



*ConnecticutWater*  
*MaineWater*

**2016** Corporate  
Sustainability Report



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# Chairman's Message

I am pleased to share this update to our Corporate Sustainability Report. This report highlights our achievements over the past several years in conducting our business operations in a manner that respects the natural environment and values service to customers, communities, employees, and shareholders.

A lot has changed since our first report in 2011. In 2012, Aqua Maine and Biddeford & Saco Water companies were acquired and became The Maine Water Company, a subsidiary of CTWS, which includes all of our Maine operations. This acquisition was a milestone for the company, adding another 32,000 customers and cementing our position as the largest publicly traded water company based in New England. Moreover, it reinforced our commitment to the environment. The beauty of the state's vast natural resources—combined with Maine Water's historically strong environmental ethic—motivated us to focus on the Environment as one of our core building blocks.

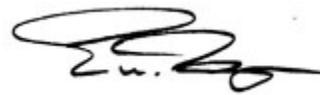
Water is a precious natural resource and encouraging conservation is the right thing to do. Our ability to encourage our customers to conserve water was enhanced by the passage of rate adjustment laws in both Connecticut (2013) and Maine (2015). These water revenue adjustment mechanisms allow our companies to collect the revenues authorized in our rate case, regardless of whether actual retail water sales were above or below amounts forecasted by regulators. This allows us to focus on water service and not sales.

Protecting water quality is paramount to our business, to future generations, and to our natural environment. Through our Source Water Protection Program, we monitor land use activities that have the potential to impair water quality by conducting regular watershed inspections and reviewing development proposals. We partner with like-minded non-profit organizations and municipalities to protect and conserve open space. To date we've established permanent conservation easements on approximately 2,500 acres of land within our service area.

In 2014, our workforce mobility platform in Connecticut went live, improving field staff efficiency, limiting paper-based work orders, enhancing customer service, and helping reduce our carbon footprint. In 2015, Maine Water replaced a finished water reservoir that was more

than a century old with a new 3-million gallon storage tank. Water loss associated with the old storage reservoir was an unsustainable 0.5 million gallons per day! And every year, our water infrastructure programs replace miles of aged distribution system piping that often contributes to system water losses. More than 112 miles of main have been replaced since 2008. This report profiles these and many other initiatives that enable us to conduct our business operations sustainably.

Some of these initiatives are large and some small, but all reflect the commitment of our company and employees to support our strategy of delivering world-class customer service while being good stewards of the natural resources and shareholders' investments entrusted to us.



Eric W. Thornburg  
Chairman, President and Chief Executive Officer



# What does it mean to be sustainable?

A basic concept of sustainability is that environmental protection, economic development, and social responsibility are not mutually exclusive of each other or in conflict. Instead, as described in the United Nations 2005 World Summit Outcome Document, they are “interdependent and mutually reinforcing pillars” of sustainable development. We believe in this concept and strive to conduct our business sustainably.

## *Environmentally Responsible*

Water utilities were perhaps the first green industry. We have long known that the quality of our water source has a direct correlation to the quality of the water we deliver to our customers. While our company has a robust source water protection program, our environmental efforts have grown beyond those directly related to land and water. Our commitment to the environment extends into areas such as energy and fleet management, purchasing standards, and other ways to reduce our overall environmental impact.

## *Economically Responsible*

We have an obligation to operate and maintain our public water systems so they have the capacity to sustain themselves through timely capital investments, replacement of aging infrastructure, implementing new technologies that enhance efficiency and water quality, and charging appropriate rates for service.

In addition, it is essential that we hire and retain skilled and dedicated employees who are passionate about delivering high quality water and service to customers and communities. The foundation for a sustainable public water system is built on sound financial management. As an investor-owned utility we are mindful that the capital that funds our operation and allows us to build our systems comes from our customers and shareholders. We have an obligation to both to operate as efficiently as possible.



## *Socially Responsible*

Our company is committed to fostering socially responsible programs and policies that enhance sustainability efforts. We believe we must be responsible employers, neighbors, and community members. Our efforts include corporate giving, employee volunteer hours, in-kind donations of products and services, and strong partnerships with community and nonprofit organizations.

*Meeting the needs of the present without compromising the ability of future generations to meet their own needs.*



# About Us

Engaged employees are more committed—to the company, to each other, and to serving our customers and communities.

## Our Company

Connecticut Water Service, Inc. (CTWS) is a non-operating holding company that was incorporated in 1974, and its common stock trades on the NASDAQ Global Select Market under the ticker symbol CTWS. CTWS is the largest publicly traded water company based in New England and one of the 10 largest investor-owned water utilities in the U.S. with more than \$100 million in revenue and a market capitalization of more than \$550 million. Its largest subsidiary is The Connecticut Water Company (CWC), a regulated water utility company that was organized in 1956. The Aqua Maine and the Biddeford & Saco Water companies in Maine acquired in 2012 became CTWS's subsidiary, The Maine Water Company (MWC).

CWC has grown from 20,000 customers across 16 towns in 1956 to 93,000 customers in 56 Connecticut communities by the end of 2016. Together, CWC and MWC serve 125,000 customers or approximately 400,000 people in 77 New England communities.

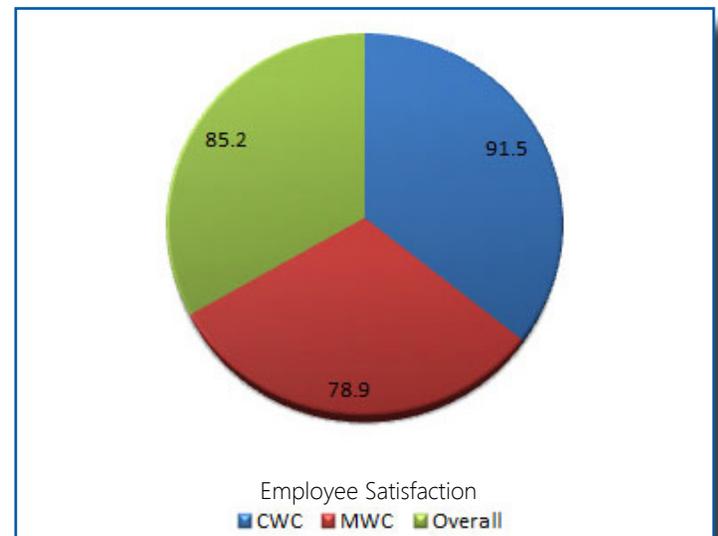
- Our customer base is 90% residential.
- Our water infrastructure consists of 75 noncontiguous water systems and approximately 2,144 miles of water main.
- We own and operate 32 water filtration facilities.
- The safe, dependable yield from our 236 active wells and 24 surface water sources is approximately 176 million gallons per day.

## Our People

Our employees are professionals. They hold numerous certifications, licenses, and actively pursue continuing education in order to perform the critical tasks necessary

to deliver high quality drinking water and service to families and communities. Our employees care deeply about those communities. To them, service means more than treating and pumping water and reading meters; it means volunteering at community events, collecting money and groceries to stock local food banks, and conducting holiday toy drives for area children. This report highlights many of the ways the employees of Connecticut Water and Maine Water strive to make a difference.

We regularly measure our employees' satisfaction, engagement, and other metrics and strive to maintain these measures at world-class levels. In 2015, we launched a robust talent management program to ensure that our people have the development opportunities to pursue rewarding careers at our company. The talent management program also positions us to ensure we have the right people waiting in the wings to fill roles as seasoned veterans approach their retirement.



## Honesty, Trust and Respect Pledge

As employees we believe that all of our jobs are important in achieving the mission of our company, and it is essential that honesty, trust and respect be honored in our work place as the foundation of a productive environment.

