New York	Jefferson	36045061400	Low-Income Community	2011–2015
New York	Jefferson	36045062100	Low-Income Community	2011–2015
New York	Kings	36047000100	Non-LIC Contiguous	2011–2015
New York	Kings	36047000200	Low-Income Community	2011–2015
New York	Kings	36047000502	Non-LIC Contiguous	2011–2015
New York	Kings	36047001100	Non-LIC Contiguous	2011–2015
New York	Kings	36047001300	Low-Income Community	2011–2015
New York	Kings	36047001500	Low-Income Community	2011–2015
New York	Kings	36047002000	Low-Income Community	2011–2015
New York	Kings	36047002200	Low-Income Community	2011–2015
New York	Kings	36047002300	Low-Income Community	2011–2015
New York	Kings	36047002901	Low-Income Community	2011–2015
New York	Kings	36047003400	Low-Income Community	2011–2015
New York	Kings	36047005300	Low-Income Community	2011–2015
New York	Kings	36047007000	Low-Income Community	2011–2015
New York	Kings	36047007100	Low-Income Community	2011–2015
New York	Kings	36047007400	Low-Income Community	2011–2015
New York	Kings	36047008200	Low-Income Community	2011–2015
New York	Kings	36047008400	Low-Income Community	2011–2015
New York	Kings	36047008500	Low-Income Community	2011–2015
New York	Kings	36047009800	Low-Income Community	2011–2015
New York	Kings	36047010100	Low-Income Community	2011–2015
New York	Kings	36047010400	Low-Income Community	2011–2015
New York	Kings	36047011600	Low-Income Community	2011–2015
New York	Kings	36047011700	Low-Income Community	2011–2015
New York	Kings	36047011800	Low-Income Community	2011–2015
New York	Kings	36047011900	Non-LIC Contiguous	2011–2015
New York	Kings	36047012700	Low-Income Community	2011–2015
New York	Kings	36047018501	Low-Income Community	2011–2015
New York	Kings	36047019100	Low-Income Community	2011–2015
New York	Kings	36047021100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047021300	Low-Income Community	2011–2015
New York	Kings	36047021500	Non-LIC Contiguous	2011–2015
New York	Kings	36047021700	Low-Income Community	2011–2015
New York	Kings	36047024100	Low-Income Community	2011–2015
New York	Kings	36047024300	Non-LIC Contiguous	2011–2015
New York	Kings	36047025100	Low-Income Community	2011–2015
New York	Kings	36047026300	Low-Income Community	2011–2015
New York	Kings	36047026500	Low-Income Community	2011–2015
New York	Kings	36047028100	Low-Income Community	2011–2015
New York	Kings	36047028300	Low-Income Community	2011–2015
New York	Kings	36047028900	Low-Income Community	2011–2015
New York	Kings	36047029300	Low-Income Community	2011–2015
New York	Kings	36047029400	Low-Income Community	2011–2015
New York	Kings	36047030300	Low-Income Community	2011–2015
New York	Kings	36047030400	Low-Income Community	2011–2015
New York	Kings	36047030700	Low-Income Community	2011–2015
New York	Kings	36047030900	Low-Income Community	2011–2015
New York	Kings	36047031400	Low-Income Community	2011–2015
New York	Kings	36047031900	Low-Income Community	2011–2015
New York	Kings	36047032300	Low-Income Community	2011–2015
New York	Kings	36047032600	Low-Income Community	2011–2015
New York	Kings	36047033000	Low-Income Community	2011–2015
New York	Kings	36047033100	Low-Income Community	2011–2015
New York	Kings	36047033900	Low-Income Community	2011–2015
New York	Kings	36047034200	Low-Income Community	2011–2015
New York	Kings	36047034700	Low-Income Community	2011–2015
New York	Kings	36047034800	Low-Income Community	2011–2015
New York	Kings	36047034900	Low-Income Community	2011–2015
New York	Kings	36047035000	Low-Income Community	2011–2015
New York	Kings	36047035200	Low-Income Community	2011–2015
New York	Kings	36047035700	Low-Income Community	2011–2015
New York	Kings	36047035900	Low-Income Community	2011–2015
New York	Kings	36047036001	Low-Income Community	2011–2015
New York	Kings	36047036100	Low-Income Community	2011–2015
New York	Kings	36047036200	Low-Income Community	2011–2015
New York	Kings	36047036300	Low-Income Community	2011–2015
New York	Kings	36047036501	Low-Income Community	2011–2015
New York	Kings	36047036502	Low-Income Community	2011–2015
New York	Kings	36047036700	Low-Income Community	2011–2015
New York	Kings	36047036900	Low-Income Community	2011–2015
New York	Kings	36047037300	Low-Income Community	2011–2015
New York	Kings	36047039700	Low-Income Community	2011–2015
New York	Kings	36047039900	Low-Income Community	2011–2015
New York	Kings	36047040100	Low-Income Community	2011–2015
New York	Kings	36047040500	Low-Income Community	2011–2015
New York	Kings	36047041300	Low-Income Community	2011–2015
New York	Kings	36047041500	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047041700	Low-Income Community	2011–2015
New York	Kings	36047041900	Low-Income Community	2011–2015
New York	Kings	36047042100	Low-Income Community	2011–2015
New York	Kings	36047042300	Low-Income Community	2011–2015
New York	Kings	36047042900	Low-Income Community	2011–2015
New York	Kings	36047043300	Low-Income Community	2011–2015
New York	Kings	36047044700	Low-Income Community	2011–2015
New York	Kings	36047044900	Low-Income Community	2011–2015
New York	Kings	36047045300	Low-Income Community	2011–2015
New York	Kings	36047051300	Low-Income Community	2011–2015
New York	Kings	36047053200	Non-LIC Contiguous	2011–2015
New York	Kings	36047054300	Non-LIC Contiguous	2011–2015
New York	Kings	36047054700	Low-Income Community	2011–2015
New York	Kings	36047054900	Low-Income Community	2011–2015
New York	Kings	36047056300	Low-Income Community	2011–2015
New York	Kings	36047057900	Non-LIC Contiguous	2011–2015
New York	Kings	36047061004	Low-Income Community	2011–2015
New York	Kings	36047076200	Low-Income Community	2011–2015
New York	Kings	36047077400	Low-Income Community	2011–2015
New York	Kings	36047078200	Low-Income Community	2011–2015
New York	Kings	36047080400	Low-Income Community	2011–2015
New York	Kings	36047080600	Low-Income Community	2011–2015
New York	Kings	36047081000	Low-Income Community	2011–2015
New York	Kings	36047081600	Low-Income Community	2011–2015
New York	Kings	36047081800	Low-Income Community	2011–2015
New York	Kings	36047082000	Low-Income Community	2011–2015
New York	Kings	36047082400	Low-Income Community	2011–2015
New York	Kings	36047082800	Low-Income Community	2011–2015
New York	Kings	36047083000	Low-Income Community	2011–2015
New York	Kings	36047087401	Low-Income Community	2011–2015
New York	Kings	36047087600	Low-Income Community	2011–2015
New York	Kings	36047088200	Low-Income Community	2011–2015
New York	Kings	36047089000	Low-Income Community	2011–2015
New York	Kings	36047089200	Low-Income Community	2011–2015
New York	Kings	36047090000	Low-Income Community	2011–2015
New York	Kings	36047090600	Low-Income Community	2011–2015
New York	Kings	36047090800	Low-Income Community	2011–2015
New York	Kings	36047111600	Low-Income Community	2011–2015
New York	Kings	36047111800	Low-Income Community	2011–2015
New York	Kings	36047113400	Low-Income Community	2011–2015
New York	Kings	36047114201	Low-Income Community	2011–2015
New York	Kings	36047114400	Low-Income Community	2011–2015
New York	Kings	36047114600	Low-Income Community	2011–2015
New York	Kings	36047115000	Low-Income Community	2011–2015
New York	Kings	36047115200	Low-Income Community	2011–2015
New York	Kings	36047115600	Low-Income Community	2011–2015
New York	Kings	36047116200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Kings	36047119400	Low-Income Community	2011–2015
New York	Kings	36047119800	Low-Income Community	2011–2015
New York	Livingston	36051030900	Low-Income Community	2011–2015
New York	Monroe	36055000200	Low-Income Community	2011–2015
New York	Monroe	36055000700	Low-Income Community	2011–2015
New York	Monroe	36055001800	Low-Income Community	2011–2015
New York	Monroe	36055001900	Low-Income Community	2011–2015
New York	Monroe	36055004702	Low-Income Community	2011–2015
New York	Monroe	36055005600	Low-Income Community	2011–2015
New York	Monroe	36055005700	Low-Income Community	2011–2015
New York	Monroe	36055005900	Low-Income Community	2011–2015
New York	Monroe	36055006400	Low-Income Community	2011–2015
New York	Monroe	36055006900	Low-Income Community	2011–2015
New York	Monroe	36055008500	Low-Income Community	2011–2015
New York	Monroe	36055009200	Low-Income Community	2011–2015
New York	Monroe	36055009301	Low-Income Community	2011–2015
New York	Monroe	36055009302	Low-Income Community	2011–2015
New York	Monroe	36055009400	Low-Income Community	2011–2015
New York	Monroe	36055009601	Low-Income Community	2011–2015
New York	Monroe	36055009602	Low-Income Community	2011–2015
New York	Monroe	36055009603	Low-Income Community	2011–2015
New York	Monroe	36055010601	Low-Income Community	2011–2015
New York	Monroe	36055011400	Low-Income Community	2011–2015
New York	Montgomery	36057070200	Low-Income Community	2011–2015
New York	Montgomery	36057070900	Low-Income Community	2011–2015
New York	Montgomery	36057072600	Low-Income Community	2011–2015
New York	Nassau	36059406801	Low-Income Community	2011–2015
New York	Nassau	36059406802	Low-Income Community	2011–2015
New York	Nassau	36059416500	Low-Income Community	2011–2015
New York	Nassau	36059517200	Low-Income Community	2011–2015
New York	New York	36061000202	Low-Income Community	2011–2015
New York	New York	36061002201	Low-Income Community	2011–2015
New York	New York	36061002601	Low-Income Community	2011–2015
New York	New York	36061006200	Low-Income Community	2011–2015
New York	New York	36061013500	Low-Income Community	2011–2015
New York	New York	36061016800	Low-Income Community	2011–2015
New York	New York	36061018000	Low-Income Community	2011–2015
New York	New York	36061019200	Low-Income Community	2011–2015
New York	New York	36061019400	Low-Income Community	2011–2015
New York	New York	36061019600	Low-Income Community	2011–2015
New York	New York	36061020600	Low-Income Community	2011–2015
New York	New York	36061020800	Low-Income Community	2011–2015
New York	New York	36061020901	Low-Income Community	2011–2015
New York	New York	36061021303	Low-Income Community	2011–2015
New York	New York	36061021500	Low-Income Community	2011–2015
New York	New York	36061021600	Low-Income Community	2011–2015
New York	New York	36061021800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	New York	36061021900	Low-Income Community	2011–2015
New York	New York	36061022200	Low-Income Community	2011–2015
New York	New York	36061022301	Low-Income Community	2011–2015
New York	New York	36061022302	Low-Income Community	2011–2015
New York	New York	36061022400	Low-Income Community	2011–2015
New York	New York	36061023000	Low-Income Community	2011–2015
New York	New York	36061023200	Low-Income Community	2011–2015
New York	New York	36061024100	Low-Income Community	2011–2015
New York	New York	36061024200	Low-Income Community	2011–2015
New York	New York	36061024301	Low-Income Community	2011–2015
New York	New York	36061026100	Low-Income Community	2011–2015
New York	New York	36061026900	Low-Income Community	2011–2015
New York	New York	36061027700	Low-Income Community	2011–2015
New York	New York	36061027900	Low-Income Community	2011–2015
New York	New York	36061028700	Low-Income Community	2011–2015
New York	New York	36061029100	Low-Income Community	2011–2015
New York	New York	36061029300	Low-Income Community	2011–2015
New York	New York	36061029900	Low-Income Community	2011–2015
New York	New York	36061030300	Low-Income Community	2011–2015
New York	Niagara	36063020200	Low-Income Community	2011–2015
New York	Niagara	36063020500	Low-Income Community	2011–2015
New York	Niagara	36063021100	Low-Income Community	2011–2015
New York	Niagara	36063021200	Low-Income Community	2011–2015
New York	Niagara	36063021700	Low-Income Community	2011–2015
New York	Niagara	36063023100	Low-Income Community	2011–2015
New York	Niagara	36063023200	Low-Income Community	2011–2015
New York	Niagara	36063023700	Low-Income Community	2011–2015
New York	Oneida	36065020102	Low-Income Community	2011–2015
New York	Oneida	36065020300	Low-Income Community	2011–2015
New York	Oneida	36065020900	Low-Income Community	2011–2015
New York	Oneida	36065021900	Low-Income Community	2011–2015
New York	Oneida	36065022500	Low-Income Community	2011–2015
New York	Oneida	36065026300	Low-Income Community	2011–2015
New York	Oneida	36065026400	Low-Income Community	2011–2015
New York	Onondaga	36067000501	Low-Income Community	2011–2015
New York	Onondaga	36067001600	Low-Income Community	2011–2015
New York	Onondaga	36067002101	Low-Income Community	2011–2015
New York	Onondaga	36067002300	Low-Income Community	2011–2015
New York	Onondaga	36067003000	Low-Income Community	2011–2015
New York	Onondaga	36067003200	Low-Income Community	2011–2015
New York	Onondaga	36067003400	Low-Income Community	2011–2015
New York	Onondaga	36067003500	Low-Income Community	2011–2015
New York	Onondaga	36067003900	Low-Income Community	2011–2015
New York	Onondaga	36067004000	Low-Income Community	2011–2015
New York	Onondaga	36067004200	Low-Income Community	2011–2015
New York	Onondaga	36067005200	Low-Income Community	2011–2015
New York	Onondaga	36067005300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Onondaga	36067005400	Low-Income Community	2011–2015
New York	Ontario	36069051000	Low-Income Community	2011–2015
New York	Ontario	36069051100	Low-Income Community	2011–2015
New York	Ontario	36069051800	Low-Income Community	2011–2015
New York	Orange	36071000300	Low-Income Community	2011–2015
New York	Orange	36071000400	Low-Income Community	2011–2015
New York	Orange	36071001500	Low-Income Community	2011–2015
New York	Orange	36071002200	Low-Income Community	2011–2015
New York	Orange	36071002300	Low-Income Community	2011–2015
New York	Orange	36071015100	Low-Income Community	2011–2015
New York	Orleans	36073040700	Low-Income Community	2011–2015
New York	Oswego	36075020301	Low-Income Community	2011–2015
New York	Oswego	36075020302	Low-Income Community	2011–2015
New York	Oswego	36075021102	Low-Income Community	2011–2015
New York	Oswego	36075021605	Low-Income Community	2011–2015
New York	Otsego	36077591100	Low-Income Community	2011–2015
New York	Queens	36081000100	Non-LIC Contiguous	2011–2015
New York	Queens	36081002500	Low-Income Community	2011–2015
New York	Queens	36081003100	Low-Income Community	2011–2015
New York	Queens	36081003300	Low-Income Community	2011–2015
New York	Queens	36081003900	Low-Income Community	2011–2015
New York	Queens	36081005100	Low-Income Community	2011–2015
New York	Queens	36081005500	Low-Income Community	2011–2015
New York	Queens	36081005700	Low-Income Community	2011–2015
New York	Queens	36081007900	Low-Income Community	2011–2015
New York	Queens	36081008500	Low-Income Community	2011–2015
New York	Queens	36081008700	Low-Income Community	2011–2015
New York	Queens	36081011300	Low-Income Community	2011–2015
New York	Queens	36081011400	Low-Income Community	2011–2015
New York	Queens	36081011600	Low-Income Community	2011–2015
New York	Queens	36081011900	Low-Income Community	2011–2015
New York	Queens	36081014202	Low-Income Community	2011–2015
New York	Queens	36081014400	Low-Income Community	2011–2015
New York	Queens	36081015700	Low-Income Community	2011–2015
New York	Queens	36081015900	Low-Income Community	2011–2015
New York	Queens	36081017900	Low-Income Community	2011–2015
New York	Queens	36081018101	Low-Income Community	2011–2015
New York	Queens	36081018900	Low-Income Community	2011–2015
New York	Queens	36081019600	Low-Income Community	2011–2015
New York	Queens	36081019900	Non-LIC Contiguous	2011–2015
New York	Queens	36081020400	Low-Income Community	2011–2015
New York	Queens	36081020500	Low-Income Community	2011–2015
New York	Queens	36081020800	Low-Income Community	2011–2015
New York	Queens	36081021200	Low-Income Community	2011–2015
New York	Queens	36081024000	Low-Income Community	2011–2015
New York	Queens	36081025400	Low-Income Community	2011–2015
New York	Queens	36081026000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Queens	36081026901	Low-Income Community	2011–2015
New York	Queens	36081028300	Low-Income Community	2011–2015
New York	Queens	36081030600	Non-LIC Contiguous	2011–2015
New York	Queens	36081032000	Low-Income Community	2011–2015
New York	Queens	36081041400	Low-Income Community	2011–2015
New York	Queens	36081041500	Low-Income Community	2011–2015
New York	Queens	36081044000	Low-Income Community	2011–2015
New York	Queens	36081044400	Low-Income Community	2011–2015
New York	Queens	36081044601	Low-Income Community	2011–2015
New York	Queens	36081044602	Low-Income Community	2011–2015
New York	Queens	36081066400	Non-LIC Contiguous	2011–2015
New York	Queens	36081069300	Low-Income Community	2011–2015
New York	Queens	36081071100	Low-Income Community	2011–2015
New York	Queens	36081071304	Low-Income Community	2011–2015
New York	Queens	36081071702	Low-Income Community	2011–2015
New York	Queens	36081079200	Low-Income Community	2011–2015
New York	Queens	36081084602	Low-Income Community	2011–2015
New York	Queens	36081086900	Low-Income Community	2011–2015
New York	Queens	36081087100	Low-Income Community	2011–2015
New York	Queens	36081088901	Low-Income Community	2011–2015
New York	Queens	36081092500	Low-Income Community	2011–2015
New York	Queens	36081094201	Low-Income Community	2011–2015
New York	Queens	36081097203	Low-Income Community	2011–2015
New York	Queens	36081099200	Low-Income Community	2011–2015
New York	Queens	36081099802	Low-Income Community	2011–2015
New York	Queens	36081100802	Low-Income Community	2011–2015
New York	Queens	36081101001	Low-Income Community	2011–2015
New York	Queens	36081101002	Low-Income Community	2011–2015
New York	Queens	36081103201	Low-Income Community	2011–2015
New York	Queens	36081103202	Low-Income Community	2011–2015
New York	Queens	36081117100	Low-Income Community	2011–2015
New York	Rensselaer	36083040400	Low-Income Community	2011–2015
New York	Rensselaer	36083040700	Low-Income Community	2011–2015
New York	Rensselaer	36083040800	Low-Income Community	2011–2015
New York	Rensselaer	36083051500	Low-Income Community	2011–2015
New York	Richmond	36085000300	Non-LIC Contiguous	2011–2015
New York	Richmond	36085000700	Low-Income Community	2011–2015
New York	Richmond	36085001100	Low-Income Community	2011–2015
New York	Richmond	36085002100	Low-Income Community	2011–2015
New York	Richmond	36085013301	Low-Income Community	2011–2015
New York	Richmond	36085020700	Low-Income Community	2011–2015
New York	Richmond	36085022300	Low-Income Community	2011–2015
New York	Richmond	36085031902	Low-Income Community	2011–2015
New York	Rockland	36087010702	Low-Income Community	2011–2015
New York	Rockland	36087010703	Low-Income Community	2011–2015
New York	St. Lawrence	36089490100	Low-Income Community	2011–2015
New York	St. Lawrence	36089490200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	St. Lawrence	36089490300	Low-Income Community	2011–2015
New York	St. Lawrence	36089490900	Low-Income Community	2011–2015
New York	St. Lawrence	36089491400	Low-Income Community	2011–2015
New York	St. Lawrence	36089491500	Low-Income Community	2011–2015
New York	St. Lawrence	36089491600	Low-Income Community	2011–2015
New York	Saratoga	36091060400	Low-Income Community	2011–2015
New York	Schenectady	36093020200	Low-Income Community	2011–2015
New York	Schenectady	36093021001	Low-Income Community	2011–2015
New York	Schenectady	36093033500	Low-Income Community	2011–2015
New York	Schoharie	36095740200	Non-LIC Contiguous	2011–2015
New York	Schoharie	36095740400	Low-Income Community	2011–2015
New York	Schuyler	36097950300	Low-Income Community	2011–2015
New York	Schuyler	36097950500	Low-Income Community	2011–2015
New York	Seneca	36099950600	Low-Income Community	2011–2015
New York	Steuben	36101960700	Low-Income Community	2011–2015
New York	Steuben	36101960800	Low-Income Community	2011–2015
New York	Suffolk	36103110902	Low-Income Community	2011–2015
New York	Suffolk	36103122501	Low-Income Community	2011–2015
New York	Suffolk	36103146203	Low-Income Community	2011–2015
New York	Suffolk	36103159103	Low-Income Community	2011–2015
New York	Suffolk	36103169704	Non-LIC Contiguous	2011–2015
New York	Suffolk	36103169800	Low-Income Community	2011–2015
New York	Sullivan	36105950700	Low-Income Community	2011–2015
New York	Sullivan	36105951500	Low-Income Community	2011–2015
New York	Sullivan	36105951800	Low-Income Community	2011–2015
New York	Tioga	36107020600	Non-LIC Contiguous	2011–2015
New York	Tioga	36107020701	Low-Income Community	2011–2015
New York	Tompkins	36109000800	Low-Income Community	2011–2015
New York	Tompkins	36109001100	Low-Income Community	2011–2015
New York	Ulster	36111951700	Low-Income Community	2011–2015
New York	Ulster	36111952100	Low-Income Community	2011–2015
New York	Ulster	36111952400	Low-Income Community	2011–2015
New York	Ulster	36111954800	Low-Income Community	2011–2015
New York	Warren	36113070200	Low-Income Community	2011–2015
New York	Warren	36113074000	Low-Income Community	2011–2015
New York	Washington	36115088000	Low-Income Community	2011–2015
New York	Wayne	36117021100	Low-Income Community	2011–2015
New York	Wayne	36117021200	Low-Income Community	2011–2015
New York	Westchester	36119000300	Low-Income Community	2011–2015
New York	Westchester	36119000401	Low-Income Community	2011–2015
New York	Westchester	36119000600	Low-Income Community	2011–2015
New York	Westchester	36119003100	Low-Income Community	2011–2015
New York	Westchester	36119005800	Low-Income Community	2011–2015
New York	Westchester	36119006100	Low-Income Community	2011–2015
New York	Westchester	36119007900	Low-Income Community	2011–2015
New York	Westchester	36119008000	Low-Income Community	2011–2015
New York	Westchester	36119009300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
New York	Westchester	36119014300	Low-Income Community	2011–2015
New York	Westchester	36119981000	Low-Income Community	2011–2015
New York	Westchester	36119984000	Low-Income Community	2011–2015
New York	Wyoming	36121970500	Low-Income Community	2011–2015
North Carolina	Alamance	37001020300	Low-Income Community	2011–2015
North Carolina	Alamance	37001020801	Low-Income Community	2011–2015
North Carolina	Alamance	37001021000	Low-Income Community	2011–2015
North Carolina	Alamance	37001021201	Low-Income Community	2011–2015
North Carolina	Alexander	37003040400	Low-Income Community	2011–2015
North Carolina	Alleghany	37005950200	Low-Income Community	2011–2015
North Carolina	Anson	37007920500	Low-Income Community	2011–2015
North Carolina	Ashe	37009970400	Low-Income Community	2011–2015
North Carolina	Avery	37011930302	Low-Income Community	2011–2015
North Carolina	Beaufort	37013930400	Low-Income Community	2011–2015
North Carolina	Bertie	37015960200	Low-Income Community	2011–2015
North Carolina	Bladen	37017950400	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020101	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020104	Low-Income Community	2011–2015
North Carolina	Brunswick	37019020602	Non-LIC Contiguous	2011–2015
North Carolina	Buncombe	37021000200	Low-Income Community	2011–2015
North Carolina	Buncombe	37021000700	Low-Income Community	2011–2015
North Carolina	Buncombe	37021000900	Low-Income Community	2011–2015
North Carolina	Buncombe	37021001400	Low-Income Community	2011–2015
North Carolina	Buncombe	37021002000	Low-Income Community	2011–2015
North Carolina	Burke	37023020301	Non-LIC Contiguous	2011–2015
North Carolina	Burke	37023021100	Low-Income Community	2011–2015
North Carolina	Burke	37023021400	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025041000	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025041902	Low-Income Community	2011–2015
North Carolina	Cabarrus	37025042300	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030100	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030300	Low-Income Community	2011–2015
North Carolina	Caldwell	37027030800	Low-Income Community	2011–2015
North Carolina	Caldwell	37027031100	Low-Income Community	2011–2015
North Carolina	Camden	37029950102	Non-LIC Contiguous	2011–2015
North Carolina	Carteret	37031970304	Low-Income Community	2011–2015
North Carolina	Carteret	37031970501	Low-Income Community	2011–2015
North Carolina	Caswell	37033930300	Low-Income Community	2011–2015
North Carolina	Catawba	37035010900	Low-Income Community	2011–2015
North Carolina	Catawba	37035011300	Low-Income Community	2011–2015
North Carolina	Chatham	37037020300	Low-Income Community	2011–2015
North Carolina	Chatham	37037020600	Low-Income Community	2011–2015
North Carolina	Chatham	37037020702	Non-LIC Contiguous	2011–2015
North Carolina	Cherokee	37039930200	Low-Income Community	2011–2015
North Carolina	Chowan	37041930200	Low-Income Community	2011–2015
North Carolina	Clay	37043950200	Low-Income Community	2011–2015
North Carolina	Cleveland	37045950500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Cleveland	37045951000	Low-Income Community	2011–2015
North Carolina	Columbus	37047930600	Low-Income Community	2011–2015
North Carolina	Columbus	37047930900	Low-Income Community	2011–2015
North Carolina	Columbus	37047931200	Low-Income Community	2011–2015
North Carolina	Craven	37049960900	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000200	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000500	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000702	Low-Income Community	2011–2015
North Carolina	Cumberland	37051000800	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001000	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001100	Low-Income Community	2011–2015
North Carolina	Cumberland	37051001604	Low-Income Community	2011–2015
North Carolina	Cumberland	37051003203	Low-Income Community	2011–2015
North Carolina	Cumberland	37051003800	Low-Income Community	2011–2015
North Carolina	Currituck	37053110302	Low-Income Community	2011–2015
North Carolina	Dare	37055970501	Low-Income Community	2011–2015
North Carolina	Davidson	37057060700	Low-Income Community	2011–2015
North Carolina	Davidson	37057061400	Low-Income Community	2011–2015
North Carolina	Davie	37059080500	Low-Income Community	2011–2015
North Carolina	Duplin	37061090300	Low-Income Community	2011–2015
North Carolina	Duplin	37061090702	Low-Income Community	2011–2015
North Carolina	Durham	37063001001	Low-Income Community	2011–2015
North Carolina	Durham	37063001100	Low-Income Community	2011–2015
North Carolina	Durham	37063001304	Low-Income Community	2011–2015
North Carolina	Durham	37063001400	Low-Income Community	2011–2015
North Carolina	Durham	37063001502	Low-Income Community	2011–2015
North Carolina	Durham	37063002016	Low-Income Community	2011–2015
North Carolina	Durham	37063002300	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020200	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020400	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065020900	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065021000	Low-Income Community	2011–2015
North Carolina	Edgecombe	37065021300	Non-LIC Contiguous	2011–2015
North Carolina	Forsyth	37067000100	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000200	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000301	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000302	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000700	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000801	Low-Income Community	2011–2015
North Carolina	Forsyth	37067000802	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001400	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001602	Low-Income Community	2011–2015
North Carolina	Forsyth	37067001700	Low-Income Community	2011–2015
North Carolina	Forsyth	37067003313	Low-Income Community	2011–2015
North Carolina	Franklin	37069060600	Non-LIC Contiguous	2011–2015
North Carolina	Franklin	37069060802	Low-Income Community	2011–2015
North Carolina	Gaston	37071030601	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Gaston	37071031302	Low-Income Community	2011–2015
North Carolina	Gaston	37071031401	Low-Income Community	2011–2015
North Carolina	Gaston	37071031500	Low-Income Community	2011–2015
North Carolina	Gaston	37071031600	Low-Income Community	2011–2015
North Carolina	Gaston	37071031900	Low-Income Community	2011–2015
North Carolina	Gaston	37071032000	Low-Income Community	2011–2015
North Carolina	Gaston	37071032200	Low-Income Community	2011–2015
North Carolina	Gaston	37071033400	Low-Income Community	2011–2015
North Carolina	Gates	37073970200	Non-LIC Contiguous	2011–2015
North Carolina	Graham	37075920300	Low-Income Community	2011–2015
North Carolina	Granville	37077970300	Low-Income Community	2011–2015
North Carolina	Greene	37079950101	Low-Income Community	2011–2015
North Carolina	Guilford	37081010200	Low-Income Community	2011–2015
North Carolina	Guilford	37081010300	Low-Income Community	2011–2015
North Carolina	Guilford	37081010800	Low-Income Community	2011–2015
North Carolina	Guilford	37081011000	Low-Income Community	2011–2015
North Carolina	Guilford	37081011101	Low-Income Community	2011–2015
North Carolina	Guilford	37081011102	Low-Income Community	2011–2015
North Carolina	Guilford	37081011200	Low-Income Community	2011–2015
North Carolina	Guilford	37081011300	Low-Income Community	2011–2015
North Carolina	Guilford	37081011400	Low-Income Community	2011–2015
North Carolina	Guilford	37081012803	Low-Income Community	2011–2015
North Carolina	Guilford	37081013800	Low-Income Community	2011–2015
North Carolina	Guilford	37081014300	Low-Income Community	2011–2015
North Carolina	Halifax	37083930400	Low-Income Community	2011–2015
North Carolina	Halifax	37083930900	Low-Income Community	2011–2015
North Carolina	Harnett	37085070100	Low-Income Community	2011–2015
North Carolina	Harnett	37085070200	Low-Income Community	2011–2015
North Carolina	Harnett	37085070801	Low-Income Community	2011–2015
North Carolina	Haywood	37087920300	Low-Income Community	2011–2015
North Carolina	Henderson	37089931000	Low-Income Community	2011–2015
North Carolina	Hertford	37091950100	Low-Income Community	2011–2015
North Carolina	Hoke	37093970300	Low-Income Community	2011–2015
North Carolina	Hyde	37095920100	Low-Income Community	2011–2015
North Carolina	Iredell	37097060100	Low-Income Community	2011–2015
North Carolina	Iredell	37097060200	Low-Income Community	2011–2015
North Carolina	Iredell	37097061301	Low-Income Community	2011–2015
North Carolina	Jackson	37099950600	Low-Income Community	2011–2015
North Carolina	Johnston	37101040301	Low-Income Community	2011–2015
North Carolina	Johnston	37101040400	Low-Income Community	2011–2015
North Carolina	Johnston	37101040901	Low-Income Community	2011–2015
North Carolina	Johnston	37101041001	Low-Income Community	2011–2015
North Carolina	Jones	37103920100	Low-Income Community	2011–2015
North Carolina	Lee	37105030200	Low-Income Community	2011–2015
North Carolina	Lenoir	37107010100	Low-Income Community	2011–2015
North Carolina	Lenoir	37107010800	Non-LIC Contiguous	2011–2015
North Carolina	Lenoir	37107010900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Lincoln	37109070800	Low-Income Community	2011–2015
North Carolina	McDowell	37111970500	Low-Income Community	2011–2015
North Carolina	McDowell	37111970700	Low-Income Community	2011–2015
North Carolina	Macon	37113970301	Low-Income Community	2011–2015
North Carolina	Madison	37115010200	Low-Income Community	2011–2015
North Carolina	Martin	37117970200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001606	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001607	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119001702	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119003902	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119003903	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004000	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004100	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004500	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004600	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004700	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119004800	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005100	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005200	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005301	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005305	Low-Income Community	2011–2015
North Carolina	Mecklenburg	37119005306	Low-Income Community	2011–2015
North Carolina	Mitchell	37121950300	Low-Income Community	2011–2015
North Carolina	Montgomery	37123960100	Low-Income Community	2011–2015
North Carolina	Moore	37125950200	Low-Income Community	2011–2015
North Carolina	Nash	37127010400	Low-Income Community	2011–2015
North Carolina	Nash	37127011500	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011000	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011100	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011200	Low-Income Community	2011–2015
North Carolina	New Hanover	37129011903	Low-Income Community	2011–2015
North Carolina	Northampton	37131920401	Low-Income Community	2011–2015
North Carolina	Onslow	37133001101	Low-Income Community	2011–2015
North Carolina	Onslow	37133002600	Low-Income Community	2011–2015
North Carolina	Orange	37135011400	Low-Income Community	2011–2015
North Carolina	Pamlico	37137950102	Low-Income Community	2011–2015
North Carolina	Pasquotank	37139960100	Low-Income Community	2011–2015
North Carolina	Pasquotank	37139960200	Low-Income Community	2011–2015
North Carolina	Pender	37141920601	Low-Income Community	2011–2015
North Carolina	Pender	37141920602	Low-Income Community	2011–2015
North Carolina	Perquimans	37143920201	Low-Income Community	2011–2015
North Carolina	Person	37145920100	Low-Income Community	2011–2015
North Carolina	Person	37145920200	Low-Income Community	2011–2015
North Carolina	Pitt	37147000701	Low-Income Community	2011–2015
North Carolina	Pitt	37147000702	Low-Income Community	2011–2015
North Carolina	Pitt	37147000800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Pitt	37147000900	Low-Income Community	2011–2015
North Carolina	Pitt	37147001800	Low-Income Community	2011–2015
North Carolina	Polk	37149920200	Non-LIC Contiguous	2011–2015
North Carolina	Randolph	37151031000	Low-Income Community	2011–2015
North Carolina	Randolph	37151031200	Low-Income Community	2011–2015
North Carolina	Randolph	37151031400	Low-Income Community	2011–2015
North Carolina	Richmond	37153970300	Low-Income Community	2011–2015
North Carolina	Richmond	37153971100	Low-Income Community	2011–2015
North Carolina	Robeson	37155960101	Low-Income Community	2011–2015
North Carolina	Robeson	37155960102	Low-Income Community	2011–2015
North Carolina	Robeson	37155960201	Low-Income Community	2011–2015
North Carolina	Robeson	37155960401	Low-Income Community	2011–2015
North Carolina	Robeson	37155960502	Low-Income Community	2011–2015
North Carolina	Robeson	37155960600	Low-Income Community	2011–2015
North Carolina	Robeson	37155960801	Low-Income Community	2011–2015
North Carolina	Rockingham	37157040200	Low-Income Community	2011–2015
North Carolina	Rockingham	37157040900	Low-Income Community	2011–2015
North Carolina	Rockingham	37157041300	Low-Income Community	2011–2015
North Carolina	Rowan	37159050201	Low-Income Community	2011–2015
North Carolina	Rowan	37159050202	Low-Income Community	2011–2015
North Carolina	Rowan	37159050800	Low-Income Community	2011–2015
North Carolina	Rowan	37159051700	Low-Income Community	2011–2015
North Carolina	Rowan	37159052000	Low-Income Community	2011–2015
North Carolina	Rutherford	37161960200	Low-Income Community	2011–2015
North Carolina	Rutherford	37161960900	Low-Income Community	2011–2015
North Carolina	Rutherford	37161961101	Low-Income Community	2011–2015
North Carolina	Sampson	37163970100	Low-Income Community	2011–2015
North Carolina	Sampson	37163970600	Low-Income Community	2011–2015
North Carolina	Scotland	37165010400	Low-Income Community	2011–2015
North Carolina	Stanly	37167931000	Low-Income Community	2011–2015
North Carolina	Stokes	37169070501	Low-Income Community	2011–2015
North Carolina	Surry	37171930400	Low-Income Community	2011–2015
North Carolina	Surry	37171930600	Low-Income Community	2011–2015
North Carolina	Surry	37171931002	Low-Income Community	2011–2015
North Carolina	Swain	37173960200	Low-Income Community	2011–2015
North Carolina	Transylvania	37175960100	Low-Income Community	2011–2015
North Carolina	Tyrrell	37177960100	Low-Income Community	2011–2015
North Carolina	Union	37179020601	Low-Income Community	2011–2015
North Carolina	Union	37179020602	Low-Income Community	2011–2015
North Carolina	Vance	37181960500	Low-Income Community	2011–2015
North Carolina	Wake	37183050900	Low-Income Community	2011–2015
North Carolina	Wake	37183052407	Low-Income Community	2011–2015
North Carolina	Wake	37183052704	Low-Income Community	2011–2015
North Carolina	Wake	37183052706	Low-Income Community	2011–2015
North Carolina	Wake	37183052803	Low-Income Community	2011–2015
North Carolina	Wake	37183052807	Low-Income Community	2011–2015
North Carolina	Wake	37183053009	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
North Carolina	Wake	37183053519	Low-Income Community	2011–2015
North Carolina	Wake	37183054008	Low-Income Community	2011–2015
North Carolina	Wake	37183054018	Low-Income Community	2011–2015
North Carolina	Wake	37183054108	Low-Income Community	2011–2015
North Carolina	Wake	37183054112	Low-Income Community	2011–2015
North Carolina	Wake	37183054500	Low-Income Community	2011–2015
North Carolina	Warren	37185950200	Low-Income Community	2011–2015
North Carolina	Washington	37187950200	Low-Income Community	2011–2015
North Carolina	Watauga	37189920601	Low-Income Community	2011–2015
North Carolina	Wayne	37191000901	Low-Income Community	2011–2015
North Carolina	Wayne	37191001500	Low-Income Community	2011–2015
North Carolina	Wayne	37191001800	Low-Income Community	2011–2015
North Carolina	Wayne	37191001900	Low-Income Community	2011–2015
North Carolina	Wilkes	37193960600	Low-Income Community	2011–2015
North Carolina	Wilkes	37193961001	Non-LIC Contiguous	2011–2015
North Carolina	Wilkes	37193961100	Low-Income Community	2011–2015
North Carolina	Wilson	37195000100	Low-Income Community	2011–2015
North Carolina	Wilson	37195000801	Low-Income Community	2011–2015
North Carolina	Wilson	37195001100	Non-LIC Contiguous	2011–2015
North Carolina	Yadkin	37197050501	Low-Income Community	2011–2015
North Carolina	Yancey	37199960300	Low-Income Community	2011–2015
North Dakota	Barnes	38003968200	Low-Income Community	2011–2015
North Dakota	Benson	38005940100	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010100	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010200	Low-Income Community	2011–2015
North Dakota	Burleigh	38015010800	Low-Income Community	2011–2015
North Dakota	Cass	38017000501	Low-Income Community	2011–2015
North Dakota	Cass	38017000502	Low-Income Community	2011–2015
North Dakota	Cass	38017000600	Low-Income Community	2011–2015
North Dakota	Cass	38017000700	Low-Income Community	2011–2015
North Dakota	Cass	38017010107	Low-Income Community	2011–2015
North Dakota	Dickey	38021973400	Low-Income Community	2011–2015
North Dakota	Emmons	38029966500	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010100	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010200	Low-Income Community	2011–2015
North Dakota	Grand Forks	38035010600	Low-Income Community	2012–2016
North Dakota	McKenzie	38053940100	Low-Income Community	2011–2015
North Dakota	Morton	38059020500	Low-Income Community	2011–2015
North Dakota	Rolette	38079941800	Low-Income Community	2011–2015
North Dakota	Rolette	38079951600	Low-Income Community	2011–2015
North Dakota	Rolette	38079951700	Low-Income Community	2011–2015
North Dakota	Sioux	38085940900	Low-Income Community	2011–2015
North Dakota	Stutsman	38093967800	Low-Income Community	2011–2015
North Dakota	Walsh	38099958000	Low-Income Community	2011–2015
North Dakota	Ward	38101010100	Low-Income Community	2012–2016
North Dakota	Wells	38103959800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Northern Mariana Islands	Rota	69100950100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000200	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000300	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000400	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000500	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000600	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000700	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000800	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110000900	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001000	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001100	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001200	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001300	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001400	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001500	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001600	Low-Income Community	2011–2015
Northern Mariana Islands	Saipan	69110001700	Low-Income Community	2011–2015
Northern Mariana Islands	Tinian	69120950101	Low-Income Community	2011–2015
Northern Mariana Islands	Tinian	69120950200	Low-Income Community	2011–2015
Ohio	Adams	39001770200	Low-Income Community	2011–2015
Ohio	Allen	39003012600	Low-Income Community	2011–2015
Ohio	Allen	39003012900	Low-Income Community	2011–2015
Ohio	Allen	39003014100	Low-Income Community	2011–2015
Ohio	Ashtabula	39007000103	Low-Income Community	2011–2015
Ohio	Ashtabula	39007000400	Low-Income Community	2011–2015
Ohio	Athens	39009972800	Low-Income Community	2011–2015
Ohio	Athens	39009973400	Low-Income Community	2011–2015
Ohio	Athens	39009973800	Low-Income Community	2011–2015
Ohio	Athens	39009973902	Low-Income Community	2011–2015
Ohio	Belmont	39013010802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Belmont	39013011700	Low-Income Community	2011–2015
Ohio	Brown	39015951202	Low-Income Community	2011–2015
Ohio	Brown	39015951300	Low-Income Community	2011–2015
Ohio	Butler	39017000300	Low-Income Community	2011–2015
Ohio	Butler	39017010906	Low-Income Community	2011–2015
Ohio	Butler	39017010909	Low-Income Community	2011–2015
Ohio	Butler	39017012200	Low-Income Community	2011–2015
Ohio	Butler	39017014700	Low-Income Community	2011–2015
Ohio	Carroll	39019720500	Low-Income Community	2011–2015
Ohio	Champaign	39021010500	Low-Income Community	2011–2015
Ohio	Clark	39023000200	Low-Income Community	2011–2015
Ohio	Clark	39023000300	Low-Income Community	2011–2015
Ohio	Clark	39023000901	Low-Income Community	2011–2015
Ohio	Clark	39023003400	Low-Income Community	2011–2015
Ohio	Clermont	39025040900	Low-Income Community	2011–2015
Ohio	Clermont	39025041306	Low-Income Community	2011–2015
Ohio	Clinton	39027964700	Low-Income Community	2011–2015
Ohio	Columbiana	39029951800	Low-Income Community	2011–2015
Ohio	Crawford	39033974400	Low-Income Community	2011–2015
Ohio	Crawford	39033974900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103602	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035103900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035104900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035105500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035107802	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035108301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035108701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035111202	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035112301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035112800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035113801	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114501	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035114600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Cuyahoga	39035114700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035116600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035117800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118101	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118400	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118500	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118602	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118700	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035118900	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119100	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119202	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119300	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035119600	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035133103	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035133104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035138105	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035140301	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152303	Low-Income Community	2012–2016
Ohio	Cuyahoga	39035152502	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152603	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035152701	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035154501	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035171102	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035180104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188104	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188105	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035188107	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035193800	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035196200	Low-Income Community	2011–2015
Ohio	Cuyahoga	39035196500	Low-Income Community	2011–2015
Ohio	Defiance	39039958500	Low-Income Community	2011–2015
Ohio	Defiance	39039958600	Low-Income Community	2011–2015
Ohio	Erie	39043040500	Low-Income Community	2011–2015
Ohio	Erie	39043040800	Low-Income Community	2011–2015
Ohio	Fairfield	39045031700	Low-Income Community	2011–2015
Ohio	Fairfield	39045032200	Low-Income Community	2011–2015
Ohio	Fayette	39047926200	Low-Income Community	2011–2015
Ohio	Franklin	39049000720	Low-Income Community	2011–2015
Ohio	Franklin	39049001122	Low-Income Community	2011–2015
Ohio	Franklin	39049001400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Franklin	39049001600	Low-Income Community	2011–2015
Ohio	Franklin	39049001700	Low-Income Community	2011–2015
Ohio	Franklin	39049002300	Low-Income Community	2011–2015
Ohio	Franklin	39049002800	Low-Income Community	2011–2015
Ohio	Franklin	39049002900	Low-Income Community	2011–2015
Ohio	Franklin	39049003600	Low-Income Community	2011–2015
Ohio	Franklin	39049003700	Low-Income Community	2011–2015
Ohio	Franklin	39049003800	Low-Income Community	2011–2015
Ohio	Franklin	39049004200	Low-Income Community	2011–2015
Ohio	Franklin	39049004300	Low-Income Community	2011–2015
Ohio	Franklin	39049004900	Low-Income Community	2011–2015
Ohio	Franklin	39049005000	Low-Income Community	2011–2015
Ohio	Franklin	39049005100	Low-Income Community	2011–2015
Ohio	Franklin	39049005300	Low-Income Community	2011–2015
Ohio	Franklin	39049005500	Low-Income Community	2011–2015
Ohio	Franklin	39049005610	Low-Income Community	2011–2015
Ohio	Franklin	39049005620	Low-Income Community	2011–2015
Ohio	Franklin	39049006000	Low-Income Community	2011–2015
Ohio	Franklin	39049006933	Low-Income Community	2011–2015
Ohio	Franklin	39049007043	Low-Income Community	2011–2015
Ohio	Franklin	39049007531	Low-Income Community	2011–2015
Ohio	Franklin	39049007534	Low-Income Community	2011–2015
Ohio	Franklin	39049007550	Low-Income Community	2011–2015
Ohio	Franklin	39049007710	Low-Income Community	2011–2015
Ohio	Franklin	39049007721	Low-Income Community	2011–2015
Ohio	Franklin	39049007812	Low-Income Community	2011–2015
Ohio	Franklin	39049007820	Low-Income Community	2011–2015
Ohio	Franklin	39049008110	Low-Income Community	2011–2015
Ohio	Franklin	39049008210	Low-Income Community	2011–2015
Ohio	Franklin	39049008230	Low-Income Community	2011–2015
Ohio	Franklin	39049008811	Low-Income Community	2011–2015
Ohio	Franklin	39049008812	Low-Income Community	2011–2015
Ohio	Franklin	39049008821	Low-Income Community	2011–2015
Ohio	Franklin	39049009210	Low-Income Community	2011–2015
Ohio	Franklin	39049009325	Low-Income Community	2011–2015
Ohio	Franklin	39049009383	Low-Income Community	2011–2015
Ohio	Franklin	39049009590	Low-Income Community	2011–2015
Ohio	Franklin	39049009600	Low-Income Community	2011–2015
Ohio	Franklin	39049009900	Low-Income Community	2011–2015
Ohio	Franklin	39049010300	Low-Income Community	2011–2015
Ohio	Gallia	39053953600	Low-Income Community	2011–2015
Ohio	Geauga	39055312400	Low-Income Community	2011–2015
Ohio	Greene	39057240200	Low-Income Community	2011–2015
Ohio	Greene	39057240600	Low-Income Community	2011–2015
Ohio	Guernsey	39059977900	Low-Income Community	2011–2015
Ohio	Hamilton	39061000200	Low-Income Community	2011–2015
Ohio	Hamilton	39061000900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Hamilton	39061001000	Low-Income Community	2011–2015
Ohio	Hamilton	39061001100	Low-Income Community	2011–2015
Ohio	Hamilton	39061001600	Low-Income Community	2011–2015
Ohio	Hamilton	39061001700	Low-Income Community	2011–2015
Ohio	Hamilton	39061002800	Low-Income Community	2011–2015
Ohio	Hamilton	39061003800	Low-Income Community	2011–2015
Ohio	Hamilton	39061005500	Low-Income Community	2011–2015
Ohio	Hamilton	39061006300	Low-Income Community	2011–2015
Ohio	Hamilton	39061006400	Low-Income Community	2011–2015
Ohio	Hamilton	39061006800	Low-Income Community	2011–2015
Ohio	Hamilton	39061006900	Low-Income Community	2011–2015
Ohio	Hamilton	39061007400	Low-Income Community	2011–2015
Ohio	Hamilton	39061007700	Low-Income Community	2011–2015
Ohio	Hamilton	39061007800	Low-Income Community	2011–2015
Ohio	Hamilton	39061008202	Low-Income Community	2011–2015
Ohio	Hamilton	39061008601	Low-Income Community	2011–2015
Ohio	Hamilton	39061009200	Low-Income Community	2011–2015
Ohio	Hamilton	39061009400	Low-Income Community	2011–2015
Ohio	Hamilton	39061021504	Low-Income Community	2011–2015
Ohio	Hamilton	39061022700	Low-Income Community	2011–2015
Ohio	Hamilton	39061025600	Low-Income Community	2011–2015
Ohio	Hamilton	39061026300	Low-Income Community	2011–2015
Ohio	Hamilton	39061026400	Low-Income Community	2011–2015
Ohio	Hamilton	39061026500	Low-Income Community	2011–2015
Ohio	Hamilton	39061027000	Low-Income Community	2011–2015
Ohio	Hamilton	39061027100	Low-Income Community	2011–2015
Ohio	Hamilton	39061027200	Low-Income Community	2011–2015
Ohio	Hamilton	39061027400	Low-Income Community	2011–2015
Ohio	Hancock	39063000100	Low-Income Community	2011–2015
Ohio	Harrison	39067975600	Low-Income Community	2011–2015
Ohio	Henry	39069000400	Low-Income Community	2011–2015
Ohio	Highland	39071954400	Low-Income Community	2011–2015
Ohio	Highland	39071954800	Low-Income Community	2011–2015
Ohio	Hocking	39073965200	Low-Income Community	2011–2015
Ohio	Holmes	39075976600	Low-Income Community	2011–2015
Ohio	Jackson	39079957200	Low-Income Community	2011–2015
Ohio	Jackson	39079957700	Low-Income Community	2011–2015
Ohio	Jefferson	39081000800	Low-Income Community	2011–2015
Ohio	Jefferson	39081011800	Low-Income Community	2011–2015
Ohio	Jefferson	39081012300	Low-Income Community	2011–2015
Ohio	Knox	39083007100	Low-Income Community	2011–2015
Ohio	Lake	39085204000	Low-Income Community	2011–2015
Ohio	Lake	39085204500	Low-Income Community	2011–2015
Ohio	Lawrence	39087050200	Low-Income Community	2011–2015
Ohio	Lawrence	39087050700	Low-Income Community	2011–2015
Ohio	Licking	39089753100	Low-Income Community	2011–2015
Ohio	Licking	39089758300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Logan	39091004500	Low-Income Community	2011–2015
Ohio	Lorain	39093022400	Low-Income Community	2011–2015
Ohio	Lorain	39093023000	Low-Income Community	2011–2015
Ohio	Lorain	39093023100	Low-Income Community	2011–2015
Ohio	Lorain	39093070800	Low-Income Community	2011–2015
Ohio	Lorain	39093097300	Low-Income Community	2011–2015
Ohio	Lucas	39095000800	Low-Income Community	2011–2015
Ohio	Lucas	39095001303	Low-Income Community	2012–2016
Ohio	Lucas	39095001400	Low-Income Community	2011–2015
Ohio	Lucas	39095001500	Low-Income Community	2011–2015
Ohio	Lucas	39095001600	Low-Income Community	2011–2015
Ohio	Lucas	39095001700	Low-Income Community	2011–2015
Ohio	Lucas	39095002200	Low-Income Community	2011–2015
Ohio	Lucas	39095002300	Low-Income Community	2011–2015
Ohio	Lucas	39095002600	Low-Income Community	2011–2015
Ohio	Lucas	39095002700	Low-Income Community	2011–2015
Ohio	Lucas	39095002800	Low-Income Community	2011–2015
Ohio	Lucas	39095002900	Low-Income Community	2011–2015
Ohio	Lucas	39095003300	Low-Income Community	2011–2015
Ohio	Lucas	39095003700	Low-Income Community	2011–2015
Ohio	Lucas	39095004600	Low-Income Community	2011–2015
Ohio	Lucas	39095004701	Low-Income Community	2011–2015
Ohio	Lucas	39095005400	Low-Income Community	2011–2015
Ohio	Mahoning	39099800600	Low-Income Community	2011–2015
Ohio	Mahoning	39099801300	Low-Income Community	2011–2015
Ohio	Mahoning	39099804000	Low-Income Community	2011–2015
Ohio	Mahoning	39099810200	Low-Income Community	2011–2015
Ohio	Mahoning	39099810800	Low-Income Community	2011–2015
Ohio	Mahoning	39099811100	Non-LIC Contiguous	2011–2015
Ohio	Mahoning	39099812400	Low-Income Community	2011–2015
Ohio	Mahoning	39099813700	Low-Income Community	2011–2015
Ohio	Mahoning	39099814000	Low-Income Community	2011–2015
Ohio	Mahoning	39099814100	Low-Income Community	2011–2015
Ohio	Marion	39101000100	Low-Income Community	2011–2015
Ohio	Medina	39103408201	Low-Income Community	2011–2015
Ohio	Medina	39103411002	Low-Income Community	2011–2015
Ohio	Meigs	39105964400	Low-Income Community	2011–2015
Ohio	Mercer	39107967400	Low-Income Community	2011–2015
Ohio	Miami	39109315300	Low-Income Community	2011–2015
Ohio	Monroe	39111966600	Low-Income Community	2011–2015
Ohio	Montgomery	39113000400	Low-Income Community	2011–2015
Ohio	Montgomery	39113000500	Low-Income Community	2011–2015
Ohio	Montgomery	39113000900	Low-Income Community	2011–2015
Ohio	Montgomery	39113001501	Low-Income Community	2011–2015
