

# The Water Efficiency and Conservation State Scorecard:



## An Assessment of Laws and Policies



**Draft**  
April 2012

## PROJECT PARTNERS

### ALLIANCE FOR WATER EFFICIENCY

The Alliance for Water Efficiency (AWE) is dedicated to the efficient and sustainable use of water in the United States and Canada. Based in Chicago, this nonprofit group advocates for water efficient products and programs and provides information and assistance on water conservation efforts. AWE works with over 345 member organizations, providing benefit to water utilities, business and industry, government agencies, environmental and energy advocates, universities, and consumers.

300 W. Adams Street, Suite 601 | Chicago, IL 60606  
PH: 773-360-5100 | [www.a4we.org](http://www.a4we.org)

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2000 L Street, NW, Suite 620 | Washington, D.C. 20036  
PH: 202-939-3800 | [www.eli.org](http://www.eli.org)

## PROJECT TEAM

William Christiansen | Alliance for Water Efficiency  
Mary Ann Dickinson | Alliance for Water Efficiency  
Adam Schempp | Environmental Law Institute  
Megan Herzog | Environmental Law Institute  
Kenneth Mirvis | Alliance for Water Efficiency  
Alexa Loftus | Alliance for Water Efficiency

## PROJECT ADVISORY COMMITTEE

The project team was privileged to have input and guidance from an esteemed advisory committee comprised of professionals working on water efficiency and conservation at the state level. We extend our gratitude to:

Alice Miller Keyes | Georgia Environmental Protection Division  
Jeffrey Ripp | Public Service Commission of Wisconsin  
Frances Spivy-Weber | California State Water Resources Control Board  
John T. Sutton | Texas Water Development Board  
Thomas Swihart | Florida Department of Environmental Protection (*Retired*)  
Cheri Vogel | New Mexico Office of the State Engineer

## FUNDING

The Turner Foundation provided partial funding for this project. Completing the project required additional resources from the Alliance for Water Efficiency in the form of staff resources as well as monetary contributions from its general operating budget.

## STATE WATER AGENCY EMPLOYEES

This project would not be possible without the assistance of various state water agency personnel. The project team is thankful for their contributions to the data gathering effort.

## PUBLIC COMMENT

The data collection and review process for this effort was complex. The survey had 20 questions asked of 50 states, which produced 1,000 answers that required additional research to verify. It is certainly possible, if not plausible, that something has been missed. This report is currently in draft form and will be open for public comment until June 15, 2012. Comments must adhere to the comment instructions in order to be reviewed.

Public Comment Instructions: Send comments via email to [info@a4we.org](mailto:info@a4we.org) with the words “State Scorecard Comment” in the subject line and include the state name. In the body of the email include the survey question(s) the comment is in regard to, and the state name. Comments suggesting a change be made to a survey answer will not be considered unless accompanied by a supporting and citable reference. In most cases, a legal citation will be required in order to change an answer.

## ONLINE STATE INFORMATION HOUSED ON THE AWE WEBSITE

The completed surveys are housed online in the Alliance for Water Efficiency’s Resource Library and are open to the public for viewing and comment (the 2009 surveys are currently posted and the 2011 survey responses will be uploaded once the draft report has been finalized). Online information is also available for the Canadian Provinces.

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## I. Executive Summary

The sustainable management of our fresh water resources is a crucial component of supporting future population and economic growth. State laws and policies can be a powerful mechanism to promote the efficient use of water. This report describes research efforts taken to identify and assess state-level laws and policies related to water efficiency and conservation. The analysis was based on a 20-question survey developed by the project team under the guidance of a project advisory committee. Each state was surveyed, and the responses for every question were scored. The results are framed in a style similar to a school report card. Presenting this information collectively provides a resource that policy makers, and other professionals active in the water efficiency and conservation movement, can utilize.

In 2009, the Alliance for Water Efficiency (AWE) conducted a similar survey, which set the stage for this project update and expansion. The results of the 12-question 2009 survey were posted online, but not summarized or

STATE	POINTS	GRADE	STATE	POINTS	GRADE
Alabama	2	D	Montana	3	D
Alaska	3	D	Nebraska	3	D
Arizona	22	B	Nevada	14	C+
Arkansas	7	C-	New Hampshire	17	B-
California	29	A-	New Jersey	16.5	B-
Colorado	16.5	B-	New Mexico	10.5	C
Connecticut	14	C+	New York	11	C
Delaware	7	C-	North Carolina	11	C
Florida	12	C+	North Dakota	2	D
Georgia	17.5	B-	Ohio	3.5	D
Hawaii	4	D	Oklahoma	3	D
Idaho	3	D	Oregon	15.5	B-
Illinois	5	C-	Pennsylvania	3	D
Indiana	6	C-	Rhode Island	20	B
Iowa	10.5	C	South Carolina	6.5	C-
Kansas	10	C	South Dakota	4	D
Kentucky	13	C+	Tennessee	2	D
Louisiana	2	D	Texas	29	A-
Maine	3	D	Utah	14	C+
Maryland	7.5	C	Vermont	6	C-
Massachusetts	12	C+	Virginia	16.5	B-
Michigan	3	D	Washington	20	B
Minnesota	14.5	C+	West Virginia	4	D
Mississippi	2	D	Wisconsin	15.5	B-
Missouri	2	D	Wyoming	2	D

analyzed. The 2011 effort, which is the focus of this report, used an expanded 20-question survey, and scored answers and assigned grades to each of the 50 states.

The intention behind adding the report and assigning grades is to create concise and useful information, and to bring attention to exemplary policies that may be used as models for other states to emulate. We anticipate the outcomes will also create a catalyst for dialogue about current and future water efficiency and conservation laws and policies, and generate friendly and healthy competition among states in regard to water efficiency and conservation efforts.

After the 20-question survey was developed and approved by the advisory committee in April, 2011 the data collection effort began.

Data collection proved to be a large undertaking and ran through the end of the calendar year. When the finished surveys were gathered, the project team began reviewing the answers for completeness and accuracy. Citations



## II. Introduction

State level laws and policies represent a powerful means to reduce water consumption in the United States. The implementation of water efficiency and conservation strategies is more important than ever. As of this writing, large portions of Arizona, New Mexico, Texas, and much of the Southeastern United States are in the midst of long-term severe drought conditions. A 2003 U.S. General Accounting Office survey revealed that 36 states are expecting water shortages by 2013. The number would likely have been higher if California, Nevada, New Mexico, Mississippi, and Michigan had provided input to the survey. Even without the aforementioned water shortages, water efficiency and conservation are necessary to support future population and economic growth.

During 2011, the Alliance for Water Efficiency (AWE) surveyed the 50 states to identify and assess state-level water efficiency and conservation laws and policies. This effort built upon existing state and provincial information that was produced and posted to the AWE resource library in 2009. Since the Alliance receives a great deal of positive feedback about the value of the state and provincial information, an update was both needed and warranted. The effort in 2009 did not include a written report or a qualitative evaluation of each state. The 2011 update included a reworking of the previous survey, a new data collection effort, the addition of a grading scheme to assign each state a score and grade, updating the online resource library, and a written report.

The intention behind adding the report and assigning grades is to create concise and useful information, and to bring attention to exemplary policies that may be used as models for other states to emulate. We anticipate the outcomes will also be a catalyst for dialogue about current and future water efficiency and conservation laws and policies, and will create friendly and healthy competition among states in regard to water efficiency and conservation efforts.

This report begins with a discussion of the project background and survey questions. Next, the data collection process and scoring methodology used to assign grades to each state are described. This is followed by a summary of the results, and a section that provides detail on the most rigorous and robust water efficiency and conservation laws and policies. The Great Lakes States are discussed in a separate section to explain some of the issues surrounding the Great Lakes Compact. Project challenges are addressed prior to the concluding remarks.

The results demonstrate that state level water efficiency and conservation laws and policies throughout the United States vary greatly. There are states with virtually no relevant policies and regulations, while others have an abundance of well-planned and strongly implemented practices.

This report does not contain the completed surveys. Those may be found in the Alliance for Water Efficiency's online Resource Library.<sup>1</sup> Currently the results from the 2009 survey are posted; the 2011 survey results will be added once the draft report is finalized.

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<sup>1</sup> Alliance for Water Efficiency Resource Library: <http://www.allianceforwaterefficiency.org/resource-library/default.aspx>

### III. Background and Methodology

This section provides a brief historical background of AWE's data collection efforts regarding state level laws and policies for water efficiency and conservation, and presents the data collection and scoring methodology. The aforementioned 2009 effort is described briefly because it set the foundation for the 2011 research.

#### A. 2009 Survey

In 2009, AWE surveyed states to identify water efficiency and conservation laws and policies. The survey consisted of 11 questions, the results of which were posted to the online AWE Resource Library. The questions are presented below. The Alliance for Water Efficiency received a great deal of feedback regarding the information generated by the survey, and the state information pages represent a highly trafficked section of the AWE website. President and CEO Mary Ann Dickinson presented the 2009 survey results at the 2010 WaterSmart Innovations Conference and summarized the results based on a simple analysis of "yes" versus "no" answers. This generated a lot of interest in scoring states and created a demand for additional analytical information in respect to state level water efficiency and conservation laws and policies.

**Figure 1 - AWE 2009 State Survey Questions**

<b>2009 Survey Questions</b>
<i>1. What state agency or agencies are in charge of drinking water conservation/efficiency?</i>
<i>2. Does the state require preparation of drought emergency plans by water utilities or cities on any prescribed schedule?</i>
<i>3. Does the state have a mandatory planning requirement for drinking water conservation separate from drought emergency plans?</i>
<i>4. Does the state require implementation of conservation measures as well as preparation of plans?</i>
<i>5. Does the state have the authority to approve or reject the conservation plans?</i>
<i>6. Does the state have minimum water efficiency standards more stringent than federal or national requirements?</i>
<i>7. Does the state regulate drinking water supplies and require conservation as part of its permitting process or water right permit?</i>
<i>8. Does the state allow funding for conservation programs under a State Revolving Fund?</i>
<i>9. Does the state offer other financial assistance? Bonds? Appropriations?</i>
<i>10. Does the state offer direct or indirect technical assistance?</i>
<i>11. Does the state provide Statewide ET microclimate information?</i>

## B. 2011 Survey

In 2011, AWE formed a project advisory committee to develop a new set of questions to update the 2009 effort. The end result contained 4 new questions, and several questions that were similar to their 2009 survey counterparts, but reworded or expanded to be more specific. The project advisory committee, representing water agencies from 6 states, met via conference call on January 26 and April 5, 2011 to develop and vet the survey instrument. The survey was finalized on April 22, 2012. This task was a challenging endeavor and required the committee to review changes and provide feedback between and after meetings. The committee could have easily created a survey containing 30 or more questions. However, a large survey would have overwhelmed survey respondents, and required more financial and staff resources than were available to complete this project. The final questionnaire is listed below in its entirety, followed by a discussion of each question. The data collection and scoring methodology are described in the next section.

**Figure 2 - AWE 2011 State Survey Questions**

<b>2011 Survey Questions</b>
<i>1. What state agency or agencies are in charge of drinking water conservation/efficiency?</i>
<i>2. Does the state have a water consumption regulation for <b>toilets</b> that is more stringent than the federal standard?</i>
<i>3. Does the state have a water consumption regulation for <b>showerheads</b> that is more stringent than the federal standard?</i>
<i>4. Does the state have a water consumption regulation for <b>urinals</b> that is more stringent than the federal standard?</i>
<i>5. Does the state have a water consumption regulation for <b>clothes washers</b> that is more stringent than the federal standard?</i>
<i>6. Does the state have a water consumption regulation for <b>pre-rinse spray valves</b> that is more stringent than the federal standard?</i>
<i>7. Does the state have <b>mandatory building or plumbing codes</b> requiring water efficient products that exceed the federal standard?</i>
<i>8. Does the state have any regulations or policies for water utilities regarding water loss in the utility distribution system?</i>
<i>9. Does the state require conservation activities as part of its water permitting process or water right permit?</i>
<i>10. Does the state require preparation of drought emergency plans by water utilities or cities on any prescribed schedule?</i>
<i>11. Does the state have a mandatory planning requirement for potable water conservation/efficiency separate from drought emergency plans?</i>

12. *Does the state have the authority to approve or reject the conservation plans?*
13. *How often does the state require the water utilities to submit a potable water conservation plan (not part of a drought emergency plan)?*
14. *If the state has a mandatory planning requirement for potable water conservation separate from drought emergency plans, is there a framework or prescribed methodology?*
15. *Does the state require water utilities to implement conservation measures, beyond just the preparation and submittal of plans?*
16. *Does the state offer financial assistance to utilities, cities, or counties for urban water conservation programs such as a revolving loan fund? Grants? Bonds? Appropriations?*
17. *Does the state offer technical assistance for urban water conservation programs?*
18. *Does the state require volumetric billing?*
19. *What percentage or number of publicly supplied water connections (residential and nonresidential) are metered in your state?*
20. *Does the state provide statewide ET microclimate information for urban landscapes?*

### *1. What state agency or agencies are in charge of drinking water conservation/efficiency?*

This question remained unchanged from the previous survey both in terms of its position and the wording. This question simply aims to identify state agencies that are responsible for drinking water efficiency and conservation. These responsibilities are often divided among multiple agencies in a single state, but only 1 agency per state is listed in the report cards found in Appendix A due to available space. The full survey responses posted in the AWE Resource Library contain complete listings.

### *2. Does the state have a water consumption regulation for toilets that is more stringent than the federal standard?*

Questions 2-7 of the current survey were disaggregated from question 6 of the previous survey which asked, “Does the state have minimum water efficiency standards more stringent than federal or national requirements?” The wording of the previous question was too vague and generated answers that were not in line with what was being sought, which was information on standards for plumbing fixtures that are more stringent than what is required federally. Standards for water-using fixtures and appliances are extremely effective in reducing water use through the process of natural replacement. If a federal standard exists for a particular fixture, and there are an abundance of high-efficiency models of that fixture in the marketplace (preferably third-party tested and approved by an entity such as WaterSense), then there may be states with a more stringent standard.

The Energy Policy Act of 1992 set a federal standard for toilets at a maximum flush volume of 1.6 gallons per flush (gpf). This standard took effect in 1994 for residential toilets and in 1997 for commercial toilets. Question 2 seeks to identify any states that have a standard for toilets that is less than 1.6 gallons per flush. Toilet technology has

advanced a great deal since the Energy Policy Act of 1992 and high-efficiency toilets are becoming more commonplace. The U.S. EPA WaterSense program has labeled over 1,000 high-efficiency toilet models that flush at a volume of 1.28 gpf, and perform well. Fixtures with the WaterSense label are 20 percent more water efficient than their average counterparts, and have undergone rigorous third party testing to ensure equal or better performance.<sup>2</sup> This is important because it reflects a marketplace that contains a sufficient stock of well performing high-efficiency toilets. If the marketplace cannot support a new efficiency standard the results will be disastrous.

### *3. Does the state have a water consumption regulation for showerheads that is more stringent than the federal standard?*

Question 3 also stemmed from question number 6 of the 2009 survey, and specifically asks if the state has a requirement for showerheads that is more stringent than the federal standard. WaterSense created a specification for showerheads in 2010 and has labeled many models at a flow rate of 2.0 gallons per minute (gpm). This is 0.5 gpm more efficient than the federal standard of 2.5 gpm set forth in the Energy Policy Act of 1992. The WaterSense labeling of showerheads indicates that there are a variety of well performing showerheads in the marketplace that are more efficient than the national standard. The project advisory committee wanted to identify any states with a standard for showerheads that is more stringent than the one imposed federally.

Any standard-making process for showerheads should consider the potential for thermal shock with a flow rate less than 2.5 gpm. There is detailed information about this issue in the AWE Resource Library on the Residential Shower and Bath Introduction page.

### *4. Does the state have a water consumption regulation for urinals that is more stringent than the federal standard?*

When question 6 from the 2009 survey was reworked into multiple questions the advisory committee chose urinals as a specific fixture to be included. The standard for urinals in the United States is 1.0 gpf as per the Energy Policy Act of 1992. WaterSense began labeling high-efficiency urinals in 2009, with a maximum flush volume of 0.5 gpf.<sup>3</sup> At present there are 102 urinal models labeled by WaterSense.<sup>4</sup> If states choose to go beyond the federal standard for urinals there are many options that meet water efficiency and performance criteria. Examples of such standards will provide valuable information for the water efficiency community.