*Therefore, we pledge to our fellow employees, business affiliates, and ourselves that we will...*

**Work** together using teamwork and open communication as our guide so **trust** will prevail;

**Be** sincere with those we serve, be open and receptive to new ideas, coach and develop others, uphold and practice fair and ethical behavior and **honesty** will form;

**Have** a positive attitude, treat others with dignity, portray patience, bench mark and continuously improve, and be accountable so **respect** will grow.



### Our Values

Our values are simple: Honesty, Trust, Respect, Service, Teamwork, Positive Attitude, and Straight Talk. We place a high value on service and trust, and work hard every day to improve our internal and external service delivery and to build trust with our customers, shareholders, regulators, and each other. To that end, our employees developed an Honesty, Trust & Respect Pledge honoring those values.

We recognize that special obligations of public trust are placed upon us since we produce a product for human consumption—and that the success of our company is based on a foundation of trust. Our Code of Conduct guides our actions by articulating shared principals of ethical behavior, clearly communicating expectations, and establishing a framework by which employees are able to model those behaviors. The Code also provides clear guidance on reporting any perceived violations or conflicts that may arise. All employees are required to undertake an annual review of the Code of Conduct and accept responsibility for adhering to its tenets.

### Corporate Responsibility Committee

In 2008, Connecticut Water established a Corporate Responsibility Committee (CRC) comprised of a cross-functional team of Connecticut and Maine employees. The committee reviews the company's commitment, success and leadership in:

- Fostering socially responsible programs and policies;
- Enhancing environmental stewardship, sustainability, and asset management; and
- Consolidating the company's efforts to conduct our business affairs as a responsible corporate citizen.

The CRC explores how to take industry best practices and employee suggestions that promote environmental and social stewardship and make them a reality. The team also works to engage employees in sustainability initiatives and communicate company successes to customers, shareholders, and other stakeholders. Our CRC Charter may be viewed online at [www.ctwater.com](http://www.ctwater.com)

# Our Mission and Vision

Our Mission is to have passionate employees delivering life-sustaining, high quality water service to families and communities while providing a fair return to our shareholders. Our Vision is to do so at world-class levels.

Our core “building blocks” are our Customers, Shareholders, Employees and the Environment. By measuring our performance across all four building blocks, we enable balanced decision-making that supports all of our stakeholders and provides a solid framework for achieving sustainability.

Customers	Employees
<ul style="list-style-type: none"> <li>Invest and maintain infrastructure to support high-quality water and service</li> <li>Provide Assistance Programs for low income/hardship</li> <li>Provide Responsive and Courteous Service</li> <li>Strive for World-Class Customer Satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Attract and retain passionate, team and service-oriented professionals</li> <li>Provide development opportunities</li> <li>Instill a value-based culture</li> <li>Strive for World-Class Employee Satisfaction</li> </ul>
Shareholders	Environment
<ul style="list-style-type: none"> <li>Invest in water utility infrastructure and earn a fair return on that investment</li> <li>Maintain, build, and enhance relationships with regulators</li> <li>Pursue prudent acquisitions of other water systems</li> <li>Supplement regulated earnings with low risk non-regulated earnings that provide core water utility services</li> </ul>	<ul style="list-style-type: none"> <li>Promote water conservation</li> <li>Dispose of unneeded land as protected open space</li> <li>Replace aging pipe, valves, and pumps to conserve natural resources</li> <li>Aggressively manage energy usage</li> <li>Invest in and protect watershed lands</li> </ul>

## Measuring Success

We monitor our **Customers'** satisfaction with our company by independently surveying them twice annually. We track our promptness in answering their phone calls, water quality issues, and service interruptions from main breaks that affect our service.

Our **Shareholders** invest in our company and expect a fair return on that investment. To deliver on that expectation, we manage the costs of delivering quality water service to our customers, generate high quality earnings, and provide a reasonable return on the equity they have invested.

The **Employees** of our company are arguably our most important asset and we are committed to providing a safe, competitive, and satisfying work environment. We measure our success in this area by surveying our employees as well as reviewing time lost to job-related injuries.

We continually look to minimize the impact our business has on the **Environment**. We track water lost in our delivery system through leaks, the amount of electricity used to move water to our customers, the number of customers billed electronically, and how often events to improve our watersheds are conducted.

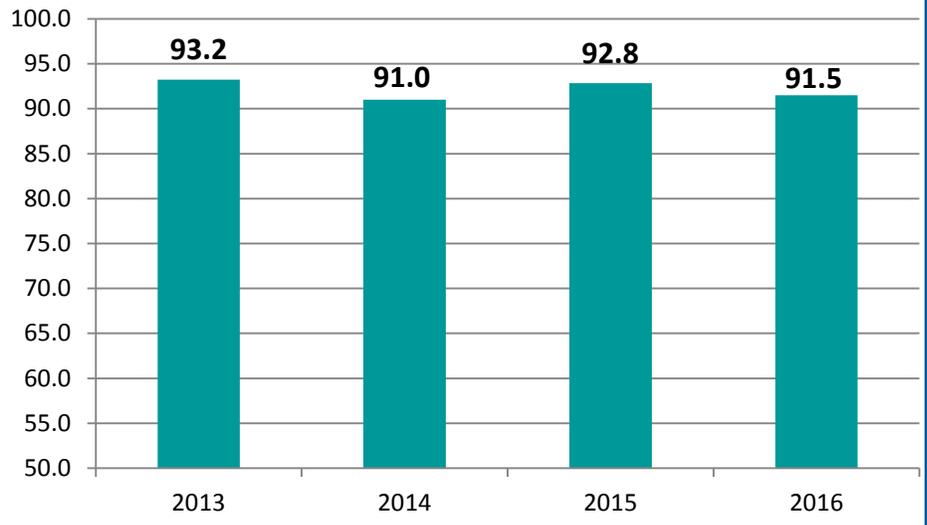
## Delivering World Class Customer Service

Serving customers is the most important thing we do each day. Our team takes great pride in delivering a reliable supply of safe drinking water and responsive service to the families, businesses and communities that we are privileged to serve.

We regularly survey customers in both Connecticut and Maine and when asked by an independent research firm about the water and service they are provided, 9 out of 10 customers said they were satisfied or very satisfied.

Results from our latest Survey show that customer satisfaction remains strong, especially when customers have contact with our call center and field personnel. Our 2016 Customer Satisfaction Index (CSI) and is made up of results from three areas: Office (call Center), Field, and Company characteristics.

## Connecticut and Maine Water Customer Satisfaction Survey Results



## Delivering High Quality Water

At Connecticut and Maine Water we know that water touches everything we care about. Our team of 266 dedicated, highly trained professionals is committed to providing our customers with a reliable supply of high quality water and responsive service. We know the most important thing we do is to provide clean, safe drinking water so families can trust in the water we provide.

The company conducts thousands of water quality tests each year at state certified laboratories to ensure that our water meets all state and federal drinking water standards. We own extensive land areas around our sources of supply to protect water quality. We regularly inspect privately owned properties within the public water supply watershed areas for conditions such as failing septic systems, soil erosion and sedimentation, leaking oil tanks, fertilizer or pesticide use, or illegal dumping that could affect water quality. Our water production and treatment facilities are equipped with the necessary equipment and technology and our professional staff monitors our treatment processes continuously to ensure your water is safe.

## Flint, Michigan Raises Lead Issue

The importance of what our water professionals do every day is even more evident following the 2015 water quality crisis of lead in drinking water in Flint, Michigan. We take a number of steps in our water treatment and testing so customers can have confidence in water quality.