Ohio	Montgomery	39113001700	Low-Income Community	2011–2015
Ohio	Montgomery	39113001800	Low-Income Community	2011–2015
Ohio	Montgomery	39113001900	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Montgomery	39113002000	Low-Income Community	2011–2015
Ohio	Montgomery	39113003402	Low-Income Community	2011–2015
Ohio	Montgomery	39113003404	Low-Income Community	2011–2015
Ohio	Montgomery	39113003500	Low-Income Community	2011–2015
Ohio	Montgomery	39113004100	Low-Income Community	2011–2015
Ohio	Montgomery	39113004200	Low-Income Community	2011–2015
Ohio	Montgomery	39113004600	Low-Income Community	2011–2015
Ohio	Montgomery	39113070300	Low-Income Community	2011–2015
Ohio	Montgomery	39113080400	Low-Income Community	2011–2015
Ohio	Montgomery	39113165100	Low-Income Community	2011–2015
Ohio	Montgomery	39113165200	Low-Income Community	2011–2015
Ohio	Morgan	39115968900	Low-Income Community	2011–2015
Ohio	Muskingum	39119911800	Low-Income Community	2011–2015
Ohio	Muskingum	39119912100	Low-Income Community	2011–2015
Ohio	Noble	39121968500	Low-Income Community	2011–2015
Ohio	Perry	39127965900	Non-LIC Contiguous	2011–2015
Ohio	Perry	39127966200	Low-Income Community	2011–2015
Ohio	Pickaway	39129020400	Low-Income Community	2011–2015
Ohio	Pike	39131952300	Low-Income Community	2011–2015
Ohio	Portage	39133600603	Low-Income Community	2011–2015
Ohio	Richland	39139000500	Low-Income Community	2011–2015
Ohio	Richland	39139000600	Low-Income Community	2011–2015
Ohio	Richland	39139003100	Low-Income Community	2011–2015
Ohio	Ross	39141955603	Low-Income Community	2011–2015
Ohio	Ross	39141956300	Low-Income Community	2011–2015
Ohio	Ross	39141956500	Low-Income Community	2011–2015
Ohio	Sandusky	39143961600	Low-Income Community	2011–2015
Ohio	Scioto	39145002600	Low-Income Community	2011–2015
Ohio	Scioto	39145003100	Low-Income Community	2011–2015
Ohio	Scioto	39145003500	Low-Income Community	2011–2015
Ohio	Scioto	39145003600	Low-Income Community	2011–2015
Ohio	Seneca	39147963200	Low-Income Community	2011–2015
Ohio	Stark	39151700100	Low-Income Community	2011–2015
Ohio	Stark	39151700800	Low-Income Community	2011–2015
Ohio	Stark	39151701100	Low-Income Community	2011–2015
Ohio	Stark	39151701300	Low-Income Community	2011–2015
Ohio	Stark	39151710400	Low-Income Community	2011–2015
Ohio	Stark	39151711600	Non-LIC Contiguous	2011–2015
Ohio	Stark	39151714200	Low-Income Community	2011–2015
Ohio	Stark	39151715000	Low-Income Community	2011–2015
Ohio	Summit	39153502101	Low-Income Community	2011–2015
Ohio	Summit	39153502102	Low-Income Community	2011–2015
Ohio	Summit	39153502200	Low-Income Community	2011–2015
Ohio	Summit	39153503600	Low-Income Community	2011–2015
Ohio	Summit	39153503800	Low-Income Community	2011–2015
Ohio	Summit	39153505400	Low-Income Community	2011–2015
Ohio	Summit	39153505600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Ohio	Summit	39153505700	Low-Income Community	2011–2015
Ohio	Summit	39153505900	Low-Income Community	2011–2015
Ohio	Summit	39153506800	Low-Income Community	2011–2015
Ohio	Summit	39153508301	Low-Income Community	2011–2015
Ohio	Summit	39153508399	Low-Income Community	2011–2015
Ohio	Summit	39153508900	Low-Income Community	2011–2015
Ohio	Summit	39153510100	Low-Income Community	2011–2015
Ohio	Summit	39153510301	Low-Income Community	2011–2015
Ohio	Summit	39153520400	Low-Income Community	2011–2015
Ohio	Trumbull	39155920500	Low-Income Community	2011–2015
Ohio	Trumbull	39155921100	Low-Income Community	2011–2015
Ohio	Trumbull	39155921200	Low-Income Community	2011–2015
Ohio	Trumbull	39155933800	Low-Income Community	2011–2015
Ohio	Trumbull	39155933900	Low-Income Community	2011–2015
Ohio	Tuscarawas	39157021100	Low-Income Community	2011–2015
Ohio	Tuscarawas	39157022001	Low-Income Community	2011–2015
Ohio	Union	39159050500	Low-Income Community	2011–2015
Ohio	Van Wert	39161020600	Low-Income Community	2011–2015
Ohio	Van Wert	39161020700	Low-Income Community	2011–2015
Ohio	Vinton	39163953100	Low-Income Community	2011–2015
Ohio	Warren	39165030200	Low-Income Community	2011–2015
Ohio	Washington	39167020500	Low-Income Community	2011–2015
Ohio	Wayne	39169001200	Low-Income Community	2011–2015
Ohio	Wayne	39169003400	Low-Income Community	2011–2015
Ohio	Williams	39171950600	Low-Income Community	2011–2015
Ohio	Wood	39173021701	Low-Income Community	2011–2015
Ohio	Wyandot	39175938400	Low-Income Community	2011–2015
Oklahoma	Adair	40001376900	Low-Income Community	2011–2015
Oklahoma	Atoka	40005587700	Low-Income Community	2011–2015
Oklahoma	Blaine	40011958800	Low-Income Community	2012–2016
Oklahoma	Bryan	40013796300	Low-Income Community	2011–2015
Oklahoma	Bryan	40013796500	Low-Income Community	2011–2015
Oklahoma	Caddo	40015162100	Low-Income Community	2011–2015
Oklahoma	Carter	40019892800	Low-Income Community	2011–2015
Oklahoma	Cherokee	40021978100	Low-Income Community	2011–2015
Oklahoma	Choctaw	40023967200	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027200700	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027201203	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027201404	Low-Income Community	2011–2015
Oklahoma	Cleveland	40027202402	Non-LIC Contiguous	2011–2015
Oklahoma	Comanche	40031001902	Low-Income Community	2011–2015
Oklahoma	Comanche	40031002500	Low-Income Community	2011–2015
Oklahoma	Craig	40035373300	Low-Income Community	2011–2015
Oklahoma	Creek	40037020102	Low-Income Community	2011–2015
Oklahoma	Creek	40037021000	Low-Income Community	2011–2015
Oklahoma	Custer	40039950800	Low-Income Community	2011–2015
Oklahoma	Custer	40039960600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Delaware	40041376000	Low-Income Community	2011–2015
Oklahoma	Garfield	40047000100	Low-Income Community	2011–2015
Oklahoma	Garfield	40047001500	Low-Income Community	2011–2015
Oklahoma	Garvin	40049681400	Low-Income Community	2011–2015
Oklahoma	Grady	40051000100	Low-Income Community	2011–2015
Oklahoma	Jackson	40065968700	Low-Income Community	2011–2015
Oklahoma	Johnston	40069660200	Low-Income Community	2011–2015
Oklahoma	Kay	40071000100	Low-Income Community	2011–2015
Oklahoma	Kay	40071001301	Low-Income Community	2011–2015
Oklahoma	Kiowa	40075963700	Low-Income Community	2011–2015
Oklahoma	Latimer	40077087200	Low-Income Community	2011–2015
Oklahoma	Le Flore	40079040302	Low-Income Community	2011–2015
Oklahoma	Le Flore	40079040303	Non-LIC Contiguous	2011–2015
Oklahoma	Le Flore	40079040402	Low-Income Community	2011–2015
Oklahoma	Logan	40083600300	Low-Income Community	2011–2015
Oklahoma	Logan	40083600600	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098200	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098500	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098600	Low-Income Community	2011–2015
Oklahoma	McCurtain	40089098700	Low-Income Community	2011–2015
Oklahoma	McIntosh	40091779700	Low-Income Community	2011–2015
Oklahoma	McIntosh	40091780200	Low-Income Community	2011–2015
Oklahoma	Marshall	40095094801	Low-Income Community	2011–2015
Oklahoma	Marshall	40095094802	Non-LIC Contiguous	2011–2015
Oklahoma	Mayes	40097040400	Low-Income Community	2011–2015
Oklahoma	Muskogee	40101000400	Low-Income Community	2011–2015
Oklahoma	Muskogee	40101000600	Low-Income Community	2011–2015
Oklahoma	Okfuskee	40107080900	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109100400	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109101300	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109101500	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102500	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102600	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109102700	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103000	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103200	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103601	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103602	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103700	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109103800	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109105100	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109105300	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106100	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106912	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109106913	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109107303	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109108003	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Oklahoma	40109108207	Low-Income Community	2011–2015
Oklahoma	Oklahoma	40109109100	Low-Income Community	2011–2015
Oklahoma	Okmulgee	40111000100	Low-Income Community	2011–2015
Oklahoma	Okmulgee	40111000200	Low-Income Community	2011–2015
Oklahoma	Osage	40113940002	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574100	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574600	Low-Income Community	2011–2015
Oklahoma	Ottawa	40115574900	Low-Income Community	2011–2015
Oklahoma	Pawnee	40117957500	Low-Income Community	2011–2015
Oklahoma	Payne	40119010200	Low-Income Community	2011–2015
Oklahoma	Payne	40119010700	Low-Income Community	2011–2015
Oklahoma	Payne	40119011301	Low-Income Community	2012–2016
Oklahoma	Payne	40119011302	Low-Income Community	2011–2015
Oklahoma	Pittsburg	40121486400	Low-Income Community	2011–2015
Oklahoma	Pontotoc	40123089000	Low-Income Community	2011–2015
Oklahoma	Pontotoc	40123089100	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125500200	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125501001	Low-Income Community	2011–2015
Oklahoma	Pottawatomie	40125501300	Low-Income Community	2011–2015
Oklahoma	Rogers	40131050101	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583300	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583400	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583500	Low-Income Community	2011–2015
Oklahoma	Seminole	40133583600	Low-Income Community	2011–2015
Oklahoma	Sequoyah	40135030302	Low-Income Community	2011–2015
Oklahoma	Stephens	40137000600	Low-Income Community	2011–2015
Oklahoma	Tillman	40141070400	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000100	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143000900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143001000	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143001200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002100	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002301	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143002500	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143003400	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143004600	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143004900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143005900	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006200	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006600	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143006801	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143007402	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143007608	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143008001	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143008002	Low-Income Community	2011–2015
Oklahoma	Tulsa	40143009300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Oklahoma	Tulsa	40143011100	Low-Income Community	2011–2015
Oklahoma	Wagoner	40145030102	Low-Income Community	2011–2015
Oklahoma	Washington	40147000300	Low-Income Community	2011–2015
Oregon	Baker	41001950500	Low-Income Community	2011–2015
Oregon	Benton	41003000100	Low-Income Community	2011–2015
Oregon	Benton	41003010600	Low-Income Community	2011–2015
Oregon	Clackamas	41005022107	Low-Income Community	2011–2015
Oregon	Clackamas	41005022108	Low-Income Community	2011–2015
Oregon	Clackamas	41005022201	Low-Income Community	2011–2015
Oregon	Clackamas	41005022400	Non-LIC Contiguous	2011–2015
Oregon	Clackamas	41005022500	Low-Income Community	2011–2015
Oregon	Clackamas	41005024400	Low-Income Community	2012–2016
Oregon	Clatsop	41007950300	Low-Income Community	2011–2015
Oregon	Columbia	41009970700	Low-Income Community	2011–2015
Oregon	Coos	41011000300	Low-Income Community	2011–2015
Oregon	Coos	41011000504	Low-Income Community	2011–2015
Oregon	Crook	41013950300	Low-Income Community	2011–2015
Oregon	Curry	41015950100	Low-Income Community	2011–2015
Oregon	Deschutes	41017000900	Low-Income Community	2011–2015
Oregon	Deschutes	41017001500	Low-Income Community	2011–2015
Oregon	Deschutes	41017001600	Low-Income Community	2011–2015
Oregon	Deschutes	41017001800	Low-Income Community	2011–2015
Oregon	Douglas	41019010000	Low-Income Community	2011–2015
Oregon	Douglas	41019130000	Low-Income Community	2011–2015
Oregon	Harney	41025960100	Low-Income Community	2011–2015
Oregon	Hood River	41027950100	Non-LIC Contiguous	2011–2015
Oregon	Hood River	41027950300	Low-Income Community	2011–2015
Oregon	Jackson	41029000100	Low-Income Community	2011–2015
Oregon	Jackson	41029001200	Low-Income Community	2011–2015
Oregon	Jackson	41029001301	Low-Income Community	2011–2015
Oregon	Jefferson	41031940000	Low-Income Community	2011–2015
Oregon	Jefferson	41031960202	Low-Income Community	2011–2015
Oregon	Josephine	41033360500	Low-Income Community	2011–2015
Oregon	Klamath	41035970200	Low-Income Community	2011–2015
Oregon	Klamath	41035971800	Low-Income Community	2011–2015
Oregon	Lake	41037960200	Low-Income Community	2011–2015
Oregon	Lane	41039003302	Low-Income Community	2011–2015
Oregon	Lane	41039003600	Non-LIC Contiguous	2011–2015
Oregon	Lane	41039003700	Low-Income Community	2011–2015
Oregon	Lane	41039003900	Low-Income Community	2011–2015
Oregon	Lane	41039004300	Low-Income Community	2011–2015
Oregon	Lincoln	41041950304	Low-Income Community	2012–2016
Oregon	Linn	41043020100	Low-Income Community	2011–2015
Oregon	Linn	41043020400	Low-Income Community	2011–2015
Oregon	Malheur	41045970300	Low-Income Community	2011–2015
Oregon	Malheur	41045970500	Low-Income Community	2011–2015
Oregon	Marion	41047000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Oregon	Marion	41047000300	Low-Income Community	2011–2015
Oregon	Marion	41047001000	Low-Income Community	2011–2015
Oregon	Marion	41047010303	Non-LIC Contiguous	2011–2015
Oregon	Marion	41047010305	Low-Income Community	2011–2015
Oregon	Multnomah	41051001101	Low-Income Community	2011–2015
Oregon	Multnomah	41051002100	Low-Income Community	2011–2015
Oregon	Multnomah	41051002303	Low-Income Community	2011–2015
Oregon	Multnomah	41051005100	Low-Income Community	2011–2015
Oregon	Multnomah	41051005600	Low-Income Community	2011–2015
Oregon	Multnomah	41051005700	Non-LIC Contiguous	2011–2015
Oregon	Multnomah	41051007300	Low-Income Community	2011–2015
Oregon	Multnomah	41051008100	Low-Income Community	2011–2015
Oregon	Multnomah	41051008201	Low-Income Community	2011–2015
Oregon	Multnomah	41051009603	Low-Income Community	2011–2015
Oregon	Multnomah	41051009604	Low-Income Community	2011–2015
Oregon	Multnomah	41051009701	Low-Income Community	2011–2015
Oregon	Multnomah	41051009801	Low-Income Community	2011–2015
Oregon	Multnomah	41051010001	Low-Income Community	2011–2015
Oregon	Multnomah	41051010100	Low-Income Community	2011–2015
Oregon	Multnomah	41051010304	Low-Income Community	2011–2015
Oregon	Multnomah	41051010600	Low-Income Community	2011–2015
Oregon	Polk	41053005100	Low-Income Community	2011–2015
Oregon	Polk	41053020202	Low-Income Community	2011–2015
Oregon	Sherman	41055950100	Low-Income Community	2011–2015
Oregon	Tillamook	41057960200	Low-Income Community	2011–2015
Oregon	Umatilla	41059940000	Low-Income Community	2011–2015
Oregon	Umatilla	41059950200	Low-Income Community	2011–2015
Oregon	Umatilla	41059951000	Low-Income Community	2011–2015
Oregon	Union	41061970800	Low-Income Community	2011–2015
Oregon	Wasco	41065970400	Low-Income Community	2011–2015
Oregon	Wasco	41065970500	Low-Income Community	2011–2015
Oregon	Washington	41067030700	Low-Income Community	2011–2015
Oregon	Washington	41067030900	Low-Income Community	2011–2015
Oregon	Washington	41067031300	Low-Income Community	2011–2015
Oregon	Washington	41067031402	Low-Income Community	2011–2015
Oregon	Washington	41067032003	Low-Income Community	2011–2015
Oregon	Washington	41067032005	Low-Income Community	2011–2015
Oregon	Washington	41067032501	Low-Income Community	2011–2015
Oregon	Washington	41067033200	Low-Income Community	2011–2015
Oregon	Yamhill	41071030202	Low-Income Community	2011–2015
Oregon	Yamhill	41071030502	Low-Income Community	2011–2015
Oregon	Yamhill	41071030601	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003010300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003030500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003050100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003050900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003051100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Allegheny	42003120700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003130600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003202200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003250700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003250900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003261400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003261500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003270400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003271500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003290100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003290200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003300100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003401200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003403500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003424000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003462100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003462600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003463900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003464400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003481000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003486900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003492900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003499300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003499400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003504100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003508000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003509400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003512900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003513800	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003514000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003515200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003515300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003523100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003523200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003524000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003551900	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003552100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Allegheny	42003552200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003560600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561000	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561100	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561200	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003561700	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562300	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562400	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562500	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003562900	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007601200	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007601300	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007602800	Low-Income Community	2011–2015
Pennsylvania	Beaver	42007605700	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000100	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000400	Low-Income Community	2011–2015
Pennsylvania	Berks	42011000900	Low-Income Community	2011–2015
Pennsylvania	Berks	42011001300	Low-Income Community	2011–2015
Pennsylvania	Berks	42011002500	Low-Income Community	2011–2015
Pennsylvania	Berks	42011011200	Low-Income Community	2011–2015
Pennsylvania	Blair	42013100300	Low-Income Community	2011–2015
Pennsylvania	Blair	42013100700	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101700	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101800	Low-Income Community	2011–2015
Pennsylvania	Blair	42013101900	Low-Income Community	2011–2015
Pennsylvania	Bradford	42015951000	Low-Income Community	2011–2015
Pennsylvania	Bucks	42017100302	Low-Income Community	2011–2015
Pennsylvania	Bucks	42017100600	Low-Income Community	2011–2015
Pennsylvania	Butler	42019902400	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000100	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000200	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021000300	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021013400	Low-Income Community	2011–2015
Pennsylvania	Cambria	42021013500	Low-Income Community	2011–2015
Pennsylvania	Cameron	42023960100	Low-Income Community	2011–2015
Pennsylvania	Centre	42027010300	Low-Income Community	2011–2015
Pennsylvania	Centre	42027011100	Low-Income Community	2011–2015
Pennsylvania	Centre	42027012500	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305400	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305500	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305600	Low-Income Community	2011–2015
Pennsylvania	Chester	42029305700	Low-Income Community	2011–2015
Pennsylvania	Clarion	42031160102	Low-Income Community	2011–2015
Pennsylvania	Clarion	42031160600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Clearfield	42033330200	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033330300	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033331100	Low-Income Community	2011–2015
Pennsylvania	Clearfield	42033331200	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030100	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030600	Low-Income Community	2011–2015
Pennsylvania	Clinton	42035030700	Low-Income Community	2011–2015
Pennsylvania	Columbia	42037050600	Low-Income Community	2011–2015
Pennsylvania	Columbia	42037051200	Low-Income Community	2011–2015
Pennsylvania	Cumberland	42041012000	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020100	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020300	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043020600	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021100	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021300	Low-Income Community	2011–2015
Pennsylvania	Dauphin	42043021400	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045402000	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045403300	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045405000	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045406500	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045406600	Low-Income Community	2011–2015
Pennsylvania	Delaware	42045410700	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000100	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000300	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000400	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000600	Low-Income Community	2011–2015
Pennsylvania	Erie	42049000800	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001000	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001200	Low-Income Community	2011–2015
Pennsylvania	Erie	42049001500	Low-Income Community	2011–2015
Pennsylvania	Fayette	42051260700	Low-Income Community	2011–2015
Pennsylvania	Fayette	42051260800	Low-Income Community	2011–2015
Pennsylvania	Greene	42059970100	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961000	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961101	Low-Income Community	2011–2015
Pennsylvania	Indiana	42063961102	Low-Income Community	2011–2015
Pennsylvania	Jefferson	42065950200	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100200	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100300	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100400	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069100600	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069102500	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069102600	Low-Income Community	2011–2015
Pennsylvania	Lackawanna	42069111200	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071000800	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071000900	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071001000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Lancaster	42071001400	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071011200	Low-Income Community	2011–2015
Pennsylvania	Lancaster	42071011300	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000400	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000700	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000800	Low-Income Community	2011–2015
Pennsylvania	Lawrence	42073000900	Low-Income Community	2011–2015
Pennsylvania	Lebanon	42075000100	Low-Income Community	2011–2015
Pennsylvania	Lebanon	42075000200	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001000	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001401	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001501	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077001800	Low-Income Community	2011–2015
Pennsylvania	Lehigh	42077009700	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079200100	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079215200	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217001	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217400	Low-Income Community	2011–2015
Pennsylvania	Luzerne	42079217500	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000400	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000600	Low-Income Community	2011–2015
Pennsylvania	Lycoming	42081000900	Low-Income Community	2011–2015
Pennsylvania	McKean	42083420200	Low-Income Community	2011–2015
Pennsylvania	McKean	42083420300	Low-Income Community	2011–2015
Pennsylvania	Mercer	42085030300	Low-Income Community	2011–2015
Pennsylvania	Mercer	42085033200	Low-Income Community	2011–2015
Pennsylvania	Monroe	42089300800	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091203902	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091208801	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091208904	Low-Income Community	2011–2015
Pennsylvania	Montgomery	42091209000	Low-Income Community	2011–2015
Pennsylvania	Montour	42093050300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095010700	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095010800	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095011000	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095011300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014200	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014300	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014400	Low-Income Community	2011–2015
Pennsylvania	Northampton	42095014600	Low-Income Community	2011–2015
Pennsylvania	Northumberland	42097081500	Low-Income Community	2011–2015
Pennsylvania	Northumberland	42097082000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101000200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101002200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101003001	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Philadelphia	42101003300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101003901	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101005600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101006900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008302	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101008602	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101009600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101010900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101011100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101013900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101014900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101015800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016701	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101016702	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017601	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017602	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	Philadelphia	42101017701	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101017702	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101018300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101018400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020101	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020102	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101020500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101024600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026302	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026500	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101026800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028300	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101028400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101029100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030000	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030200	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101030900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101033400	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101036900	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037600	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037700	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101037800	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101038100	Low-Income Community	2011–2015
Pennsylvania	Philadelphia	42101980000	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107001300	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107002600	Low-Income Community	2011–2015
Pennsylvania	Schuylkill	42107002700	Low-Income Community	2011–2015
Pennsylvania	Somerset	42111021100	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200500	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200700	Low-Income Community	2011–2015
Pennsylvania	Venango	42121200900	Low-Income Community	2011–2015
Pennsylvania	Warren	42123970800	Low-Income Community	2011–2015
Pennsylvania	Warren	42123970900	Low-Income Community	2011–2015
Pennsylvania	Washington	42125783200	Low-Income Community	2011–2015
Pennsylvania	Washington	42125783300	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129800100	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129800700	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129802800	Low-Income Community	2011–2015
Pennsylvania	Westmoreland	42129803600	Low-Income Community	2011–2015
Pennsylvania	York	42133000300	Low-Income Community	2011–2015
Pennsylvania	York	42133000600	Low-Income Community	2011–2015
Pennsylvania	York	42133001000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Pennsylvania	York	42133001200	Low-Income Community	2011–2015
Pennsylvania	York	42133001600	Low-Income Community	2011–2015
Pennsylvania	Allegheny	42003425000	Non-LIC Contiguous	2011–2015
Pennsylvania	Allegheny	42003461000	Non-LIC Contiguous	2011–2015
Pennsylvania	Allegheny	42003564400	Non-LIC Contiguous	2011–2015
Pennsylvania	Centre	42027010400	Non-LIC Contiguous	2011–2015
Pennsylvania	Clearfield	42033330100	Non-LIC Contiguous	2011–2015
Pennsylvania	Clearfield	42033330400	Non-LIC Contiguous	2011–2015
Pennsylvania	Jefferson	42065950100	Non-LIC Contiguous	2011–2015
Pennsylvania	Lackawanna	42069111300	Non-LIC Contiguous	2011–2015
Pennsylvania	Lehigh	42077009100	Non-LIC Contiguous	2011–2015
Pennsylvania	Luzerne	42079217300	Non-LIC Contiguous	2011–2015
Pennsylvania	Philadelphia	42101014300	Non-LIC Contiguous	2011–2015
Puerto Rico	Adjuntas	72001956300	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956400	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956500	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956600	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956700	Low-Income Community	2011–2015
Puerto Rico	Adjuntas	72001956800	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430100	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430200	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430300	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430401	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430402	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430501	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430502	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430601	Low-Income Community	2011–2015
Puerto Rico	Aguada	72003430602	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400100	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400300	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400400	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400501	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400502	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400600	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400700	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400800	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005400900	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401000	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401100	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401200	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401301	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401302	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401401	Low-Income Community	2011–2015
Puerto Rico	Aguadilla	72005401402	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230100	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230200	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Aguas Buenas	72007230400	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230501	Low-Income Community	2011–2015
Puerto Rico	Aguas Buenas	72007230502	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250100	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250200	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250300	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250400	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250500	Low-Income Community	2011–2015
Puerto Rico	Aibonito	72009250600	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810100	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810200	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810300	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810400	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810500	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810600	Low-Income Community	2011–2015
Puerto Rico	Añasco	72011810700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300101	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300102	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300200	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300301	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300302	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300400	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300500	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013300800	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301000	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301100	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301200	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301300	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301400	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301500	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301600	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301700	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301800	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013301900	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302000	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302100	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302201	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302202	Low-Income Community	2011–2015
Puerto Rico	Arecibo	72013302300	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280101	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280102	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280201	Low-Income Community	2011–2015
Puerto Rico	Arroyo	72015280202	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590100	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590200	Low-Income Community	2011–2015
Puerto Rico	Barceloneta	72017590300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Barceloneta	72017590400	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952201	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952202	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952301	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952302	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952400	Low-Income Community	2011–2015
Puerto Rico	Barranquitas	72019952500	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030101	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030103	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030104	Non-LIC Contiguous	2011–2015
Puerto Rico	Bayamón	72021030105	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030200	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030300	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030700	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030800	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030901	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030902	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030903	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021030904	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031004	Non-LIC Contiguous	2011–2015
Puerto Rico	Bayamón	72021031005	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031013	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031021	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031023	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031031	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031033	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031101	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031113	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031114	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031121	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031122	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031123	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031124	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031125	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031201	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031202	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031203	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031301	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031304	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031305	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031306	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031307	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031401	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031402	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031403	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031501	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031502	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Bayamón	72021031503	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031611	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031612	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031621	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031622	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031631	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031632	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031641	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031651	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031701	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031702	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031703	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031704	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031800	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021031900	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032000	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032100	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032200	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032301	Low-Income Community	2011–2015
Puerto Rico	Bayamón	72021032302	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830101	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830102	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830200	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830300	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830400	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830502	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830503	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830504	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830603	Low-Income Community	2011–2015
Puerto Rico	Cabo Rojo	72023830604	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200100	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200302	Non-LIC Contiguous	2011–2015
Puerto Rico	Caguas	72025200304	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200400	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200600	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200700	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200800	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025200900	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201000	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201300	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201400	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201600	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Caguas	72025201800	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025201900	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202000	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202100	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202200	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202300	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202402	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202403	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202404	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202500	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202601	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202602	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202701	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202702	Low-Income Community	2011–2015
Puerto Rico	Caguas	72025202800	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320100	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320200	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320300	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320401	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320402	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320500	Low-Income Community	2011–2015
Puerto Rico	Camuy	72027320600	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100101	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100103	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100104	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100200	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100400	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100502	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100503	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100504	Non-LIC Contiguous	2011–2015
Puerto Rico	Canóvanas	72029100601	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100602	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100700	Low-Income Community	2011–2015
Puerto Rico	Canóvanas	72029100800	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050105	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050110	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050211	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050212	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050221	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050222	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050231	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050232	Non-LIC Contiguous	2011–2015
Puerto Rico	Carolina	72031050241	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050242	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050302	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050311	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050321	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Carolina	72031050331	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050341	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050401	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050402	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050501	Non-LIC Contiguous	2011–2015
Puerto Rico	Carolina	72031050503	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050504	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050600	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050700	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050803	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050811	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050812	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050821	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050822	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050831	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050841	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050901	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031050902	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051001	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051002	Low-Income Community	2011–2015
Puerto Rico	Carolina	72031051102	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020200	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020302	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020403	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020422	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020423	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020425	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020426	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033020427	Low-Income Community	2011–2015
Puerto Rico	Cataño	72033980003	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260100	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260201	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260202	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260300	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260400	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260500	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260600	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260700	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260800	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260901	Low-Income Community	2011–2015
Puerto Rico	Cayey	72035260902	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160201	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160202	Low-Income Community	2011–2015
Puerto Rico	Ceiba	72037160300	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955600	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955700	Low-Income Community	2011–2015
Puerto Rico	Ciales	72039955800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Ciales	72039955900	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240101	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240102	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240201	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240202	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240300	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240401	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240402	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240500	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240601	Low-Income Community	2011–2015
Puerto Rico	Cidra	72041240602	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043953900	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954000	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954100	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954200	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954300	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954400	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954500	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954600	Low-Income Community	2011–2015
Puerto Rico	Coamo	72043954700	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951700	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951800	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045951900	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045952000	Low-Income Community	2011–2015
Puerto Rico	Comerío	72045952100	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530100	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530200	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530300	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530400	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530500	Low-Income Community	2011–2015
Puerto Rico	Corozal	72047530600	Low-Income Community	2011–2015
Puerto Rico	Culebra	72049950500	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540100	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540200	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540300	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540400	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540500	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540600	Low-Income Community	2011–2015
Puerto Rico	Dorado	72051540700	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150102	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150104	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150200	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150301	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150302	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150400	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150500	Low-Income Community	2011–2015
Puerto Rico	Fajardo	72053150601	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Fajardo	72053150602	Low-Income Community	2011–2015
Puerto Rico	Florida	72054580100	Low-Income Community	2011–2015
Puerto Rico	Florida	72054580200	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055960900	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961000	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961100	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961200	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961300	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961400	Low-Income Community	2011–2015
Puerto Rico	Guánica	72055961500	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270100	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270201	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270202	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270300	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270400	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270500	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270600	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270700	Low-Income Community	2011–2015
Puerto Rico	Guayama	72057270800	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740101	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740102	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740200	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740300	Low-Income Community	2011–2015
Puerto Rico	Guayanilla	72059740400	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040101	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040102	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040103	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040200	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040302	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040303	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040304	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040403	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040411	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040421	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040422	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040432	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040442	Non-LIC Contiguous	2011–2015
Puerto Rico	Guaynabo	72061040500	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040601	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040700	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040800	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061040900	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061041000	Low-Income Community	2011–2015
