Partnership for Safe Water

Treatment Plant & Distribution System Optimization Programs
Annual Data Summary Report

April 2016
Partnership Staff Introduction

AWWA’s Partnership for Safe Water Staff are pleased to present the 2016 Annual Data Summary Report. This annual data summary report has been approved for publication by the Partnership for Safe Water Steering Committee and contains a technical summary of the data submitted by participants in the Partnership for Safe Water treatment plant and distribution system optimization programs.

The data included in this report primarily consists of combined filter effluent turbidity and disinfectant residual/DBP data from Partnership utility subscribers, covering the period from June 2014 through May 2015. The purpose of this report is to provide collective program performance results that can be used by individual utilities to compare their performance with those of all of the Partnership participants.

Caution should be exercised when interpreting the data contained in this report. Although more than 400 surface water filtration plants and 50 distribution systems serving over 85 million people submitted the data, this is only a fraction of the total number of surface water treatment plants and water systems in North America. Among these Partnership subscribers are many of the largest, proactive, and best managed utilities. The data presented is only that which is submitted voluntarily by program subscribers. It may, therefore, be misleading to extrapolate the data to represent larger industry trends.

The report also features program highlights from 2015 – the Partnership for Safe Water’s 20th Anniversary year. The past year has been an outstanding one for the Partnership program. The program continues to grow, both in terms of subscribers and program volunteers. More than 20 new subscribers joined the Partnership for Safe Water program during 2015, and the number of volunteers choosing to share their time and expertise with the program has increased to more than 70. The Partnership’s 20th Anniversary was celebrated during several events throughout 2015, including the Water System Optimization Conference, co-sponsored by Pennsylvania Section AWWA. Additionally, nearly 100 Partnership awards were presented in 2015, part of the more than 750 awards presented throughout the program’s 20-year history.

It is truly a privilege to work with Partnership for Safe Water subscribers. Thank you for an outstanding 2015!

Barb Martin & Tom Schippert
Partnership Staff

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Partnership for Safe Water Steering Committee - 2015

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organization/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Michael Barsotti, Chair</strong></td>
<td><strong>AWWA Representative</strong></td>
<td>Champlain Water District</td>
</tr>
<tr>
<td><strong>Brian Haws</strong></td>
<td><strong>AMWA Representative</strong></td>
<td>Austin Water Utility</td>
</tr>
<tr>
<td><strong>Douglas Kinard</strong></td>
<td><strong>ASDWA Representative</strong></td>
<td>South Carolina Department of Health and Environmental Control</td>
</tr>
<tr>
<td><strong>Bruce Hauk</strong></td>
<td><strong>NAWC Representative</strong></td>
<td>Illinois American Water</td>
</tr>
<tr>
<td><strong>Gregory Carroll</strong></td>
<td><strong>USEPA Representative</strong></td>
<td>USEPA, Office of Ground Water and Drinking Water</td>
</tr>
<tr>
<td><strong>Frank Blaha</strong></td>
<td><strong>Water Research Foundation</strong></td>
<td>Representative</td>
</tr>
<tr>
<td><strong>James Fay (non-voting)</strong></td>
<td><strong>Past Steering Committee</strong></td>
<td>Chair Champlain Water District Term Ended 2009</td>
</tr>
<tr>
<td><strong>Steve Hubbs (non-voting)</strong></td>
<td><strong>Past Steering Committee</strong></td>
<td>Chair Formerly, Louisville Water Co. Founding Chair</td>
</tr>
<tr>
<td><strong>Robert Cheng (non-voting)</strong></td>
<td><strong>Past Steering Committee</strong></td>
<td>Chair Coachella Valley Water District Term Ended 2015</td>
</tr>
</tbody>
</table>

Partnership for Safe Water Partner Organizations

Partnership for Safe Water Quebec Licensee (Administered by Réseau Environnement)
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Partnership Highlights

More than 99% of 95th percentile CFE turbidity values reported by treatment program subscribers, regardless of phase, were less than 0.20 NTU.

Water Quality: Treatment Program

Treatment plants that have completed a Phase III self-assessment continue to exhibit an average 60% reduction in CFE turbidity, compared to their originally reported baseline values.

Excellence in Water Treatment Award-winning plants have an average 95th percentile CFE turbidity of 0.037 NTU - and 25% of these plants serve less than 100,000 people.
More than 95% of distribution system free chlorine samples meet the Partnership's optimization goals of 0.20 - 4.0 mg/L

Water Quality: Distribution Program

Sixteen distribution systems have received the Directors Award. Two distribution systems have received the Presidents Award for Distribution System Operation.

Most common Action Plan items include increased monitoring, optimizing flushing, improving leak detection, and updating SOPs.
Robert Cheng (Coachella Valley Water District, CA - left) completes six years of service as Steering Committee Chair. He is replaced by incoming Chair, Michael Barsotti (Champlain Water District, VT - right).

Leadership and Governance

Kevin Linder (Aurora Water, CO - above, 2nd from left) and Jack Wang (Louisville Water, KY - left, 2nd from right) begin roles as PEAC-T and PEAC-D Chairs, respectively.

The number of engaged volunteers who choose to share their time and expertise with the Partnership is more than 70 - Thank You!
Self-Assessment for Water Treatment Plant Optimization, the new treatment program self-assessment guidance was released in June 2015.

Marketing and Outreach

Celebrated the Partnership’s 20th Anniversary with the Water System Optimization Conference, co-sponsored by Pennsylvania Section AWWA.

Numerous conference presentations, Opflow and Journal articles, and media hits result in more than 20 new subscribers in 2015.
Partnership Programs

Partnership for Safe Water Mission:
To improve the quality of drinking water delivered to customers of public water supplies by optimizing water system operations

The Partnership for Safe Water was founded in 1995 when six organizations dedicated to safe drinking water came together to develop a program to reduce the risk of Cryptosporidium exposure from plants treating surface water. A new program for distribution system optimization was introduced in 2011 to further ensure the quality and safety of water delivered to consumers. The Partnership for Safe Water program celebrated its 20th Anniversary in 2015.

The goal of the Partnership is to work with utilities to optimize water utility operation and help ensure public health protection. The Partnership provides self-assessment and optimization programs so that operators, managers, and administrators have the tools they need to improve performance above and beyond even proposed regulatory levels.

The Partnership program helps utilities optimize water system performance and improve water quality by using flexible technical tools that allow utilities to customize performance improvements at their own pace with limited capital spending. Hundreds of utilities realize the benefits of participation in the Partnership’s treatment plant and distribution system optimization programs.

The Partnership was formally chartered as an Enterprise Department of the American Water Works Association (AWWA) in January 2013. The Partnership has two dedicated full-time AWWA staff members who manage program operation and is directed by a Steering Committee comprised of one volunteer representative appointed by each Partner organization. The Program Effectiveness Assessment Committee (PEAC) is comprised of volunteer utility optimization experts and is responsible for reviewing Phase III (Self-Assessment) and Phase IV (Optimization) utility completion report submissions.
An overview of each program is provided below. Program participants must maintain compliance with all applicable health-based regulations to remain in good standing.

**Treatment Plant Optimization Program**
The treatment plant optimization program was the original *Partnership for Safe Water* program at the time of its inception in 1995. The tools that were developed by the *Partnership* are based on methods described in the handbook *Optimizing Water Treatment Plant Performance Using the Composite Correction Program* - EPA/625/6-91/027. The goal of the treatment program is to reduce the risk to water consumers from microbial contaminants, such as *Cryptosporidium*, by reducing filter effluent turbidity.

The program is designed to help treatment plants reduce filter effluent turbidity by optimizing plant processes to increase particulate removal, allowing them to surpass current regulatory requirements. Subscribers are not required to meet the *Partnership*’s turbidity goals at the time they initially join the program. Plants participating in the program complete a comprehensive self-assessment of treatment plant operations, which includes areas such as performance, plant unit processes, operations, and administration. The self-assessment is used to identify performance limiting factors, for which an action plan for improvement can be developed and implemented to address. Progress is tracked through the submission of annual optimization reports and data.

The primary data reporting parameter for the treatment program is turbidity, for raw, settled (if applicable), and filtered water. As plants progress through the *Partnership*’s phases, turbidity requirements become more stringent to ensure that optimized plants are producing the highest levels of water quality. Disinfection capacity is a secondary assessment parameter for plants during the self-assessment phase of the program to ensure that adequate disinfection is provided. All surface water filtration plants, or groundwater plants under the influence of surface water, are eligible to participate in the treatment plant optimization program.

**Distribution System Optimization Program**
The *Partnership for Safe Water*’s distribution system optimization program (DSOP) is the culmination of more than a decade of research and planning focused on cultivating the knowledge and resources necessary to develop a performance assessment and optimization program for distribution system operations. The program’s objective is to help water service providers deliver high quality water to all users, thus providing an additional level of public health protection.

The program is primarily based on WRF Project #4109 – Criteria for Optimized Distribution Systems. Although the performance standards are rigorous, the guidance provided to DSOP utility subscribers provides them with the tools they need to continuously improve and achieve distribution system operational excellence. Similar to the early development of the *Partnership*’s treatment plant optimization program, the distribution program is expected to evolve during the coming years, as knowledge and experience is gained by utility subscribers.

There are several key distribution system performance indicators that are monitored as part of the distribution system optimization program to ensure system integrity. These factors, along with the indicator by which they are quantitatively represented, include:
• Water quality integrity (disinfectant residual)
• Hydraulic integrity (pressure)
• Physical integrity (main break frequency)

Some of the 19 performance improvement variables also included in the self-assessment process include cross-connection control, nitrification, energy management, flushing, operation and maintenance of storage facilities, and security and online monitoring. These variables were selected based on their potential to influence, or be influenced by, the performance of each of the three primary optimization areas. Utility subscribers are not limited to these parameters and may choose to quantitatively monitor performance in additional areas. Note that utilities are not required to meet the Partnership’s distribution system performance goals prior to joining the program.

Utilities participating in the program complete a comprehensive self-assessment of distribution system operations, which includes areas such as performance, design, operations, and administration. The self-assessment is used to identify performance limiting factors, for which an action plan for improvement is developed and implemented. The program is designed to encourage continuous improvement and annual progress is tracked by comparing current data to the utility’s initial baseline data submission.

The Partnership invites interested utilities to learn more about the Partnership for Safe Water program by visiting www.awwa.org/partnership. Surface water filtration plants are eligible to participate in the treatment program, while any utility that applies a residual disinfectant to the distribution system is eligible to participate in the distribution program. Both US-based and international utilities are welcome to participate in the Partnership.

This report quantifies the widespread impact of this voluntary program for the 2015 calendar year. Water system personnel are encouraged to consider sharing portions of this information with management and customers to demonstrate the cost effective use of resources applied to gain quantifiable water quality improvements.

Partnership award winners are recognized throughout the water community. Awards plaques are presented at the AWWA annual conference.
Partnership Benefits

“The ultimate winner is our customers....”