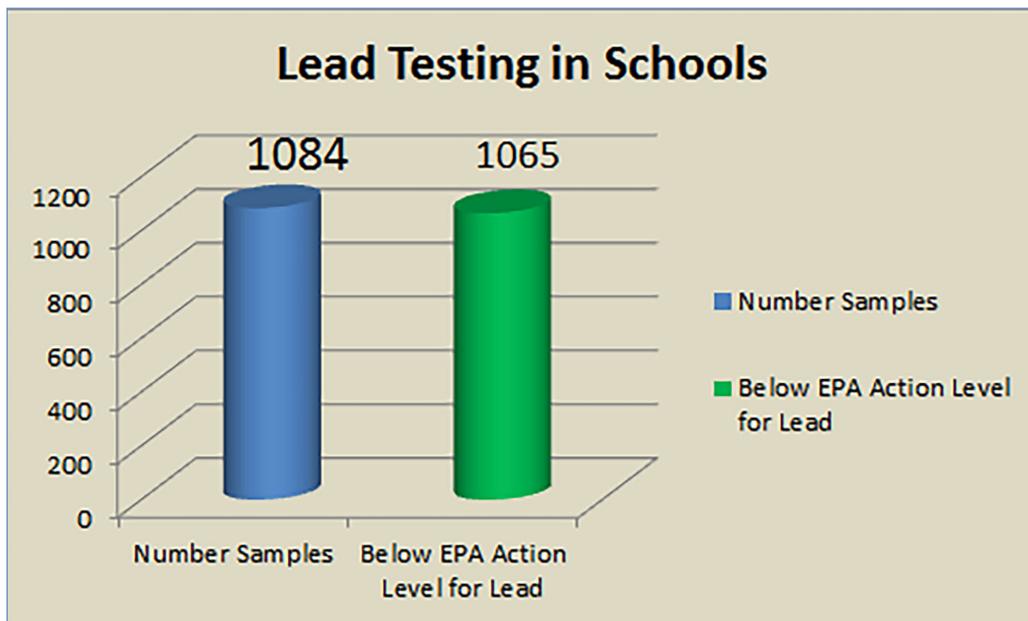
Lead is rarely found in surface water supplies or groundwater wells and no lead has been detected in testing of any of our water sources. Our comprehensive corrosion control program provides treatment based on the source water quality to minimize corrosion of both our piping system and private plumbing systems. Further, we fully comply with the EPA requirements regarding sampling for lead in drinking water and have documented our results to our regulators. Lead testing results for all of our water systems are available on the Water Quality page of our website.

## Testing for Lead in Schools

While the water delivered by the company to the schools and facilities in our service communities meets all state and federal drinking water standards, we recognized that parents and school officials would be looking for information on the safety of the water found in school buildings. Given the age of many schools, which predate the elimination of lead from solder in plumbing joints and low-lead drinking water fixtures, and the length of time that water may be exposed to those materials, it is possible there may be detectable levels of lead in the drinking water at school fountains or fixtures.



To adequately assess the possibility of lead exposure in school buildings, the company voluntarily reached out to all the schools we serve and offered to conduct sampling, analyze samples, and explain the results to school officials. The results were strong – of the total of 1,084 samples collected in 126 individual schools 1,065, or more than 98%, were below the EPA action level for lead. In the few instances where the results exceeded the action level, we offered to work closely with school officials to identify and correct issues with specific plumbing or fixtures that were contributing to the lead levels, and many took us up on the offer. With real data based on testing in certified labs, school officials and parents could have confidence in the water in the schools.



# GOOD GOVERNANCE



## Enterprise Risk Management

In 2015, the Company initiated a comprehensive Enterprise Risk Management (ERM) Program. ERM considers threats and uncertainties that may impact the organization's ability to do business. Our goal is to identify and proactively manage potential risks to the organization in order to protect and create value for our stakeholders, including shareholders, employees, customers, regulators, the environment, and society overall.

Every Connecticut Water and Maine Water Company employee has the "front-line" job responsibility to recognize and report on risks that would otherwise negatively impact our core building blocks—be they customers, shareholders, employees or the environment. The senior leaders in our Company, assisted by an ERM Team, have the responsibility to proactively identify, assess, and monitor business risks; execute risk management activities; and report on the results of these activities. Top risks are reassessed at the end of each year and appropriate mitigation strategies are developed, implemented, and tracked to assure success.

The long-term success of our business is dependent upon understanding our risks and strategizing ways to avoid and minimize their likelihood and impact. To better mitigate our risks and manage compliance with a number of internal and external obligations, the Company implemented a new tracking tool to support our

ERM program and the goals of our Regulatory Compliance Council by:

- Establishing systems and support to reduce reliance on individuals and institutional memory for critical obligations
- Reducing the company's compliance risk by tracking compliance-related obligation due dates
- Better managing environmental, health, and safety-related incidents ,
- Improving the organization and storage of compliance and policy related documents, and
- Providing support and reminders to promote timely completion and follow-up by individuals responsible for these tasks.



# Environmental Policy

Our company is committed to fostering socially responsible programs and policies that enhance sustainability efforts.

We strive to be good stewards of the environment and to manage the resources in a manner that promotes water and energy conservation, source protection, and preservation of open space.

In the pursuit of our environmental goals, our company resolves to:

- Educate and engage our employees to be responsible stewards of the environment.
- Evaluate our operations to ensure we are operating as efficiently as practicable.
- Purchase sustainable products wherever feasible, and include environmental criteria in purchasing and vendor selection.
- Use water and energy efficiently, and invest in the infrastructure/equipment that lead to enhanced resource sustainability.
- Assess the environmental impact of our operations and identify areas where we can minimize impacts.
- Promote recycling by employees, both at work and at home.
- Publicize and foster our environmental position in communications and community outreach activities with state and local officials, environmental organizations, customers and employees.
- Achieve and maintain compliance with environmental regulations.
- Promote preservation of open space for passive recreation and the protection of resources.
- Provide education to communities on drinking water.





# Source Water Protection

Our company owns approximately 6,500 acres of land in Connecticut and 2,200 acres in Maine, the vast majority of which is maintained in its natural state for watershed and aquifer protection. We conduct an aggressive, multifaceted source water protection program in towns in which our supplies and associated source water protection areas are located.

## *Watershed Inspections*

We keep a close eye on the land that surrounds our valuable water resources. As required under Connecticut statutes, watershed inspectors conduct more than 3,200 sanitary surveys of properties located within Connecticut's public water supply watersheds. The surveys look for conditions that could pose a risk to water quality, such as failing septic systems and improper chemical storage. Most problems that are encountered are resolved by working with town sanitarians and other local agencies. While the state of Maine does not require public water utilities to inspect private property, we have an awareness of uses on private property that could affect our sources or water quality and work with local officials and property owners to address any issues that may be identified. We also actively manage the watershed property and wellhead protection zone property that we own, including routine inspections of dams, intakes and other points of access.



## *Emergency Spill Response*

We maintain comprehensive Emergency Spill Response Plans that identify specific notification procedures for reporting and responding to hazardous materials and chemical spills within source water protection areas. Emergency spill control equipment is provided at key company facilities and employees are trained in appropriate and safe response procedures.