Puerto Rico	Guaynabo	72061041100	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210100	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210201	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210202	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Gurabo	72063210300	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210400	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210502	Non-LIC Contiguous	2011–2015
Puerto Rico	Gurabo	72063210503	Low-Income Community	2011–2015
Puerto Rico	Gurabo	72063210504	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310100	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310200	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310300	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310400	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310500	Low-Income Community	2011–2015
Puerto Rico	Hatillo	72065310600	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820100	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820300	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820400	Low-Income Community	2011–2015
Puerto Rico	Hormigueros	72067820500	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180100	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180201	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180202	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180301	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180302	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180400	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180500	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180600	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180700	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180800	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180901	Low-Income Community	2011–2015
Puerto Rico	Humacao	72069180902	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410100	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410200	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410300	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410401	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410402	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410500	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410600	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410701	Low-Income Community	2011–2015
Puerto Rico	Isabela	72071410702	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956000	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956100	Low-Income Community	2011–2015
Puerto Rico	Jayuya	72073956200	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710102	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710200	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710301	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710302	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710400	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710500	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710600	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710700	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Juana Díaz	72075710800	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710901	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075710902	Low-Income Community	2011–2015
Puerto Rico	Juana Díaz	72075711002	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500100	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500200	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500301	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500302	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500401	Low-Income Community	2011–2015
Puerto Rico	Juncos	72077500402	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850101	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850102	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850200	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850300	Low-Income Community	2011–2015
Puerto Rico	Lajas	72079850400	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957700	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957800	Low-Income Community	2011–2015
Puerto Rico	Lares	72081957900	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958000	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958100	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958200	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958300	Low-Income Community	2011–2015
Puerto Rico	Lares	72081958400	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959700	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959800	Low-Income Community	2011–2015
Puerto Rico	Las Marías	72083959900	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190101	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190102	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190201	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190202	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190301	Low-Income Community	2011–2015
Puerto Rico	Las Piedras	72085190302	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110101	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110102	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110200	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110301	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110302	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110303	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110304	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110400	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110500	Low-Income Community	2011–2015
Puerto Rico	Loíza	72087110600	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140101	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140102	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140201	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140202	Low-Income Community	2011–2015
Puerto Rico	Luquillo	72089140300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Manatí	72091570100	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570201	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570202	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570300	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570400	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570500	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570600	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570700	Low-Income Community	2011–2015
Puerto Rico	Manatí	72091570800	Low-Income Community	2011–2015
Puerto Rico	Maricao	72093960100	Low-Income Community	2011–2015
Puerto Rico	Maricao	72093960200	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951400	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951500	Low-Income Community	2011–2015
Puerto Rico	Maunabo	72095951600	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080100	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080200	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080300	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080400	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080500	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080600	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080800	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097080900	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081000	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081100	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081200	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081300	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081501	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081512	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081522	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081601	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081602	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081700	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081800	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097081900	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082001	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082012	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082022	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082102	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082103	Low-Income Community	2011–2015
Puerto Rico	Mayagüez	72097082104	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420100	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420200	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420301	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420302	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420401	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420402	Low-Income Community	2011–2015
Puerto Rico	Moca	72099420500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Morovis	72101955201	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955202	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955300	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955401	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955402	Low-Income Community	2011–2015
Puerto Rico	Morovis	72101955500	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170100	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170200	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170300	Low-Income Community	2011–2015
Puerto Rico	Naguabo	72103170400	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520100	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520200	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520300	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520400	Low-Income Community	2011–2015
Puerto Rico	Naranjito	72105520500	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954801	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954802	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954901	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107954902	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955001	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955002	Low-Income Community	2011–2015
Puerto Rico	Orocovis	72107955100	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290100	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290200	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290300	Low-Income Community	2011–2015
Puerto Rico	Patillas	72109290400	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730100	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730200	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730300	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730400	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730700	Low-Income Community	2011–2015
Puerto Rico	Peñuelas	72111730800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070100	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070201	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070202	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070300	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070400	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070502	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070503	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070513	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070514	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070522	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113070900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071000	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071200	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Ponce	72113071401	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071402	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071500	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071601	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071602	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071700	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071800	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113071900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072000	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072101	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072102	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072201	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072202	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072300	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072400	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072500	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072600	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072701	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072703	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072704	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113072900	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073001	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073002	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073003	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073004	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073005	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073006	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073009	Low-Income Community	2011–2015
Puerto Rico	Ponce	72113073010	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330100	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330200	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330300	Low-Income Community	2011–2015
Puerto Rico	Quebradillas	72115330400	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959400	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959500	Low-Income Community	2011–2015
Puerto Rico	Rincón	72117959600	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130101	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130200	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130300	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130401	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130402	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130500	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130601	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130602	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130701	Low-Income Community	2011–2015
Puerto Rico	Río Grande	72119130702	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Sabana Grande	72121960400	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960500	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960600	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960700	Low-Income Community	2011–2015
Puerto Rico	Sabana Grande	72121960800	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952600	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952700	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952800	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123952900	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953000	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953100	Low-Income Community	2011–2015
Puerto Rico	Salinas	72123953200	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840100	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840200	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840300	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840400	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840500	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840600	Low-Income Community	2011–2015
Puerto Rico	San Germán	72125840700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000506	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127000700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001000	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001200	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001301	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001302	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127001600	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127001800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002002	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127002900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003501	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Juan	72127003502	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127003902	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004306	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127004900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005101	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005102	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005103	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005201	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005202	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005204	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005214	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005215	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005401	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005402	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005403	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005601	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127005900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006101	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006102	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006600	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127006900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007004	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Juan	72127007700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127007900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008001	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008002	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008100	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127008201	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008202	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008601	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127008602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008603	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008700	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127008900	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009111	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009112	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009121	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009122	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009123	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009300	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009400	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009601	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009602	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009603	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009624	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009800	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009901	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127009902	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127009903	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127010001	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010012	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010022	Non-LIC Contiguous	2011–2015
Puerto Rico	San Juan	72127010032	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010042	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010100	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010200	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127010500	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980000	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980103	Low-Income Community	2011–2015
Puerto Rico	San Juan	72127980200	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220100	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220200	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220300	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220401	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	San Lorenzo	72129220402	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220501	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220502	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220600	Low-Income Community	2011–2015
Puerto Rico	San Lorenzo	72129220700	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131009200	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958500	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958700	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958800	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131958900	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959000	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959200	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959300	Low-Income Community	2011–2015
Puerto Rico	San Sebastián	72131959500	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953300	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953500	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953600	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953700	Low-Income Community	2011–2015
Puerto Rico	Santa Isabel	72133953800	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510102	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510200	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510300	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510400	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510502	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510503	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510504	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510601	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510602	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510701	Low-Income Community	2011–2015
Puerto Rico	Toa Alta	72135510702	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120200	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120300	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120400	Non-LIC Contiguous	2011–2015
Puerto Rico	Toa Baja	72137120500	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120600	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120700	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120800	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137120900	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121001	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121002	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121100	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121200	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121300	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121400	Non-LIC Contiguous	2011–2015
Puerto Rico	Toa Baja	72137121701	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121702	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121801	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Toa Baja	72137121802	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137121900	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122001	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122100	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122201	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122202	Low-Income Community	2011–2015
Puerto Rico	Toa Baja	72137122400	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060102	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060103	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060104	Non-LIC Contiguous	2011–2015
Puerto Rico	Trujillo Alto	72139060211	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060212	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060222	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060223	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060301	Non-LIC Contiguous	2011–2015
Puerto Rico	Trujillo Alto	72139060302	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060401	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060403	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060501	Low-Income Community	2011–2015
Puerto Rico	Trujillo Alto	72139060502	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141956900	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957000	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957100	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957200	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957300	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957400	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957500	Low-Income Community	2011–2015
Puerto Rico	Utuado	72141957600	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550100	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550200	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550300	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550400	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550500	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550601	Low-Income Community	2011–2015
Puerto Rico	Vega Alta	72143550602	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560100	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560201	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560204	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560300	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560401	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560402	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560500	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560600	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560701	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560702	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560801	Low-Income Community	2011–2015
Puerto Rico	Vega Baja	72145560802	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Puerto Rico	Vega Baja	72145560900	Low-Income Community	2011–2015
Puerto Rico	Vieques	72147950500	Low-Income Community	2011–2015
Puerto Rico	Vieques	72147950600	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720100	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720300	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720400	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720502	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720503	Low-Income Community	2011–2015
Puerto Rico	Villalba	72149720504	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950600	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950700	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950800	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151950900	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951000	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951100	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951200	Low-Income Community	2011–2015
Puerto Rico	Yabucoa	72151951300	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750101	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750102	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750201	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750202	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750300	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750400	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750501	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750502	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750503	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750601	Low-Income Community	2011–2015
Puerto Rico	Yauco	72153750602	Low-Income Community	2011–2015
Rhode Island	Bristol	44001030500	Low-Income Community	2011–2015
Rhode Island	Bristol	44001030700	Low-Income Community	2011–2015
Rhode Island	Kent	44003020200	Low-Income Community	2011–2015
Rhode Island	Newport	44005040500	Low-Income Community	2011–2015
Rhode Island	Providence	44007000101	Low-Income Community	2011–2015
Rhode Island	Providence	44007000200	Low-Income Community	2011–2015
Rhode Island	Providence	44007000600	Low-Income Community	2011–2015
Rhode Island	Providence	44007000800	Low-Income Community	2011–2015
Rhode Island	Providence	44007001900	Low-Income Community	2011–2015
Rhode Island	Providence	44007002500	Low-Income Community	2011–2015
Rhode Island	Providence	44007010400	Low-Income Community	2011–2015
Rhode Island	Providence	44007011100	Low-Income Community	2011–2015
Rhode Island	Providence	44007011200	Low-Income Community	2011–2015
Rhode Island	Providence	44007011800	Low-Income Community	2012–2016
Rhode Island	Providence	44007014700	Low-Income Community	2011–2015
Rhode Island	Providence	44007015100	Low-Income Community	2011–2015
Rhode Island	Providence	44007015200	Low-Income Community	2011–2015
Rhode Island	Providence	44007016100	Low-Income Community	2011–2015
Rhode Island	Providence	44007016700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Rhode Island	Providence	44007017900	Low-Income Community	2011–2015
Rhode Island	Providence	44007018000	Low-Income Community	2011–2015
Rhode Island	Providence	44007018500	Low-Income Community	2011–2015
Rhode Island	Washington	44009050801	Low-Income Community	2011–2015
Rhode Island	Washington	44009051400	Low-Income Community	2011–2015
Rhode Island	Washington	44009051504	Low-Income Community	2011–2015
South Carolina	Abbeville	45001950400	Low-Income Community	2011–2015
South Carolina	Aiken	45003020802	Non-LIC Contiguous	2011–2015
South Carolina	Aiken	45003020902	Low-Income Community	2011–2015
South Carolina	Aiken	45003021400	Low-Income Community	2011–2015
South Carolina	Allendale	45005970200	Low-Income Community	2011–2015
South Carolina	Anderson	45007000800	Low-Income Community	2011–2015
South Carolina	Anderson	45007011901	Low-Income Community	2011–2015
South Carolina	Anderson	45007012002	Low-Income Community	2011–2015
South Carolina	Anderson	45007012300	Low-Income Community	2011–2015
South Carolina	Bamberg	45009960100	Low-Income Community	2011–2015
South Carolina	Bamberg	45009960200	Low-Income Community	2011–2015
South Carolina	Barnwell	45011970500	Low-Income Community	2011–2015
South Carolina	Beaufort	45013000200	Low-Income Community	2011–2015
South Carolina	Beaufort	45013000600	Low-Income Community	2011–2015
South Carolina	Beaufort	45013010800	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020102	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020201	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020302	Low-Income Community	2011–2015
South Carolina	Berkeley	45015020506	Non-LIC Contiguous	2011–2015
South Carolina	Calhoun	45017950200	Low-Income Community	2011–2015
South Carolina	Charleston	45019000700	Low-Income Community	2011–2015
South Carolina	Charleston	45019002400	Low-Income Community	2011–2015
South Carolina	Charleston	45019004000	Low-Income Community	2011–2015
South Carolina	Charleston	45019004300	Low-Income Community	2011–2015
South Carolina	Charleston	45019004400	Low-Income Community	2011–2015
South Carolina	Charleston	45019005300	Low-Income Community	2011–2015
South Carolina	Charleston	45019005400	Low-Income Community	2011–2015
South Carolina	Charleston	45019005500	Low-Income Community	2011–2015
South Carolina	Cherokee	45021970201	Low-Income Community	2011–2015
South Carolina	Cherokee	45021970401	Low-Income Community	2011–2015
South Carolina	Chester	45023020200	Low-Income Community	2011–2015
South Carolina	Chester	45023020300	Low-Income Community	2011–2015
South Carolina	Chesterfield	45025950101	Low-Income Community	2011–2015
South Carolina	Chesterfield	45025950502	Low-Income Community	2011–2015
South Carolina	Clarendon	45027960300	Low-Income Community	2011–2015
South Carolina	Clarendon	45027960500	Low-Income Community	2011–2015
South Carolina	Colleton	45029970401	Low-Income Community	2011–2015
South Carolina	Colleton	45029970402	Non-LIC Contiguous	2011–2015
South Carolina	Darlington	45031010600	Low-Income Community	2011–2015
South Carolina	Darlington	45031011500	Low-Income Community	2011–2015
South Carolina	Dillon	45033970300	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
South Carolina	Dillon	45033970400	Low-Income Community	2011–2015
South Carolina	Dillon	45033970600	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010200	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010400	Low-Income Community	2011–2015
South Carolina	Dorchester	45035010700	Low-Income Community	2011–2015
South Carolina	Edgefield	45037970400	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960100	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960300	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960400	Low-Income Community	2011–2015
South Carolina	Fairfield	45039960500	Low-Income Community	2011–2015
South Carolina	Florence	45041000700	Low-Income Community	2011–2015
South Carolina	Florence	45041001000	Low-Income Community	2011–2015
South Carolina	Florence	45041002000	Low-Income Community	2011–2015
South Carolina	Florence	45041002201	Low-Income Community	2011–2015
South Carolina	Florence	45041002500	Low-Income Community	2011–2015
South Carolina	Georgetown	45043920201	Low-Income Community	2011–2015
South Carolina	Georgetown	45043920302	Non-LIC Contiguous	2011–2015
South Carolina	Georgetown	45043920700	Low-Income Community	2011–2015
South Carolina	Greenville	45045000500	Low-Income Community	2011–2015
South Carolina	Greenville	45045000700	Low-Income Community	2011–2015
South Carolina	Greenville	45045000800	Low-Income Community	2011–2015
South Carolina	Greenville	45045002005	Low-Income Community	2011–2015
South Carolina	Greenville	45045002303	Low-Income Community	2011–2015
South Carolina	Greenville	45045002505	Low-Income Community	2011–2015
South Carolina	Greenville	45045003401	Low-Income Community	2011–2015
South Carolina	Greenville	45045003904	Low-Income Community	2011–2015
South Carolina	Greenville	45045004300	Low-Income Community	2011–2015
South Carolina	Greenwood	45047970600	Low-Income Community	2011–2015
South Carolina	Greenwood	45047970702	Low-Income Community	2011–2015
South Carolina	Hampton	45049920300	Low-Income Community	2011–2015
South Carolina	Horry	45051020200	Low-Income Community	2011–2015
South Carolina	Horry	45051050600	Low-Income Community	2011–2015
South Carolina	Horry	45051050700	Low-Income Community	2011–2015
South Carolina	Horry	45051070200	Low-Income Community	2011–2015
South Carolina	Horry	45051070300	Low-Income Community	2011–2015
South Carolina	Horry	45051080102	Low-Income Community	2011–2015
South Carolina	Jasper	45053950300	Low-Income Community	2011–2015
South Carolina	Kershaw	45055970601	Low-Income Community	2011–2015
South Carolina	Kershaw	45055970800	Low-Income Community	2011–2015
South Carolina	Lancaster	45057010700	Low-Income Community	2011–2015
South Carolina	Lancaster	45057010800	Low-Income Community	2011–2015
South Carolina	Laurens	45059920301	Non-LIC Contiguous	2011–2015
South Carolina	Laurens	45059920400	Low-Income Community	2011–2015
South Carolina	Laurens	45059920700	Low-Income Community	2011–2015
South Carolina	Lee	45061920200	Low-Income Community	2011–2015
South Carolina	Lee	45061920302	Low-Income Community	2011–2015
South Carolina	Lexington	45063020201	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
South Carolina	Lexington	45063020300	Low-Income Community	2011–2015
South Carolina	Lexington	45063020505	Low-Income Community	2011–2015
South Carolina	Lexington	45063020509	Low-Income Community	2011–2015
South Carolina	Lexington	45063020706	Low-Income Community	2011–2015
South Carolina	Lexington	45063021402	Low-Income Community	2011–2015
South Carolina	McCormick	45065920200	Low-Income Community	2011–2015
South Carolina	Marion	45067950300	Low-Income Community	2011–2015
South Carolina	Marion	45067950600	Low-Income Community	2011–2015
South Carolina	Marlboro	45069960100	Low-Income Community	2011–2015
South Carolina	Marlboro	45069960302	Low-Income Community	2011–2015
South Carolina	Newberry	45071950502	Low-Income Community	2011–2015
South Carolina	Oconee	45073030602	Low-Income Community	2011–2015
South Carolina	Oconee	45073030701	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075010200	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075010600	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075011300	Low-Income Community	2011–2015
South Carolina	Orangeburg	45075011400	Low-Income Community	2011–2015
South Carolina	Pickens	45077010700	Non-LIC Contiguous	2011–2015
South Carolina	Pickens	45077010801	Low-Income Community	2011–2015
South Carolina	Pickens	45077011001	Low-Income Community	2011–2015
South Carolina	Richland	45079000100	Low-Income Community	2011–2015
South Carolina	Richland	45079000200	Low-Income Community	2011–2015
South Carolina	Richland	45079000500	Low-Income Community	2011–2015
South Carolina	Richland	45079000700	Low-Income Community	2011–2015
South Carolina	Richland	45079010600	Low-Income Community	2011–2015
South Carolina	Richland	45079010703	Low-Income Community	2011–2015
South Carolina	Richland	45079010803	Low-Income Community	2011–2015
South Carolina	Richland	45079010900	Low-Income Community	2011–2015
South Carolina	Richland	45079011800	Low-Income Community	2011–2015
South Carolina	Saluda	45081960400	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020301	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020400	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020500	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020702	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083020800	Low-Income Community	2011–2015
South Carolina	Spartanburg	45083023202	Non-LIC Contiguous	2011–2015
South Carolina	Sumter	45085000600	Low-Income Community	2011–2015
South Carolina	Sumter	45085001100	Low-Income Community	2011–2015
South Carolina	Sumter	45085001300	Low-Income Community	2011–2015
South Carolina	Union	45087030100	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970501	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970502	Low-Income Community	2011–2015
South Carolina	Williamsburg	45089970600	Low-Income Community	2011–2015
South Carolina	York	45091060200	Low-Income Community	2011–2015
South Carolina	York	45091060300	Low-Income Community	2011–2015
South Carolina	York	45091060401	Low-Income Community	2011–2015
South Carolina	York	45091060501	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
South Dakota	Beadle	46005956900	Low-Income Community	2011–2015
South Dakota	Beadle	46005957000	Low-Income Community	2011–2015
South Dakota	Brookings	46011958900	Low-Income Community	2011–2015
South Dakota	Brown	46013951500	Low-Income Community	2011–2015
South Dakota	Brule	46015973100	Low-Income Community	2011–2015
South Dakota	Charles Mix	46023940300	Low-Income Community	2011–2015
South Dakota	Clay	46027965700	Low-Income Community	2011–2015
South Dakota	Codington	46029954400	Low-Income Community	2011–2015
South Dakota	Dewey	46041941500	Low-Income Community	2011–2015
South Dakota	Lake	46079960200	Low-Income Community	2011–2015
South Dakota	Lyman	46085940100	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099000500	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099000700	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099001001	Low-Income Community	2011–2015
South Dakota	Minnehaha	46099010405	Non-LIC Contiguous	2011–2015
South Dakota	Pennington	46103010200	Low-Income Community	2011–2015
South Dakota	Pennington	46103010400	Low-Income Community	2011–2015
South Dakota	Pennington	46103010500	Low-Income Community	2011–2015
South Dakota	Pennington	46103011500	Low-Income Community	2011–2015
South Dakota	Roberts	46109940400	Low-Income Community	2011–2015
South Dakota	Oglala Lakota County/ Shannon	46113940500	Low-Income Community	2011–2015
South Dakota	Todd	46121940200	Low-Income Community	2011–2015
South Dakota	Tripp	46123971700	Low-Income Community	2011–2015
South Dakota	Yankton	46135966301	Non-LIC Contiguous	2011–2015
South Dakota	Yankton	46135966302	Low-Income Community	2011–2015
Tennessee	Anderson	47001020500	Low-Income Community	2011–2015
Tennessee	Anderson	47001021000	Low-Income Community	2011–2015
Tennessee	Bedford	47003950500	Low-Income Community	2011–2015
Tennessee	Benton	47005963200	Low-Income Community	2011–2015
Tennessee	Bledsoe	47007953100	Low-Income Community	2011–2015
Tennessee	Blount	47009010100	Low-Income Community	2011–2015
Tennessee	Blount	47009010200	Low-Income Community	2011–2015
Tennessee	Blount	47009010301	Low-Income Community	2012–2016
Tennessee	Blount	47009010302	Low-Income Community	2011–2015
Tennessee	Bradley	47011010700	Low-Income Community	2011–2015
Tennessee	Cannon	47015960200	Low-Income Community	2011–2015
Tennessee	Carroll	47017962100	Low-Income Community	2011–2015
Tennessee	Carter	47019071200	Low-Income Community	2011–2015
Tennessee	Cheatham	47021070104	Low-Income Community	2012–2016
Tennessee	Claiborne	47025970300	Low-Income Community	2011–2015
Tennessee	Clay	47027955000	Low-Income Community	2011–2015
Tennessee	Cocke	47029920200	Low-Income Community	2011–2015
Tennessee	Cocke	47029920700	Low-Income Community	2011–2015
Tennessee	Crockett	47033961100	Low-Income Community	2011–2015
Tennessee	Cumberland	47035970400	Low-Income Community	2011–2015
Tennessee	Cumberland	47035970800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Davidson	47037010401	Low-Income Community	2011–2015
Tennessee	Davidson	47037012600	Low-Income Community	2011–2015
Tennessee	Davidson	47037013601	Low-Income Community	2011–2015
Tennessee	Davidson	47037013602	Low-Income Community	2011–2015
Tennessee	Davidson	47037013700	Low-Income Community	2011–2015
Tennessee	Davidson	47037013800	Low-Income Community	2011–2015
Tennessee	Davidson	47037013900	Low-Income Community	2011–2015
Tennessee	Davidson	47037014200	Low-Income Community	2011–2015
Tennessee	Davidson	47037014800	Low-Income Community	2011–2015
Tennessee	Davidson	47037015628	Low-Income Community	2011–2015
Tennessee	Davidson	47037015900	Low-Income Community	2011–2015
Tennessee	Davidson	47037016000	Low-Income Community	2011–2015
Tennessee	Davidson	47037016100	Low-Income Community	2011–2015
Tennessee	Davidson	47037016200	Low-Income Community	2011–2015
Tennessee	Davidson	47037016300	Low-Income Community	2011–2015
Tennessee	Davidson	47037017300	Low-Income Community	2011–2015
Tennessee	Davidson	47037019200	Low-Income Community	2011–2015
Tennessee	Davidson	47037019300	Low-Income Community	2011–2015
Tennessee	DeKalb	47041920200	Low-Income Community	2011–2015
Tennessee	Dickson	47043060602	Low-Income Community	2011–2015
Tennessee	Dyer	47045964300	Low-Income Community	2011–2015
Tennessee	Fayette	47047060300	Low-Income Community	2011–2015
Tennessee	Fentress	47049965300	Low-Income Community	2011–2015
Tennessee	Gibson	47053966900	Low-Income Community	2011–2015
Tennessee	Gibson	47053967000	Low-Income Community	2011–2015
Tennessee	Greene	47059090100	Low-Income Community	2011–2015
Tennessee	Greene	47059091200	Low-Income Community	2011–2015
Tennessee	Grundy	47061955300	Low-Income Community	2011–2015
Tennessee	Hamblen	47063100300	Low-Income Community	2011–2015
Tennessee	Hamblen	47063100800	Low-Income Community	2011–2015
Tennessee	Hamilton	47065000400	Low-Income Community	2011–2015
Tennessee	Hamilton	47065001600	Low-Income Community	2011–2015
Tennessee	Hamilton	47065001900	Low-Income Community	2011–2015
Tennessee	Hamilton	47065002000	Low-Income Community	2011–2015
Tennessee	Hamilton	47065003100	Low-Income Community	2011–2015
Tennessee	Hamilton	47065012300	Low-Income Community	2011–2015
Tennessee	Hamilton	47065012400	Low-Income Community	2011–2015
Tennessee	Hancock	47067960600	Low-Income Community	2011–2015
Tennessee	Hardeman	47069950300	Low-Income Community	2011–2015
Tennessee	Hawkins	47073050400	Low-Income Community	2012–2016
Tennessee	Hawkins	47073050601	Low-Income Community	2011–2015
Tennessee	Haywood	47075930500	Non-LIC Contiguous	2011–2015
Tennessee	Henderson	47077975400	Low-Income Community	2011–2015
Tennessee	Henry	47079969000	Low-Income Community	2012–2016
Tennessee	Hickman	47081950302	Low-Income Community	2011–2015
Tennessee	Houston	47083120200	Low-Income Community	2011–2015
Tennessee	Jackson	47087960400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Johnson	47091956300	Low-Income Community	2011–2015
Tennessee	Knox	47093000100	Low-Income Community	2011–2015
Tennessee	Knox	47093000800	Low-Income Community	2011–2015
Tennessee	Knox	47093001900	Low-Income Community	2011–2015
Tennessee	Knox	47093002400	Low-Income Community	2011–2015
Tennessee	Knox	47093003500	Low-Income Community	2011–2015
Tennessee	Knox	47093006502	Low-Income Community	2011–2015
Tennessee	Knox	47093006700	Low-Income Community	2011–2015
Tennessee	Knox	47093006800	Low-Income Community	2011–2015
Tennessee	Lake	47095960100	Low-Income Community	2011–2015
Tennessee	Lauderdale	47097050504	Low-Income Community	2011–2015
Tennessee	Lauderdale	47097050505	Low-Income Community	2011–2015
Tennessee	Lawrence	47099960300	Low-Income Community	2011–2015
Tennessee	Lawrence	47099960501	Low-Income Community	2011–2015
Tennessee	Lincoln	47103975300	Low-Income Community	2011–2015
Tennessee	Lincoln	47103975400	Low-Income Community	2012–2016
Tennessee	Loudon	47105060202	Low-Income Community	2011–2015
Tennessee	Loudon	47105060600	Low-Income Community	2011–2015
Tennessee	McMinn	47107970101	Non-LIC Contiguous	2011–2015
Tennessee	McMinn	47107970600	Low-Income Community	2011–2015
Tennessee	Macon	47111970300	Low-Income Community	2011–2015
Tennessee	Madison	47113000200	Low-Income Community	2011–2015
Tennessee	Madison	47113000500	Low-Income Community	2011–2015
Tennessee	Madison	47113000600	Low-Income Community	2011–2015
Tennessee	Madison	47113000700	Low-Income Community	2011–2015
Tennessee	Madison	47113000800	Low-Income Community	2011–2015
Tennessee	Madison	47113000900	Low-Income Community	2011–2015
Tennessee	Marion	47115050301	Low-Income Community	2011–2015
Tennessee	Marshall	47117955300	Low-Income Community	2011–2015
Tennessee	Meigs	47121960200	Low-Income Community	2011–2015
Tennessee	Monroe	47123925000	Non-LIC Contiguous	2011–2015
Tennessee	Monroe	47123925501	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100100	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100200	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100800	Low-Income Community	2011–2015
Tennessee	Montgomery	47125100900	Low-Income Community	2011–2015
Tennessee	Obion	47131965400	Low-Income Community	2012–2016
Tennessee	Obion	47131965500	Low-Income Community	2011–2015
Tennessee	Overton	47133950302	Low-Income Community	2011–2015
Tennessee	Pickett	47137925100	Low-Income Community	2011–2015
Tennessee	Polk	47139950400	Low-Income Community	2011–2015
Tennessee	Putnam	47141000600	Low-Income Community	2011–2015
Tennessee	Putnam	47141000800	Low-Income Community	2011–2015
Tennessee	Putnam	47141001100	Low-Income Community	2011–2015
Tennessee	Rhea	47143975401	Low-Income Community	2011–2015
Tennessee	Roane	47145030600	Low-Income Community	2011–2015
Tennessee	Rutherford	47149041800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Rutherford	47149041900	Low-Income Community	2011–2015
Tennessee	Rutherford	47149042100	Low-Income Community	2011–2015
Tennessee	Scott	47151975200	Low-Income Community	2011–2015
Tennessee	Sequatchie	47153060101	Non-LIC Contiguous	2011–2015
Tennessee	Sevier	47155080101	Low-Income Community	2011–2015
Tennessee	Sevier	47155080400	Low-Income Community	2011–2015
Tennessee	Shelby	47157000200	Low-Income Community	2011–2015
Tennessee	Shelby	47157000300	Low-Income Community	2011–2015
Tennessee	Shelby	47157000400	Low-Income Community	2011–2015
Tennessee	Shelby	47157001900	Low-Income Community	2011–2015
Tennessee	Shelby	47157002000	Low-Income Community	2011–2015
Tennessee	Shelby	47157002100	Low-Income Community	2011–2015
Tennessee	Shelby	47157002400	Low-Income Community	2011–2015
Tennessee	Shelby	47157002500	Low-Income Community	2011–2015
Tennessee	Shelby	47157002700	Low-Income Community	2011–2015
Tennessee	Shelby	47157002800	Low-Income Community	2011–2015
Tennessee	Shelby	47157003000	Low-Income Community	2011–2015
Tennessee	Shelby	47157003600	Low-Income Community	2011–2015
Tennessee	Shelby	47157003700	Low-Income Community	2011–2015
Tennessee	Shelby	47157003800	Low-Income Community	2011–2015
Tennessee	Shelby	47157003900	Low-Income Community	2011–2015
Tennessee	Shelby	47157004500	Low-Income Community	2011–2015
Tennessee	Shelby	47157004600	Low-Income Community	2011–2015
Tennessee	Shelby	47157005000	Low-Income Community	2011–2015
Tennessee	Shelby	47157005900	Low-Income Community	2011–2015
Tennessee	Shelby	47157006600	Low-Income Community	2011–2015
Tennessee	Shelby	47157006700	Low-Income Community	2011–2015
Tennessee	Shelby	47157007000	Low-Income Community	2011–2015
Tennessee	Shelby	47157007300	Low-Income Community	2011–2015
Tennessee	Shelby	47157007400	Low-Income Community	2011–2015
Tennessee	Shelby	47157011200	Low-Income Community	2011–2015
Tennessee	Shelby	47157011300	Low-Income Community	2011–2015
Tennessee	Shelby	47157011400	Low-Income Community	2011–2015
Tennessee	Shelby	47157011600	Low-Income Community	2011–2015
Tennessee	Shelby	47157020210	Non-LIC Contiguous	2011–2015
Tennessee	Shelby	47157020300	Low-Income Community	2011–2015
Tennessee	Shelby	47157022111	Low-Income Community	2011–2015
Tennessee	Shelby	47157022500	Low-Income Community	2011–2015
Tennessee	Smith	47159975300	Low-Income Community	2011–2015
Tennessee	Smith	47159975400	Non-LIC Contiguous	2011–2015
Tennessee	Stewart	47161110600	Low-Income Community	2011–2015
Tennessee	Sullivan	47163040200	Low-Income Community	2011–2015
Tennessee	Sullivan	47163042701	Low-Income Community	2011–2015
Tennessee	Sullivan	47163043000	Low-Income Community	2011–2015
Tennessee	Sullivan	47163043302	Low-Income Community	2011–2015
Tennessee	Sumner	47165020300	Low-Income Community	2011–2015
Tennessee	Sumner	47165020700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Tennessee	Tipton	47167040700	Low-Income Community	2011–2015
Tennessee	Tipton	47167041000	Low-Income Community	2011–2015
Tennessee	Unicoi	47171080100	Low-Income Community	2011–2015
Tennessee	Unicoi	47171080200	Low-Income Community	2011–2015
Tennessee	Union	47173040201	Low-Income Community	2011–2015
Tennessee	Van Buren	47175925200	Low-Income Community	2011–2015
Tennessee	Warren	47177930800	Low-Income Community	2011–2015
Tennessee	Washington	47179060100	Low-Income Community	2011–2015
Tennessee	Washington	47179060800	Low-Income Community	2011–2015
Tennessee	Washington	47179060900	Low-Income Community	2011–2015
Tennessee	Washington	47179062000	Low-Income Community	2011–2015
Tennessee	Wayne	47181950200	Low-Income Community	2011–2015
Tennessee	Weakley	47183968101	Low-Income Community	2011–2015
Tennessee	White	47185935300	Low-Income Community	2012–2016
Texas	Anderson	48001950401	Low-Income Community	2011–2015
Texas	Anderson	48001950901	Low-Income Community	2011–2015
Texas	Angelina	48005000200	Low-Income Community	2011–2015
Texas	Angelina	48005000500	Low-Income Community	2011–2015
Texas	Angelina	48005000600	Low-Income Community	2011–2015
Texas	Angelina	48005000700	Low-Income Community	2011–2015
Texas	Angelina	48005001001	Low-Income Community	2011–2015
Texas	Angelina	48005001300	Low-Income Community	2011–2015
Texas	Aransas	48007950100	Low-Income Community	2011–2015
Texas	Aransas	48007950400	Low-Income Community	2011–2015
Texas	Aransas	48007950500	Low-Income Community	2011–2015
Texas	Atascosa	48013960300	Low-Income Community	2011–2015
Texas	Atascosa	48013960401	Low-Income Community	2011–2015
Texas	Bastrop	48021950200	Low-Income Community	2011–2015
Texas	Bastrop	48021950600	Low-Income Community	2011–2015
Texas	Bastrop	48021950801	Low-Income Community	2011–2015
Texas	Bee	48025950600	Low-Income Community	2011–2015
Texas	Bell	48027020800	Low-Income Community	2011–2015
Texas	Bell	48027020900	Low-Income Community	2011–2015
Texas	Bell	48027021601	Low-Income Community	2011–2015
Texas	Bell	48027021602	Low-Income Community	2011–2015
Texas	Bell	48027022000	Low-Income Community	2011–2015
Texas	Bell	48027023204	Low-Income Community	2011–2015
Texas	Bexar	48029110100	Low-Income Community	2011–2015
Texas	Bexar	48029110500	Low-Income Community	2011–2015
Texas	Bexar	48029110600	Low-Income Community	2011–2015
Texas	Bexar	48029121203	Low-Income Community	2011–2015
Texas	Bexar	48029121204	Low-Income Community	2011–2015
Texas	Bexar	48029121205	Low-Income Community	2011–2015
Texas	Bexar	48029130600	Low-Income Community	2011–2015
Texas	Bexar	48029130700	Low-Income Community	2011–2015
Texas	Bexar	48029130800	Low-Income Community	2011–2015
Texas	Bexar	48029141800	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Bexar	48029150600	Low-Income Community	2011–2015
Texas	Bexar	48029150800	Low-Income Community	2011–2015
Texas	Bexar	48029152000	Low-Income Community	2011–2015
Texas	Bexar	48029152100	Low-Income Community	2011–2015
Texas	Bexar	48029160901	Low-Income Community	2011–2015
Texas	Bexar	48029160902	Low-Income Community	2011–2015
Texas	Bexar	48029161100	Low-Income Community	2011–2015
Texas	Bexar	48029161200	Low-Income Community	2011–2015
Texas	Bexar	48029162001	Low-Income Community	2011–2015
Texas	Bexar	48029170102	Low-Income Community	2011–2015
Texas	Bexar	48029171802	Low-Income Community	2011–2015
Texas	Bexar	48029192200	Low-Income Community	2011–2015
Texas	Bexar	48029980002	Low-Income Community	2011–2015
Texas	Bexar	48029980100	Low-Income Community	2011–2015
Texas	Bosque	48035950200	Low-Income Community	2011–2015
Texas	Bowie	48037010400	Low-Income Community	2011–2015
Texas	Bowie	48037010500	Low-Income Community	2011–2015
Texas	Bowie	48037010800	Low-Income Community	2011–2015
Texas	Bowie	48037011300	Low-Income Community	2011–2015
Texas	Bowie	48037011401	Low-Income Community	2011–2015
Texas	Bowie	48037011402	Low-Income Community	2011–2015
Texas	Bowie	48037011502	Low-Income Community	2011–2015
Texas	Brazoria	48039661200	Low-Income Community	2011–2015