### *5. Does the state have a water consumption regulation for clothes washers that is more stringent than the federal standard?*

Clothes washers were included when question 6 from the 2009 survey was divided into specific components. Currently the federal standard for residential and commercial family-sized clothes washers requires a water factor (WF) of 9.5 or less based on the Energy Independence and Security Act of 2007. The water factor is a value used to determine the water efficiency of a clothes washer, and represents the number of gallons used to wash 1 cubic foot of laundry.<sup>5</sup> The lower the water factor, the higher the efficiency. Energy Star labeled clothes washers must have a water factor of 6.0 or less to qualify, which is 37 percent lower than the WF required by the national

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<sup>2</sup> The WaterSense Label [http://www.epa.gov/WaterSense/about\\_us/watersense\\_label.html](http://www.epa.gov/WaterSense/about_us/watersense_label.html)

<sup>3</sup> WaterSense Specification for Flushing Urinals [http://www.epa.gov/WaterSense/docs/urinal\\_finalspec508.pdf](http://www.epa.gov/WaterSense/docs/urinal_finalspec508.pdf)

<sup>4</sup> WaterSense Labeled Urinal List [http://www.epa.gov/WaterSense/product\\_search.html?Category=3](http://www.epa.gov/WaterSense/product_search.html?Category=3)

<sup>5</sup> Alliance for Water Efficiency Residential Clothes Washer Introduction  
[http://www.allianceforwaterefficiency.org/Residential\\_Clothes\\_Washer\\_Introduction.aspx?terms=water+factor](http://www.allianceforwaterefficiency.org/Residential_Clothes_Washer_Introduction.aspx?terms=water+factor)

standard.<sup>6</sup> As of this writing, Energy Star has labeled 367 residential clothes washers and 71 family sized commercial clothes washers.<sup>7</sup> Consumers would have a large variety of clothes washers to choose from if a state created a standard more efficient than what is found in the Energy Independence and Security Act of 2007.

### *6. Does the state have a water consumption regulation for pre-rinse spray valves that is more stringent than the federal standard?*

Pre-rinse spray valves are commonly used in restaurants and other commercial food operations to rinse particles from plates and other items with a high pressured spray of water before loading them into a dishwasher. The current federal standard is 1.6 gpm according to the Energy Policy Act of 2005. A specification is currently being developed by WaterSense for pre-rinse spray valves which will likely require a flow rate of 1.25 gpm to be labeled.<sup>8</sup> If a specification is developed it will help ensure that there are a variety of models in the marketplace that meet both efficiency and performance requirements set forth by WaterSense. The federal standard for pre-rinse spray valves is relatively new and the project advisory committee wanted to recognize any states with a standard more stringent than the one imposed nationally. This question was derived from question 2 from the 2009 survey.

### *7. Does the state have mandatory building or plumbing codes requiring water efficient products that exceed the federal standard?*

In addition to asking about standards for specific water-using fixtures and appliances, the advisory committee concluded it was important to ask about building and plumbing codes. Building and plumbing codes can require the installation of water-efficient products in buildings. These codes may include efficiency standards for the aforementioned fixtures in questions 2-6, additional fixtures and fittings, or may contain requirements for plumbing system design.

### *8. Does the state have any regulations or policies for water utilities regarding water loss in the utility distribution system?*

According to the AWE Resource Library,

Losses in water utility operations occur in two distinctly different manners. *Apparent losses* occur due to customer meter inaccuracies, billing system data errors and unauthorized consumption. These losses cost utilities revenue and distort data on customer consumption patterns. Losses also occur as real losses or water that escapes the water distribution system, including leakage and storage overflows. These losses inflate the water utility's production costs and stress water resources since they represent water that is extracted and treated, yet never reaches beneficial use.<sup>9</sup>

Losses from the distribution system may very well represent the most inefficient consumption of treated water. This is a new question. The 2009 survey did not directly ask about water loss, and the project advisory committee decided that this important topic should be included.

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<sup>6</sup> Energy Star Clothes Washer Criteria [http://www.energystar.gov/index.cfm?c=clotheswash.pr\\_crit\\_clothes\\_washers](http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers)

<sup>7</sup> Residential and Commercial Clothes Washers Qualified Product Lists  
[http://downloads.energystar.gov/bi/qplist/res\\_clothes\\_washers.pdf?53a8-df0d](http://downloads.energystar.gov/bi/qplist/res_clothes_washers.pdf?53a8-df0d)  
[http://downloads.energystar.gov/bi/qplist/comm\\_clothes\\_washers.pdf?182e-6c2b](http://downloads.energystar.gov/bi/qplist/comm_clothes_washers.pdf?182e-6c2b)

<sup>8</sup> WaterSense Notification of Intent (NOI) to Develop Draft Performance Specifications for High-Efficiency Pre-Rinse Spray Valves  
[http://www.energystar.gov/ia/partners/prod\\_development/new\\_specs/downloads/pre\\_rinse\\_spray\\_valves/PRSV\\_Notice\\_of\\_Intent.pdf](http://www.energystar.gov/ia/partners/prod_development/new_specs/downloads/pre_rinse_spray_valves/PRSV_Notice_of_Intent.pdf)

<sup>9</sup> Water Loss Control - What Can Be Done? [http://www.allianceforwaterefficiency.org/Water\\_Loss\\_Control\\_-\\_What\\_Can\\_Be\\_Done.aspx](http://www.allianceforwaterefficiency.org/Water_Loss_Control_-_What_Can_Be_Done.aspx)

*9. Does the state require conservation activities as part of its water permitting process or water right permit?*

This question was asked in the 2009 survey (question 7) and was included again in the 2011 effort. Water withdrawal permits may contain conditions to ensure that water is not being wasted or used inefficiently. Requiring conservation activities in the permit approval process represents a means to promote the efficient use of water. Procedures vary among states, and this question was asked to identify what conditions are set forth in regard to conservation in the water permitting process.

*10. Does the state require preparation of drought emergency plans by water utilities or cities on any prescribed schedule?*

Times of drought require immediate action to reduce the demand for water. It is important to have this action well planned in advance. Drought plans often include strategies to reduce demand for a varying degree of shortage situations. This is the same as question 2 in the 2009 survey and is intended to find out if states are requiring water suppliers to prepare such plans.

*11. Does the state have a mandatory planning requirement for potable water conservation/efficiency separate from drought emergency plans?*

The 2009 survey (question 3) and the 2011 survey both asked if conservation plans are required separately from drought emergency plans. This distinction between drought plans and conservation plans clearly identifies states that are focused on water efficiency and conservation during non-drought conditions. Measures taken during a drought may only have short-term savings impacts, whereas programs implemented via a conservation plan are intended to have long-term effects on water demand.

*12. Does the state have the authority to approve or reject the conservation plans?*

This question was utilized in the 2009 survey (question 5) and sought to identify authority held by the state to approve or reject required conservation plans. This question builds upon question 11. Without authority to approve or reject plans, it will be difficult, if not impossible, for the state to hold utilities to any specific planning requirements. The state's authority to approve or reject plans gives strength to the overall planning process.

*13. How often does the state require the water utilities to submit a potable water conservation plan (not part of a drought emergency plan)?*

This question asks how often utilities must submit water conservation plans, and is intended to add detail to any "yes" answers for question 11. This new question was not included in the 2009 survey.

*14. If the state has a mandatory planning requirement for potable water conservation separate from drought emergency plans, is there a framework or prescribed methodology?*

This was a new question and not asked in the 2009 survey. Must conservation plans adhere to a methodology or include mandatory components? Answers to this question provide insight into the strength of the planning

requirements set forth by states. A prescribed methodology helps water providers prepare plans and creates a standardized approach.

*15. Does the state require water utilities to implement conservation measures, beyond just the preparation and submittal of plans?*

This question was asked in the 2009 survey (question 4) as well. Water conservation plans alone will not reduce water use; the plans have to be put into action. Legal language regarding implementation can vary from suggestions to enforceable penalties for failure to implement. This question was formulated to recognize the importance of actual implementation, and to identify the different requirements among states.

*16. Does the state offer financial assistance to utilities, cities, or counties for urban water conservation programs such as a revolving loan fund? Grants? Bonds? Appropriations?*

The 2009 survey contained multiple questions regarding funding for water conservation programs. The 2011 survey condensed these questions into one. Technically all states can capitalize water conservation programs via the Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) programs. A September 2000 EPA memorandum titled, "Policy on Using the CWSRF on Water Efficiency/Conservation Measures," details eligible projects, which include conservation programs. A similar EPA memo regarding the DWSRF programs indicates the fund can be used for water conservation programs.<sup>10</sup> In addition to these memorandums, the EPA factsheet, "Funding Water Efficiency through the State Revolving Fund Programs," confirms that both the CWSRF and DWSRF can be used for, "financial assistance to help states and systems initiate a variety of efficiency measures and programs."

This question asked about additional resources such as grant programs, bonds, and appropriations. Without financial assistance many water efficiency and conservation programs would not be possible.

*17. Does the state offer technical assistance for urban water conservation programs?*

Question 10 of the 2009 survey essentially asked the same question, "Does the state offer direct or indirect technical assistance?" The 2009 question lacked specificity in regard to urban water conservation programs, and the "yes" answers were not always relevant or could be slightly misleading. The question was reworded for the 2011 survey, and only technical assistance that is designed for urban water use was included.

*18. Does the state require volumetric billing?*

This question was not part of the 2009 survey, but its subject is of great importance to water efficiency and conservation. If customers are billed for the amount of water consumed they are less likely to waste water.<sup>11</sup> Volumetric billing also makes it possible to implement water rate structures that encourage conservation.

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<sup>10</sup> EPA DWSRF Memorandum (July 25, 2003) *Use of Drinking Water State Revolving Fund (DWSRF) Program Funds for Water Efficiency Measures*

<sup>11</sup> Alliance for Water Efficiency Metering Introduction: <http://www.allianceforwaterefficiency.org/metering.aspx>

### *19. What percentage or number of publicly supplied water connections (residential and nonresidential) are metered in your state?*

Water meters allow consumption to be measured. Without them suppliers cannot identify the amount of water being used and charge accordingly. The advisory committee designed this question to identify the percentage of metered connections in each state. If the state could not provide the percentage, but rather a number of connections, the project team would estimate a percentage from data on the total number of connections.

### *20. Does the state provide statewide ET microclimate information for urban landscapes?*

Question 11 of the 2009 survey asked, “Does the state provide Statewide ET microclimate information?” For the 2011 survey, the question was altered to ask specifically about evapotranspiration (ET) information for urban landscapes. A significant portion of existing weather and irrigation data concerns agricultural water use. Because the focus of this effort is urban water use, the question was changed to eliminate those responses. Microclimate information can be used to increase the efficiency of outdoor water use through improved irrigation scheduling.

## **C. Data Collection and Scoring Methodology**

Once the survey was fully vetted, a team began collecting data. The data collection effort, which included a thorough review of the results, ran through the end of calendar year 2011. Question 1 of the 2009 survey asked, “What state agency or agencies are in charge of drinking water conservation/efficiency?” The information produced from this question was used to find appropriate contacts in each state to assist with completing the survey. Contact was initiated via phone calls and emails. Due to the length of the survey and the need to include citations, the completed surveys were sent from the respondents to the project team via email instead of being conducted over the phone.

There were a small number of instances when the project team repeatedly attempted to connect with state personnel and received little or no assistance. In these cases the team conducted extensive research to find information for any unanswered survey questions.

After the finished surveys were gathered the project team began reviewing the responses for completeness and accuracy. The questions generated complex answers and there was a great deal of variance among states. Even with the help of state employees, the survey results required extensive research and cite checking to verify answers. Many responses were edited in the course of the verification process and additional information often was added to support answers.

Ultimately, all “yes” answers required a supporting citation to be counted. Not all “yes” answers are equal, and there are often nuanced details behind a “yes” designation. To account for this, a substantial amount of supporting information is posted along with the completed surveys in the AWE Resource Library. The variation and complexity of answers also created a need to expand point ranges for scoring questions, which is discussed in greater detail below.

Following AWE’s preliminary efforts to verify responses and seek feedback from the states regarding any unverified answers, AWE forwarded augmented survey responses to a team of attorneys at the Environmental Law Institute (ELI) for a more comprehensive legal review. The Institute restricted its analysis to the survey questions that involved legal matters: questions 2-6, 7-15, and 18. Through legal research databases, ELI obtained current

versions of each statute or regulation cited by the survey respondents. In the course of exploring state codes, ELI located relevant but un-cited authorities and also included those sources in its evaluation.

Using the referenced laws, ELI verified whether the provisions cited by the respondents were sufficient to support the respondents’ answers. ELI relied only on the language of the laws to cite check and evaluate the accuracy of responses; ELI disregarded as immaterial to its analysis any citations to non-binding guidance documents, evidence of future or historical policies, statements regarding administrative practice, or other non-legal data. When necessary and appropriate, the ELI attorneys exercised their professional judgment to interpret and evaluate the statutory or regulatory language.

In the course of its analysis, ELI changed answers where, in the professional judgment of its staff, respondents’ answers were incorrect or the cited authority failed to support the proffered answer. Where the information provided by the state was insufficient for ELI to evaluate the answer as either correct or incorrect, ELI flagged the answer for AWE as requiring further attention; in some instances, AWE was able to obtain the necessary additional information from the state and re-forward the answer to ELI for analysis. To support its conclusions, ELI cataloged direct quotations of all on-point statutory and regulatory provisions. Additionally, ELI identified for AWE publicly-available copies of each relevant law it examined.

Comparing the relative strength of water efficiency and conservation laws between the 50 states allowed ELI to stratify the states into tiers. These tiers are directly reflected in the scoring rubric developed by ELI and AWE. Accordingly, the inclusion of numerous scoring intervals for a particular question reflects the fact that the project team observed a broad diversity in the quality of answers to that question.

Based on ELI’s legal analysis, and in consultation with ELI, AWE scored each answer according to the scoring rubric presented in **Table 1**. Scoring challenges encountered by the project team are discussed in the Project Challenges section below. Following scoring, ELI and AWE identified laws and regulations they believe to represent the strongest examples of water efficiency and conservation law under each question. Model examples are presented in the Policy Highlights section below. In identifying model examples, the project team sought to showcase the diversity of effective policy alternatives and innovative policymaking efforts.

A total of forty possible points could be earned from the survey questions. Additionally, the states were eligible for three additional points in the form of extra credit. **Table 1** presents the guidelines used for the scoring of each question. It is followed by the overall grading scale. The Policy Highlights section includes some additional discussion of the nuances of scoring the questions that underwent legal review.