## *Land Use Monitoring*

We are able to protect the sources of supply in part by owning vast areas of watershed and other lands. Because there are areas outside the company's control that contribute water to the reservoir and well supplies, it is important that we monitor proposed local land use activities on an on-going basis. Trained staff review significant development proposals within source protection areas, and if warranted, prepare and send written comments to the appropriate town commissions, officials and the developer. This process is intended to avoid potential problems by providing constructive input during the various stages of the proposed activity. On-site field inspections are undertaken as needed, and staff periodically monitor the progress of construction work for the duration of the project to ensure compliance with the approved plans. If source protection concerns arise with a particular development or land use, assistance is sought from local and state agencies to correct the existing or potential source of pollution.

## *Planning & Regulatory Advocacy*

A variety of information and technical assistance is provided to town officials, commissions and residents within source water protection areas. We continue to play a major role in the review of municipal land use plans and state regulations to protect sources of supply, and employees are active in efforts to drive state policies and local regulations to support these source protection goals. We review proposed plans and regulations—such as town plans of development, inland wetlands and zoning regulations—and where possible, source protection concerns are incorporated into the local planning and regulatory framework. The company takes an active role in providing information on the need to protect drinking water supplies through bill inserts, news releases, company websites, social media and other company communications publications.



# Recreation and Open Space

We believe that land ownership carries a special stewardship responsibility. Part of that responsibility is working with local communities to ensure, as best we can, that company lands no longer needed for watershed or water supply purposes are permanently protected as open space and provide for passive recreation opportunities, while providing a fair return to shareholders.



Connecticut legislation which allows tax credits for the donation or discount sales of eligible lands to municipalities or land conservation organizations, has helped further goals for the permanent preservation of open space.

To date, we have worked with local communities to transfer land or apply permanent conservation easements to 1,037 acres of land in Connecticut and 1,153 acres in Maine as protected open space. Some specific projects include:

## *Water Works Brook Ownership Transferred to Town of Windsor Locks, CT*

In 2015, Connecticut Water transferred ownership of 198 acres of land to the Town of Windsor Locks, at no cost to the town. It was the final phase of a two-step process to preserve the property as protected open space. The initial phase in 2009 was the bargain sale of a conservation easement to the Town that permanently protected the land as open space.

The Water Works Brook property, which was the location of ground water sources that were no longer needed by the Company, was the largest parcel of open space land remaining in the Town of Windsor Locks. Connecticut Water successfully worked with the Town, the CT DEEP Open Space grant program, and the Trust for Public Land to permanently preserve this land for future generations.

## Land Protected as Open Space





### *Mirror Lake and Grassy Pond, Maine*

In 2016, the company committed to the sale and donation to the Coastal Mountain Land Trust of a conservation easement on 1,300 acres of watershed land around Mirror Lake and Grassy Pond in Rockport, Maine. The transaction will require successful fundraising by the land trust and is expected to close in two pieces – one in 2017 and one in 2019.

### *Round the Mountain Trail & Highland Path, Maine*

We understand the public's deep and abiding interest in having outdoor recreational opportunities in our watershed and forest lands, so Maine Water is donating funds to the land trust to help with the development of a "Round the Mountain" trail system. This nine mile trail system will connect to the Camden Snow Bowl recreational area and provide for low-impact, four season opportunities to explore Ragged Mountain.

We also continue to work with the Georges Valley Land Trust to allow them to develop and maintain the "Highland Path". This foot traffic only path through our land holdings in the Mirror Lake and Grassy Pond watershed, including two hiker parking lots, connect to the trail system that is part of the Camden Hills State Park.

### *Forest Management*

Forest management plans have been developed for the majority of our 6,500 acres in Connecticut and 2,000 acres in Maine. These plans outline specific forest management activities primarily geared toward improving the overall health of the forest and enhancing water quality. We also strive to improve the value of the forest for wood products; promote wildlife diversity; and maintain property boundaries. Each year forest management activities are undertaken in accordance with these management plans. In Maine, forest land is actively managed in Rockport, Hope, Skowhegan, Freeport and soon in Biddeford. All projects are overseen by company staff and a forestry consultant for compliance with any local or state regulations.

### *Roadside Management Project*

In 2015, Connecticut Water partnered with the Connecticut Agricultural Experiment Station (CAES) to implement a "Stormwise" roadside forest management demonstration project on company land in the Town of Prospect. The demonstration project implements forest management practices geared to reduce the potential of tree-caused damage to power lines during severe storms while maintaining an aesthetic roadside forest landscape. CAES will monitor the demonstration area for 10 years.

# Water Conservation



We pride ourselves on being good stewards of the environment and feel we have a special obligation to promote water conservation to protect the valuable water resources that supply our customers. With the available rate making tools, we can focus on service, not sale.

We recognize that conserving existing water resources is integral to our mission and have developed a comprehensive, multi-faceted water conservation plan incorporating both supply and demand management measures. Supply management measures are employed by the company to conserve water during system operation and maintenance, while demand management measures are intended to increase the efficiency of water consumption by consumers. This is done through various programs to educate our customers about the value of the water resource and the importance of conservation on an on-going basis. Before a new source of water supply is developed to meet projected demand, all reasonable, cost-effective conservation measures are implemented to defer or possibly alleviate the need for the new source development.

## Revenue Adjustment Mechanisms

Water rates are set following an extensive process with the states' public utility regulatory agency that considers all approved expenses and the anticipated water sales and defines a unit charge for customers' water consumption. As such, revenues and financial results have traditionally been linked to water sales, which created an inherent disincentive for water utilities to promote conservation.

In both Connecticut and Maine we were fortunate to work with our state legislators and regulators to adopt revenue adjustment legislation that allow us to collect the revenues authorized in our rate case, whether actual water sales are more or less than anticipated at the time of the case. Referred to as the Water Revenue Adjustment (WRA), these progressive rate mechanisms allow us to promote water conservation without incurring a financial penalty in the form of lower revenues. This makes it

possible for our company to focus on serving families and communities and protecting water resources. It allows us to be leaders in water conservation efforts, educating our customers and developing innovative programs to encourage our customers to reduce their water usage.

## Helping Customers Conserve

We believe that promoting the wise use of water through consumer education is necessary and important. Customers routinely receive conservation-oriented information through our customer newsletter, *Straight from the Tap*, and on our website. [A Water Calculator](#) and other conservation information is included on our website to help customers better understand their water use habits and evaluate steps they can take to minimize their water footprint. Since 2011, our conservation education and outreach efforts have expanded as we've developed our presence on popular social media outlets including Facebook, Twitter, and YouTube.

**ConnecticutWater**



Conservation  
News and Tips

CTW-13004D

### Water Conservation and the Water Drop Challenge

Connecticut Water has adequate water supplies to meet our customers' needs but we always encourage water conservation and the wise use of water resources.

Nearly 5,000 residential customers are participating in the Water Drop Challenge to reduce the amount of water they use. Even if you have not joined the Challenge, you can do your part to help save water resources.

### Outdoor Water Saving Tips

#### Lawn watering tips:

- The best time to water a lawn is early morning. You can also save by watering at night or on cloudy days.
- Water the lawn only when needed, such as when footprints become visible.
- Restrict use of automatic sprinklers during periods of heavy rains. Use automatic shutoff device to prevent the irrigation system from operating during rainstorms or disable the timer and operate the system manually.
- Position sprinklers to avoid watering pavement and sidewalks.
- Use a soaker hose or trickle irrigation system in the garden.
- Skip the automatic irrigation system, water by hand to save water and money.
- To learn more watch our Youtube video [Cost of Lawn Watering](#) at [www.youtube.com/user/ctwaterco](http://www.youtube.com/user/ctwaterco)



#### Other ways to save water outdoors:

- Plant drought tolerant grass, plants, shrubs and flowers that thrive in drier conditions. Consider planting a [xeriscape garden](#). To learn more go to our webpage [www.ctwater.com/conservation](http://www.ctwater.com/conservation)
- Water shrubs longer and less frequently since they have deeper root systems.
- Use a solar cover on pools to minimize evaporation.



