BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

IN RE:

PETITION OF TENNESSEE AMERICAN WATER COMPANY TO CHANGE AND INCREASE CERTAIN RATES AND CHARGES SO AS TO PERMIT IT TO EARN A FAIR AND ADEQUATE RATE OF RETURN ON ITS PROPERTY USED AND USEFUL IN FURNISHING WATER SERVICE TO ITS CUSTOMERS	)	**Docket No. 08-00039**

CHATTANOOGA MANUFACTURERS ASSOCIATION'S RESPONSES TO TENNESSEE AMERICAN WATER COMPANY'S SECOND SET OF DISCOVERY REQUESTS

The Chattanooga Manufacturers Association ("CMA"), by and through its attorneys, submits the following responses to the Second Set of Discovery Requests from Tennessee American Water Company (the "Company") propounded upon CMA. CMA has set forth its objections generally applicable to the Company's requests in Part I, and specific objections to Company discovery requests in Part II.

GENERAL OBJECTIONS

1. CMA objects to the definitions and instructions contained in the discovery requests for production to the extent that the definitions and instructions attempt to impose on CMA a burden or obligation greater than that required by the *Tennessee Rules of Civil Procedure* and applicable statutes and regulations governing contested case hearings.

2. CMA objects to the discovery requests to the extent they call for information and the production of documents which are protected from disclosure by the attorney-client privilege, the attorney work product doctrine or any other applicable privilege or protection. CMA objects to the Company's discovery requests to the extent that the Company is attempting to impose on

CMA obligations with regard to identification of privileged documents beyond those required by the *Tennessee Rules of Civil Procedure* and applicable statutes and regulations governing contested case hearings.

3. CMA objects to the Company's discovery requests to the extent that they seek information to matters not at issue in this litigation or to the extent they are not reasonably calculated to lead to the discovery of admissible evidence. By providing information in response to these requests, CMA does not concede that such information is relevant, material or admissible in evidence. CMA reserves all rights to object to the use of such information as evidence.

4. CMA objects to the Company's discovery requests to the extent that the Company is attempting to impose on CMA obligations to supplement its responses beyond those required by the *Tennessee Rules of Civil Procedure* and applicable statutes and regulations governing contested case hearings.

5. CMA objects to the Company's discovery requests to the extent that the Company is attempting to require CMA to provide information and produce documents beyond those in its possession, custody or control as that phrase is used in the *Tennessee Rules of Civil Procedure* and applicable statutes and regulations governing contested case hearings.

6. CMA objects to the Company's discovery requests to the extent that they seek information and documents that are readily available through public sources or are in the Company's own possession, custody or control. It is unduly burdensome and oppressive to require CMA to respond or produce data and documents that are equally or more available to the Company.

7. CMA objects to the production of any documents prepared by it subsequent to the filing of this litigation or contested case.

8. CMA's objections and responses to these requests are based on information now known to it. CMA reserves the right to amend, modify or supplement its objections and responses if it learns of new or additional information.

9. CMA reincorporates by reference as if fully stated herein all objections CMA has made relative to the Company's First Set of Discovery Requests. CMA also supports, adopts, and incorporates herein the relevant objections made by either the Attorney General's Consumer Advocate and Protection Division or the City of Chattanooga.

ADDITIONAL OBJECTIONS TO SPECIFIC DISCOVERY REQUESTS

Subject to and without waiving any of the objections stated above, CMA responds to each of the specific discovery requests as follows:

DISCOVERY REQUEST NO. 1:

Please provide any studies, documents, CMA Minutes, or correspondence from 2003-2008 possessed by the CMA or the TAWC customers represented by the CMA as of July 18, 2008 that address the impact of the cost of water on their business.

RESPONSE:

The burden of proof in this matter is on the public utility, TAWC, to demonstrate (if it can) that the rate increases requested are just and reasonable. Considering that standard, CMA objects to the request on the grounds that it is unduly burdensome, overbroad, ambiguous, vague, retaliatory, oppressive and appears intended to deter CMA, and/or its member companies and their employees, from participating in this and future rate cases. CMA further objects to this

question on the on the basis of Attorney-Client Privilege, Attorney Work Product doctrine, and other applicable privileges which are not waived, and/or that any such materials would have been made or undertaken in anticipation of (or during) litigation. CMA further objects to this question on the on the basis that CMA minutes are privileged and proprietary. CMA further objects to the request to the extent it calls for materials or data that is already in the possession custody or control of TAWC and/or is as readily available to TAWC as to CMA. Subject to all prior objections, and in an attempt to avoid being delayed or distracted by anticipated motions to compel that will interfere further in the preparation for hearing in this matter, in addition to the pre-filed testimony or other materials previously filed, responsive documents are attached hereto.

DISCOVERY REQUEST NO. 2:

Please provide any studies, documents, CMA Minutes, or correspondence from 2003-2008 possessed by the CMA or by the TAWC customers represented by the CMA as of July 18, 2008 that address development of alternative water supplies.

RESPONSE:

See Response to Discovery Request No. 1, above. For years 2003-2007, see also CMA Response and objections to TAWC Discovery Request No. 16 in TRA Docket 06-00290.

DISCOVERY REQUEST NO. 3:

Please provide any studies, documents, CMA Minutes, or correspondence from 2003-2008 possessed by the CMA or by the TAWC customers represented by the CMA as of July 18, 2008 that address the level of service or reliability of service provided by TAWC.

RESPONSE:

See Response to Discovery Request No. 1, above. For years 2003-2007, see also CMA Response and objections to TAWC Discovery Request No. 17 in TRA Docket 06-00290.

DISCOVERY REQUEST NO. 4:

Please provide any agreements or correspondence from 2003-2008 possessed by the CMA or by the TAWC customers represented by the CMA as of July 18, 2008 that address the service CMA provides to those customers in representing them in TAWC rate proceedings.

RESPONSE:

See Response to Discovery Request No. 1, above. For years 2003-2007, see also CMA Response and objections to TAWC Discovery Request No. 18 in TRA Docket 06-00290.

DISCOVERY REQUEST NO. 5:

Please provide the Return on Equity and Profit Margin for each customer represented by the CMA. If any of those customers represented by the CMA are segments of a larger business, please provide the ROE (if applicable) and the Profit Margin for the Chattanooga-based operation.

RESPONSE:

See Response to Discovery Request No. 1, above. In the last rate case, the Company also sought the same information for all CMA members. CMA did not agree with that request. CMA acknowledged it would provide the information from the two CMA member company witnesses that had submitted pre-filed testimony, and the Company agreed, in TRA Docket 06-00290.

Here, there are no CMA member companies that have provided pre-filed direct testimony in this rate case and, thus, the requested information simply is not relevant. CMA further objects on the grounds that the questions in this discovery request are unduly burdensome, irrelevant, and not designed to lead to the discovery of admissible evidence. Further, TAWC seeks to require CMA to create materials from raw data, regardless of whether CMA possesses such data, even though that is the type of objection TAWC raised in its responses to discovery in this matter. If granted, the Company's nearly annual rate increases could drive up procurement costs in amounts for such large users that obviously would exceed for such entities far greater than the Company's mantra of a 12¢ per day / $3.65 per month increase for an "average" TAWC residential ratepayer. Clearly this request is an oppressive and unwarranted intrusion into the business practices of the Company's largest customers, perhaps designed to intimidate such

customers with the threat of having to reveal to the water supplier, a public service provider, highly sensitive and critical business information in a competitive environment.

DISCOVERY REQUEST NO. 6:

Please provide the engagement letter, contract, any other correspondence and a schedule of fees paid by CMA to Michael Gorman or Brubaker Associates, Inc. during the last five years.

RESPONSE:

CMA objects to the question as unduly burdensome, overbroad, and irrelevant. CMA will provide documents or correspondence, if any exist, retaining Mr. Gorman's employment in this case. Notwithstanding the objections, any business prior to this case between Michael Gorman and Brubaker & Associates, Inc. and CMA conducted over the last five years did not result in the development of positions taken in this case, nor produce discoverable evidence for this proceeding. Notwithstanding the objections, for purposes of this case, BAI has an oral agreement with CMA concerning its activities in this proceeding, and BAI will bill for its services based on hourly billing rates, time spent, and out-of-pocket expenses. Hourly billing rates of BAI employees Michael Gorman, Greg Meyer, and Maggie Ackenhausen are $205, $135, and $110, respectively, and the hourly billing rates of BAI's Analyst Department range from $130 or less.

DISCOVERY REQUEST NO. 7:

For each TAWC customer testifying in this docket on behalf of the CMA, please provide a schedule listing the total annual amount their Chattanooga operations spent from 2003 to 2008 on each of the following: water, electricity, natural gas, sewer, and local property tax; and calculate the percentage each of the listed costs represents as compared to the total operating or budgeted cost for their Chattanooga operations.

RESPONSE:

See Response to Discovery Request No. 5, above.

DISCOVERY REQUEST NO. 8:

Identify and/or produce all communications between the CMA and its members regarding the hearing of this case.

RESPONSE:

See Response to Discovery Request No. 1, above. Moreover, the request is overbroad, vague, ambiguous, and unduly burdensome. Subject to all prior objections, CMA further responds and refers the Company to attached responsive materials.

DISCOVERY REQUEST NO. 9 (TO MR. GORMAN):

Please provide legible copies of the original sources relied upon to obtain the following data:

a. growth rate forecasts from Zacks Investment Research and SNL Financial (Exhibit MPG-10),

b. common equity ratios from *AUS Utility Reports* (Exhibit MPG-9),

c. market to book ratios for the gas proxy group from *Mergent Public Utility Manual* and *AUS Utility Reports* (Exhibit MPG-15),

d. and authorized rates of return for the companies included in the gas proxy group from Regulatory Research Associates (Exhibit MPG-16).

RESPONSE:

CMA objects on the grounds that the request is overbroad, vague, ambiguous, and unduly burdensome. CMA further responds and refers the Company to Mr. Gorman's workpapers served and filed on or about July 22, 2008, as requested information was included as part of Mr. Gorman's workpapers supplied in this case. If these copies are not legible or clear, CMA and BAI will work in good faith to resolve any further concerns of the Company.

DISCOVERY REQUEST NO. 10 (TO MR. GORMAN):

With regard to your testimony on page 39 that a market-to-book ratio at or above 1.0 implies that regulatory authorized returns on common equity supported a utility's ability to issue additional common stock without diluting existing shares, please provide the definition of "share dilution" as it is used in this context.

RESPONSE:

CMA responds, as it understands this request, that share dilution would occur if a utility's book value per share is reduced after new shares are issued. This dilution would effectively reduce the relative ownership of existing shareholders, and reduce the regulatory earnings base (book value per share). A reduced book value per share would equate to lower earnings per share under original cost rate base – rate of return rate setting and potentially result in a lower market price per share.

DISCOVERY REQUEST NO. 11 (TO MR. GORMAN):

With regard to your testimony on page 53 that the Missouri Public Service Commission rejected a financial risk adjustment proposed by a witness for AmerenUE that is comparable to the market value capital structure adjustment for financial risk utilized by Dr. Vilbert in this proceeding, please provide: (i) the page number(s) and line number(s) (if applicable) of the testimony of AmerenUE's witness to which this statement refers; (ii) the docket number of the proceeding; (iii) the date on which the testimony was filed; and (iv) a reference to the specific part of the testimony in which the financial risk adjustment is described.

RESPONSE:

CMA reincorporates Mr. Gorman's testimony as if fully restated herein. Please see the following:

Missouri Public Service Commission, AmerenUE, Case ER-2007-002, Order, May 22, 2007, at 39-42. See also the following AmerenUE witness testimony:

- Direct testimony of Kathleen McShane, filed July 2006, at pages 40-45 and her Schedule KCM-E9.
- Direct testimony of Dr. James Vander Weide, filed July 2006, at pages 41-43 and his Schedule JVW-11.

DISCOVERY REQUEST NO. 12 (TO MR. GORMAN):

Provide all source documents, including but not limited to workpapers, e-mails and interview notes, in a legible format indicating a basis for a water loss adjustment.

RESPONSE:

CMA objects on the grounds that the request is overbroad, vague, ambiguous, and unduly burdensome. CMA further responds and refers the Company to Mr. Gorman's workpapers that were served and filed on or about July 22, 2008, and refers to attached responsive materials:

See Attachment 12A: "Survey of State Agency Water Loss Reporting Practices," Final Report to the American Water Works Association, January 2002.

See Attachment 12B: "Benchmarking Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report," American Water Works Association, 2005, excerpt – pgs. cover - vi and 136-138.

DISCOVERY REQUEST NO. 13 (TO MR. GORMAN:

Provide all source documents, including but not limited to, workpapers, e-mails, and interview notes, in a legible format related to all adjustments proposed as a part of Mr. Gorman's testimony.

RESPONSE:

CMA objects on the grounds that the request is overbroad, vague, ambiguous, and unduly burdensome. CMA further responds and refers the Company to Mr. Gorman's workpapers served and filed on or about July 22, 2008, as requested information was included as part of Mr. Gorman's workpapers supplied in this case. If these copies are not legible or clear, CMA and BAI will work in good faith to resolve any further concerns of the Company.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served via the method(s) indicated, on this the 31st day of July, 2008, upon the following:

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[ ] Facsimile
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CMA Responses to TAWC 2nd Round of Discovery- final.doc

Benchmarking Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report

Benchmarking Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report

The QualServe Benchmarking Program is a joint program of the American Water Works Association and the Water Environment Federation.