**Table 1 – Scoring Guidelines**

SCORING GUIDELINES FOR INDIVIDUAL QUESTIONS	
1. State agency in charge of drinking water conservation?	All states received 1 point for answering
2. Water consumption regulation for toilets?	0 = No 1 = Yes, but limited applicability (e.g., only applies to new construction) 2 = Yes
3. Water consumption regulation for showerheads?	0 = No 1 = Yes, but limited applicability (e.g., only applies to new construction) 2 = Yes

<p>4. Water consumption regulation for urinals?</p>	<p>0 = No 1 = Yes, but limited applicability (e.g., only applies to new construction) 2 = Yes</p>
<p>5. Water consumption regulation for clothes washers?</p>	<p>0 = No 1 = Yes, but limited applicability (e.g., only applies to new construction) 2 = Yes</p>
<p>6. Water consumption regulation for pre-rinse spray valves?</p>	<p>0 = No 1 = Yes, but limited applicability (e.g., only applies to new construction) 2 = Yes</p>
<p>7. Mandatory building or plumbing codes?</p>	<p>0 = No 1 = Codes are only applied to a specific subset set of buildings, or conditions (e.g., Texas has code that applies only to state buildings) 2 = Codes applied to most or all buildings</p>
<p>8. Water loss regulation or policy?</p>	<p>0 = No 1 = Some kind of policy in writing, but without a specific target or requirements, or target is weak 2 = Specific target or requirement, but only for new permits, or strong initiative demonstrated by state 3 = Robust target and requirements, and required by all suppliers, or if only for new permits with very strong law</p>
<p>9. Conservation activities as part of water permitting process?</p>	<p>0 = No 1 = Little more than a plan is required, or a strong law with limited geographic applicability 2 = Water rights expressly can be conditioned (or rejected) based on water conservation efforts 3 = Robust application or approval requirements (compliance with conservation plans, mandatory conservation conditions, etc.)</p>
<p>10. Drought emergency plans required?</p>	<p>0 = No 1 = Yes, but plan only connected to permitting; OR no updating of plan required once it has been submitted 1.5 = Yes, plan is required, but the framework for developing the plan is not robust 2 = Yes, plan is required and must adhere to a detailed framework</p>
<p>11. Conservation planning required separate from drought plans?</p>	<p>0 = No, or already given credit under question 9 1 = Plan is required only for a very limited set of users 2 = Plan requirement is broadly applicable</p>
<p>12. Authority to approve or reject conservation plans?</p>	<p>0 = No or N/A 0.5 = The plan must be submitted as part of a complete permit application, but its substance is not really part of the application review process 1 = Yes, the plan is reviewed as part of reviewing a permit application 2 = Yes, the plan is approved via an independent review process</p>

<p>13. How often are plans required?</p>	<p>0 = No or N/A 0.5 = 25+ years 1 = 11-24 years; or split between two planning processes (i.e., CT) 1.5 = 7-10 years 2 = 1-6 years</p>
<p>14. Planning framework or methodology?</p>	<p>0 = No; N/A; only unenforceable policy guidelines 0.5 = No, but the law requires the agency to draft unenforceable guidelines; OR there is a framework for what plans may include 1 = Yes, but the framework is not robust 2 = Yes, and the framework is robust</p>
<p>15. Implementation of conservation measures required?</p>	<p>0 = No or N/A 1 = There is some language facilitating implementation, but it lacks an enforceable hook 2 = The plan is enforceable as a permit condition 3 = Robust provisions to facilitate and enforce implementation (e.g., penalties, permit revocation, submitting schedules and reports, drafting an implementation plan, identifying legal and financial sources for implementation)</p>
<p>16. State funding for urban water conservation programs?</p>	<p>1 = Drinking Water State Revolving Funds (all states received 1 point) 2 = Funding resources beyond State Revolving Funds</p>
<p>17. Technical assistance for urban water conservation programs?</p>	<p>0 = No 1 = Online or other resources 2 = Direct technical assistance offered by state</p>
<p>18. Does the state require volumetric billing?</p>	<p>0 = No 1 = Yes 2 = Yes, and conservation rates are required</p>
<p>19. Percent of publicly supplied connections that are metered?</p>	<p>Due to a lack of citable references, no states were scored on this question</p>
<p>20. ET microclimate information for urban landscapes?</p>	<p>0 = No 1 = Online state resource including turfgrass ET data available 2 = Online resource specifically targeted for urban landscape irrigation</p>

After each question was scored, the total was summed and states were assigned a grade based on the scale presented in **Table 2**. If a state was one half point away from the next grade on the scale, the score was rounded up (e.g., 15.5 points would equal a “B-” instead of a “C+” grade). The water efficiency scorecards are notably different from a school report card. There are no “F” grades, for example, and the grading scale is much more forgiving than the typical percentage-based scoring utilized by educational institutions. The grades are intended to serve as a guide, and the project team made every effort to create a grading scale that demonstrated the level of effort states are making toward water efficiency via state-level laws and policies.

**Table 2 – Grading Scale**

GRADING SCALE	
34 - 40	A+
30 -33	A
27 - 29	A-
23 - 26	B+
19 - 22	B
16 - 18	B-
12 - 15	C+
8 - 11	C
5 - 7	C-
1 - 4	D
*.5's round up	

## IV. Discussion

This chapter is comprised of four sections. First, summary results are provided that present the grades among the 50 states. This is followed by the Policy Highlights section, which provides examples of exceptional laws and policies. The Great Lakes States are discussed in light of the Great Lakes Compact, and the last section identifies project challenges.

### A. Summary of Results

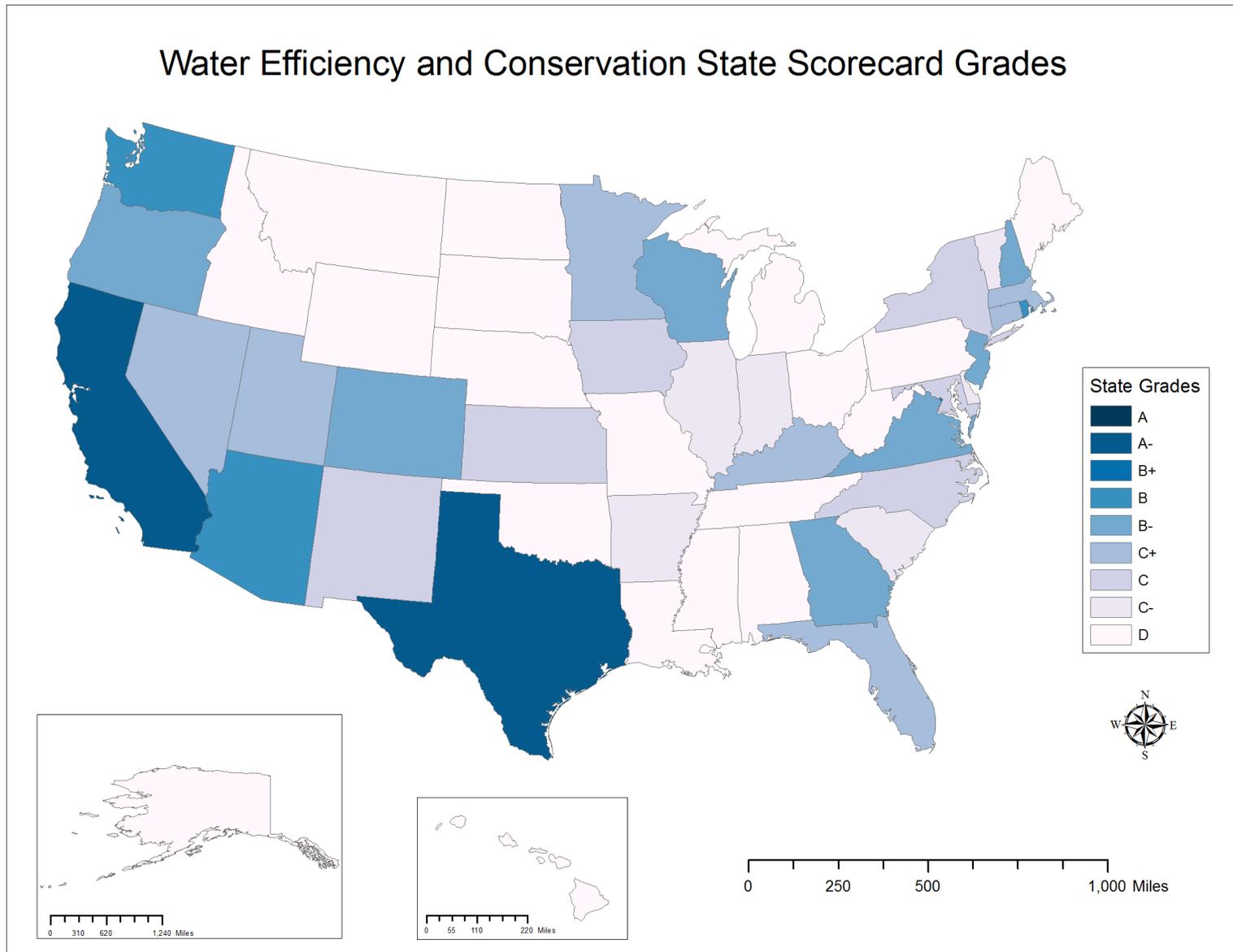
**Table 3 – Grade Totals**

GRADE	TOTALS
A+	0
A	0
A-	2
B+	0
B	3
B-	7
C+	7
C	6
C-	6
D	19
TOTAL	50

This section presents a complete score and grade for each of the 50 states. The individual state water efficiency scorecards appear in alphabetical order in the appendix. Two summary tables and a map present the results. **Table 3** shows the number of states that were assigned each grade. **Table 4** contains a point total and letter grade for each of the 50 states. **Figure 3** displays the spatial distribution of the results in a choropleth map. Only 2 states earned an “A” grade and both were “A-”; additionally, there were 10 “B’s,” 19 “C’s,” and 19 “D’s.” **Table 5** contains a point total and average grade for the United States as a whole. The 50 states earned a total of 480 points. When divided by 50 the result is 9.6, which is the middle of the range for a “C” grade.

Much can be learned from existing policies, regulations, and initiatives. While many robust water efficiency and conservation policies are in place, the results also indicate that there is great opportunity for improvement. Not only can polices be put in place where they are currently lacking, but existing policies and laws can be strengthened to increase their overall effectiveness.

Figure 3- Map of State Scorecard Grades



**Table 4 – Point Totals and Grade by State**

STATE	POINTS	GRADE	STATE	POINTS	GRADE
Alabama	2	D	Montana	3	D
Alaska	3	D	Nebraska	3	D
Arizona	22	B	Nevada	14	C+
Arkansas	7	C-	New Hampshire	17	B-
California	29	A-	New Jersey	16.5	B-
Colorado	16.5	B-	New Mexico	10.5	C
Connecticut	14	C+	New York	11	C
Delaware	7	C-	North Carolina	11	C
Florida	12	C+	North Dakota	2	D
Georgia	17.5	B-	Ohio	3.5	D
Hawaii	4	D	Oklahoma	3	D
Idaho	3	D	Oregon	15.5	B-
Illinois	5	C-	Pennsylvania	3	D
Indiana	6	C-	Rhode Island	20	B
Iowa	10.5	C	South Carolina	6.5	C-
Kansas	10	C	South Dakota	4	D
Kentucky	13	C+	Tennessee	2	D
Louisiana	2	D	Texas	29	A-
Maine	3	D	Utah	14	C+
Maryland	7.5	C	Vermont	6	C-
Massachusetts	12	C+	Virginia	16.5	B-
Michigan	3	D	Washington	20	B
Minnesota	14.5	C+	West Virginia	4	D
Mississippi	2	D	Wisconsin	15.5	B-
Missouri	2	D	Wyoming	2	D

**Table 5 – Water Efficiency Scorecard All 50 States**

WATER EFFICIENCY SCORECARD ALL 50 STATES		GRADE: C
QUESTION	TOTAL "YES" ANSWERS	TOTAL POINTS
1. State agency in charge of drinking water conservation?	50	50
2. Water consumption regulation for toilets?	3	6
3. Water consumption regulation for showerheads?	0	0
4. Water consumption regulation for urinals?	3	3
5. Water consumption regulation for clothes washers?	0	0
6. Water consumption regulation for pre-rinse spray valves?	0	0
7. Mandatory building or plumbing codes?	2	2
8. Water loss regulation or policy?	21	35
9. Conservation activities as part of water permitting process?	25	34
10. Drought emergency plans required?	14	20.5
11. Conservation planning required separate from drought plans?	28	32
12. Authority to approve or reject conservation plans?	25	35.5
13. How often are plans required?	20	34.5
14. Planning framework or methodology?	24	31.5
15. Implementation of conservation measures required?	19	37
16. State funding for urban water conservation programs?	50	72
17. Technical assistance for urban water conservation programs?	24	38
18. Does the state require volumetric billing?	6	8
<del>19. Percent of publicly supplied connections that are metered?</del>	<del>0</del>	<del>0</del>
20. ET microclimate information for urban landscapes?	8	12
EXTRA CREDIT		29
TOTAL		480
AVERAGE		9.6

## B. Policy Highlights

Strong statutory and regulatory language is the foundation of an effective statewide water efficiency program. This chapter showcases examples from across the country of outstanding state statutory and regulatory provisions to promote potable water efficiency, conservation, and planning. In some cases, diverse examples were selected in order to demonstrate a variety of effective methods for facilitating water efficiency through legal requirements. This chapter further summarizes the range of answers received for each topic and details why the top-performing states within each question received maximum credits. The highlighted examples may serve as useful policy

models for states wishing to strengthen their water conservation requirements and improving their future water efficiency score. Answers for questions 1, 16, 17, 19, and 20 were not put through a legal review process, but represent important initiatives and are included in this section.

### *Question 1: State Agencies*

Each state was awarded one point for answering this question and no additional points were available. There is no particular highlight, or state that has an example for others to follow. States with a high overall score have active agencies, but the structures differ. Some states have several agencies in charge of water efficiency and conservation. This can have advantages, such as putting specialized agencies in charge of specific components of water efficiency and conservation. However, when multiple agencies are involved there can be a lack of cohesion. It is important for agencies to be aware of each other's responsibilities and work together as much as possible.

### *Questions 2-6: Water Consumption Regulations*

Questions 2-6 are similar: does the state have a water consumption regulation more stringent than the federal standard for toilets, showerheads, urinals, clothes washers, and pre-rinse spray valves? Each state answering yes to any of these questions cited the same state law for each "yes" answer. Additionally, the standards were the same for all states with "yes" answers. For toilets, the average flush volume for single flush toilets may not exceed 1.28 gallons, and the average flush volume of 2 reduced flushes and 1 full flush for dual flush toilets may not exceed 1.28 gallons. For urinals, the maximum flow may not exceed an average of 0.5 gallons of water per flush, with minimal exceptions. No state identified laws more stringent than the federal standards for showerheads, clothes washers, or pre-rinse spray valves.

While the more stringent standards were uniform among those states with them, the 3 states differed in the scope of application of those standards. **California** and **Texas'** standards apply to all sales, as does Georgia's standard for toilets but Georgia's standard for urinals applies only to new construction. California and Texas have slightly different language regarding application and exemptions.

#### **California**

(b)

(1) All water closets sold or installed in this state shall use no more than an average of 1.6 gallons per flush. On and after January 1, 2014, all water closets, other than institutional water closets, sold or installed in this state shall be high-efficiency water closets.

(2) All urinals sold or installed in this state shall use no more than an average of one gallon per flush. On and after January 1, 2014, all urinals, other than blow-out urinals, sold or installed in this state shall be high-efficiency urinals.

....

(g) As used in this section, the following terms have the following meanings:

(1) "Blow-out urinal" means a urinal designed for heavy-duty commercial applications that work on a powerful nonsiphonic principle.

(2) "High-efficiency water closet" means a water closet that is either of the following:  
(A) A dual flush water closet with an effective flush volume that does not exceed 1.28 gallons, where effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush . .

..

(B) A single flush water closet where the effective flush volume shall not

exceed 1.28 gallons . . . .

(3) "High-efficiency urinal" means a urinal that uses no more than 0.5 gallons per flush.

(4) "Institutional water closet" means any water closet fixture with a design not typically found in residential or commercial applications or that is designed for a specialized application, including, but not limited to, wall-mounted floor-outlet water closets, water closets used in jails or prisons, water closets used in bariatrics applications, and child water closets used in day care facilities.<sup>12</sup>

**Texas**

(a) A person may not sell, offer for sale, distribute, or import into this state a plumbing fixture for use in this state unless:

(1) the plumbing fixture meets the water saving performance standards provided by Subsection (b) . . . .

(b) The water saving performance standards for a plumbing fixture are the following standards . . . .

(4) except as provided by Subsection (g), for a urinal and the associated flush valve, if any, sold, offered for sale, or distributed in this state on or after January 1, 2014:

(A) maximum flow may not exceed an average of 0.5 gallons of water per flush

. . . .

(6) except as provided by Subsection (h), for a toilet sold, offered for sale, or distributed in this state on or after January 1, 2014:

(A) the toilet must be a dual flush water closet that meets the following standards:

(i) the average flush volume of two reduced flushes and one full flush may not exceed 1.28 gallons . . . . or

(B) the toilet must be a single flush water closet that meets the following standards:

(i) the average flush volume may not exceed 1.28 gallons . . . .

. . . .

(g) The water saving performance standards for a urinal and the associated flush valve, if any, sold, offered for sale, or distributed in this state on or after January 1, 2014, are [maximum flow may not exceed an average of one gallon of water per flush] if the urinal was designed for heavy-duty commercial applications.

(h) The water saving performance standards for a toilet sold, offered for sale, or distributed in this state on or after January 1, 2014, are [maximum flow may not exceed an average of 1.6 gallons of water per flush] if the toilet is a water closet that has a design not typically found in a residential application or that is designed for a specialized application, including a water closet that:

(1) is mounted on the wall and discharges to the drainage system through the floor;

(2) is located in a correctional facility, as defined by Section 1.07, Penal Code;

(3) is used in a bariatric application;

(4) is used by children at a day-care facility; or

(5) consists of a non-tank type commercial bowl connected to the plumbing system through a pressurized flushing device.<sup>13</sup>

<sup>12</sup> CAL. HEALTH & SAFETY CODE § 17921.3.

<sup>13</sup> TEX. HEALTH & SAFETY CODE ANN. § 372.002.

*Question 7: Building and Plumbing Codes*

Question 7 asks whether the state has mandatory building or plumbing codes that require water efficient products exceeding the federal standard. Ideally, the building or plumbing codes will apply to all construction and the required efficiency of all products will exceed the federal standard; however, few states answered yes. As with questions 2-6, the scope of application as well as the standard established separated the “yes” answers. Partial credit was given to states with laws applicable to a specific subset of buildings or conditions.