Texas	Brazoria	48039661400	Low-Income Community	2011–2015
Texas	Brazoria	48039662800	Low-Income Community	2011–2015
Texas	Brazoria	48039664100	Low-Income Community	2011–2015
Texas	Brazoria	48039664200	Low-Income Community	2011–2015
Texas	Brazoria	48039664300	Low-Income Community	2011–2015
Texas	Brazos	48041000201	Low-Income Community	2011–2015
Texas	Brazos	48041000202	Low-Income Community	2011–2015
Texas	Brazos	48041000400	Low-Income Community	2011–2015
Texas	Brazos	48041000500	Low-Income Community	2011–2015
Texas	Brazos	48041000603	Low-Income Community	2011–2015
Texas	Brazos	48041001301	Low-Income Community	2011–2015
Texas	Brazos	48041001303	Low-Income Community	2011–2015
Texas	Brazos	48041001702	Low-Income Community	2011–2015
Texas	Brazos	48041002012	Low-Income Community	2011–2015
Texas	Brazos	48041002014	Low-Income Community	2011–2015
Texas	Brewster	48043950400	Low-Income Community	2011–2015
Texas	Brooks	48047950200	Low-Income Community	2011–2015
Texas	Brown	48049950700	Low-Income Community	2011–2015
Texas	Burleson	48051970500	Low-Income Community	2011–2015
Texas	Burnet	48053960300	Low-Income Community	2011–2015
Texas	Caldwell	48055960200	Low-Income Community	2011–2015
Texas	Caldwell	48055960400	Low-Income Community	2011–2015
Texas	Caldwell	48055960500	Low-Income Community	2011–2015
Texas	Calhoun	48057000500	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Cameron	48061010100	Low-Income Community	2011–2015
Texas	Cameron	48061010201	Low-Income Community	2011–2015
Texas	Cameron	48061010203	Low-Income Community	2011–2015
Texas	Cameron	48061010301	Low-Income Community	2011–2015
Texas	Cameron	48061010402	Low-Income Community	2011–2015
Texas	Cameron	48061010800	Low-Income Community	2011–2015
Texas	Cameron	48061011700	Low-Income Community	2011–2015
Texas	Cameron	48061012102	Low-Income Community	2011–2015
Texas	Cameron	48061012301	Low-Income Community	2011–2015
Texas	Cameron	48061012304	Low-Income Community	2011–2015
Texas	Cameron	48061012305	Low-Income Community	2011–2015
Texas	Cameron	48061012700	Low-Income Community	2011–2015
Texas	Cameron	48061013307	Low-Income Community	2011–2015
Texas	Cameron	48061013802	Low-Income Community	2011–2015
Texas	Cameron	48061014001	Low-Income Community	2011–2015
Texas	Cameron	48061014200	Low-Income Community	2011–2015
Texas	Camp	48063950101	Low-Income Community	2011–2015
Texas	Camp	48063950102	Low-Income Community	2011–2015
Texas	Cass	48067950200	Low-Income Community	2011–2015
Texas	Cass	48067950400	Low-Income Community	2011–2015
Texas	Cass	48067950600	Low-Income Community	2011–2015
Texas	Cass	48067950700	Low-Income Community	2011–2015
Texas	Castro	48069950200	Low-Income Community	2011–2015
Texas	Chambers	48071710300	Low-Income Community	2011–2015
Texas	Chambers	48071710401	Low-Income Community	2011–2015
Texas	Chambers	48071710500	Low-Income Community	2011–2015
Texas	Cherokee	48073950300	Low-Income Community	2011–2015
Texas	Cherokee	48073950400	Low-Income Community	2011–2015
Texas	Cherokee	48073951100	Low-Income Community	2011–2015
Texas	Coleman	48083950300	Low-Income Community	2011–2015
Texas	Collin	48085032013	Low-Income Community	2011–2015
Texas	Comal	48091310608	Low-Income Community	2011–2015
Texas	Cooke	48097000400	Low-Income Community	2011–2015
Texas	Cooke	48097001100	Low-Income Community	2011–2015
Texas	Coryell	48099010300	Low-Income Community	2011–2015
Texas	Coryell	48099010501	Low-Income Community	2011–2015
Texas	Coryell	48099010502	Low-Income Community	2011–2015
Texas	Coryell	48099010504	Low-Income Community	2011–2015
Texas	Coryell	48099010601	Low-Income Community	2011–2015
Texas	Cottle	48101950100	Low-Income Community	2011–2015
Texas	Crosby	48107950100	Low-Income Community	2011–2015
Texas	Crosby	48107950200	Low-Income Community	2011–2015
Texas	Dallas	48113002000	Low-Income Community	2011–2015
Texas	Dallas	48113004100	Low-Income Community	2011–2015
Texas	Dallas	48113005400	Low-Income Community	2011–2015
Texas	Dallas	48113005700	Low-Income Community	2011–2015
Texas	Dallas	48113008704	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Dallas	48113009301	Low-Income Community	2011–2015
Texas	Dallas	48113010101	Low-Income Community	2011–2015
Texas	Dallas	48113012207	Low-Income Community	2011–2015
Texas	Dallas	48113012302	Low-Income Community	2011–2015
Texas	Dallas	48113012701	Low-Income Community	2011–2015
Texas	Dallas	48113015304	Low-Income Community	2011–2015
Texas	Dallas	48113015900	Low-Income Community	2011–2015
Texas	Dallas	48113016621	Low-Income Community	2011–2015
Texas	Dallas	48113018111	Low-Income Community	2011–2015
Texas	Dallas	48113018505	Low-Income Community	2011–2015
Texas	Dallas	48113020300	Low-Income Community	2011–2015
Texas	Dallas	48113020400	Low-Income Community	2011–2015
Texas	Dallas	48113020500	Low-Income Community	2011–2015
Texas	Dawson	48115950402	Low-Income Community	2011–2015
Texas	Delta	48119950200	Low-Income Community	2011–2015
Texas	Denton	48121020602	Low-Income Community	2011–2015
Texas	Denton	48121021618	Low-Income Community	2011–2015
Texas	Denton	48121021739	Low-Income Community	2011–2015
Texas	DeWitt	48123970200	Low-Income Community	2011–2015
Texas	Dickens	48125950300	Low-Income Community	2011–2015
Texas	Donley	48129950200	Low-Income Community	2011–2015
Texas	Eastland	48133950100	Low-Income Community	2011–2015
Texas	Eastland	48133950200	Low-Income Community	2011–2015
Texas	Ector	48135002700	Low-Income Community	2011–2015
Texas	Ellis	48139060400	Low-Income Community	2011–2015
Texas	Ellis	48139061000	Low-Income Community	2011–2015
Texas	Ellis	48139061200	Low-Income Community	2011–2015
Texas	Ellis	48139061300	Low-Income Community	2011–2015
Texas	Ellis	48139061600	Low-Income Community	2011–2015
Texas	El Paso	48141001203	Low-Income Community	2011–2015
Texas	El Paso	48141001900	Low-Income Community	2011–2015
Texas	El Paso	48141003000	Low-Income Community	2011–2015
Texas	El Paso	48141003200	Low-Income Community	2011–2015
Texas	El Paso	48141003501	Low-Income Community	2011–2015
Texas	El Paso	48141003804	Low-Income Community	2011–2015
Texas	El Paso	48141010102	Low-Income Community	2011–2015
Texas	El Paso	48141010220	Low-Income Community	2011–2015
Texas	El Paso	48141010334	Low-Income Community	2011–2015
Texas	El Paso	48141010335	Low-Income Community	2011–2015
Texas	El Paso	48141010340	Low-Income Community	2011–2015
Texas	El Paso	48141010344	Low-Income Community	2011–2015
Texas	El Paso	48141010347	Low-Income Community	2011–2015
Texas	El Paso	48141010501	Low-Income Community	2011–2015
Texas	El Paso	48141010504	Low-Income Community	2011–2015
Texas	El Paso	48141010506	Low-Income Community	2011–2015
Texas	Erath	48143950201	Low-Income Community	2011–2015
Texas	Erath	48143950202	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Erath	48143950300	Low-Income Community	2011–2015
Texas	Falls	48145000400	Low-Income Community	2011–2015
Texas	Fannin	48147950402	Low-Income Community	2011–2015
Texas	Fisher	48151950400	Low-Income Community	2011–2015
Texas	Fort Bend	48157670200	Low-Income Community	2011–2015
Texas	Fort Bend	48157670400	Low-Income Community	2011–2015
Texas	Fort Bend	48157673700	Low-Income Community	2011–2015
Texas	Fort Bend	48157674900	Low-Income Community	2011–2015
Texas	Fort Bend	48157675400	Low-Income Community	2011–2015
Texas	Franklin	48159950300	Low-Income Community	2011–2015
Texas	Galveston	48167722200	Low-Income Community	2011–2015
Texas	Galveston	48167722800	Low-Income Community	2011–2015
Texas	Galveston	48167722900	Low-Income Community	2011–2015
Texas	Galveston	48167723000	Low-Income Community	2011–2015
Texas	Galveston	48167723700	Low-Income Community	2011–2015
Texas	Galveston	48167724101	Low-Income Community	2011–2015
Texas	Galveston	48167724800	Low-Income Community	2011–2015
Texas	Galveston	48167726200	Low-Income Community	2011–2015
Texas	Gonzales	48177000300	Low-Income Community	2011–2015
Texas	Gonzales	48177000500	Low-Income Community	2011–2015
Texas	Gray	48179950600	Low-Income Community	2011–2015
Texas	Grayson	48181000200	Low-Income Community	2011–2015
Texas	Grayson	48181000502	Low-Income Community	2011–2015
Texas	Grayson	48181000902	Low-Income Community	2011–2015
Texas	Grayson	48181002000	Low-Income Community	2011–2015
Texas	Gregg	48183000800	Low-Income Community	2011–2015
Texas	Gregg	48183001100	Low-Income Community	2011–2015
Texas	Gregg	48183001400	Low-Income Community	2011–2015
Texas	Gregg	48183010200	Low-Income Community	2011–2015
Texas	Gregg	48183010500	Low-Income Community	2011–2015
Texas	Gregg	48183010700	Low-Income Community	2011–2015
Texas	Grimes	48185180101	Low-Income Community	2011–2015
Texas	Grimes	48185180102	Low-Income Community	2011–2015
Texas	Grimes	48185180200	Low-Income Community	2011–2015
Texas	Hale	48189950100	Low-Income Community	2011–2015
Texas	Hall	48191950500	Low-Income Community	2011–2015
Texas	Hardin	48199030100	Low-Income Community	2011–2015
Texas	Hardin	48199030700	Low-Income Community	2011–2015
Texas	Hardin	48199030800	Low-Income Community	2011–2015
Texas	Harris	48201100000	Low-Income Community	2011–2015
Texas	Harris	48201210400	Low-Income Community	2011–2015
Texas	Harris	48201210500	Low-Income Community	2011–2015
Texas	Harris	48201210600	Low-Income Community	2011–2015
Texas	Harris	48201210700	Low-Income Community	2011–2015
Texas	Harris	48201210800	Low-Income Community	2011–2015
Texas	Harris	48201211000	Low-Income Community	2011–2015
Texas	Harris	48201211300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201211400	Low-Income Community	2011–2015
Texas	Harris	48201211500	Low-Income Community	2011–2015
Texas	Harris	48201211600	Low-Income Community	2011–2015
Texas	Harris	48201212300	Low-Income Community	2011–2015
Texas	Harris	48201220100	Low-Income Community	2011–2015
Texas	Harris	48201220200	Low-Income Community	2011–2015
Texas	Harris	48201220800	Low-Income Community	2011–2015
Texas	Harris	48201222501	Low-Income Community	2011–2015
Texas	Harris	48201222503	Low-Income Community	2011–2015
Texas	Harris	48201222600	Low-Income Community	2011–2015
Texas	Harris	48201222700	Low-Income Community	2011–2015
Texas	Harris	48201230200	Low-Income Community	2011–2015
Texas	Harris	48201230600	Low-Income Community	2011–2015
Texas	Harris	48201230700	Low-Income Community	2011–2015
Texas	Harris	48201231000	Low-Income Community	2011–2015
Texas	Harris	48201231100	Low-Income Community	2011–2015
Texas	Harris	48201231200	Low-Income Community	2011–2015
Texas	Harris	48201231400	Low-Income Community	2011–2015
Texas	Harris	48201231500	Low-Income Community	2011–2015
Texas	Harris	48201233500	Low-Income Community	2011–2015
Texas	Harris	48201240100	Low-Income Community	2011–2015
Texas	Harris	48201240501	Low-Income Community	2011–2015
Texas	Harris	48201240502	Low-Income Community	2011–2015
Texas	Harris	48201240600	Low-Income Community	2011–2015
Texas	Harris	48201253800	Low-Income Community	2011–2015
Texas	Harris	48201254300	Low-Income Community	2011–2015
Texas	Harris	48201254600	Low-Income Community	2011–2015
Texas	Harris	48201310100	Low-Income Community	2011–2015
Texas	Harris	48201310300	Low-Income Community	2011–2015
Texas	Harris	48201310400	Low-Income Community	2011–2015
Texas	Harris	48201310500	Low-Income Community	2011–2015
Texas	Harris	48201310600	Low-Income Community	2011–2015
Texas	Harris	48201310800	Low-Income Community	2011–2015
Texas	Harris	48201310900	Low-Income Community	2011–2015
Texas	Harris	48201311000	Low-Income Community	2011–2015
Texas	Harris	48201311600	Low-Income Community	2011–2015
Texas	Harris	48201311700	Low-Income Community	2011–2015
Texas	Harris	48201312000	Low-Income Community	2011–2015
Texas	Harris	48201312200	Low-Income Community	2011–2015
Texas	Harris	48201312300	Low-Income Community	2011–2015
Texas	Harris	48201312400	Low-Income Community	2011–2015
Texas	Harris	48201312500	Low-Income Community	2011–2015
Texas	Harris	48201312700	Low-Income Community	2011–2015
Texas	Harris	48201312800	Low-Income Community	2011–2015
Texas	Harris	48201312900	Low-Income Community	2011–2015
Texas	Harris	48201313000	Low-Income Community	2011–2015
Texas	Harris	48201313200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201313300	Low-Income Community	2011–2015
Texas	Harris	48201313400	Low-Income Community	2011–2015
Texas	Harris	48201313500	Low-Income Community	2011–2015
Texas	Harris	48201313600	Low-Income Community	2011–2015
Texas	Harris	48201313700	Low-Income Community	2011–2015
Texas	Harris	48201313800	Low-Income Community	2011–2015
Texas	Harris	48201314001	Low-Income Community	2011–2015
Texas	Harris	48201314002	Low-Income Community	2011–2015
Texas	Harris	48201314300	Low-Income Community	2011–2015
Texas	Harris	48201314400	Low-Income Community	2011–2015
Texas	Harris	48201321900	Low-Income Community	2011–2015
Texas	Harris	48201322100	Low-Income Community	2011–2015
Texas	Harris	48201322200	Low-Income Community	2011–2015
Texas	Harris	48201323702	Low-Income Community	2011–2015
Texas	Harris	48201324100	Low-Income Community	2011–2015
Texas	Harris	48201331100	Low-Income Community	2011–2015
Texas	Harris	48201331200	Low-Income Community	2011–2015
Texas	Harris	48201331300	Low-Income Community	2011–2015
Texas	Harris	48201331400	Low-Income Community	2011–2015
Texas	Harris	48201331700	Low-Income Community	2011–2015
Texas	Harris	48201331800	Low-Income Community	2011–2015
Texas	Harris	48201332000	Low-Income Community	2011–2015
Texas	Harris	48201342300	Low-Income Community	2011–2015
Texas	Harris	48201421101	Low-Income Community	2011–2015
Texas	Harris	48201421102	Low-Income Community	2011–2015
Texas	Harris	48201421201	Low-Income Community	2011–2015
Texas	Harris	48201421202	Low-Income Community	2011–2015
Texas	Harris	48201421300	Low-Income Community	2011–2015
Texas	Harris	48201421401	Low-Income Community	2011–2015
Texas	Harris	48201421402	Low-Income Community	2011–2015
Texas	Harris	48201421403	Low-Income Community	2011–2015
Texas	Harris	48201421500	Low-Income Community	2011–2015
Texas	Harris	48201421600	Low-Income Community	2011–2015
Texas	Harris	48201422302	Low-Income Community	2011–2015
Texas	Harris	48201422701	Low-Income Community	2011–2015
Texas	Harris	48201433600	Low-Income Community	2011–2015
Texas	Harris	48201452500	Low-Income Community	2011–2015
Texas	Harris	48201453200	Low-Income Community	2011–2015
Texas	Harris	48201453300	Low-Income Community	2011–2015
Texas	Harris	48201453401	Low-Income Community	2011–2015
Texas	Harris	48201530800	Low-Income Community	2011–2015
Texas	Harris	48201531800	Low-Income Community	2011–2015
Texas	Harris	48201531900	Low-Income Community	2011–2015
Texas	Harris	48201532001	Low-Income Community	2011–2015
Texas	Harris	48201532700	Low-Income Community	2011–2015
Texas	Harris	48201532800	Low-Income Community	2011–2015
Texas	Harris	48201533000	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Harris	48201533300	Low-Income Community	2011–2015
Texas	Harris	48201533400	Low-Income Community	2011–2015
Texas	Harris	48201533702	Low-Income Community	2011–2015
Texas	Harrison	48203020102	Low-Income Community	2011–2015
Texas	Harrison	48203020103	Low-Income Community	2011–2015
Texas	Harrison	48203020302	Low-Income Community	2011–2015
Texas	Harrison	48203020401	Low-Income Community	2011–2015
Texas	Harrison	48203020402	Low-Income Community	2011–2015
Texas	Haskell	48207950300	Low-Income Community	2011–2015
Texas	Hays	48209010200	Low-Income Community	2011–2015
Texas	Hays	48209010303	Low-Income Community	2011–2015
Texas	Hays	48209010701	Low-Income Community	2011–2015
Texas	Hays	48209010702	Low-Income Community	2011–2015
Texas	Henderson	48213950602	Low-Income Community	2011–2015
Texas	Henderson	48213950700	Low-Income Community	2011–2015
Texas	Henderson	48213950901	Low-Income Community	2011–2015
Texas	Henderson	48213950902	Low-Income Community	2011–2015
Texas	Henderson	48213951000	Low-Income Community	2011–2015
Texas	Henderson	48213951200	Low-Income Community	2011–2015
Texas	Hidalgo	48215020102	Low-Income Community	2011–2015
Texas	Hidalgo	48215020201	Low-Income Community	2011–2015
Texas	Hidalgo	48215020503	Low-Income Community	2011–2015
Texas	Hidalgo	48215021302	Low-Income Community	2011–2015
Texas	Hidalgo	48215021303	Low-Income Community	2011–2015
Texas	Hidalgo	48215021304	Low-Income Community	2011–2015
Texas	Hidalgo	48215021305	Low-Income Community	2011–2015
Texas	Hidalgo	48215021401	Low-Income Community	2011–2015
Texas	Hidalgo	48215021701	Low-Income Community	2011–2015
Texas	Hidalgo	48215021702	Low-Income Community	2011–2015
Texas	Hidalgo	48215022103	Low-Income Community	2011–2015
Texas	Hidalgo	48215022106	Low-Income Community	2011–2015
Texas	Hidalgo	48215022401	Low-Income Community	2011–2015
Texas	Hidalgo	48215022402	Low-Income Community	2011–2015
Texas	Hidalgo	48215023103	Low-Income Community	2011–2015
Texas	Hidalgo	48215023104	Low-Income Community	2011–2015
Texas	Hidalgo	48215023503	Low-Income Community	2011–2015
Texas	Hidalgo	48215024108	Low-Income Community	2011–2015
Texas	Hidalgo	48215024114	Low-Income Community	2011–2015
Texas	Hidalgo	48215024201	Low-Income Community	2011–2015
Texas	Hidalgo	48215024203	Low-Income Community	2011–2015
Texas	Hidalgo	48215024204	Low-Income Community	2011–2015
Texas	Hidalgo	48215024205	Low-Income Community	2011–2015
Texas	Hill	48217960100	Low-Income Community	2011–2015
Texas	Hill	48217960900	Low-Income Community	2011–2015
Texas	Hockley	48219950100	Low-Income Community	2011–2015
Texas	Hockley	48219950400	Low-Income Community	2011–2015
Texas	Hopkins	48223950600	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Hopkins	48223950700	Low-Income Community	2011–2015
Texas	Hopkins	48223950800	Low-Income Community	2011–2015
Texas	Howard	48227950500	Low-Income Community	2011–2015
Texas	Hunt	48231960200	Low-Income Community	2011–2015
Texas	Hunt	48231960500	Low-Income Community	2011–2015
Texas	Hunt	48231960600	Low-Income Community	2011–2015
Texas	Hunt	48231960700	Low-Income Community	2011–2015
Texas	Hunt	48231960800	Low-Income Community	2011–2015
Texas	Hunt	48231961300	Low-Income Community	2011–2015
Texas	Hunt	48231961503	Low-Income Community	2011–2015
Texas	Hunt	48231961600	Low-Income Community	2011–2015
Texas	Jasper	48241950200	Low-Income Community	2011–2015
Texas	Jasper	48241950300	Low-Income Community	2011–2015
Texas	Jefferson	48245002500	Low-Income Community	2011–2015
Texas	Jefferson	48245005400	Low-Income Community	2011–2015
Texas	Jefferson	48245005900	Low-Income Community	2011–2015
Texas	Jefferson	48245006100	Low-Income Community	2011–2015
Texas	Jefferson	48245006300	Low-Income Community	2011–2015
Texas	Jefferson	48245010100	Low-Income Community	2011–2015
Texas	Jefferson	48245011700	Low-Income Community	2011–2015
Texas	Jefferson	48245011800	Low-Income Community	2011–2015
Texas	Jim Hogg	48247950200	Low-Income Community	2011–2015
Texas	Jim Hogg	48247950400	Low-Income Community	2011–2015
Texas	Johnson	48251130212	Low-Income Community	2011–2015
Texas	Johnson	48251130302	Low-Income Community	2011–2015
Texas	Jones	48253020400	Low-Income Community	2011–2015
Texas	Karnes	48255970200	Low-Income Community	2011–2015
Texas	Karnes	48255970300	Low-Income Community	2011–2015
Texas	Kaufman	48257050300	Low-Income Community	2011–2015
Texas	Kaufman	48257050400	Low-Income Community	2011–2015
Texas	Kaufman	48257050500	Low-Income Community	2011–2015
Texas	Kaufman	48257050704	Low-Income Community	2011–2015
Texas	Kaufman	48257051201	Low-Income Community	2011–2015
Texas	Kaufman	48257051300	Low-Income Community	2011–2015
Texas	Kerr	48265960500	Low-Income Community	2011–2015
Texas	Kerr	48265960800	Low-Income Community	2011–2015
Texas	Kleberg	48273020200	Low-Income Community	2011–2015
Texas	Kleberg	48273020300	Low-Income Community	2011–2015
Texas	Lamar	48277000300	Low-Income Community	2011–2015
Texas	Lamar	48277000500	Low-Income Community	2011–2015
Texas	Lamar	48277000600	Low-Income Community	2011–2015
Texas	Lamar	48277000700	Low-Income Community	2011–2015
Texas	Lamar	48277000800	Low-Income Community	2011–2015
Texas	Lamb	48279950500	Low-Income Community	2011–2015
Texas	Lamb	48279950600	Low-Income Community	2011–2015
Texas	La Salle	48283950300	Low-Income Community	2011–2015
Texas	Lavaca	48285000600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Lee	48287000400	Low-Income Community	2011–2015
Texas	Liberty	48291700100	Low-Income Community	2011–2015
Texas	Liberty	48291700200	Low-Income Community	2011–2015
Texas	Liberty	48291700300	Low-Income Community	2011–2015
Texas	Liberty	48291700400	Low-Income Community	2011–2015
Texas	Liberty	48291700600	Low-Income Community	2011–2015
Texas	Liberty	48291701200	Low-Income Community	2011–2015
Texas	Liberty	48291701300	Low-Income Community	2011–2015
Texas	Limestone	48293970400	Low-Income Community	2011–2015
Texas	Limestone	48293970600	Low-Income Community	2011–2015
Texas	Llano	48299970200	Low-Income Community	2011–2015
Texas	Llano	48299970500	Low-Income Community	2011–2015
Texas	Llano	48299970600	Low-Income Community	2011–2015
Texas	Loving	48301950100	Low-Income Community	2011–2015
Texas	Lubbock	48303000100	Low-Income Community	2011–2015
Texas	Lubbock	48303000201	Low-Income Community	2011–2015
Texas	Lubbock	48303000301	Low-Income Community	2011–2015
Texas	Lubbock	48303000302	Low-Income Community	2011–2015
Texas	Lubbock	48303000700	Low-Income Community	2011–2015
Texas	Lubbock	48303000900	Low-Income Community	2011–2015
Texas	Lubbock	48303001000	Low-Income Community	2011–2015
Texas	Lubbock	48303010200	Low-Income Community	2011–2015
Texas	McLennan	48309000100	Low-Income Community	2011–2015
Texas	McLennan	48309001200	Low-Income Community	2011–2015
Texas	McLennan	48309001500	Low-Income Community	2011–2015
Texas	McLennan	48309003602	Low-Income Community	2011–2015
Texas	McLennan	48309004201	Low-Income Community	2011–2015
Texas	Madison	48313000100	Low-Income Community	2011–2015
Texas	Marion	48315950300	Low-Income Community	2011–2015
Texas	Matagorda	48321730201	Low-Income Community	2011–2015
Texas	Matagorda	48321730501	Low-Income Community	2011–2015
Texas	Matagorda	48321730600	Low-Income Community	2011–2015
Texas	Matagorda	48321730700	Low-Income Community	2011–2015
Texas	Maverick	48323950201	Low-Income Community	2011–2015
Texas	Maverick	48323950601	Low-Income Community	2011–2015
Texas	Medina	48325000402	Low-Income Community	2011–2015
Texas	Medina	48325000500	Low-Income Community	2011–2015
Texas	Milam	48331950402	Low-Income Community	2011–2015
Texas	Milam	48331950700	Low-Income Community	2011–2015
Texas	Montgomery	48339692200	Low-Income Community	2011–2015
Texas	Montgomery	48339692500	Low-Income Community	2011–2015
Texas	Montgomery	48339692601	Low-Income Community	2011–2015
Texas	Montgomery	48339692602	Low-Income Community	2011–2015
Texas	Montgomery	48339692700	Low-Income Community	2011–2015
Texas	Montgomery	48339692802	Low-Income Community	2011–2015
Texas	Montgomery	48339693000	Low-Income Community	2011–2015
Texas	Montgomery	48339693400	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Montgomery	48339693500	Low-Income Community	2011–2015
Texas	Montgomery	48339694000	Low-Income Community	2011–2015
Texas	Montgomery	48339694101	Low-Income Community	2011–2015
Texas	Morris	48343950100	Low-Income Community	2011–2015
Texas	Morris	48343950200	Low-Income Community	2011–2015
Texas	Morris	48343950300	Low-Income Community	2011–2015
Texas	Motley	48345950100	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950301	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950302	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950700	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950800	Low-Income Community	2011–2015
Texas	Nacogdoches	48347950900	Low-Income Community	2011–2015
Texas	Nacogdoches	48347951000	Low-Income Community	2011–2015
Texas	Navarro	48349970100	Low-Income Community	2011–2015
Texas	Navarro	48349970200	Low-Income Community	2011–2015
Texas	Navarro	48349970500	Low-Income Community	2011–2015
Texas	Navarro	48349970600	Low-Income Community	2011–2015
Texas	Navarro	48349970700	Low-Income Community	2011–2015
Texas	Navarro	48349970800	Low-Income Community	2011–2015
Texas	Navarro	48349970900	Low-Income Community	2011–2015
Texas	Newton	48351950200	Low-Income Community	2011–2015
Texas	Newton	48351950300	Low-Income Community	2011–2015
Texas	Nueces	48355001000	Low-Income Community	2011–2015
Texas	Nueces	48355001602	Low-Income Community	2011–2015
Texas	Nueces	48355002001	Low-Income Community	2011–2015
Texas	Nueces	48355002200	Low-Income Community	2011–2015
Texas	Nueces	48355002704	Low-Income Community	2011–2015
Texas	Nueces	48355002900	Low-Income Community	2011–2015
Texas	Nueces	48355005602	Low-Income Community	2011–2015
Texas	Nueces	48355006300	Low-Income Community	2011–2015
Texas	Nueces	48355006400	Low-Income Community	2011–2015
Texas	Orange	48361020200	Low-Income Community	2011–2015
Texas	Orange	48361020300	Low-Income Community	2011–2015
Texas	Orange	48361020500	Low-Income Community	2011–2015
Texas	Orange	48361020700	Low-Income Community	2011–2015
Texas	Orange	48361020900	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000500	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000600	Low-Income Community	2011–2015
Texas	Palo Pinto	48363000800	Low-Income Community	2011–2015
Texas	Polk	48373210101	Low-Income Community	2011–2015
Texas	Polk	48373210102	Low-Income Community	2011–2015
Texas	Polk	48373210203	Low-Income Community	2011–2015
Texas	Polk	48373210204	Low-Income Community	2011–2015
Texas	Polk	48373210301	Low-Income Community	2011–2015
Texas	Polk	48373210400	Low-Income Community	2011–2015
Texas	Potter	48375015400	Low-Income Community	2011–2015
Texas	Presidio	48377950200	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Reeves	48389950100	Low-Income Community	2011–2015
Texas	Robertson	48395960200	Low-Income Community	2011–2015
Texas	Rusk	48401950501	Low-Income Community	2011–2015
Texas	Rusk	48401950502	Low-Income Community	2011–2015
Texas	Rusk	48401951000	Low-Income Community	2011–2015
Texas	Sabine	48403950300	Low-Income Community	2011–2015
Texas	San Augustine	48405950100	Low-Income Community	2011–2015
Texas	San Augustine	48405950300	Low-Income Community	2011–2015
Texas	San Jacinto	48407200101	Low-Income Community	2011–2015
Texas	San Patricio	48409010800	Low-Income Community	2011–2015
Texas	San Saba	48411950100	Low-Income Community	2011–2015
Texas	Shelby	48419950100	Low-Income Community	2011–2015
Texas	Shelby	48419950200	Low-Income Community	2011–2015
Texas	Shelby	48419950300	Low-Income Community	2011–2015
Texas	Shelby	48419950400	Low-Income Community	2011–2015
Texas	Smith	48423000100	Low-Income Community	2011–2015
Texas	Smith	48423000201	Low-Income Community	2011–2015
Texas	Smith	48423000202	Low-Income Community	2011–2015
Texas	Smith	48423000400	Low-Income Community	2011–2015
Texas	Smith	48423000500	Low-Income Community	2011–2015
Texas	Smith	48423000900	Low-Income Community	2011–2015
Texas	Smith	48423001500	Low-Income Community	2011–2015
Texas	Smith	48423001601	Low-Income Community	2011–2015
Texas	Smith	48423001700	Low-Income Community	2011–2015
Texas	Smith	48423001801	Low-Income Community	2011–2015
Texas	Smith	48423001802	Low-Income Community	2011–2015
Texas	Smith	48423002101	Low-Income Community	2011–2015
Texas	Somervell	48425000200	Low-Income Community	2011–2015
Texas	Starr	48427950104	Low-Income Community	2011–2015
Texas	Starr	48427950105	Low-Income Community	2011–2015
Texas	Starr	48427950106	Low-Income Community	2011–2015
Texas	Starr	48427950107	Low-Income Community	2011–2015
Texas	Starr	48427950202	Low-Income Community	2011–2015
Texas	Starr	48427950204	Low-Income Community	2011–2015
Texas	Starr	48427950401	Low-Income Community	2011–2015
Texas	Starr	48427950402	Low-Income Community	2011–2015
Texas	Stephens	48429950300	Low-Income Community	2011–2015
Texas	Tarrant	48439100201	Low-Income Community	2011–2015
Texas	Tarrant	48439100202	Low-Income Community	2011–2015
Texas	Tarrant	48439100300	Low-Income Community	2011–2015
Texas	Tarrant	48439103800	Low-Income Community	2011–2015
Texas	Tarrant	48439106201	Low-Income Community	2011–2015
Texas	Tarrant	48439122900	Low-Income Community	2011–2015
Texas	Tarrant	48439123500	Low-Income Community	2011–2015
Texas	Taylor	48441011700	Low-Income Community	2011–2015
Texas	Taylor	48441013000	Low-Income Community	2011–2015
Texas	Terry	48445950400	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Titus	48449950300	Low-Income Community	2011–2015
Texas	Tom Green	48451001702	Low-Income Community	2011–2015
Texas	Travis	48453001712	Low-Income Community	2011–2015
Texas	Travis	48453001804	Low-Income Community	2011–2015
Texas	Travis	48453001832	Low-Income Community	2011–2015
Texas	Travis	48453001842	Low-Income Community	2011–2015
Texas	Travis	48453002106	Low-Income Community	2011–2015
Texas	Travis	48453002109	Low-Income Community	2011–2015
Texas	Travis	48453002111	Low-Income Community	2011–2015
Texas	Travis	48453002112	Low-Income Community	2011–2015
Texas	Travis	48453002209	Low-Income Community	2011–2015
Texas	Travis	48453002307	Low-Income Community	2011–2015
Texas	Travis	48453002312	Low-Income Community	2011–2015
Texas	Travis	48453002313	Low-Income Community	2011–2015
Texas	Travis	48453002319	Low-Income Community	2011–2015
Texas	Travis	48453002410	Low-Income Community	2011–2015
Texas	Travis	48453002411	Low-Income Community	2011–2015
Texas	Travis	48453002413	Low-Income Community	2011–2015
Texas	Travis	48453002427	Low-Income Community	2011–2015
Texas	Travis	48453002432	Low-Income Community	2011–2015
Texas	Travis	48453002433	Low-Income Community	2011–2015
Texas	Travis	48453002435	Low-Income Community	2011–2015
Texas	Travis	48453002436	Low-Income Community	2011–2015
Texas	Trinity	48455950200	Low-Income Community	2011–2015
Texas	Trinity	48455950400	Low-Income Community	2011–2015
Texas	Trinity	48455950500	Low-Income Community	2011–2015
Texas	Tyler	48457950200	Low-Income Community	2011–2015
Texas	Tyler	48457950300	Low-Income Community	2011–2015
Texas	Val Verde	48465950400	Low-Income Community	2011–2015
Texas	Van Zandt	48467950500	Low-Income Community	2011–2015
Texas	Victoria	48469000100	Low-Income Community	2011–2015
Texas	Victoria	48469000201	Low-Income Community	2011–2015
Texas	Victoria	48469000202	Low-Income Community	2011–2015
Texas	Victoria	48469000301	Low-Income Community	2011–2015
Texas	Victoria	48469000302	Low-Income Community	2011–2015
Texas	Victoria	48469000700	Low-Income Community	2011–2015
Texas	Victoria	48469001601	Low-Income Community	2011–2015
Texas	Walker	48471790102	Low-Income Community	2011–2015
Texas	Walker	48471790400	Low-Income Community	2011–2015
Texas	Walker	48471790500	Low-Income Community	2011–2015
Texas	Walker	48471790600	Low-Income Community	2011–2015
Texas	Waller	48473680200	Low-Income Community	2011–2015
Texas	Waller	48473680500	Low-Income Community	2011–2015
Texas	Washington	48477170100	Low-Income Community	2011–2015
Texas	Webb	48479000105	Low-Income Community	2011–2015
Texas	Webb	48479000106	Low-Income Community	2011–2015
Texas	Webb	48479001816	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Texas	Webb	48479001818	Low-Income Community	2011–2015
Texas	Wharton	48481740200	Low-Income Community	2011–2015
Texas	Wharton	48481740300	Low-Income Community	2011–2015
Texas	Wharton	48481740500	Low-Income Community	2011–2015
Texas	Wharton	48481740700	Low-Income Community	2011–2015
Texas	Wharton	48481740800	Low-Income Community	2011–2015
Texas	Wharton	48481741000	Low-Income Community	2011–2015
Texas	Wichita	48485011200	Low-Income Community	2011–2015
Texas	Wichita	48485011300	Low-Income Community	2011–2015
Texas	Wichita	48485011500	Low-Income Community	2011–2015
Texas	Wilbarger	48487950500	Low-Income Community	2011–2015
Texas	Wilbarger	48487950700	Low-Income Community	2011–2015
Texas	Willacy	48489950300	Low-Income Community	2011–2015
Texas	Willacy	48489950400	Low-Income Community	2011–2015
Texas	Willacy	48489950500	Low-Income Community	2011–2015
Texas	Willacy	48489950600	Low-Income Community	2011–2015
Texas	Willacy	48489950700	Low-Income Community	2011–2015
Texas	Williamson	48491020201	Low-Income Community	2011–2015
Texas	Williamson	48491020808	Low-Income Community	2011–2015
Texas	Williamson	48491021300	Low-Income Community	2011–2015
Texas	Williamson	48491021602	Low-Income Community	2011–2015
Texas	Wilson	48493000201	Low-Income Community	2011–2015
Texas	Wise	48497150200	Low-Income Community	2011–2015
Texas	Wood	48499950200	Low-Income Community	2011–2015
Texas	Wood	48499950400	Low-Income Community	2011–2015
Texas	Wood	48499950601	Low-Income Community	2011–2015
Texas	Wood	48499950700	Low-Income Community	2011–2015
Texas	Zapata	48505950400	Low-Income Community	2011–2015
Texas	Zavala	48507950100	Low-Income Community	2011–2015
Texas	Zavala	48507950200	Low-Income Community	2011–2015
Texas	Zavala	48507950302	Low-Income Community	2011–2015
Utah	Beaver	49001100100	Low-Income Community	2011–2015
Utah	Box Elder	49003960300	Low-Income Community	2011–2015
Utah	Box Elder	49003960601	Low-Income Community	2011–2015
Utah	Cache	49005000900	Low-Income Community	2011–2015
Utah	Cache	49005001002	Low-Income Community	2011–2015
Utah	Carbon	49007000600	Low-Income Community	2011–2015
Utah	Davis	49011125701	Low-Income Community	2011–2015
Utah	Davis	49011125702	Low-Income Community	2011–2015
Utah	Davis	49011126001	Low-Income Community	2011–2015
Utah	Duchesne	49013940300	Low-Income Community	2011–2015
Utah	Garfield	49017000300	Low-Income Community	2011–2015
Utah	Grand	49019000300	Low-Income Community	2011–2015
Utah	Iron	49021110300	Low-Income Community	2011–2015
Utah	Iron	49021110600	Low-Income Community	2011–2015
Utah	Millard	49027974300	Low-Income Community	2011–2015
Utah	Salt Lake	49035100600	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Utah	Salt Lake	49035102500	Low-Income Community	2011–2015
Utah	Salt Lake	49035102600	Low-Income Community	2011–2015
Utah	Salt Lake	49035102702	Low-Income Community	2011–2015
Utah	Salt Lake	49035111500	Low-Income Community	2011–2015
Utah	Salt Lake	49035111600	Low-Income Community	2011–2015
Utah	Salt Lake	49035111802	Low-Income Community	2011–2015
Utah	Salt Lake	49035112403	Low-Income Community	2011–2015
Utah	Salt Lake	49035112907	Low-Income Community	2011–2015
Utah	Salt Lake	49035113305	Low-Income Community	2011–2015
Utah	Salt Lake	49035113513	Low-Income Community	2011–2015
Utah	Salt Lake	49035113802	Low-Income Community	2011–2015
Utah	Salt Lake	49035113906	Low-Income Community	2011–2015
Utah	Salt Lake	49035114000	Low-Income Community	2011–2015
Utah	Salt Lake	49035114500	Low-Income Community	2011–2015
Utah	San Juan	49037942100	Low-Income Community	2011–2015
Utah	Sanpete	49039972400	Low-Income Community	2011–2015
Utah	Sevier	49041975300	Low-Income Community	2011–2015
Utah	Tooele	49045130900	Low-Income Community	2011–2015
Utah	Utah	49049000400	Low-Income Community	2011–2015
Utah	Utah	49049002400	Low-Income Community	2011–2015
Utah	Utah	49049002500	Low-Income Community	2011–2015
Utah	Utah	49049002801	Low-Income Community	2011–2015
Utah	Utah	49049002802	Low-Income Community	2011–2015
Utah	Washington	49053270300	Low-Income Community	2011–2015
Utah	Washington	49053271300	Low-Income Community	2011–2015
Utah	Weber	49057200400	Low-Income Community	2011–2015
Utah	Weber	49057200800	Low-Income Community	2011–2015
Utah	Weber	49057200900	Low-Income Community	2011–2015
Utah	Weber	49057201100	Low-Income Community	2011–2015
Utah	Weber	49057210800	Low-Income Community	2011–2015
Vermont	Addison	50001960300	Low-Income Community	2011–2015
Vermont	Bennington	50003970900	Low-Income Community	2011–2015
Vermont	Bennington	50003971200	Low-Income Community	2011–2015
Vermont	Caledonia	50005957200	Low-Income Community	2011–2015
Vermont	Caledonia	50005957400	Low-Income Community	2012–2016
Vermont	Caledonia	50005957500	Low-Income Community	2011–2015
Vermont	Chittenden	50007000500	Low-Income Community	2011–2015
Vermont	Chittenden	50007001000	Low-Income Community	2011–2015
Vermont	Chittenden	50007002400	Low-Income Community	2011–2015
Vermont	Chittenden	50007002500	Low-Income Community	2011–2015
Vermont	Chittenden	50007003600	Low-Income Community	2011–2015
Vermont	Franklin	50011010700	Low-Income Community	2011–2015
Vermont	Lamoille	50015953200	Low-Income Community	2011–2015
Vermont	Orange	50017959400	Non-LIC Contiguous	2011–2015
Vermont	Orleans	50019951400	Low-Income Community	2011–2015
Vermont	Orleans	50019951500	Low-Income Community	2011–2015
Vermont	Rutland	50021963100	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Vermont	Rutland	50021963200	Low-Income Community	2011–2015
Vermont	Rutland	50021963300	Low-Income Community	2011–2015
Vermont	Washington	50023955200	Low-Income Community	2011–2015
Vermont	Windham	50025967000	Low-Income Community	2011–2015
Vermont	Windham	50025968500	Low-Income Community	2011–2015
Vermont	Windsor	50027965100	Low-Income Community	2011–2015
Vermont	Windsor	50027966600	Low-Income Community	2011–2015
Vermont	Windsor	50027966700	Non-LIC Contiguous	2011–2015
Virgin Islands	St. Croix	78010970200	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970300	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970800	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010970900	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971000	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971100	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971200	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971300	Low-Income Community	2011–2015
Virgin Islands	St. Croix	78010971400	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030960800	Non-LIC Contiguous	2011–2015
Virgin Islands	St. Thomas	78030960900	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961000	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961100	Low-Income Community	2011–2015
Virgin Islands	St. Thomas	78030961200	Low-Income Community	2011–2015
Virginia	Accomack	51001090100	Low-Income Community	2012–2016
Virginia	Accomack	51001090200	Low-Income Community	2011–2015
Virginia	Albemarle	51003010700	Low-Income Community	2011–2015
Virginia	Albemarle	51003011302	Low-Income Community	2011–2015
Virginia	Alleghany	51005080202	Low-Income Community	2011–2015
Virginia	Amherst	51009010502	Low-Income Community	2011–2015
Virginia	Appomattox	51011040100	Low-Income Community	2011–2015
Virginia	Arlington	51013102701	Low-Income Community	2011–2015
Virginia	Arlington	51013103100	Low-Income Community	2011–2015
Virginia	Augusta	51015071200	Low-Income Community	2011–2015
Virginia	Bedford	51019030605	Low-Income Community	2011–2015
Virginia	Bedford	51019050100	Low-Income Community	2011–2015
Virginia	Brunswick	51025930203	Low-Income Community	2011–2015
Virginia	Buchanan	51027010300	Low-Income Community	2011–2015
Virginia	Campbell	51031020500	Low-Income Community	2011–2015
Virginia	Campbell	51031020900	Low-Income Community	2011–2015
Virginia	Caroline	51033030100	Low-Income Community	2012–2016
Virginia	Carroll	51035080200	Low-Income Community	2011–2015
Virginia	Charlotte	51037930100	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100107	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100210	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100407	Low-Income Community	2011–2015
Virginia	Chesterfield	51041100600	Low-Income Community	2011–2015
Virginia	Culpeper	51047930400	Low-Income Community	2011–2015
Virginia	Cumberland	51049930200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Dickenson	51051040300	Low-Income Community	2011–2015
Virginia	Dinwiddie	51053840500	Low-Income Community	2011–2015
Virginia	Essex	51057950700	Low-Income Community	2011–2015
Virginia	Fairfax	51059415401	Low-Income Community	2011–2015
Virginia	Fairfax	51059421500	Low-Income Community	2011–2015
Virginia	Fairfax	51059421600	Low-Income Community	2011–2015
Virginia	Fairfax	51059421800	Low-Income Community	2011–2015
Virginia	Fairfax	51059451400	Low-Income Community	2011–2015
Virginia	Fairfax	51059451502	Low-Income Community	2011–2015
Virginia	Fairfax	51059452801	Low-Income Community	2011–2015
Virginia	Fairfax	51059481000	Low-Income Community	2011–2015
Virginia	Fairfax	51059482100	Low-Income Community	2011–2015
Virginia	Fauquier	51061930706	Low-Income Community	2011–2015
Virginia	Franklin	51067020500	Low-Income Community	2011–2015
Virginia	Frederick	51069051102	Low-Income Community	2011–2015
Virginia	Giles	51071930100	Low-Income Community	2011–2015
Virginia	Gloucester	51073100301	Low-Income Community	2012–2016
Virginia	Grayson	51077060201	Low-Income Community	2011–2015
Virginia	Greensville	51081880101	Low-Income Community	2011–2015
Virginia	Halifax	51083930301	Low-Income Community	2011–2015
Virginia	Halifax	51083930600	Low-Income Community	2011–2015
Virginia	Halifax	51083930800	Low-Income Community	2011–2015
Virginia	Henrico	51087200105	Low-Income Community	2011–2015
Virginia	Henrico	51087200106	Non-LIC Contiguous	2011–2015
Virginia	Henrico	51087200303	Low-Income Community	2011–2015
Virginia	Henrico	51087200501	Low-Income Community	2011–2015
Virginia	Henrico	51087200805	Low-Income Community	2011–2015
Virginia	Henrico	51087201501	Low-Income Community	2011–2015
Virginia	Henrico	51087201502	Non-LIC Contiguous	2011–2015
Virginia	Henry	51089010100	Low-Income Community	2011–2015
Virginia	Henry	51089010300	Low-Income Community	2011–2015
Virginia	Henry	51089010602	Low-Income Community	2011–2015
Virginia	Henry	51089010700	Low-Income Community	2011–2015
Virginia	Henry	51089010800	Low-Income Community	2011–2015
Virginia	James City	51095080102	Low-Income Community	2011–2015
Virginia	King and Queen	51097950500	Low-Income Community	2011–2015
Virginia	Lancaster	51103030200	Low-Income Community	2012–2016
Virginia	Lee	51105950500	Low-Income Community	2011–2015
Virginia	Loudoun	51107611501	Low-Income Community	2011–2015
Virginia	Loudoun	51107611700	Low-Income Community	2011–2015
Virginia	Mecklenburg	51117930101	Low-Income Community	2011–2015
Virginia	Mecklenburg	51117930200	Low-Income Community	2011–2015
Virginia	Montgomery	51121020700	Low-Income Community	2011–2015
Virginia	Montgomery	51121020900	Low-Income Community	2011–2015
Virginia	Northampton	51131930300	Low-Income Community	2011–2015
Virginia	Orange	51137110200	Low-Income Community	2011–2015
Virginia	Page	51139030100	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Pittsylvania	51143010200	Low-Income Community	2011–2015
Virginia	Pittsylvania	51143011100	Low-Income Community	2011–2015
Virginia	Pittsylvania	51143011400	Low-Income Community	2011–2015
Virginia	Prince Edward	51147930201	Low-Income Community	2011–2015
Virginia	Prince George	51149850200	Low-Income Community	2011–2015
Virginia	Prince William	51153900201	Low-Income Community	2011–2015
Virginia	Prince William	51153900203	Low-Income Community	2011–2015
Virginia	Prince William	51153900300	Low-Income Community	2011–2015
Virginia	Prince William	51153900600	Low-Income Community	2011–2015
Virginia	Prince William	51153901008	Low-Income Community	2012–2016
Virginia	Prince William	51153901900	Low-Income Community	2011–2015
Virginia	Pulaski	51155210300	Low-Income Community	2011–2015
Virginia	Richmond	51159040100	Low-Income Community	2011–2015
Virginia	Roanoke	51161030201	Non-LIC Contiguous	2011–2015
Virginia	Rockingham	51165010500	Low-Income Community	2011–2015
Virginia	Rockingham	51165011700	Low-Income Community	2011–2015
Virginia	Russell	51167030401	Low-Income Community	2011–2015
Virginia	Scott	51169030600	Low-Income Community	2011–2015
Virginia	Shenandoah	51171040700	Low-Income Community	2011–2015
Virginia	Smyth	51173030301	Low-Income Community	2011–2015
Virginia	Smyth	51173030701	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020202	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020304	Low-Income Community	2011–2015
Virginia	Spotsylvania	51177020305	Low-Income Community	2011–2015
Virginia	Sussex	51183870300	Low-Income Community	2011–2015
Virginia	Tazewell	51185020200	Low-Income Community	2011–2015
Virginia	Tazewell	51185020600	Low-Income Community	2011–2015
Virginia	Warren	51187020601	Low-Income Community	2011–2015
Virginia	Washington	51191010100	Low-Income Community	2011–2015
Virginia	Wise	51195930900	Low-Income Community	2011–2015
Virginia	Wise	51195931300	Low-Income Community	2011–2015
Virginia	Wise	51195931400	Non-LIC Contiguous	2011–2015
Virginia	Wise	51195931700	Low-Income Community	2011–2015
Virginia	Wythe	51197050100	Low-Income Community	2011–2015
Virginia	Alexandria	51510200102	Low-Income Community	2011–2015
Virginia	Alexandria	51510200104	Low-Income Community	2011–2015
Virginia	Alexandria	51510200303	Low-Income Community	2011–2015
Virginia	Alexandria	51510201203	Low-Income Community	2011–2015
Virginia	Bristol	51520020100	Low-Income Community	2011–2015
Virginia	Bristol	51520020400	Low-Income Community	2011–2015
Virginia	Buena Vista	51530930600	Low-Income Community	2011–2015
Virginia	Charlottesville	51540000401	Low-Income Community	2011–2015
Virginia	Charlottesville	51540000501	Low-Income Community	2011–2015
Virginia	Chesapeake	51550020300	Low-Income Community	2011–2015
Virginia	Chesapeake	51550020500	Low-Income Community	2011–2015
Virginia	Chesapeake	51550021403	Low-Income Community	2011–2015
Virginia	Covington	51580060200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Danville	51590000300	Low-Income Community	2011–2015
Virginia	Danville	51590000400	Low-Income Community	2011–2015
Virginia	Danville	51590000500	Low-Income Community	2011–2015
Virginia	Danville	51590000600	Low-Income Community	2011–2015
Virginia	Emporia	51595890100	Low-Income Community	2011–2015
Virginia	Franklin	51620090200	Low-Income Community	2011–2015
Virginia	Fredericksburg	51630000200	Low-Income Community	2011–2015
Virginia	Fredericksburg	51630000500	Low-Income Community	2011–2015
Virginia	Galax	51640070101	Low-Income Community	2011–2015
Virginia	Galax	51640070102	Low-Income Community	2011–2015
Virginia	Hampton	51650010313	Low-Income Community	2011–2015
Virginia	Hampton	51650010314	Low-Income Community	2011–2015
Virginia	Hampton	51650010502	Low-Income Community	2011–2015
Virginia	Hampton	51650010601	Low-Income Community	2011–2015
Virginia	Harrisonburg	51660000101	Low-Income Community	2011–2015
Virginia	Harrisonburg	51660000302	Low-Income Community	2011–2015
Virginia	Hopewell	51670820300	Low-Income Community	2011–2015
Virginia	Hopewell	51670820600	Low-Income Community	2011–2015
Virginia	Lexington	51678930500	Low-Income Community	2011–2015
Virginia	Lynchburg	51680000500	Low-Income Community	2011–2015
Virginia	Lynchburg	51680000600	Low-Income Community	2011–2015
Virginia	Lynchburg	51680001400	Low-Income Community	2011–2015
Virginia	Lynchburg	51680001600	Low-Income Community	2011–2015
Virginia	Manassas	51683910201	Low-Income Community	2011–2015
Virginia	Martinsville	51690000100	Low-Income Community	2011–2015
Virginia	Martinsville	51690000200	Low-Income Community	2011–2015
Virginia	Newport News	51700030100	Low-Income Community	2011–2015
Virginia	Newport News	51700030400	Low-Income Community	2011–2015
Virginia	Newport News	51700030800	Low-Income Community	2011–2015
Virginia	Newport News	51700032113	Low-Income Community	2011–2015
Virginia	Newport News	51700032128	Low-Income Community	2011–2015
Virginia	Newport News	51700032225	Low-Income Community	2011–2015
Virginia	Newport News	51700032400	Low-Income Community	2011–2015
Virginia	Norfolk	51710001100	Low-Income Community	2011–2015
Virginia	Norfolk	51710002500	Low-Income Community	2011–2015
Virginia	Norfolk	51710002600	Low-Income Community	2011–2015
Virginia	Norfolk	51710002700	Low-Income Community	2011–2015
Virginia	Norfolk	51710002900	Low-Income Community	2011–2015
Virginia	Norfolk	51710003501	Low-Income Community	2011–2015
Virginia	Norfolk	51710004100	Low-Income Community	2011–2015
Virginia	Norfolk	51710004200	Low-Income Community	2011–2015
Virginia	Norfolk	51710004700	Low-Income Community	2011–2015
Virginia	Norfolk	51710004800	Low-Income Community	2011–2015
Virginia	Norfolk	51710005000	Low-Income Community	2011–2015
Virginia	Norfolk	51710005701	Low-Income Community	2011–2015
Virginia	Norfolk	51710006502	Low-Income Community	2011–2015
Virginia	Norfolk	51710006800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Virginia	Norfolk	51710006901	Low-Income Community	2011–2015
Virginia	Norfolk	51710007001	Low-Income Community	2011–2015
Virginia	Norton	51720960100	Low-Income Community	2011–2015
Virginia	Petersburg	51730810100	Low-Income Community	2011–2015
Virginia	Petersburg	51730811200	Low-Income Community	2011–2015
Virginia	Petersburg	51730811300	Low-Income Community	2011–2015
Virginia	Portsmouth	51740210200	Low-Income Community	2011–2015
Virginia	Portsmouth	51740210500	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211400	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211700	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211800	Low-Income Community	2011–2015
Virginia	Portsmouth	51740211900	Low-Income Community	2011–2015
Virginia	Portsmouth	51740212000	Low-Income Community	2011–2015
Virginia	Portsmouth	51740212100	Low-Income Community	2011–2015
Virginia	Radford	51750010102	Low-Income Community	2011–2015
Virginia	Radford	51750010200	Low-Income Community	2011–2015
Virginia	Richmond	51760020200	Low-Income Community	2011–2015
Virginia	Richmond	51760020300	Low-Income Community	2011–2015
Virginia	Richmond	51760020500	Low-Income Community	2011–2015
Virginia	Richmond	51760021100	Low-Income Community	2011–2015
Virginia	Richmond	51760030200	Low-Income Community	2011–2015
Virginia	Richmond	51760040200	Low-Income Community	2011–2015
Virginia	Richmond	51760060200	Low-Income Community	2011–2015
Virginia	Richmond	51760060700	Low-Income Community	2011–2015
Virginia	Richmond	51760060800	Low-Income Community	2011–2015
Virginia	Richmond	51760060900	Low-Income Community	2011–2015
Virginia	Richmond	51760061000	Low-Income Community	2011–2015
Virginia	Roanoke	51770000601	Low-Income Community	2011–2015
Virginia	Roanoke	51770000602	Low-Income Community	2011–2015
Virginia	Roanoke	51770001100	Non-LIC Contiguous	2011–2015
Virginia	Roanoke	51770001200	Low-Income Community	2011–2015
Virginia	Salem	51775010100	Low-Income Community	2011–2015
Virginia	Staunton	51790000200	Low-Income Community	2011–2015
Virginia	Staunton	51790000300	Low-Income Community	2012–2016
Virginia	Suffolk	51800065400	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810040200	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810041002	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044200	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044805	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810044806	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045407	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045408	Low-Income Community	2011–2015
Virginia	Virginia Beach	51810045604	Low-Income Community	2011–2015
Virginia	Waynesboro	51820003200	Low-Income Community	2011–2015
Virginia	Williamsburg	51830370200	Low-Income Community	2011–2015
Virginia	Winchester	51840000100	Low-Income Community	2011–2015
Washington	Adams	53001950200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	Asotin	53003960300	Low-Income Community	2011–2015
Washington	Benton	53005010901	Low-Income Community	2011–2015
Washington	Benton	53005011300	Low-Income Community	2011–2015
Washington	Chelan	53007961000	Low-Income Community	2011–2015
Washington	Chelan	53007961100	Low-Income Community	2011–2015
Washington	Chelan	53007961200	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009000200	Low-Income Community	2011–2015
Washington	Clallam	53009000300	Low-Income Community	2011–2015
Washington	Clallam	53009000400	Low-Income Community	2011–2015
Washington	Clallam	53009000700	Low-Income Community	2011–2015
Washington	Clallam	53009000800	Low-Income Community	2011–2015
Washington	Clallam	53009000900	Low-Income Community	2011–2015
Washington	Clallam	53009001500	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009002100	Low-Income Community	2011–2015
Washington	Clallam	53009002300	Non-LIC Contiguous	2011–2015
Washington	Clallam	53009940000	Low-Income Community	2011–2015
Washington	Clark	53011040507	Low-Income Community	2011–2015
Washington	Clark	53011040509	Low-Income Community	2011–2015
Washington	Clark	53011041009	Low-Income Community	2011–2015
Washington	Clark	53011041600	Low-Income Community	2011–2015
Washington	Clark	53011042400	Low-Income Community	2011–2015
Washington	Clark	53011042500	Non-LIC Contiguous	2011–2015
Washington	Clark	53011042600	Low-Income Community	2011–2015
Washington	Columbia	53013960200	Low-Income Community	2011–2015
Washington	Cowlitz	53015000300	Low-Income Community	2011–2015
Washington	Cowlitz	53015001100	Low-Income Community	2011–2015
Washington	Douglas	53017950300	Low-Income Community	2011–2015
Washington	Ferry	53019940000	Low-Income Community	2011–2015
Washington	Ferry	53019970100	Low-Income Community	2011–2015
Washington	Ferry	53019970200	Low-Income Community	2011–2015
Washington	Franklin	53021020100	Low-Income Community	2011–2015
Washington	Garfield	53023970300	Low-Income Community	2011–2015
Washington	Grant	53025010800	Low-Income Community	2011–2015
Washington	Grays Harbor	53027000200	Low-Income Community	2011–2015
Washington	Grays Harbor	53027001000	Low-Income Community	2011–2015
Washington	Grays Harbor	53027001500	Low-Income Community	2011–2015
Washington	Island	53029970700	Low-Income Community	2011–2015
Washington	Jefferson	53031950202	Low-Income Community	2011–2015
Washington	Jefferson	53031950400	Low-Income Community	2011–2015
Washington	Jefferson	53031950601	Non-LIC Contiguous	2011–2015
Washington	Jefferson	53031950702	Low-Income Community	2011–2015
Washington	King	53033008600	Low-Income Community	2011–2015
Washington	King	53033008700	Low-Income Community	2011–2015
Washington	King	53033009000	Low-Income Community	2011–2015
Washington	King	53033009100	Low-Income Community	2011–2015
Washington	King	53033009200	Low-Income Community	2011–2015
Washington	King	53033009300	Low-Income Community	2011–2015