Angela K. Lafferty and William C. Lauer

American Water Works Association

APQC

Disclaimer

The QualServe Benchmarking program and the American Water Works Association funded this project. The American Productivity & Quality Center provided much of the analyses used in this report. This report is presented solely for informational purposes.

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Library of Congress Cataloging-in-Publication Data has been applied for.

ISBN 1-58321-366-X

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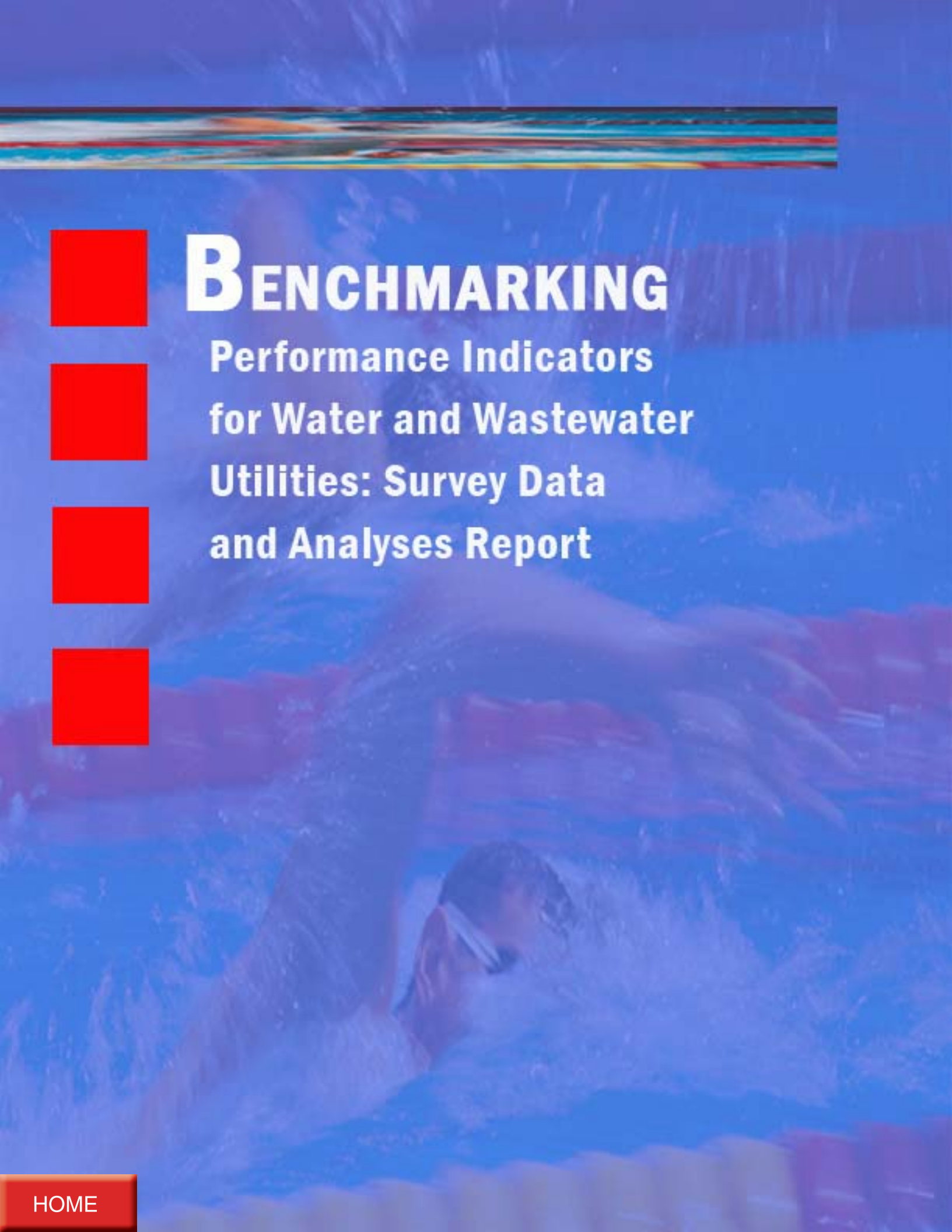
BENCHMARKING

Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report



HOME

Contents

14. Distribution System Water Loss

Description:

This indicator is a measure of the percentage of produced water that fails to reach customers and cannot otherwise be accounted for through authorized usage.

Calculation:

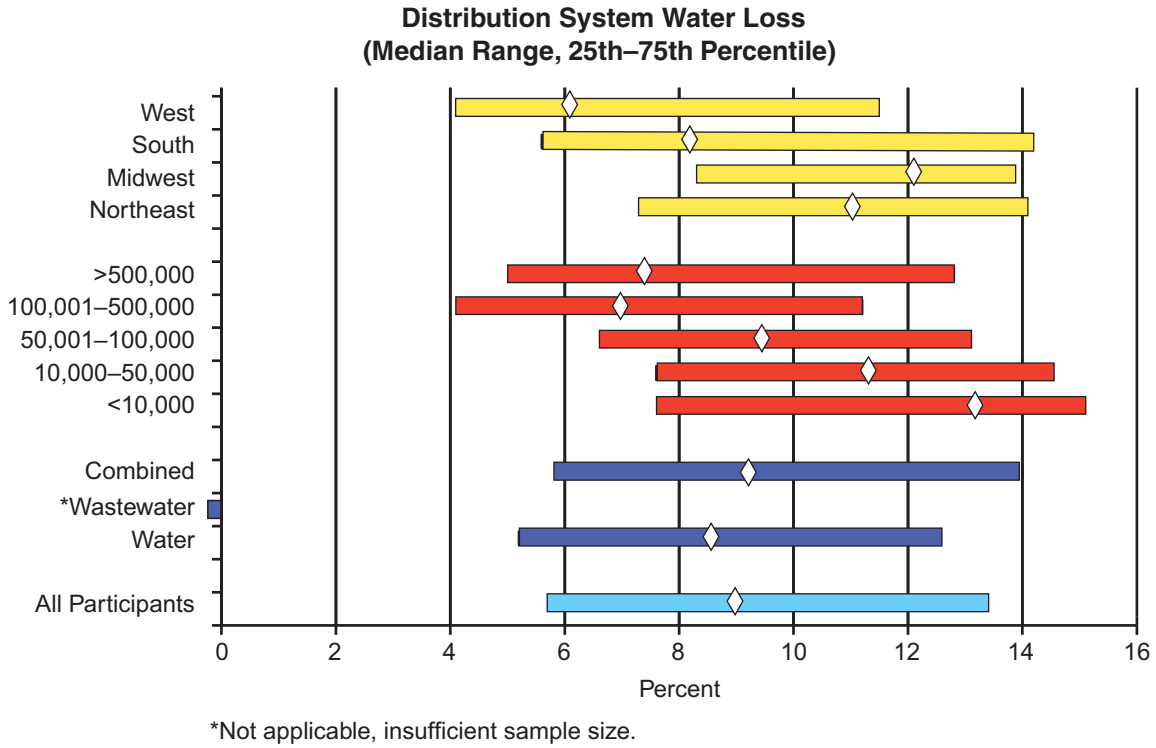
distribution water loss (%) = 100 [volume distributed – (volume billed + volume unbilled but authorized)/volume distributed]

Definitions:

- *Water losses* are those water volumes that do not find their way to authorized uses while under the utility's control. Water losses consist of real losses and apparent losses. The former are true losses of water from the utility's system, up to the point of customer metering. Apparent losses consist of unauthorized use and inaccuracies associated with metering. Water losses occur throughout the water system, from source water intakes, transmission pipelines, treatment facilities, distribution pipelines, and storage facilities. (For this indicator the focus is on losses from the points of distribution through the points of customer service meters.)
- *Distributed water* is the total volume of water entering the distribution system from all sources, including treatment facilities, well fields, individual wells, and purchased water connections.
- *Volume billed* is the total for all customer classes.
- *Volume unbilled but authorized* are the metered or estimated volume totals for all unbilled but authorized uses (e.g., flushing fire hydrants to maintain water quality, washing storage facilities, or pipeline construction and rehabilitation activities).

Distribution System Water Loss

Median Range Chart



*Not applicable, insufficient sample size.

FIGURE 5–31 Distribution System Water Loss

Distribution System Water Loss

Tabular Results

TABLE 5–31 Distribution System Water Loss

Region		25th Percentile	Median	75th Percentile	Sample Size
	West	4.1	6.2	11.5	32
	South	5.6	8.3	14.2	48
	Midwest	8.3	12.6	13.9	22
	Northeast	7.3	11	14.1	15
Size	>500,000	5	7.6	12.8	20
	100,001–500,000	4.1	7	11.2	44
	50,001–100,000	6.6	9.6	13.1	17
	10,000–50,000	7.6	11.7	14.6	31
	<10,000	7.6	13.7	15.2	7
Type	Combined	5.8	9.3	14	78
	*Wastewater	na	na	na	0
	Water	5.2	8.4	12.6	43
	All Participants	5.7	9.1	13.4	121

*na = not applicable, insufficient sample size.

Performance Measure Interpretation:

Generally, higher values are not desirable.

Water loss can adversely impact revenue and water use efficiency. Utilities located where there are water shortages are focused on reducing this performance indicator. Water used (but not billed) for authorized purposes is not considered water loss. Examples of this type of water use include flushing programs designed to maintain water quality, water used to clean water storage facilities, and water used during new pipeline construction. There is probably no way to completely eliminate all water loss, but most utilities strive to minimize this value.

SURVEY OF STATE AGENCY WATER LOSS REPORTING PRACTICES

FINAL REPORT TO THE AMERICAN WATER WORKS ASSOCIATION

January 2002

Prepared by
Janice A. Beecher, Ph.D.
Beecher Policy Research, Inc.

SURVEY OF STATE AGENCY WATER LOSS REPORTING PRACTICES
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Prepared by
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Beecher Policy Research, Inc.

Introduction[1]

There might have been a time when having a fair amount of lost or "unaccounted-for" water was pretty acceptable to water utilities. Finding and plugging leaks might not have seemed cost effective for a typical water system; that is, the perceived cost of detection and repair might have outweighed the perceived benefits of saving water. Many water systems also might not have metered or charged for certain kinds of uses.

Such practices are no longer accepted as the best management of water resources. Today, the commodity that water systems deliver has greater value than ever before. Extraction, treatment, storage, and pumping all add value to the water resource. Ignoring the value of water losses is no longer justifiable.[2] Given growing constraints on water resources and mounting infrastructure costs, it is more imperative than ever that water managers endeavor to account for the water that travels from the source to end users.

While lacking a rational structure for quantifying water loss, numerous assessments in the literature suggest that water loss is a significant, and often overlooked, occurrence for many US water utilities. Many case studies have documented systems for which losses from leakage and poor accounting constitute substantial portions of total water deliveries.

A growing number of communities are faced with pressure to find additional supplies to serve expanding populations. Many of these exist in water-limited regions where the development of new supply sources and the allocation of existing sources are complex and sensitive issues. Yet rational assessment of water-loss performance and appropriate improvements often are not pursued as a resource management option or given appropriate priority.

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[1] Based on George Kunkel and Janice A. Beecher, *Survey of State Agency Water Loss Reporting Practices: Preliminary Findings.* Proceedings of the 2001 AWWA Annual Conference (Denver: CO: American Water Works Association, 2002).
[2] George Kunkel, "Cutting Our Losses," *Journal AWWA* (January 2001): 40.

Proper management of any resource must include accurate measurement of the resource throughout its life cycle. In any proper accounting system checks and balances must be provided via the use of independent audits, consistent reports and rational procedures. U.S water systems do not consistently account for water or apply consistent methods of water accounting. The need for a reliable and authoritative system of water accounting has become increasingly apparent to utility managers and practitioners in the field of water-resource policy.

This paper describes the findings of a research project sponsored by the Technical and Educational Council of the American Water Works Association that provides an initial baseline of data describing the status of water accounting and related public policy at the state and regional levels. The results are summarized in this paper and the detailed findings by jurisdiction are available in a spreadsheet format.

Water Accounting

Many water providers in the United States refer to the term "water accountability" as the measure of effectiveness in moving their product (water) to their customers with minimal losses in transmission and distribution. Water accountability, however, is not a well-defined discipline and the methodologies used to quantify losses are varied and inconsistent. Lack of standard terminology and measures are at the center of the water-loss penumbra.[3] Often quoted, but poorly defined, the "metered-water ratio" more frequently confuses rather than informs the reader when attempting to evaluate the water loss condition of suppliers.

Confusing terms and standards can make it difficult for water professionals to address water-loss issues. The terminology used to represent the difference between the water that is withdrawn from the source and water that is eventually distributed to end users is imprecise. For example, the terms "water losses" and "unaccounted-for water" have been used somewhat interchangeably. But not all unaccounted-for water is lost; some might be given away or used for authorized purposes. Some water has been labeled "nonrevenue" or "nonrevenue producing" but such water might include both authorized and unauthorized uses.[4] EPA has used the term "uncompensated usage" to include water used by public authorities, water used for maintenance purposes (flushing), leakage, and uncollected accounts from customers.[5]

In a 1987 study for the American Water Works Association Research Foundation (AWWARF), a useful distinction was made between "account" and "nonaccount" water: *Account water* is all water for which an account exists, the water is metered,

[3] Ibid.
[4] Janice A. Beecher and Patrick C. Mann, *Cost Allocation and Rate Design for Water Utilities* (Columbus, OH: The National Regulatory Research Institute, 1990).
[5] U.S. Environmental Protection Agency, *Community Water System Survey* (Washington, DC: USEPA, 1997).

and the account is billed: *nonaccount water* is the sum of all water produced or purchased by a water utility that is not covered by the term "account water."[6]

This proposed nomenclature has not been widely internalized by U.S. water systems. For the most part, the industry and state agencies tend to use the term "unaccounted-for water" to mean leaks as well as other kinds of avoidable losses relative to total water production. However, the measurement of unaccounted-for water can be a source of confusion because the numerator and the denominator used to calculate the percentage are not obvious. Is the percentage amount supposed to represent all water not metered and sold or only water lost through leaks? How the percentage is calculated is obviously meaningful.