**Georgia** requires the installation of high-efficiency plumbing fixtures in all new construction, including new buildings, the alteration of existing buildings, and even replacement of malfunctioning, unserviceable, or obsolete fixtures, regardless of the owner or location. In addition to the provisions concerning toilets and urinals, the statute sets a standard for lavatory faucets and lavatory replacement aerators at no more than 1.5 gallons of water per minute. The standards for other fixtures match the federal standards. Georgia also requires new multiunit residential buildings and new multiunit retail and light industrial buildings to be constructed so as to allow the measurement of water use by each unit.

**Georgia**

(a) On or before July 1, 2012, the department, with the approval of the board, shall amend applicable state minimum standard codes to require the installation of high-efficiency plumbing fixtures in all new construction permitted on or after July 1, 2012.

(b) As used in this Code section, the term:

(1) "Construction" means the erection of a new building or the alteration of an existing building in connection with its repair or renovation or in connection with making an addition to an existing building and shall include the replacement of a malfunctioning, unserviceable, or obsolete faucet, showerhead, toilet, or urinal in an existing building.

....

(c) The standards related to high-efficiency plumbing fixtures shall include without limitation, the following

....

(4) A lavatory faucet or lavatory replacement aerator that allows a flow of no more than 1.5 gallons of water per minute at a pressure of 60 pounds per square inch . . .

<sup>14</sup>

....

(c) All new multiunit residential buildings permitted on or after July 1, 2012, shall be constructed in a manner which will permit the measurement by a county, municipal, or other public water system or by the owner or operator of water use by each unit. This subsection shall not apply to any building constructed or permitted prior to July 1, 2012, which is thereafter: (1) renovated; or (2) following a casualty or condemnation, renovated or rebuilt.

(d) All new multiunit retail and light industrial buildings permitted or with a pending permit application on or after July 1, 2012, shall be constructed in a manner which will permit the measurement by the owner or operator of water use by each unit. This subsection shall not apply to any building constructed or permitted prior to July 1, 2012, which is thereafter: (1) renovated; or (2) following a casualty or condemnation, renovated or rebuilt. This subsection is not intended to apply to newly constructed multiunit office buildings or office components of mixed use developments. Multiunit office buildings and the office component of mixed use developments may seek reimbursement from office tenants for water and waste-water use through an economic allocation which approximates the water use of each tenant based on

<sup>14</sup> GA. CODE ANN. § 8-2-3.

square footage. The retail component of a mixed use development shall be constructed in a manner which will permit the measurement by the owner or operator of water use by each retail unit.<sup>15</sup>

*Question 8: Utility Distribution Water Loss*

Question 8 asks whether the state has regulations or policies regarding water loss from water utility distribution systems. The answer for most states is yes, but information-gathering, reporting, and response requirements, as well as which utilities are covered, varies. Ideally, state law will require leak detection and correction, and will apply to all municipal purveyors. Limited credit was given to states that have a policy in writing but with a weak or vague target or requirement. Partial credit was given to states with a specific target or requirement but only for new permits.

**New Hampshire, New Jersey, and Washington** have very different but strong policies regarding water loss. New Jersey and Washington’s municipal water loss laws apply to all municipal purveyors. New Hampshire and New Jersey require purveyors to implement leak detection. New Hampshire requires water purveyors to repair all leaks within 60 days of being discovered. New Jersey requires purveyors to “proceed expeditiously to correct leakage.” New Hampshire requires purveyors to develop and implement a response plan if lost water exceeds 15 percent of total water. Washington requires something similar of purveyors with 500 or more connections when water loss is greater than 10 percent for the prior three-year average, greater than 20 percent for purveyors with fewer than 500 connections. New Jersey requires the purveyors with the highest proportion of lost water for each purveyor size class to reduce losses to the median percentage for that class within 1 year, or else be subject to a specified compliance schedule.

**New Hampshire**

(g) [New community water systems and large existing ones obtaining a new source of water] shall implement a water audit and leak detection program in accordance with “Manual of Water Supply Practices, Water Audits and Leak Detection” . . .

(h) The water system shall repair all leaks identified by the activities required by (g), above, within 60 days of discovery unless a waiver is obtained . . .

(i) The water system shall estimate the volume and percentage of unaccounted-for water once every year using protocols and procedures described in “Manual of Water Supply Practices, Water Audits and Leak Detection” . . .

(j) The water system shall prepare and submit a response plan to the department within 60 days if the percentage of unaccounted for water in the water system . . . exceeds 15% of the total water introduced to the water system.

(k) The response plan prepared pursuant to (j), above, shall identify how the water system intends to reduce the percentage of unaccounted-for water to below 15% within 2 years, except for leaks that have been identified which must be repaired in accordance with (h), above.

. . . .

(m) The water system shall implement the response plan in accordance with the approved schedule upon receiving approval from the department.<sup>16</sup>

<sup>15</sup> GA. CODE ANN. § 12-5-180.1.

<sup>16</sup> N.H. CODE ADMIN. R. ANN. Env-Wq 2101.04 - .05.

**New Jersey**

(b) For each purveyor size class, the Department shall determine the percentage of purveyors having the highest proportion of unaccounted-for water, and these purveyors will be determined by the Department to be provisionally delinquent. This determination may not include more than 35 percent of the total number of purveyors each year. . . .

(c) Purveyors found provisionally delinquent will be allowed one year in which to take appropriate corrective action . . . an annual review of each provisionally delinquent purveyor will be conducted by the Department.

1. If the review establishes that the percentage of unaccounted-for water has been reduced to the median percentage for purveyors of that class, the provisionally delinquent status of the purveyor will be terminated.
2. If the provisionally delinquent status is reaffirmed and unless the purveyor submits a schedule for corrective action which is approved by the Department, an order will be issued by the Department, requiring the elimination of all undue losses in the system in accordance with a specified compliance schedule.<sup>17</sup>

. . . .

[A]ll public community water systems shall:

1. Proceed expeditiously to correct leakage in the total distribution system, as detected through a systematic program to monitor leakage.<sup>18</sup>

**Washington**

(1)

. . . .

(b) Municipal water suppliers will be considered in compliance with this section if any of the following conditions are satisfied:

- (i) Distribution system leakage calculated in accordance with subsection (2) of this section is ten percent or less for the last three-year average;
- (ii) Distribution system leakage calculated under subsection (3) of this section meets the numerical standards for the approved alternative methodology for the last three-year average;
- (iii) For systems serving less than five hundred total connections, distribution system leakage calculated in accordance with subsection (2) of this section is twenty percent or less for the last three-year average and the steps outlined in subsection (5) of this section are completed; or
- (iv) A water loss control action plan has been developed and implemented under subsection (4) of this section and the system is meeting the implementation schedule.

. . . .

(4) If the average distribution system leakage for the last three years does not meet the standard calculated under subsection (1)(b)(i), (ii), or (iii) of this section, the municipal water supplier shall develop and implement a water loss control action plan . . . .<sup>19</sup>

*Question 9: Conservation and Water Permitting*

Question 9 asks whether the state requires conservation activities as part of its water permitting process. The answer for most states is yes, but linkage to existing plans, the amount and quality of information required, the

<sup>17</sup> N.J. ADMIN. CODE tit. 7, § 19-6.4.

<sup>18</sup> N.J. ADMIN. CODE tit. 7, § 19-6.5(a).

<sup>19</sup> WASH. ADMIN. CODE § 246-290-820.

consideration that must be given by the permitting agency, the authority of the permitting agency to condition a permit, and the types of conditions possible vary. Ideally, a state will require all municipal water permittees to plan for and adopt specific water conservation measures, and condition the permit on implementation of those measures and others that may be necessary in the future. Limited credit was given to states that required nothing more regarding water conservation in the course of the permitting process than the development of a conservation plan. At least partial credit was given to states that have established a process for review of plan implementation, expressly allow water rights to be conditioned or rejected based on water conservation, or require conservation provisions on all water permits or licenses.

**California, Georgia, and Massachusetts** received top points for their robust permitting requirements regarding water conservation. Massachusetts requires water withdrawal applications to include a description of existing and planned water conservation measures and a water conservation program and implementation timetable. Massachusetts also requires the reviewing agency to consider the conservation practices and measures in its decision-making. Georgia requires water withdrawal permitting decisions to be made in accordance with the statewide and regional water management plans. Massachusetts requires all permits to be conditioned on implementation of water conservation measures. California also requires all permits to contain a water conservation condition, but that condition is more extensive, establishing the continuing authority of the permitting agency to impose additional requirements at a later date to eliminate waste of water and avoid unreasonable draft on the source. Massachusetts requires each permit holder to file an annual statement of new conservation measures implemented within the past year and of the savings due to conservation measures.

#### California

In addition to the applicable standard terms which are included in each permit, the following terms shall be included in every water right permit issued by the board, and shall be included in every existing permit as a condition for granting an extension of time to commence or to complete construction work or to apply the water to full beneficial use:

(a) Continuing Authority... The continuing authority of the board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to:

- (1) reusing or reclaiming the water allocated;
- (2) using water reclaimed by another entity instead of all or part of the water allocated;
- . . . .
- (4) suppressing evaporation losses from water surfaces;
- . . . . and
- (6) to installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project.<sup>20</sup>

<sup>20</sup> CAL. CODE REGS. tit. 23, § 780.

**Georgia**

The division shall make all water withdrawal permitting decisions in accordance with this chapter, the comprehensive state-wide water management plan that has been approved or enacted by the General Assembly as provided by this article, and any applicable regional water development and conservation plan, including, but not limited to, restrictions, if any, on diversion from or reduction of flows in other watercourses. Any political subdivision or local water authority that is not in compliance with the plan shall be ineligible for state grants or loans for water projects, except for those projects designed to bring such political subdivision or local water authority into compliance with the plan.<sup>21</sup>

**Massachusetts**

Every registration statement must contain, at a minimum . . . (f) Conservation measures instituted, or to be instituted, by the registrant . . . .<sup>22</sup>

. . . .

Each permit application filing shall include, at a minimum . . . (f) a description of water conservation measures instituted or to be instituted by the applicant, including a schedule for implementation of those measures.<sup>23</sup>

. . . .

Each permit applicant must submit, in accordance with guidelines developed by the Department, a detailed water conservation program and implementation timetable with the permit application.<sup>24</sup>

. . . .

In reviewing a permit application, the Department shall consider at least the following . . . (h) reasonable conservation practices and measures . . . .<sup>25</sup>

. . . .

All permits shall be conditioned on at least the following . . . (e) implementation of water conservation measures . . . .<sup>26</sup>

. . . .

Each permit holder shall file an annual statement of withdrawal which includes at least the following . . . (b) conservation measures instituted in the past 12 months; (c) savings due to conservation measures implemented . . . .<sup>27</sup>

*Question 10: Drought Plans*

Question 10 asks whether water utilities or municipalities are required to plan for drought, and if so, how frequently they need to reexamine their drought plans. Ideally, state law will require water utilities and/or municipalities to prepare drought plans at least every 5 years, and the law will include a robust, detailed framework outlining the required elements of an acceptable drought plan. An independent drought planning process is superior to a requirement that drought plans be submitted with water rights permit applications mainly for 2 reasons: 1) in reviewing a permit application, the state must consider a variety of diverse factors and interests, and therefore may not rigorously evaluate the contents of the drought plan, and 2) a drought plan

<sup>21</sup> GA. CODE ANN. § 12-5-522(e).

<sup>22</sup> MASS. REGS. CODE tit. 310, § 36.06(2).

<sup>23</sup> MASS... REGS. CODE tit. 310, § 36.20(1).

<sup>24</sup> MASS. REGS. CODE tit. 310, § 36.25(1).

<sup>25</sup> MASS. REGS. CODE tit. 310, § 36.26(1).

<sup>26</sup> MASS. REGS. CODE tit. 310, § 36.28(1).

<sup>27</sup> MASS. REGS. CODE tit. 310, § 36.33(1).

connected to the permitting process is likewise connected to the state's permit renewal schedule and enforceability regime.

A number of states require municipalities to prepare "emergency" plans, but do not mention drought specifically in their plan preparation instructions. Because emergency plans are geared towards terrorism, mechanical failures, and storm events, these states received no credit; droughts are distinct from typical public infrastructure emergencies and require the implementation of unique water conservation policies and measures. Another portion of states received limited credit for requirements that water rights permit applicants prepare drought plans, or that drought plans to be prepared but not regularly updated. The states highlighted below: **Arizona** and **Texas**, both received top points for their robust drought plan requirements.

Both Arizona and Texas require water suppliers to develop drought plans, submit the plans to the state for review, and update the plans every 5 years. Arizona's detailed plan requirements are concise but sufficient; the state asks water systems to identify and describe water reduction measures, public education initiatives, alternative water supplies, and demand management strategies. Texas' drought plan requirements are slightly more detailed than Arizona's, but essentially target the same planning elements. Texas additionally requires drought plans to include enforcement procedures, such as fines and service discontinuation, to ensure mandatory water use restrictions are followed. Furthermore, Texas requires drought plans to be consistent with broader regional water plans, thus ensuring a cohesive multi-level water planning process across the state.

#### Arizona

[E]ach community water system shall prepare and submit to the director a system water plan that includes . . . [a] drought preparedness plan.<sup>28</sup>

. . . .

The drought preparedness plan shall be designed to meet the specific needs of the water system for which it applies and shall include:

1. The name, address and telephone number of the community water system and the names of the officers or other persons responsible for directing operations during a water shortage emergency.
2. Drought or emergency response stages providing for the implementation of measures in response to reduction in available water supply due to drought . . . .
3. A plan of action that the community water system will take to respond to drought or water shortage conditions, including:
  - (a) Provisions to actively inform the public of the water supply shortage and a program for continued education and information regarding implementation of the drought preparedness plan.
  - (b) Development of emergency supplies, which may include identification of emergency or redundant facilities to withdraw, divert or transport substitute supplies of the same or other types of water.
  - (c) Specific water supply or water demand management measures for each stage of drought or water shortage conditions, subject to approval by the corporation commission if the community water system is a public service corporation. This requirement may be met by providing a curtailment tariff on file with the corporation commission.<sup>29</sup>

<sup>28</sup> ARIZ. REV. STAT. § 45-342(A)(2).

<sup>29</sup> ARIZ. REV. STAT. § 45-342(I).

....  
[A] large community water system . . . shall submit an updated plan within six months prior to January 1 of every fifth calendar year . . .<sup>30</sup>

**Texas**

(5) Drought contingency plans for retail public water suppliers. Retail public water suppliers shall submit a drought contingency plan meeting [applicable] requirements . . . to the executive director after adoption by its governing body. The retail public water system shall provide a copy of the plan to the regional water planning group for each region within which the water system operates.<sup>31</sup>

....  
(1) Minimum requirements. Drought contingency plans shall include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the Regional Water Planning Groups for the service area of the retail public water supplier to insure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan shall include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) reduction in available water supply up to a repeat of the drought of record;

....

(F) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(G) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(H) The drought contingency plan must include procedures for granting variances to the plan.

(I) The drought contingency plan must include procedures for the

<sup>30</sup> ARIZ. REV. STAT. § 45-342(B).

<sup>31</sup> 30 TEX. ADMIN. CODE § 288.30.

enforcement of any mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and shall incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.<sup>32</sup>

*Question 11: Water Conservation Plans*

Question 11 asks whether the state requires water utilities and/or municipalities to prepare water conservation plans. Unlike drought emergency plans, which only apply during drought emergency events, water conservation plans outline measures that are broadly applicable at all times of operation to promote efficient water use.

States received full credit for requirements that cover a large set of water suppliers outside of the permitting process. Many states have no law regarding water conservation planning. A portion of states only require water conservation planning with permit applications, or for new appropriators. Because conservation planning associated with water rights permitting is examined in question nine, those states received no credit here. Ideally, states should require all suppliers to undertake an independent water conservation planning process separate from permitting. As with drought planning, an independent water conservation planning process is superior.

The states highlighted below: **California, Colorado, Rhode Island, Utah, Washington,** and **Wisconsin**, received top points for their broadly applicable water conservation planning requirements. These states represent a range of ways to describe and require water conservation planning processes. For instance, California requires conservation planning within its mandated urban water management plans. Colorado is representative of how broadly the law can define the scope of entities required to undertake water conservation planning. Rhode Island uniquely employs a “Water Use Efficiency Rule” to establish targets for per capita per day water use, leakage, efficient use, and accurate metering, then lists required and optional methods for reaching those targets, which users must include in their plans. Utah’s law includes a hearty definition of “water conservation plan.” Washington’s definition of a water conservation plan is notable in its specificity; a water plan must include both a resource analysis component and a financial evaluation component, both stretching at least 20 years into the future. Finally, Wisconsin represents how water conservation planning can vary by source; Wisconsin has one generally applicable planning process for public water suppliers, and another planning process only applicable to large withdrawers from the Great Lakes Basin.