2015 Annual Report Excerpt

The benefits of being a Partnership subscriber are numerous and significant:

<table>
<thead>
<tr>
<th>PARTNERSHIP BENEFITS</th>
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<tbody>
<tr>
<td>Improved quality of water delivered to customers</td>
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<tr>
<td>Reduced risk from microbiological contaminants</td>
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<tr>
<td>Cryptosporidium removal credit under the regulatory requirements of the Long-Term 2 Enhanced Surface Water Treatment Rule</td>
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<tr>
<td>Greater preparedness for water quality and treatment challenges beyond turbidity - such as cyanobacteria and their metabolites, extreme weather events, and corrosion control</td>
</tr>
<tr>
<td>Customized performance enhancement plans using the program’s technical tools and guidance</td>
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<td>Training and technical support for Partnership programs</td>
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<td>Comparison data from program subscriber database</td>
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<tr>
<td>Accountability through annual data reporting and progress towards optimization</td>
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<td>Development of employee tenacity for producing high quality water</td>
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<tr>
<td>Improved teamwork among plant personnel at all levels</td>
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<tr>
<td>Enhanced customer confidence through awards and recognition program</td>
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<td>Recognition from local regulators for documented achievements</td>
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<td>Interactions with top water professionals to better understand operations</td>
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<tr>
<td>Ability to identify cost effective optimization solutions that can be shared and applied</td>
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<tr>
<td>Professional growth, networking, and leadership experience through Partnership volunteer opportunities</td>
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All of these benefits are provided with the support of utility subscriber fees, which cost utility customers, on average, less than one penny per year.
Partnership Subscribers

**Partnership Treatment Plant and Distribution System Optimization Program subscribers provide water to nearly 100 million people!**

As of December 2015, The Partnership for Safe Water treatment plant optimization program’s subscriber base as of consisted of 250 utilities with 460 water treatment plants, while approximately 145 utility subscribers with 159 unique distribution systems participated in the distribution system optimization program. An additional 37 water treatment plants located in Quebec participate in the Programme d’Excellence en eau Potable (PEXEP), a parallel program, managed through Reseau Environnement. In 2015, PEXEP was primarily a treatment plant optimization program, although the program has been expanded on a pilot scale, during 2015, to include distribution system optimization.

Subscriber Facts:

- **Partnership** programs serve utilities of all sizes - more than 50% of subscribers in both programs serve communities of fewer than 100,000 people, as indicated in Figure 2.
- **Partnership** subscribers are geographically diverse - subscribers represent more than 40 states, the District of Columbia, and three Canadian provinces.
- **Partnership** subscribers are committed to optimization – more than 85 subscribers participate in both treatment plant and distribution system optimization programs.
- Treatment program subscribers serve approximately 40% of the US population served by surface water; distribution program subscribers currently serve less than one percent of community water systems in the US.
Treatment Program Summary

The size categories displayed in Figure 2 are those used by AWWA to determine utility membership and are based on numbers of service connections. These size ranges have been converted to population served for the purposes of this comparison, as Partnership subscriber fees are based on the population served by a utility. Although a substantial number of the Partnership utilities are among the very largest in the country, more than 50% of utility subscribers serve fewer than 100,000 customers. The number of utilities in the smaller size categories is increasing. Collectively, the utilities participating in the treatment plant optimization program serve a combined population of more than 89 million, or more than 40% of the U.S. population served by surface water, which was estimated by EPA at over 216 million for fiscal year 2014. The 2015 population distribution of Partnership subscribers remained fairly consistent with that of the 2014 reporting period.

Figure 2 – Partnership for Safe Water – Percent Distribution of Treatment Program Subscribers by Population Served (6/1/2014 – 5/31/2015)
Another means of comparison is to examine the number of utilities that participate in the Partnership for Safe Water treatment plant optimization program as a percentage of the total number of drinking water utilities in the United States. The Partnership’s treatment plant optimization program is directed at the optimization of surface water treatment plant performance. Therefore, the most accurate means of comparison is to compare the number of Partnership utility subscribers in each population category with the total number of active utilities in each category that treat surface water or groundwater under the direct influence of surface water (Figure 3). Estimates of the number of surface water treatment plant utilities were obtained from the USEPA Safe Drinking Water Information System (SDWIS) database for the 2014 Fiscal Year. Changes in percentages from past years are primarily due to minor changes in the population distribution for surface water utilities since EPA SDWIS data were last compiled for this report or reported population changes of subscriber utilities, causing them to cross between population categories. This same comparison was not carried out for Canadian utilities due to the limited number of Canadian subscribers at the current time.

Figure 3 – Partnership for Safe Water Subscribers as a Percent of US Surface Water Utilities (6/1/2014 – 5/31/2015)
Distribution Program Summary

Similar to the treatment program data described above, a summary of distribution program subscribers by population size is displayed in Figure 4. Although a substantial number of the Partnership distribution program subscriber utilities are among the very largest in the country, more than 50% of subscribers serve fewer than 100,000 customers, a percentage which has grown over the past few years. Distribution system program subscribers include utilities acting as water wholesalers, utilities that supply water directly to their customers (retailers), and consecutive systems. To date, subscriber feedback indicates that the self-assessment process has been successfully applied to all of these various distribution system formats.

Distribution program subscribers serve a combined population of more than 37 million people, or approximately 12% of the US population served by a community water system (CWS) of any size, which was estimated by EPA at approximately 300 million in 2010.

Figure 4 – Partnership for Safe Water – Percent Distribution of Distribution System Program Subscribers by Population Served (6/1/2014 – 5/31/2015)

To report the number of distribution program subscribers versus the number of utilities eligible to participate in the program, the number of subscribers must be compared to the total number of CWS in the United States, as the program is open to any water system that applies a residual disinfectant. For 2015 reporting, this comparison is limited to utilities located in the United States, due to limited international participation at this time. The assumption is also made that the vast majority of CWS serving a population of >500 apply a residual disinfectant in the distribution system. Based on this comparison, distribution program subscribers represent approximately 0.27% of the approximately
52,000 total CWS in the United States. At this time, representation is greatest among the largest utilities, with subscribers representing 17% of eligible CWS in the United States serving a population of greater than 100,000. Representation decreases as CWS population served decreases. Distribution system program subscribers represent only 1.6% of CWS in the United States serving a population between 10,001 and 100,000 and even smaller percentages of smaller system sizes.

Figure 5 – Partnership for Safe Water – Program Overlap for 2015 (6/1/2014 – 5/31/2015)

Figure 5 represents the overlap between utility participation in the treatment plant and distribution system optimization programs. Approximately 65% of distribution system program subscribers also participate in the treatment program, while 35% of treatment program subscribers also participate in the distribution program.

Accounting for overlap between the programs, Partnership in Safe Water subscriber utilities, in total, provide water to an estimated population of nearly 100 million across North America. This is nearly one-third of the United States population. There are a number of notable observations from these data. Program participation varies by the size of the utility, with larger utilities being the most heavily represented in the Partnership. Utility participation decreases as the population served by a surface water treatment facility or community water system decreases. This indicates that the greatest potential for Partnership for Safe Water program subscriber growth is among small and medium utilities. The Partnership for Safe Water’s strategic plan emphasizes subscriber engagement and growth to ensure the long-term sustainability of the program. More than 20 new utility subscribers made the
commitment to drinking water utility optimization by joining the Partnership’s treatment plant and distribution system optimization programs during 2015.

**Program Growth**

*Partnership for Safe Water* participation, in both the treatment plant and distribution system optimization programs, has increased significantly over the past several years. This reflects the program’s relevancy to today’s drinking water utilities and the recognition that the Partnership’s self-assessment and optimization mindset can help utilities to remain proactive, vigilant, and prepared to address current and future water quality and operational challenges. The Partnership’s subscriber growth from 2013-2015 is illustrated in Figure 6.

![Figure 6 – Partnership for Safe Water Subscriber Growth (2013-2015)](#)

“It is an honor to continue participation in the Partnership as we strive to produce the best possible drinking water for our customers and our community.”

2015 Phase III Annual Report Excerpt
The **Partnership Process and Awards**

The *Partnership for Safe Water* program consists of four phases. Each phase is intended to assist utilities in progressing toward optimized treatment plant or distribution system performance and operation as indicated by specific water quality and performance goals. Utility subscribers pursue these performance goals by completing specific tasks associated with each phase of the program. Each phase is described briefly below.

### Phase I
- **Commitment**
- Utilities agree to participate through Phase III, apply, and submit fees.

### Phase II
- **Baseline Data Collection**
- Utilities provide baseline data to the *Partnership*
- **Treatment:** Turbidity, **Distribution:** Disinfectant residual/DBPs

### Phase III
- **Self-Assessment**
- Utilities complete a comprehensive self-assessment of treatment plant or distribution system operations, develop an action plan, and submit a completion report, reviewed by trained experts to become eligible for the **Directors Award** for Treatment Plant or Distribution System Operation.

### Phase IV
- **Demonstrated Optimization**
- Utilities achieve Phase IV status by submission of a report demonstrating fully optimized operation. There are two levels of performance beyond Phase III - the **Presidents Award** and the **Phase IV Excellence Award** levels.

Note that Phase IV Excellence in Distribution System Operation requirements are currently under development for the distribution system optimization program. The requirements for the Presidents Award for Distribution System Operation were released to all Phase III distribution system program utilities during 2014.

Detailed information about the *Partnership*’s phases and specific requirements may be accessed on the *Partnership for Safe Water* website ([www.awwa.org/partnership](http://www.awwa.org/partnership)) or by contacting *Partnership* staff directly. Resources, such as self-assessment guidance and data collection software, are available to guide *Partnership* subscribers through all phases of the program. Progress through the program’s phases is self-paced so that utilities may complete the self-assessment process according to a timeline from which the utility is able to derive the maximum benefit.

Regardless of program or phase, data submissions are an essential component of the *Partnership* program. Turbidity data are submitted by Treatment program subscribers, while disinfectant, pressure,
Partnership for Safe Water

and main break data are submitted by Distribution program subscribers. The collection and submission of baseline data allows utilities to assess their current performance, prior to beginning the self-assessment process. These data are also useful for future comparisons as the utility progresses through the program. The submission of annual data also provides a degree of accountability for utility subscribers, and the aggregate data included in this report provide a basis for performance comparison with other utility subscribers. Finally, the collective data submitted by utilities on an annual basis, allows the impact of a utility’s progress through the program phases to be quantified and allows the overall impact of Partnership programs on treatment plant and distribution system performance over time to be quantified. Appreciation and thanks is extended to all Partnership subscriber utilities that have made the effort to submit annual data, many utilities for a period of close to two decades.

2015 Partnership Awards Summary

First-time Directors, Presidents, and Excellence Awards are presented throughout the year as the award levels are achieved. Longevity awards are typically presented at AWWA’s Annual Conference and Exhibition (ACE). Partnership staff frequently works with subscribers to arrange for presentation of awards at local AWWA conferences or utility board/city council meetings. As of December 2015, the following numbers of plants and distribution systems have achieved the Phase III Directors Award level or higher in the program. The table below briefly describes each award level, the total number of awards achieved since the inception of the Partnership, and the number of awards presented in calendar year 2015. Note that not all utilities listed in the total award count are current program subscribers.