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State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	King	53033009400	Low-Income Community	2011–2015
Washington	King	53033011001	Low-Income Community	2011–2015
Washington	King	53033011101	Low-Income Community	2011–2015
Washington	King	53033011800	Low-Income Community	2011–2015
Washington	King	53033026100	Low-Income Community	2011–2015
Washington	King	53033026801	Low-Income Community	2011–2015
Washington	King	53033026802	Low-Income Community	2011–2015
Washington	King	53033027200	Low-Income Community	2011–2015
Washington	King	53033027300	Low-Income Community	2011–2015
Washington	King	53033027900	Low-Income Community	2011–2015
Washington	King	53033028000	Low-Income Community	2011–2015
Washington	King	53033028100	Low-Income Community	2011–2015
Washington	King	53033028200	Low-Income Community	2011–2015
Washington	King	53033028402	Low-Income Community	2011–2015
Washington	King	53033028403	Low-Income Community	2011–2015
Washington	King	53033028802	Low-Income Community	2011–2015
Washington	King	53033030006	Low-Income Community	2011–2015
Washington	Kitsap	53035080500	Low-Income Community	2011–2015
Washington	Kitsap	53035092200	Low-Income Community	2011–2015
Washington	Kitsap	53035092300	Low-Income Community	2011–2015
Washington	Kittitas	53037975500	Low-Income Community	2011–2015
Washington	Kittitas	53037975600	Low-Income Community	2011–2015
Washington	Klickitat	53039950100	Low-Income Community	2011–2015
Washington	Klickitat	53039950200	Low-Income Community	2011–2015
Washington	Lewis	53041971000	Low-Income Community	2011–2015
Washington	Lewis	53041971100	Non-LIC Contiguous	2011–2015
Washington	Lincoln	53043960400	Low-Income Community	2011–2015
Washington	Mason	53045960600	Low-Income Community	2011–2015
Washington	Mason	53045961300	Low-Income Community	2011–2015
Washington	Okanogan	53047940100	Low-Income Community	2011–2015
Washington	Okanogan	53047940200	Low-Income Community	2011–2015
Washington	Okanogan	53047970400	Low-Income Community	2011–2015
Washington	Okanogan	53047970800	Low-Income Community	2011–2015
Washington	Pacific	53049950200	Low-Income Community	2011–2015
Washington	Pacific	53049950300	Low-Income Community	2011–2015
Washington	Pacific	53049950800	Low-Income Community	2011–2015
Washington	Pend Oreille	53051970200	Low-Income Community	2011–2015
Washington	Pend Oreille	53051970500	Low-Income Community	2011–2015
Washington	Pierce	53053061400	Low-Income Community	2011–2015
Washington	Pierce	53053061601	Low-Income Community	2011–2015
Washington	Pierce	53053061602	Low-Income Community	2011–2015
Washington	Pierce	53053062400	Low-Income Community	2011–2015
Washington	Pierce	53053062600	Low-Income Community	2011–2015
Washington	Pierce	53053071408	Low-Income Community	2011–2015
Washington	Pierce	53053071409	Low-Income Community	2011–2015
Washington	Pierce	53053071503	Low-Income Community	2011–2015
Washington	Pierce	53053071805	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Washington	Pierce	53053071806	Low-Income Community	2011–2015
Washington	Pierce	53053072000	Low-Income Community	2011–2015
Washington	Pierce	53053940007	Low-Income Community	2011–2015
Washington	Skagit	53057940500	Low-Income Community	2011–2015
Washington	Skagit	53057951500	Low-Income Community	2011–2015
Washington	Skagit	53057952200	Low-Income Community	2011–2015
Washington	Skagit	53057952401	Low-Income Community	2011–2015
Washington	Skagit	53057952500	Non-LIC Contiguous	2011–2015
Washington	Skamania	53059950300	Low-Income Community	2011–2015
Washington	Skamania	53059950400	Low-Income Community	2011–2015
Washington	Skamania	53059950500	Low-Income Community	2011–2015
Washington	Snohomish	53061040200	Low-Income Community	2011–2015
Washington	Snohomish	53061040700	Low-Income Community	2011–2015
Washington	Snohomish	53061041901	Low-Income Community	2011–2015
Washington	Snohomish	53061051400	Low-Income Community	2011–2015
Washington	Snohomish	53061052803	Low-Income Community	2011–2015
Washington	Snohomish	53061053509	Low-Income Community	2011–2015
Washington	Snohomish	53061053700	Low-Income Community	2011–2015
Washington	Spokane	53063000200	Low-Income Community	2011–2015
Washington	Spokane	53063001600	Low-Income Community	2011–2015
Washington	Spokane	53063002300	Low-Income Community	2011–2015
Washington	Spokane	53063002400	Low-Income Community	2011–2015
Washington	Spokane	53063003100	Low-Income Community	2011–2015
Washington	Spokane	53063003200	Low-Income Community	2011–2015
Washington	Spokane	53063003500	Low-Income Community	2011–2015
Washington	Spokane	53063004000	Low-Income Community	2011–2015
Washington	Spokane	53063010401	Low-Income Community	2011–2015
Washington	Spokane	53063014400	Low-Income Community	2011–2015
Washington	Spokane	53063014500	Low-Income Community	2011–2015
Washington	Stevens	53065941000	Low-Income Community	2011–2015
Washington	Stevens	53065950800	Low-Income Community	2011–2015
Washington	Thurston	53067010100	Low-Income Community	2011–2015
Washington	Thurston	53067011200	Low-Income Community	2011–2015
Washington	Thurston	53067012320	Low-Income Community	2011–2015
Washington	Thurston	53067012720	Low-Income Community	2011–2015
Washington	Walla Walla	53071920300	Low-Income Community	2011–2015
Washington	Walla Walla	53071920500	Low-Income Community	2011–2015
Washington	Whatcom	53073000600	Low-Income Community	2011–2015
Washington	Whatcom	53073001000	Low-Income Community	2011–2015
Washington	Whatcom	53073940000	Low-Income Community	2011–2015
Washington	Yakima	53077000100	Low-Income Community	2011–2015
Washington	Yakima	53077000200	Low-Income Community	2011–2015
Washington	Yakima	53077001300	Low-Income Community	2011–2015
Washington	Yakima	53077001501	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971500	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971600	Low-Income Community	2011–2015
West Virginia	Berkeley	54003971700	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
West Virginia	Boone	54005958300	Low-Income Community	2011–2015
West Virginia	Cabell	54011000600	Low-Income Community	2011–2015
West Virginia	Cabell	54011010900	Low-Income Community	2011–2015
West Virginia	Greenbrier	54025950100	Low-Income Community	2011–2015
West Virginia	Greenbrier	54025950700	Low-Income Community	2011–2015
West Virginia	Hampshire	54027968200	Low-Income Community	2011–2015
West Virginia	Hancock	54029021300	Low-Income Community	2011–2015
West Virginia	Harrison	54033030100	Low-Income Community	2011–2015
West Virginia	Jackson	54035963300	Low-Income Community	2011–2015
West Virginia	Jackson	54035963400	Non-LIC Contiguous	2011–2015
West Virginia	Jefferson	54037972300	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972401	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972402	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972505	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972506	Low-Income Community	2011–2015
West Virginia	Jefferson	54037972800	Low-Income Community	2011–2015
West Virginia	Kanawha	54039000800	Low-Income Community	2011–2015
West Virginia	Kanawha	54039000900	Low-Income Community	2011–2015
West Virginia	Kanawha	54039001200	Low-Income Community	2011–2015
West Virginia	Kanawha	54039001700	Low-Income Community	2011–2015
West Virginia	Kanawha	54039013000	Low-Income Community	2011–2015
West Virginia	Kanawha	54039013100	Low-Income Community	2011–2015
West Virginia	Marion	54049020100	Low-Income Community	2011–2015
West Virginia	Marion	54049020700	Low-Income Community	2011–2015
West Virginia	Marshall	54051020200	Low-Income Community	2011–2015
West Virginia	Mason	54053955102	Low-Income Community	2011–2015
West Virginia	Mercer	54055001300	Low-Income Community	2011–2015
West Virginia	Mercer	54055002300	Low-Income Community	2011–2015
West Virginia	Mercer	54055002400	Low-Income Community	2011–2015
West Virginia	Mingo	54059957400	Low-Income Community	2011–2015
West Virginia	Mingo	54059957700	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010102	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010201	Low-Income Community	2011–2015
West Virginia	Monongalia	54061010600	Low-Income Community	2011–2015
West Virginia	Monroe	54063950200	Low-Income Community	2011–2015
West Virginia	Morgan	54065970800	Low-Income Community	2011–2015
West Virginia	Nicholas	54067950100	Non-LIC Contiguous	2011–2015
West Virginia	Nicholas	54067950200	Low-Income Community	2011–2015
West Virginia	Ohio	54069002700	Low-Income Community	2011–2015
West Virginia	Raleigh	54081000200	Low-Income Community	2011–2015
West Virginia	Raleigh	54081000400	Low-Income Community	2011–2015
West Virginia	Randolph	54083966100	Low-Income Community	2011–2015
West Virginia	Summers	54089000700	Low-Income Community	2011–2015
West Virginia	Taylor	54091964600	Low-Income Community	2011–2015
West Virginia	Tyler	54095961800	Low-Income Community	2011–2015
West Virginia	Upshur	54097966700	Low-Income Community	2011–2015
West Virginia	Upshur	54097966800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
West Virginia	Wayne	54099005200	Low-Income Community	2011–2015
West Virginia	Wetzel	54103030400	Low-Income Community	2011–2015
West Virginia	Wood	54107000701	Low-Income Community	2011–2015
West Virginia	Wood	54107011000	Non-LIC Contiguous	2011–2015
West Virginia	Wyoming	54109003100	Low-Income Community	2011–2015
Wisconsin	Ashland	55003950300	Low-Income Community	2011–2015
Wisconsin	Barron	55005000500	Low-Income Community	2011–2015
Wisconsin	Barron	55005000600	Low-Income Community	2011–2015
Wisconsin	Brown	55009000100	Low-Income Community	2011–2015
Wisconsin	Brown	55009000800	Low-Income Community	2011–2015
Wisconsin	Brown	55009001702	Low-Income Community	2011–2015
Wisconsin	Brown	55009021303	Low-Income Community	2011–2015
Wisconsin	Chippewa	55017010500	Low-Income Community	2011–2015
Wisconsin	Columbia	55021970400	Low-Income Community	2011–2015
Wisconsin	Crawford	55023960500	Low-Income Community	2011–2015
Wisconsin	Dane	55025000407	Low-Income Community	2011–2015
Wisconsin	Dane	55025000408	Low-Income Community	2011–2015
Wisconsin	Dane	55025000600	Low-Income Community	2011–2015
Wisconsin	Dane	55025001401	Low-Income Community	2011–2015
Wisconsin	Dane	55025001402	Low-Income Community	2011–2015
Wisconsin	Dane	55025001502	Low-Income Community	2011–2015
Wisconsin	Dane	55025001804	Low-Income Community	2011–2015
Wisconsin	Dane	55025002100	Low-Income Community	2011–2015
Wisconsin	Dane	55025002402	Low-Income Community	2011–2015
Wisconsin	Dane	55025002500	Low-Income Community	2011–2015
Wisconsin	Dane	55025011505	Low-Income Community	2011–2015
Wisconsin	Dodge	55027960900	Low-Income Community	2011–2015
Wisconsin	Douglas	55031020300	Low-Income Community	2011–2015
Wisconsin	Douglas	55031021100	Low-Income Community	2011–2015
Wisconsin	Dunn	55033970800	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035000600	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035001101	Low-Income Community	2011–2015
Wisconsin	Eau Claire	55035001200	Low-Income Community	2011–2015
Wisconsin	Fond du Lac	55039040500	Low-Income Community	2011–2015
Wisconsin	Grant	55043960900	Low-Income Community	2011–2015
Wisconsin	Green	55045960500	Low-Income Community	2011–2015
Wisconsin	Green Lake	55047100100	Low-Income Community	2011–2015
Wisconsin	Jefferson	55055100200	Low-Income Community	2011–2015
Wisconsin	Jefferson	55055101100	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059000700	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059001000	Low-Income Community	2011–2015
Wisconsin	Kenosha	55059001200	Low-Income Community	2011–2015
Wisconsin	La Crosse	55063000200	Low-Income Community	2011–2015
Wisconsin	La Crosse	55063000400	Low-Income Community	2011–2015
Wisconsin	Langlade	55067960600	Low-Income Community	2011–2015
Wisconsin	Lincoln	55069960800	Low-Income Community	2011–2015
Wisconsin	Manitowoc	55071000800	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wisconsin	Manitowoc	55071005400	Low-Income Community	2011–2015
Wisconsin	Marathon	55073000100	Low-Income Community	2011–2015
Wisconsin	Marathon	55073000500	Low-Income Community	2011–2015
Wisconsin	Marinette	55075960800	Low-Income Community	2011–2015
Wisconsin	Marinette	55075961400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000101	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000102	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079000201	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079001200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079001300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079002500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079004100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079004700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079006900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079008900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079009800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079009900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079011300	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079013500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079013700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079014100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079014900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079015900	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016700	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079016800	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079021600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079100200	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079110100	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079170600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079185400	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079185600	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186000	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186500	Low-Income Community	2011–2015
Wisconsin	Milwaukee	55079186800	Low-Income Community	2011–2015
Wisconsin	Oneida	55085971500	Low-Income Community	2011–2015
Wisconsin	Outagamie	55087010100	Low-Income Community	2011–2015
Wisconsin	Pierce	55093960400	Low-Income Community	2011–2015
Wisconsin	Portage	55097960400	Low-Income Community	2011–2015
Wisconsin	Portage	55097961000	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wisconsin	Price	55099970200	Low-Income Community	2011–2015
Wisconsin	Racine	55101000100	Low-Income Community	2011–2015
Wisconsin	Racine	55101000400	Low-Income Community	2011–2015
Wisconsin	Racine	55101000500	Low-Income Community	2011–2015
Wisconsin	Richland	55103970400	Low-Income Community	2011–2015
Wisconsin	Rock	55105000100	Low-Income Community	2011–2015
Wisconsin	Rock	55105001000	Low-Income Community	2011–2015
Wisconsin	Rock	55105001400	Low-Income Community	2011–2015
Wisconsin	Rock	55105001500	Low-Income Community	2011–2015
Wisconsin	Rock	55105001700	Low-Income Community	2011–2015
Wisconsin	Rusk	55107960500	Low-Income Community	2011–2015
Wisconsin	Sauk	55111000300	Low-Income Community	2011–2015
Wisconsin	Sawyer	55113100300	Low-Income Community	2011–2015
Wisconsin	Sawyer	55113940000	Low-Income Community	2011–2015
Wisconsin	Shawano	55115100500	Low-Income Community	2011–2015
Wisconsin	Sheboygan	55117000800	Low-Income Community	2011–2015
Wisconsin	Sheboygan	55117011400	Low-Income Community	2011–2015
Wisconsin	Vernon	55123960100	Low-Income Community	2011–2015
Wisconsin	Vilas	55125940000	Low-Income Community	2011–2015
Wisconsin	Vilas	55125950500	Low-Income Community	2011–2015
Wisconsin	Walworth	55127000400	Low-Income Community	2011–2015
Wisconsin	Walworth	55127000501	Low-Income Community	2011–2015
Wisconsin	Washburn	55129950500	Low-Income Community	2011–2015
Wisconsin	Waukesha	55133202600	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139000500	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139001500	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139002900	Low-Income Community	2011–2015
Wisconsin	Winnebago	55139003300	Low-Income Community	2011–2015
Wisconsin	Wood	55141010400	Low-Income Community	2011–2015
Wisconsin	Wood	55141011200	Low-Income Community	2011–2015
Wisconsin	Wood	55141011700	Low-Income Community	2011–2015
Wyoming	Albany	56001962800	Low-Income Community	2011–2015
Wyoming	Albany	56001963100	Low-Income Community	2011–2015
Wyoming	Albany	56001963400	Low-Income Community	2011–2015
Wyoming	Albany	56001963500	Low-Income Community	2011–2015
Wyoming	Albany	56001963700	Low-Income Community	2011–2015
Wyoming	Carbon	56007967700	Low-Income Community	2011–2015
Wyoming	Converse	56009956600	Non-LIC Contiguous	2011–2015
Wyoming	Fremont	56013000100	Low-Income Community	2011–2015
Wyoming	Fremont	56013940100	Low-Income Community	2011–2015
Wyoming	Fremont	56013940300	Low-Income Community	2011–2015
Wyoming	Goshen	56015957800	Low-Income Community	2011–2015
Wyoming	Goshen	56015958000	Low-Income Community	2011–2015
Wyoming	Hot Springs	56017967800	Low-Income Community	2011–2015
Wyoming	Laramie	56021000402	Low-Income Community	2011–2015
Wyoming	Laramie	56021001502	Low-Income Community	2011–2015
Wyoming	Natrona	56025000200	Low-Income Community	2011–2015