The confusion about terms exacerbates the confusion about standards. Any single standard (expressed in terms of volume or a percentage) for unaccounted-for water may not be valid, realistic, or appropriate for a particular water system. Many system characteristics—such as size, age, service population density, physical terrain, soil characteristics, and pipe materials—will affect leakage rates. Systems also have different production-cost profiles against which the cost-effectiveness of leak detection and control programs can be evaluated.

In 1996, AWWA's Leak Detection and Accountability Committee recommended 10 percent as a benchmark for unaccounted-for water, supplanting a 15 percent standard that apparently was based more on folklore than rigid empirical analysis.[7] But even this 10 percent recommendation in considered arbitrary in nature and the use of any percentage loss indicator is now viewed as suspect; particularly in light of emerging approaches that rest on more accurate water accounting.

The AWWA Committee concluded that, "Regardless of the water system's size, water loss should be expressed in terms of actual volume, not as a percentage."[8] This volumetric measure, the committee points out, is essential for estimating the monetary value of losses. The volumetric measure of lost water can be multiplied by the unit cost of water production (or the retail rate) to estimate the value of the lost water. From an economics perspective, the true value of losses is the *marginal* or *incremental* unit cost of production (that is, the cost of producing the next increment of drinking water supply). Incremental or marginal costs more accurately reflect water's resource value, which will increase as supply alternatives become scarcer. Reducing leakage and loss can help systems capture a supply resource and avoid costly supply-side operating and capital costs.

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[6] Lynn P. Wallace, *Water and Revenue Losses: Unaccounted for Water.* Denver, CO: American Water Works Association, 1987.
[7] AWWA Leak Detection and Water Accountability Committee, "Committee Report: Water Accountability," *Journal AWWA* (July 1996): 108-111.
[8] Ibid., 110.

Although widely applied, the concept of "unaccounted-for water" is troubling from a best-practices perspective, as well as from perceptual viewpoint; professional water managers should be able to "account for" their inventory using appropriate measurement and estimation tools. Recently a task force of the International Water Association (IWA) created a new methodology and set of performance indicators for water loss.[9] These measures, which can be applied internationally, recommend against the use of the term "unaccounted-for" water, based on the premise that *all* water should be accounted-for, as either a use or a loss. Most analysts agree a better system of *accounting* is the foundation for a better system of *accountability* for the drinking water supply industry.

Goals of the Project

The major goal of this project is to determine the extent to which state and regional agencies have established politics related to water loss and water-loss management. By making a comprehensive and systematic assessment of current policy, the project will help establish a baseline of understanding that can be used to evaluate the validity of the widely held perception that greater consistency is needed in water accounting for U.S. water utilities.

Approach

A survey was designed for completion by any state agency that might play a role in establishing or implementing a policy regarding water losses. State agencies that were contacted included drinking water administrators, natural resource agencies, and public utility regulatory agencies. Regional (multistate and substate) agencies, such as the Delaware River Basin Commission and the Florida water management districts (respectively), were also surveyed on a limited basis. A copy of the survey is included as Appendix A.

The survey results were supplemented by a document search and a review of state web sites to collect general information on state policies, including, but not limited to state laws and regulations, definitions, standards, and accounting requirements.

Survey information was gathered from various agencies representing thirty-four states, as well as the Delaware River Commission, the Southwest Florida Water Management District (SWFWMD FL), and the St. Johns River Water Management District (SJRWMD FL) (for a total of 37 completed surveys). Information on water loss policies was acquired for an additional eleven (11) state jurisdictions for which no survey was completed. Accordingly, the study includes information for forty-six (46) jurisdictions, including forty-three (43) states (See Table 1 and Figure 1).

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[9] International Water Association, *Performance Indicators for Water Supply Services* (London: International Water Association, 2000).

Although not entirely complete or representative, the results provide relatively good coverage of state water-loss policy development.

Table 1
State Water Loss Policy Survey Coverage (December 2001)

State or Regional Government	Survey	Other Information Sources
Alabama		
Alaska	X	
Arizona	X	Web search
Arkansas		
California	X	Document search
Colorado		
Connecticut	X	Web search
Delaware	X	Web search
Florida	X	Web search
Georgia	X	Web search
Hawaii	X	Web search
Idaho	X	2 surveys
Illinois		
Indiana	X	Web search
Iowa	X	Web search
Kansas	X	Web search
Kentucky	X	Document search
Louisiana		Web search
Maine	X	
Maryland	X	Document search
Massachusetts		Document search
Michigan		
Minnesota	X	Web search
Mississippi		
Missouri	X	
Montana	X	
Nebraska	X	
Nevada	X	Document search
New Hampshire	X	
New Jersey	X	
New Mexico		Document search
New York		Web search/Document search
North Carolina	X	Web search
North Dakota	X	
Ohio	X	2 surveys/ Web search
Oklahoma		
Oregon	X	
Pennsylvania	X	2 surveys
Rhode Island	X	
South Carolina	X	
South Dakota	X	

Table 1 (continued)

State or Regional Government	Survey	Other Resources
Tennessee		Document search
Texas	X	Web search
Utah		Web search
Vermont	X	Web search
Virginia		Document search
Washington		Web search
West Virginia		Web search
Wisconsin	X	Document search
Wyoming	X	Web search
Delaware River Basin Commission	X	
Southwest Florida Water Mgmt. Dist.	X	
St. Johns River Water Mgmt. Dist.	X	
TOTAL	37	29

Figure 1. Survey respondents (state jurisdictions).

Survey Design

The survey on state water loss policy, as well as the supplemental research, was designed to be very simple and straightforward in order to ensure a high rate of response. Ten issue areas, which emerged from the preliminary research phase of the project, were covered by the survey:

1. Water-loss policy. Does the state have a policy regarding the loss of water by water utility systems? If so, where is the policy stated (statute, regulation, directive, etc). Which agency or agencies are responsible for implementing the water loss policy?

2. Definition of water loss. Does the state or agency provide a definition of water loss or unaccounted-for water?

3. Accounting and reporting. Does the state or agency provide a method to account for and report water loss?

4. Standards and benchmarks. Does the state or agency identify a standard or benchmark for water losses, such as a specific percentage?

5. Goals and targets. Does the state or agency specify a goal or target for water-loss reduction?

6. Planning requirements. Does the state or agency address water-loss issues in the context of water resource, conservation, or other planning requirements?

7. Compilation and publication. Does the state or agency compile and/or publish data on water losses by water utility systems?

8. Technical assistance. Does the state or agency provide any form of direct technical assistance to water utility systems to help reduce water losses?

9. Performance incentives. Does the state or agency provide any form of performance incentive for water-loss reduction?

10. Auditing and enforcement. Does the state or agency implement any form of auditing or enforcement in relation to the water-loss policy?

Survey respondents were asked to provide additional information for affirmative responses to any of the survey questions. Follow-up contacts with some respondents helped provide additional information as needed.

Finally, in addition to the survey, case studies were developed for six jurisdictions in order to highlight various aspects of water-loss policy development:

- Arizona Department of Water Resources
- Kansas Water Office
- Minnesota Department of Natural Resources, Division of Waters
- Pennsylvania Public Utility Commission and Pennsylvania Bureau of Water Supply and Wastewater Management
- Delaware River Basin Commission (interstate)
- St. Johns River Water Management District (intrastate Florida)

Survey Findings

Water-Loss Policy

Whether a state or agency has a water-loss policy is defined very liberally. Survey respondents were asked to indicate the existence of a policy. However, a policy was also assumed if information was found in any official state document. A water-loss policy can thus range from one that simply encourages utilities to reduce losses to one that specifically defines water loss, sets standards, requires reporting, and enforces compliance. Based on these broad criteria, the presence of a water-loss policy was detected for thirty-three (33) states plus the two surveyed Florida Water Management Districts and the Delaware River Basin Commission (for a total of 36 jurisdictions).

Water loss policies are most commonly found in a variety of state administrative codes, rules, and statutes. State agencies frequently reiterate and emphasize water loss policies in pamphlets, manuals, official forms, and memoranda of understanding. These can be useful information sources for understanding a particular agency's water loss policy.

As expected, the survey results indicate that the agencies responsible for water loss policy vary from state to state. Typically, the agency with responsibility in this area will be the state water resource, natural resource, or environmental agency that has jurisdiction for water-quantity issues. To a lesser extent, some state public utility commissions also implement water-loss policies. Least involved in water-loss policies are the state drinking water administrators, the primacy agencies for water-quality concerns.

Definition of Water Loss

According to the survey, seventeen (17) jurisdictions provide a definition of water loss or unaccounted-for water (including the St. Johns River Water Management District and the Delaware River Basin Commission). For the most part, these definitions do not provide for an operational measurement of unaccounted-for water. Most of the definitions differentiate between metered versus unmetered water. For

example, the Georgia Environmental Protection Division defines unaccounted-for water as "the difference between the total amount of water pumped into the water system from the source(s) and the amount of metered water use by the customers of the water system expressed as a percentage of the total water pumped into the system" (Rules and Regulations of the State of Georgia Chapter 391-3-2-.02 Definitions, Amended).

The California Department of Water Resources distinguishes between authorized unmetered uses and water losses. Authorized unmetered uses may include water used for beneficial purposes, such as fire fighting and main flushing. Most definitions identify some of the potential sources of unaccounted-for water, including water for fire fighting and flushing, leaks and breaks, illegal connections, faulty meters, and other sources.

The Massachusetts Department of Environmental Protection uses a detailed definition provided by a sister agency, the Water Resources Commission, to define unaccounted-for water as: "the difference between water pumped or purchased and water that is metered or confidently estimated. Unaccounted for water should include, meter problems (i.e. master meter inaccuracies, domestic and non-domestic meter under-registration, etc.), unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, stand-pipe overflows and data processing errors."

Three state agencies in the sample provide worksheets or formulas for calculating unaccounted-for water. The Missouri Department of Natural Resources defines water loss as a simple percentage: ((water pumped minus water used)/(water pumped)) times 100. Total usage is the sum of customer meter readings, volume used for main flushing or fire hydrant testing, volume sold through water salesman or truck loads from fire hydrants, volume used to fill swimming pools not otherwise metered, etc.

The Texas Water Development Board provides a worksheet for systems to calculate unaccounted-for water, which can be summarized in three steps:[10]

(1) The volume of water produced or supplied to the distribution system, as measured by all master meters at wells and treatment facilities or points of purchase from other utilities, is totaled.
(2) The volume of water sold and distributed as measured by sales meters and estimated un-metered uses.
(3) Unaccounted-for water is obtained by subtracting water sales from total water produced supplied.

[10] Texas Water Development Board, *A Guidebook for Reducing Unaccounted-for Water* (Texas Water Development Board, June 1997), 2.

Texas also defines unaccounted-for water as production minus sales (and the percentage of unaccounted-for water as unaccounted-for water divided by water produced times 100).

The Pennsylvania Department of Environmental Protection defines unaccounted-for water as generally "water which is produced but is not used or sold to the consumers."[11] The percent of unaccounted-for water is then specified in a basic calculation:

Percent of Unaccounted for Water =
(Water Available for Sale) – (Water Sold or Used)/Water Available for Sale x 100

Accounting and Reporting

Most water professionals agree that all water systems, even smaller systems, should implement a basic system of water accounting. AWWA provides a manual, *Water Audits and Leak Detection* (M36, 1990) to guide this process.[12] Water accounting facilitates the process of tracking water throughout the transmission and distribution system—from water sources to end users—and also identifies areas that may need special attention, such as the existence of large volumes of nonaccount water.

The survey indicates that twenty (20) state agencies and the two Florida water management districts either require or provide guidelines for water accounting and/or reporting water loss. Accounting and reporting may be part of an annual report requirement to an agency or may be required as part of an application process. Several examples illustrate the diversity in accounting and reporting.

The Environmental Protection Division of the Georgia Department of Natural Resources requires, as part of a permit to withdraw ground and surface water, submission of an annual water-use data report that includes information on unaccounted-for water for the prior twelve (12) months.

The Iowa Department of Natural Resources Water Supply Section Construction Permit Application requires applicants to provide data for unaccounted-for water (on an average-day and peak-day basis).