<table>
<thead>
<tr>
<th>Award</th>
<th>Description</th>
<th>2015 Awardees</th>
<th>Overall Awardees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors Award</td>
<td>Awarded to plants that complete a self-assessment report that is successfully peer reviewed (PEAC) and determined to be a “good faith effort” for plant assessment and development of an action plan for future improvement efforts</td>
<td>6</td>
<td>269</td>
</tr>
<tr>
<td>5-Year Directors Award</td>
<td>Awarded to plants that maintain Directors Award status for five years by submitting a staff-reviewed annual update report and data</td>
<td>6</td>
<td>201</td>
</tr>
<tr>
<td>10-Year Directors Award</td>
<td>Awarded to plants that maintain Directors Award status for 10 years by submitting a staff-reviewed annual update report and data</td>
<td>10</td>
<td>158</td>
</tr>
<tr>
<td>15-Year Directors Award</td>
<td>Awarded to plants that maintain Directors Award status for 15 years by submitting a staff-reviewed annual update report and data</td>
<td>48</td>
<td>77</td>
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<tr>
<td>Presidents Award</td>
<td>Awarded to plants that optimize operations to achieve Phase IV individual filter effluent turbidity optimization goals and are committed to working toward the Excellence Award level using a team-based approach</td>
<td>15</td>
<td>29</td>
</tr>
<tr>
<td>Excellence in Water Treatment Award</td>
<td>Awarded to plants that submit a report demonstrating full optimization has been achieved with regards to water quality goals and the resolution of all performance limiting factors identified in the self-assessment. Report is reviewed by utility peers (PEAC).</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>5-Year Excellence Award</td>
<td>Awarded to plants that maintain Excellence Award level performance for five years and submit staff-reviewed annual data and narrative reports</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>10-Year Excellence Award</td>
<td>Awarded to plants that maintain Excellence Award level performance for 10 years and submit staff-reviewed annual data and narrative reports</td>
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<td>3</td>
</tr>
<tr>
<td>15-Year Excellence Award</td>
<td>Awarded to plants that maintain Excellence Award level</td>
<td>0</td>
<td>1</td>
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performance for 15 years and submit staff-reviewed annual data and narrative reports – awarded for the first time in 2014.

**Distribution Program**

<table>
<thead>
<tr>
<th>Award</th>
<th>Description</th>
<th>6</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directors Award</td>
<td>Awarded to systems that complete a self-assessment report that is successfully peer reviewed (PEAC) and determined to be a “good faith effort” for distribution system assessment and development of an action plan for future improvement efforts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidents Award</td>
<td>Awarded to distribution systems that optimize operations to achieve the program’s disinfectant residual optimization goals and are committed to working towards the Excellence Award using a team-based approach. This award was presented for the first time in 2015.</td>
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Figure 7 – Representatives from Metropolitan Water District of Southern California receive the first achieved Presidents Award for Distribution System Operation at ACE15. From left are John Donahue (AWWA Past-President), Glen Boyd, Heather Collins, and Sun Liang (all of Metropolitan Water District of Southern California, and David LaFrance (AWWA CEO)

All award winning utilities are commended for their outstanding performance and tenacity for continuous improvement – many have maintained this standard for an extended period of time. Plants and distribution systems receiving program longevity awards must remain in compliance with all
applicable health-based regulations as well as submit annual data and describe progress made towards optimization in annual narrative report submissions. After repeated years of continuous improvement efforts, many of these utilities have made significant progress towards improving and optimizing treatment plant and distribution system performance.

A graphical illustration of the progress of active plants through the Partnership's treatment program award levels is displayed in Figure 8. This figure displays the total number of currently active plants to achieve each of the program's phases. Active plants consist of subscribers that pay annual dues and submit annual data reports, as required by their specific program phase. Refer to page 18 for a more detailed description of each program phase. Program retention is greatest for plants that complete the self-assessment process and achieve Phase III Directors Award status. Phase IV is a voluntary phase of the program, with stringent performance standards, representing fully optimized performance. The majority of plants that commit to participating in the program eventually complete the self-assessment process. There is no time requirement associated with completion of the self-assessment.

![Figure 8 – Plant Achievements in Partnership for Safe Water History as of December 2015 (Active Plants)](image)

In the distribution system optimization program, 16 utilities have achieved Phase III Directors Award status. At the current time, guidelines for the Presidents Award for Distribution System Operation have been released and Phase IV Excellence in Distribution System Operation Award requirements are under development. As of the time of this report’s preparation, approximately 35% of distribution system program subscribers have progressed to Phase II by submitting baseline disinfectant residual data, while the majority of subscribers remain in Phase I. This is likely to change in future years as a growing number of utilities submit baseline data and distribution system self-assessment reports.
**Partnership Results**

**Treatment Program – Combined Filter Effluent Turbidity Results**

Water treatment plants that are participating in the *Partnership* submit combined filter effluent turbidity results annually. Data are submitted by plants of varying process configurations. Combined filter effluent turbidity results are entered into the *Partnership* data collection software. The software calculates statistics for plant performance evaluation and presents the information in tabular and graphical formats. The calculated monthly 95th percentile values and the monthly maximum values are charted and a frequency distribution plot is constructed using these values.

The annual report data received from all *Partnership* participants (more than 550,000 individual data points are used in this analysis) were analyzed by developing frequency distributions of the monthly 95th percentile turbidity data and the monthly maximum turbidity data. The frequency distribution may be interpreted to represent the percent of monthly turbidity values (either 95th percentile or maximum value) that are less than or equal to a given value. Figure 9 shows the frequency distribution of the annual report data from all participating treatment plants, regardless of phase achieved, for the most recent reporting period (6/1/14-5/31/15).

![Frequency Distribution of Monthly 95th Percentile and Maximum Turbidity Values](image)

**Figure 9 – Frequency Distribution of Monthly 95th Percentile and Maximum Turbidity Values (6/1/2014 – 5/31/2015)**
From these data, many comparisons are possible. Utilities should examine the frequency distribution from their annual report submittal and compare it to the one displayed in Figure 9, which represents all data submitted by Partnership treatment plants at all levels of the program. The graph displayed in Figure 9 yields some interesting information:

- Over 99.8% of monthly 95th percentile turbidity values reported by utility subscribers were less than 0.30 NTU.
- Over 99.3% of monthly 95th percentile turbidity values reported by utility subscribers were less than 0.20 NTU.
- Of all 95th percentile monthly turbidity values, 92.9% were less than or equal to 0.10 NTU.
- A total of 98.6% of monthly maximum turbidity values were less than 0.30 NTU.

Note that the y-axis of the graph in Figure 9 was truncated at a value of 0.5 NTU for clarity and to provide additional detail at lower turbidity levels. A total of 19 individual maximum turbidity values (0.6% of all maximum turbidity values) reported were greater than 0.5 NTU. All of the above statistics represent improvement over 2014 annual program performance.

The USEPA Surface Water Treatment Rule (SWTR) provides specific requirements for filtered water turbidity. The SWTR requires that surface water treatment systems, or systems treating groundwater under the direct influence of surface water (GWUDI), that use conventional and direct filtration not exceed a combined filter effluent turbidity of 1 NTU at any time. The rule also states that combined filter effluent turbidity values must be less than 0.3 NTU for at least 95 percent of samples in any month. The vast majority of Partnership utility subscribers employ conventional or direct filtration techniques, so the turbidity data submitted may be compared with EPA regulatory requirements. These data demonstrate that Partnership treatment program utility subscribers, as a whole, produce water with a lower combined filter effluent turbidity than is required by the EPA Surface Water Treatment Rule. Similar turbidity regulations have been established by Health Canada and specific provinces for Canadian utilities.

It is a Partnership requirement that treatment plants considered to be in good standing, regardless of their phase of program participation, must maintain compliance with all applicable health-based drinking water regulatory requirements, including the EPA Surface Water Treatment Rule turbidity requirements. It is expected that plants located internationally will comply with all applicable health-based local and federal regulatory requirements.

“Employees continue to manage the facility on a daily basis, producing high quality drinking water while meeting and or exceeding regulatory requirements and Partnership goals. Every year the commitment by plant employees to optimize every aspect of the facility is expanded and strengthened.”

2015 Phase III Annual Report Excerpt
Directors Award Finished Water Turbidity Results

Since the inception of the Partnership program, a total of 269 plants have completed a self-assessment and achieved the Directors Award level of recognition in the treatment plant optimization program. An additional 16 utilities have received Directors Award recognition in the distribution system optimization program. Figure 10 illustrates the number of award submittals and achievements in the 2015 calendar year for both programs. The peer-review process can take several weeks, and may carry over into the next year for submittals received late in the year. Therefore, the number of award applications received will not necessarily equal, and may exceed, the number of award achievements in a given year.

The total number of award applications, including Phase III self-assessment completion reports, continues to increase over previous years, as a growing number of subscribers seek to increase their engagement in the Partnership for Safe Water program and work towards demonstrated optimization. The self-assessment process, for both programs, represents a highly beneficial and system-specific learning and improvement opportunity for utility staff. The Presidents Award for Water Treatment remains the program’s most rapidly growing award category.

An increase in the number of trained PEAC volunteers and review team leaders during 2014-2015 has helped to support the increase in report submissions that has occurred over the past several years. The Partnership currently benefits from the talents of nearly 70 trained utility optimization experts. A number of 2015 submittals remain under review at the time of preparation of this report.

Figure 10 – 2015 Partnership Award Summary
Phase III plants have completed a self-assessment and strive to continuously meet the *Partnership* performance goal of a combined filter effluent turbidity of less than 0.10 NTU, at least 95% of the time. Although a limited but increasing number of Phase III plants have achieved the Phase IV Excellence Award, many of these plants are working towards treatment optimization and achievement of the Phase IV numerical goals and Presidents Award recognition which are described in the following section.

The performance results from Directors Award plants reflect those of plants that have completed the self-assessment process. Figure 11 displays the frequency distribution for the monthly 95\textsuperscript{th} percentile turbidity values for plants that have completed Phase III. The “baseline” data (plant performance prior to conducting the self-assessment) for Directors Award plants are compared with the most recent data submittals for these plants (6/1/2014 – 5/31/2015). A comparison of year to year results indicates that Phase III utilities are making steady progress in improving filter effluent turbidity.

This comparison shows that the 95\textsuperscript{th} percentile CFE turbidity of Phase III treatment plants improved by 60% following completion of the *Partnership* self-assessment. This is one way that the effectiveness of the program and its self-assessment process may be demonstrated.

![Frequency Distribution of Monthly 95\textsuperscript{th} Percentile Turbidity Values for Plants Achieving Directors Award Status (6/1/2014 – 5/31/2015)](image)

“I find value in taking chances, risking the comfort of the current operational mindset, and reaping the rewards that only taking risks will provide. We have stepped up to the challenge of treating our challenging raw water source and are doing so safely, efficiently, and effectively. I am proud of my team and what we have accomplished.”

2015 Phase III Annual Report Excerpt
Beyond Phase III – Presidents and Excellence in Water Treatment Turbidity Results

As of December 31, 2015 there are 15 treatment plants that have received the Phase IV Excellence in Water Treatment Award from the Partnership for Safe Water. This award signifies achievement of all Phase IV performance goals and successful demonstration that the treatment plant is fully optimized according to the award guidelines. Data from 12 of these plants are illustrated below, due to the timing of annual submissions received.

