ANNUAL REPORT FY2022

LAUNCHING FORWARD

Celebrating 25 years of service

MISSION STATEMENT

Our mission is to provide an uninterrupted, high-quality supply of water to our customers, to collect and treat wastewater, and return clean water to the environment.

While fulfilling our mission, we strive to:

1. Conserve and protect our reliable, high-quality water supply for present and future generations
2. Meet or surpass public health standards, environmental standards, and support fire protection
3. Operate, maintain, improve and manage our water and wastewater infrastructure in a cost-efficient manner
4. Manage finances to support Commission needs and maintain stable and affordable water and wastewater rates
5. Maintain an accountable, safe and professional workforce
6. Understand and respond to customers' expectations for service

TABLE OF CONTENTS

MESSAGE FROM THE COMMISSIONERS

FY22 Board of Commissioners (from left to right): Commissioner Daniel Rodriguez, Commissioner William E. Leonard, and FY22 Chairwoman Vanessa Otero

Fiscal Year 2022 was memorable for three reasons. First, it marked 25 years since the formation of the Springfield Water and Sewer Commission in 1996. Second, it marked the beginning of a generational-scale renewal of our water and wastewater infrastructure. And finally, it was the last full fiscal year of service for Commissioner William E. Leonard, who served throughout the Commission's entire 25-year history.

When the Commission formed in 1996, it enabled an exclusive focus on the provision of the region's most vital resource – clean and safe water. Over the past 25 years the Commission has worked to steward its practices and the region's century-old system into the 21st century, adopting best practices that utilized technology to digitize assets; data analysis to identify needs; and strategic planning to prioritize projects. These efforts have rolled up into concrete results for ratepayers: effective maintenance to ensure reliability, lower borrowing costs due to a AA Stable bond rating, and a competitive $250 million Water Infrastructure Financing and Innovation Act (WIFIA) loan from EPA to accelerate critically-needed infrastructure renewal. The Commission is now focused on ensuring that our customers can trust in safe, affordable, and reliable drinking water and wastewater services for decades to come.

Through all of this change, Commissioner Leonard selflessly provided his oversight, guidance, and wisdom at monthly Board meetings, public hearings, community events, and beyond. His record of service to the ratepayers of our region will forever be experienced through the modern and efficient water and wastewater services we will be able to provide for generations to come.

MESSAGE FROM THE EXECUTIVE DIRECTOR

Executive Director Josh Schimmel (left) pictured with EPA Assistant Administrator for the Office of Water Radhika Fox

Anniversaries are times for reflection, and I am grateful that I have been able to experience all of the Commission's 25 years in my career. The transition to an independent, regional public water utility in 1996 resulted in the focused and forward-thinking dedication to delivering water and wastewater services we practice today. In the 1990s, many of our infrastructure assets that had been upgraded in the 1970s were nearing 20 years old – so when the Commission formed, it was the start of a long road of planning, reorganization, and prioritization that has culminated in the generational reinvestment we were proud to announce in FY22.

Across the country, outdated or neglected infrastructure is converging with the increased stresses of climate change and demands of 21st century regulations, forcing communities to make difficult decisions about where and when to invest among many competing needs, all while keeping essential water services affordable. The Commission faces these same challenges, but over the past 25 years has positioned itself to tackle many of its highest priorities on an accelerated schedule through its $550 million Water and Wastewater Infrastructure Renewal Program (WWIRP), formally announced on September 21, 2021.

In FY22 we got to work on many critical WWIRP projects that will shape the future of the region's water, most notably the new West Parish Filters Water Treatment Plant. While design started for the new treatment processes, Phase 1 of the new plant – the Clearwell and Backwash Pump Station Project – broke ground in the same location as the existing plant's original 1909 slow sand filters. Meanwhile, construction continued apace on the new York Street Pump Station and Connecticut River Crossing Project, and critical repairs made existing infrastructure more versatile and functional, such as the modifications to the Diversion Gates.

These investments, and all of our work in FY22, represent our commitment to sustaining the legacy of our initial 25 years and moving forward to serve the needs of future generations.

Joshua D. Schimmel
Executive Director

If you have any questions about the content of this report, please contact the Commission at 413-452-1300 or email info@waterandsewer.org.

A LOOK BACK AT 25 YEARS

Commission Sewers Group, c. 2012

York Street Pump Station Groundbreaking, 2019

Commissioner William E. Leonard at a North End community event

Current Executive Director Josh Schimmel in a past role as CSO inspector

Former Executive Director Kathy Pederson (second from left) receiving the New England Water Works Best Drinking Water Taste Test Contest's top award in 2015

For the past 25 years, the Commission has been led by a dedicated staff that continues to provide high-quality service to residents and business owners throughout the community. Many of those members are pictured on these pages.

Commission Daniel Rodriguez at the South Transmission Main Repair Project, 2016

Touring students of the STCC–MWWA's online drinking water treatment course at West Parish Filters, March 2020

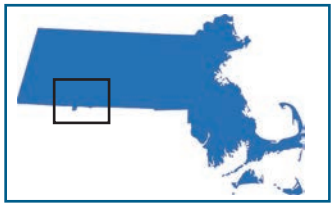
Commission crew, c. 2000

Receiving the Massachusetts Water Works Association's Water Works Pride Award during the pandemic, 2020

Imagine a Day Without Water event, Cobble Mountain Reservoir, 2017

SWSC System Map

Service Area and
Major System Components



Service Categories

Springfield (main customer)	Retail water and wastewater
Ludlow	Retail water and wholesale wastewater
Agawam, Longmeadow, East Longmeadow	Wholesale water and wastewater
Southwick	Wholesale water, peak emergency water
Westfield, Chicopee	Peak emergency water
West Springfield, Wilbraham	Peak emergency water, wholesale wastewater

Littleville Reservoir
Emergency water supply

West Parish Filters Water Treatment Plant

Provin Mountain Storage Tanks

Blandford

Little River Watershed

Westfield

West Springfield

Chicopee

Ludlow

Ludlow Reservoir
Emergency water supply

Springfield

Springfield Regional Wastewater Treatment Facility

Wilbraham

Borden Brook Reservoir
Primary water supply

Cobble Mountain Reservoir
Primary water supply

Southwick

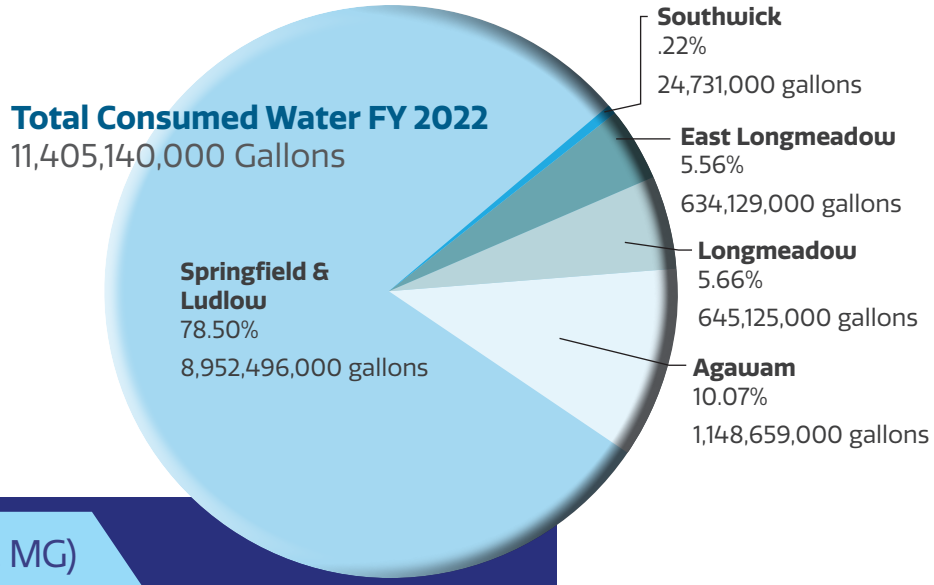
Agawam

Longmeadow

East Longmeadow

WATER SUPPLY & CONSUMPTION

The Commission provides drinking water to approximately 250,000 people in the lower Pioneer Valley. This includes retail customers in Springfield and Ludlow (as well as small portions of Chicopee and Wilbraham), and wholesale customers in Agawam, Longmeadow, and East Longmeadow. The Commission also provides emergency and peak drinking water supply to Southwick, Westfield, West Springfield, Chicopee, and Wilbraham. In FY22, the output from West Parish Filters Water Treatment Plant was approximately 11.4 billion gallons among all Commission customers.



WHOLESALE WATER CONSUMPTION (MILLION GALLONS, MG)

Yearly usage (mg)	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	3-year Avg
Agawam	1,182.5	1,100.1	1,238.3	1,378.1	1,148.7	1,255
East Longmeadow	657	625.4	726	758.6	634.1	706.2
Longmeadow	671.2	626.3	709	820.3	645.1	724.8
Southwick	22.4	17.8	28.9	36.5	24.7	30
Springfield et al.	8,269.1	8,207.5	8,508	8,519.4	8,952.5	8,660
West Parish Output	10,802.2	10,577	11,210.2	11,513	11,405.1	11,376.1

% of output	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	3-year Avg
Agawam	11	10.4	11.1	12	10.1	11
East Longmeadow	6.1	5.9	6.5	6.6	5.6	6.2
Longmeadow	6.2	5.9	6.3	7.1	5.7	6.4
Southwick	0.2	0.2	0.3	0.3	0.2	0.3
Springfield et. al.	76.6	77.6	75.9	74	78.5	76.1
	100%	100%	100%	100%	100%	100%

INFRASTRUCTURE RENEWAL

Water and Wastewater Infrastructure Renewal PROGRAM

"Our team is championing the WIFIA portfolio of projects, and we have spent the last year working to set up the framework to make sure that this program is successfully executed," says Darleen Buttrick, the Commission's new Director of Engineering. "I'm proud of all of their hard work in doing this while also adapting to a new team leader."