**California**

(a) Every urban water supplier shall prepare and adopt an urban water management plan . . . .

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier. . . .<sup>33</sup>

<sup>32</sup> 30 TEX. ADMIN. CODE § 288.20.

**Colorado**

‘Covered entity’ means each municipality, agency, utility, including any privately owned utility, or other publicly owned entity with a legal obligation to supply, distribute, or otherwise provide water at retail to domestic, commercial, industrial, or public facility customers, and that has a total demand for such customers of two thousand acre-feet or more.<sup>34</sup>

Each covered entity shall . . . develop, adopt, make publicly available, and implement a plan pursuant to which such covered entity shall encourage its domestic, commercial, industrial, and public facility customers to use water more efficiently.<sup>35</sup>

**Rhode Island**

Rhode Island’s “Water Use Efficiency Rule” establishes targets for per capita per day water use, leakage, efficient use, and accurate metering.<sup>36</sup>

Suppliers shall prepare a Water Efficiency and Demand Management Strategy (DMS) to achieve targets identified in section 3.0 through the application of required methods in section 4.1 and through the application of selected optional methods listed in section 4.2 and or any other methods as appropriate.<sup>37</sup>

All water suppliers and institutional water suppliers which obtain, transport, purchase, or sell more than 50,000,000 gallons of water per year shall be required to prepare, maintain, and carry out a Water Supply Systems Management Plan (WSSMP) as described by these procedures.<sup>38</sup>

**Utah**

“Water conservation plan” means a written document that contains existing and proposed water conservation measures describing what will be done by retail water providers, water conservancy districts, and the end user of culinary water to help conserve water and limit or reduce its use in the state in terms of per capita consumption so that adequate supplies of water are available for future needs. . . .<sup>39</sup>

[E]ach water conservancy district and each retail water provider shall: prepare and adopt a water conservation plan if one has not already been adopted . . . .<sup>40</sup>

**Washington**

(2) Purveyors . . . shall submit a water system plan for review and approval by the department:  
. . . .

(4) In order to demonstrate system capacity, the water system plan shall address the following elements, as a minimum, for a period of at least twenty years into the future:  
. . . .

<sup>33</sup> CAL. WAT. CODE § 10620(1)(b).

<sup>34</sup> CAL. WAT. CODE § 10620(2)(a).

<sup>35</sup> COLO. REV. STAT. § 37-60-126.

<sup>36</sup> 96-110-008 R.I. CODE R. § 3.0.

<sup>37</sup> 96-110-008 R.I. CODE R. § 5.2.

<sup>38</sup> 96-110-008 R.I. CODE R. § 7.00.

<sup>39</sup> UTAH CODE ANN. § 73-10-32(1)(f)(f).

<sup>40</sup> UTAH CODE ANN. § 73-10-32(3)(a)(i)(A).

(f) Water resource analysis, including:  
 (i) A water use efficiency program  
 . . . .  
 (vii) For systems serving one thousand or more total connections, an evaluation of opportunities for the use of reclaimed water, where they exist  
 . . . .  
 (j) Financial program, including demonstration of financial viability by providing:  
 . . . .  
 (iv) An evaluation that has considered:  
 . . . .  
 (B) The feasibility of adopting and implementing a rate structure that encourages water demand efficiency.<sup>41</sup>

**Wisconsin**

1. The department shall establish, by rule, and administer a continuing water supply planning process for the preparation of water supply plans for persons operating public water supply systems. . . .

2. A person operating a public water supply system that serves a population of 10,000 or more and that withdraws water from the waters of the state shall have an approved plan . . . .<sup>42</sup>

The department shall issue one or more general permits to cover withdrawals from the Great Lakes basin that average 100,000 gallons per day or more in any 30-day period but that do not equal at least 1,000,000 gallons per day for any 30 consecutive days.<sup>43</sup>

All persons identified [as withdrawers from the Great Lakes Basin] . . . shall submit with the application for a new or increased withdrawal, diversion, or water loss approval . . . (1) A water conservation plan . . . .<sup>44</sup>

*Question 12: State Approval of Water Conservation Plans*

Question 12 seeks information about the amount of control the state exercises over local water conservation planning processes. Ideally, a state agency will have the authority to review, and approve or reject water conservation plans independent of a water rights permitting process and against specified criteria. State approval authority helps to ensure that water conservation planning is cohesive across the state, and makes certain that plans meet all legal requirements. An independent approval process outside of permitting is ideal; however, states received additional credit where reviewing the sufficiency of the water conservation plan was a distinct and substantive element of permit application review. Although the question did not seek information on the extent to which entities must involve stakeholders in the planning process, bonus points were awarded for notice and comment procedures, mandatory public hearings, and other measures to promote broad involvement of stakeholders in the plan adoption process. Additionally, extra credit was awarded where the law sets forth specific criteria against which the state must evaluate conservation plans.

The states highlighted here are: **Connecticut, Colorado, Kentucky, and Virginia**. Both Connecticut and Virginia are notable in that they allow interested state agencies and other entities to provide comments on the proposed plans

<sup>41</sup> WASH. ADMIN. CODE § 246-290-100.

<sup>42</sup> WIS. STAT. § 281.348(3)(a).

<sup>43</sup> WIS. STAT. § 281.346(4s)(a).

<sup>44</sup> WIS. ADMIN. CODE NR § 852.04.

before the state decides whether to approve or reject the plan. Additionally, both states list criteria against which plans will be judged. Virginia, in particular, has a detailed checklist for plan approval. Kentucky's regulations focus on whether the plan complies with all applicable laws and regulations, and further, whether the plan is consistent with broader state resource plans. Although Colorado's criteria are not set forth by statute, the law does specifically require the reviewing state entity to draft guidelines and methods for the review of water conservation plans. Finally, Virginia law contains robust notice and comment requirements allowing all interested persons to comment on approval of proposed plans.

### Connecticut

(1) The Department of Environmental Protection and the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, shall have ninety (90) days upon notice that a plan is deemed complete to comment on the plan. In the event that either the Department of Environmental Protection or the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, fails to provide written comments within ninety (90) days, the Department of Public Health shall notify, in writing, both departments of such failure, and in sixty (60) days from issuance of such notice, the Department of Public Health shall make a determination on approval, modification, or rejection of the plan using all available information. If within sixty (60) days following the issuance of such notice, the Department of Public Utility Control or the Department of Environmental Protection provides written comments on such plan, the Department of Public Health shall approve or reject such plan as appropriate based on such comments. If within sixty (60) days of the issuance of the above notice, the Department of Public Utility Control or the Department of Environmental Protection fails to provide written comments on such plan, such department shall upon expiration of such sixty (60) day period issue a letter concurring with such plan and the Department of Public Health shall approve or reject such plan as the Department of Public Health deems appropriate. Notwithstanding the above, the Department of Public Health may reject any plan deemed acceptable to the Department of Public Utility Control and the Department of Environmental Protection.

(2) The department in making a decision to approve, modify or reject a plan shall consider the following:

- (A) the ability of the company to provide a pure, adequate and reliable water supply for present and projected future customers;
- (B) adequate provision for the protection of the quality of future and existing sources;
- (C) comments from state agencies; and
- (D) consistency with state regulations and statutes.

(3) Within sixty days after the Department of Environmental Protection and the Department of Public Utility Control, in the case of a water company regulated by that agency, have commented to the department regarding whether a plan should be approved, or in no case more than one hundred and fifty days after written notice that the plan has been deemed complete, the commissioner shall advise the water company whether the plan is rejected, approved or approved with conditions.

(4) If the commissioner fails to approve or reject the plan within the timeframes required . . . the plan shall be deemed approved as submitted.

(5) If the commissioner rejects the plan, he shall advise the water company in writing that the plan is being rejected and the reason the plan cannot be approved as submitted.<sup>45</sup>

<sup>45</sup> CONN. AGENCIES REGS. § 25-32d-5(c).

**Colorado**

The board shall adopt guidelines for the office to review water conservation plans submitted by covered entities and other state or local governmental entities. The guidelines shall define . . . the methods for office review and approval of the plans . . . .<sup>46</sup>

**Kentucky**

The planning council shall submit one (1) copy of the plan formulation document and three (3) copies of the final plan document to the [Energy & Environment] cabinet.

(a) No plan shall be approved by the cabinet unless it meets all the provisions of this administrative regulation and is consistent with state laws and administrative regulations.

(b) The cabinet shall examine the plan for consistency with other water supply plans that have been approved by the cabinet pursuant to this administrative regulation. . .

. . . If any portion of any county in a planning unit is located within the watershed of the Kentucky River, the cabinet shall examine the plan for consistency with administrative regulations promulgated by the Kentucky River Authority and with the Kentucky River Authority's water resource plan and notify the planning council and the Kentucky River Authority of inconsistencies.<sup>47</sup>

**Virginia**

A. The [State Water Control] board shall review all programs to determine compliance with this regulation and consistency with the State Water Resources Plan. The board will review adopted elements of a local program according to review policies adopted by the board. Copies of the adopted local program documents and subsequent changes thereto shall be provided to the board.

B. To assist in the review of the program, the board shall provide the Department of Health and other agencies listed in 9 VAC 25-780-150 B along with any other agency the board deems appropriate, 90 days to evaluate the program. . . .

C. The board will assess the compliance of submitted programs with these regulations. The board shall prepare a tentative statement of findings on whether the program has demonstrated compliance with the following:

1. All elements of a local program identified in 9 VAC 25-780-50 have been submitted;
2. The program was developed through a planning process consistent with this chapter;
3. The results of any evaluation conducted pursuant to subsection G of this section have been appropriately accommodated;
4. The existing sources information complies with 9 VAC 25-780-70;
5. The existing water use information complies with 9 VAC 25-780-80;
6. The existing resources information complies with 9 VAC 25-780-90;
7. The projected water demand is based on an accepted methodology and complies with 9 VAC 25-780-100;
8. The water demand management information complies with 9 VAC 25-780-110;
9. The drought response and contingency plan complies with 9 VAC 25-780-120;
10. The statement of need complies with 9 VAC 25-780-130 A;
11. When required, the alternatives comply with 9 VAC 25-780-130;
12. The local program is consistent with 9 VAC 25-390-20, § 62.1-11 of the Code of

<sup>46</sup> COLO. REV. STAT. § 37-60-126(7)(a).

<sup>47</sup> 401 KY. ADMIN. REGS. 4:220 § 7(4).

Virginia and Chapter 3.2 (§ 62.1-44.36 et seq.) of Title 62.1 of the Code of Virginia.

D. If the board's tentative decision is to find the local program in compliance with subsection C of this section, the board shall provide public notice of its findings pursuant to 9 VAC 25-780-150.

E. If the tentative decision of the board is to find the local program in noncompliance with subsection C of this section, the board shall identify (i) the reason for the finding of noncompliance, (ii) what is required for compliance, and (iii) the right to an informational proceeding under Article 3 (§ 2.2-4018 et seq.) of Chapter 40 of the Virginia Administrative Process Act.

F. The board shall make a final decision on whether the local program is in compliance with this chapter after completing review of the submitted program, any agency comments received, and any public comment received from a public meeting held pursuant to 9 VAC 25-780-160.

G. In conjunction with the compliance determination made by the board, the state will develop additional information and conduct additional evaluation of local or regional alternatives in order to facilitate continuous planning. This additional information shall be included in the State Water Resources Plan and used by localities in their program planning. This information shall include:

1. A cumulative demand analysis, based upon information contained in the State Water Resources Plan and other sources;
2. The evaluation of alternatives prepared pursuant to 9 VAC 25-780-130 B and C;
3. The evaluation of potential use conflicts among projected water demand and estimates of requirements for in-stream flow; and
4. An evaluation of the relationship between the local plan and the State Water Resources Plan.

H. The board may facilitate information sharing and discussion among localities when potential conflicts arise with regard to demands upon a source.

I. A local program's information shall be included in the State Water Resource Plan when determined to be in compliance by the board.<sup>48</sup>

... .

A. The board shall give public notice on the department website for every tentative and final decision to determine local program compliance.

B. The board shall give public notice to the Department of Health, the Department of Conservation and Recreation, the Marine Resources Commission, the Department of Historic Resources, and the Department of Game and Inland Fisheries for every tentative and final decision on program compliance. The agencies shall have 90 days to submit written comment. At the request of the applicant, the board will convene a technical evaluation committee meeting to facilitate receipt of these comments.

C. The board shall provide a comment period of at least 30 days following the date of the public notice for interested persons to submit written comments on the tentative or final decision. All written comments submitted during the comment period shall be retained by the board and considered during its final decision.

D. Commenters may request a public meeting when submitting comments. In order for the board to grant a public meeting, there must be a substantial public interest and a factual basis upon which the commenter believes that the proposed program might be contrary to the purposes stated in 9 VAC 25-780-20. . . .<sup>49</sup>

<sup>48</sup> 9 VA. ADMIN. CODE § 25-780-140.

<sup>49</sup> 9 VA. ADMIN. CODE § 25-780-150.

### Question 13: Updating Water Conservation Plans

A water conservation plan is most useful if it is relevant and updated. Accordingly, Question 13 asks how often water conservation plans must be updated or resubmitted to the state. States received limited credit where updates are required on an eleven- to twenty-four-year schedule, middling credit for a 7- to 10-year schedule, and top credit for a 1- to 6-year schedule.

Although almost a dozen states received top credit, the update requirements of **Massachusetts**, **South Carolina**, and **Texas** are notable. Although conservation plan approval is connected to permit application approval in Massachusetts, Massachusetts' regulations require permit holders to renew their permit every 5 years. Additionally, regulations explicitly authorize the reviewing state agency to modify permit conditions and terms based on the updated information submitted by the applicant. In South Carolina, conservation plans are also linked to the permitting process. Interestingly, South Carolina allows the state permitting agency to issue permits for a period even less than 5 years, should the agency find a shorter period necessary to conserve water resources. Finally, in Texas, water conservation plan updates are required every 5 years to coincide with regional water planning efforts. Importantly, implementation reports must accompany any revised water conservation plans that are submitted to the State of Texas for review.

#### Massachusetts

Each holder of a permit which has a term greater than five years shall file every five years for a review of the permit on a form provided by the Department at least 60 days prior to the fifth anniversary of the original permit application date. The permit holder shall submit at the time of service any additional information requested by the Department. . . . The Department will review for adequacy and compliance all permit conditions and provisions, additional information submitted by the applicant, and any available safe yield information. The Department may modify permit conditions or provisions accordingly.<sup>50</sup>

#### South Carolina

No permit shall be issued for a period longer than the following:

- a. Five (5) years; [or]
- b. The period found by the Department necessary to conserve and protect the resource, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources . . . .<sup>51</sup>

#### Texas

[T]he next revision of the water conservation plan for municipal, industrial, and other non-irrigation uses must be submitted . . . every five years . . . to coincide with the regional water planning group. Any revised plans must be submitted to the executive director within 90 days of adoption. The revised plans must include implementation reports.<sup>52</sup>

<sup>50</sup> 310 MASS. CODE REGS. 36.33(4).

<sup>51</sup> S.C. CODE ANN. REGS. 61-113(H)(1).

<sup>52</sup> 30 TEX. ADMIN. CODE § 288.30.

*Question 14: Required Elements of Water Conservation Plans*

Question 14 seeks information regarding the required elements of a water conservation plan. Although process is important to the effectiveness of plans in promoting water efficiency, the substance of the plan itself is really the heart of a water conservation planning process. Robust frameworks listing required plan elements drive comprehensive, detailed, and thoughtful conservation planning processes. Although agency guidelines are helpful tools for conservation planners, states that only use unenforceable or optional guidelines to steer conservation planning processes received no or limited credit. Middling credit was awarded for mandatory frameworks even if the frameworks lacked detail. Top credit went to states with especially detailed frameworks of requirements.

States receiving top credit under Question 14 include: **California** and **Texas**. Both states have laws outlining in detail the elements that must be incorporated into water conservation plans. For example, in California, conservation plans must include: specified water demand management measures, estimated water savings, the feasibility of using recycled water, and the effects of water quality on water availability. Additionally, California plans must include cost-benefit analyses, public health and social impact analyses, implementation schedules, and identification of available implementation funds. Texas has an equally robust framework of what must be included in water conservation plans, including: water conservation goal-setting, metering programs, rate restructuring, and leak detection programs. Additionally, Texas has a supplemental list of plan elements that may be required at the discretion of the reviewing entity, including: water reuse, adoption of plumbing ordinances, landscape water management, and monitoring programs.