State	County	Census Tract Number	Tract Type	ACS Data Source
Wyoming	Natrona	56025000800	Low-Income Community	2011–2015
Wyoming	Natrona	56025001100	Low-Income Community	2011–2015
Wyoming	Natrona	56025001200	Low-Income Community	2011–2015
Wyoming	Park	56029965400	Low-Income Community	2011–2015
Wyoming	Platte	56031959100	Low-Income Community	2011–2015
Wyoming	Platte	56031959400	Low-Income Community	2011–2015
Wyoming	Sweetwater	56037970903	Low-Income Community	2011–2015
Wyoming	Uinta	56041975400	Low-Income Community	2011–2015
Wyoming	Washakie	56043000301	Low-Income Community	2011–2015

DRAFTING INFORMATION

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Beginning of Construction for the Investment Tax Credit under Section 48

Notice 2018–59

SECTION 1. PURPOSE

On December 18, 2015, the Consolidated Appropriations Act, 2016, Pub. L. No. 114–113, Div. P, Title III, § 303, 129 Stat. 2242, extended and modified the investment tax credit (ITC) under § 48 of the Internal Revenue Code (Code). As modified, § 48 phases down the ITC for solar energy property the construction of which begins after December 31, 2019, and before January 1, 2022, and further limits the amount of the § 48 credit available for solar energy property that is not placed in service before January 1, 2024.

On February 9, 2018, the Bipartisan Budget Act of 2018, Pub. L. 115–123, Div. D, Title I, § 40411, 132 Stat. 150 (BBA 2018), modified the ITC under § 48 by replacing the requirement to place energy property in service by a certain date with a requirement to begin construction by a certain later date. Prior to the modification, energy property was required to be placed in service by a certain date (before January 1, 2016, or January 1, 2017, depending on the type of energy property). As modified, construction of energy property must begin before January 1, 2022. This modification has the effect of retroactively extending by five years the ITC for fiber-optic solar, qualified fuel cell, qualified microturbine, combined heat and power system (CHP), qualified small wind, and geothermal heat pump property the construction of which begins before January 1, 2022. The amendments also phase out the ITC for fiber-optic solar, qualified fuel cell, and qualified small wind energy property over five years. For these energy properties, regardless of when construction begins, the projects must be placed in service before January 1, 2024.

This notice provides guidance to determine when construction has begun on energy property that is eligible for the § 48 credit. It provides two methods for taxpayers to establish the beginning of construction (Physical Work Test and Five Percent Safe Harbor), a Continuity Requirement for both methods, rules for transferring energy property, and additional rules applicable to the beginning of construction requirement of § 48.

The Internal Revenue Service (Service) will not issue private letter rulings or determination letters to taxpayers regarding the application of this notice or the beginning of construction requirement of § 48.

SECTION 2. BACKGROUND

.01 *In general*. Section 48 provides that the ITC for any taxable year is the energy percentage of the basis of each energy property placed in service during such taxable year. For most types of energy property, eligibility for the ITC, and in some cases the amount of the ITC for which energy property is eligible, are dependent upon meeting certain deadlines for beginning construction on the energy property and placing the energy property in service. The table below summarizes these requirements, which are set forth in more detail in section 2.03 of this notice.

Type of Energy Property	Date Construction Begins	Placed in Service Date	ITC Amount
Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	10%
	On or after 1/1/22	Any	10%
Fiber-Optic Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%

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WHITE PAPER

April 2020

Underutilized Sources of Public Capital for the Clean Energy Sector

Even in uncomplicated times, accessing capital and other forms of financial support can be challenging. We summarize here a cross-section of federal and, on an exemplary basis, state financial support mechanisms currently available to the clean energy sector, beyond the historic, now waning Production Tax Credit and Investment Tax Credit. These programs—premised on the contribution to our innovation economy, domestic manufacturing and national security of renewables, energy efficiency solutions and storage systems—are available to developers, entrepreneurs, and investors. They offer a diverse quiver of arrows ranging from direct loans and grants, through loan guarantees and tax benefits, to opportunities for R&D collaboration with this nation's National Laboratories. We specifically highlight underutilized programs, but also include programs that, however well known in some circles, may now engage a broader coalition. Collectively, these financial support systems, some competitively awarded, are expected to allocate tens of billions of dollars across the spectrum of clean energy ventures and projects. They also may carry collateral benefits, reputational and otherwise.