## Water Drop Challenge

In 2016, we encouraged our residential customers to conserve water by incentivizing them with a \$30 conservation credit if they successfully lowered their annual billed consumption by at least 10% compared to their billed water usage in the prior year 2015. The program won praise from environmental groups and regulators – and nearly 5,000 residential customers enrolled.

Over the course of the year, nearly 2,000 participants successfully met the Water Drop Challenge. Collectively, they were able to reduce their annual water consumption by 30 million gallons – which was enough to fill 5,000 water tankers that parked end-to-end would cover 55 miles! It equates to enough water to meet the average annual water needs of 500 residential water customers.



## Municipal Retrofit Program

In 2015, a Municipal Water Conservation Pilot Program was developed for our Connecticut service towns. The program targeted the replacement of inefficient water fixtures at municipal facilities—such as town halls, public works garages, and senior centers—served by the company.

The program was offered at no cost to the community and the Company ultimately inventoried 443 fixtures at 31 separate facilities in 6 service communities. Overall, 28 fixtures – predominantly toilets – were replaced with high-efficiency flush units driving savings at these facilities.



## Leak Detection and Water Auditing

Our company has long had a robust leak detection program targeting non-revenue water loss. The 2,107 miles in our water distribution system varies in age and material and requires a dedicated and continuous water

audit and leak survey effort to maintain non-revenue and lost water at a minimum practical level. Through leak detection, repair and infrastructure replacement efforts, we believe a sustainable water loss goal of 1 gallon per minute per mile of main is ultimately achievable. In 2016, we were able to save more than 200 million gallons of what that would have been lost to leaks.

Our ongoing program focuses on continuous reviews and surveys of each of our systems. Leak surveys are conducted based on the results of ongoing water system audits when there is an indication of higher production than metered consumption. All leaks are repaired as soon as practical after they are discovered to minimize lost water. The use of cement lined ductile iron mains for the replacement of older mains and new extensions will help reduce leakage rate over time.

## Metered Ratio

We closely track the efficiency of our water systems using a metric called 'metered ratio' that compares how much water we produce to how much is consumed by our customers. With careful monitoring, equipment upgrades, and targeted infrastructure investment, we strive to keep this metered ratio at or above 80%.

In early 2011 we began looking at ways to refine our water audit processes consistent with the American Water Works Association's M36 Water Audit & Loss Control Program manual. Work in this area is ongoing and we are seeing the savings in many systems.

# Sustainable Infrastructure

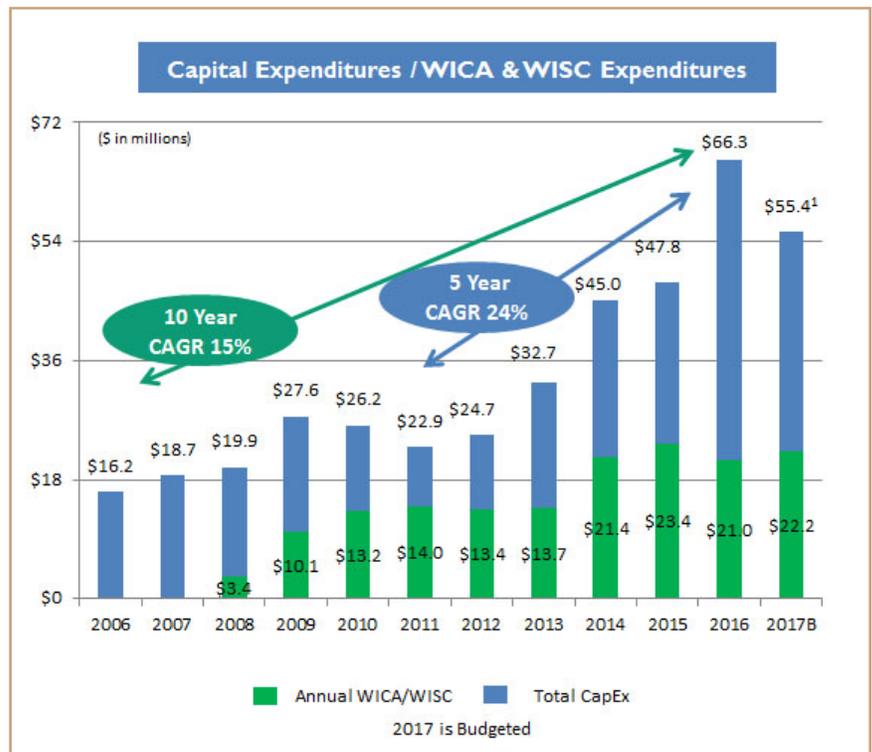
Our investment in infrastructure ensures customer health and safety; is a growth driver for the Company; and benefits customers, communities and the environment.

## Water Infrastructure Replacement

In the northeast, where Connecticut Water and Maine Water serve families and communities, the cost of replacing aged water main can easily approach \$200 per foot, or approximately \$1 million per mile. Having ready access to capital is critical if a water utility is to programmatically replace its infrastructure to reliably serve current and future generations.

## WICA/WISC

In 2007, the Connecticut General Assembly passed the Water Infrastructure and Conservation Adjustment ("WICA") Act. WICA allows Connecticut Water to add a surcharge to customers' bills, subject to review and approval by our regulatory agency, to reflect the costs of replacement of principally water mains, meters, service lines that are or will be contributing to unacceptable levels of unaccounted for water or are negatively impacting water quality or reliability of service if not replaced. In addition WICA can be used for the purchase of energy efficient equipment for water company operations.



In June 2013, a Water Infrastructure Charge ("WISC") became available in Maine that allows for expedited recovery of investment in water system infrastructure replacement, in both treatment and distribution assets.

Since the inception of WICA in 2008 and WISC in 2014, the company has invested nearly \$134 million in replacing over 100 miles of old and undersized water main in both Maine and Connecticut. This proactive replacement program conserves valuable water resources by reducing the frequency of distribution system leaks, enhances water quality and fire protection, and ensures our water systems can sustainably serve future generations.



# Water Infrastructure Replacement

Our ongoing company-wide assessment of water mains considers risk factors such as age, pipe material, break history, water quality, size, pressure, and soil characteristics.



The Company conducts an assessment to rank the age and condition of its water main, and those with the highest weighted scores are prioritized and scheduled for replacement. By replacing pipe that may be effecting water quality, is approaching the end of its useful life, or is small diameter or underperforming mains, we are able to ensure adequate fire flows and maintain water quality, reliable service and public safety. Services and hydrants are also replaced or new hydrants installed where the infrastructure could not previously support fire flows.

## WICA Improvements

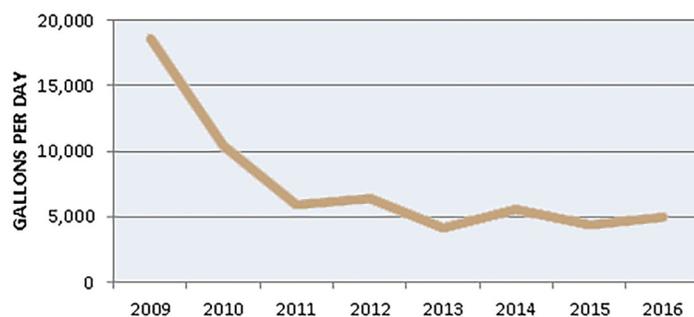
In Connecticut's Westchester East system in East Hampton an infrastructure replacement project effectively reduced water lost through leaks and main breaks. Work was completed to replace the systems aged and break prone mains, 3,032 feet of 90 year pipe was replaced by 2012.