During 2015, 15 treatment plants also received the Presidents Award for Water Treatment, based on achieving Phase IV individual filter effluent turbidity performance criteria. For the first time, in 2015, the performance of Presidents Award treatment plants was summarized in this annual report. The performance results from Presidents in Water Treatment Award-winning plants reflect those of plants that have achieved the Partnership’s numerical goals for individual filter effluent turbidity and are working to achieve full, demonstrated optimization, as represented by the Phase IV Excellence in Water Treatment Award requirements. Figure 12 displays the frequency distribution for the monthly 95\textsuperscript{th} percentile turbidity values and monthly maximum turbidity values submitted by Presidents Award-winning plants for the reporting period (6/1/2014-5/31/2015).

Figure 12 – Frequency Distribution of Monthly Turbidity Values – Presidents Award for Water Treatment Plants (6/1/2014 – 5/31/2015)
The performance results from Excellence in Water Treatment Award-winning plants reflect those of plants that have completed the self-assessment process and then proceeded to reach full optimization. Figure 13 displays the frequency distribution for the monthly 95th percentile turbidity values and monthly maximum turbidity values for the reporting period (6/1/2014-5/31/2015).

![Figure 13 – Frequency Distribution of Monthly Turbidity Values – Excellence in Water Treatment Award Plants (6/1/2014 – 5/31/2015)](image)

When comparing data from Presidents and Excellence Award plants, it can be observed that both groups produce water with a comparable filter effluent turbidity that is significantly lower than the Partnership’s optimization goals. Excellence Award plants produce water of a slightly lower 95th percentile CFE turbidity, on average, than Presidents Award plants (average of 0.039 NTU for Presidents Award plants versus 0.037 NTU for Excellence Award plants). The 95th percentile CFE turbidity data from Excellence Award plants also appears to demonstrate a higher level of consistency than that from Presidents Award plant (RSD of 36% for Presidents Award plants versus 30% for Excellence Award plants). Readers are cautioned that this constitutes a single year of data, so limited conclusions can be drawn from the comparison at this time.

Figure 14 includes a comparison of “baseline” data (plant performance prior to conducting the self-assessment) for Excellence in Water Treatment Award plants with the most recent turbidity data submitted (6/1/2014 – 5/31/2015). These data indicate that, based on 95th percentile turbidity values,
plant performance improved more than 50% over the initial baseline turbidity results. This is even more impressive when it is considered that the 95th percentile baseline turbidity value for this group of plants was already <0.10 NTU. This evidence supports that the Phase IV process is an effective tool to further optimize and improve performance, even for well-performing treatment plants.

Figure 14 – Frequency Distribution of Monthly 95th Percentile Turbidity Values – Excellence in Water Treatment Award Plants (Current Year compared to Baseline Year)

“*The water treatment plant staff embraces the Partnership for Safe Water culture, continually striving for excellence. The staff are tenacious at improving the reliability and performance of the treatment processes within the facility. We are committed to accomplishing these goals at all times, never compromising our high standards in the face of any treatment challenges. Treatment plant staff are continually striving for optimization and excellence.*”

*2015 Phase IV Annual Report Excerpt*
In the process of achieving optimization, Phase IV utilities strive to meet stringent performance goals. These goals include:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Phase IV Optimization Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Filter Effluent Turbidity</td>
<td>&lt;0.10 NTU, at least 95% of the time, with a maximum individual filter effluent turbidity goal of ≤0.30 NTU</td>
</tr>
<tr>
<td>Individual Sedimentation Basin Turbidity</td>
<td>&lt;1.0 NTU for raw water turbidity averaging ≤10 NTU, &lt;2.0 NTU for raw water turbidity averaging &gt;10 NTU (does not apply to direct filtration or precipitative softening plants)</td>
</tr>
<tr>
<td>Filter Backwash Recovery Time</td>
<td>Goal of less than 15 minutes at or above 0.10 NTU following a filter backwash (for plants without filter to waste capabilities)</td>
</tr>
</tbody>
</table>

Phase IV plants, like all Partnership utility subscribers, are expected to remain in compliance with all applicable health-based drinking water regulations to maintain good standing as a Phase IV plant as well as to justify their continued recognition at this level.

The 15 Phase IV Excellence in Water Treatment Award winning plants represent a wide range of utilities. These utilities serve populations ranging in size from 20,000 to approximately 1.5 million. *Four of the 15 Excellence in Water Treatment Award winners serve a population of less than 100,000. Eight of the 29 Presidents Award winning utilities serve a population of 100,000 or less, and some Presidents Award recipients have water treatment plants with peak flows of less than 2 MGD.* This demonstrates that treatment optimization is not dependent on utility size. Achieving optimization, and its associated improvements in water quality, can be a realistic goal for utilities of all sizes. Smaller utilities with a commitment to achieving optimization have demonstrated success through the Partnership program. Additionally, both conventional and direct filtration plant configurations are among the Excellence in Water Treatment award winners, demonstrating that the achievement of treatment optimization is independent of the specific treatment process that is applied at the plant.

“It is well understood that the work we do on a daily basis has a direct impact on the health and safety of customers in the communities we serve as tap water personally affects each individual every day. We consider this an enormous responsibility that cannot be taken lightly. We are considered a leader in water treatment locally, regionally, and nationally, and derive a great sense of pride in our commitment to customers, water quality, and the drinking water industry.”

*2015 Phase IV Annual Report Excerpt*
Distribution Program Data Summary

The first preliminary data summary report for the distribution system optimization program was published in 2013. This report marks the fourth year that results from this program have been compiled. During the 2014-2015 reporting period, a total of 51 utilities submitted annual data for the distribution system program, which is a slight increase from the number of annual data submissions in the previous reporting period. These utilities were evenly split between the use of free chlorine and total chlorine as a distribution system disinfectant. Note that this continues to represent a very limited number of utilities and caution should be used when interpreting results. Although a limited amount of data was received, some general observations could be made regarding disinfectant residual and DBP performance. Annual data continues to be collected from distribution system program subscribers to continue to build the database, allowing the program’s impact to be better quantified in the future. The Partnership continues to have a goal of 100% utility participation in the annual reporting process.

Free Chlorine

A frequency distribution of monthly entry point average free chlorine concentrations is presented in Figure 15.

![Frequency Distribution of Monthly Entry Point Average Free Chlorine Concentrations](image)

Figure 15 – Frequency Distribution of Monthly Entry Point Average Free Chlorine Concentrations (6/1/2014 – 5/31/2015)
Based on these data, the monthly average entry point free chlorine concentration submitted by utility subscribers maintaining a free chlorine residual in their distribution systems was 1.28 mg/L, with a standard deviation of 0.44 mg/L. The monthly minimum distribution system sample concentrations ranged from non-detectable (ND) to 1.39 mg/L. The average minimum distribution system free chlorine residual concentration was 0.33 mg/L. The free chlorine results are comparable with those of the previous year’s annual report.

For systems maintaining a free chlorine residual in the distribution system, the percentage of all reported samples not meeting the Partnership’s minimum concentration goal of ≥0.20 mg/L was 2.3%. This means that of the 31,970 free chlorine sample data points compiled by utility subscribers, approximately 778 individual free chlorine samples did not meet the Partnership’s minimum free chlorine concentration goal of ≥0.20 mg/L. None of the entry point average data points exceeded the Partnership’s maximum concentration goal and EPA MRDL of 4.0 mg/L (as Cl₂). Utilities also report the optimization rating of distribution system sample site locations on a scale of 1-5, based on the utilization of optimized sampling locations as defined in the program’s self-assessment guide. The average disinfectant residual sample collection site optimization ranking for free chlorine systems was 3.0.

**Total Chlorine**

A frequency distribution of monthly entry point average total chlorine concentrations is presented in Figure 16.

![Figure 16 - Frequency Distribution of Monthly Entry Point Average Total Chlorine Concentrations (6/1/2014 – 5/31/2015)](image-url)
Based on these data, the monthly average entry point total chlorine residual concentration submitted by utility subscribers that maintain a total chlorine residual in the distribution system was 2.37 mg/L, with a standard deviation of 0.92 mg/L. The monthly minimum distribution system sample concentrations reported ranged from ND to 3.13 mg/L. The average minimum total chlorine concentration was 0.76 mg/L. None of the entry point average monthly total chlorine residual concentrations reported were higher than the Partnership maximum goal and EPA MRDL of 4.0 mg/L (as Cl₂). The total chlorine results are comparable with those of the previous year’s annual report.

For total chlorine systems, the annual average percentage of all reported samples not meeting the Partnership’s target concentration goals was 5.7%. This means that of the 52,767 individual total chlorine sample data points compiled by participating utilities, approximately 4487 total chlorine samples did not meet the Partnership’s target total chlorine concentration range of 0.50 mg/L and ≤4.0 mg/L. The average disinfectant residual sample collection site optimization ranking for total chlorine systems was 3.4.

Disinfection By-Products (DBPs)

Partnership distribution system program utility subscribers also submit disinfection by-product data for TTHM and HAA5. Although the majority of utilities submitted quarterly DBP data, the Partnership’s data collection software allows for the entry of the maximum TTHM and HAA5 value on any given day and compiles the information into a monthly maximum value, which is reported to the Partnership. The data included in this report are an aggregation of these monthly maximum values. LRAA data is not currently submitted by utilities nor included in the following summaries, although it is typically considered in the distribution system self-assessment process.

The Partnership’s optimization criteria for disinfection by-product concentrations are based on test results used to satisfy current local regulatory requirements. Since the majority of utilities reporting data during the 2014-2015 reporting period are from the US, the current USEPA MCLs for TTHM and HAA5 under the Stage 2 D/DBP Rule are as follows:

- TTHM – MCL of 80 µg/L
- HAA5 – MCL of 60 µg/L

Both of these MCLs are calculated as locational running annual averages (LRAA). Additional information pertaining to EPA DBP regulations can be obtained from the EPA website. Note that DBP regulations vary across the geographical locations of utility subscribers.

A summary of the average monthly maximum DBP data submitted, separated by disinfectant type, is displayed in Figure 17.
The average monthly maximum TTHM concentration for utilities using maintaining a free chlorine residual in the distribution system is 43.3 µg/L, while this value is 33.7 µg/L for utilities using total chlorine as a residual distribution system disinfectant. For HAA5, the average monthly maximum concentration is 30.2 µg/L for utilities using free chlorine and 21.1 µg/L for utilities using total chlorine as a residual disinfectant.

Frequency distributions of DBP data are displayed in Figures 18 and 19. Utilities may wish to compare their DBP results with those of other distribution program subscribers. The data includes DBP concentrations submitted by both groundwater and surface water systems.
The average of the monthly maximum TTHM concentrations submitted by free chlorine systems was 43.3 µg/L, with a standard deviation of 29.0 µg/L. The average of the monthly maximum HAA5 concentrations submitted by free chlorine systems was 30.2 µg/L, with a standard deviation of 24.5 µg/L. The range of monthly maximum TTHM concentrations submitted by free chlorine systems was <0.1 µg/L to 130 µg/L, and the range of monthly maximum HAA5 concentrations was <0.1 µg/L to 110 µg/L.
The average of the monthly maximum TTHM concentrations submitted by total chlorine systems was 33.7 µg/L, with a standard deviation of 21.3 µg/L. The average of the monthly maximum HAA5 concentrations submitted by free chlorine systems was 21.1 µg/L, with a standard deviation of 12.5 µg/L. The range of monthly maximum TTHM concentrations submitted by total chlorine systems was 2.0 µg/L to 110 µg/L, and the range of monthly maximum HAA5 concentrations was 2.4 µg/L to 75.8 µg/L.