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The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") focused on providing quick and direct relief to businesses and individuals. It did not include provisions related to the federal wind production tax credit ("PTC") or the federal solar investment tax credit ("ITC"), tax credits that the energy sector employs to advance lower-cost capital. Nonetheless, various federal and state sources of capital and public support, including in the forms of grants and loan guarantees, remain available to developers, investors, and entrepreneurs in connection with renewables, energy efficiency solutions, and energy storage platforms.

We focus here on a cross-section of these financial mechanisms, premised on the innovation, domestic manufacturing, and national security value of renewables, energy efficiency solutions, and storage systems. To the extent that the clean energy sector experiences COVID-19-related disruptions in access to capital, possible solutions may include currently available federal and state support mechanisms, such as the underutilized federal New Markets Tax Credit ("NMTC") program and the federal Rural Energy for America Program ("REAP") renewables-based loans, loan guarantees, and grants. In addition, we highlight comparable mechanisms, including innovation-based grants offered by the U.S. Department of Energy ("DOE"), and states, particularly the New York State Energy Research & Development Agency ("NYSERDA") and the Massachusetts Clean Energy Center ("MassCEC"). Finally, we summarize the current status of the PTC and ITC.

RENEWABLES AND EFFICIENCY GRANT, LOAN GUARANTEE, AND TAX CREDIT PROGRAMS

The NMTC program is designed to incentivize community development, job creation, and economic growth by attracting private investment to underserved communities. Approximately 40% of the U.S. census tracts qualify for NMTC investment—broadly, that encompasses census tracts where the individual poverty rate is at least 20% and the median family income does not exceed 80% of the area median. The NMTC program allows qualifying individual and corporate taxpayers to receive federal income tax credits in exchange for equity investments in vehicles certified as Community Development Entities ("CDEs") by the U.S. Treasury Department under its Community Development Financial Institutions Fund (the "CDI Fund"). CDEs that receive tax credit allocation authority under the program include U.S. corporations or partnerships that provide loans, investments, or financial counseling in low-income urban and rural communities. A CDE investor will receive a tax credit equal to 39% of its investment over a seven-year period, separate and apart from its returns on that investment. Accordingly, an NMTC investment can be very attractive to a CDE investor. CDEs then use that investment capital to provide flexible, affordable financing for environmentally sustainable projects within those underserved communities. From 2003 through late 2019, this program has allocated $52B in tax credits, including for wind projects, across all 50 states, the District of Columbia, and Puerto Rico. The NMTC is set to expire on December 31, 2020, but has previously been extended and is being considered for extension once again. As such, new allocations under the NMTC program will end in 2020 unless Congress acts. Various states also have NMTC programs.

Under REAP, the U.S. Department of Agriculture ("DOA") provides agricultural producers and rural small businesses with loan guarantees for renewable energy systems, including small and large solar and wind generation projects, as well as hydrogen, biomass, and geothermal projects. Entities that earn at least 50% of their gross income from agricultural operations qualify as "agricultural producers" under REAP and small businesses in municipal areas (i.e., cities or towns) with fewer than 50,000 inhabitants generally qualify as "rural small businesses" thereunder. REAP provides loan guarantees for up to 75% of total eligible project costs.[1] Applicants must provide at least 25% of the project costs and demonstrate sufficient revenue to repay the loan and cover project operation and maintenance expenses. In addition to loan guarantees, REAP provides grant funding to agricultural producers and rural small businesses to install renewable energy systems or make energy efficiency improvements. Renewable energy system grants range from $2,500 to $500,000, can be used to fund up to 25% of total eligible project costs, and can be combined with loan guarantees up to specified limits. Through REAP, the DOA has awarded approximately $1.3 billion in loan guarantees and $42 million in grants for nearly 350 wind energy systems to date.

DOE's loan guarantee program, administered through its Loan Programs Office ("LPO"), provides financing solutions to large-scale energy infrastructure projects as part of a mandate in the Energy Policy Act of 2005 (with regulations amended in

late 2016).[2] Up to $4.5 billion is currently available in loan guarantees for innovative (so-called "New or Significantly Improved Technology") and energy efficiency projects, with nearly $18 billion available as direct loans for advanced vehicles manufacturing. Obtaining loans and loan guarantees can be a significant undertaking. Further, the program is not without substantial cost to the applicant, including DOE's administrative costs, costs attributable to the applicant's credit risk and a cost allocation based on project risk. Nonetheless, an initial consultation with the LPO is on a "no fee, no commitment" basis, and therefore worth consideration. Further, our experience is that such programs can offer substantial direct and indirect value, including in the latter category reputational value. Through 2019, the LPO has issued more than $35 billion in loans and loan guarantees for more than 30 projects, with an overall positive performance record.

COMPETITIVE CLEAN ENERGY INNOVATION AND DEPLOYMENT OPPORTUNITIES

COVID-19 has prompted a renewed focus on research and development ("R&D"), domestic innovation, and energy security. To that end, we highlight certain R&D and commercialization grants that may be available for energy sector participants beyond the current Small Business Administration ("SBA") mechanisms in the CARES Act. These opportunities cover all stages of business activities, from R&D to project deployment, with a focus on innovative clean energy, and offer a broad range of direct and indirect benefits, including non-dilutive capital, independent technical validation, and the opportunity for access to extraordinary equipment, systems, and personnel. Awards are generally competitive (i.e., merit based), in some cases (including as a result of the Energy Policy Act of 2005) require impartial assessment of scientific or technical merit, and often reward public-private partnerships ("P3s"). DOE has deployed approximately $2B annually in the form of grants and cooperative agreements to public and private entities, including nonprofits.

- DOE's Office of Energy Efficiency and Renewable Energy ("EERE") offers grants and cooperative agreements to encourage R&D and deployment of a broad range of renewable energy, energy efficiency, and related technologies. Funding opportunities vary, but typically are focused on technology or systems development, not on startup funding, which is the focus of other DOE programs (including those noted below). Unsolicited proposals may be submitted, but must conform to applicable regulatory and guidance standards. Businesses in nearly every state have received EERE support. Energy efficiency includes innovation in plastics recycling and reductions (for example, highly recyclable or biodegradable plastics). While there is a wide range in terms of award amount, awards in the $1 million to $3 million range are typical at the lower end and often run for 12 to 36 months. Here is a link to open funding opportunities or solicitations, some of which reflect COVID-19 extensions.

- DOE also has multiple, sector-based divisions that generate, issue, and award competitively sourced grants. For example, DOE's Wind Energy Technologies Office ("WETO") focuses on technological developments designed to improve the reliability and affordability of wind energy and address barriers to deployment via competitively sourced grants focused on more efficient technologies that lower the cost of wind energy. DOE's Solar Energy Technology Office ("SETO") does the same for the solar sector, focusing on photovoltaics, concentrating solar power and systems integration. Demonstration projects have received such grants and SETO recently featured a grant for integrated thermal energy storage and Brayton cycle equipment demonstrations of $39M for one to two projects. The EERE link above includes these opportunities. Moreover, each division hosts webinars that are useful for first-time applicants.

- DOE's Advanced Research Projects Agency-Energy ("ARPA-E") provides grants for applied R&D related to advanced or transformative technologies addressing energy creation, distribution, and use. It is ideally suited to disruptive technologies, some of which may be too early-stage for private-sector investment alone. ARPA-E advances disruptive technologies with the potential to radically improve national and economic security, as well as our collective environmental well-being. ARPA-E remains

a well-known resource in the clean energy venture community, and the breadth of its awards is noteworthy, with recent funding announcements focused on ambient plastics reductions, not to mention fusion.

- DOE's Office of Technology Transitions Technology Commercialization Fund ("TCF") matches funds from private partners and provides equipment, services, and personnel, to promote promising energy technologies developed at DOE's National Laboratories including via cooperative research and development agreements ("CRADAs") governing joint development work.

Various states have undertaken clean energy initiatives, some modelled on or synergistic with federal programs. We highlight two such programs here, again on an exemplary basis.

- In order to support advancement of New York's carbon neutral electricity sector, innovation economy, and job growth, NYSERDA funds all aspects of the business cycle for a broad range of technologies, including Smart Grid technologies for New York-based businesses. Multi-year funding totals in the billions, with substantial price support in the form of offtake agreements to the wind sector. For example, NYSERDA's Storage Incentives offer a variety of incentives and support for storage innovation, including seed capital and grants. Here is a link to the NYSERDA energy storage program. The New York Green Bank, a specialized financial entity and division of NYSERDA, employs its own parallel strategies to advance private finance of clean energy technologies, systems, and projects, typically by leading rounds in comparatively small investments.

- MassCEC, the Massachusetts counterpart to NYSERDA, has an express mission of supporting innovators, entrepreneurs, and businesses through the so-called "valley of death" that new businesses in emergent sectors can experience. Among its many programs, the MassCEC adds its support or amplifies federal awards issued by the DOE or ARPA-E, among others, with up to $500,000 of additional capital. MassCEC provides seed investment to advance and commercialize clean energy technologies and businesses in the form of convertible notes up to $250,000. Here is a link to each MassCEC program.

WANING CLEAN ENERGY TAX CREDITS

Two tax credits, the PTC and the ITC, have played a historically important role in U.S. renewables development. The PTC allows owners and developers of both onshore and offshore wind energy facilities to claim a federal income tax credit on every kilowatt-hour of electricity generated during the ten year period after a facility is placed in service. For facilities that break ground from 2017 through 2020, the amount of the allowable credit is based on when the project commences construction. The PTC was scheduled to phase-down over time and expire in 2020 and therefore would have been unavailable to projects beginning construction after 2019, but was extended and increased during a single additional year, allowing specified renewables projects that commence construction in 2020 to be eligible for a 60% PTC.[3] Because the revised phase-down schedule actually increases (in an out-of-step fashion) the credit for projects beginning construction in 2020, projects may undertake, consistent with IRS guidance, to analyze and shift the "beginning of construction" threshold so as to fall within the 2020 year class and accordingly claim a 60% PTC, rather than a 40% PTC for projects commencing construction in 2019. Tax credit insurance has played, and will continue to play, an important role in these transactions. Currently, there is no PTC for projects for which construction begins after 2020.

The ITC is a federal income tax credit for capital investments in renewable energy projects. Unlike the PTC, the ITC is a one-time credit based on the investment value, earned when the project is placed into service. The ITC is particularly significant for capital-intensive projects, such as solar or offshore wind, but is most commonly used today for solar projects. Nonetheless, the ITC is phasing down. With respect to the ITC, owners and developers of large-scale wind energy facilities that commence construction prior to 2021 can elect to claim the ITC in lieu of the PTC, with some noteworthy nuances. For large-scale wind projects that elect to use the ITC instead of the PTC, the credit is reduced from the traditional 30% to 18% if construction begins in 2020; for solar projects, the credit is reduced from 30% to 26% if construction begins in 2020 and to 22% if construction begins in 2021. Currently, there is no ITC available for projects that commence construction after 2020 (for most wind projects) and 2021 (for most solar projects).

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ENDNOTES

1 REAP regulations are available at 7 C.F.R. § 4280.101, Subpart B (final rules promulgated with useful commentary at 79 Fed.Reg. 78220 (December 29, 2014)).

2 Current regulations are available at 10 C.F.R. Part 609 (final rule promulgated with useful commentary at 81 Fed.Reg. 90699 (December 15, 2016)).

3 Thus, current PTC eligibility is as follows: 100% PTC if construction began during 2016 or earlier; 80% PTC if construction began during 2017; 60% PTC if construction began during 2018; 40% PTC if construction began during 2019; and 60% PTC if construction begins during 2020.

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NON-CIRCUMVENTION/NON-DISCLOSURE AGREEMENT

Between:

COMMUNITY DEVELOPMENT ENTERPRISES - JACKSON I ("Disclosing Party")

and

("Receiving Party")

_____

Name

_____

Street Address

_____

City, State, Zip

NON-CIRCUMVENTION/NON-DISCLOSURE AGREEMENT made as of the ____ day of _____, 2020 between Disclosing Party and Receiving Party.

WHEREAS, Disclosing Party desires to disclose to the Receiving Party certain information related to the development, engineering, and/or construction of a shared solar facility located in Jackson, Tennessee, including development activities relating to the processes involved in the establishment of a microgrid that delivers solar electricity to local commercial, government, and nonprofit users, and associated project data and information in connection therewith (collectively, the "Information") for the purpose of allowing the Receiving Party to evaluate a potential role in the process, and any other purpose related to the proposed solar facility, designed and developed by the Disclosing Party, and that is potentially benefited by obtaining the financial, management, or engineering assistance of the Receiving Party; and

WHEREAS, the Information to be disclosed by the Disclosing Party constitutes valuable proprietary, trade secret and/or confidential information to it; and

WHEREAS, the parties desire that all disclosures hereunder be subject to the terms and conditions of this Non-disclosure Agreement;

NOW, THEREFORE, the Disclosing Party and the Receiving Party hereby agree as follows:

1. The Receiving Party receiving Information under this Agreement from the Disclosing Party shall use such Information solely for the purpose stated above and shall not use it for any other purpose.

2. The Receiving Party and its employees will hold in strict trust and confidence all Information that the Disclosing Party furnishes and disclosed or otherwise makes available to the Receiving Party hereunder.

3. Neither the Receiving Party nor its employees or sub-contractors shall copy, reproduce, sell, lease, transfer, assign, reveal or otherwise disclose or make available any Information received by the Receiving Party hereunder to any persons or parties other than the Receiving Party's employees who reasonably have a need to possess knowledge of such Information for the purpose stated above and who have signed a secrecy agreement with terms at least as strict as those herein.

4. Upon the conclusion of the evaluation described above, the Receiving Party shall return to the Disclosing Party all Information received by it hereunder.

5. The Receiving Party shall not be subject to the restrictions imposed herein with respect to any Information obtained by it from the Disclosing Party pursuant to this Agreement if:

   (a) the Receiving Party can show by written documentation that the Information was known to it at the time of the receipt from the Disclosing Party;

(b) the Information was at the time of disclosure by the Disclosing Party to the Receiving Party or thereafter becomes a matter of public knowledge through no violation of this Agreement by the Receiving Party; or

(c) the Information was or hereafter is obtained properly by the Receiving Party from another source without any restrictions of confidentiality or use.

6. This Agreement shall be governed by the laws of the State of Tennessee.

7. The obligations contained in this Agreement with respect to any Information shall remain in effect for five (5) years from date of disclosure of such Information.

8. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof, and it supersedes all prior or contemporaneous agreements, negotiations or understandings with respect to said subject matter. This Agreement may be amended or waived only by a written instrument duly signed by both parties.

IN WITNESS HEREOF, the parties have caused this Non-disclosure Agreement to be executed on their respective behalf as of the date first hereinabove set forth.

DISCLOSING PARTY:
COMMUNITY DEVELOPMENT ENTERPRISES - JACKSON I

E A Solar, LLC, Manager

By: _____
Dennis Emberling, CEO

Date:_____

RECEIVING PARTY:

Name:_____

Title:_____

Date:_____



Solar Lending Practices by Community and Regional Financial Institutions

Paul Schwabe and David Feldman
National Renewable Energy Laboratory

NREL is a national laboratory of the U.S. Department of Energy
Office of Energy Efficiency & Renewable Energy
Operated by the Alliance for Sustainable Energy, LLC

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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS001165

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Technical Report
NREL/TP-6A20-71753
June 2018

Contract No. DE-AC36-08GO28308

EAS001166

NOTICE

This work was authored in part by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the U.S. Department of Energy Office of Energy Efficiency and Renewable Solar Energy Technologies Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.

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Acknowledgments

The authors would like to thank the invaluable contributions from Kelsey Read and Andrew Belden from Massachusetts Clean Energy Center as well as the following individuals and organizations for their insightful perspectives and review comments: Justin Allender of First Green Bank; Sean Baird of Medallion Bank; Carol Chernikoff of Alternatives Credit Union; Ron Felder of Redwood Credit Union; Jasna Filipović and Justin Fuller of Celtic Bank; Phillip Forbert, Lance Griswold, and Danielle Silva of U.S. Eagle Credit Union; Kyle Henderson of FirstBank; Sarah Llewellyn and Chad Tomsich of Elevations Credit Union; David Miller and Pete Yang of Alpine Bank; Scott Pellegrini of Provident Credit Union; Steve Sherman formerly of GreenChoice Bank; Bob Schweigert of Salal Credit Union; and Skyler Webster of New Resource Bank. The authors also thank Jarett Zuboy for his superb editorial support and Eric O'Shaughnessy and Billy Roberts for their help with graphics.

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the Solar Energy Technologies Office of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.

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List of Acronyms

CRFI	community and regional financial institution
FDIC	Federal Deposit Insurance Corporation
FICO	Fair Isaac Corporation (credit score)
HELOC	home equity line of credit
ITC	investment tax credit
MassCEC	Massachusetts Clean Energy Center
NCUA	National Credit Union Administration
NREL	National Renewable Energy Laboratory
PACE	property assessed clean energy
PPA	power-purchase agreement
PV	solar photovoltaic
SREC	Solar Renewable Energy Certificate
TPO	third-party ownership
UCC	Uniform Commercial Code

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Executive Summary

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018). The shift towards PV loans has allowed new, smaller financiers such as CRFIs to enter the PV financing market.

CRFIs typically offer PV financing via loans to small residential and commercial borrowers. A sampling of CRFI perspectives collected from industry interviews indicates positive experiences with the development and evolution of PV loans. Quantitative data on 6,770 loans representing over $186 million in lending also suggest PV loans are performing very well to date—although these results must be put in the context of the high credit quality of borrowers, early state of the loans, and recent robust economy (Table ES-1). The strong performance to date suggests continued expansion of loan offerings by CRFIs already operating in this space and likely attraction of new entrants. Although most CRFI investment has targeted distributed PV without storage, other applications will likely emerge, such as community PV and PV coupled with energy storage. Looking ahead, access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth.

Table ES-1. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan (2018) and individual CRFI contributions

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1 Introduction

Current projections of solar photovoltaic (PV) system costs and deployment in the United States indicate substantial capital requirements over the next 30 years and beyond. The U.S. Energy Information Administration estimates that, from 2019 to 2050, approximately $650 billion will be spent on U.S. PV system deployment (EIA 2018). Concurrently, community and regional financial institutions (CRFIs), including community banks and credit unions, collectively hold $3.6 trillion in assets. These institutions could provide a significant portion of the required PV capital while creating a large investment opportunity for themselves. Accelerating the involvement of CRFIs in the PV financial marketplace would increase the total amount of capital available for PV projects and broaden the types of financing products used.

PV systems installed in the United States vary considerably in terms of size, location, and procurement mechanism. Large, centralized PV systems constitute most of the country's total installed PV capacity, but the greatest number of PV systems are distributed projects located on residential or commercial property (95.4% and 4.5% of U.S. PV systems, respectively) (SEIA and GTM Research 2018). Because each individual project represents a relatively small financial investment, some businesses have aggregated numerous projects to increase the size and attractiveness of distributed PV investments. Over the past 10 years, distributed PV markets have grown considerably; in 2017 alone, investment in U.S. distributed PV systems totaled over $10 billion (SEIA and GTM Research 2018).

From 2012 to 2014, third-party-ownership (TPO) of residential PV systems, including leases and power-purchase agreements represented 62% to 72% of the U.S. market. Beginning in 2015, TPO market share decreased while PV loans and cash purchases grew. By 2017, TPO fell to 41% of annual installations while loans made up 33% of the market (the remainder were direct purchases). The increase in PV loans and cash purchases was due to several factors, including declining PV system costs, more widespread loan availability, and changing business models of national installers among other reasons (Mond 2018).

The shift toward host ownership of PV systems has allowed new, smaller financiers—such as CRFIs—to enter the market, including lenders dedicated to small residential and commercial projects. The TPO market presents barriers to many small lenders, particularly as TPO projects often require complex investment structures with outside tax-equity investors to capture the value of the investment tax credit (ITC).[1] Providing loans rather than leases and power-purchase agreements plays to the strengths of many CRFIs as solar loans are like other CRFI products and because complex financial structuring is not required to use the ITC, which remains with the homeowner.

This report therefore examines the experiences and perspectives of CRFIs that have developed and launched PV loan products, including the evolution of the products and their performance.

[1] Given the limited number of tax-equity investors participating in the U.S. market, and the premium they can charge for many projects with limited options, there may be a role for some CRFIs in this space. That said, the federal wind and solar tax credits are scheduled to phase down over the next few years, so institutions may decide not to invest resources into learning how to structure these complex financial transactions with potentially limited availability.

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This information could assist other CRFIs that are considering participating in or expanding their role in PV financing.

The remainder of this report is organized as follows. Section 2 gives an overview of U.S. CRFIs and the financial products they typically offer. Section 3 provides CRFI perspectives about their experiences with PV financing products based on industry interviews. Section 4 presents quantitative data on PV loan performance and borrower credit profiles. Section 5 concludes and identifies future needs related to expansion of PV lending.[2]

[2] The National Renewable Energy Laboratory (NREL) has conducted previous PV-financing research. From 2013–2015, the Solar Access to Public Capital project examined how a securitization market for TPO PV allowed national-level players to increase PV project capital by attracting institutional and retail investors (NREL 2018). NREL also compared PV loans with other TPO products such as PPAs and leases (Feldman and Lowder 2014). This previous research focused on financial products rather than types of financial institutions.

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2 Overview of CRFIs and PV Lending

This section first discusses the importance of CRFIs in facilitating community investments and then briefly describes the characteristics of PV loan types. Here CRFIs include community banks insured by the Federal Deposit Insurance Corporation (FDIC) and credit unions insured by the National Credit Union Administration (NCUA).[3]

2.1 CRFIs

Table 1 shows the sizes and numbers of U.S. banks and credit unions. FDIC-insured community banks and NCUA-insured credit unions account for approximately 19% of all bank assets ($3.6 trillion), 24% of all bank loans ($2.6 trillion), and 96% of U.S. banking institutions (10,911 institutions).

Table 1. Bank Assets, Loans, and Number of Institutions in the United States

	Assets in $ trillions (% of total)	Loans in $ trillions (% of total)	Number of institutions (% of total)
FDIC-insured non-community banks	$15.3 (81.0%)	$8.2 (76.6%)	443 (3.9%)
FDIC-insured community banks	$2.2 (11.6%)	$1.6 (15.0%)	5,227 (46.0%)
NCUA-insured credit unions	$1.4 (7.4%)	$1.0 (9.3%)	5,684 (50.1%)
Total	$18.9	$10.7	11,354

Sources: CUNA (2017), FDIC (2017, 2018)

The FDIC defines community banks as those that "focus on providing traditional banking services in their local communities. They obtain most of their core deposits locally and make most of their loans to local businesses" (FDIC 2012). Further, CRFIs are often considered "relationship" lenders rather than "transaction" lenders. Community banks can be apt to make credit decisions based on local knowledge and unique data obtained through long-term relationships owing to their deep understanding of local market dynamics (FDIC 2012). Small businesses may rely more heavily on this relationship approach, because they may be challenged to qualify for loans based on the more rigid, standardized qualification parameters of non-community banks (FDIC 2012). Community banks are frequently privately owned and locally controlled, which may balance the competing interests of shareholders, customers, employees, and the local community. This is also true for credit unions, which are owned by their members and operate for the sole purpose of servicing their members. Larger banks are more likely to be publicly owned and tend to have stronger associations with the capital markets. They also operate in more places with centralized and model-based loan-approval structures. (FDIC 2012).

Community banks are particularly important and prevalent in certain regions of the country. In 2014, community banks held 72% of deposits in U.S. rural counties and 56% of deposits in

[3] Some CRFIs operate certain business lines, such as direct lending, in more than one market, while other business lines, such as retail banking, can be restricted to a smaller geographic footprint. This report does not exclude CRFIs even if a business line is operated in more than one market.

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micro-counties (FDIC 2015).[4] Many states with a large community banking presence are in the middle of the country, where PV penetration tends to be relatively low (Figure 1).[5] CRFIs could close this gap by providing financial solutions that help make distributed PV economically attractive in their region.

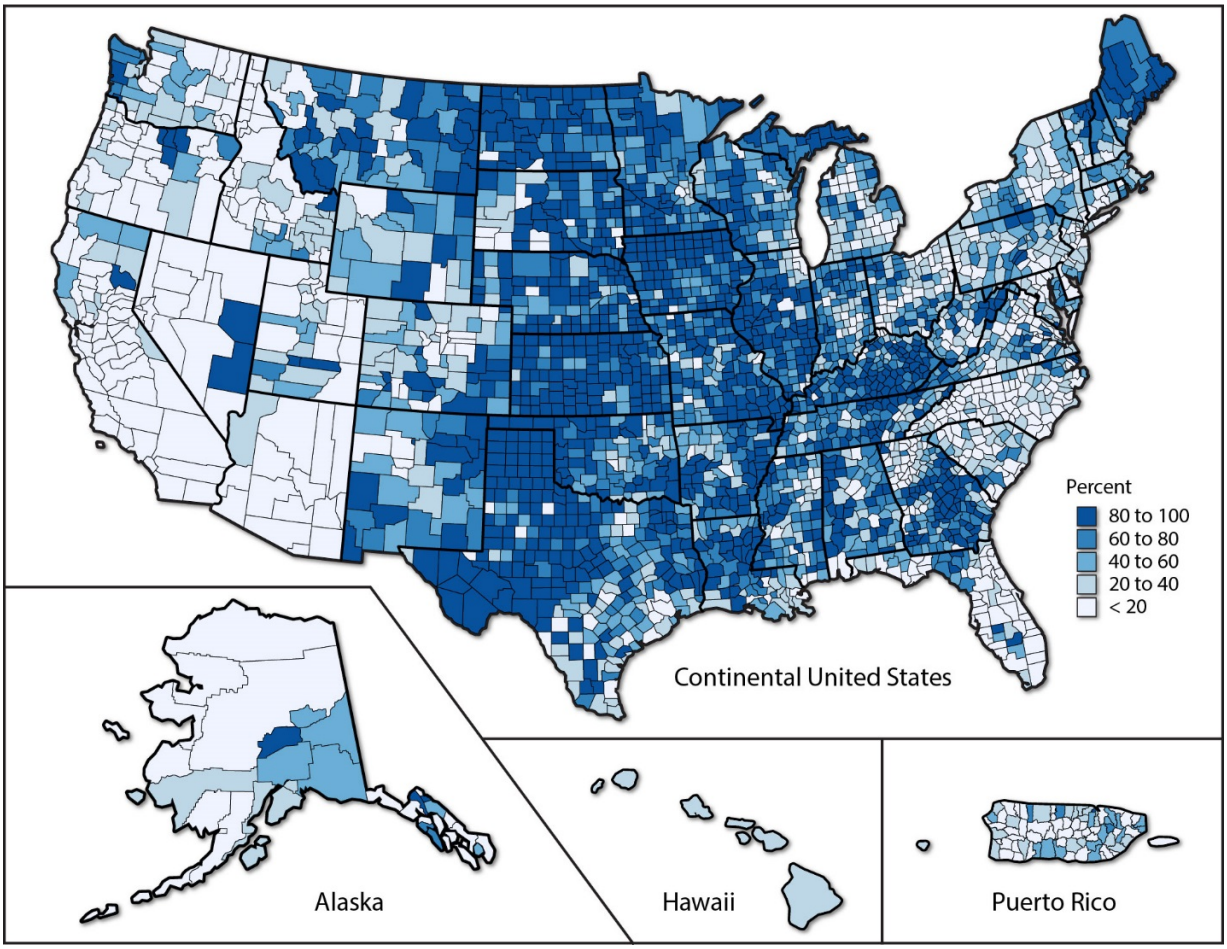


Figure 1. Percentage of total deposits held by community banks in 2017

Source: FDIC (2018)

Because of their size, geographic variation, and local market knowledge, CRFIs are well suited to develop innovative or tailored PV financing products. Relatively few banking institutions currently offer PV loan products, and existing product specifications might not be desirable in every market. However, new PV loan products could be developed for many of the communities served by CRFIs, and the willingness of many CRFIs to collaborate and share could enable rapid dissemination and evolution of the new products.

[4] Rural counties are defined as those with a population of less than 10,000 people. Micro-counties are defined as having between 10,000 and 50,000 people (FDIC 2012).
[5] Data as of June 30, 2017.

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Many CRFI loan types could be adapted for financing PV systems. As shown in Figure 2, most community bank loans are for commercial and residential real estate (70%), followed by commercial and industrial activities (13%), construction and development (7%), and unsecured loans to individuals (4%).[6] Credit unions generally focus more on individual customers and less on commercial activities, with 83% of their loans made for residential real estate or automobiles, 7% for commercial and industrial activities, and 10% for unsecured loans to individuals. Distributed PV systems are usually physically attached to real estate, much like many home-improvement projects (e.g., roof replacements, kitchen remodeling), which are often funded through real estate loans. A 2018 Federal Reserve Bank of New York study found that 56% of home equity lines of credit (HELOCs) and 72% of home equity loans—types of real estate loans—were used to make home improvements (Fuster et al. 2018). In the commercial space, a PV system is like other equipment financings and could be funded by commercial and industrial loans. Finally, because the cost of PV systems has fallen dramatically, loans made to an individual on an unsecured basis may also fund a PV project. Although unsecured loans to individuals represent a relatively small portion of CRFI loan portfolios, they still constituted over $160 billion at the end of 2017 (see Table 1 and Figure 2).

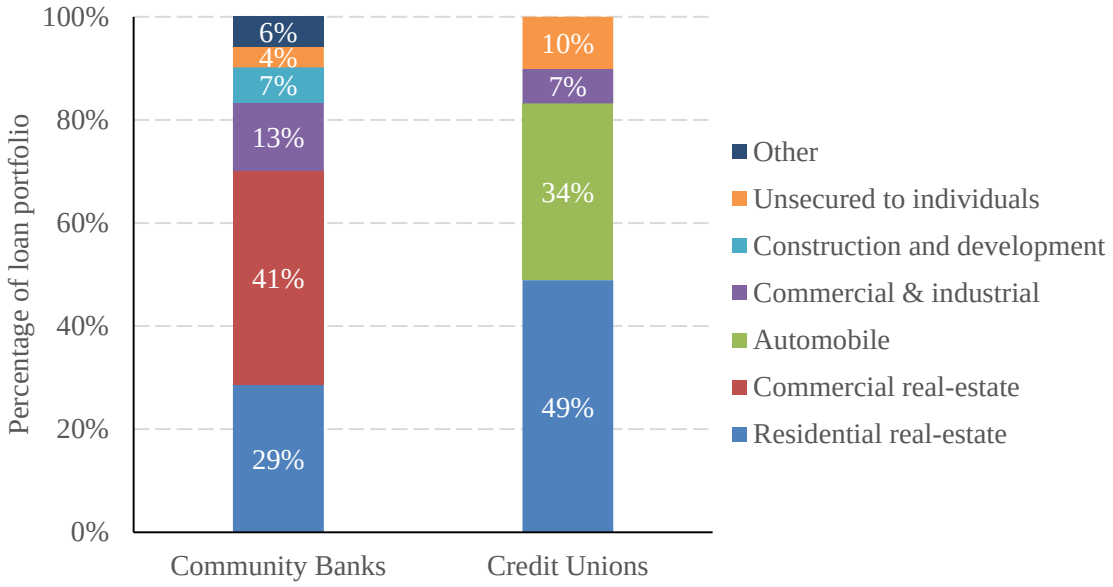


Figure 2. Portfolio breakdown for loans made by community banks and credit unions in 2017

Sources: CUNA (2017), FDIC (2018)

2.2 Primary PV Loan Types

PV loans generally fall into a few categories, with variations. As shown in Figure 3, PV loans can be classified by their level of security, based on what the borrower pledges as collateral for

[6] An unsecured loan is a loan issued based on the creditworthiness of the individual, rather than being based on collateral such as real estate equity.

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the loan. PV loans have typically been secured by real estate, by the equipment itself through a Uniform Commercial Code (UCC)-1 filing,[7] or as an unsecured personal loan.[8]

- **Loan secured on real estate**—PV loans can be secured via the underlying real estate, typically, in the residential space, through a home equity loan (also referred to as a second mortgage) or a HELOC.[9] Like other real estate loans, they require a closing, or settlement, at which all parties sign the necessary loan documents. To get to closing, the real estate typically is appraised to ensure the owner has sufficient equity in the property, the loan is registered with the county clerk, and taxes are evaluated. This is a heavily regulated process, particularly since the recent mortgage crisis. Obtaining a real estate loan requires time and money, but borrowers can often get a relatively low rate compared with the rates of other types of loans.[10] Real estate loans typically carry longer repayment terms, which allows PV system owners to match the loan payments more closely with the energy cost savings from the PV system.
- **Loan secured on equipment**[11]—Many PV loan providers secure the loan through a UCC-1 filing with the county or state (or both) of the borrower, which gives notice of the lender's lien (also referred to as a security interest) on the PV property, but importantly not on the underlying real estate. The UCC-1 filing gives the lender certain rights, such as repossession of the PV system itself until the loan is repaid. UCC-1 filings require less upfront time, money, and paperwork compared with real estate loan processes, but the UCC-1 security interest still comes up in a title search, which is typically conducted when a property is sold or refinanced. That said, the solar lender may have difficulty recouping the value of the PV system in the case of repossession, and the UCC-1 filing must be re-registered periodically. For these reasons, many lenders consider solar loans with UCC-1 filings as not fully secured.
- **Unsecured loan**—With an unsecured loan, the lender holds no collateral but instead makes the loan based on an individual's credit quality, income, and debt level. Such loans can be closed more easily and quickly than other loans, but the interest rate charged is typically higher and with a shorter term than the rate and term of a secured loan. In addition, unsecured loans are usually only available to borrowers with good credit or a high income and with limited outstanding debt.

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[7] UCC-1 refers to Form 1 (UCC Financing Statement) (IACA 2018).