Fiscal Year 2022 featured a historic endeavor for the Commission as it launched its Water & Wastewater Infrastructure Renewal Program (WWIRP). This generational-scale reinvestment features more than 27 water and wastewter infrastructure projects supported in part by EPA's Water Infrastructure Finance and Innovation Act (WIFIA) and the Massachusetts Clean Water Trust State Revolving Fund (SRF). The $250 million WIFIA award provides low-interest financing that will enable the accelerated execution of these critically needed projects over six years. Projects in the WIFIA portfolio span the Commission's drinking water and wastewater systems, with the new West Parish Filters Water Treatment Plant and the York Street Pump Station and Connecticut River Crossing Project as cornerstones. While a majority of the projects covered in this section are financed in part by WIFIA, some are supported by other funding.

An aerial look at West Parish Filters Treatment Plant, with the new Clearwell and Backwash Pump Station project (Phase 1 of the new plant) under construction in summer 2021.

WIFIA PROGRAM

To view more information about the Commission's Water and Wastewater Infrastructure Renewal Program, click here online or scan the QR code

New West Parish Filters Water Treatment Plant

Originally built in 1909, West Parish Filters is located in Westfield and uses rapid sand filters dating from 1974 to filter raw water from Cobble Mountain Reservoir before it is disinfected and treated for corrosion control. The Commission also uses slow sand filters, which date to the 1920s – 1960s, on a supplemental basis to meet peak and emergency demand.

Through the WIFIA Program, design is currently underway for a new treatment plant to be completed in 2027. The new plant will reduce the risk of failure posed by aging infrastructure, improve water quality to meet 21st cenutry drinking water regulations, increase climate resiliency, and ensure that customers receive reliable, clean, safe drinking water every time they turn on the tap. In FY22 the Commission completed the planning effort, selected a design consultant, and conducted an alternatives analysis for the new facility.

At left, a slow sand filter is exposed to sunlight for the first time since 1909 as it is demolished in early 2021 to create the site for the new Clearwell and Backwash Pump Station project (right).

Progress at the Clearwell and Backwash Pump Station construction site at West Parish Filters in June 2022.

Clearwell and Backwash Pump Station

The underground clearwell structure was constructed in the 1920s originaly as a slow sand filter chamber. Due to declining structual integrity, construction to replace the clearwell began in November 2021 after several years of planning and design. Significant construction progress was made in FY22, including the installation of the new clearwell superstructure at the treatment plant. The replacement of the 1970s-era pumps will improve energy efficiency and increase system redundancy. The project, estimated to cost $25.8 million, is financed through the SRF as a match to the WIFIA loan and is considered phase 1 of the new water treatment plant. Completion is expected at the end of 2023.

DID YOU KNOW?

A clearwell is where filtered water is stored to be used in the cleaning of the filters (known as a "backwash"). Approximately every 24 hours, water from the clearwell is forcefully pumped back up through the filters to dislodge and drain accumulated suspended solids.

The 42-inch-diameter valve is being replaced to help ensure redundancy for water flow from the reservoir to the West Parish Filters Water Treatment Plant.

DID YOU KNOW?

The Cobble Mountain Hydroelectric Station is a critical conveyance pathway from Cobble Mountain Reservoir to the treatment plant that generates green power as water flows through it.

Bulk Chemical & Chlorine Room Upgrades

The Commission stores chemicals and chlorine used for water treatment at a separate chemical storage facility at West Parish Filters Water Treatment Plant. In FY22 construction was mostly completed on upgrades to improve deficiencies in the existing chlorine storage and feed system, as well as upgrades to the storage of the primary coagulant at West Parish Filters. The new storage facility will have improved safety measures to protect staff and the surrounding community. The construction cost was $1.6 million.

42-Inch Pipeline Design Project

The 42" pipeline is a critical redundant pathway for raw water from Cobble Mountain Reservoir to West Parish Filters Water Treatment Plant. Redundancy ensures service during severe weather events or during routine maintenance activities. Damage caused by a valve failure in 2019 necessitates repair of this pipeline. In FY22 a peer review was conducted for the preliminary design, cost estimates were developed, and the next phase of design commenced. Peer review of the 90% design plan will be completed in FY23.

The chemical room supports the functioning of the existing flocculators at West Parish Filters, shown above. The flocculators mix coagulants that bind to dissolved solids in the raw water, facilitating their removal during filtration.

The Diversion Gate House receives upgrades to expand its use to year-round.

An aerial view of the Cobble Mountain Hydropower Plant.

Diversion Gate House Improvements Phase 1

Phase 1 of the Diversion Gate House improvements was completed in Fall 2021 as part of the Raw Water Outlet Improvement Project and cost roughly $3.7 million. Located at the base of Cobble Mountain Reservoir dam, freezing hazards prevented access and use of the jet flow gates in winter months. However, upgrades were made to eliminate the risk of the gates freezing in winter, expanding their use to year-round. The gates were opened for a month from December 2021 to January 2022 for a cold weather test and operated successfully. Planning is currently underway for Phase 2, which will address necessary repairs of the 42-inch-diameter pipeline to ensure there are redundant paths for water to flow from the reservoir to the West Parish Filters Water Treatment Plant.

DID YOU KNOW?

The Diversion Gate House received its name from its role in "diverting" the Little River during the construction of Cobble Mountain Dam in the 1930s.

Inlet Control Valve Rehabilitation and Penstock Repairs & Inspections

The Cobble Mountain Hydropower Plant was constructed in 1930 and is a key component of the water treatment system. Water flowing through the hydropower plant to West Parish Filters generates green energy. Due to the plant's reliance on original 1930 machinery and equipment, in FY22 the Commission developed a comprehensive conditions assessment and alternatives analysis for the station and associated infrastructure. At least one of two 93-inch-diameter pipes will undergo repairs to ensure much-needed resiliency and system redundancy for the conveyance of raw water to the treatment plant.

Provin Mountain Storage Structural Monitoring

The Massachusetts Department of Environmental Protection (MassDEP) requires routine monitoring of Provin Mountain Storage Tank 1 until it is demolished. The tank was drained, isolated, and removed from service in FY20 after an engineering analysis determined the tank was no longer structurally sound and the storage capacity was no longer needed. In FY22 internal and external monitoring points were installed on the tank and are now being used for surveys to establish baseline conditions and monitor future changes. The estimated project cost for monitoring Tank 1 is $210,000.

Right: A view of Provin Mountain looking east toward Springfield..

Distribution and Collection System Upgrades

Nearly 40% of the Commission's water and sewer mains are over 75 years old. Each year, the Commission analyzes and prioritizes water distribution and sewer collection system projects for design, with construction to follow in subsequent years. In FY22 construction included the rehabilitation of a 400' section of the 42"-diameter South Branch sewer along Watershops Pond, among the 7,830 total linear feet of sewer rehabilitation completed in FY22. Also completed was 9,667 of water main rehabilitation, primarily along Massachusetts Avenue and Narragansett Street. $35.4 million has been allocated to the planning and design of distribution and collection system improvements for future years and will be funded by both revenue and WIFIA funds.

Left: A crew member works on sewer upgrades.