**California**

A plan shall be adopted in accordance with this chapter that shall do all of the following:  
 . . . . .  
 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:  
     (1) A description of each water demand management measure that is currently being implemented, or scheduled or implementation, including the steps necessary to implement any proposed measure, including, but not limited to, all of the following:  
         (A) Water survey programs for single-family residential and multifamily residential customers.  
         (B) Residential plumbing retrofit.  
         (C) System water audits, leak detection, and repair.  
         (D) Metering with commodity rates for all new connections and retrofit of existing connections.  
         (E) Large landscape conservation programs and incentives.  
         (F) High-efficiency washing machine rebate programs.  
         (G) Public information programs.  
         (H) School education programs.  
         (I) Conservation programs for commercial, industrial, and institutional accounts.  
         (J) Wholesale agency programs.  
         (K) Conservation pricing.  
         (L) Water conservation coordinator.  
         (M) Water waste prohibition.  
         (N) Residential ultra-low-flush toilet replacement programs.<sup>53</sup>  
     (2) A schedule of implementation for all water demand management measures

<sup>53</sup> CAL. WAT. CODE § 10631.

proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

- (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
- (2) Include a cost-benefit analysis, identifying total benefits and total costs.
- (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
- (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use . . . . The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Describe the opportunities for development of desalinated water . . . .

. . . .

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source . . . .<sup>54</sup>

. . . .

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier . . . and the manner in which water quality affects water management strategies and supply reliability.<sup>55</sup>

**Texas**

(1) Minimum requirements. All water conservation plans for municipal uses by public drinking water suppliers shall include the following elements:

- (A) a utility profile including, but not limited to, information regarding population and customer data, water use data, water supply system data, and wastewater system data;
- (B) specification of conservation goals including, but not limited to, municipal per capita water use goals, the basis for the development of such goals, and a time frame for achieving the specified goals;
- (C) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;
- (D) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;
- (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

<sup>54</sup> CAL. WAT. CODE § 10633.

<sup>55</sup> CAL. WAT. CODE § 10634.

- water system to determine illegal connections, abandoned services, etc.);
- (F) a program of continuing public education and information regarding water conservation;
- (G) a water rate structure which is not “promotional,” i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;
- (H) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies; and
- (I) a means of implementation and enforcement . . . .
- (J) documentation of coordination with the Regional Water Planning Groups for the service area of the public water supplier in order to insure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan shall include the following elements:

- (A) 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;
- (B) a record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes:
  - (i) residential;
  - (ii) commercial;
  - (iii) public and institutional; and
  - (iv) industrial; and
- (C) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter; if the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

- (A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
- (B) adoption of ordinances, plumbing codes, and/or rules requiring water-conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;
- (C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;
- (D) reuse and/or recycling of wastewater and/or greywater;
- (E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;
- (F) a program and/or ordinance(s) for landscape water management;

(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and  
 (H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.<sup>56</sup>

### *Question 15: Implementation of Water Conservation Plans*

A water conservation planning process is essentially worthless if the utility or municipality is not legally required to implement the plan once the plan has been developed. Question 15 evaluates the extent to which state law facilitates plan implementation and also the extent to which plan implementation is enforceable by the state. For example, legal enforcement incentives to implement the plan can include monetary penalties or water rights permit revocation if the plan is not implemented. Provisions facilitating implementation, for example, can include requirements to submit reports and implementation schedules, or requirements to identify the legal and financial mechanisms necessary for plan implementation.

States received minimal credit if the law included some language facilitating implementation, such as language that the planning entity “shall implement the plan.” States received middling credit where implementation of the conservation plan is incorporated as a condition to a water rights allocation permit. States received top credit where the law contained a combination of enforcement provisions and requirements to facilitate implementation.

States with stand-out implementation measures include: **California, New Hampshire, Oregon, and Texas.** California requires conservation plans to include a schedule for implementation and requires that plans be implemented according to that schedule. Additionally, state water management grants and loans are conditioned upon implementation of the water demand management measures identified in the plan. In New Hampshire, compliance with implementation requirements is determined through a field inspection and submission of a report evidencing implementation. If the user is not implementing the required water conservation measures, the state can revoke the associated water rights allocation permit. In Oregon, where a water conservation plan is required, the planning entity must submit periodic progress reports discussing progress towards achieving 5-year water conservation benchmarks. Progress reports are then submitted for public notice and comment. If the State of Oregon determines a supplier is not implementing a required plan, the state may initiate its own water regulation, rescind approval of the conservation plan, and, in some cases, revoke a water rights permit or assess a civil penalty. Texas requires conservation plans to include a copy of the legal authorities (e.g., ordinance, resolution, tariff, etc.) under which the water supplier will implement and enforce its conservation plan. If a water supplier is not following the minimum plan requirements or submitting annual reports, the reviewing state entity is authorized to take enforcement actions against the supplier.

#### **California**

The plan must include "A schedule of implementation for all water demand management measure proposed or described in the plan."<sup>57</sup>

An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.<sup>58</sup>

<sup>56</sup> 30 TEX. ADMIN. CODE § 288.2(a).

<sup>57</sup> CAL. WAT. CODE § 10631(f)(2).

<sup>58</sup> CAL. WAT. CODE § 10643.

....

(1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures . . . .

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation.

**New Hampshire**

A water user shall submit a report that demonstrates [implementation].<sup>59</sup>

....

- (a) The department shall issue or deny approval to operate a new source of water . . . within 45 days of receipt of the report . . . .
- (b) The department shall conduct a site visit within 30 days of receipt of the report prepared in accordance with Env-Wq 2101.10 in order to:
  - (1) Review the report with the water user; and
  - (2) Assess the accuracy of the processes described in the report.
- (c) The department shall issue approval to operate a new source when:
  - (1) The information in the report produced in accordance with Env-Wq 2101.10 is complete and correct;
  - (2) The information in the report produced in accordance with Env-Wq 2101.10 demonstrates that the water conservation measures . . . are being or will be implemented in accordance with the timeframes specified therein; . . . .
- (d) The department shall deny approval if:
  - (1) The report submitted pursuant to Env-Wq 2101.10 does not show compliance with the requirements . . . .<sup>60</sup>

....

If, after the issuance of an approval, the department receives information that indicates that the information upon which the approval was based was not true and complete or was misleading or that the water user is not complying with applicable requirements of Env-Wq 2101, the department shall notify the water user of the date, time and place of a hearing at which the water user shall be given an opportunity to show cause why the approval should not be revoked . . . .<sup>61</sup>

**Oregon**

- (1) Each municipal water supplier required to submit a water management and conservation plan shall exercise diligence in implementing the approved plan and shall update and resubmit a plan consistent with the requirements of these rules as prescribed during plan approval.
- ....
- (3) Progress reports submitted by municipal water suppliers will be used in determining whether five-year benchmarks are being met, whether the Department will authorize additional diversion of water under extended permits, and/or if schedule changes proposed in updated plans are reasonable and appropriate.
- (4) Progress reports submitted by municipal water suppliers shall include:
  - (a) A list of the benchmarks established under OAR 690-086-0150 and a

<sup>59</sup> N.H. CODE R. ENV-WQ 2101.10.

<sup>60</sup> N.H. CODE R. ENV-WQ 2101.12.

<sup>61</sup> N.H. CODE R. ENV-WQ 2101.14(b).

description of the progress of the municipal water supplier in implementing the associated conservation or other measure;

....

(c) A description of the results of the annual water audit required under OAR 690-086-0150(4)(a); and

(d) A comparison of quantities of water used in each sector as identified and described in OAR 690-086-0140(6) with the quantities of water used in each sector for the previous five years.

(5) Upon receipt of a progress report the Department shall give public notice in the weekly notice published by the Department and provide an opportunity for written public comment.<sup>62</sup>

....

If the Director determines that a water supplier . . . has failed to satisfactorily implement an approved water management and conservation plan, the Director may proceed with one or more of the following actions:

- (1) Provide an additional, specified amount of time for remedy;
- (2) Initiate an evaluation of the supplier's water management practices and facilities to determine if the use of water is wasteful;
- (3) Initiate regulation of water use under OAR 690-250-0050 to eliminate waste;
- (4) Rescind a previous approval of a water management and conservation plan; and
- (5) If the submittal of the water management and conservation plan is required under a condition of a permit or an extension approved under OAR chapter 690, division 315 or 320, assess a civil penalty under OAR 690-260-0005 to 690-260-0110 or cancel the permit.<sup>63</sup>

**Texas**

All water conservation plans for municipal uses by public drinking water suppliers shall include the following elements:

....

(I) a means of implementation and enforcement which shall be evidenced by:

- (i) a copy of the ordinance, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and
- (ii) a description of the authority by which the water supplier will implement and enforce the conservation plan.<sup>64</sup>

....

The Texas Water Development Board shall notify the commission if the Texas Water Development Board determines that an entity has not complied with the Texas Water Development Board rules relating to the minimum requirements for water conservation plans or submission of plans or annual reports. The commission shall take appropriate enforcement action upon receipt of notice from the Texas Water Development Board.<sup>65</sup>

*Question 16: Funding*

Each state received 1 point for this question for the ability to fund water efficiency and conservation programs through the CWSRF and DWSRF programs. An additional point was awarded if the state demonstrated funding opportunities beyond the drinking water and clean water state revolving fund programs. Maximum credit was

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<sup>62</sup> OR. ADMIN. R. 690-086-0120.  
<sup>63</sup> OR. ADMIN. R. 690-086-0920.  
<sup>64</sup> 30 TEX. ADMIN. CODE § 288.2(1).  
<sup>65</sup> 30 TEX. ADMIN. CODE § 288.30(10)(D).

given to 22 states for question 16. Strong examples include Colorado's Water Efficiency Grant Program and Oregon's Water Conservation, Re-use and Storage Grant Program.<sup>66 67</sup> **North Carolina** has a unique approach that is highlighted below. Local governments and large community water systems must meet water efficiency and conservation requirements to be eligible for state funding to expand delivery or treatment capacity.

#### North Carolina

(b) To be eligible for State water infrastructure funds from the Drinking Water State Revolving Fund or the Drinking Water Reserve or any other grant or loan of funds allocated by the General Assembly whether the allocation of funds is to a State agency or to a nonprofit organization for the purpose of extending waterlines or expanding water treatment capacity, a local government or large community water system must demonstrate that the system:

- (1) Has established a water rate structure that is adequate to pay the cost of maintaining, repairing, and operating the system, including reserves for payment of principal and interest on indebtedness incurred for maintenance or improvement of the water system during periods of normal use and periods of reduced water use due to implementation of water conservation measures. The funding agency shall apply guidelines developed by the State Water Infrastructure Commission in determining the adequacy of the water rate structure to support operation and maintenance of the system.
- (2) Has implemented a leak detection and repair program.
- (3) Has an approved water supply plan pursuant to G.S. 143-355.
- (4) Meters all water use except for water use that is impractical to meter, including, but not limited to, use of water for firefighting and to flush waterlines.
- (5) Does not use a rate structure that gives residential water customers a lower per-unit water rate as water use increases.
- (6) Has evaluated the extent to which the future water needs of the water system can be met by reclaimed water.
- (7) Has implemented a consumer education program that emphasizes the importance of water conservation and that includes information on measures that residential customers may implement to reduce water consumption. (2008-143, s. 9; 2010-142, s. 13; 2010-180, s. 16; 2011-374, s. 3.2.)<sup>68</sup>

### *Question 17: Technical Assistance*

States could earn two points for this question depending on the extent of technical assistance available. States with initiatives such as online resources were awarded 1 point, and states that offer direct technical assistance via staff resources were awarded 2 points. Arizona, California, Colorado, Florida, Minnesota, New Mexico, North Carolina, South Dakota, Texas, Utah, Virginia, Washington, and Wisconsin all earned maximum credit for question 17.

### *Question 18: Volumetric Billing*

Question 18 asks whether the state requires volumetric billing. Few states do. While good policy, metering requirements alone did not receive credit for this question because they do not take that final step of defining billing policy. Likewise, nonbinding encouragement in law for volumetric billing did not receive credit. Ideally, state

<sup>66</sup> Colorado Water Efficiency Grant Program: [cwcb.state.co.us/LoansGrants/water-efficiency-grants/Pages/main.aspx](http://cwcb.state.co.us/LoansGrants/water-efficiency-grants/Pages/main.aspx)

<sup>67</sup> Oregon Water Conservation, Re-use and Storage Grant Program: [http://www.wrd.state.or.us/OWRD/LAW/conservation\\_supply.shtm](http://www.wrd.state.or.us/OWRD/LAW/conservation_supply.shtm)

<sup>68</sup> NC General Statute §143-355.4. Water system efficiency.

law requires not only volumetric billing but a rate structure explicitly designed to encourage water conservation, as **Minnesota** and **New Jersey** law do.

New Jersey requires all public community water systems to establish water rate structures with water conservation incentives, unless the system has fewer than 500 connections and demonstrates that metering is not practical but annual average daily water use does not exceed 75 gallons per person per day. Minnesota requires all public water suppliers serving more than 1,000 people to implement demand reduction measures, which must include a conservation rate structure, or a uniform rate structure with a conservation program.

#### Minnesota

(a) For the purposes of this section, "demand reduction measures" means measures that reduce water demand, water losses, peak water demands, and nonessential water uses. Demand reduction measures must include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. A "conservation rate structure" means a rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user.

(b) To encourage conservation, a public water supplier serving more than 1,000 people must implement demand reduction measures by January 1, 2015.<sup>69</sup>

#### New Jersey

Unless more stringent water conservation measures are required by the Department, all public community water systems shall... 4. File water rate structures which provide incentives for water conservation with the Department and the Board of Public Utilities, as appropriate; and 5. Require installation of water meters for all service connections. This shall not apply to fire emergency uses. Water systems with fewer than 500 service connections or systems where it is demonstrated to the satisfaction of the Department that metering is not practical may be exempted from metering if it is shown that the annual average daily water use by the system does not exceed 75 gallons per person per day.<sup>70</sup>

### Question 19: Metered Connections

Many states provided an answer for question 19 that exceeded 90 percent. However, not one state was able to support its estimate with a citable reference. Because of this lack of adequate documentation, the project team decided to discard this question and not report any of the responses. No states were scored on this item. While this question failed to yield useable results, it highlighted the lack of documentation and reporting among states in regard to the number or percentage of metered connections.

States could create valuable information by requiring uniform metering and consistent reporting of the number of metered connections. Currently there are no examples to share.

<sup>69</sup> MINN. STAT. § 103G.291(4).

<sup>70</sup> N.J. ADMIN. CODE tit. 7, § 19-6.5(a).

### Question 20: Microclimate Information

States could earn 2 points for question 20. Some states have climatic data that can be utilized to reduce urban landscape water use, but that information is not directly intended for, or targeted to, urban water customers. States with evapotranspiration data not directly targeted to urban water users earned 1 point. If a state demonstrated a resource designed specifically for urban irrigation, 2 points were awarded. Only 8 states answered “yes” to question 20, and 4 were awarded maximum credit.

New Mexico’s Landscape Irrigation “Smart” Calculator is a great example of an initiative that targets and empowers urban water customers to increase landscape water use efficiency.<sup>71</sup>

## C. Great Lakes States

When evaluating state level water efficiency and conservation laws and policies, the Great Lakes States fall into a class of their own. The Great Lakes-St. Lawrence River Water Resources Compact was signed into federal law on October 3, 2008 and took effect December 8, 2008. The Compact contains water efficiency and conservation provisions applicable to the states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. Section 4.2 of the Compact, “Water Conservation and Efficiency Programs,” sets forth planning, implementation, and reporting requirements related to water conservation.

### Interstate Compact Regarding Water Resources in the Great Lakes-St. Lawrence River Basin

1. The Council commits to identify, in cooperation with the Provinces, Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency program. These objectives are based on the goals of:
  - a. Ensuring improvement of the Waters and Water Dependent Natural Resources;
  - b. Protecting and restoring the hydrologic and ecosystem integrity of the Basin;
  - c. Retaining the quantity of surface water and groundwater in the Basin;
  - d. Ensuring sustainable use of Waters of the Basin; and,
  - e. Promoting the efficiency of use and reducing losses and waste of Water.
  
2. Within two years of the effective date of this Compact, each Party shall develop its own Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and shall develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party’s goals and objectives. Each Party shall annually assess its programs in meeting the Party’s goals and objectives, report to the Council and the Regional Body and make this annual assessment available to the public.
  
3. Beginning five years after the effective date of this Compact, and every five years thereafter, the council, in cooperation with the Provinces, shall review and modify as appropriate the Basinwide objectives, and the Parties shall have regard for any such modifications in implementing their programs. This assessment will be based on examining new technologies, new patterns of Water use, new resource demands and threats, and Cumulative Impact assessment under Section 4.15.