Pressure and Main Break Data
While not a component of the Phase II baseline data submission, pressure and main break data are evaluated as part of the distribution system self-assessment process. These data are submitted, on an annual basis, by distribution systems that have achieved Phase III status in the distribution system optimization program. The number of pressure and main break data submissions is steadily increasing, as the number of Phase III distribution systems continues to grow. It is anticipated that a summary of aggregated pressure and main break data will be included in the 2017 Annual Data Summary Report.

Caution should be used when evaluating the data from distribution system program subscribers that is included in this report. Data reports were submitted by a total of 51 utilities during 2015, and the data should continue to be considered preliminary. The Partnership continues to collect annual data from both treatment and distribution system program subscribers to continue to quantify the long-term impact of the Partnership’s optimization programs.
**Partnership Roadmap – 2016**

Key elements of the *Partnership’s* 2016 goals are outlined below. The *Partnership for Safe Water* strategic plan, finalized and distributed in 2014, will serve to direct future program operations.

### Partnership for Safe Water: Overall Program Elements

- Subscriber growth for both programs
- Increase outreach and marketing efforts
- Continue collaboration with AWWA Sections, utilities, and partner organizations
- International (Canada) growth
- Implementation of the *Partnership* strategic plan

### Distribution Program

- Continue to develop and refine program guidance, tools, and software
- Develop, release, and pilot Excellence Award level guidelines
- Recruit and provide training for additional PEAC volunteers
- Increase outreach to grow membership, increase engagement, and encourage data submission.

### Treatment Program

- Continue to provide resources and tools to utility subscribers
- Increase outreach to encourage subscriber growth and increase engagement
- Expand the program to incorporate groundwater treatment plants
- Recruit and provide training for PEAC volunteers
**Partnership Budget – 2015**

Operation of the *Partnership for Safe Water* is supported by utility subscriber fees. Utilities pay a subscription fee based on population served. Subscriber fees cost utility customers, on average, less than one penny per year for the benefits of the *Partnership* program. The chart below provides a breakdown of the areas supported by subscriber fees during 2015. The total *Partnership* program budget for 2015 was approximately $400K.

The *Partnership for Safe Water* is a program that is operated primarily by volunteers who contribute their time and expertise to the program. The six *Partnership* organizations all provide support to help keep the program affordable and increase the value to participants. The total value of the time and in-kind support provided by *Partnership* volunteers and *Partner* organizations is estimated at nearly $150,000 annually. This provides value to subscribers and allows program subscription fees to remain affordable, averaging less than one penny per year to the average customer of a utility subscriber.

*Partnership* volunteers contribute significantly to the program’s success. The members of the Steering Committee, the Program Coordinating Committee, the PEAC-T, the PEAC-D, the distribution system and treatment plant self-assessment guidance handbook development teams, and other volunteers dedicate their talent and many hours of their time to make the *Partnership for Safe Water* a successful and affordable program. The *Partnership* is fortunate to benefit from the expertise and generosity of more than 70 volunteers that choose to contribute to the program. *Partnership* staff and the six *Partnership* organizations wish to thank all of the volunteers and their employers for their many hours of dedicated service.
2015 PEAC Distribution System Training attendees and instructors pictured at Pennsylvania American Water’s Hershey Water Treatment Plant.

Read more about the Partnership’s 20-year history in the December 2015 issue of Journal AWWA!
**Partnership Resources**

The *Partnership* implements a number of program features designed to enhance the benefits of Treatment or Distribution Program membership to utility subscribers. Resources available to program subscribers include the following and are limited only by the creativity of subscribers!

<table>
<thead>
<tr>
<th>Partnership Resources for Subscriber Utilities and Award Winners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Award recognition at the AWWA Annual Conference and local venues – including 5, 10, and 15 year longevity awards</td>
</tr>
<tr>
<td>Customized press releases for award winning plants and distribution systems</td>
</tr>
<tr>
<td>A communications kit for award winning utilities</td>
</tr>
<tr>
<td>Press releases to local media by AWWA</td>
</tr>
<tr>
<td>Press releases to social media, upon utility request</td>
</tr>
<tr>
<td>Electronic <em>Partnership</em> logos (Official logo items available for purchase)</td>
</tr>
<tr>
<td>Annual data summary report to compare plant and distribution system performance with aggregate data trends of program subscribers</td>
</tr>
<tr>
<td><em>Partnership for Safe Water</em> data collection software</td>
</tr>
<tr>
<td>Articles in AWWA publications to raise program visibility and provide recognition</td>
</tr>
<tr>
<td>Ads and articles in water publications to recognize award-winning utilities</td>
</tr>
<tr>
<td>Recognition for award-winning utilities in AWWA section publications and at section conferences</td>
</tr>
<tr>
<td>Presentations and outreach at water utility conferences</td>
</tr>
<tr>
<td>Network of <em>Partnership</em> volunteers and support</td>
</tr>
<tr>
<td>Volunteer opportunities to support the <em>Partnership</em> while gaining experience, knowledge, and access to a network of water utility professionals</td>
</tr>
<tr>
<td>Resources to assist with data collection, starting and accomplishing the self-assessment process and self-assessment report completion</td>
</tr>
<tr>
<td>Utility subscriber Case Studies and Technical Tips published regularly</td>
</tr>
<tr>
<td>Informative quarterly newsletter and newly improved website</td>
</tr>
<tr>
<td>Notices of awards to local and state elected officials, upon request</td>
</tr>
</tbody>
</table>
In Closing – *Partnership* is:

**Effective:**

The *Partnership for Safe Water* program has been effective for more than twenty years in improving water quality for over 100 million people served by utilities participating in the program. This represents over 40% of the US population served by surface water. Data submitted by participating utilities provides undeniable evidence that the program results in measurable treatment plant performance improvement. This improvement in water quality has a direct association with decreased risk from exposure to pathogenic microorganisms.

**Proven:**

As evidenced by the data in this report, the program has proven effective for all size utilities. Utilities serving less than 100,000 customers comprise approximately 50% of utility subscribers for both the treatment plant and distribution system optimization programs. The results from all utilities consistently reflect that as the participants progress through the program, treatment plant performance improves. Four of the 15 Phase IV Excellence in Water Treatment Award-winning utilities and eight of the 29 Presidents Award-winning treatment plants serve a population of less than 100,000.

**Real:**

Utilities participating in the program cite major benefits including systematically improving water quality, enhancing operations staff responsibility, improving teamwork, and providing a customer communication tool. The program is highly cost-effective. *Partnership* utility subscriber fees cost customers less than one penny per year for a quantifiable improvement in their water quality. The *Partnership for Safe Water* continues to demonstrate the value of a voluntary program that produces measurable water quality improvement.

*Partner with us*

For more information about the *Partnership for Safe Water* program, or to subscribe, visit [www.awwa.org/partnership](http://www.awwa.org/partnership) or contact Partnership staff at [partnership@awwa.org](mailto:partnership@awwa.org) or by calling 303-347-6169.
Partnership Award Winners – as of December 31, 2015

The Partnership celebrates the following award-winning utilities for their long-term commitment to optimization and the delivery of superior quality drinking water to customers.

2015 Partnership Award Winners (Awards Presented CY 2015)

### EXCELLENCE in Water Treatment Awards

<table>
<thead>
<tr>
<th>10-Year Excellence Award</th>
<th>Excellence in Water Treatment Award</th>
<th>Excellence in Water Treatment Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>Kentucky</td>
<td>Ohio</td>
</tr>
<tr>
<td>Central Lake Cty. Joint Action Water Agency</td>
<td>Louisville Water Company</td>
<td>Cleveland Division of Water</td>
</tr>
<tr>
<td>Paul M. Neal Water Treatment Facility</td>
<td>Crescent Hill Water Treatment Plant</td>
<td>Crown Water Treatment Plant</td>
</tr>
</tbody>
</table>

### PRESIDENTS AWARD for Water Treatment

- **California**
  - City of Fairfield
  - North Bay Regional Water Treatment Plant
  - Metropolitan Water District of Southern California
    - Weymouth Filtration Plant

- **Maryland**
  - Washington Suburban Sanitary Commission
  - Patuxent Water Treatment Plant

- **Nevada**
  - Truckee Meadows Water Authority
  - Chalk Bluff Water Treatment Plant

- **Pennsylvania**
  - Capital Region Water
    - Dr. Robert E. Young Water Services Center
    - Ephrata Area Joint Authority
    - Ephrata Water Treatment Facility

- **Wisconsin**
  - Oak Creek Water & Sewer Utility
  - Oak Creek Water Treatment Plant

### 15-Year Directors Award - Treatment Program

- **California**
  - East Bay Municipal Utility District
    - Orinda Water Treatment Plant
  - Metropolitan Water District of Southern California
    - Henry J. Mills Filtration Plant
    - Joseph Jensen Filtration Plant
    - Robert B. Diemer Filtration Plant
    - Weymouth Filtration Plant
  - Colorado
    - Fort Collins Utilities
      - Fort Collins Water Treatment Plant
  - Georgia
    - Columbus Water Works
      - North Columbus Water Resource Facility
  - Illinois
    - Illinois American Water
      - Pontiac Water Treatment Plant
      - Streator Water Treatment Plant
  - Indiana
    - Fort Wayne City Utilities
      - Three Rivers Filtration Plant
  - Kentucky
    - Louisville Water Company
      - B.E. Payne Water Treatment Plant
      - Crescent Hill Water Treatment Plant
    - Paducah Water Works
      - Paducah Water Works Water Treatment Plant
    - New Jersey
      - New Jersey American Water
        - Delaware River Regional Water Treatment Plant
        - Raritan-Millstone Water Treatment Plant
    - Pennsylvania
      - City of Lancaster
        - Conestoga Water Treatment Plant
      - Pennsylvania American Water
        - Bangor Water Treatment Plant
        - Brownell Water Treatment Plant
        - Butler Water Treatment Plant
        - Geisertown Water Treatment Plant
        - Ellwood Water Treatment Plant
        - Fallbrook Water Treatment Plant
        - Forest City Water Treatment Plant
        - Gerald C. Smith (Hershey) Water Treatment Plant
      - Indiana Water Treatment Plant
    - Tennessee
      - Knoxville Utilities Board
        - Mark B. Whitaker Water Treatment Plant
      - Tennessee American Water
        - Citico Water Treatment Plant
    - Texas
      - Austin Water Utility
        - Albert B. Davis Water Treatment Plant
        - City of Houston
        - East Water Purification Plant
      - Dallas Water Utilities
        - Bachman Water Treatment Plant
        - East Side Water Treatment Plant
    - Utah
      - Central Utah Water Conservancy District
        - Ashley Valley Water Treatment Plant
        - Don A. Christiansen Water Treatment Plant
        - Duchesne Valley Water Treatment Plant
      - Metro. Water District of Salt Lake & Sandy
        - Little Cottonwood Water Treatment Plant
        - Salt Lake City Public Utilities
        - Big Cottonwood Water Treatment Plant
        - City Creek Treatment Plant
        - Parleys Water Treatment Facility
      - Washington
        - City of Everett
        - Everett Water Treatment Plant
### 10-Year Directors Award - Treatment Program