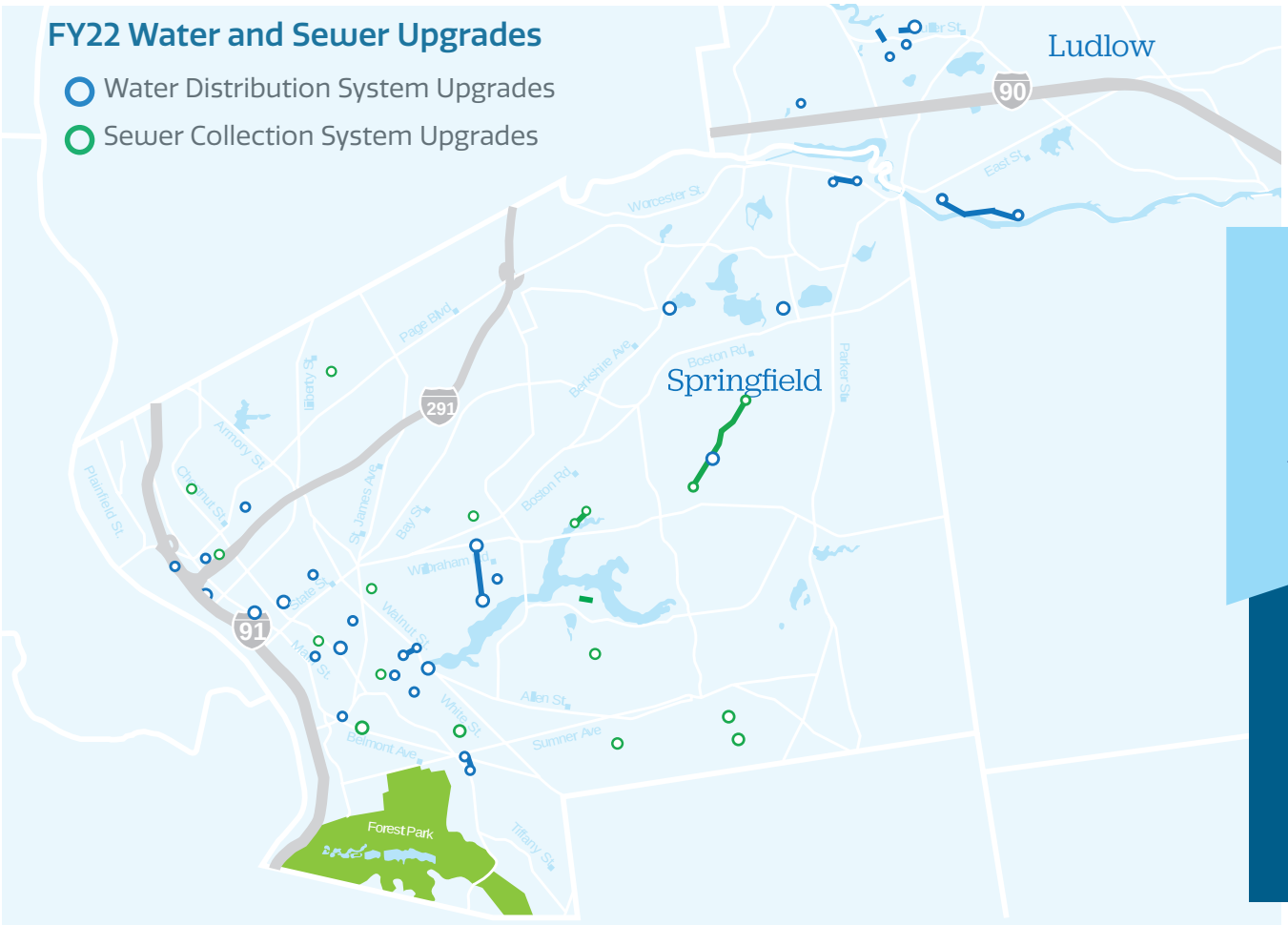
Notable Inspection Projects

In FY22 the Commission supported inspection projects including Springfield College's new Health Sciences Center and new parking area as well as the redevelopment of the Knox Building.

Inspectors ensure proper connections are made to the water and sewer system to protect the systems' integrity.

FY22 Water and Sewer Upgrades

- Water Distribution System Upgrades
- Sewer Collection System Upgrades



To see if there will be construction in your neighborhood, click here online or scan the QR code

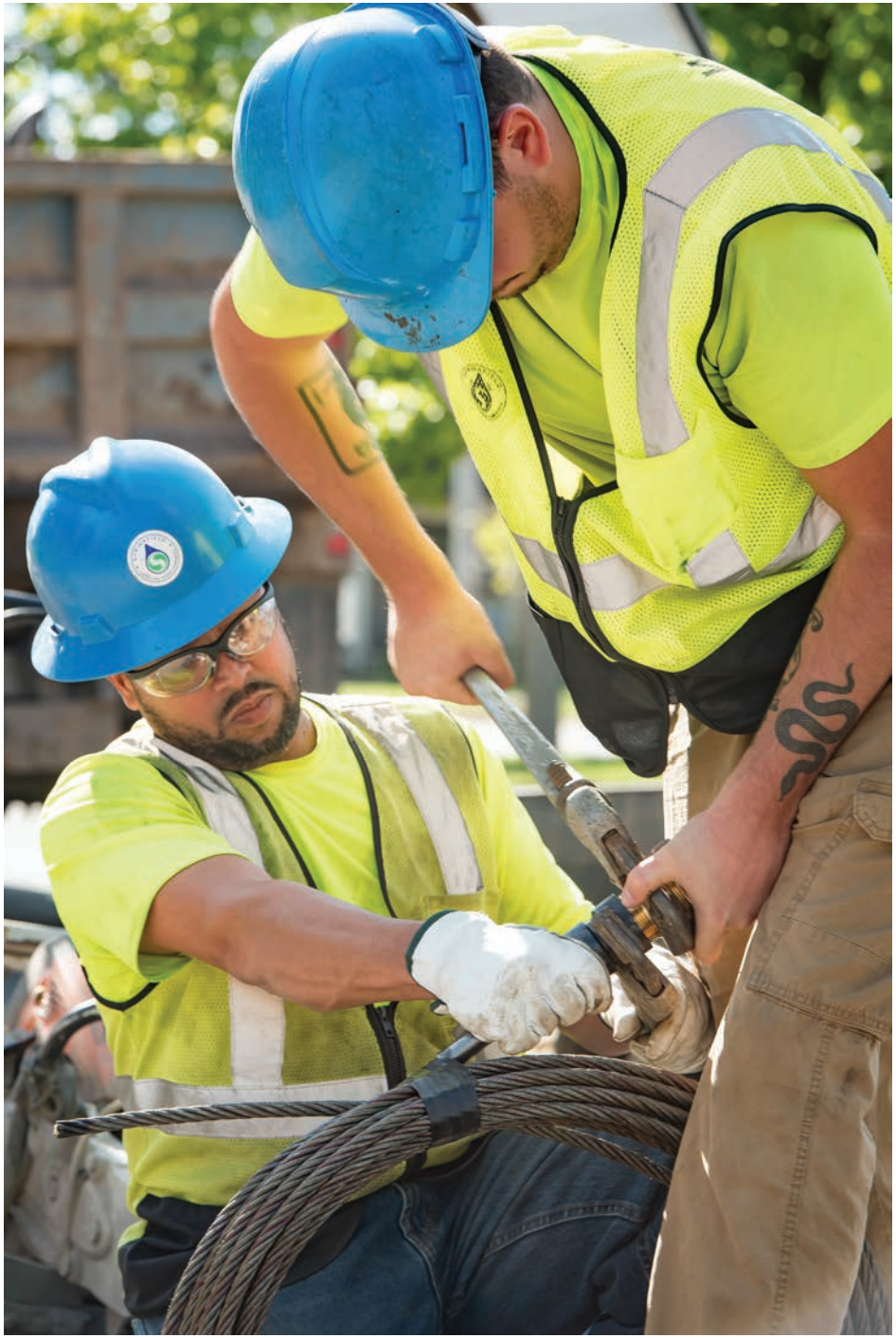
Top: Progress is made on the York Street Pump Station in June 2022. Bottom and top right: Aerial views of the York Street Pump Station and Connecticut River Crossing Project in August 2021.

York Street Pump Station and Connecticut River Crossing Project

A cornerstone of the Commission's WIFIA portfolio, the York Street Pump Station and Connecticut River Crossing project will serve 70% of the region's population with a new regional wastewater pump station and three new pipes across the Connecticut River. This project is a critical element of the Commission's Combined Sewer Overflow (CSO) Long Term Control Plan. The project will reduce the volume of CSOs discharging to the Connecticut River by more than 100 million gallons in a typical year by delivering more sewer flow to the Springfield Regional Wastewater Treatment Facility (SRWTF).

While the frequency and intensity of the storms in summer of FY22 proved challenging, the project hit the 80% completion mark at the close of the fiscal year, with a completion date slated for July 2023. Progress included:

- Three pipelines were installed across the Connecticut River and passed testing.
- The pump station building envelope was completed.
- New pumping systems were put in place and process piping installation continued.
- Plumbing, electrical and HVAC installations progressed inside of the new pump station.
- The majority of site piping was installed and ready for testing.



Commission crews prepare equipment for a distribution system upgrade.

Unplanned Capital Projects

Due to age of the Commission's infrastructure, large projects sometimes materialize unplanned. In FY22 a failure of Rapid Sand Filter Filter No. 6 underdrain occurred at the West Parish Filters Water Treatment Plant. The Engineering and Water Operations staff immediately jumped in to conduct an immediate replacement project of the underdrain in the filter. This is the first failure of its kind for the 1974 filter, but due to the staff's immediate response, customers did not experience any service interruption. Restoration included the underdrain system in Filter 6, as well as replacement of nozzles in some of the other filters that were exhibiting similar symptoms. The Commission continues to replace nozzles in the remaining filters, with completion anticipated in June 2023 (see page page 24 for more details).

The 24-inch-diameter Cemetery Brook Sewer, which is part of the North Branch of the Mill River Interceptor, experienced a failure in April 2022. To address the failure, a 300-foot section of vitrified clay pipe was replaced via a contract change order to the FY22 Sewer Improvements project.

Following Tropical Storm Henri in August 2021, a portion of slope on Dam #2 on the campus of West Parish Filters partially collapsed. Engineering staff coordinated with on-call contractors and Commission Water Operations and Field Services staff (see page 24) to repair the dam. Engineering is currently overseeing the development of plans for permanent stabilization.