In addition to reporting requirements for unaccounted-for water, three state agencies also require a statement of how the utility plans to remedy the situation. In

[11] Pennsylvania Department of Environmental Protection, *Public Water Supply Manual – Part 5 (Appendix A)*, November 1, 1997.
[12] Several water conservation planning manuals also have suggested systems of water accounting. One that contributed to the method proposed in this article appeared in the *Water Conservation Manual* published by the New York State Department of Environmental Conservation (January 1989).

its Annual Statistical Report for Community (COM) Public Water Systems and Non-Transient Non-Community (NTNC) Public Water Systems, the Massachusetts Department of Environmental Protection requires systems to identify the reasons for the unaccounted-for water, as well as the measures that will be implemented to correct the problem. According to the required form:

> If your system has 15% or greater unaccounted water or uses 100,000 gallons per day or greater and has any % unaccounted for water, please indicate in the table below the possible reason(s) for your unaccounted for water and your plans to correct these problems. Please note that during or before your next Sanitary Survey DEP staff will evaluate your progress with the corrective actions plans as indicated.[13]

In a like manner, the Ohio Public Utility Commission requires each waterworks company to annually report unaccounted-for water and also to propose remedial actions if unaccounted-for water exceeds 15 percent. The West Virginia Public Service Commission also requires a statement of remedial actions to be taken if the utility indicates unaccounted-for water greater than 15 percent in its annual report.

The New York Department of Health requires water suppliers to prepare an annual Drinking Water Quality Report that includes an accounting of the total amount of water withdrawn, delivered, and lost from the system. The Texas Water Board provides detailed worksheets for calculating unaccounted-for water in their Drought Planning Guide. Finally, the Public Service Commission of Wisconsin requires utilities to maintain a ongoing record that compares water pumpage with metered consumption.

Standards and Benchmarks

The imprecision of the definitions of water losses carries over to the establishment of standards and benchmarks. The survey confirmed the lack of clear consensus on standards. Twenty-eight agencies (representing twenty-three states and the three regional authorities) reported the use of some standard or benchmark for water losses. Table 2 presents standards for "unaccounted-for water" from a select number of jurisdictions. The reported standards range from 7.5 to 20 percent, with 15 percent being most common. The percentages refer generally, but rather vaguely, to water losses relative to production.

[13] Massachusetts Department of Environmental Protection, "2001 Public Water System Annual Statistical Report for Community (COM) Public Water Systems and Non-Transient Non-Community (NTNC) Public Water Systems." http://www.state.ma.us/dep/brp/dws/files/comntnc.doc

Table 2
Selected State Standards for Unaccounted-for Water

State	Agency	Standard
Arizona	Department of Water Resources	10% (large) 15% (small)
California	Urban Water Conservation Council	10%
Florida	Southwest Florida Water Management District	12% or less
Florida	St. Johns River Water Management District	10%
Georgia	Environmental Protection Division	Less than 10%
Indiana	Department of Environmental Management	10 to 20%
Kansas	Kansas Water Office	15%
Kentucky	Department of Energy, Water and Sewer Branch	15%
Louisiana	Department of Environmental Quality	15%
Massachusetts	Department of Environmental Protection	15%
Minnesota	Department of Natural Resources	10%
Missouri	Department of Natural Resources	10%
North Carolina	Division of Water Resources	15%
Ohio	Public Utility Commission and Environmental Protection Agency	15%
Oregon	Water Resources Division	10-15%
Pennsylvania	Public Utility Commission	20%
Pennsylvania	Bureau of Water and Wastewater Management	10-15%
Rhode Island	Water Resources Board	10-15%
South Carolina	Public Service Commission	7.5%
South Carolina	Department of Health and Environmental Control	10%
Texas	Water Development Board	10 to 15%
Texas	Natural Resources Conservation Commission	20%
Washington	Department of Health	20% (10% proposed)
West Virginia	Public Service Commission	15%
Wisconsin	Public Service Commission	15% (large) 25% (small)
Delaware River Basin Commission	Delaware River Basin Commission	15%

Source: Survey of states.

According to the review, only Arizona, Texas, and Wisconsin established different standards for water systems based on their type or size. The Texas Water Development Board, for example, has found that "unaccounted for water rates above 15 percent for municipal systems and slightly higher (15% to 18%) for wide-spread rural systems indicate the need for immediate actions."[14]

Goals and Targets

Eighteen (18) state agencies and the two Florida water management districts mentioned a goal or target for water-loss reduction. In most cases the goal or target is for the utility to meet the standard or benchmark for unaccounted-for water discussed in the previous section. Goals often are stated in relatively vague terms.

For example, the Florida Department of Environmental Protection, Water Resource Implementation Rule declares that, "The overall water conservation goal of the state shall be to prevent and reduce wasteful, uneconomical, impractical, or unreasonable use of water resources…"Districts shall further accomplish this water conservation goal by:…3. Minimizing unaccounted for water losses..."[15]

The Minnesota Department of Natural Resources provides a time period target of three years for a water supplier to reduce unaccounted-for water:

> If unaccounted-for water exceeds 20% of total water appropriations the public water supplier's water appropriation permit is amended to require the implementation of measures to reduce unaccounted-for water volumes within 3 years. The generous targets of 20% and 3 years are intended to provide sufficient time and resources for small systems…[16]

The Kansas Water Office is the only agency in the sample to specify a particular target year. The agency plans to reduce the number of public water suppliers with excessive unaccounted-for water by the year 2010.

Planning Requirements

For twenty-seven (27) of the agencies in the sample, water-loss issues are addressed in the context of planning requirements. In almost every case, the planning requirement is for water conservation, supply, or emergency planning. For example, the Connecticut Department of Health requires water suppliers to

[14] Texas Water Development Board, 2.
[15] Florida Statute, CHAPTER 62-40 Water Resource Implementation Rule 62-40.412 Water Conservation. http://www.dep.state.fl.us/water/rules/62-40.pdf
[16] Jim Japs, Supervisor, Water Permit Programs, MN Department of Natural Resources, Division of Waters, survey information.

discuss current leak detection and repair and pressure-reduction programs in their Water Supply Plans. In Nevada each water supplier must "identify and reduce leakage in water supplies, inaccuracies in water meters and high pressure in water supplies"[17] in its required water conservation plan. In Vermont, the Department of Environmental Conservation requires systems to prepare a water conservation plan that, "at a minimum, addresses the following: (a) evaluation of system water use efficiency, including evaluation of extent of unaccounted-for water, water accounting, and loss control."[18]

The Texas Natural Resources Conservation Commission includes more specific requirements in their water conservation plans:

> All water conservation plans for municipal uses by public drinking water suppliers shall include the following elements: (E) measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections, abandoned services, etc.). For Systems serving 5,000 or more population the plan must include "a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water" For wholesale water suppliers, plans must include goals for "maximum acceptable unaccounted-for water"[19]

New Hampshire and Virginia require water-loss management plans in connection with all new groundwater withdrawals. The Kansas Water Office requires a water utility to implement a water management review every time the amount of unsold water exceeds 20 percent of the total raw-water intake for a four-month time period.

Compilation and Publication

Only nine state agencies and one Florida water management district appear to compile or publish data on water losses. Two agencies, the Hawaii Department of Water Supply and the Southwest Florida Water Management District compile water loss data but do not publish this information for public consumption. In some states, such as Minnesota, water-loss data is only available through annual reports or planning documents. The Kansas Water Office compiles data on unaccounted-for water and publishes it in the Kansas Municipal Water Use Report, which is available

[17] Nevada Revised Statutes (NRS), NRS 540.141.
[18] Vermont Environmental Protection Rules, Chapter 21,revised December 29, 2000: Appendix B, Long Range Plan Requirements. http://www.anr.state.vt.us/dec/watersup/wsrule/WSRuleDecember2000.pdf
[19] Texas Rules, Chapter 288 Subchapter A: Water Conservation Plans 288.1-288.6 Effective April 27, 2000. http://www.tnrcc.state.tx.us/oprd/rules/pdflib/288a.pdf

online. The office currently lists sixty-one (61) systems with unaccounted-for water amounting to 30 percent or more.

Technical Assistance

Eighteen (18) state agencies and one Florida water management district in the sample provide some amount of technical assistance to water utility systems to help reduce water losses. In Kansas, technical assistance is provided to any public water supplier upon request. The Kansas Rural Water Association provides on-site technical assistance at no charge. In Texas, technical assistance, classes, and training are available from a number of providers, including the Texas Natural Resources Conservation Commission, Texas Water Development Board, Texas Water Utilities Association, the Texas Engineering Extension Service, and the Community Resource Group.

The Kentucky Infrastructure Authority implements a program to assist systems in detecting water losses from distribution lines. The program includes both audits and low-interest loans:

> The authority shall establish a program to assist governmental agencies in detecting water loss from distribution lines. The program may include contracting with third parties to conduct water loss audits and leak detection. The program may include giving low interest loans, on a priority basis established by the authority consistent with the findings and purposes set out in section 1 of this act, for the repair or replacement of distribution facilities, deemed reasonable by the authority, undertaken as a result of the water loss audit.[20]

Performance Incentives

Only eleven (11) state agencies and one Florida water management district in the sample indicated the use of performance incentives for water loss reduction, broadly defined for the purpose of this study. Minnesota and Rhode Island consider the approval of a conservation plan or permit as a performance incentive. The Rhode Island Water Resources Board, for example, requires attention to water-loss reduction for approval of Water System Supply Management Plans. The Vermont Department of Environmental Conservation reported that fees might be slightly lowered as incentive for water-loss reduction. The Texas Natural Resources Conservation Commission, a price regulator for some systems, reports that a system's rate of return may be affected by excessive line losses.

[20] 2000 Ky. Acts 529; 2000 Ky. Ch. 529; 2000 Ky. SB 409

Four states (Indiana, Iowa, Louisiana, and North Carolina) mention water losses in their state revolving loan fund (SRF) applications. In some instances, higher rates of water loss might actually result in greater benefits. For example, Louisiana assigns extra points to loan applicants experiencing unaccounted-for water greater than 15 or 25 percent. Although such incentives might appear "perverse," the intention is to identify systems most in need of assistance. Moreover, loan provisions generally require a plan to reduce losses.

Thus, Iowa assigns ten points to SRF applicants that plan to rectify excessive water losses per the established water conservation plan if unaccounted-for water is more than 15 percent. North Carolina's funding programs place a particular emphasis on water losses. The Drinking Water Treatment Fund awards up to 20 points for projects that replace undersized or leaking water lines. For the state's Clean Water Bond Loan Program and Clean Water Revolving Loan and Grant Program, five points are given if "An applicant demonstrates it has a continuing water loss program in its water supply system program."[21]

Auditing and Enforcement

Fifteen (15) agencies in the sample call for some type of auditing or enforcement. Generally, these policies are basic auditing requirements. None of the jurisdictions covered by the survey were found to impose direct sanctions (such as fines) on systems failing to meet water-loss related requirements.

Auditing includes any agency review of the water utility's annual report or planning documents. Utility's might also be required to conduct a periodic water audit. For example, the St. Johns River Water Management District requires all consumptive use permit applicants to complete a water audit, paying special attention to unaccounted-for water:

> If the total unaccounted for loss of the system from line 4F is 10% or greater, the applicant is required to evaluate the feasibility of completing the leak detection survey found on the water audit form. The applicant has the option to perform the leak detection immediately or to propose a one year program to improve water use accountability to below 10% and then to repeat the audit. If the second audit shows unaccounted-for water loss above 10%, the permittee must implement the leak detection program where feasible.[22]

[21] North Carolina Public Water Supply Section, Chapter 1 - Departmental Rules, Subchapter 1 L - State Clean Water Bond Loan Program Section 0.100 - General Provisions
[22] St. Johns Water Management District, *Instructions for Completing the District Water Audit Form.*

The Minnesota Department of Natural Resources audits annual reports and also requires an audit of unaccounted-for water when reviewing each permit request. Public water suppliers with losses exceeding 20 percent must provide an annual report of actions being implemented to reduce unaccounted-for water. The Kansas Rural Water Association closely audits all public water suppliers with 30 percent or more unaccounted-for water. Quarterly monitoring is required until two consecutive quarterly reports show 20 percent or less unaccounted-for water.

As an example of potential enforcement, the Ohio Public Utility Commission requires a water company to notify the Commission if it cannot comply with water-loss requirements. The company is given thirty days to take corrective actions and submit a report to the Commission. "The compliance division of the commission shall, after reviewing the report, notify the company of any further necessary actions."[23]

Case Studies

Six cases are highlighted here because they represent significant water-loss policy developments at the state and regional levels.

Arizona Department of Water Resources

Most water-loss requirements in Arizona are implemented through the states five Active Management Areas (AMA). Each AMA must submit a yearly Management Plan, which requires all municipal suppliers to report their unaccounted-for water.

Arizona applies a relatively specific working definition of unaccounted-for water:

> Lost and unaccounted for water is defined as the total water from any source, except direct use effluent, withdrawn, diverted, or received in a year minus the total amount of authorized deliveries made by the municipal provider in that year.[24]

Lost and unaccounted-for water includes leaks (from distribution lines, sewer lines, storage tanks, storage ponds, hydrants), breaks (from distribution lines, sewer lines, mains, hydrants), measurement errors (meter under/over-registration, source meter errors, flumes/weirs errors), evaporation, illegal connections/water theft, and phreatophyte uses.[25]

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[23] Ohio Administrative Rule 4901:1-15-22 OAC.
[24] Arizona Department of Water Resources, *Third Management Plan for Phoenix Active Management Area, 2000-2010.*
[25] Ibid.

Arizona is one of only two jurisdictions (along with Wisconsin) that has established different water-loss standards for small and large systems. Small municipal providers are required to maintain lost and unaccounted-for water at or below 15 percent while large municipal providers are required to maintain lost and unaccounted-for water at or below 10 percent. Large systems that are unable to operate and maintain their distribution systems to meet the 10 percent requirement are required to line all canals used to deliver untreated water to delivery points with a material that allows no more lost water than a well-maintained concrete lining.