As a result of this project the average daily production of water in the system was reduced drastically which resulted in lower pumping and chemical costs in the system.

The Westchester East project demonstrates the multiple values a sustainable infrastructure replacement program affords: By reducing lost water, we are able to serve our customers while being good stewards of the environment by using less power and chemicals.

We recognize that maintaining reliable water infrastructure is paramount to our mission, and have made the WICA and WISC programs a priority for our capital investments.

## AVERAGE DAILY PRODUCTION WESTCHESTER EAST WATER SYSTEM



# Investing in Infrastructure

As we prioritize, plan and design our capital projects, we consider the environmental benefits and opportunities to enhance energy efficiency in our design and construction.



## *Barra Road Booster Station, Biddeford, ME*

The Barra Road Booster Station in Biddeford, Maine was completed in July 2015 and serves the high service zone of the Biddeford Saco Division of Maine Water. The design incorporated insulated concrete forms for the reinforced concrete walls. Roof construction was typical wooden truss, a longer lasting, standing seam metal roof was installed over traditional asphalt shingles. The building is heated in the winter and cooled and dehumidified in the summer by a high efficiency split heat pump. Pump motors are premium efficiency with variable frequency drives. They are fully monitored and controlled by SCADA from the surface water treatment plant.

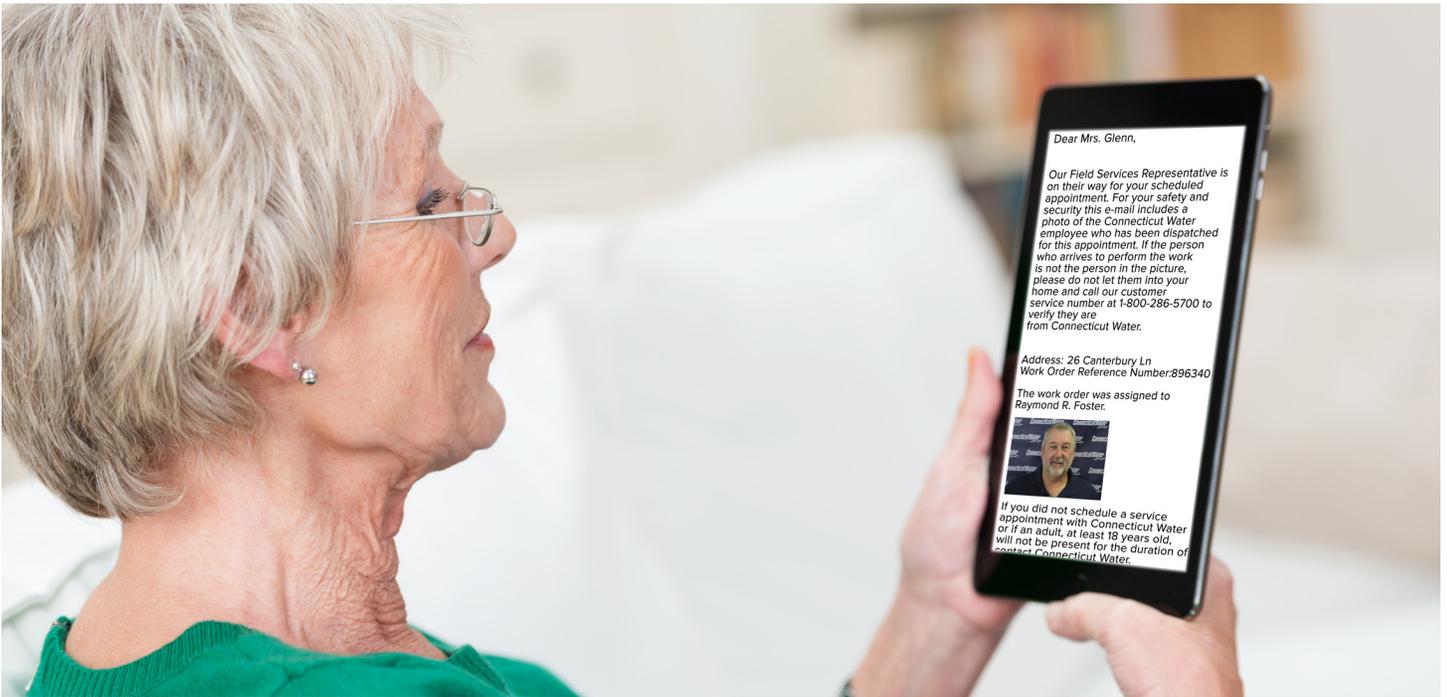
The booster station's back-up natural gas generator is located in an attached "car port". This provides added weather protection, sound dampening for a close neighbor, and improved aesthetics for a better fit within the surrounding development.

## *Storage Tank, Biddeford, ME*

In 2015, a 3-million-gallon storage tank to serve customers in southern Maine was constructed in Biddeford. The tank replaced a finished water reservoir that had been in service since 1885. Due to its age and condition, the finished water reservoir had become a source of substantial water loss.

Once the new tank came online, it was able to be calculated that the old storage reservoir had been losing up to 500,000 gallons of water per day—water that had been pumped and treated to drinking water standards. Infrastructure investments such as these allow us to maintain a high level of service while controlling operating expenses and limiting the size of our environmental footprint.





## Customer Protection Program

Safety is a top priority at Connecticut Water and we encourage our customers to ask our employees for identification or call us if they have any question about the identity of a service representative.

We have enhanced our customers' safety and security through our award-winning **Be Sure Before You Open the Door** program. Prior to a scheduled appointment, a photo of the employee who will be on-site is emailed to the customer, giving them confidence in knowing who to expect before they open the door. Since going live in 2015, our **Be Sure Before You Open the Door** program has been recognized with the prestigious Stevie Award, the Management Innovation Award from the National Association of Water Companies, and the Community Service Award from the Connecticut Construction Industry Association.

## Leveraging Technology



## Mobile Workforce Management Platform

Our investment in mobile technology for our field service employees is making it possible for us to reduce the miles traveled by our vehicles. The mobile system assigns work orders to the individuals with the appropriate skill sets and optimizes travel routes, which reduces the number of miles our Field Service Representatives need to drive for customer appointments. This conserves fuel, reduces wear and tear on vehicles, and improves workload efficiency—while allowing our people to deliver world-class customer service.

# Reducing Our Energy Footprint

We estimate that we will reduce energy usage by 160,000 kilowatt hours annually, and greenhouse gas emissions by 180,000 pounds.

## *Energy Management*

A large amount of energy is embedded in the water customers consume—from its treatment, distribution and in-home use, to its collection and disposal as wastewater. Our company's energy footprint extends to our offices, vehicles, and other assets necessary to serve our customers.

Our internal Energy Management Team meets regularly to discuss ways to integrate energy management into all areas of the organization and obtain input, ideas, and resources from all departments. Through this effort, we have successfully established a comprehensive energy management program geared toward continuous energy efficiency improvement.

Since 2011, energy audits have been conducted in facilities in both Connecticut and Maine. These audits identify opportunities for savings as we look to replace older equipment with energy-efficient variable-speed pumps, motors and control systems, and older light fixtures with new LED lighting. Energy efficiency now considered in all Water Treatment Plants and facility design and construction to minimize future demands.