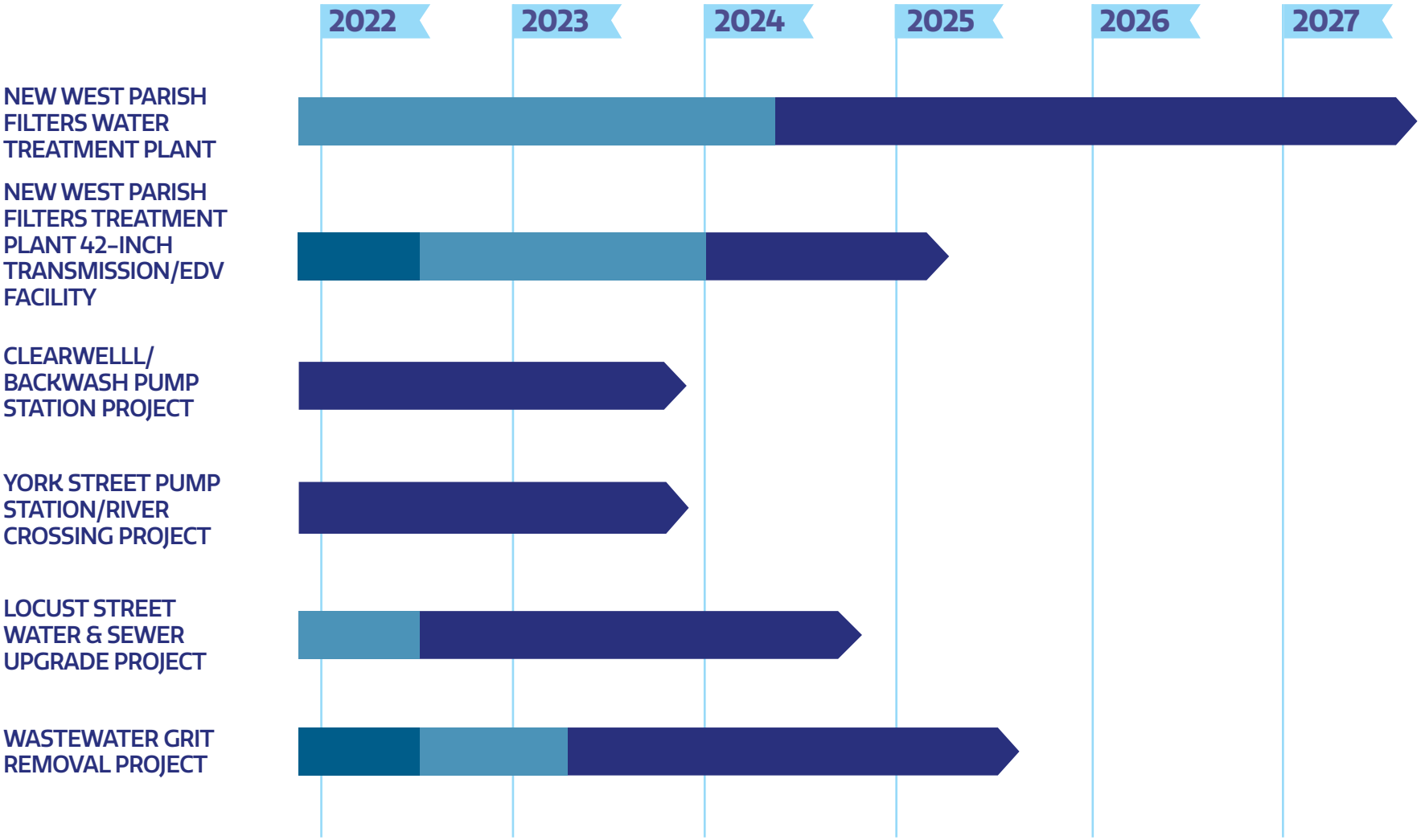
A Look Ahead

A new organizational structure has been developed for the Engineering department to accommodate all the capital work in the next few years The department also upgraded its project tracking processes, which will allow engineering to track all task orders. The department has also been developing Commission-wide standards for programmatic delivery.

Director of Engineering Darleen Buttrick (right) confers ωtih a colleague at the site of the Connecticut River Crossing Project.

ACTIVE WWIRP PROJECTS IN FY22

Water and Wastewater Infrastructure Renewal PROGRAM



WIFIA PROGRAM

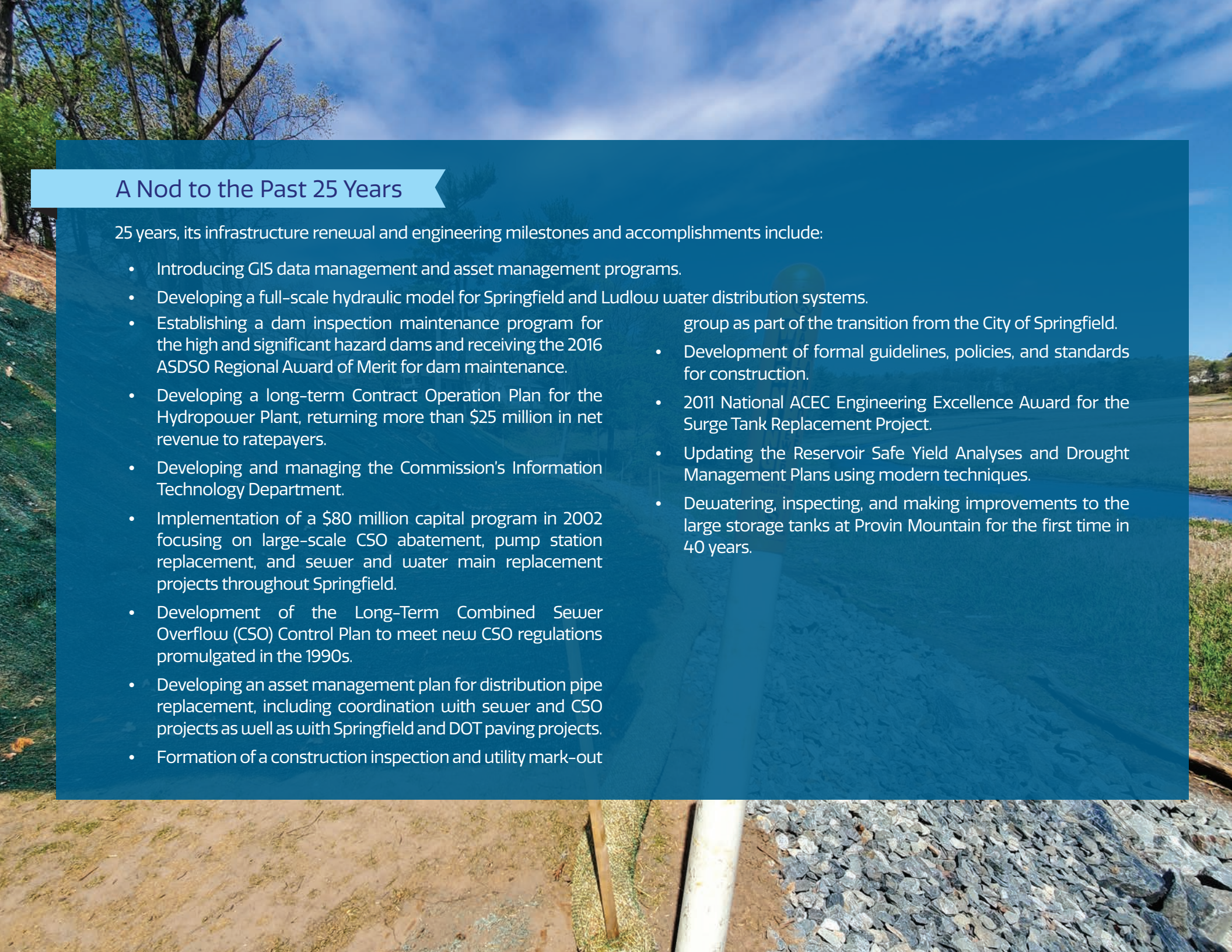
**Schedule subject to change*

HIGHLIGHTS OF MAJOR FY22 CAPITAL IMPROVEMENTS ($)

Water treatment system improvements projects	$907,000
Water distribution system assessment and rehabilitation	$1.6 million
Hydrant projects	$54,000
Meter replacements	$503,000
Wastewater collection system assessment and rehabilitation	$730,000
Wastewater treatment system improvement projects	$1.6 million
York Street and Connecticut River Crossing project	$39.3 million
Water and sewer main rehabilitation projects	$1.5 million
Provin Reservoir tank projects	$28,000
Various other rehabilitation and improvement projects	$2.8 million

FY22 WATER AND SEWER SYSTEM UPGRADES

Water Main Replacement	9,573 linear feet
Sewer Pipe Installed	7,668 inear feet
Sewer (Rehabilitation) Lining	162 linear feet



A Nod to the Past 25 Years

25 years, its infrastructure renewal and engineering milestones and accomplishments include:

- Introducing GIS data management and asset management programs.
- Developing a full-scale hydraulic model for Springfield and Ludlow water distribution systems.
- Establishing a dam inspection maintenance program for the high and significant hazard dams and receiving the 2016 ASDSO Regional Award of Merit for dam maintenance.
- Developing a long-term Contract Operation Plan for the Hydropower Plant, returning more than $25 million in net revenue to ratepayers.
- Developing and managing the Commission's Information Technology Department.
- Implementation of a $80 million capital program in 2002 focusing on large-scale CSO abatement, pump station replacement, and sewer and water main replacement projects throughout Springfield.
- Development of the Long-Term Combined Sewer Overflow (CSO) Control Plan to meet new CSO regulations promulgated in the 1990s.
- Developing an asset management plan for distribution pipe replacement, including coordination with sewer and CSO projects as well as with Springfield and DOT paving projects.
- Formation of a construction inspection and utility mark-out group as part of the transition from the City of Springfield.
- Development of formal guidelines, policies, and standards for construction.
- 2011 National ACEC Engineering Excellence Award for the Surge Tank Replacement Project.
- Updating the Reservoir Safe Yield Analyses and Drought Management Plans using modern techniques.
- Dewatering, inspecting, and making improvements to the large storage tanks at Provin Mountain for the first time in 40 years.

DRINKING WATER TREATMENT

FACES OF DRINKING WATER TREATMENT

"We are most proud of the extraordinary efforts that water operations staff put into maintaining the water treatment plant," say Director of Water Operations James Laurila and Deputy Director Christina Jones about staff contributions in FY22. "In order to complete critical filter repair work, West Parish Filters, Borden Brook and Provin Mountain staff all worked together seamlessly to provide important assistance."

The Commission's Water Operations group is charged with one of the Commission's most important missions: to provide safe and dependable drinking water treatment. In FY22, teamwork came to the forefront in support of capital plan – and unplanned – projects. In FY22 $19,835,112 was spent on drinking water treatment.

Clearwell/Backwash Pump Station Project

As construction commenced in FY22 (see page 12), the Water Operations team played an important role in using its intricate knowledge of the West Parish Filters Water Treatment Plant to protect infrastructure and treatment processes. Daily coordination in areas where demolition and excavation are occurring is a necessary component due to the project's complex nature. Coordination will continue until project completion in 2023.