All municipal providers are required to annually report to the Arizona Department of Water Resources the total quantity of lost and unaccounted-for water during the calendar year, as well as the percentage of water lost and unaccounted for.

Municipal providers also are required to include per-capita usage estimates in their yearly report, the calculation of which considers lost and unaccounted-for water. Lost and unaccounted-for water is calculated accordingly:

1. Subtract the calendar year total residential, non-residential, and system-related deliveries from the calendar year total non-irrigation water use to obtain the lost and unaccounted for water volume, in acre-feet.
2. Divide the lost and unaccounted for water volume by the total non-irrigation water use for the calendar year and multiply the result by 100.
3. If the product from D.1. is *less than* ten percent, the result is the volumetric allotment, in acre-feet, for lost and unaccounted for water for the calendar year; **or** if the product from D.1. is *greater than* ten percent, multiply the total water use for the calendar year by ten percent. The result is the volumetric **Lost and Unaccounted For Water Allotment**, in acre-feet, for the calendar year.[26]

Kansas Water Office

Kansas has one of the most comprehensive programs for unaccounted-for water among the surveyed jurisdictions. The Kansas program for unaccounted-for water is articulated primarily through the state's annual water plan. The Kansas Water Office is mandated by law to "formulate on a continuing basis, a state water plan for the management, conservation and development of the water resources of the state." [27] The planning process is coordinated with various local, state and federal agencies, special interest groups, and the general public:

[26] Ibid.
[27] State Water Resource Planning Act (K.S.A. 82a-903 *et seq.*).

> The Kansas Water Office defines unaccounted for water as… the amount of water that a public water supplier pumped and/or purchased from other entities; minus all metered amounts (either sold or distributed free). Metered amounts include sales to other public water suppliers; large industrial, bulk or livestock water users; and residential and commercial customers; as well as metered free water (such as swimming pools, golf courses, community buildings, water treatment process, etc).[28]

One of the two primary objectives of the Kansas Water Plan is to, "By 2010, reduce the number of public water suppliers with excessive 'unaccounted for' water by first targeting those with 30 percent or more 'unaccounted for' water."[29] In addition to the focus on systems with very high losses, the plan also targets systems with losses exceeding 15 percent because "15% was the average percent of unaccounted for water for public water suppliers in 1997, and is a reasonable amount for unfinished water."[30]

Water suppliers are required to report their unaccounted-for water in an annual water report. Failure to submit an annual report is subject to a fine and providing false information is considered a class C misdemeanor. Furthermore, most water suppliers are also required to submit a water-conservation plan. One of the long-term water-use efficiency practices required of water utilities is the implementation of:

> … a water management review, which will result in a specified change in water management practices or implementation of a leak detection and repair program or plan, whenever the amount of unsold water (amount of water provided free for public service, used for treatment purposes, water loss, etc.) exceeds 20 percent of the total raw water intake for a four month time period.[31]

The Kansas Municipal Water Use Report keeps a current compilation of all water losses in the state of Kansas. The annual and average percent of unaccounted-for water for all public water suppliers in the state is compiled and published by the Kansas Water Office.[32]

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[28] The Kansas Water Office, "2010 Objectives Basin Assessment, Unaccounted For Water Assessment." http://www.kwo.org/assess/unaccount/main.html

[29] The Kansas Water Office, "The Kansas Water Plan, Fiscal Year 2003,' July 2001. http://www.kwo.org/kwp/fy2003kwp.html

[30] ibid.

[31] The Kansas Water Office, "Kansas Municipal Water Conservation Plan Guidelines." http://www.kwo.org/reports/1990_WCP_Guidelines/index.htm

[32] This report is available online at http://www.kwo.org/reports/1999_mwur/index.htm.

Kansas is also one of the few states surveyed that operates a program for technical assistance for water suppliers to reduce water losses. The Kansas Water Office funds on-site technical assistance through the Kansas Rural Water Association to suppliers with 30 percent or more unaccounted-for water. Assistance includes leak detection, meter testing and replacement, and bookkeeping reviews. Technical assistance for preparing water conservation plans is also provided to public water suppliers.

Kansas has a strict auditing program for water suppliers with excessive water losses. The Kansas Rural Water Association monitors public water suppliers with 30 percent or more unaccounted-for water on a quarterly basis. Monitoring continues until two consecutive quarterly reports show unaccounted-for water of 20 percent or less.

The Kansas Water Office reports that their water-loss program has significantly reduced the amount of unaccounted-for water in the state. They project that the amount of unaccounted-for water in excess of 15 percent of total water use for Kansas will be reduced by 82 percent by the target year of 2010.[33]

Minnesota Department of Natural Resources, Division of Waters

Minnesota's water-loss policy is implemented in conjunction with the state's requirement for water emergency and conservation plans. System plans must address demand-reduction measures associated with plan and permit approvals, as well as water losses and unaccounted-for water.[34] An approved water emergency and conservation plan is required as part of the Wellhead Protection Plan and for applications to the State Drinking Water Revolving Fund.

Despite the emphasis on the water-loss issue, Minnesota policy is not guided by clear operational definitions. Unaccounted-for water is simply defined as water withdrawals minus water sales. Water loss is one component of unaccounted-for water. According to a state official, water suppliers estimate their own water loss, using methodologies that are "inconsistent and some times questionable."[35]

The Minnesota Department of Natural Resources (DNR) has required annual reporting of unaccounted-for water for communities serving more than 1,000 people since 1994. Because of inconsistent and questionable methodologies for determining unaccounted-for water, the Minnesota DNR has assumed the task of calculating unaccounted-for volumes based on total water withdrawals less water sales.

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[33] The Kansas Water Office, "The Kansas Water Plan, Fiscal Year 2003,' July 2001. http://www.kwo.org/kwp/fy2003kwp.html

[34] See Minnesota Statutes 2001, 103G.291, Subd. 3 a-c. http://www.revisor.leg.state.mn.us/stats/103G/291.html

[35] James Japs, Minnesota DNR Water, survey response.

Minnesota has set a standard for water losses at less than 10 percent. According to the state's water appropriation permit program:

> Cities should establish a goal for unaccounted-for water (the AWWA recommends less than 10 percent) and monitor unaccounted-for water volumes each month or billing period. Water audit, leak detection, and repair programs should be implemented when unaccounted-for water is higher than the goal.[36]

However, Minnesota has set a more lenient target for public water suppliers with high rates of water loss. "If unaccounted-for water exceeds 20% of total water appropriations the public water supplier's water appropriation permit is amended to require the implementation of measures to reduce unaccounted-for water volumes within 3 years."[37] It is believed that this more lenient goal will give small systems a reasonable amount of time and resources to reduce water loss.

The Minnesota DNR audits all annual water-report forms. Furthermore, an audit and evaluation of unaccounted-for water is conducted in connection with each permit request. If a public water supplier exceeds 20 percent unaccounted-for water, the system must provide an annual report of actions being implemented to reduce unaccounted-for water.

Pennsylvania Public Utility Commission and
Pennsylvania Bureau of Water Supply and Wastewater Management

In Pennsylvania, both the Public Utility Commission and the Bureau of Water Supply and Wastewater Management implement policies that address the issue of water loss. The Public Utility Commission, an economic regulatory agency, requires evidence of the reasonableness of unaccounted-for water claims greater than 20 percent. This policy was adopted in a general waterworks rate-case order. According to the order:

> In the future, water companies with experienced unaccounted-for water of more than 20%, should be prepared to demonstrate by way of substantial evidence that their experience is both normal and reasonable. Such evidence may be a combination of engineering, operations or historical testimony and data, but

[36] Minnesota Water Appropriation Permit Program - "Conservation Measures for Water Supply Systems"
http://www.dnr.state.mn.us/waters/programs/water_mgt_section/appropriations/pwsconserve.html
[37] James Japs, Minnesota DNR Water, survey response.

> it should consist of something more than unsupported or conclusory opinions by Company witnesses.[38]

The Commission requires regulated water suppliers to submit data that complies with this directive, including a description of leak-survey programs. As part of their annual report to the Commission, systems are required to complete a form on water delivered into the system during the year. The form requires suppliers to report unavoidable leakage in terms of gallons-per-day per mile of main, located and repaired breaks in mains and services, total unaccounted-for water, and percentage of unaccounted-for water.

The Bureau of Water and Wastewater Management in the Pennsylvania Department of Environmental Protection (DEP) also regulates unaccounted-for water. The Public Water Supply Manual explains the department's water-loss policy and specifies the procedures for staff to follow when they review and evaluate public water supplier's Operations and Maintenance Plans.

Although the DEP defines unaccounted-for water simply as water that is produced but not sold or used, some detail is provided about the particular factors that should be considered when assessing unaccounted-for water:

1. The water produced – Is this quantity accurately determined, has the meter been calibrated, does the meter measure all of the water?
2. The water used for water system purposes such as chemical feed water, backwash water, fire hydrant and blow-off flushing – How is each of these uses measured?…
3. The water sold or used by the consumer must be accurately accounted for. A meter testing program should be in place to periodically test the accuracy of the meters. All consumer use must be accounted for…
4. Water used for fire fighting purposes – This water only can be estimated, but some careful calculations by the fire company and the water system can develop a reasonable value.[39]

The calculation of unaccounted-for water involves subtracting the amount of water sold or used from the water available for sale. The DEP recommends using a one-year period for the calculation to mitigate the effects of metering and seasonal variations.

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[38] Pennsylvania Public Utility Order, Dauphin Consolidated Water Supply Company @ R-79050616, July 2, 1981.

[39] Pennsylvania Department of Environmental Protection, Bureau of Water Supply Management, "Public Water Supply Manual – Part V,"
http://www.dep.state.pa.us/dep/subject/all_final_technical_guidance/bwsch/383-3110-111.htm

The Pennsylvania DEP recommends the AWWA standard of 10-15 percent for unaccounted-for water. However, the department also notes the relevance of a number of systems-specific considerations:

1. The age and condition of the system…A range of 35 to 40 percent may be acceptable until funds for replacement of mains is available;
2. The pressure in the system can affect the rate of leakage. Thus high pressure systems may have a higher percentage of unaccounted-for water;
3. The number of customers per mile of main can affect the unaccounted-for water. Therefore, if a system has a high ratio of miles of pipeline to the number of customers, the percentage of unaccounted-for water will increase;
4. Under-registration of customer meters or unauthorized uses can increase the percentage of unaccounted-for water.[40]

Pennsylvania policy also expressly considers the economic value of water losses. The state recommends that systems "Calculate the cost of producing a thousand gallons or one hundred cubic feet of water and then calculate the amount of money which is being 'lost' as unaccounted-for water each month. By identifying this cost, you can justify the cost of the programs to correct the problem."[41] Suggested programs include meter testing, leakage control program that focuses on detection, and record keeping to support a main-replacement program.

These requirements and recommendations are incorporated in the review and evaluation of the Operations and Maintenance Plans that public water suppliers must prepared in accordance with the DEP's drinking water management programs.

The DEP's Water Allocation Permit system also requires systems to implement a continuous water conservation program, which must include an ongoing leakage and loss control program. Permit holders must initiate a study to develop a plan to reduce unaccounted-for water within one year of the date of the permit and reduce losses to 20 percent or less within five years of the date of the permit.

Finally, the DEP provides free leak-detection services to water suppliers that agree to follow program requirements, including a yearly water audit through a partnership agreement with the Pennsylvania Rural Water Association.

Delaware River Basin Commission

The Delaware River Basin Compact was enacted in 1961 to address water-resource issues on a regional basis. The member states include Delaware, New Jersey, New York, and Pennsylvania. The governing commission is composed of

[40] Ibid.
[41] Ibid.

five members, one from each state and one representing the federal government. The Delaware River Basin Commission (DRBC) has wide authority in the area of water-resource planning and management agencies in the basin. This authority extends to water efficiency and such areas as metering, conservation, billing, and water losses.

The DRBC policy on water loss is established in Resolution 87-6 (revised), requiring owners of water-supply systems serving the public to "undertake a systematic program to monitor and control leakage within their water supply system. Such program shall at a minimum include: periodic surveys to monitor leakage, enumerate unaccounted-for water, and determine the current status of system infrastructure; recommendations to monitor and control leakage; and a schedule for the implementation of such recommendations." After the initial submission of a leak-detection and repair plan, systems are required to submit new plans every three years. Plans are submitted to the respective state regulatory agency for review and approval.

The DRBC uses a very simple calculation for water loss. Unaccounted-for water is the difference between the metered ratio and 100 percent. A standard of 15 percent water loss is suggested and systems that exceed this standard may be subject to more frequent reporting. According to one official, "DRBC's regulatory objective is to reduce overall unaccounted-for water to 15 percent or less by 2020."[42]

Water loss is considered an integral part of the DRBC's overall water-conservation programs. All water purveyors planning a new or expanded water withdrawal must submit a water-conservation plan that discusses source metering, service metering, leak detection and repair, and water conservation performance standards. Although the conservation plan provides no specific incentives for implementation, incentives are more direct in connection with withdrawals; new projects, such as new withdrawals, will not be approved until adequate leak detection and repair programs are implemented.

The DRBC does not provide direct technical assistance to water utilities to help reduce water losses. Nor does the commission require detailed water audits or exert substantial enforcement activity. Still, much of the progress in reducing water losses in the Delaware River Basin is attributed to the DRBC regulations.