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
<th>Plant Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Water Works Board of the City of Birmingham</td>
<td>Putnam Filter Plant</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Harnett County Department of Public Utilities</td>
<td>Harnett County Regional Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>Orange Water &amp; Sewer Authority</td>
<td>Jones Ferry Road Water Treatment Plant</td>
</tr>
<tr>
<td>Ohio</td>
<td>Cleveland Division of Water</td>
<td>Crown Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>Garrett A. Morgan Water Treatment Plant</td>
<td></td>
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<tr>
<td>Pennsylvania</td>
<td>Blossburg Water Authority</td>
<td>Bellman Water Treatment Plant</td>
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<td></td>
<td>Schuylkill County Municipal Authority</td>
<td>Mount Laurel Water Treatment Plant</td>
</tr>
<tr>
<td>Texas</td>
<td>City of Houston</td>
<td>Southeast Water Purification Plant</td>
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<tr>
<td></td>
<td>El Paso Water Utilities</td>
<td>Jonathan W. Rogers Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>Robertson/Ubenhauer Water Treatment Plant</td>
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</tbody>
</table>

### 5-Year Directors Award - Treatment Program

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
<th>Plant Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>City of Aurora</td>
<td>City of Aurora Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>South Carolina</td>
<td>Greenville Water Stovall Water Treatment Plant</td>
</tr>
<tr>
<td>New York</td>
<td>Monroe County Water Authority</td>
<td>Shoremont Treatment Plant</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Easton Suburban Water Authority</td>
<td>Easton Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>Tennessee</td>
<td>City of Kingsport Water Services</td>
</tr>
<tr>
<td></td>
<td>West Virginia</td>
<td>West Virginia American Water Kanawha Valley Water Treatment Plant</td>
</tr>
<tr>
<td>Colorado</td>
<td>Denver Water</td>
<td>Moffat Water Treatment Plant</td>
</tr>
<tr>
<td></td>
<td>North Carolina</td>
<td>Charlotte Water Vest Water Treatment Plant</td>
</tr>
<tr>
<td>New Jersey</td>
<td>American Water (North Brunswick, NJ)</td>
<td>North Brunswick Water Treatment Plant</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Pennsylvania American Water</td>
<td>Rock Run Water Treatment Plant</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Reading Area Water Authority</td>
<td>Maidencreek Filter Plant</td>
</tr>
</tbody>
</table>

### Directors Award - Treatment Program

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
<th>Plant Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Denver Water</td>
<td>Moffat Water Treatment Plant</td>
</tr>
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<td></td>
<td>North Carolina</td>
<td>Charlotte Water Vest Water Treatment Plant</td>
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<td>New Jersey</td>
<td>American Water (North Brunswick, NJ)</td>
<td>North Brunswick Water Treatment Plant</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Pennsylvania American Water</td>
<td>Rock Run Water Treatment Plant</td>
</tr>
<tr>
<td>New York</td>
<td>Metro. Water Board of Onondaga Cty.</td>
<td>Metropolitan Water Board of Onondaga County Water Treatment Plant</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Reading Area Water Authority</td>
<td>Maidencreek Filter Plant</td>
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### PRESIDENTS AWARD for Distribution System Operation

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Long Beach Water Department</td>
</tr>
<tr>
<td>California</td>
<td>Metropolitan Water District of Southern California</td>
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</table>

### Directors Award - Distribution Program

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Fort Collins Utilities</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>American Water Military Services – Fort Sill</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Powdersville Water</td>
</tr>
<tr>
<td>Texas</td>
<td>American Water Military Services – Fort Hood</td>
</tr>
<tr>
<td>Virginia</td>
<td>Newport News Waterworks</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Oak Creek Water &amp; Sewer Utility</td>
</tr>
</tbody>
</table>
All Time Partnership Award Winners (as of December 31, 2015)

The following utilities and plants have been recognized for their optimization efforts since the inception of the Partnership in 1997. Organizations listed at their highest recognition level.

15-Year Excellence in Water Treatment Award (Phase IV)

Vermont
Champlain Water District
Peter L. Jacob Water Treatment Facility

Illinois
Central Lake County Joint Action Water Agency
Paul M. Neal Water Treatment Facility

Utah
Central Utah Water Conservancy District
Don A. Christiansen Water Treatment Plant

5-Year Excellence in Water Treatment Award (Phase IV)

California
East Bay Municipal Utility District
Orinda WTP

Colorado
Aurora Water
Wemlinger WTP

South Carolina
Greenwood Commissioners of Public Works
W. R. Wise WTP

Excellence in Water Treatment Award (Phase IV)

Alabama
WW Board of the City of Birmingham
Western Filter Plant

New Hampshire
Manchester Water Works
Lake Massabesic WTP

Colorado
Aurora Water
Griswold WTP

North Carolina
Orange Water & Sewer Authority
Jones Ferry Road WTP

Kentucky
Louisville Water Company
B.E. Payne WTP
Crescent Hill WTP

Pennsylvania
Carlisle Borough MA
Carlisle WTP
Chester Water Auth.
Octoraro WTP

Ohio
Cleveland Division of Water
Crown WTP

Presidents Award for Water Treatment

California
City of Fairfield
North Bay Regional Water Treatment Plant
City of San Diego
Miramar WTP
Metropolitan Water Dist. Of So. California
Joseph Jensen WTP
Weymouth Filtration Plant
Modesto Irrigation District
Modesto Regional WTP

Georgia
Atlanta-Fulton County Water Resources Commission
Atlanta-Fulton County Water Treatment Plant

Illinois
City of Aurora
City of Aurora Water Treatment Plant
Village of Wilmette
Wilmette Water Treatment Plant

Maryland
Washington Suburban Sanitary Comm.
Patuxent Water Treatment Plant

Minnesota
St. Paul Regional Water Services
Mccarrons Water Treatment Plant

Pennsylvania
Capital Region Water
Dr. Robert E. Young Water Services Center
Chester Water Authority
Octoraro WTP
Ephrata Area Joint Authority
Ephrata Water Treatment Facility
North Penn/North Wales Water Auth.
Forest Park WTP
Western Berks Water Auth.
Western Berks WTP
Williamsport Municipal Water Authority
Williamsport MWA Water Filtration Plant

Pennsylvania
Pennsylvania American Water
Bangor Water Treatment Plant
Brownell Water Treatment Plant
Clarion Water Treatment Plant
Crystal Lake Water Treatment Plant
Hershey (GC Smith) WTP
Indiana Water Treatment Plant
Nesbitt Water Treatment Plant
Norristown Water Treatment Plant
Philipsburg Water Treatment Plant

South Carolina
Greenville Water System
Adkins Water Treatment Plant
Stovall Water Treatment Plant

Wisconsin
Oak Creek Water & Sewer Utility
Oak Creek Water Treatment Plant
### PRESIDENTS Award - Distribution System Program

<table>
<thead>
<tr>
<th>California</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Water District of Southern California</td>
<td>Long Beach Water Department</td>
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</table>

### Directors Award - Distribution System Program (Phase III)

<table>
<thead>
<tr>
<th>Arizona</th>
<th>California</th>
<th>Colorado</th>
<th>Illinois</th>
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</thead>
<tbody>
<tr>
<td>City of Tempe</td>
<td>Long Beach Water Department</td>
<td>Fort Collins Utilities</td>
<td>American Water Military Services</td>
</tr>
<tr>
<td>Metropolitan Water District of Southern California</td>
<td>Metropolitan Water District of Southern California</td>
<td>San Jose Water Company</td>
<td>Scott Air Force Base</td>
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<tr>
<th>Kansas</th>
<th>Kentucky</th>
<th>New York</th>
<th>North Carolina</th>
<th>Oklahoma</th>
<th>South Carolina</th>
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<tbody>
<tr>
<td>American Water Military Services</td>
<td>Louisville Water Company</td>
<td>City of Rochester</td>
<td>Charlotte Mecklenburg Utilities</td>
<td>Powdersville Water</td>
<td></td>
</tr>
<tr>
<td>Fort Leavenworth</td>
<td></td>
<td></td>
<td>Orange Water and Sewer Authority</td>
<td></td>
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<table>
<thead>
<tr>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oak Creek Water &amp; Sewer Utility</td>
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### 15-Year Directors Award – Treatment (Phase III)

<table>
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<th>California</th>
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<tbody>
<tr>
<td>Alameda County Water District</td>
<td>City of Lancaster</td>
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<tr>
<td>Mission San Jose Water Treatment Plant</td>
<td>Conestoga Water Treatment Plant</td>
</tr>
<tr>
<td>East Bay Municipal Utility District</td>
<td>Pennsylvania American Water</td>
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<tr>
<td>Orinda Water Treatment Plant</td>
<td>Aldrich Water Treatment Plant</td>
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<tr>
<td>Metropolitan Water District of Southern California</td>
<td>Bangor Water Treatment Plant</td>
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<tr>
<td>Henry J. Mills Water Treatment Plant</td>
<td>Brownell Water Treatment Plant</td>
</tr>
<tr>
<td>Joseph Jensen Water Treatment Plant</td>
<td>Butler Water Treatment Plant</td>
</tr>
<tr>
<td>Robert A. Skinner Water Treatment Plant</td>
<td>Ceasetown Water Treatment Plant</td>
</tr>
<tr>
<td>Robert B. Diemer Water Treatment Plant</td>
<td>Ellwood Water Treatment Plant</td>
</tr>
<tr>
<td>Weymouth Filtration Plant</td>
<td>Fallback Water Treatment Plant</td>
</tr>
<tr>
<td>San Francisco Public Utilities Commission</td>
<td>Forest City Water Treatment Plant</td>
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<tr>
<td>Sunol Valley Water Treatment Plant</td>
<td>Gerald C. Smith (Hershey) Water Treatment Plant</td>
</tr>
<tr>
<td>Zone 7 Water Agency</td>
<td>Hays Mine Water Treatment Plant</td>
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<tr>
<td>Del Valle Water Treatment Plant</td>
<td>Indiana Water Treatment Plant</td>
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<table>
<thead>
<tr>
<th>Colorado</th>
<th>Connecticut</th>
<th>Florida</th>
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<tbody>
<tr>
<td>Fort Collins Utilities</td>
<td>Aquarion Water Company of Connecticut</td>
<td>City of Tampa Water Department</td>
</tr>
<tr>
<td>Fort Collins Water Treatment Plant</td>
<td>Easton Lake Water Treatment Facility</td>
<td>David L. Tippin Water Treatment Facility</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>South Carolina</th>
<th>Florida</th>
<th>Georgia</th>
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<tbody>
<tr>
<td>Georgetown County Water and Sewer Authority</td>
<td>City of Tampa Water Department</td>
<td>Douglasville-Douglas County Water &amp; Sewer Authority</td>
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<tr>
<td>Waccamaw Neck Regional Water Treatment Plant</td>
<td>Bear Creek Water Treatment Plant</td>
<td>Bear Creek Water Treatment Plant</td>
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<td>Santee Cooper Regional Water Authority</td>
<td>Columbus Water Works</td>
<td>Columbus Water Works</td>
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<tr>
<td>Lake Moultrie Water Treatment Plant</td>
<td>North Columbus Water Resource Facility</td>
<td>North Columbus Water Resource Facility</td>
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<table>
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<th>Tennessee</th>
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<tbody>
<tr>
<td>Knoxville Utilities Board</td>
<td>Austin Water Utility</td>
</tr>
<tr>
<td>Mark B. Whitaker Water Treatment Plant</td>
<td>Albert R. Davis Water Treatment Plant</td>
</tr>
<tr>
<td>Tennessee American Water</td>
<td>Ullrich Water Treatment Plant</td>
</tr>
<tr>
<td>Citco Water Treatment Plant</td>
<td>City of Houston</td>
</tr>
<tr>
<td></td>
<td>East Water Purification Plant</td>
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<table>
<thead>
<tr>
<th>Texas Water Utilities</th>
<th>Virginia</th>
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</thead>
<tbody>
<tr>
<td>Bachman, East Side, &amp; Elm Fork Water Treatment Plants</td>
<td>Newport News Waterworks</td>
</tr>
</tbody>
</table>
15-Year Directors Award – Treatment (Phase III) - continued