Dam #2 Slope Repair

On August 22, 2021, Tropical Storm Henri delivered more than 2 inches of rain at West Parish Filters Water Treatment Plant, which caused a section of the slope along the downstream face of Dam #2 to fail. Dam #2 forms the Upper Lagoon, which receives plant process water. Local and state agencies were notified, and the Commission's dam engineer was consulted to assess the situation.

Classified by the Massachusetts Office of Dam Safety as a Significant Hazard Dam, the failure of Dam #2 could cause the flooding of Northwest Road and seven downstream buildings. Failure could also result in the loss of function of the Upper Lagoon, which is an important part of the treatment process.

West Parish Filters labor staff drained the Upper Lagoon and covered the failed area with a tarp to prevent further rain infiltration. Dam slope repairs were started by West Parish Filters staff at 3 a.m., and then supplemented by a Field Services crew that worked in partnership throughout. West Parish Filters staff helped coordinate the purchase and delivery of dam repair materials; controlled the water in Cooks Brook and the pool level in Upper Lagoon; and monitored the lagoon's water quality. All work was completed on August 25. The repairs held up during Hurricane Ida the following week. The dam is being regularly monitored and plans are underway by Engineering to permanently address the risk associated with this dam.

Rapid sand filter #6 failed during a routine backwash in January 2021.

Filter #6 Underdrain Repair

On January 16, 2021, the underdrain for rapid sand filter #6 failed during a routine backwash. The filter backwash data was evaluated to help determine the cause for the filter's failure. The remaining filters were also inspected. Design work was completed quickly by a contractor and approved by MassDEP. Construction work progressed through the summer, with staff helping expedite the replacement of thousands of backwash nozzles. While filter #6 was being replaced, the Commission relied on slow sand filters to meet summer water demands. Slow sand filters must be manually cleaned, so Operations staff spent additional time shoveling the underground filters during the summer to meet production needs.

Above: Water Operations staff work on cleaning and replacing nozzles on the other non-damaged rapid sand filters.

Coagulation Bulk Storage System and Chlorine Gas System Upgrades

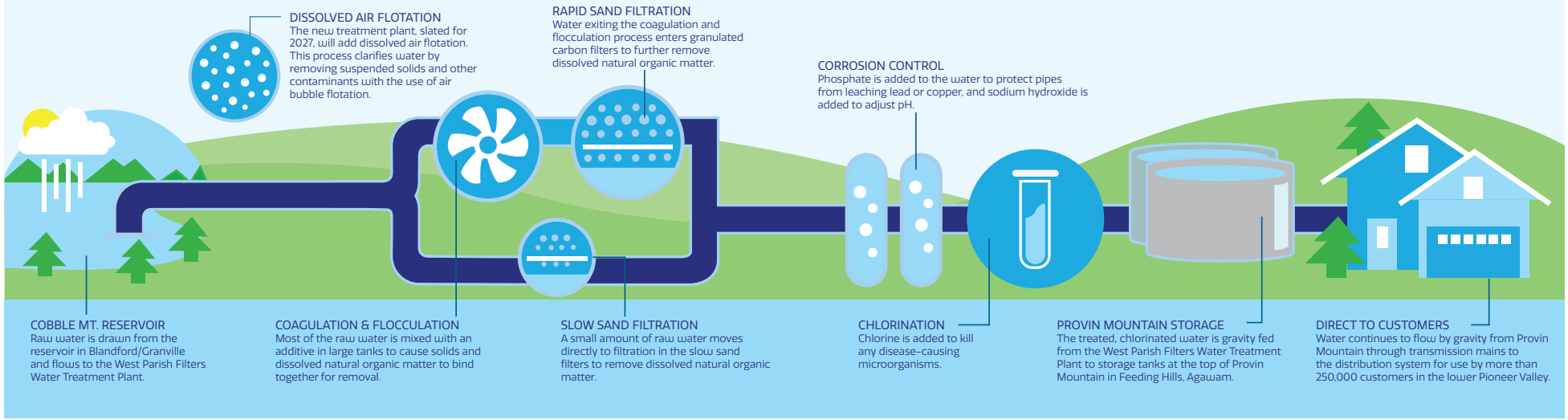
Prior to the construction of the new bulk chemical and day tank storage system, operators managed the treatment coagulant out of small totes. In FY22 the completion of this capital project (see page 13) entailed important operational improvements to the chlorine disinfection system, including the utilization of new scales.

Laboratory and Source Water Quality Programs

The Commission collects water quality samples seven days a week, year-round, from locations throughout the distribution system in Springfield, Ludlow, and the watershed. In FY22, more than 51,000 water quality tests were analyzed.

Water Operations also continued its Source Water Quality Monitoring Program, which first began in 2019. Monitoring the water quality in feeder streams and in the Borden Brook and Cobble Mountain Reservoirs provides data needed to understand and respond to seasonal water quality conditions and trends in the reservoirs.

The Water Treatment Process at West Parish Filters



DID YOU KNOW?

The Commission's lab analyzes 52,000 water samples seven days a week, year-round, to ensure residents receive high-quality water.

Transmission System Maintenance

Water that is treated at West Parish Filters Water Treatment Plant is stored in three storage tanks at Provin Mountain in Agawam. Each tank stores 12 to 17 million gallons of treated water to maintain pressure and provide emergency supply. Water is then conveyed through three transmission mains that pass through Westfield, Agawam, and West Springfield. Staff monitor for leaks, encroachments, and excessive vegetation growth along the transmission mains. In FY22, 16 miles of transmission easements were cleared of vegetation.

Scholarships and Training

In FY22 the Commission continued to provide scholarships that allow prospective water sector professionals to take the training classes needed to become a licensed water treatment plant operator. This initiative is in response to a current water operator shortage experienced by utilities across the country. Through this program the Commission continues to identify excellent treatment plant operators for potential future hire, particularly since the new water treatment plant will have additional processes. The programs also help increase the general pool of licensed operators in the state. In FY22 four scholarships were awarded, and two of those recipients are now Commission employees.

Top: The repairs of the slope of Dam #2. Bottom: Water quality tests are analyzed daily...

A Look Ahead

Water Operations is evolving to accommodate the ongoing large construction projects at West Parish Filters, including managing the transitions from older to newer facilities. The flexibility and cross-training of staff has made the team more effective in managing plant conditions that can change quickly. Other ongoing priorities include:

- Optimizing the existing water treatment processes to the extent possible to comply with the Disinfection Byproducts Rule.
- Providing operations input into the design of the new water treatment plant.
- Coordinating the integration of the new clearwell and backwash pump station into the existing water plant operations.
- Completing updates to Operation and Maintenance Manuals and trainings on the Emergency Action Plans (EAPs) for all Commission dams.
- Creating an interactive data management and visualization platform to manage source water and watershed data.

To learn more about the new West Parish Filters Treatment Plant, visit page 10.

New fire hydrants.

A Nod to the Past 25 Years

Water Operations has evolved in response to new technologies, regulations, and system needs. Highlights of these changes include:

- Adopting a new SCADA system to operate and monitor the water treatment plant, and automate monthly compliance reporting.
- Implementation of a Computerized Maintenance Management System (CMMS) to track water system assets, implement preventative maintenance routines, and track work orders.
- Replacement of obsolete chemical feed pumps, resulting in more uniform coagulant dosing and improved water treatment.
- Updating plant operations procedures to maximize rapid sand filter production to improve water quality and backwash efficiency.
- Optimizing chlorine dosing in accordance with recommendations from UMass and CDM Smith and industry best practices.
- Updating water storage practices by removing a structurally deficient tank from service and installing mixing systems at Provin Mountain.
- Using a new coagulant chemical to remove more natural organic matter, which is known to create disinfection byproducts, after a trial study in 2016.
- Cultivating a valuable long-term, ongoing relationship with elite researchers at UMass-Amherst, who have completed multiple studies over the years on the Commission's water treatment and watershed conditions.
- Creating new key technical positions in Water Operations to respond to modern water treatment requirements, including Bacteriologist, Process Control Manager, Process Control Analyst, Water Resources Manager, and Land Stewards.
- Expanding the in-house testing capacity of the laboratory with TTHM and TOC analyzer.
- Cultivating a safety-conscious, risk-averse, and dedicated team that is committed to the continual provision of the highest-quality water possible.

WASTEWATER COLLECTION & TREATMENT

"The Wastewater Operations team's ability to navigate complex projects through the various technical and resource agency challenges" was among the achievements that made Steven Frederick, Director of Wastewater Operations, proud in FY22.

Seven communities in the lower Pioneer Valley send their wastewater to the Springfield Regional Wastewater Treatment Facility (SRWTF) on Bondi's Island in Agawam. Wastewater is carried from buildings and homes through 473 miles of collection pipes in Springfield, with some dating back to the late 1880s.

The Commission owns the SRWTF, and Veolia, a contracted operator, manages the treatment of the wastewater coming from Agawam, East Longmeadow, Longmeadow, Ludlow, Wilbraham, West Springfield, and part of Chicopee. After the wastewater is treated at SRWTF, it is returned to the Connecticut River.

In FY22, SRWTF treated nearly 12.4 billion gallons of wastewater, which totals to an average of 40 million gallons per day (MGD). In FY22, the Commission spent $17,948,704 on wastewater treatment. A collective team comprising the Commission, Veolia North America LLC, and

consultants is actively working toward a common goal of providing sound capital planning, executing corrective and preventative maintenance, advancing project planning, and rebuilding the SRWTF operation on Bondi's Island.

Springfield Wastewater Collection System

The Commission owns, operates, and maintains the complex wastewater collection system that runs beneath the City of Springfield. The Commission's Sewer Division, part of Field Services, attends to sewer backups and any repairs and inspections of the system. Veolia maintains the 33 pump stations, 24 combined sewer outfalls, and the large transmission pipes associated with the collection system. (See page 47 for collection system statistics.)