St. Johns River Water Management District (Florida)

The St. Johns River Water Management District (SJRWMD) requires the issuance of permits for large-volume water users in accordance with the "Permitting of

[42] Jeffrey Featherstone, 'Conservation in the Delaware River Basin," *Journal American water Works Association* (January 1996): 48.

Consumptive Uses of Water" rule.[43] All applicants for a consumptive-use permit must complete a thorough water audit. The water audit requires identification of water losses in the treatment process and in the distribution system. Applicants must identify all water uses, as well as total unaccounted-for water and the percentage of unaccounted-for water.

Conservation is required as part of all consumptive-use permits. In order to obtain a consumptive-use permit (CUP) from the SJRWMD, "all available water conservation measures must be implemented unless the applicant demonstrates that implementation is not economically, technically, and environmentally feasible."[44] Water-loss reduction is a recognized water conservation measure. Permit applicants must also conduct a meter survey to account for and correct meter error if unaccounted-for water is 10 percent or greater based on the initial water audit.

SJRWMD has one of the strictest requirements for leak detection. According to the applicant's handbook:

> An applicant whose water audit…shows greater than 10% unaccounted for water use, must complete the leak detection evaluation portion of Form 40C-22-0590-3. Based upon this evaluation, an applicant may choose to implement a leak detection program immediately or develop an alternative plan of corrective action to address water use accountability and submit a new water audit to the District within two years. If the subsequent audit show greater than 10% unaccounted for water, the applicant must implement a leak detection and repair program within one year unless the applicant demonstrates that implementation is not economically feasible. In all cases, this evaluation and repair program may be designed by the applicant to firs address the areas which are most suspect for major leaks. The evaluation and repair program may be terminated when the permittee demonstrates that its unaccounted for water loss no longer exceeds 10%.[45]

The leakage evaluation must include the following items:

- Potential water system leakage
- Annual potential system leakage
- Recoverable leakage (assumes 50%)
- Production cost per million gallons
- Recoverable savings
- Estimated cost of leak detection survey
- Estimated recovery period

[43] Florida Administrative Code, Chapter 40C-2.
[44] Florida Administrative Code, Chapter 40C-2.301 (4).
[45] St. John's River Water Management District, *Applicant's Handbook: Consumptive Uses of Water, Chapter 40C-2, F.A.C.* http://www.sjrwmd.com/Excite/index.html.

The consumptive-use permit will not be issued until the applicant addresses water leaks and losses.

Conclusions

The results of the survey and analysis, summarized in Table 3, suggest a fair amount of state and regional policy activity regarding the issue of water losses. However, the prevailing policies are not entirely clear, consistent, or operational. Most of the identified policies are raising much-needed awareness of the loss issue and promoting better accounting and reporting, but most do not necessarily impose consequences through incentive or enforcement mechanisms.

The findings confirm the need to refine the definitions, measures, and standards for evaluating water losses. A uniform approach, advanced and adopted by authoritative organizations in the water industry, could play a vital role in policy development. It is not uncommon for public policies to refer to authoritative sources with regard to technical standards, such as those that might be developed for water losses.

A precursor to further policy development is the establishment of a uniform system of water accounting and the collection of valid and reliable data on water losses. Better accounting will promote a common understanding of the water-loss issue, as well as appropriate benchmarks and standards. Eventually, best practices for water accounting and loss management may emerge and find reflection in water-loss policies, as future surveys might reveal.

Table 3
Summary of Findings

Issue	Jurisdictions	States (n = 43)	Other (n = 3)	Total (n = 46)
Water-loss policy	AZ, CA, CT, FL, GA, HI, IN, IA, KS, KY, LA, MD, MA, MN, MD, NV, NH, NY, NC, OH, OR, PA, RI, SC, TN, TX, UT, VT, VA, WA, WV, WI, WY, DRBC, SWFWMD, SJRWMD	33	3	36
Definition of water loss	AZ, CA, GA, HI, KS, MD, MA, MN, MO, OR, PA, RI, SC, TX, WI, DRBC, SJRWMD	15	2	17
Accounting and reporting	AZ, CA, GA, HI, IA, KS, KY, MD, MA, MN, MO, NY, OH, OR, PA, RI, TX, WV, WI, WY, SWFWMD, SJRWMD	20	2	22
Standards and benchmarks	AZ, CA, GA, HI, IN, KS, KY, LA, MD, MA, MN, MO, NC, OH, OR, PA, RI, SC, TX, UT, WA, WV, WI, DRBC, SWFWMD, SJRWMD	23	3	26
Goals and targets	AZ, CA, FL, GA, HI, KS, KY, ME, MD, MN, MO, NM, OH, OR, PA, RI, TX, WI, SWFWMD, SJRWMD	18	2	20
Planning requirements	AZ, CA, CT, FL, GA, HI, IA, KS, MD, MA, MN, MO, NV, NH, OR, PA, RI, SC, TX, VT, VA, WA, WV, WI, SWFWMD, SJRWMD, DRBC	24	3	27
Compilation and publication	AZ, CA, HI, KS, KY, MN, PA, RI, WI, SWFWMD	9	1	10
Technical assistance	AK, CA, FL, GA, HI, KS, KY, ME, NV, ND, OR, PA, RI, SC, TN, TX, VT, WI, SWFWMD	18	1	19
Performance incentives	CA, GA, HI, IN, IA, LA, MN, NC, RI, TX, VT, SJRWMD	11	1	12
Auditing and enforcement	AZ, GA, HI, KS, MD, MN, NH, OH, OR, PA, SC, TX, WI, SWFWMD, SJRWMD	13	2	15

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From: Celeste [celeste@cma1902.com]
Sent: Thursday, July 31, 2008 2:18 PM
To: [redacted]
Subject: editorial

Celeste Longwith
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Chattanooga Times

Established 1869 Adolph S. Ochs, Publisher 1878-1935

EDITORIALS

Fight the water rate hike

The 20.58 percent increase in water rates sought by Tennessee American Water Co. has stirred vehement opposition, and rightly so. TAWC's vague justification doesn't pass the "reasonable person" test. If granted, the latest request — compounded by the 12.3 percent increase on the base price last year — would amount to an effective 35.1 percent increase in TAWC water rates in a little more than a year. That is unreasonable on its face.

Water company officials, who filed the petition for the latest rate hike in June, argue that the price of chemicals to treat water taken free from the Tennessee River, and the cost of electricity to operate the utility system's pumps, have soared. Their treatment and handling costs probably have increased, to be sure. Yet it seems unlikely that those cost components alone could justify such a huge increase.

The more likely reason for another large rate request by TAWC is that such petitions have simply become part of a standing strategy to drive up profits. In fact, there's nothing stopping TAWC from asking for big increases, especially since the city agreed in 1999 to drop its proposed takeover of the private utility and convert it to municipal ownership.

City and county officials and businesses — and surely most citizens by now, as well — must rue the day the city dropped that bid. The publicly owned water utilities in Memphis, Nashville, Knoxville and most other Tennessee cities haven't raised their rates at anywhere near the pace that TAWC has sought in recent years.

TAWC is a subsidiary of a large corporation, American Water, that is owned by the giant German corporation RWE. The German corporation has been trying conspicuously to raise American Waters' stock values. And because Tennessee, like most states, allow publicly regulated private monopoly utilities like TAWC to earn a substantial guaranteed return on the company's investment, TAWC has nothing to lose by seeking a large rate increase every year from the Tennessee Regulatory Authority.

In any case, it's hard to tell much about the need from TAWC's filing. With a cadre of corporate lawyers tasked with filing an overwhelming rate petition, they can obscure and confuse the merits of their petition simply by making their petition excessively convoluted and lengthy. They've certainly done the latter.

The petition runs to 950 pages of myriad and confusing information, and contains some 60,000 pages of legal documents. It also requests from the city unrelated documents involving negotiations with the pending Volkswagen plant by its water supplier, Eastside Utility District. What that has to do TAWC's rate case is a mystery, but it's obviously a nice lawyerly fishing trip and a way to distract the city and drive up the costs of fighting the water company's rate hike.

Randy Baker, the volunteer head of the "Fight the Hike" grass-roots citizens' campaign that has joined city and county governments and the Chattanooga Manufacturers' Association to fight the rate increase, rightly points out that a simple, clean petition with relevant documented numbers on TAWC's various costs versus its profit margins would easily make the company's case for a rate increase clear, if there is a case.

In fact, an analysis compiled in March by county government on the county's eight water utility district and two water companies, TAWC and Signal Mountain's water department, showed that TAWC serves 54 percent of the county's water customers, or, by meter counts, 73,969 of the overall 136,942 metered addresses. TAWC's net profits were $12,011,000 at the end of 2006, versus the combined net profits of the other nine water utilities and departments *in 2007* of $9,054,107. By that measure, TAWC earned more than 30 percent more in 2006 on just 4 percent more customers than all the county's other water utilities earned a year later.

As a monopoly, of course, TAWC is not only guaranteed a profitable return on investment by state regulation; it also can roll rich salaries and benefits, and unrestrained overhead for its parent company's charges into the costs it claims on investment. Infrastructure improvements, moreover, are financed by bonds and amortized over time and charged against tax deductible corporate costs.

There appears to be ample reason to fight TAWC's pernicious trend of large rate hike requests. No wonder the state's consumer advocate is arguing that TAWC customers deserve a $1.6 million rate *cut*.

With the latest rate increase filing, it also appears there are grounds for the city to reinstate a public bid again to takeover TAWC. Felton, California, won a similar battle earlier this summer against California-American Water Co., another American Water subsidiary of RWE, becoming the second California town to beat the German behemoth. Chattanooga should talk to their lawyers while it fights TAWC and its corporate masters on this new rate hike.

Ray Childers

From: Ray Childers [ray@[redacted]

Sent: Friday, April 04, 2008 3:38 PM

To: Bill Minehan (bminehan@[redacted]); Dan Nuckolls (dannuc[redacted]); David Breckinridge (david.breckinridge[redacted]); Debbie McKee-Fowler (debbie_mckee[redacted]); George Garcia (george.garcia@[redacted]); J D Purvis (j.d.purvis[redacted]; Phil Ball (phil.ball[redacted]); 'Robert Holcombe'; Roger Layne (rlayne@[redacted]); 'Stephen French'; 'Sybella Wilder'; 'Tom Elkins'; Walter Lancaster (wlancaste[redacted])

Subject: TAWC Intervention & Funding request

Thanks to the CMA Board for your unanimous support of the intervention, and I might add, in record time. As you read in the paper this morning, the long anticipated spinoff was announced late yesterday, and I have found no one who is sure of the impact, if any, the spinoff will have on the rate increase filing, or vice versa. I have also had three very generous contribution pledges to the intervention fund, and the letters were just mailed yesterday.

Also, if you go to the attached link, you will see a list of 87 detailed discovery requests filed on the TAWC by the TRA Staff. CMA's petition to intervene also just appeared on the docket.

I will keep you informed of developments in the case, and David Higney, our attorney, will come to the April 23 Board meeting to brief you on the legal status of the intervention.
As mentioned earlier, we will go as far in this case as contributions to the intervention fund will permit, and plan to coordinate our strategies and actions with our allies, the list of whom seem to be larger and more committed than in earlier interventions.
I will be back in Nashville on Tuesday working the Legislature, and Celeste will be back in the office on Monday after a week's vacation (thank goodness). Enjoy a safe weekend! Thanks for your support.

http://www.state.tn.us/tra/orders/2008/0800039c.pdf

[redacted]2008

[redacted]
Chattanooga, TN 37419

Dear [redacted]

Thank you for your contribution to the Chattanooga Manufacturers Association (CMA) intervention in Docket # 08-00039 on record at the Tennessee Regulatory Authority (TRA).

The contested case arises from the filing made on March 14, 2008 to the TRA by the Tennessee American Water Company (TAWC) seeking permission to increase your water rates.

As you are aware, CMA has a lengthy and successful history of intervening when a regulated utility seeks to increase rates, modify rate structures or make other changes to existing conditions under which water and natural gas are provided to CMA's member companies. The present intervention is proceeding under the direction of a Hearing Officer assigned by the TRA, and is expected to go to a Hearing on the Merits late this summer – probably in August. The case either will be resolved by settlement agreement of the parties, or a decision rendered by a three-member panel of TRA Commissioners sometime after the hearing.

The Consumer Advocate Division of the Office of the State Attorney General and the City of Chattanooga have also intervened in this case. Additionally, the Hamilton County Commission has filed a Resolution in opposition to the increase requested by the TAWC. Legal processes are well underway, and I intend to keep you informed as the matter proceeds to hearing.

It is our intention to limit the increase in water rates (if any), to only that amount supported by well-documented testimony and data that can withstand the most critical legal and forensic examination. You can follow the case at: http://www.state.tn.us/tra/dockets/0800039.htm

Thanks again for your support in this matter.

Best Regards,

Ray Childers

Ray Childers

From: John Zeiser [JZeise[redacted]]
Sent: Wednesday, April 16, 2008 10:23 AM
To: Ray Childers
Cc: Heather Overton
Subject: RE: water intervention

Ray, you can put SCT down for $[redacted] I assume we will only be invoiced if you get enough commitments to proceed. Good luck! I thank you and the CMA for stepping up the plate on our behalf.
jz

From: Ray Childers [mailto:ray@cma1902.com]
Sent: Wednesday, April 16, 2008 7:30 AM
To: John Zeiser
Subject: RE: water intervention

Thanks for the response , John. I wish more of our members were as supportive. I will be on the phone the next three days trying to raise enough funds for an effective intervention. Both the
City and County are strongly opposing this increase. While that is helpful, we must still present a strong rebuttal to a case brought forward by highly skilled and well-funded adversaries.