**Kentucky**
- Louisville Water Company
  - B.E. Payne Water Treatment Plant
  - Crescent Hill Water Treatment Plant
- **Kentucky American Water**
  - Kentucky River Station Water Treatment Plant
  - Richmond Road Station Water Treatment Plant
- Paducah Water Works Water Treatment Plant

**Utah**
- Central Utah Water Conservancy District
  - Ashley Valley Water Treatment Plant
  - Don A. Christiansen Water Treatment Plant
  - Duchesne Valley Water Treatment Plant
- **Metro. Water District of Salt Lake & Sandy**
  - Little Cottonwood Water Treatment Plant
  - Salt Lake City Public Utilities
  - Big Cottonwood Water Treatment Plant
  - City Creek Treatment Plant
  - Parleys Water Treatment Facility

**Minnesota**
- St. Paul Regional Water Services
  - McCarrons Water Filtration Plant

**Missouri**
- City Utilities of Springfield
  - Blackman Water Treatment Plant
  - Fulbright Water Treatment Plant

**New Jersey**
- New Jersey American Water
  - Delaware River Regional Water Treatment Plant
  - Raritan-Millstone Water Treatment Plant

**Vermont**
- Champlain Water District
  - Peter L. Jacob Water Treatment Facility

**Virginia**
- Chesterfield County Utilities
  - Addison-Evans Water Prod. & Lab

**Washington**
- City of Bellingham
  - Whatcom Falls Water Treatment Plant
- **City of Everett**
  - Everett Water Treatment Plant

**West Virginia**
- West Virginia American Water
  - Huntington Water Treatment Plant

**Wisconsin**
- Oak Creek Water & Sewer Utility
  - Oak Creek Water Treatment Plant

**Arizona**
- Arizona Public Service Commission
  - Maricopa Water Treatment Plant

**California**
- California American Water
  - Claremont Water Treatment Plant

**Canada**
- **Ontario**
  - Peel Region
    - Mimico Water Treatment Plant

**Connecticut**
- Connecticut Water Company
  - Bridgeport Water Treatment Plant

**Delaware**
- Delaware City Water Company
  - New Castle Water Treatment Plant

**Florida**
- Florida Water Services
  - Jupiter Water Treatment Plant

**Georgia**
- Georgia Water Services
  - Atlanta Water Treatment Plant

**Illinois**
- Illinois Water Services
  - Chicago Water Treatment Plant

**Indiana**
- Indiana Water Services
  - Indianapolis Water Treatment Plant

**Iowa**
- Iowa Water Services
  - Des Moines Water Treatment Plant

**Kansas**
- Kansas Water Services
  - Kansas City Water Treatment Plant

**Kentucky**
- Kentucky Water Services
  - Louisville Water Treatment Plant

**Louisiana**
- Louisiana Water Services
  - Baton Rouge Water Treatment Plant

**Maryland**
- Maryland Water Services
  - Baltimore Water Treatment Plant

**Michigan**
- Michigan Water Services
  - Detroit Water Treatment Plant

**Minnesota**
- Minnesota Water Services
  - Twin Cities Water Treatment Plant

**Missouri**
- Missouri Water Services
  - Kansas City Water Treatment Plant

**New Jersey**
- New Jersey Water Services
  - Newark Water Treatment Plant

**New York**
- New York Water Services
  - New York City Water Treatment Plant

**North Carolina**
- North Carolina Water Services
  - Charlotte Water Treatment Plant

**Ohio**
- Ohio Water Services
  - Cleveland Water Treatment Plant

**Oklahoma**
- Oklahoma Water Services
  - Oklahoma City Water Treatment Plant

**Oregon**
- Oregon Water Services
  - Portland Water Treatment Plant

**Pennsylvania**
- Pennsylvania Water Services
  - Philadelphia Water Treatment Plant

**Rhode Island**
- Rhode Island Water Services
  - Providence Water Treatment Plant

**South Carolina**
- South Carolina Water Services
  - Charleston Water Treatment Plant

**South Dakota**
- South Dakota Water Services
  - Sioux Falls Water Treatment Plant

**Tennessee**
- Tennessee Water Services
  - Memphis Water Treatment Plant

**Texas**
- Texas Water Services
  - Houston Water Treatment Plant

**Utah**
- Utah Water Services
  - Salt Lake City Water Treatment Plant

**Vermont**
- Vermont Water Services
  - Burlington Water Treatment Plant

**Virginia**
- Virginia Water Services
  - Richmond Water Treatment Plant

**Washington**
- Washington Water Services
  - Seattle Water Treatment Plant

**West Virginia**
- West Virginia Water Services
  - Charleston Water Treatment Plant

**Wisconsin**
- Wisconsin Water Services
  - Milwaukee Water Treatment Plant

**Wyoming**
- Wyoming Water Services
  - Cheyenne Water Treatment Plant
Due to the number of plants that have achieved 10-Year Directors Award status in California & Pennsylvania, plants in these states have been listed separately. Refer to the following page for a list of 10-Year Directors Award-winning plants in other areas.

California
- Contra Costa Water District
  - Bollman WTP
  - Randall-Bold WTP

- East Bay Municipal Utility Dist.
  - Lafayette WTP
  - Sobrante WTP
  - Upper San Leandro WTP
  - Walnut Creek WTP

- Modesto Irrigation District
  - Modesto Regional WTP

- San Francisco Public Utilities Commission
  - Harry Tracy WTP

Pennsylvania
- Blossburg Water Authority
  - Bellman Water Treatment Plant

- Brodhead Creek Regional Water Authority
  - Brodhead Creek Regional WTP

- Capital Region Water
  - Dr. Robert E. Young Water Services Center

- Carlisle Borough Municipal Authority
  - Carlisle WTP

- Chester Water Authority
  - Octoraro WTP

- Downington MWA
  - Vincent J. DiEuuis WTP

- E. Greenville Boro Water Department
  - East Greenville WTP

- Jersey Shore Area Joint Water Authority
  - Larrys Creek Filter Plant

- North Penn/North Wales Water Authority
  - Forest Park WTP

- Oakmont Water Authority
  - Hulton WTP

- Pennsylvania American Water
  - Brownsville WTP
  - Crystal Lake WTP
  - Kane WTP
  - Lake Scranton WTP
  - Norristown WTP
  - Oneida Valley WTP
  - Philipsburg WTP
  - Punxsutawney WTP
  - Silver Spring WTP
  - Susquehanna WTP
  - Watres WTP
  - White Deer Creek WTP

- Schuylkill County Municipal Authority
  - Mount Laurel WTP

- Shenandoah Municipal Water Authority
  - Shenandoah WTP
<table>
<thead>
<tr>
<th>State</th>
<th>City/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td><strong>Aquarion Water Co. of CT</strong>&lt;br&gt;Putnam WFP&lt;br&gt;Mianus Filter Plant</td>
</tr>
<tr>
<td></td>
<td><strong>Montezuma Water Co.</strong>&lt;br&gt;Montezuma WTP</td>
</tr>
<tr>
<td></td>
<td><strong>Ute Water Conservancy</strong>&lt;br&gt;Ute WTP</td>
</tr>
<tr>
<td>Colorado</td>
<td><strong>City of Golden</strong>&lt;br&gt;City of Golden WTP</td>
</tr>
<tr>
<td></td>
<td><strong>City of Golden</strong>&lt;br&gt;City of Golden WTP</td>
</tr>
<tr>
<td></td>
<td><strong>Montezuma Water Co.</strong>&lt;br&gt;Montezuma WTP</td>
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<td><strong>Ute Water Conservancy</strong>&lt;br&gt;Ute WTP</td>
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<tr>
<td>Connecticut</td>
<td><strong>Aquarion Water Co. of CT</strong>&lt;br&gt;Putnam WFP&lt;br&gt;Mianus Filter Plant</td>
</tr>
<tr>
<td></td>
<td><strong>Central Lake County Joint Action Water Agency</strong>&lt;br&gt;Paul M. Neal WTP</td>
</tr>
<tr>
<td>Illinois</td>
<td><strong>Illinois American Water</strong>&lt;br&gt;Alton District WTP&lt;br&gt;Cairo District WTP&lt;br&gt;East St. Louis WTP&lt;br&gt;Granite City WTP&lt;br&gt;Peoria-Ill River WTP</td>
</tr>
<tr>
<td>Indiana</td>
<td><strong>Indiana American Water</strong>&lt;br&gt;Borman Park WTP&lt;br&gt;Kokomo (Wildcat) WTP&lt;br&gt;Muncie White River WTP&lt;br&gt;Ogden Dunes WTP&lt;br&gt;Richmond Main WTP</td>
</tr>
<tr>
<td>Iowa</td>
<td><strong>Iowa American Water</strong>&lt;br&gt;East River Station WTP</td>
</tr>
<tr>
<td>Louisiana</td>
<td><strong>City of Bossier City</strong>&lt;br&gt;Bossier Water Treatment Plant</td>
</tr>
<tr>
<td>Missouri</td>
<td><strong>City of St. Louis Department of Public Utilities</strong>&lt;br&gt;Chain of Rocks WTP&lt;br&gt;Howard Bend WTP</td>
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<tr>
<td></td>
<td><strong>Missouri American Water</strong>&lt;br&gt;Central WTP&lt;br&gt;Jefferson City WTP&lt;br&gt;Joplin Blendville WTP&lt;br&gt;Meramec WTP&lt;br&gt;North WTP&lt;br&gt;South WTP</td>
</tr>
<tr>
<td>New Hampshire</td>
<td><strong>Manchester Water Works</strong>&lt;br&gt;Lake Massabesic WTP</td>
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<tr>
<td>New Jersey</td>
<td><strong>Middlesex Water Company</strong>&lt;br&gt;C. J. Olsen WTP</td>
</tr>
<tr>
<td></td>
<td><strong>New Jersey American Water</strong>&lt;br&gt;Canal Road WTP&lt;br&gt;Jumping Brook WTP&lt;br&gt;Swimming River WTP</td>
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<tr>
<td>New York</td>
<td><strong>City Rochester Water &amp; Lighting Bureau</strong>&lt;br&gt;Hemlock Lake WFP</td>
</tr>
<tr>
<td>North Carolina</td>
<td><strong>Harnett County Department of Public Utilities</strong>&lt;br&gt;Harnett County Regional WTP</td>
</tr>
<tr>
<td></td>
<td><strong>Fayetteville PW Comm.</strong>&lt;br&gt;Glennville Lake WTP&lt;br&gt;P. O. Hoffer WTP</td>
</tr>
<tr>
<td></td>
<td><strong>Orange Water &amp; Sewer Authority</strong>&lt;br&gt;Jones Ferry Road WTP</td>
</tr>
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<td><strong>Town of Cary</strong>&lt;br&gt;Cary Apex WTP</td>
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<tr>
<td>Ohio</td>
<td><strong>Aqua Ohio Water Company</strong>&lt;br&gt;Marion District WTP&lt;br&gt;Tiffin WTP</td>
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<td></td>
<td><strong>Cleveland Division of Water</strong>&lt;br&gt;Crown WTP&lt;br&gt;Garrett A. Morgan WTP</td>
</tr>
<tr>
<td>Oregon</td>
<td><strong>City of The Dalles</strong>&lt;br&gt;Wicks WTP</td>
</tr>
<tr>
<td>South Carolina</td>
<td><strong>Beaufort Jasper Water and Sewer Authority</strong>&lt;br&gt;Chelsea WTP</td>
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<td><strong>Charleston Water System</strong>&lt;br&gt;Hanahan WTP</td>
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<td></td>
<td><strong>City of Newberry</strong>&lt;br&gt;G. Hugh Connelly WTP</td>
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<td><strong>Greenwood Commissioners of Public Works</strong>&lt;br&gt;W. R. Wise WTP</td>
</tr>
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<td><strong>Spartanburg Water</strong>&lt;br&gt;R. B. Simms WTP</td>
</tr>
<tr>
<td>Texas</td>
<td><strong>City of Houston</strong>&lt;br&gt;Southeast WPP&lt;br&gt;El Paso Water Utilities&lt;br&gt;Robertson/Umbehauer WTP</td>
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<tr>
<td>Virginia</td>
<td><strong>Appomattox River Water Authority</strong>&lt;br&gt;Appomattox River WTP</td>
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<tr>
<td>West Virginia</td>
<td><strong>W. Virginia American Water</strong>&lt;br&gt;Ada WTP (Bluefield)&lt;br&gt;Bluestone WTP&lt;br&gt;Gassaway WTP&lt;br&gt;Weston WTP (West Fork)</td>
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</table>
## 5-Year Directors Award – Treatment (Phase III)