CSO Notification System

This automated alert system notifies the public of combined sewer overflows (CSOs). The notification system was launched in May 2022, ahead of the new state law that went into effect in FY23. The regulation establishes requirements and procedures for notifying the public of discharges of certain types of untreated or partially treated wastewater, including discharges that fall into the categories of CSOs, sanitary sewer overflows (SSOs), and blended wastewater.

To view the CSO notification system, click here online or scan the QR code

Top and bottom: Scenes from the Springfield Regional Wastewater Treatment Facility on Bondi's Island.

Wastewater Treatment Operations Contract

SUEZ Water Environmental Services signed a 20-year contract that began in FY21. In FY22, Veolia North America LLC took over the SRWTF's management due to a merger between SUEZ and Veolia. Veolia is responsible for the biological treatment, disinfection, and chlorination of the wastewater that flows through the plant. Wastewater Operations staff reviewed and ensured that all contract provisions were upheld through the transition, including Initial Capital Investments (ICIs). Veolia is responsible for executing three ICI projects to upgrade systems at the wastewater treatment plant.

Electrical System Improvements

Wastewater treatment is energy-intensive, with systems operating every minute of each day. The Commission successfully consolidated a future project of electrical upgrades at the SRWTF into the current ICI framework. This project will update the electrical system to reduce the risk of failure and improve efficiency. The system was last modernized in the 1970s. The project, funded through a loan from the Massachusetts Clean Water Trust Fund, is $5.5 million and slated to begin in FY23.

One of the new three river crossing pipes is floated into the water before being laid in the bed of the Connecticut River.

DID YOU KNOW?

The York Street Pump Station and Connecticut River Crossing Project is one of the largest wastewater projects to take place in the region in decades.

DID YOU KNOW?

When the Asset Management and Maintenance Program began in 2008, 122 sanitary sewer overflows occurred. Only 5 occurred in FY22.

Nitrogen Monitoring

Nitrogen monitoring instrumentation obtained by a $290,000 grant from the National Fish and Wildlife Foundation–Long Island Sound Futures Fund in FY21 was installed in FY22 at the SRWTF. The instrumentation optimizes the Biological Nutrient Removal (BNR) process at the plant and captures data on the amount of nitrogen in the wastewater. The data is integrated into the treatment system to automatically adjust settings to match real-time oxygen demands in the aeration basins. While there is not enough data yet for a comparative analysis, the technological advancement is expected to reduce nitrogen loads discharged into the Connecticut River by up to 3,000 pounds per year.

Asset Management and Maintenance Program (AMMP)

Since 1008, the Commission performs regular high-pressure cleaning and camera/robotic assessments of the sewer system. This allows the Commission to prioritize the repair and rehabilitation of pipes. In FY22, the Commission assessed and cleaned approximately 230 miles of pipe.

In FY22, there were 5 sanitary sewer overflows (SSOs), which can be caused by defects in the sewer system, blockages, stormwater or groundwater infiltration. These SSOs are reported to EPA and MassDEP. This is a decrease from 14 SSOs in FY21 and is part of a downward surge in SSOs since the AMMP began in 2008, when there were 122 SSOs.

Top and bottom: Views of the aeration basin (secondary treatment) of the wastewater treatment plant.

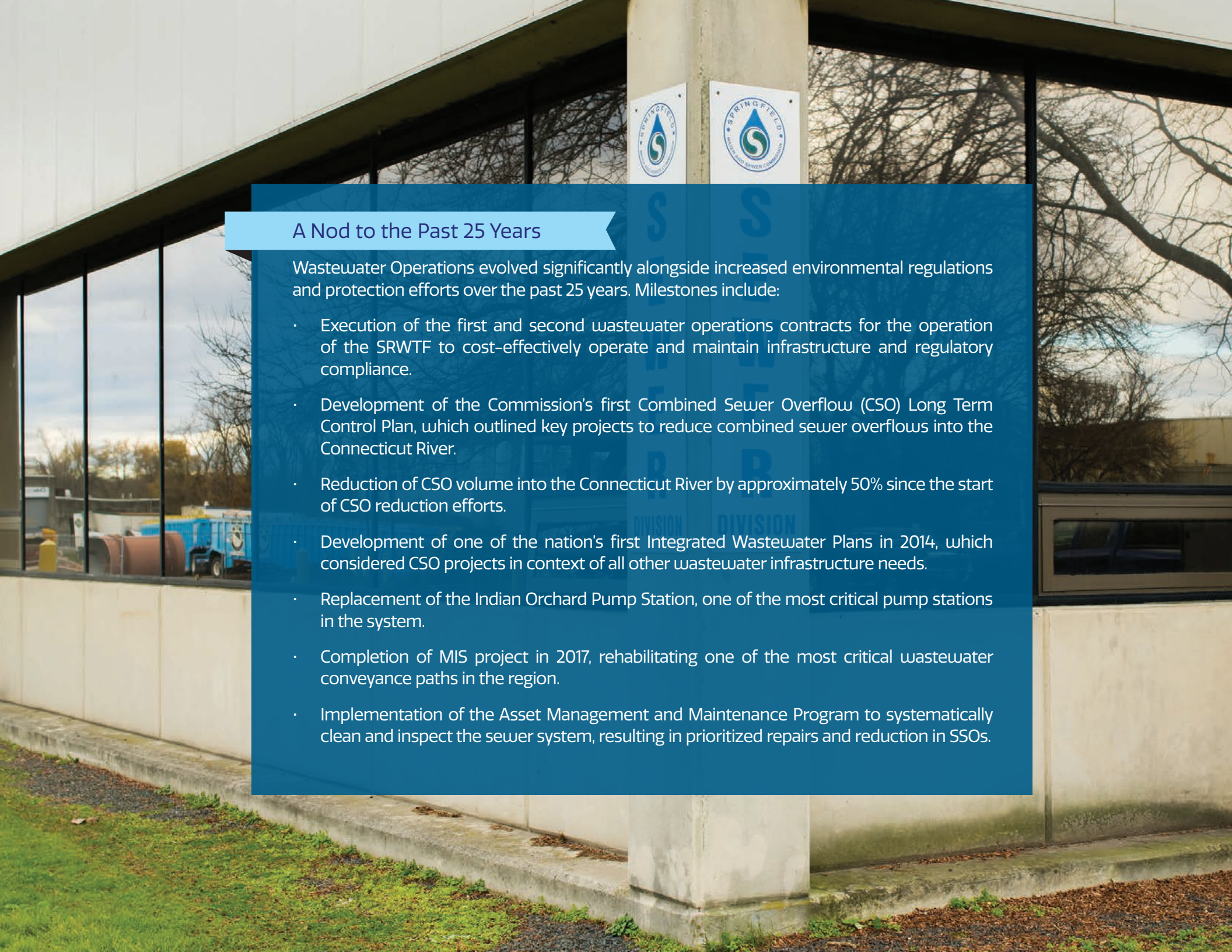
A Look Ahead

The Wastewater Operations team anticipates that York Street Pump Station will be activated with the start of system testing in Spring 2023.

The ICI projects will also help build system reliability and a more efficient plant process. The Grit Removal System and Primary Clarifier Upgrades will be completed and help further the Commission's efforts to strengthen the plant's efficiency, flexibility, and tolerance to the changing climate.

The Commission has been committed to building a facility that will meet current needs with an eye to the future. The facility contract is in place and built around improving the plant. The Commission is prioritizing projects that offer system redundancy and resiliency and ensure environmental compliance for years to come.

The York Street Pump Station and Connecticut River Project has an estimated completion date of summer 2023.



A Nod to the Past 25 Years

Wastewater Operations evolved significantly alongside increased environmental regulations and protection efforts over the past 25 years. Milestones include:

- Execution of the first and second wastewater operations contracts for the operation of the SRWTF to cost-effectively operate and maintain infrastructure and regulatory compliance.
- Development of the Commission's first Combined Sewer Overflow (CSO) Long Term Control Plan, which outlined key projects to reduce combined sewer overflows into the Connecticut River.
- Reduction of CSO volume into the Connecticut River by approximately 50% since the start of CSO reduction efforts.
- Development of one of the nation's first Integrated Wastewater Plans in 2014, which considered CSO projects in context of all other wastewater infrastructure needs.
- Replacement of the Indian Orchard Pump Station, one of the most critical pump stations in the system.
- Completion of MIS project in 2017, rehabilitating one of the most critical wastewater conveyance paths in the region.
- Implementation of the Asset Management and Maintenance Program to systematically clean and inspect the sewer system, resulting in prioritized repairs and reduction in SSOs.

WATERSHED PROTECTION

FACES OF WATERSHED PROTECTION

"I am proud of our team and the work that we do," says Water Resources Manager Nicole Sanford. "We have staff that are dedicated, educated and skilled in caring for Commission property for the purposes of source water protection. The highlight of FY22 was completing the Source Water Protection Plan since it documents all the work that has been done with regards to conservation, forestry, monitoring and maintenance of Commission property and watershed infrastructure."

The Watershed Management team members diligently protect the watershed, a natural filter for source water.

The Commission needs a thriving forest to provide high-quality drinking water. The Watershed Management Department actively monitors watershed property for water quality threats and to ensure the safety, health, and longevity of this natural filter. Ongoing tasks to protect the source of the region's water include:

- Maintaining watershed roads and culverts to prevent erosion and sedimentation issues.
- Developing forest management plans with the goal of maintaining a diverse and resilient forest.
- Acquiring and maintaining property within the Little River Watershed to protect watershed land from water quality threats associated with development.

Land stewards monitor the watershed.

Cobble Mountain Reservoir in early fall.