From: John Zeiser [mailto:JZeise[redacted]]
Sent: Tuesday, April 15, 2008 7:24 PM
To: Ray Childers
Subject: water intervention

Ray, I apologize for not getting in touch sooner. I just saw your appeal for assistance today on the water rate case. I will have to see what our water bill runs and get back to you, but we will certainly participate at some level. As soon as I see what our annual cost is, I'll let you know what we can do.

John

[redacted], 2008

[redacted]
Signal Mountain, TN 37377

Dear [redacted]

As you are aware, on March 14, 2008, the Tennessee American Water Company (TAWC) filed a petition with the Tennessee Regulatory Authority (TRA) requesting an increase in revenue of $7.645 million. As you recall, on May 15, 2007, the TRA granted TAWC an increase in revenue of $4.02 million.

The amount granted in May, 2007 resulted in an increase of 12.3% in water rates paid by TAWC customers. The rate increase requested in the March, 2008 filing, if approved in full, would result in a 20.58% increase applied across the board. While increases have become to be expected over time, increases of this magnitude and frequency are unprecedented.

CMA has a lengthy and successful history of legal intervention in utility rate cases. In the past, the majority of financial support for these interventions has been provided by a relatively small number of CMA companies, primarily the large-volume users of utility services. The current situation finds a convergence of fewer large-volume users, more complex and more frequent filings for rate increases, and larger increases requested by utility providers who are not locally owned and operated.

To continue CMA's history of successful intervention, the CMA Board of Directors requests that each CMA member company* contribute an amount equal to 5% of their annual water bill to the CMA Intervention Fund. The funds will be used exclusively to support legal and utility rate consultant services and other expenses incurred in presenting an effective intervention in the rate setting process.

Please respond to this request by **April 15** if possible, since we must know by that date if there is sufficient support to continue in the intervention process. If you have questions concerning this request or the utility rate setting process, please call the CMA office.

* CMA member-companies who do not use large volumes of water, or whose water service is provided by another utility also have an interest in this matter, since most CMA member companies have employees, customers or suppliers who will be impacted by this rate increase.

Sincerely,

Dave Breckinridge

Ray Childers

Ray Childers

From: Celeste [celeste@cma1902.com]
Sent: Wednesday, March 26, 2008 8:35 AM
To: Celeste
Subject: Reminder! Water Rate Meeting
Importance: High

Dear Member,

Please attend today's meeting at 3:15 at the CMA office regarding the TN American Water rate case. If you cannot attend, please be sure to send a representative. Options discussed in this meeting will determine CMA's course of action which will impact your water rates.

CMA is located in the EPB building at 10 West Martin Luther King Blvd. on the 5th floor.

Celeste Longwith
Chattanooga Manufacturers Association
P.O. Box 11489
Chattanooga, TN 37401
Phone: 423-266-1902
Fax: 423-266-1985
Email: celeste@cma1902.com
Web: www.cma1902.com

Letter to each individual/company who has made a contribution to the intervention fund for Tennessee Regulatory Authority Docket Case # 0800039.

Dear _____,

Thank you for your contribution to the fund being raised by the Chattanooga Manufacturers Association(CMA) to cover legal and administrative costs of pursuing an intervention in Docket # 0800039 on record at the Tennessee Regulatory Authority(TRA).

The contested case arises from the filing made on March 14, 2008 to the TRA by the Tennessee American Water Company(TAWC) for permission to increase water rates.

As you are aware, CMA has a lengthy and successful history of intervening when a regulated utility seeks to increase rates, modify rate structures or seek other changes modifying existing conditions under which water and natural gas are provided to its member companies. The present intervention is proceeding under the direction of a Hearing Officer assigned by the TRA, and is expected to go to a Hearing on the Merits late this summer. The case will be heard and resolved by settlement agreement of the parties or a decision rendered by a three-member panel of TRA Commissioners.

The Consumer Advocate Division of the Office of the State Attorney General and the City of Chattanooga have also intervened in this case. Additionally, the Hamilton County Commission has filed a Resolution in opposition to the increase requested by the TAWC. Legal processes are well underway, and I will keep you informed as the matter proceeds to hearing.

It is our intention to limit the increase in water rates (if any), to only that amount supported by well-documented testimony and data that can withstand the most critical legal and forensic examination. You can follow the case at:
http://www.state.tn.us/tra/dockets/0800039.htm

Thanks again for your support in this matter.

Best Regards,

Ray Childers

Ray Childers

From: Ray Childers [ray@cma1902.com]

Sent: Friday, March 14, 2008 2:51 PM

To: Bill Minehan (bminehan@[redacted]); Dan Nuckolls (dannuc@[redacted]); David Breckinridge (david.breckinridge@[redacted]); Debbie McKee-Fowler (debbie_mckee@[redacted]); George Garcia (george.garcia@[redacted]); J D Purvis (j.d.purvis@[redacted]); Phil Ball (phil.ball@[redacted]); Robert Holcombe (rholcombe@[redacted]); Roger Layne (rlayne@[redacted]); 'Stephen French'; 'Sybella Wilder'; 'Tom Elkins'; Walter Lancaster (wlancaster@[redacted]); Brian Humphrey (bhumphrey@[redacted]); Carl Hartley (chartley@[redacted]); Don Huffman (huffman4889@[redacted]); Eric Elster (eelster@[redacted]); Kent Keasler (kkchat@[redacted]); Michael St. Charles (mstcharles@[redacted]); Mike Love (mlove@[redacted])

Subject: TAWC Filing for 20.58% increase

I just got word that TAWC is filing for a 20.58 % increase in water rates this afternoon in Nashville. The Times called me while I was at the Mall at Chattanooga Made. Jason Reynolds asked me what I thought of this increase, and I told him that the first word that comes to mind was "unbelievable"! I told him that I would have no other comment until I saw the actual filing. About 30 minutes later Kim Dalton came to the Mall and gave me a copy of the press release, and it is in fact, unbelievable. I will get a copy to you'all early Monday, and we will begin the process of deciding what our options are. I am afraid that we already know, and none of them are good. If anybody wants to talk about it before then, call me on the cell # 593-7029. I am on my way back to the product exhibition.

[redacted]2007

Paul Miller
3M Industrial Business
5115 Maryland Way
Brentwood, TN 37027

Re: Tennessee American Water Co. Filing for 19.7 % Increase in Water Rates

Dear Paul,

This letter is written to obtain your help in the CMA Intervention case in opposition to Tennessee American Water Company's recent rate filing for a 19.7 % increase in water rates. Attached you will find a recent *Chattanooga Times* editorial. We hope to receive from your company the strong local support the *Times* predicts in opposition to this increase. You will also note that the City of Chattanooga and the Hamilton County Commission are supportive of CMA's intervention effort and oppose the proposed increase.

In the past, major water users have borne most of the cost for an intervention, although all classes of water users benefit from holding water costs down. The cost for legal and expert witness expenses for our interventions can be approximately $80,000 to $110,000. Since this rate increase request is so large and is the same percentage increase for all classes of rate payers (residential, commercial and industrial), it seems reasonable to ask all users to join in and share the costs. It is noted that CMA has intervened in the past seven water rate cases has been successful in significantly reducing the requested increases.

Therefore we are asking you to help fund the intervention case, by sending a check to CMA in the amount of one month's average water bill or $200, whichever is larger. Associate Members with less than 100 employees please send the amount of one month's average water bill or a minimum of $100. The maximum any company is asked to send is $7500. Hopefully this will raise enough money to fund CMA's opposition and we won't have to ask for additional funds later. This is the largest rate increase we can remember ever being requested and it comes only 18 months since the last increase.

Since Tennessee American Water Company is a regulated monopoly whose water and earnings rates are controlled by the Tennessee Regulatory Authority, such interventions are our only available option to effectively participate in the rate setting process. This is an important issue and your help is greatly needed for a successful intervention against the 19.7% increase requested by Tennessee American Water Company. If you have any questions on this matter, please call the CMA office.

Sincerely,

Ray Childers
CMA President

Don Huffman
Chairman, CMA Energy Committee

October 23, 2006

CMA Presentation t[redacted] Corporate Executives

Welcome to Chattanooga! I hope that you have enjoyed your visit, and that we can provide you with some useful information about the Chattanooga Manufacturers Association.

First, let me tell you that[redacted] is and has been a very active and supportive member of CMA.[redacted] has served as a Board member, Secretary/Treasurer, Vice-Chairman, and is currently Chairman of the CMA Board of Directors. CMA greatly appreciates the solid relationship that exists between CMA and[redacted] and looks forward to enhancing that relationship in the future.

CMA has a lengthy and interesting history, dating back to its formation in 1902. The Association was created to address a need for concerted activity to obtain lower freight rates on rail shipments of products being sent to other cities across the country.

After initial success in this matter, the Association moved on to other issues such as power and utility availability, rates and rate structures, taxation, management training, government interaction, and other issues which could be addressed more effectively as a cohesive group.

Currently, CMA has ongoing active projects such as:

- Working with the Tennessee Regulatory Authority to reduce amount of increase requested by the Chattanooga Gas Company ([redacted]n provide details of CMA's successes in moderating energy and utility costs for local manufacturers)
- Partnering with local educators to improve quality of the rising workforce (includes working with secondary schools, community technical colleges, the local state university, and economic development organizations at local, state and federal levels)
- Developing broadcast and print media presentations to showcase modern manufacturing facilities as providers of excellent employment opportunities to a wide cross section of the local workforce
- Monitoring, and when necessary, taking positions and establishing and coordinating action plans with other manufacturing advocacy groups in response to proposed legislative and regulatory activity impacting manufacturers (taxation, environment, labor relations, mandated benefits, workers compensation, etc.)
- Producing a variety of seminars and other learning opportunities to manufacturing management, technical and production employees

Provide copies of:

- CMA Brochure w/attachments
- CMA Year in Review
- CMA Intervention History
- CMA website Home Page
- 2005 Annual Meeting DVD

CHATTANOOGA MANUFACTURERS ASSOCIATION

CMA Quarterly Review: May 28, 2008

CMA's ***Lean Manufacturing Network*** continues to be well-attended. The meetings are held in the EPB training room, and the only expense is the parking fee and a $5 contribution towards a pizza lunch. The next session will be at 11:30 AM on June 20th.

Congratulations to Jerry Tyman and the employees of **Tennessee Rand Automation** for winning the 2008 Kruesi "Spirit of Free Enterprise Award. The award is presented by the Chamber of Commerce for excellence in Innovation.

Mayor Littlefield's Chattanooga Green Committee and several sub-committees are meeting to chart a proper course for increasing sustainability in everything that we do. A recent public meeting attracted about 500 interested citizens to participate in an interactive session to board ideas for goals and ideas. CMA members are encouraged to participate in this process, which if properly nurtured, can turn "Green into Gold."

The 9th Annual Chattanooga Made product exhibition was held at Hamilton Place Mall on March 14th. Hundreds of school children on spring break consumed thousands of Little Debbies and Moon Pies, and carried away hundreds of tubes and bottles of sun tan products provided by Schering Plough. Each year the students and their parents and other visitors to the Mall are amazed at the number of products that are made right here in Chattanooga!

Also on March 14th, residential, commercial and industrial consumers of water provided by the Tennessee American Water company were amazed at the announcement of a request filed with the Tennessee Regulatory Authority. The TAWC requested an increase of 20.58% across the board, following an increase of 12.3% effective May 22, 2007. Needless to say, CMA, the City of Chattanooga, the Hamilton County Commission, the State Consumer Advocate Division of the Attorney General's office and other interested persons will vigorously oppose this excessive increase.

There is much speculation concerning the siting of a Volkswagen assembly plant at Enterprise South. Chamber of Commerce Economic Development leaders and others involved in such matters anxiously await the decision expected to be made soon.

The Regional Planning Agency will conduct a neighborhood land use plan update for the Alton Park area. The plan will focus on key redevelopment properties such as the old Anchor Glass site and the old Belle School site among others. A public meeting has been scheduled for June 19. CMA participated in a preliminary meeting with representatives of the RPA and will continue to follow this process as it moves forward. The area has a strong history of manufacturing activity, and with the current body of environmental regulation, modern manufacturers may once again become a good neighbor, a concerned corporate citizen and an integral part of a revitalized community economy.

The CMA Staff met recently with a representative of the U.S. Department of Transportation Division of Pipeline & Hazardous Materials Safety Administration. Out of the meeting came a plan to present a seminar dealing with proper use of Hazardous Materials (HMR; 49 CFR), dealing with the Hazardous Materials Table, mode restrictions, proper shipping name, labeling, hazard class, training, etc. After sampling the membership it was concluded that there was sufficient interest to schedule a seminar on this subject. The seminar will be held here at the EPB Building on Wednesday, July 14th.

CMA Quarterly Review: September 25, 2007

- The Chattanooga State Supervisory Development Program recently began its 2007-08 session with a class representing several local businesses. The group includes individuals currently in supervisory positions as well as team leaders and those preparing for careers in management. Chattanooga State handles administrative details of the program, and has been CMA's partner in this endeavor for the past decade.