<table>
<thead>
<tr>
<th>State</th>
<th>City/Authority</th>
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</thead>
<tbody>
<tr>
<td><strong>Alabama</strong></td>
<td>WW Board of the City of Birmingham, H. Y. Carson WFP, and Western WFP</td>
</tr>
<tr>
<td><strong>California</strong></td>
<td>City of San Diego, Otay WTP, and Western WFP</td>
</tr>
<tr>
<td><strong>Colorado</strong></td>
<td>Aurora Water: Grieswold WTP, Clifton Water District, Charles A. Strain (Clifton) WTP</td>
</tr>
<tr>
<td><strong>Illinois</strong></td>
<td>City of Aurora, and Village of Wilmette, Wilmette WTP</td>
</tr>
<tr>
<td><strong>Kansas</strong></td>
<td>Kansas City Board of Public Utilities, Nearman WTP</td>
</tr>
<tr>
<td><strong>New York</strong></td>
<td>City of Troy Department of Public Utilities, John P. Buckley WTP</td>
</tr>
<tr>
<td><strong>Pennsylvania</strong></td>
<td>Easton Suburban Water Authority, Easton WTP</td>
</tr>
<tr>
<td><strong>South Carolina</strong></td>
<td>Beaufort Jasper Water &amp; Sewer Authority, Purnysburg WTP</td>
</tr>
<tr>
<td><strong>Tennessee</strong></td>
<td>City of Kingsport Water Services, City of Kingsport WTP</td>
</tr>
<tr>
<td><strong>West Virginia</strong></td>
<td>West Virginia American Water, Kanawha Valley WTP, Montgomery WTP, New River Regional WTP</td>
</tr>
</tbody>
</table>

### States and Cities

- **Alabama**: WW Board of the City of Birmingham, H. Y. Carson WFP, Western WFP
- **California**: City of San Diego, Otay WTP, Western WFP
- **Colorado**: Aurora Water: Grieswold WTP, Clifton Water District, Charles A. Strain (Clifton) WTP
- **Illinois**: City of Aurora, Village of Wilmette, Wilmette WTP
- **Kansas**: Kansas City Board of Public Utilities, Nearman WTP
- **New York**: City of Troy Department of Public Utilities, John P. Buckley WTP
- **Pennsylvania**: Easton Suburban Water Authority, Easton WTP
- **South Carolina**: Beaufort Jasper Water & Sewer Authority, Purnysburg WTP
- **Tennessee**: City of Kingsport Water Services, City of Kingsport WTP
- **West Virginia**: West Virginia American Water, Kanawha Valley WTP, Montgomery WTP, New River Regional WTP

### Directors Award – Treatment (Phase III)

<table>
<thead>
<tr>
<th>State</th>
<th>City/Authority</th>
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<tbody>
<tr>
<td><strong>Arizona</strong></td>
<td>EPCOR Water Arizona, Anthem WTP</td>
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<tr>
<td><strong>Arkansas</strong></td>
<td>Beaver Water District, Beaver Water District WTP</td>
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<tr>
<td><strong>California</strong></td>
<td>City of Fairfield, North Bay Regional WTP, City of San Diego, Miramar WTP</td>
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<td><strong>Colorado</strong></td>
<td>Aurora Water: Peter D. Binney WPP, Wemlinger WTP, City of Boulder, Betasso WTP, Boulder Reservoir/63rd St. WTP, Denver Water, Moffat WTP</td>
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<tr>
<td><strong>Georgia</strong></td>
<td>Atlanta-Fulton County Water, Atlanta-Fulton County WTP</td>
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<tr>
<td><strong>Maryland</strong></td>
<td>City of Rockville, Rockville WTP, Washington Suburban Sanitary Commission, Patuxent WFP, Potomac River WTP</td>
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<tr>
<td><strong>Nevada</strong></td>
<td>Truckee Meadows Water Auth. (Chalk Bluff WTP, So. Nevada Water Authority, River Mountains WTP)</td>
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<tr>
<td><strong>New Jersey</strong></td>
<td>American Water (North Brunswick NJ), North Brunswick WTP, Town of Queensbury, Town of Queensbury WTP</td>
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<tr>
<td><strong>New York</strong></td>
<td>Metro. Water Board of Onondaga County, Metro. Water Board of Onondaga County WTP, City of Greensboro, Lake Townsend WTP, City of Raleigh, E.M. Johnson WTP</td>
</tr>
<tr>
<td><strong>North Carolina</strong></td>
<td>Charlotte-Mecklenburg Util. (Franklin WTP, Vest WTP, City of Greensboro, N.L. Mitchell WTP, Lake Townsend WTP)</td>
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<tr>
<td><strong>Pennsylvania</strong></td>
<td>Aqua Pennsylvania, Inc., Roaring Creek Div. WTP, Ingram’s Mill WTP, Ephrata Area Joint Authority, Ephrata Area Joint Authority WTP, Pennsylvania American Water, Rock Run WTP, Shady Lane WTP/Home Sys. Stanley Garden WTP, West Shore Regional WTP, Pike Township Municipal Auth., Pike Township WTP, Reading Area Water Authority, Maidencreek Filtration Plant, Western Berks Water Auth., Western Berks WTP</td>
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<tr>
<td><strong>Oklahoma</strong></td>
<td>City of Tulsa, A. B. Jewell WTP, Mohawk WTP</td>
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<tr>
<td><strong>South Carolina</strong></td>
<td>Greenville Water System, Stovall WTP, Orangeburg Dept. of Public Utilities, John H. Pearson WTP</td>
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<tr>
<td><strong>Virginia</strong></td>
<td>Town of Culpeper, Culpeper WTP</td>
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</tbody>
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**Partnership for Safe Water** 48
Current Distribution System Program Subscribers

The following utilities are current Partnership subscribers and among the first utilities to be active in the Distribution System Optimization Program. We recognize these utilities for their leadership in the industry. Listing is of active subscribers as of 12/31/15.

Alaska
Anchorage Water and Wastewater Utility

Alabama
The Water Works Board of the City of Birmingham
American Water Enterprises

Arkansas
Central Arkansas Water

Arizona
City of Tempe
EPCOR Water Arizona
Metro Water District of Tucson

California
Apple Valley Ranchos Water Company
California American Water Company
California Water Service Company
City of San Diego
City of Santa Monica Water Department
Contra Costa Water District
Golden State Water Company
Long Beach Water Department
Metropolitan Water District of Southern California
Park Water Company
San Jose Water Company
Yucaipa Valley Water District

Colorado
Aurora Water
City of Boulder
City of Golden
City of Westminster
Denver Water
Eagle River Water and Sanitation District
Fort Collins Utilities
North Table Mountain Water and Sanitation District
Upper Eagle Regional Water Authority

Delaware
City of Wilmington

District of Columbia
DC Water

Florida
Palm Bay Utilities
Pinellas County Utilities

Georgia
City of Thomaston
Columbus Water Works
Douglasville-Douglas County Water & Sewer Authority

Iowa
Iowa City Water Division
Marshalltown Water Works

Illinois
American Water Military Services – Scott Air Force Base
Illinois American Water

Indiana
Indiana American Water

Kansas
American Water Military Services - Fort Leavenworth
City of Olathe

Kentucky
Henderson Water Utility
Kentucky American Water
Louisville Water Company

Louisiana
American Water Military Services - Fort Polk
City of Monroe Water System

Maryland
American Water Military Services - Fort George G. Meade
Easton Utilities Commission
Washington Suburban Sanitary Commission

Maine
Portland Water District

Massachusetts
Town of Canton Water Department
<table>
<thead>
<tr>
<th>Michigan</th>
<th>Plainview Water District</th>
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<tr>
<td></td>
<td>Village of Waterloo</td>
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<td>Minnesota</td>
<td>Nova Scotia</td>
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<td>Halifax Water</td>
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<td>Missouri</td>
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<td>Cleveland Division of Water</td>
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<td>Greater Cincinnati Water Works</td>
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<td>Shawnee Municipal Authority</td>
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<td>Hilton Head #1 Public Service District</td>
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<td>New Mexico</td>
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<td>City of Rochester Water Bureau</td>
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<td>Monroe County Water Authority</td>
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</tbody>
</table>

Partnership for Safe Water 50
Mount Pleasant Waterworks
Powdersville Water
Sartex-Jackson-Wellford-Duncan Water District

**Tennessee**
City of Alcoa
Metro Water Services - Nashville
Tennessee American Water

**Texas**
American Water Military Services - South Fort Hood
City of Houston
City of Kilgore
El Paso Water Utilities Public Service Board
Fort Worth Water Department
San Jacinto River Authority – Woodlands Division

**Utah**
Jordanelle Special Service District
Twin Creeks Special Service District

**Virginia**
American Water – Fort AP Hill
Chesterfield County Utilities Dept.
City of Virginia Beach Dept. of Public Utilities
Newport News Waterworks
Prince William County Service Authority
Spotsylvania County Utilities Department
Washington County Service Authority

**Vermont**
Champlain Water District & Retail Dept.

**Wisconsin**
Milwaukee Water Works
Oak Creek Water and Sewer Utility