Land Conservation

The Commission owns, protects, and maintains nearly 50% of the forestland in the Little River Watershed, with an additional 9% protected by public or non-profit land protection organizations. In FY22 the Commission was awarded a Drinking Water Supply Protection grant to purchase Hull Conservation Area, a 12-acre property in Blandford. This property is open to the public for passive recreation, including hiking, cross-country skiing, and wildlife observation. The property includes a parking area and information kiosk.

Watershed Maintenance and Monitoring

The Commission's land stewards conduct vigorous monitoring efforts to ensure the watershed land is adequately protected and conserved. Maintaining infrastructure reduces erosion and sedimentation and allows Commission staff to continue accessing watershed property for the purposes of watershed management. FY22 activities included:

- Monitoring 2,632 acres of Commission watershed property.
- Monitoring additional 1,119 acres of watershed property protected by conservation easements for debris and illegal dumping.
- Inspecting 185 culverts in the watershed for blockages, erosion, and other deficiencies.
- Regrading road surfaces, adding stone, constructing drainage features, and cleaning and reshaping roadside drainage ditches on unpaved Commission roads, including the Borden Brook Reservoir access road and South Street.

Forest Management Activities

Forest management maintains a structurally and species-diverse forest, which is beneficial to source water quality as the forest functions as a natural filter to the reservoirs. In FY22, maintenance included prioritizing and removing invasive plant species within the watershed. The Commission is collaborating with a consulting forester and invasives removal specialist to determine the most effective strategies for removing invasive species.

A watershed management crew member identifies invasive species within the forest.

Land stewards inspect infrastructure.

A boat is launched to sample source water at Borden Brook Reservoir.

To learn more about public access in the watershed, check out the interactive map of the watershed here or scan the QR code

Also in FY22, in accordance with the Department of Conservation & Recreation's (DCR) approved Forest Stewardship Plans and in preparation for future thinning and regeneration cuts, ash trees that were hazardous or infected by the emerald ash borer were removed.

Forest Management Planning

The Commission's consulting forester completed the Pond Brook Forest Stewardship Plan in 2021. The plan covered a total of 997 acres and was approved by DCR. Implementation of management recommendations for areas with completed Forest Stewardship Plans will occur simultaneously with planning.

Source Water Protection

In December 2021, MassDEP conducted an inspection of the Little River Watershed to review the Commission's Source Water Protection Program. DEP determined that the source water protection strategies employed by the Commission are effective in maintaining federal water quality standards.

The Source Water Protection Plan was also updated in FY22. The document identifies, evaluates, and proposes mitigation strategies for potential threats to water quality in the Little River Watershed. The plan also sets goals for watershed management over the next three years.

Public Access

The Commission's public access properties allow the public to enjoy passive recreational access to conservation land. A paved recreational path at Ludlow Reservoir is the most popular property, and publicly accessible recreational areas within the Cobble Mountain watershed are also available. There were 32,287 visitors to Ludlow Reservoir in FY22.

Not all areas in the Commission's Cobble Mountain and Ludlow Reservoir watersheds are open to the public; strategic areas remain closed to prevent damage to critical watershed ecosystems and water infrastructure. Commission crews and the Massachusetts State Police and Environmental Police monitor the watershed to deter and intercept unauthorized activity.

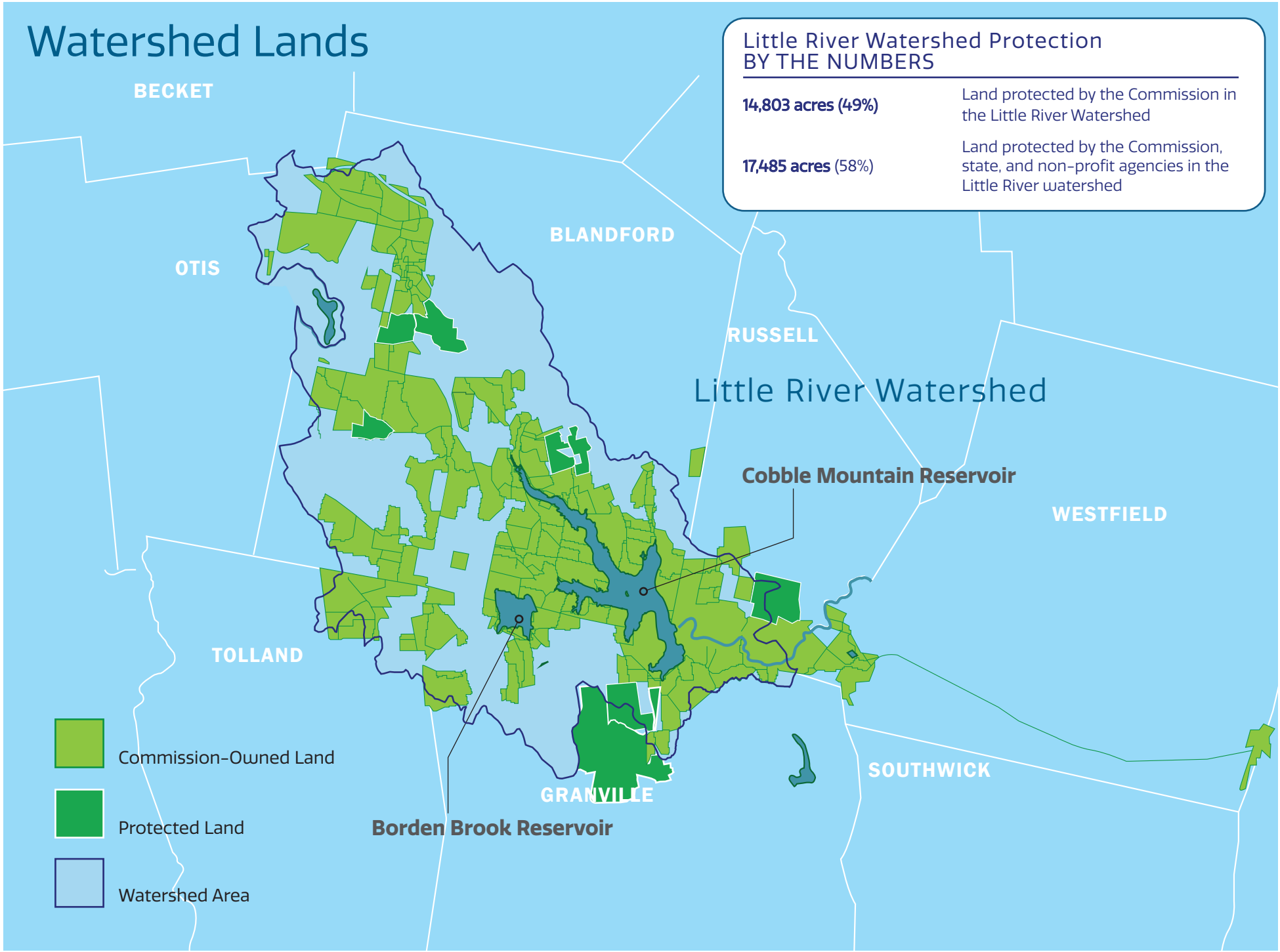
A Look Ahead

Technology, data, and accessibility are at the forefront of the Watershed Management Department's planned advancements, including:

- Integrating forestry data into the Commission's GIS database to help track where management strategies have been implemented and their successes over time.
- Updating online information about public access properties, and adding informational signage and access upgrades to select Commission conservation areas.

A staff member samples source water from the Commission boat.