- County Mayor Claude Ramsey and Chattanooga Mayor Ron Littlefield met recently with a group of CMA manufacturers for a delightful southern breakfast at the Mountain City Club. Before and after breakfast, several issues facing manufacturers were addressed and both Mayors had the opportunity to add interesting insights to the challenges faced by local governments. CMA appreciates the open relationships that these sessions have helped develop with our government leaders.

- The Chattanooga City Council recently approved an increase in sewer fees charged to residential, commercial and industrial users of the city's Interceptor Sewer System. In meetings with waste water management, CMA had opportunities to review and discuss the planned increases. While increases in waste water treatment services are never welcome, it appears that the current round of increases are the result of federal mandates and that required changes have been managed so as not to subject local users to the huge increases occurring in other localities.

- Attorney Steve Warren of the Jackson Lewis law firm conducted a training session on issues associated with the Employee Free Choice Act. The act would permit labor unions to organize work groups by merely getting a majority to sign a union card, rather than going through the long-established NLRA election process. While the specific legislation was not passed in the current legislative session, employers must prepare to meet it head on when it appears again after the next election. Don't let the name of the act fool you or your employees. The current election process provides a far more balanced approach to addressing the issue of employee representation in the workplace.

- CMA continues to watch with interest the activities of the Regional Planning Agency. The use of directed zoning studies to accomplish targeted zoning changes driven by special interest groups can create areas of conflict between competing interests for land use. In many cases, the present owner/tenant may be subtly pressured to make unreasonable process changes or to just withdraw from the location. While the RPA publicly states that it respects the property rights of current owners and acknowledges the "grandfather "principle, encroachment continues on tracts of property long dedicated to traditional industrial use.

- CMA is a principle-driven organization. As such, the CMA Board and Staff develop principle-based positions on complex issues. With respect to EPB's Fiber to the Home proposal, CMA contends that since modern manufacturing operations require available, reliable, high-speed, state of the art, and competitively priced data transmission services, such as those to be offered by this proposal, the Association should support its approval and installation. A letter of support has been presented to EPB management and members of the City Council.

CMA Quarterly Review: June 20, 2007

CMA President Ray Childers made presentations concerning the state and future of manufacturing to students at Southern Adventist University's E.A. Anderson Lecture Series and the Chattanooga APICS Chapter meeting.

The Tennessee American Water Company (TAWC) rate case hearing was held April 17-20 in Chattanooga and on April 20 at the Tennessee Regulatory Authority (TRA) facilities in Nashville. The matter was concludes by a TRA decision granting the TAWC 12.3% of the 19.67% increase requested in the petition filed. CMA is discussing remaining options with its members and other interveners in this matter.

CMA Government Affairs Committee leaders, representatives of several member companies have been involved in meetings with members of the Regional Planning Authority and several local government officials discussing implementation of zoning changes and introduction of plans and guidelines for future development in the North Shore. While the meetings have generally included some interaction between the groups, there remains serious concerns that the interests of promoting urban character, sense of place, pedestrian accommodation and other such lofty visions are given precedence over more practical, mundane activities such as manufacturing. Promoting a distinctive image and identity for the Northshore seems to be paramount to other considerations.
As the process continues, it appears that the North Shore Plan, complete with some severe and restrictive guidelines will be passed by the City Council. Perhaps restricting such activities as car and other vehicle sales, recycling processing centers, and manufacturing and food processing plants with more than 5 employees, will provide the ambiance, touch and feel, that those in charge are seeking. Meanwhile, manufacturers on property adjacent to the Northshore are not sleeping well at night.

CMA, Chattanooga State Technical Community College, and other local stakeholders are working together to establish ***CAMTES,*** a Center for Advanced Manufacturing Training at Enterprise South. This state of the art education and training center will begin operation July 2009. CAMTES will provide a world-class, technology-rich, education and training center to support improvements in student learning in several advanced engineering technician education programs. Further intellectual merits of the Center include advanced training methods for students and faculty, strong private sector support and involvement, certification in all advanced manufacturing disciplines, and sustainability of the various curriculums. The purpose of CAMTES includes supporting the growth of existing industry and encouraging the relocation of new industry to our region by improving technical education at all levels of the workforce to meet requested skill needs.
CAMTES will provide an education, training and development system with demonstrated ability to produce a superior workforce rapidly and to specifications for all types of modern industrial operations, including food and beverage, machinery and equipment, automotive, chemicals, electronics, paper and plastics.

The CMA staff, decked out in 1907 period costumes, participated in activities celebrating the Grand Re-Opening of City Hall following an extensive remodeling project. During the project, a time capsule was recovered which provided items and documents giving some interesting insight to the people and organizations that were active when the building was constructed. Among the documents were several CMA items, and when the new time capsule was put in place, CMA was permitted to place several current documents and data sources for enlightenment of future Chattanoogans.

CMA's annual Energy Seminar and Barge trip provided a period of information sharing and insight into Energy matters followed by a very enjoyable river excursion complete with barbecue dinner and music by the Collins Brothers band. The barge trip was made even better by cooling rain showers which seemed to make the group even more cordial and festive. Once again, CMA is very grateful to its partners EPB and TVA for making this trip possible.

CMA Quarterly Review March 22, 2007

The Tennessee American Water Company filed a petition with the Tennessee Regulatory Authority on November 22 for an across the board increase in water rates of 19.67%. CMA and the City of Chattanooga have intervened, and the parties are preparing their respective cases. You can follow the filings to the TRA case docket at http://www2.state.tn.us/tra/dockets/0600290.htm. CMA President Ray Childers briefed the Hamilton County Commission on the case on December 21, and the Commission unanimously passed a resolution opposing the rate increase. As a result of petitions filed by CMA and the City, the hearing will be held in Chattanooga during the week of April 16. The hearing is open to interested parties, and at some point during the hearing, a time typically will be made available for comments from the public. The Commission also agreed to make the Commission Meeting Room available in the event that the hearing was held in Chattanooga.

Members of the CMA Government Affairs Committee met with city planners to discuss provisions of the new Urban General Commercial Zone. The group would later meet with the Chattanooga City Council to raise questions about certain parts of the plan and concerns from some manufacturers regarding the planning process.

Ed Adams of EBS &Associates led CMA's annual Health Care Overview. Several presentations on matters of interest were made by representatives of health care and insurance groups.

Brian Humphrey is putting together CMA's annual Environmental Seminar. It is currently scheduled for May 10. Details will follow.

Several members of CMA's industrial group met with Bob Colby to hear his plan to increase Air Permit fees. Director Colby also made the presentation to the CMA Environment Committee, and as a result of this involvement, CMA made an appearance before the Air Pollution Control Board. CMA told the APCB that for competitive reasons, CMA member companies are never happy with cost increases, but understand the need for an occasional increase following implementation of aggressive cost containment measures.

The CMA Lean Network continues to gain members and momentum, and is currently meeting monthly here in the EPB building. Call the office if you would like to attend a session, or better still, join the group!

Several CMA members, especially those in the Manufacturers Road/US 27 area have been following with interest, planning activity concerning land use and development in the North Shore area. While the planners have listened to the concerns and incorporated some of the input provided, there remains much room in the plan for sensitivity to the perception held by manufacturers that future growth and development in the area may present compatibility issues.

City of Chattanooga Mayor Ron Littlefield and Dave Flessner of the Chattanooga Times Free Press joined the CMA Staff and Commercial Metals Company General Manager Abe Boackle to tour CMC's local facilities and review plans to add additional capacity. A very informative article appeared in the Free Press Business Section documenting this visit.

The 2007 Chattanooga Made! Product Exhibition was held at Hamilton Place mall on April 16. Hundreds of shoppers and visitors to the area and thousands of students on Spring Break and their parents descended on approximately 30 booths of companies displaying products made right here in Chattanooga. Gazillions of Schering-Plough products, millions of Little Debbies, Moon Pies and Coca Cola products

and tons of Wrigley Altoids and Creamsavers were consumed by the group. (---OK, so I have been known to hyperbolize the numbers!)

CHATTANOOGA MANUFACTURERS ASSOCIATION

CMA Quarterly Review

December 7, 2006

The 15th annual edition of **CMA's Breakfast Briefing Series** kicked off September 6th with a session on **HIPAA**. Several of the original group of 6 or 7 members are still around although their hair has turned gray, or in some cases, *loose*! The October session featured **Workers Compensation** with special guests Bart Quinn, Esq., of Chambliss Bahner and Stophel and Herbert Thornbury, a local civil trial specialist who represents workers injured on the job. The November session on **Immigration Law** brought another special guest speaker, Jorge Lopez, from the Jackson Lewis law firm. Additional sessions are planned for the first Wednesday of each month through May 2007. For more information, see **Events** section of http://www.cma1902.com/.

CMA President Ray Childers met with new Hamilton County School Superintendent **Dr. Jim Scales** on October 12. Dr. Scales was briefed on CMA's history, mission, vision and current activities. The discussion included how the two organizations could tighten partnerships involving mutual interests in **improving harmony between the knowledge, skills and abilities currently being taught** and the **job requirements in advanced manufacturing operations of the present and future.**

CMA hosted management from **NA Industries, including top-level corporate executives from Japan.** The group was interested in CMA's advocacy role in helping to make Chattanooga a better place to operate a manufacturing plant. They were also interested in the gift bag of **products made in Chattanooga**, especially the **Little Debbies, Moon Pies, Coca-Colas and Altoids.**

CMA played an important role in bringing together **representatives of several member companies** and **Chattanooga Police Department personnel, including Chief Steve Parks,** to discuss criminal acts and violence occurring in a particular section of the City. Hopefully the dialogue will continue and result in making the area a safer place to work and conduct business.

Congratulations to **Komatsu for celebrating its 20th Anniversary** on November 7th. The CMA Staff joined local and state officials in thanking Komatsu management and their employees for their commitment to the economic, social and cultural interests of the City. **Thanks to Dennis Riddell, his staff and employees** for all that you do to make this a better City and the world a better place!

Brian Humphrey of Miller & Martin is the new Chair of CMA's **Environment Committee.** After serving CMA for many years, including a term on the Board, **Wayne Cropp will become Executive Director of the Enterprise Center.** CMA wishes Wayne well in his new position, and looks forward to working with him on future projects of mutual interest. Meanwhile, Brian will be convening a meeting of the Environment Committee soon to plan an **Environmental Overview Seminar.**

A group including **Mayor Ramsey, Mayor Littlefield and Chattanooga State President Dr. Jim Catanzaro met with 3M representatives in Minneapolis** recently **to discuss a partnership** in addressing curriculum, operational and staffing issues of **the planned Center for Advanced Manufacturing Training** to be located at **Enterprise South.** The group spent a very full day visiting 3M training and development facilities and presenting an overview of reasons why a **3M/Chattanooga partnership** was a natural fit in achieving business objectives of both parties.

CMA's **104th Annual Meeting** was a tremendous success, drawing both a nationally recognized speaker and a full-house crowd. **National OSHA Director Edwin Foulkes, Jr.** provided the group with insight to the objectives and direction of the nation's top developer and enforcer of safety and health regulations. He also **spoke to a Manufacturers Caucus** of local political and industrial leadership **and toured a local manufacturing facility. Dr. Jim Catanzaro** was awarded **the 2006 Captain C.D. Mitchell Award.** The Annual Meeting was **sponsored by Komatsu, Tennessee American Water Company and Chattanooga State.** The Manufacturers Caucus was **sponsored by BASF and EPB**. Thanks to the sponsors and all who attended.

On November 22, **Tennessee American Water Company filed a petition with the Tennessee Regulatory Authority for an across the board increase in water rates of 19.67%.** CMA is studying the petition and discussing the matter with other business advocacy and government groups. The last water rate increase was in the spring of 2005. CMA has successfully intervened in past cases involving water rate increases, and will intervene in this case as well. You can follow the filings to the TRA case docket at http://www2.state.tn.us/tra/dockets/0600290.htm .

CMA met with representatives of **Chattanooga State** and the **Chamber** to discuss possible inclusion in ongoing education initiatives of a **nationally-recognized certification program for skilled production technicians developed by the Manufacturing Skills Standards Council(MSSC).** The program has been praised by the **National Association of Manufacturers, and NAM President John Engler said** , "This is a breakthrough with great implications for the future of manufacturing in the United States", ---and "Introduction of this certification program underscores growing recognition that America must do a better job of training and educating our workforce to remain competitive in the global economy." **James McCaslin, President & COO, Harley-Davidson Motor Company and Chair of the MSSC Board of Directors said** "The program will provide highly skilled workers who are flexible, agile and able to meet future manufacturing needs."
The group discussed how the program would supplement other certification programs and where it could fit into current plans for the **Center for Advanced Manufacturing Training.** The group will meet again to continue discussions and learn more about this promising program.

CMA's Annual Holiday Open House was held on Thursday, November 30 at the new facilities in the EPB Building. A large group of the membership stopped by during the afternoon to enjoy snacks, fellowship and networking. Ben McCloud from Murfreesboro won the virtual prize for traveling the greatest distance to attend the event. Several of the group saw the new building for the first time, and like all others, were favorably impressed with the open design and flexible layout of the facility.

The Tennessee Regulatory Authority will consider a **Proposed Settlement Agreement** filed by the **Consumer Advocate Division, the Gas Company and the CMA** on Tuesday, December 5. This proposal was worked out by the parties after lengthy discussion to settle Part 1 of a bifurcated rate case and appears to contain provisions that all can live with. Remaining issues will be addressed as the case continues early next year.