## *LED Lighting*

In 2015, Maine Water installed LED lighting and motion sensors in the Saco work center, which reduced the facility's energy consumption by 68%—and provides some \$3,000 in annual savings. Inspired by Maine's success, Connecticut Water installed LED lighting retrofit kits in existing fixtures at its corporate facility in 2016. This has allowed us to lower our energy use without incurring the cost of complete fixture replacement. The project will save approximately 60,000 kWh, or \$8,500 per year, and pay for itself within five years.

Lighting upgrades across the company are expected to decrease our annual energy consumption by over 160,000 kilowatt hours (kWh) and reduce CO2 emissions by over 180,000 lbs. All of our energy efficiency projects—whether they are upgrades to lighting or pumping equipment, conversions to natural gas, or improvements to building envelopes—are carefully assessed to ensure the investment is prudent and maximally designed to reduce our overall energy consumption and greenhouse gas emissions.





### *Mirror Lake Treatment Facility, Rockport, Maine*

Completed in 2010, the facility's solar thermal system supplies hot water to the backwash cycle of the membrane filters and offsets 55,000 kWh of purchased electricity annually. The Solar Photovoltaic system provides direct electricity to the treatment process, offsetting an additional 21,000 kWh of annual electrical purchases. These solar systems generate the equivalent of 256 million BTUs per year, reducing emissions by 38.5 tons of CO<sub>2</sub>.

### *Sustainable Infrastructure Design*

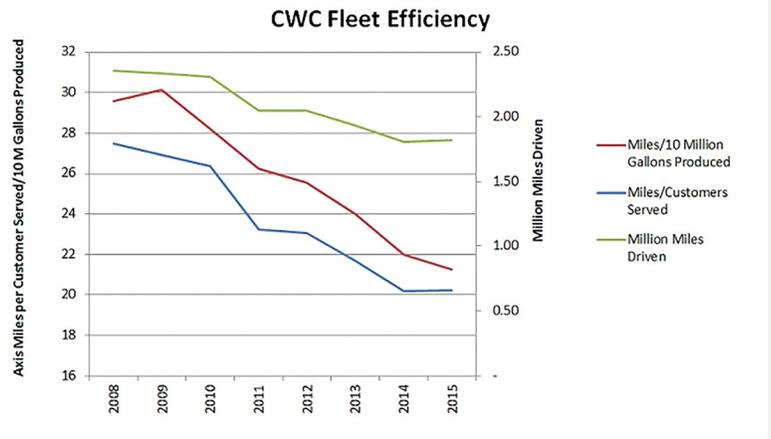
Design work on the proposed Saco River Water Treatment Facility is proceeding under the Envision® Framework. Developed by the Institute for Sustainable Infrastructure, Envision® is a comprehensive approach to evaluating sustainability options in the design and construction of infrastructure projects. Six employees are being trained as certified Envision® professionals and we look forward to integrating into the facility design.



## Fleet Management

Operating 75 separate water systems, maintaining 2,107 miles of water main, and meeting the daily water needs of 125,000 customers requires a fair amount of driving. Our goal is to maximize vehicle efficiency while ensuring employee safety and maintaining world-class customer service.

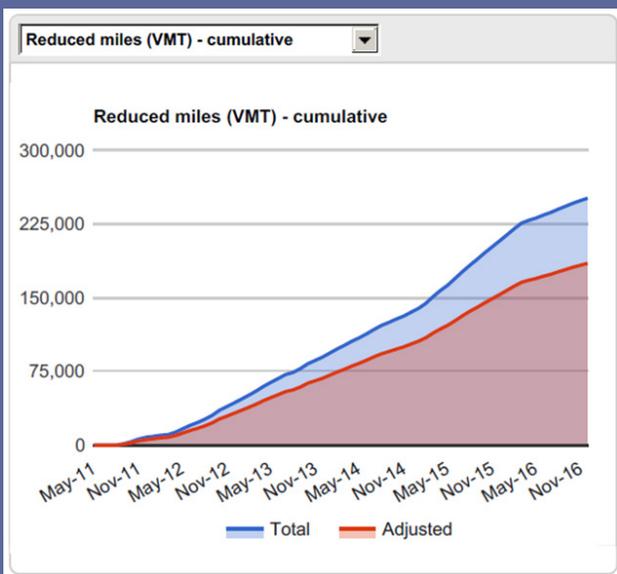
Efforts undertaken by the company have allowed us to measurably reduce the number of miles our employees drive. These include both strategic organizational and service delivery changes, as well as technological initiatives such as installing videoconferencing between facilities, the widespread use of water quality analyzers at remote well stations, and the more recent implementation of a mobility platform in Connecticut which optimizes routing when dispatching field work orders. Since 2008, these and other initiatives have steadily increased the efficiency of our travel and allowed us to reduce the total number of



miles driven by over 500,000 miles annually – a savings of more than 25 percent.

This concerted effort has allowed us to decrease our carbon footprint by eliminating more than 560 tons of annual greenhouse gas emissions and furthers the company's efforts toward achieving environmental and business sustainability.

## Telecommuting



Following a successful pilot in 2011, the company formalized a telecommuting program as a means to enhance employee work-life balance, maintain business continuity, and minimize our carbon footprint. Since our first few employees began recording their avoided commuting miles back in 2011, the program has saved over 250,000 miles! This has conserved nearly 14,000 gallons of gasoline and prevented 134 tons of harmful emissions. Telecommuting has an added benefit as it helps us deliver on our commitment to world class service by allowing our call center staff to field customer calls from home during adverse weather or other events.

## CTRides Week

CTRides Week is an annual five day challenge to Connecticut residents to try alternative methods of travel to driving alone. The challenge seeks to alleviate traffic congestion and improve air quality, while creating awareness around alternative transportation options, such as carpooling, mass transit, bicycling, telecommuting, and even walking.

Our Corporate Responsibility Committee annually promotes CTRides Week and challenges our employees to participate. Breaking the "driving alone" habit is difficult, but we have seen a steady increase in the number of miles our employees collectively "save", with 1,780 total miles avoided during the 2016 week long challenge.

## Video Conferencing

As our organization continues to grow and team based initiatives cross state lines, video conferencing plays an ever increasing role. The technology allows teams to work effectively and efficiently, while contributing to our environmental goals. Employees are encouraged to schedule meetings where people can participate via videoconferencing to save the time, expense, and environmental impacts driving incurs. Videoconferencing has been in place at all Connecticut offices and works centers as well as in three central areas in Maine.

# Social Awareness

We are dedicated to being an integral part of and improving the communities we serve. We look for opportunities to partner with community leaders and local organizations on projects to improve water quality, preserve the environment, promote education, and benefit the community as a whole. We understand that being a responsible member of any community means giving — financial support, our time, and our unique expertise.



## *Education Initiatives*

Employees routinely volunteer their time at local community events to answer customers' questions, share water conservation information, and provide drinking water to event participants. Throughout the year our employees participate in career days and business organization and professional events as well as volunteer to talk informally with students about careers in the water industry, and offer treatment plant tours to interested students and their teachers. We are always looking for educational opportunities to share the importance of sustainable water practices and the critical role drinking water plays in people's lives.

## *Paid-Time-Off Employee Volunteer Initiative*

To support our commitment to serving our communities, the company provides active full time employees with 4 hours of Paid Time Off to pursue a community volunteer activity of their choosing. This program, which was started in 2016, recognizes the many valuable contributions our people can make to improve the quality of life in the communities where they live and work. While the policy may be new, giving back to the community is something our employees have been doing for years. In the pilot year, our employees collectively earned 76 hours of volunteer time at company-sponsored community assistance events, which have in turn been redeemed for a variety of charitable volunteer activities unique to each individual.