[8] In some instances, banks have also secured loans using incentive streams generated by PV assets, such as Solar Renewable Energy Certificates (SRECs). This option is only available in markets with SRECs of sufficient value and is dependent on the PV asset continuing to generate electricity (to produce SRECs).

[9] HELOCs typically have a drawdown period with a floating interest rate. Funds from second mortgages are received at the beginning of the loan, and the loan is more likely to have a fixed rate.

[10] The interest payments on home equity loans and HELOCs can be tax deductible under certain qualifying uses. Generally, the home equity loan or HELOC is borrowed for home-improvement purposes, and the total of the borrower's first mortgage and their home equity loan or HELOC does not exceed $750,000. The Tax Cut and Jobs Act of December 2017 lowered this interest deduction cap from $1,100,000 to $750,000 and narrowed the allowable uses to primarily home-improvement related. Given these changes, it is possible that demand for home equity loans and HELOCs may fall, particularly in markets with comparatively high home prices and a higher probability of reaching the $750,000 combined interest deduction cap (Harney 2018).

[11] May also be referred to as a chattel loan. Although PV equipment is technically considered collateral, the practicality and cost effectiveness of physically removing the equipment from the property remains an open question (see Section 3.5).

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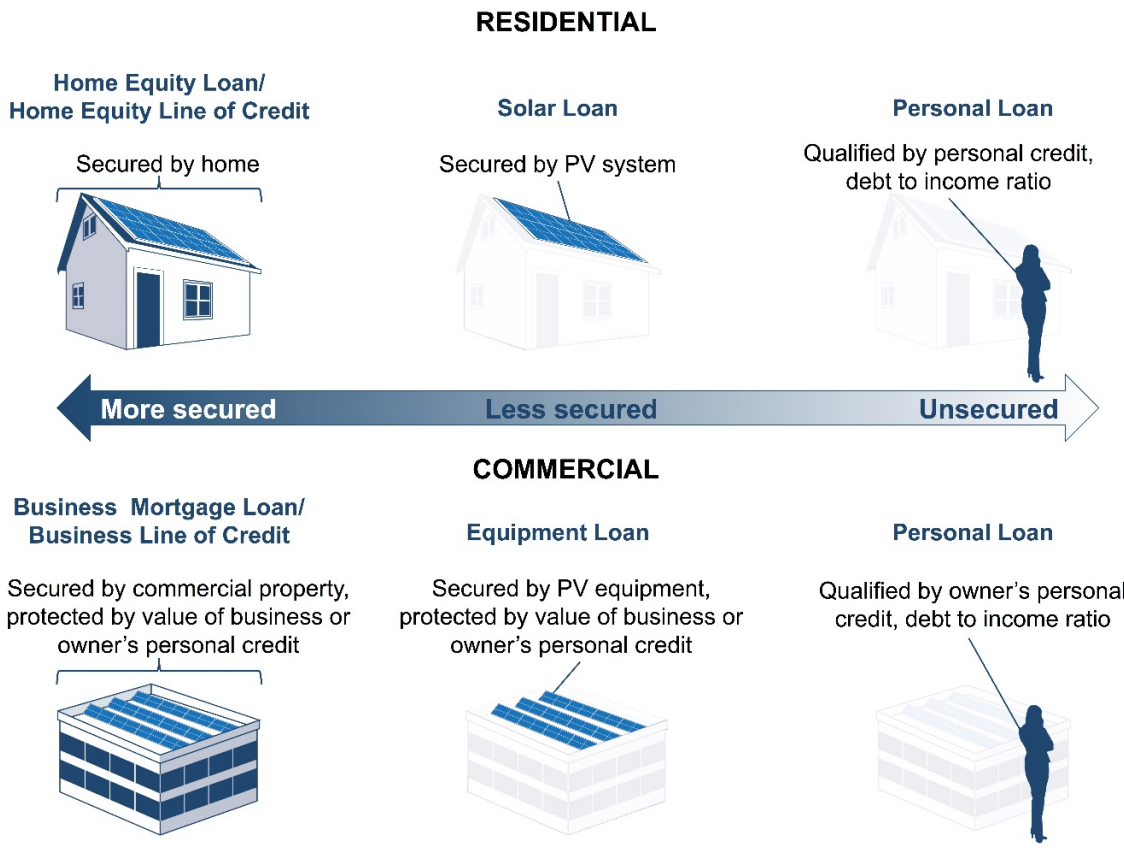


Figure 3. Variations in PV loan types by level of security

In addition to level of security, PV loans can be characterized by several criteria:

- **Tenor (loan length)**—Because PV assets are long-lived, it is often advantageous for a PV loan to have a longer tenor. A longer tenor reduces the amount of each periodic payment, potentially aligning the loan payment more closely with the PV energy savings. Some UCC-1 loans and personal, unsecured loans have relatively short tenors, but some banks have lengthened the tenor as their programs have evolved. For this reason, PV loan tenors can vary from 3–20 years.
- **Prepayment and reamortization**[12]—Some loans have prepayment penalties to compensate lenders for receiving fewer interest payments over the course of the loan. PV systems currently benefit from the 30% federal ITC, typically taken in the first year of operation. Therefore, PV system owners often get 30% of the system cost back very early in the loan. Many PV loans offer a one-time low or no-fee prepayment option, which the borrower can use to buy down the outstanding principal using the ITC, or no prepayment penalty over the life of the loan. Some borrowers also reamortize the loan after the prepayment to reduce monthly debt payments further.

[12] Reamortization is the process of recalculating the monthly loan payment amount while keeping the same original schedule of loan payments (i.e., tenor). A loan is typically reamortized when a significant portion of its principal is paid.

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- **Government involvement**—Many banks have introduced PV loan products based on market conditions without government financial support, but some loan products have benefited from state or federal government programs. Some state agencies have helped banks set up PV loan products and provided technical expertise to get banks comfortable with PV as an asset class. Other programs have subsidized the cost of PV loans by offering credit support (guaranteeing all or some of the loan amount), buying down the interest rate of a loan, or buying down the cost of a PV project (reducing the loan principal, typically through rebates). These programs are often instituted to establish or accelerate a market or to provide loans to customers who may not otherwise qualify (e.g., individuals with low income).[13]

[13] Local governments are also heavily involved in property assessed clean energy (PACE) programs, which offer commercial and residential customers loans that are tied to their property taxes.

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3 Themes about PV Loan Products from CRFI Interviews

This section summarizes the themes from in-depth interviews with 20 PV financing experts from 14 CRFIs or related stakeholder institutions, describing shared and diverse experiences of PV financing products. Themes arising from more than one institution or individual are included, and no approach is presented as favorable. The themes are described loosely in chronological order, starting with product initiation, followed by operational experiences, and concluding with forward-looking perspectives.

3.1 Market Demand, Institutional Philosophy, and Comfort with Home-Improvement Loans Drive PV Loan Product Development

In addition to the shifting PV market trends described earlier, PV loan products are frequently initiated in response to customer or member requests and repeated requests provide strong motivation. One interviewee had at least 10 customer inquiries before committing time and resources to the possibility of a PV-specific product. Conversely, in markets with barriers to PV adoption, CRFIs may be limited in their ability to stimulate PV demand, but they may alleviate a financing barrier by establishing a PV loan product. Commercial PV installations seem to have fewer dedicated lending products compared with the residential sector.

The motivations to offer PV loan products extend beyond requests from potential borrowers. Some CRFIs see promotion of PV as part of their commitment to environmental offerings or a triple-bottom-line (social, environmental, financial) business philosophy. Others see PV loans as an opportunity to grow the institution's lending portfolio or interact with new customers who might also be directed to the institution's other services.

In some cases, home-improvement contractors who banked with a CRFI asked the institution to create a PV loan offering, so they could recommend the product to their customers. Experience lending for similar home-improvement measures also drives PV loan product development or innovation. Several interviewees suggested PV loans complement existing home-improvement products. The interviewees generally reported positive experiences with energy efficiency lending (e.g., new windows, heating, ventilating, and air conditioning) and thought PV has a similar risk and performance profile. Some institutions came to PV lending through other PV-specific products, such as PACE financing or community PV projects. Several institutions entered the market in response to an attractive support policy, such as a state-based loan loss reserve fund for PV lending.

3.2 PV Loan Product Development Benefits from a Thoughtful Research, Approval, and Product-Rollout Period

All interviewees noted the need to devote considerable time and resources to understanding and developing a dedicated PV loan product. The education process typically entails a designated product lead researching the PV industry generally (technology, construction, pricing, risks, and reliability), the financing options available to local borrowers, the risks associated with PV lending, national and local competition, and the types of PV loans. As one banker noted, an overarching rule of banking is to know your product, know your market, and know your

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collateral. This industry research phase typically requires 6 months to 1 year, depending on the financial institution's familiarity with the PV industry.

There are multiple ways to develop a solar loan product. At some institutions, research is driven by an opportunistic, entrepreneurial and environmentally minded staff member (such as a loan officer) who champions the process, secures internal resources, and obtains decision-maker approvals. At other institutions, a management-level product-development officer (i.e., the chief lending officer or chief credit officer) provides the primary market research and justification for the product. In many cases, research and product development is driven by internal personnel. However, in some cases, an outside specialist with experience in the specific product class is hired to develop the product.

The internal champion often uses a concise product brief to secure internal approval, which can include approval by the chief credit officer, chief financial officer, loan and finance committee members, and potentially the board of directors. The brief can include information on local customer interest in the product, an assessment of the competitive lending landscape and market share, information on the technology and asset class, investigations into the local installer base, and a qualitative risk matrix. Decision makers scrutinize the loan tenors, which tend to be longer for PV than for other products, and the typical loan sizes among other criteria.

CRFIs frequently protect themselves against the unknowns of a new asset class by establishing a smaller initial loan product offering or portfolio concentration limits. Thus, they can roll out the program with relatively modest expectations and allow for a testing period, which can be reassessed later in the product-development cycle (often 1 or 2 years after program launch). Finding the right product balance is often part of the initial rollout. Too much volume, and the institution might feel uncomfortable with the portfolio concentration. Too little volume, and the time and setup costs are harder to justify.

3.3 Smaller CRFIs Possess Unique Challenges and Opportunities

It can be challenging for smaller CRFIs to establish a large portfolio of new loan products. Many have no dedicated product-development personnel, so personnel with other job duties must be tasked with establishing new loan products. In addition, because smaller institutions offer relatively few loans and cannot be over-weighted in any area (owing to concentration risk), the number of PV loans they can make may be limited, especially since there is a learning curve associated with a new asset class. Such limitations are particularly relevant for unsecured loans, because CRFIs are required to establish a loan loss reserve in case of default, which represents money not earning a return. A new product at a larger CRFI would represent a much smaller share of the total loan portfolio. Finally, the effort required for any product subject to significant regulations, such as real estate loans, may outweigh the product's benefits for a smaller institution without the dedicated capabilities to manage new requirements.

On the other hand, CRFIs have some advantages related to implementing PV loan products. Product approval processes can be easier at smaller institutions than at larger institutions. Smaller CRFIs may also be subject to less intense regulation compared with larger CRFIs. In addition, smaller CRFIs generally report the ability to be more nimble and adaptable when creating or modifying new products for a specific asset class like PV.

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3.4 PV Loan Products and Processes Vary across Institutions

Section 2.2 provides basic information about PV loan types. This subsection describes additional PV product variations across CRFIs.

CRFIs offer PV loans via direct and indirect lending programs. In the direct model, the lending institution provides capital to the borrower, and the borrower is typically free to choose a PV installer that meets minimum criteria (years in business, acceptable business ratings, applicable experience, etc.). Direct-lending customers are often existing members of the credit union or community bank or join specifically to take advantage of the loan offering. In the indirect model, the lending institution instead prequalifies select PV installers—typically based on requirements set by the institution—who can present the loan product on behalf of the institution. The indirect model gives the institution some control over the installation process and the borrower's experience with it.

PV loan programs evolve over time. Interviewees commonly reported launching a product, receiving customer and installer feedback during rollout, and making product adjustments accordingly. For example, several CRFIs adjusted to longer repayment periods or moved from a secured loan based on a second mortgage to a UCC-1 or unsecured loan.

PV loan products can include one or two loans per transaction. With two loans, the first amount is sized at approximately 30% of the PV purchase price to match the expected ITC amount, and the second funds the balance of the purchase price. The first loan can forego interest payments for the first 12–18 months (or the interest is paid by the installer), and the borrower can use their ITC benefit to pay off the zero-interest loan. The conventional second loan entails a standard amortization schedule (10–20-year term) and market interest rates. With one loan, for the full purchase price (at a set interest rate and term), the lender often offers a one-time reamortization for free or at a reduced rate (e.g., $100), allowing the borrower to use the ITC or other funds to pay down the principal. This prepayment reduces the monthly payments while maintaining the original loan schedule. However, in this model, the borrower pays interest on the full loan amount before the principal paydown, while interest is typically paid on only 70% of the full loan in the two-loan approach.

The other timing element in structuring a solar loan product is the disbursement schedule from the bank to the installer. For example, one program disburses 35% of the loan amount once the loan has been closed and then the final 65% after installation. Installers may prefer a more front-loaded disbursement schedule, while lenders typically prefer holding funds until after installation.

Loan application and closing processes also vary. Some CRFIs primarily handle customer applications over the phone, whereas others allow online applications through a dedicated portal connection. Some banks work with PV installers and developers to integrate the online portal into the PV sales process. Variations in closing processes include fully automated versus manual review and approval as well as online document signing versus finalizing loans in person at a branch and, in some cases, in the presence of an attorney.

Finally, options to improve loan terms vary. Attractive sales pitches can include low interest rates or a "no interest" period (e.g., the first year) that allow borrowers to save money

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immediately instead of waiting for energy savings from PV (e.g., in the winter, when electricity production is lower). The no-interest period is particularly attractive in the first year, before the loan's principal is reduced through an ITC buydown. These practices are done per strict lending regulation. However, borrowers should analyze all loan conditions including interest rates, terms, penalties, and fees—which lenders can charge to the borrower or the PV developer, who may pass the fee on to the PV sales price.

3.5 UCC-1 Fixture Filing Is Useful as a Security Interest, but Repossessing PV Systems Is Impractical

Most CRFIs that offer a dedicated PV loan use a UCC-1 fixture filing, and many institutions have had positive experiences with this process. Interviewees commonly described the usefulness of the UCC-1 fixture filing not in terms of collateral recoverable via repossession, but rather as an indicator that the PV system has an outstanding loan to be paid, which is often revealed at the time of a home sale or refinancing. The UCC-1 fixture filing provides some protection from a loss due to loan default, even if the lender must wait an extended time (sometimes years for a home sale) to potentially recover some portion of the debt. UCC-1 fixture filing is not, however, a one-time process; lenders typically must refile every 5 years to maintain protections.

Lenders can try to repossess PV systems, but most interviewees questioned the practicality of this approach for several reasons. First, CRFIs have little use for a used PV system, and—because there is no established secondary market for used PV equipment—attempting to liquidate a PV system might yield little return. In contrast, when a UCC-1 filing is used to secure a loan for commercial equipment such as heavy machinery or vehicles, the repossession value is relatively high owing to the equipment's mobility and the active secondary market for used equipment. Second, the all-in cost of a PV system (and thus the loan amount) reflects not only the equipment cost, but also various "soft costs" related to system design, installation labor, permitting, customer acquisition, and so forth. Repossessing the PV equipment would not compensate for these soft costs. At the same time, uninstalling, storing, and selling the used PV equipment (while preserving the roof's integrity) would be costly to the lender. Finally, and perhaps most importantly, trying to repossess PV equipment from a distressed borrower's home presents a risk of bad publicity.

3.6 PV Loan Repayment Has Been Strong, but Most Loans Are Young and Were Made to Highly Rated Borrowers

All interviewees reported positive results from their PV loan portfolios, with no portfolio-wide issues or systematic concerns to date and only a few repayment anomalies attributed to events such as divorces, bankruptcies, or deaths of the primary borrowers. Interviewees described their PV loans' performance with phrases such as "pretty good overall," "little to no losses to speak of but a few delinquencies," "charge-offs remaining unbelievably low," and "delinquencies and

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losses lower than expectations."[14] Because of high repayment performance to date, many CRFIs will increase the volume of PV loans offered.

However, the high performance of PV loans must be qualified. First, PV loan recipients were, on average, considered A+ borrowers and thus were expected to pay reliably. Some interviewees questioned whether borrowers with lower credit quality would do as well; some CRFIs are considering expanding their PV loan offerings to borrowers with slightly lower credit quality, but they are limited by the need for such borrowers to own homes. Second, the PV loan programs are generally young, and thus many loans are very early in their tenor. Many interviewees said delinquencies or losses from comparable loan products typically peak later, perhaps between years 2 and 5 of the loan. Finally, because the current economy is extremely robust, the performance of PV loans during a downturn is uncertain. Kroll Bond Rating Agency stated in its rating of a securitized portfolio of residential loans from a large solar provider that, "with no more than 36 months of performance data [typical for most solar loan programs] … these loans have not been through a full loan-cycle and therefore losses could be higher than experience to date suggests" (KBRA 2018).

See Section 4 for a quantitative summary of PV loan performance to date.

3.7 Relationships between PV Installers and CRFIs Can Enhance the Marketing of PV Loan Products

Interviewees consistently described the critical role of PV installers in driving the demand for PV loan products. Because, as one interviewee said, customers typically decide to install PV first and then search for financing products, many potential customer inquiries are directed to installers as opposed to finance providers.

PV installers and CRFIs both market PV loan programs. Product marketing channels include social media, newsletters, direct mailings, farmers markets, movie theater advertisements, coupon books, and home shows. Some interviewees described a shift in the way most loan leads have been generated as PV loan products have evolved. Early in the loan programs, some existing bank and credit union members contacted their CRFIs to finance PV. As new sales channels have been made, CRFIs have developed relationships with installer partners that bring in customers who may not have been CRFI members.

Being comfortable with installer partners is very important. Installers may have exclusive agreements pertaining to a CRFI's financial product and may have online access to the loan-origination system to close the deal. A CRFI can save underwriting time, help installers understand and promote loan products, and mitigate technology and installer risks by pre-vetting PV installers and developing relationships with vetted installers in the CRFI's service territory. The CRFI and installer both benefit from communicating about areas of concern and teaching each other their business languages. Although installers do not qualify borrowers, training enables them to speak with potential borrowers about the financial product, process, and

[14] Charge-offs generally refer to the situation in which a lender records a monetary loss on a loan due to non-repayment.

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relationships. Alternatively, an installer may simply provide the customer with a sample of financial product offerings (loan brochures, etc.) to choose from.

3.8 CRFIs Are Willing to Extend PV Loans to Lower-Rated Borrowers, but Barriers Exist

Although to date PV loan recipients have generally had high financial qualifications, interviewees agreed that offering loans to less highly rated customers, within reason, is desirable. Having a more extensive and detailed national history of PV loan credit performance would help this effort. In addition, having more granular data (e.g., at the county or state level) would likely be required to drive local financing decisions. The automobile industry provides a good example of easy access to credit data, with high regional fidelity and extensive history.

The primacy of the federal ITC as a residential PV incentive may hinder the offering of PV loans to customers with lower financial ratings. In many cases, low- to moderate-income customers may not benefit directly from a tax credit due to insufficient tax liabilities. In such cases, a TPO arrangement rather than direct PV ownership might be more appealing because the TPO provider can monetize the tax credit.

Naturally CRFIs want to extend loans that borrowers can repay with relative ease and consistency. After the recent mortgage crisis and ensuing regulations, lending institutions assumed additional fiduciary and legal responsibility to deny loans to customers who cannot service them. Although many government programs target low- and moderate-income customers, CRFIs are hesitant to push the bar too low for challenged borrowers. In any case, customers living paycheck to paycheck may be less interested in products like PV that offer savings over a 15-year period or longer.

That said, PV loan approval processes are not necessarily determined by hard and fast rules tied to credit scores or debt-to-income ratios. Because CRFIs know their market and customer base well, they can examine customers individually and evaluate loan products that make sense for the borrower and lender. Interviewees, however, did report that they frequently declined customers based on insufficient financial qualifications.

3.9 PV Energy Savings Are Generally Given Little Weight during Loan-Approval Processes

Although PV owners save on utility payments, many CRFIs generally do not factor these savings into PV loan criteria. Most financial institutions use a debt-to-income ratio to assess a borrower's ability to repay debt. Taking out a PV loan increases the debt side of that ratio, while acquiring a PV system increases the income side (through energy savings)—yet the PV income factor is generally not considered during loan qualification.

Because of this practice, government policies that affect PV economics might have a muted impact on CRFI decisions to offer a PV loan. For example, reducing PV's economic value by lowering the net metering rate might reduce the demand for PV loans, but it would not directly change a loan's evaluation criteria. That said, energy bill savings are sometimes factored in to the process of deciding whether to offer a PV loan product, even if they are not formally included as part of the loan-approval process. CRFIs may also be more inclined to include these

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savings in their analysis if they had access to widely accepted third-party guidance on the specifications that determine how much a PV system will reduce a customer's electricity bill. This type of documentation would be particularly beneficial for banks entering the space in markets without significant PV deployment.

3.10 Regulations Have Not Hindered PV Loans, but Educating Regulators about PV May Help

Various entities regulate CRFIs, including the FDIC (which insures deposits for local and regional banks), the NCUA (which insures deposits for credit unions), any number of state-based financial regulators (particularly for CRFIs with a state charter), federal regulators (such as the Office of the Comptroller of the Currency), and more. Some entities may overlap, and a single institution may be regulated or monitored by multiple agencies.

In general, interviewees identified no significant regulatory barriers related to PV loans. Regulators aim to ensure that loans do not harm the safety and soundness of the institution (because these regulators serve as guarantors of institution deposits) and that the consumer is protected against predatory or discriminatory lending practices. Thus, CRFIs must demonstrate how PV loans fit under those requirements, for example, by demonstrating clear and fair lending practices, a satisfactory credit quality of the overall portfolio, appropriate disclosures that are clear and sufficient, and that institutions are not over-weighted in any one market or customer segment (which can introduce portfolio-concentration risk).

Educating regulators about PV loans can facilitate regulatory review of CRFI portfolios. Most interviewees agreed that regulators do not approve PV loan programs before program initiation. Instead, PV loans are established under the same practices and general regulations that are applied to all other loan types. However, regulators might review an institution's entire loan portfolio annually or at other intervals, in which case it can be helpful to educate the regulators about the PV asset class. Some CRFIs work with outside partners to prepare for the audit process, which can last a week or more. In any case, product innovation outside of an industry standard, such as a 15-year equipment loan on PV, can happen if it fully conforms to regulations.

3.11 Challenges Remain for PV Loan Products

There are a few remaining challenges to CRFI development of PV loan products. For example, the term of a PV loan (up to 20 years) presents long-term interest rate risk, because interest rates could change while the loan's rate stays fixed. Some CRFIs are more comfortable assuming this risk than others. Risk-mitigation measures include shorter terms, higher rates, or one-time rate adjustments, but these measures can make the loan less attractive to borrowers.

The lack of an established securitization market for PV loans is another challenge. Although some PV loans from national installers have been sold on the securities market, most CRFIs do not have the size or volume to sell PV loans to the securities markets. Most interviewees said they would prefer to keep PV loans rather than sell them. However, the option to sell a portfolio

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of loans to other investors could lower risks by creating more liquidity, thus putting PV loans on equal footing with loans for more established asset classes such as mortgages and automobiles.[15]

PV loans with UCC-1 fixture filings can also entail challenges. Some lenders cannot offer such loans when the PV-hosting house is held in trust rather than in the borrower's name. In addition, because PV loans with UCC-1 fixture filings are not as widely familiar as secured loans (HELOCs, second mortgages) or unsecured, personal loans, the lender's requirements do not always meet the borrower's expectations.

Finally, the lack of national and local information about PV loans makes it difficult for CRFIs to assess market size and the risks of starting a PV loan program. Whereas market research firms provide robust data for other asset classes, such as automobile loans, the smaller PV market has not yet stimulated the development of detailed, widely available data products.[16]

[15] June 2017 guidance from the NCUA asserts that federal credit unions are authorized to issue and sell assets such as Ginnie Mae home mortgages, auto loans, and other assets (NCUA 2017). The practice, known as securitization, was not explicitly authorized for federal credit unions prior to the 2017 guidance. Securitization of assets by community banks is estimated at more than $28 billion in 2014 though small relative to total assets (Baily and Montalbano 2015). In general, securitization by CRFIs may be limited to larger institutions with asset volumes large enough to justify the transactional costs and expertise required.

[16] Previous NREL efforts targeted this data gap for the TPO market, but not for solar lending (NREL 2018).

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4 Quantitative Indicators of PV Loan Performance

This section provides summary statistics on PV loans made by CRFIs to complement the qualitative insights noted above. The data are anonymized and used to analyze loan and borrower characteristics as well as loan performance.

The data set contains high-level information from 6,770 loans, representing a combined PV loan portfolio exceeding $186 million across 22 different CRFIs. Massachusetts accounts for 57% of the PV loans in the data set and 67% of the loan value. These data were collected by the Massachusetts Clean Energy Center (MassCEC) and the Massachusetts Department of Energy Resources as part of the Mass Solar Loan Program (Mass Solar Loan 2018). NREL collected data for the remaining 43% of PV loans and 33% of loan value from individual CRFIs across the United States. Across the entire combined data set (6,770 loans), banks account for 32% of the PV loans and 38% of the loan value, and credit unions constitute the remaining 68% of PV loans and 62% of loan value. The loan data reflect performance through February 2018.

These data entail several caveats. The PV loan program data were self-reported by the various CRFIs. Although the data were spot checked, a thorough audit to check consistency across institutions or for reporting accuracy was not conducted. The Mass Solar Loan Program data are part of a state incentive program that includes a financially protective loan loss reserve fund, which may impact lending practices such as borrower qualification and the interest rate. The institutions outside the Mass Solar Loan Program reported data through a standardized form, but each institution may collect and process their PV lending data uniquely, which could produce subtle data differences across institutions. Thus, the data are useful for analyzing high-level trends. Future studies could improve the data-collection process and expand the scope of the analyses.

Table 2 categorizes the data by the value of each institution's PV loan portfolio. Out of 6,770 total PV loans, 12 loans (< 0.2%) were reported as charge-offs, indicating the loan is unlikely to be repaid by the borrower. Hypothetically, if an average lender charged-off $15,000 for each of the 12 defaulted loans, the loss would represent about $26 per loan when spread across all 6,770 loans. This estimate is likely high, because some loan charge-off losses could be offset from a claim to a loan loss reserve program or via the UCC-1 process when the home is sold or refinanced.

Table 2. PV Loan Sample Summary Statistics by CRFI Portfolio Size

PV loan portfolio (million)	No. of CRFIs	Total loans	No. of loans	Avg. seasoning in months	FICO ≥ 720	FICO 681-719	FICO ≤ 680	Charge-offs	30 days late	60 days late	90 days late
> $10	6	$138,699,859	4,929	12	78%	14%	8%	10	171	61	24
>$5–$10	4	$30,867,895	1,091	13	82%	11%	6%	0	4	0	0
>$1–$5	6	$13,886,826	658	14	76%	12%	11%	2	0	0	0
< $1	6	$2,851,725	92	4	88%	9%	3%	0	3	0	0
Totals	**22**	**$186,306,305**	**6,770**					**12**	**178**	**61**	**24**

Source: Mass Solar Loan 2018 and individual CRFI contributions

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There were 178 loans reported at least 30 days late, representing approximately 2.6% of the overall loan portfolio. Interviewees noted that short-term delinquencies can occur when borrowers are slow to set up automatic loan payments. Delinquencies drop substantially at the 60- and 90-day marks.[17] According to some interviewees, loan delinquency rates may vary by loan "seasoning" (i.e., the time elapsed since loan closing). For example, delinquencies might be expected to peak at 2–5 years of seasoning according to some interviewees. As shown in Table 2 and Figure 4, most PV loans in the data set were substantially younger than 2 years. The lower seasoning of CRFIs with portfolios of $1 million or less compared with the rest of the institutions could indicate smaller institutions or relatively nascent solar loan program offerings.

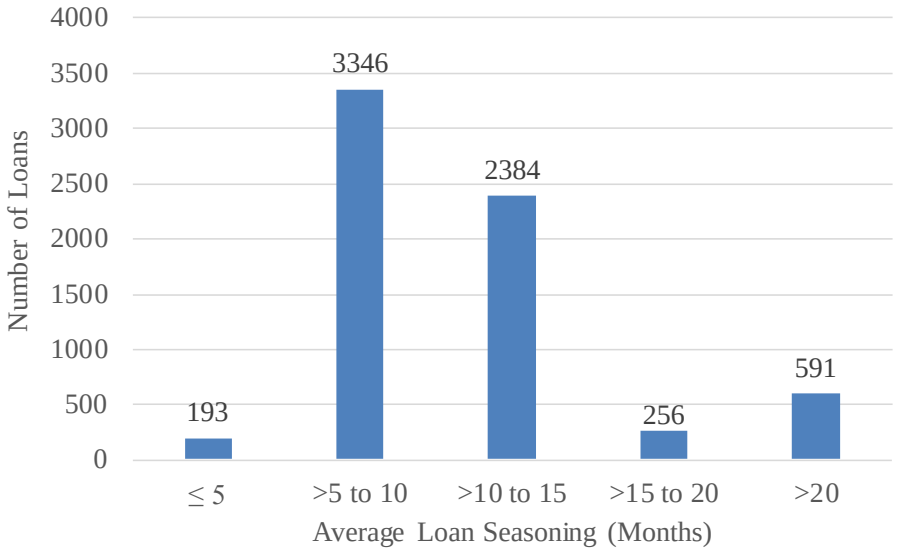


Figure 4. Number of CRFI PV loans by seasoning[18]

Table 2 also summarizes borrower credit profiles, which are consistent across CRFIs of various PV loan portfolio sizes: 76%–88% of borrowers had credit scores of 720 or higher, 9%–14% had scores of 681–720, and 3%–11% had scores of 680 or lower. Even within the lowest credit category, many borrowers likely were still considered "prime"—that is, attractive enough to qualify for approval at relatively low interest rates. The "subprime" level typically starts around a 620-credit score. These statistics agree with interviewees describing typical PV borrowers with overall high credit quality, thus presenting less risk. The high credit quality of PV borrowers is

[17] Some institutions report cumulative delinquency payments (how many loans have ever been late even if they are now current), whereas others report point-in-time delinquency metrics (how many loans are delinquent at any given point in time). Thus, the delinquency data in Table 2 are likely higher than if all the reported delinquencies were based on point-in-time estimates, because many delinquencies are corrected over time. Conversely, the delinquency data in Table 2 are likely lower than they would be if each financial institution reported a cumulative metric showing the number of loans that have ever been delinquent during the loan's operating period.

[18] Loan seasoning for Mass Solar Loan Program data is provided at the individual loan level, which is then averaged for each CRFI. Loan seasoning for CRFIs outside of the Mass Solar Loan Program is provided as a portfolio average for that CRFI. The number of loans shown in Figure 4 represents the total number of loans in each bin including both Mass Solar Loan Program and other CRFI data.

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also expected, because applicants must be homeowners and ideally have enough income to use the ITC effectively. Figure 5 provides a credit score summary of the total sample.

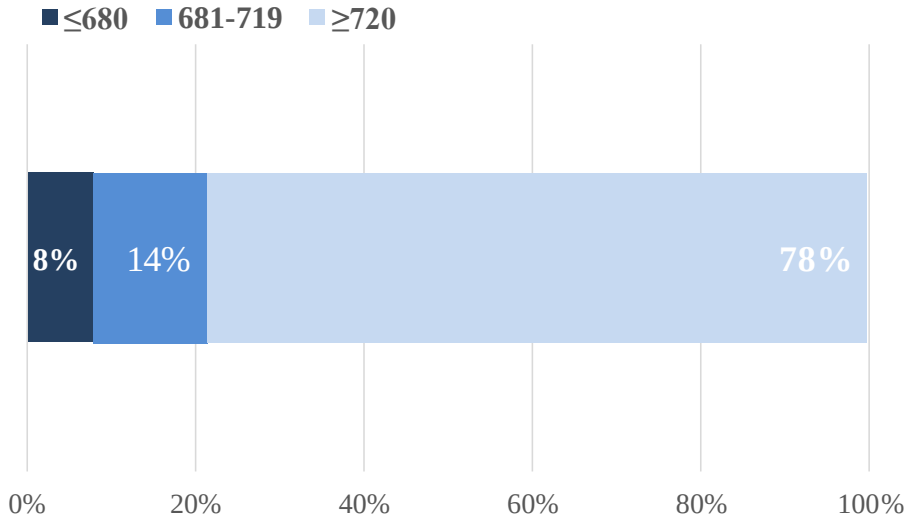


Figure 5. Credit score summary across entire sample of borrowers

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5 Conclusions and Future Needs

CRFIs have demonstrated the willingness and entrepreneurism to provide new loan products for growing distributed PV markets. Early qualitative perspectives and quantitative data suggest PV loans are performing very well, making expansion of loan offerings attractive for CRFIs already operating in this space and potentially attracting new entrants. Although most CRFI investment to date has targeted standalone distributed PV, other applications will likely emerge, such as community PV and PV coupled with battery storage.

Access to additional credit and market information is critical for accelerating the role of CRFIs and other financial institutions in supporting U.S. PV growth, including the following:

- Higher-fidelity PV loan performance and borrower credit data on par with the data readily available for other assets classes, especially improved geographic, historical, and borrower-classification data.
- Information on the presence of PV financing providers across different markets as well as detailed information on the type of financing products provided.
- Information provided through dedicated PV lending training or educational materials to existing and potential PV lenders, covering areas such as technical evaluation of PV equipment, assessment of industry risk profiles, and characterization of various PV financing products.

Public and private partnerships may be able to collect and disseminate such data throughout the United States. Working together, the industry can help existing providers grow their loan portfolios and reduce risks while enabling new financiers to enter the PV loan space and service areas where distributed PV loans can be offered widely and profitably.

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