<sup>71</sup> New Mexico Landscape Irrigation “Smart” Calculator: <http://wuc.ose.state.nm.us/irrcalc/>

4. Within two years of the effective date of this Compact, the Parties commit to promote Environmentally Sound and Economically Feasible Water Conservation Measures such as:

- a. Measures that promote efficient use of Water;
- b. Identification and sharing of best management practices and state of the art conservation and efficiency technologies;
- c. Application of sound planning principles;
- d. Demand-side and supply-side Measures or incentives; and,
- e. Development, transfer and application of science and research.

5. Each Party shall implement in accordance with paragraph 2 above a voluntary or mandatory Water conservation program for all, including existing, Basin Water users. Conservation programs need to adjust to new demands and the potential impacts of cumulative effects and climate.<sup>72</sup>

Scoring the 8 Great Lakes States was not as straight forward as scoring the other 42 states. Some policies in these states only apply to withdrawals from a Great Lakes body of water. Illinois is a prime example, as its water loss policy only applies to the portion of the state in the Great Lakes Basin. Therefore, Illinois was only given partial credit for this otherwise strong water loss requirement. Summary results of the Great Lakes States are included in the following table. The Provinces of Ontario and Québec are included as well, but the reader should note that the Canadian Provinces were not scored or assigned a grade. Complete Canadian provincial survey responses will be uploaded to the AWE Resource Library.

**Table 6** shows a range of grades from D to B- and a point total range of 3 to 15.5 based on the survey results. All of these states have committed to water efficiency and conservation per the Great Lakes-St. Lawrence River Water Resources Compact. While the analysis presented in this report assesses state level water efficiency and conservation activity, it does not directly measure state compliance within the provisions of the Great Lakes Compact. The Great Lakes-St. Lawrence River Basin Water Resources Council (Compact Council) website houses a variety of resources, including program reports by state.<sup>73</sup>

<sup>72</sup> Pub. L. No. 110-342, 122 Stat. 3749 § 4.2 (2008).

<sup>73</sup> The Great Lakes-St. Lawrence River Basin Water Resources Council Website - <http://www.glscompactcouncil.org/Resolutions.aspx#ProgramReports>

**Table 6 – Summary of Great Lake States and Provinces Survey Responses**

	IL	IN	MI	MN	NY	OH	PA	WI		ON	QC
2. Water consumption regulation for toilets?	No	No	No	No	No	No	No	No		N/A	N/A
3. Water consumption regulation for showerheads?	No	No	No	No	No	No	No	No		N/A	N/A
4. Water consumption regulation for urinals?	No	No	No	No	No	No	No	No		N/A	N/A
5. Water consumption regulation for clothes washers?	No	No	No	No	No	No	No	No		No	No
6. Water consumption regulation for pre-rinse spray valves?	No	No	No	No	No	No	No	No		No	No
7. Mandatory building or plumbing codes?	No	No	No	No	No	No	No	No		No	Pending
8. Water loss regulation or policy?	Yes	Yes	No	Yes	Yes	No	No	Yes		No	Yes
9. Conservation activities as part of water permitting process?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes		No	No
10. Drought emergency plans required?	No	Yes	No	No	No	No	No	No		No	No
11. Conservation planning required separate from drought plans?	No	Yes	No	Yes	Yes	No	No	Yes		Pending	Yes
12. Authority to approve or reject conservation plans?	No	Yes	No	Yes	Yes	No	No	Yes		Yes	Yes
13. How often are plans required?	N/A	50 Years	N/A	10 Years	10 years	N/A	N/A	20 Years		Undetermined	Annually
14. Planning framework or methodology?	No	No	No	No	Yes	No	No	Yes		N/A	Yes
15. Implementation of conservation measures required?	No	No	No	Yes	Yes	No	No	Yes		Pending	Yes
16. State funding for urban water conservation programs?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
17. Technical assistance for urban water conservation programs?	No	No	No	Yes	Yes	Yes	Yes	Yes		Yes	Yes
18. Does the state require volumetric billing?	No	No	No	Yes	No	No	No	Yes		No	No
19. Percent of publicly supplied connections that are metered?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A
20. ET microclimate information for urban landscapes?	No	No	No	No	No	No	No	No		No	No
Points Scored	5	6	3	14.5	11	3.5	3	15.5		N/A	N/A
<b>Grade</b>	<b>C-</b>	<b>C-</b>	<b>D</b>	<b>C+</b>	<b>C</b>	<b>D</b>	<b>D</b>	<b>B-</b>		<b>N/A</b>	<b>N/A</b>

\*Question #1 intentionally omitted from table. Each state earned one point for answering.

## D. Project Challenges

The project team encountered a myriad of challenges throughout the course of this research. Those challenges were related to the survey instrument, data collection, survey review, and scoring. The information produced from this project will become outdated in a short time and regular updates will be required. Minnesota's April 2, 2012 amendment of its law that required water conservation rate structures is a great example of how quickly things can change.<sup>74</sup> Project challenges are discussed so future efforts may be conducted more efficiently and effectively.

Designing the survey instrument itself was a complex task requiring stakeholder involvement and approval. It is difficult to include all topic areas surrounding water efficiency and conservation in a survey that is sized appropriately. A small survey will not capture enough data and a large survey will likely have a very low response rate. Further, some of the questions created complications, which was not revealed until several surveys had been completed and reviewed. This is detailed below.

Question 7 invites potential overlap for the scoring in questions 2-6. Georgia's requirement for toilets and urinals is the only real example. Georgia answered "yes" to question 4 and the answer pertained to a requirement for urinals that are more efficient than the national standard, but only for new construction. Georgia's "yes" response in question 2 includes point-of-sale as well as new construction. In question 7, a very large part of Georgia's "yes" answer includes the requirements for toilets and urinals in new construction. There are additional requirements for bathroom and kitchen faucets in new construction, and an additional code that requires sub-metering in newly constructed multifamily housing after July 1, 2012. Because of the requirements beyond toilets and urinals the supporting "yes" answer for Georgia in question 7, it was awarded 1 point.

Question 9 asks if any conservation activities are required in connection with water rights permitting processes. The most commonly reported requirement was a conservation plan. Question 11 asks directly about the requirement of conservation plans. Because the same plan requirement was often reported by states as an answer to both questions 9 and 11, there is potential for confusion when reviewing the survey answers and scorecards. Further adding to the complexity is the heterogeneity of conservation plan requirements among states. Some states require conservation plans only in association with the permitting process (e.g., Massachusetts), while others require conservation plans outside of the permitting process (e.g., Colorado), and still other states have requirements both within permitting and outside of permitting (e.g., California).

Questions 12-15 relate to conservation plans, but the answers to these questions can be based on a "yes" answer for questions 9 or 11. Question 15 in particular can be a source of double-counting if a state was awarded multiple points in question 9. Future project updates should include adjustments to the survey instrument for these questions and improve overall specificity. The current order and wording of the questions can produce challenges for the individuals filling out the survey and add complexity to interpreting the results.

A project like this is inherently challenging due to the large amount of information that must be gathered from 50 different states. The 20-question survey applied to 50 states created 1,000 text-based data points. The project relied on assistance from state personnel and connecting with the appropriate people was often difficult. Making contact with the appropriate people did not guarantee they had the time or inclination to provide assistance. Moreover, the survey responses had to be thoroughly reviewed and typically expanded upon for the purposes of

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<sup>74</sup>Representative O'Driscoll and Senator Pederson Announce Passage of Bill to Modify Mandatory Tiered Water Pricing for Cities - [http://www.senate.mn/members/member\\_pr\\_display.php?ls=&id=4420](http://www.senate.mn/members/member_pr_display.php?ls=&id=4420)

this study. The review required the project team to retrieve and analyze legal citations, which was a very time-consuming process.

Scoring the survey responses was a new concept for the 2011 project effort. The responses were not numerical and thus hard to quantify. At their root, the answers were “yes” and “no,” which can be thought of as 1 and 0 respectively. But complications arose due to immense variation in the details of the “yes” answers. Not all “yes” answers were simply a “1.” Scoring tiers were employed to manage this variability in the scoring process. The drawback of scoring tiers based on variability is that it may add a large number of points, and thus weight, to a policy that may lack importance in terms of water savings. However, estimating the savings impact of various laws and policies would be a large research undertaking in its own right. The project team made every effort to create a fair and consistent scoring methodology.

Funding was also a challenge. The Turner Foundation provided partial funding for this project, for which AWE is grateful. Unfortunately, AWE was unable to secure any additional financial support. When finished, the project will have required a substantial amount of money beyond what was procured.

#### Recommendations for future updates:

1. Involve a project advisory committee comprised of state representatives for guidance. They were very helpful and provided a tremendously important perspective.
2. Update the survey instrument to be more specific and directive. Address issues mentioned above and ask specifically for legal citations (or appropriate references when it is not a legal question). Respondents were asked to include citations in correspondence, but this was sometimes forgotten because it was not explicitly stated in the survey. The team received multiple surveys with “yes” and “no” answers that were not accompanied by any explanation or supported by a citation.
3. Involve a team of legal experts such as the Environmental Law Institute, whose large contribution to this project cannot be overstated.
4. Create and follow a systematic scoring methodology and improve upon the guidelines presented in this report when possible. This project team was exploring new territory when it came to scoring the questions. While the scoring methodology in this report created meaningful results, future updates should amend the survey instrument and scoring methodology synergistically. Consideration should be given to the value of laws and policies in terms of the level of effectiveness they have in reducing water consumption (if feasible) as well as their legal strength.
5. Properly estimate time and budget. It is easy to underestimate the amount of work required to collect and review the data for a project of this magnitude. Proper estimations will help avoid potential compromise.
6. With a larger budget, future updates could overlay the results with other state information such as state water consumption values (total and per capita), and water supply conditions.

## V. Conclusion

Water efficiency and conservation efforts can be initiated by the federal government, regional entities, state governments, water providers, and even by customers. Strong initiatives taken by individual states are a critical component of the sustainable management of our nation's fresh water resources. This research effort identified state level water efficiency and conservation policies and laws throughout the 50 states via a 20 question survey. Water efficiency and conservation laws and policies encompassed in the survey included plumbing fixture standards, water conservation requirements related to water rights, water loss control rules, conservation planning and program implementation, volumetric billing for water, funding sources for water efficiency and conservation programs, and technical assistance and other informational resources.

The project began with the creation of the survey with the assistance of a project advisory committee, followed by the data collection effort. After the data were gathered the surveys were thoroughly reviewed and amended based on further research findings. Following the review, the responses were put through a systematic legal analysis. Each question was then scored, and states were assigned a report card style grade based on a point total.

This report evaluates the states individually and presents the information collectively. It demonstrates areas of deficiency and provides valuable examples that can serve as models for future policy. Perhaps of greatest value are the highlights of robust laws and policies that can be used as examples by others to support new efforts. These highlights not only demonstrate that a state has a particular robust policy, but also shows how the policy is worded, and where it exists in state statute. It is hoped that this report will provide great value to planners, policy makers, and professionals active in the water efficiency movement.

Only 2 states scored an "A", 10 states scored "B" grades, and 38 states split the difference of "C's" and "D's." So what does this say? States with "A" grades are certainly leaders, and are employing many laws and policies to promote water efficiency and conservation. "B" states are also making great effort and likely have valuable examples of strong policy. "C" states may also have a small number of robust laws and policies, but they may be lacking a comprehensive approach. A grade of a "C" certainly does not indicate a complete absence of initiative. "D" states have a lot of opportunity for growth. All states, regardless of grade, can improve their policies, and there are plenty of strong examples documented by this research to serve as models.

## **Appendix A: State Water Efficiency and Conservation Scorecards**

*Alabama*

<b>ALABAMA WATER EFFICIENCY SCORECARD</b>			<b>GRADE:</b>	<b>D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>	
1. State agency in charge of drinking water conservation?	Alabama Office of Water Resources		1	
2. Water consumption regulation for toilets?	No		0	
3. Water consumption regulation for showerheads?	No		0	
4. Water consumption regulation for urinals?	No		0	
5. Water consumption regulation for clothes washers?	No		0	
6. Water consumption regulation for pre-rinse spray valves?	No		0	
7. Mandatory building or plumbing codes?	No		0	
8. Water loss regulation or policy?	No		0	
9. Conservation activities as part of water permitting process?	No		0	
10. Drought emergency plans required?	No		0	
11. Conservation planning required separate from drought plans?	No		0	
12. Authority to approve or reject conservation plans?	No		0	
13. How often are plans required?	N/A		0	
14. Planning framework or methodology?	N/A		0	
15. Implementation of conservation measures required?	N/A		0	
16. State funding for urban water conservation programs?	Yes		1	
17. Technical assistance for urban water conservation programs?	No		0	
18. Does the state require volumetric billing?	No		0	
19. Percent of publicly supplied connections that are metered?	N/A		0	
20. ET microclimate information for urban landscapes?	No		0	
<b>EXTRA CREDIT</b>			0	
<b>TOTAL</b>			<b>2</b>	

*Alaska*

<b>ALASKA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Alaska Department of Environmental Conservation		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	N/A		0
15. Implementation of conservation measures required?	N/A		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Statute 46.15.035 Water Conservation Fee; Reservation of Water For Fish	1
<b>TOTAL</b>			<b>3</b>

Arizona

ARIZONA WATER EFFICIENCY SCORECARD			GRADE: <b>B</b>
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Arizona Department of Water Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes	Within Active Management Areas	1
10. Drought emergency plans required?	Yes	Every five years	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		1
<b>EXTRA CREDIT</b>		Evaporative cooling systems and decorative fountains required to have water recycling or reuse systems	1
<b>TOTAL</b>			<b>22</b>

*Arkansas*

ARKANSAS WATER EFFICIENCY SCORECARD			GRADE: C-
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Arkansas Natural Resources Commission		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?		Only at time of permit application	0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	Yes	Only in regard to permit applications	1
16. State funding for urban water conservation programs?	Yes	Has programs beyond DWSRF and CWSRF	2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>7</b>

*California*

<b>CALIFORNIA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: A-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		There are 5 agencies with water conservation responsibilities.	1
2. Water consumption regulation for toilets?	Yes		2
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	Yes		1
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes		3
10. Drought emergency plans required?	Yes	Every 5 years	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	Yes		1
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		2
<b>EXTRA CREDIT</b>		Max extra credit for robust answers to questions 10, 11, 14, & 15. Also, California MOU and Landscape Ordinance (AB 1881).	3
<b>TOTAL</b>			<b>29</b>

*Colorado*

<b>COLORADO WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Colorado Water Conservation Board (CWCB)		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No	Builders required to offer homebuyers efficient fixtures	0
8. Water loss regulation or policy?	No	CWCB is collecting annual data but there is no policy or regulation	0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	7 Years		1.5
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes	CWCB has a Water Efficiency Grant Fund	2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit for extremely transparent water conservation reporting process, question 11, and requirement of builders to offer homebuyers efficient fixtures	3
<b>TOTAL</b>			<b>16.5</b>

*Connecticut*

<b>CONNECTICUT WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C+</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Connecticut	Department of Energy and Environmental Protection	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	Leak detection evaluations to be included with water supply plans	1
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	Yes	Drought is part of the required Water Supply Plans	1
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	Variable		1
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit for question 12 and for the requirement of rain sensors on automatic irrigation systems	2
<b>TOTAL</b>			<b>14</b>

*Delaware*

<b>DELAWARE WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Natural Resources and Environmental Control		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	Leak detection and control are required for new water permits	1
9. Conservation activities as part of water permitting process?	Yes		2
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		0.5
13. How often are plans required?	30 Years	Only when applying for new allocation permit	0.5
14. Planning framework or methodology?	Yes	Requirements are listed in the regulations	1
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>7</b>

*Florida*

<b>FLORIDA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C+</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Florida Department of Environmental Protection		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	Yes	Water Management Districts are required to have a plan	1
11. Conservation planning required separate from drought plans?	Yes		1
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?		Dependent on terms of permit	0
14. Planning framework or methodology?	Yes	Only at the Water Management District level	1
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes	Water Savings Incentive Program	2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		1
<b>EXTRA CREDIT</b>		While Florida's regulations are not written in a way to answer "yes" to many of these questions the WMD's are empowered to promote water conservation. Rain shutoff sensors are required for irrigation systems.	2
<b>TOTAL</b>			<b>12</b>

*Georgia*

<b>GEORGIA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Georgia Department of Natural Resources		1
2. Water consumption regulation for toilets?	Yes		2
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	Yes		1
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	Yes		1
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes		3
10. Drought emergency plans required?	Yes		1
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	10 Years	Permits are 10 Years for groundwater, 10-20 for surface water	1.5
14. Planning framework or methodology?	Yes	Requirements are listed in the rules	2
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes	Georgia Environmental Finance Authority	2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>17.5</b>