## *Watershed Clean-Ups*

Watershed clean-ups have become an annual tradition for our company, where employees and family members work together to pick up trash in our watersheds. Over the past three years, our clean-up crews have participated in dozens of events and gathered an average of 1,800 lbs of trash per event, literally collecting tons of trash.





## Donations

While the company provides financial support to a number of civic and community organizations, our employees regularly organize clothing, food, pet supplies and holiday toy drives to help our neighbors. We are also proud to donate material, such as drinking water at community events, and the expertise of our water industry professionals to worthy causes.

## Veterans

Twice a year, to align with Memorial Day and Veterans Day, our employees organize a donation drive for veterans who reside at the Veterans' Home in Rocky Hill, CT. The facility provides long term care to veterans with chronic and disabling medical conditions. Employees distribute needed personal items and spend time interacting with the veterans and their caregivers.



## Coats for Kids

Maine Water's Saco office raises funds throughout the year for charities such as the Salvation Army's Coats for Kids program. Through their efforts, 50 new winter coats were donated to deserving children in 2016.

## H2O—Help to Our Customers Hardship Assistance Program

We recognize that some customers may occasionally face financial challenges and offer assistance through our H2O "Help to our Customers" assistance program. We partner with local social service agencies to determine customer eligibility, which is based on federal and state income guidelines. We work with eligible customers to identify potential available resources, establish a payment arrangement for unpaid balances, and provide financial assistance with their water bill.

# Partnering for Sustainability

Our company is a proud member of the following organizations who share our vision for a sustainable future.

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## *WaterSense*

The WaterSense program partners with manufacturers, retailers and distributors, and utilities to promote conservation and to bring water-efficient products to the marketplace. The WaterSense program also promotes "Fix a Leak Week" by encouraging utilities to educate customers on how much water can be wasted with a leak.

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## *Alliance for Water Efficiency*

The Alliance for Water Efficiency is a non-profit organization dedicated to the efficient and sustainable use of water. The Alliance acts as a voice for water efficiency, promoting water efficiency through the development of codes and standards, and by providing comprehensive information about water-efficient products, practices, and programs.



## *Water Research Foundation*

The Water Research Foundation is an internationally recognized leader in water research that is dedicated to advancing the science of water by sponsoring cutting-edge research and promoting collaboration. Our research provides industry insights and practical solutions to the most complex challenges facing the water community today and into the future.

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## *EPA Partnership for Safe Water*

The Partnership is a voluntary effort between six drinking water organizations, and more than 200 water utilities throughout the United States. The goal of the Partnership is to provide a new measure of safety to millions of Americans by implementing prevention programs where legislation or regulation does not exist.



## *American Water Works Association*

The American Water Works Association is the largest nonprofit, scientific and educational association dedicated to managing and treating water, the world's most important resource. AWWA provides solutions to improve public health, protect the environment, strengthen the economy and enhance our quality of life. Local chapters include the New England Water Works Association and the CT Section of AWWA. These organizations work to be an instrument of change to advance the knowledge, science, government awareness, public trust, and environmental stewardship of the water works profession.

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## *Connecticut Water Works Association*

The Connecticut Water Works Association is an organization of public water supply utilities that work together to develop meaningful policies to ensure a safe, high quality supply of water for our customers and a regulatory environment in which we can operate effectively.



# Our Award-Winning Reputation

Our company has been recognized by many organizations as an industry leader in a number of areas. We are pleased to highlight a few of our most recent awards, which are a reflection of the dedication and passion of our employees.



## *Partnership for Safe Water Directors Award*

In 2014, Connecticut Water was recognized for achieving Partnership for Safe Water 15-Year Directors Awards for fifteen years of maintaining consistent high-quality performance and commitment to optimization at both the MacKenzie and Stewart Water Treatment plants. The Partnership's voluntary initiative was developed by the Environmental Protection Agency and other water organizations to recognize water utilities that strive to provide their communities with drinking water quality that surpasses regulatory standards.

## *CCIA Safety Recognition Award*

For the past 12 years, Connecticut Water has received the Connecticut Construction Industries Association (CCIA) Safety Recognition Award for Excellence in Construction Safety and Health. This award follows OSHA's safety and health guidelines and recognizes CCIA member companies having a solid construction safety and health program.

## *Gold Stevie Award*

In 2015, Connecticut Water was awarded a Gold Stevie for our Be Sure Before You Open the Door customer protection program. *The Stevie Awards* are one of the world's premier business awards, created to recognize and honor the achievements and positive contributions of organizations and working professionals worldwide. The judges were impressed with Connecticut Water's commitment to "go above and beyond" to serve customers and how technology was leveraged to provide a valuable service.

In addition to the Stevie, the program has been recognized with a Management Innovation Award from the National Association of Water Companies and Community Service Award from the Connecticut Construction Industry Association.



# Delivering on Past Commitments

We know the importance of delivering on past commitments and are including follow-ups to several projects that were highlighted in our 2011 Sustainability Report.

## Wetlands Mitigation

Created as part of the Killingworth Reservoir dam project, this 6.2 acre scrub-shrub shallow and deep water marsh wetlands replaced 5 acres of wetlands impacted by the dam-raising activities in 2005. Mitigation has exceeded expectations with regard to wetland plant diversity, wildlife usage, low invasive plant species presence, and long-term sustainability. A final wetlands mitigation monitoring report was completed in 2015.



## Residuals Handling

Four water treatment residuals handling basins were completed in April 2012 at the Rockville Water Treatment Facility. The infiltration and drying basins are used for clarifier sludge waste, which is a by-product of the water filtration process. Rather than continue to send waste to a municipal wastewater treatment plant, residuals are now pumped to the basins, where the sludge is dewatered, dried and will eventually be removed offsite and used for beneficial reuse as a soil amendment. This environmentally sound, cost-effective, solution avoids the financial, energy and environmental impacts associated with wastewater disposal and treatment.

## UCONN/Mansfield Pipeline

CWC's five-mile pipeline proposal was selected as the preferred solution to provide up to 2.2 million gallons per day of water to meet the long term needs of the University of Connecticut and the Town of Mansfield. The project was identified as having the least environmental impact among those evaluated, as well as being the most cost effective and consistent with the State Plan of Conservation & Development. Completed in 2016, the pipeline is currently operational and providing potable water and fire protection to the community.



# Looking Ahead

There is a lot to look forward to in the coming years. As we continue to explore opportunities to make our current business processes more sustainable in ways large and small, we are excited to be undertaking several significant investments that will provide for the next century of service to our customers and communities. Project design and construction is being done to maximize energy efficiency and reduce chemical needs while delivering high quality water.



## *Upgrades at the Rockville Water Treatment Facility, Vernon, CT*

This major water treatment plant project will benefit our customers in north central Connecticut. The upgrade includes the use of Dissolved Air Flotation (DAF) treatment technology, which reduces the amount of energy used in the solids removal process and more easily adapts to changing raw water quality and plant flows. The upgrade is one example of CWC's commitment to deliver the highest quality product to our customers as cost effectively as possible. The new treatment plant is scheduled for completion in 2017.



### *New Biddeford/Saco Water Treatment Facility, Saco, Maine*

In June 2016, Maine Water announced its plan to build a new water treatment plant in Biddeford to replace the current facility that is more than 130 years old and lies in the flood plain of the Saco River. The existing treatment plant continues to produce water that meets all water quality standards, but a significant upgrade is long overdue. The new plant is expected to be on line in 2020 and have a capacity of 20 million gallons a day (MGD). The added treatment capacity will help serve the growing population of Southern Maine beyond Maine Water's existing service area.

Sustainability should inspire and engage us to become better stewards of the environment, and to pursue positive social objectives while promoting sound economic growth.



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