*Hawaii*

<b>HAWAII WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	The Commission on Water Resource Management		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	N/A		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	N/A		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes	Water resource management fund	2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>4</b>

*Idaho*

<b>IDAHO WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Water Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	N/A		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	N/A		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

*Illinois*

ILLINOIS WATER EFFICIENCY SCORECARD			GRADE: C-
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?		Department of Natural Resources	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	8%, but only for Lake Michigan allocations	1
9. Conservation activities as part of water permitting process?	Yes	Only for Lake Michigan allocations	1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Soil moisture sensors are required for irrigation systems	1
<b>TOTAL</b>			<b>5</b>

*Indiana*

<b>INDIANA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Natural Resources, Division of Water		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes	Only in relation to the Great Lakes Compact	0.5
10. Drought emergency plans required?	Yes		0.5
11. Conservation planning required separate from drought plans?	Yes		1
12. Authority to approve or reject conservation plans?	Yes		0.5
13. How often are plans required?	50 Years	Only when applying for permit	0.5
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>6</b>

*Iowa*

<b>IOWA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Iowa Department of Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		2
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		1
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	10 Years		1.5
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>10.5</b>

*Kansas*

<b>KANSAS WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Kansas Water Office		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No	Assistance for systems with over 30% unaccounted for water use	0
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		1
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		2
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes	For utilities developing a conservation plan	1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit given for the water loss assistance mentioned in question 8	1
<b>TOTAL</b>			<b>10</b>

*Kentucky*

<b>KENTUCKY WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C+</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Kentucky Division of Water		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	For rate making a utility's unaccounted water cannot exceed 15%	1
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	Yes	5 Years	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Kentucky was awarded an extra credit point for question 15	0
<b>TOTAL</b>			<b>13</b>

*Louisiana*

<b>LOUISIANA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	N/A		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	N/A		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes	Water conservation can be used to assign priority for state funding	1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>2</b>

*Maine*

<b>MAINE WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Health and Human Services	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No	Water systems have to report water loss in annual reports	1
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No	Emergency and security plans required but no mention of "drought"	0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

*Maryland*

<b>MARYLAND WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Environment		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		1
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?		Only when applying for permit	0
14. Planning framework or methodology?	Yes	Guidance but not a required framework	0.5
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>7.5</b>

*Massachusetts*

<b>MASSACHUSETTS WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C+</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Water Resources Commission		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes		3
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	5 Years	Permits issued every 20 years conservation plans reviewed every 5	2
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	Yes		2
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>12</b>

*Michigan*

<b>MICHIGAN WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Environmental Quality	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No	Emergency plans required but no mention of drought	0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

*Minnesota*

<b>MINNESOTA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C+</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Natural Resources	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	If greater than 10% utilities must explain how it will be reduced	2
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No	Emergency plans are required but the word "drought" is not used	0
11. Conservation planning required separate from drought plans?	Yes	As part of Water Supply Plans, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	10 Years		1.5
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	Yes		2
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Minnesota requires landscape irrigation systems to have a rain sensor	1
<b>TOTAL</b>			<b>14.5</b>

*Mississippi*

<b>MISSISSIPPI WATER EFFICIENCY SCORECARD</b>			<b>GRADE:</b>	<b>D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>	
1. State agency in charge of drinking water conservation?	Department of Environmental Quality		1	
2. Water consumption regulation for toilets?	No		0	
3. Water consumption regulation for showerheads?	No		0	
4. Water consumption regulation for urinals?	No		0	
5. Water consumption regulation for clothes washers?	No		0	
6. Water consumption regulation for pre-rinse spray valves?	No		0	
7. Mandatory building or plumbing codes?	No		0	
8. Water loss regulation or policy?	No		0	
9. Conservation activities as part of water permitting process?	No		0	
10. Drought emergency plans required?	No		0	
11. Conservation planning required separate from drought plans?	No		0	
12. Authority to approve or reject conservation plans?	No		0	
13. How often are plans required?	N/A		0	
14. Planning framework or methodology?	No		0	
15. Implementation of conservation measures required?	No		0	
16. State funding for urban water conservation programs?	Yes		1	
17. Technical assistance for urban water conservation programs?	No		0	
18. Does the state require volumetric billing?	No		0	
19. Percent of publicly supplied connections that are metered?	N/A		0	
20. ET microclimate information for urban landscapes?	No		0	
<b>EXTRA CREDIT</b>			0	
<b>TOTAL</b>			<b>2</b>	

Missouri

MISSOURI WATER EFFICIENCY SCORECARD			GRADE: <b>D</b>
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Department of Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>2</b>

Montana

<b>MONTANA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Natural Resources and Conservation		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

Nebraska

NEBRASKA WATER EFFICIENCY SCORECARD			GRADE: D
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Nebraska Department of Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

*Nevada*

NEVADA WATER EFFICIENCY SCORECARD			GRADE: C+
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	State of Nevada Division of Water Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	Identifying and reducing leakage is required, but no target specified	1
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	Yes	Every 5 years as part of the Plan for Conservation	1
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes	Office of Financial Assistance - Water Grants Program	2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		1
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>14</b>

*New Hampshire*

<b>NEW HAMPSHIRE WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Environmental Services	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	15%, but only for permits and applications for new water withdrawal	3
9. Conservation activities as part of water permitting process?	Yes		3
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	Already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes	Only applies to permits and applications for new water withdrawal	1
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit awarded for question 14	1
<b>TOTAL</b>			<b>17</b>

*New Jersey*

<b>NEW JERSEY WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Environmental Protection	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	15%, but only relating to the permitting process	3
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	Yes		1
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	10 Years	Permits shall not exceed 10 years	1.5
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		2
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	Yes		2
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		New Jersey requires landscape irrigation systems to have a rain sensor	1
<b>TOTAL</b>			<b>16.5</b>

*New Mexico*

NEW MEXICO WATER EFFICIENCY SCORECARD			GRADE:	C
QUESTION	ANSWER	NOTABLE DETAILS	POINTS	
1. State agency in charge of drinking water conservation?	Office of the State Engineer		1	
2. Water consumption regulation for toilets?	No		0	
3. Water consumption regulation for showerheads?	No		0	
4. Water consumption regulation for urinals?	No		0	
5. Water consumption regulation for clothes washers?	No		0	
6. Water consumption regulation for pre-rinse spray valves?	No		0	
7. Mandatory building or plumbing codes?	No		0	
8. Water loss regulation or policy?	No		0	
9. Conservation activities as part of water permitting process?	No	State Engineer can refuse permit if "contrary to the conservation of water"	2	
10. Drought emergency plans required?	No		0	
11. Conservation planning required separate from drought plans?	No		0	
12. Authority to approve or reject conservation plans?	No		0	
13. How often are plans required?	N/A		0	
14. Planning framework or methodology?	Yes		0.5	
15. Implementation of conservation measures required?	No		0	
16. State funding for urban water conservation programs?	Yes		2	
17. Technical assistance for urban water conservation programs?	Yes		2	
18. Does the state require volumetric billing?	No		0	
19. Percent of publicly supplied connections that are metered?	N/A		0	
20. ET microclimate information for urban landscapes?	Yes		2	
<b>EXTRA CREDIT</b>		1 point for the NMOSE gallons per capita per day (GPCD) methodology and calculator	1	
<b>TOTAL</b>			<b>10.5</b>	

*New York*

<b>NEW YORK WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Division of Water		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes		1
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		0.5
13. How often are plans required?	10 years	When applying for a permit	1.5
14. Planning framework or methodology?	Yes	Guidance is provided, but only applies for new permit applications	1
15. Implementation of conservation measures required?	Yes		2
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>11</b>

*North Carolina*

<b>NORTH CAROLINA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Environment and Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	Yes	Every five years	2
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	N/A		0
13. How often are plans required?	No		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		2
<b>EXTRA CREDIT</b>		North Carolina's conservation requirements for drought planning and the conservation requirements to be eligible for state funding earned an extra point. See answers to questions 10 and 16.	1
<b>TOTAL</b>			<b>11</b>

*North Dakota*

<b>NORTH DAKOTA WATER EFFICIENCY SCORECARD</b>			<b>GRADE:</b>	<b>D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>	
1. State agency in charge of drinking water conservation?	North Dakota State Water Commission		1	
2. Water consumption regulation for toilets?	No		0	
3. Water consumption regulation for showerheads?	No		0	
4. Water consumption regulation for urinals?	No		0	
5. Water consumption regulation for clothes washers?	No		0	
6. Water consumption regulation for pre-rinse spray valves?	No		0	
7. Mandatory building or plumbing codes?	No		0	
8. Water loss regulation or policy?	No		0	
9. Conservation activities as part of water permitting process?	No		0	
10. Drought emergency plans required?	No		0	
11. Conservation planning required separate from drought plans?	No		0	
12. Authority to approve or reject conservation plans?	No		0	
13. How often are plans required?	N/A		0	
14. Planning framework or methodology?	No		0	
15. Implementation of conservation measures required?	No		0	
16. State funding for urban water conservation programs?	Yes		1	
17. Technical assistance for urban water conservation programs?	No		0	
18. Does the state require volumetric billing?	No		0	
19. Percent of publicly supplied connections that are metered?	N/A		0	
20. ET microclimate information for urban landscapes?	No		0	
<b>EXTRA CREDIT</b>			0	
<b>TOTAL</b>			<b>2</b>	

Ohio

OHIO WATER EFFICIENCY SCORECARD			GRADE: <b>D</b>
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?		Department of Natural Resources	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		0.5
10. Drought emergency plans required?	No	Contingency plans required, but no mention of "drought"	0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3.5</b>

*Oklahoma*

<b>OKLAHOMA WATER EFFICIENCY SCORECARD</b>			<b>GRADE:</b>	<b>D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>	
1. State agency in charge of drinking water conservation?	Oklahoma Water Resources Board		1	
2. Water consumption regulation for toilets?	No		0	
3. Water consumption regulation for showerheads?	No		0	
4. Water consumption regulation for urinals?	No		0	
5. Water consumption regulation for clothes washers?	No		0	
6. Water consumption regulation for pre-rinse spray valves?	No		0	
7. Mandatory building or plumbing codes?	No		0	
8. Water loss regulation or policy?	No		0	
9. Conservation activities as part of water permitting process?	No		0	
10. Drought emergency plans required?	No		0	
11. Conservation planning required separate from drought plans?	No		0	
12. Authority to approve or reject conservation plans?	No		0	
13. How often are plans required?	N/A		0	
14. Planning framework or methodology?	No		0	
15. Implementation of conservation measures required?	No		0	
16. State funding for urban water conservation programs?	Yes		2	
17. Technical assistance for urban water conservation programs?	No		0	
18. Does the state require volumetric billing?	No		0	
19. Percent of publicly supplied connections that are metered?	N/A		0	
20. ET microclimate information for urban landscapes?	No		0	
<b>EXTRA CREDIT</b>			0	
<b>TOTAL</b>			<b>3</b>	

*Oregon*

<b>OREGON WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Water Resources Department		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	Only for suppliers seeking municipal water use permit extensions	1
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	Yes	Only for suppliers submitting Water Mgmt. Conservation Plan	1
11. Conservation planning required separate from drought plans?	Yes	Not all suppliers are required to submit plans	1
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	10 Years		1.5
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit awarded for question 15	1
<b>TOTAL</b>			<b>15.5</b>

*Pennsylvania*

<b>PENNSYLVANIA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Bureau of Watershed Management		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>3</b>

*Rhode Island*

<b>RHODE ISLAND WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Water Resources Board		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	Target of 10%	3
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	Yes	Part of Water Supply System Mngmnt Plan, "reviewed" every 5 years	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	5 Years	First reports due August 2012, annual progress reports will follow	2
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		1
18. Does the state require volumetric billing?	Yes		1
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit for question 11	1
<b>TOTAL</b>			<b>20</b>

*South Carolina*

<b>SOUTH CAROLINA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Bureau of Water		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		0.5
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		1
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			
<b>TOTAL</b>			<b>6.5</b>

*South Dakota*

<b>SOUTH DAKOTA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Environment and Natural Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>4</b>

*Tennessee*

<b>TENNESSEE WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Environment and Conservation		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			
<b>TOTAL</b>			<b>2</b>

Texas

TEXAS WATER EFFICIENCY SCORECARD			GRADE: A-
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Texas Water Development Board		1
2. Water consumption regulation for toilets?	Yes		2
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	Yes		1
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	Yes		1
8. Water loss regulation or policy?	Yes		2
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	Yes	Reviewed every 5 years	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?	5 Years	Plans are reviewed every 5 years	2
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	Yes		1
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		1
<b>EXTRA CREDIT</b>		Maximum extra credit awarded for questions 10, 11, 14, & 15	3
<b>TOTAL</b>			<b>29</b>

Utah

UTAH WATER EFFICIENCY SCORECARD			GRADE: C+
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?	Division of Water Resources		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	5 Years		2
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	Yes		2
<b>EXTRA CREDIT</b>		Extra credit for question 11	1
<b>TOTAL</b>			<b>14</b>

*Vermont*

<b>VERMONT WATER EFFICIENCY SCORECARD</b>			<b>GRADE: C-</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Drinking Water and Ground Water Protection Division	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes	For permitting, already credited in question 9	0
12. Authority to approve or reject conservation plans?	Yes		1
13. How often are plans required?		At time of permit application	0
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		2
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>6</b>

Virginia

VIRGINIA WATER EFFICIENCY SCORECARD			GRADE: B-
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?		Department of Environmental Quality	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	No target	1
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	Yes	Every 10 years for suppliers that deliver 300,000 gal/month or more	2
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	5 or 10 Yrs		1.5
14. Planning framework or methodology?	Yes		1
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit awarded for question 12	1
<b>TOTAL</b>			<b>16.5</b>

*Washington*

<b>WASHINGTON WATER EFFICIENCY SCORECARD</b>			<b>GRADE: B</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Department of Health's Office of Drinking Water		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	10%	3
9. Conservation activities as part of water permitting process?	Yes	On a case by case basis	0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	6 Years		2
14. Planning framework or methodology?	Yes		2
15. Implementation of conservation measures required?	Yes		3
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit awarded for questions 11 and 14	2
<b>TOTAL</b>			<b>20</b>

*West Virginia*

<b>WEST VIRGINIA WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?		Department of Environmental Protection	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	15%	2
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>			0
<b>TOTAL</b>			<b>4</b>

Wisconsin

WISCONSIN WATER EFFICIENCY SCORECARD			GRADE: B-
QUESTION	ANSWER	NOTABLE DETAILS	POINTS
1. State agency in charge of drinking water conservation?		Department of Natural Resource	1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	Yes	>= 4,000 customers = 15%, <4,000 = 25%	2
9. Conservation activities as part of water permitting process?	Yes		1
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	Yes		2
12. Authority to approve or reject conservation plans?	Yes		2
13. How often are plans required?	20 Years		1
14. Planning framework or methodology?	Yes		0.5
15. Implementation of conservation measures required?	Yes		1
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	Yes		2
18. Does the state require volumetric billing?	Yes		1
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>		Extra credit for question 11	1
<b>TOTAL</b>			<b>15.5</b>

*Wyoming*

<b>WYOMING WATER EFFICIENCY SCORECARD</b>			<b>GRADE: D</b>
<b>QUESTION</b>	<b>ANSWER</b>	<b>NOTABLE DETAILS</b>	<b>POINTS</b>
1. State agency in charge of drinking water conservation?	Wyoming Water Development Commission		1
2. Water consumption regulation for toilets?	No		0
3. Water consumption regulation for showerheads?	No		0
4. Water consumption regulation for urinals?	No		0
5. Water consumption regulation for clothes washers?	No		0
6. Water consumption regulation for pre-rinse spray valves?	No		0
7. Mandatory building or plumbing codes?	No		0
8. Water loss regulation or policy?	No		0
9. Conservation activities as part of water permitting process?	No		0
10. Drought emergency plans required?	No		0
11. Conservation planning required separate from drought plans?	No		0
12. Authority to approve or reject conservation plans?	No		0
13. How often are plans required?	N/A		0
14. Planning framework or methodology?	No		0
15. Implementation of conservation measures required?	No		0
16. State funding for urban water conservation programs?	Yes		1
17. Technical assistance for urban water conservation programs?	No		0
18. Does the state require volumetric billing?	No		0
19. Percent of publicly supplied connections that are metered?	N/A		0
20. ET microclimate information for urban landscapes?	No		0
<b>EXTRA CREDIT</b>	No		0
<b>TOTAL</b>			<b>2</b>