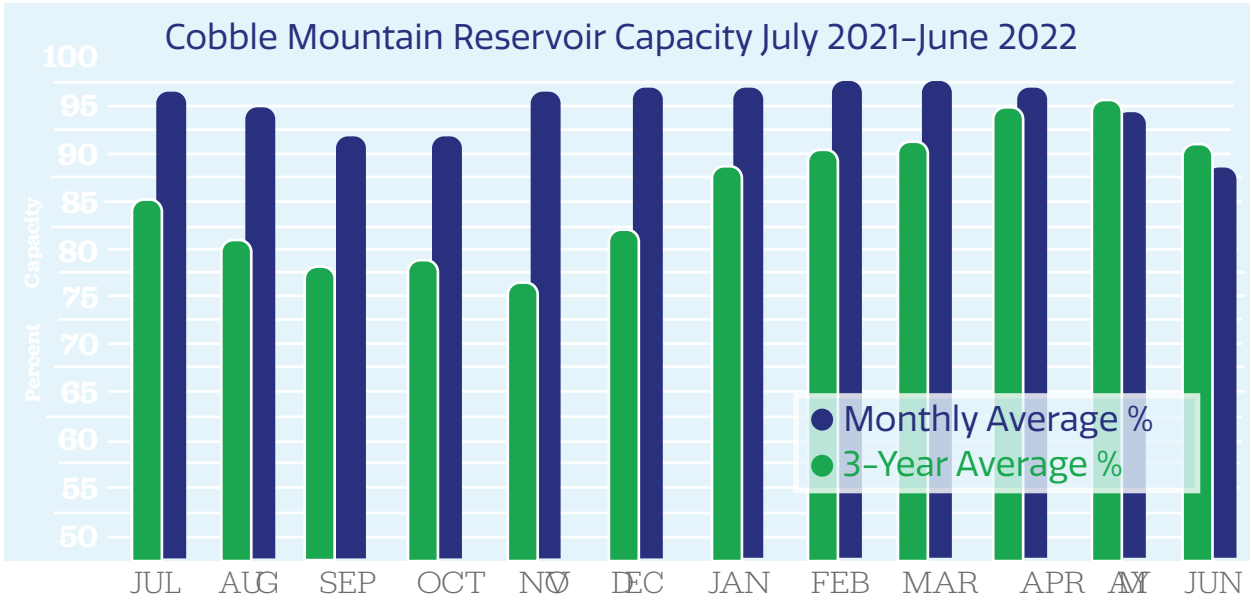
Watershed Lands

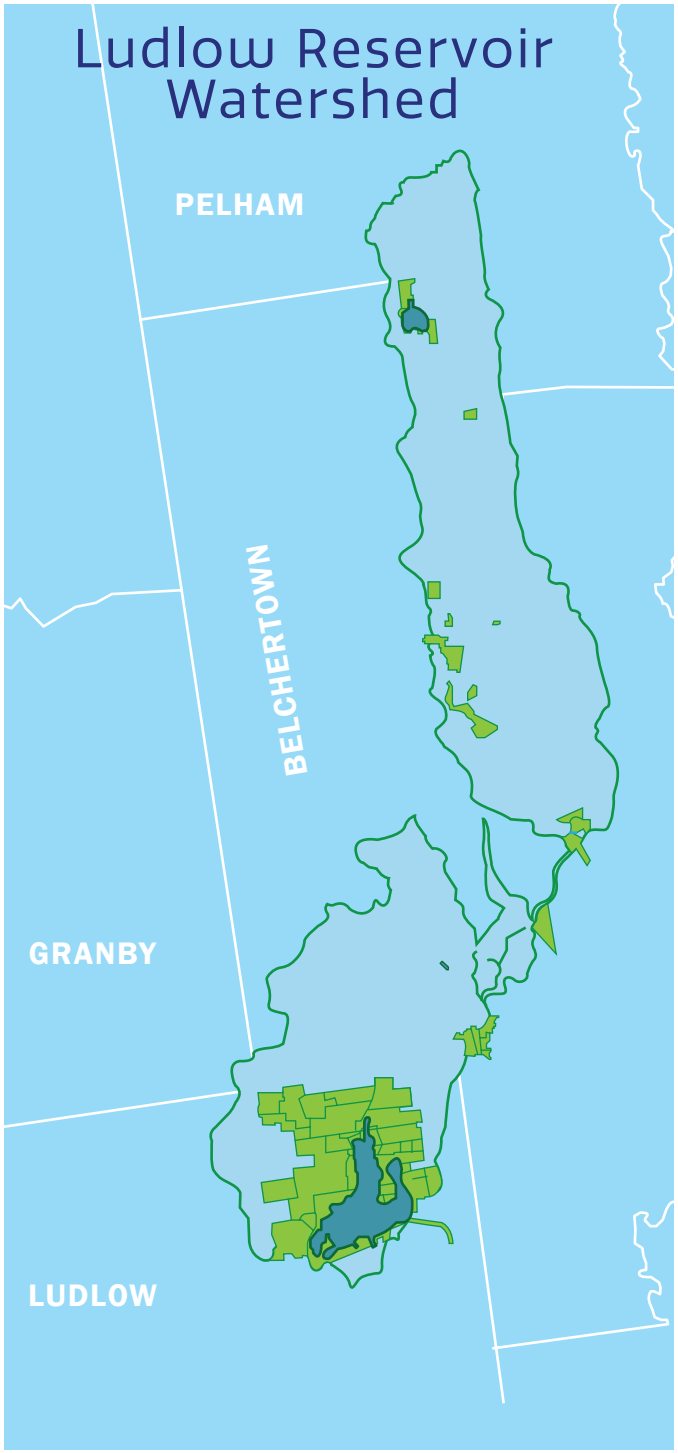


Little River Watershed Protection BY THE NUMBERS

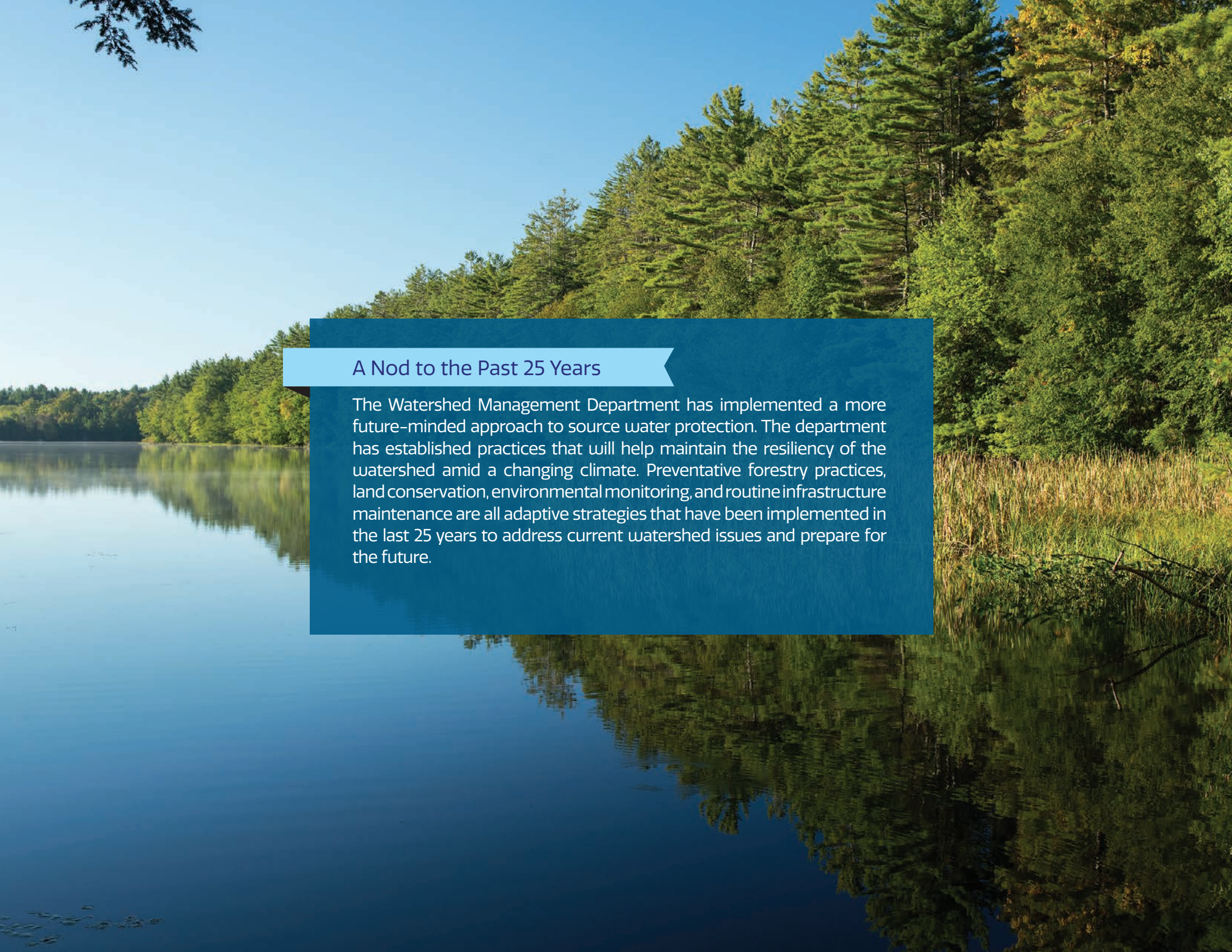
14,803 acres (49%)	Land protected by the Commission in the Little River Watershed
17,485 acres (58%)	Land protected by the Commission, state, and non-profit agencies in the Little River watershed

The fishing pier at Ludlow Reservoir.





Top left: An aerial survey for beaver dams in the watershed. Clockwise from top right: Wildlife in the watershed includes moose, bobcats, newts, and fox.



A Nod to the Past 25 Years

The Watershed Management Department has implemented a more future-minded approach to source water protection. The department has established practices that will help maintain the resiliency of the watershed amid a changing climate. Preventative forestry practices, land conservation, environmental monitoring, and routine infrastructure maintenance are all adaptive strategies that have been implemented in the last 25 years to address current watershed issues and prepare for the future.

Field Services

DID YOU KNOW?

Water distribution mains span 580 linear miles. Straightened out, the mains roughly equal the distance from Springfield to the Outer Banks in North Carolina.

"Field Services has incorporated several different divisions in recent years," said Ryan Wingerter, Deputy Director of Field Services. "This new structure helps streamline efforts to be responsive and proactive for customers, protect Commission assets and resources, and provide more paths of advancement for fulfilling careers in water."

Below the City's streets lie a complex system of hundreds of miles of water and sewer pipes. Every inch of those pipes, valves, hydrants, and more are maintained by the Commission's Field Services Division. The Division also supports customers with installation, repairs, and replacements of water and sewer service lines at individual properties; water consumption surveys; and water quality checks. The multitude of activities provided by this Division are funded through the Commission's operations budget. In FY22, $49,012,860 was spent on these activities.

The Commission collects readings from its 46,782 meters throughout Springfield and Ludlow each month.

The Commission's stock room crew.

DID YOU KNOW?

All known lead service lines in Springfield were removed by 2005.

Water Quality Protection

The Commission's Water Quality Group (WQG) regularly inspects valves and hydrants, and conducts flushing to ensure safe chlorine levels and water age throughout the system. Conducted in coordination with engineers and operators at West Parish Filters, the WQG's Unidirectional Flushing (UDF) Program increases water flow through high-powered flushing of mains and hydrants to clean out sediment. In FY22, 146 miles of pipe were flushed.

Water Infrastructure Maintenance and Upgrades

The Commission's Water Construction Group (WCG) is tasked with responding to unpredictable main breaks (14 in FY22), replacing aging water mains, rebuilding hydrants, and performing other routine or emergency repairs and maintenance for hundreds of miles of water pipes and well over 6,000 hydrants. Crews are ready to respond to emergencies 24 hours a day, seven days a week. The WCG also works with customers on water service line replacements and repairs (412 in FY22) and inspections.

Water Consumption Tracking and Assessments

All water meters installed at residential and commercial properties are maintained and serviced by the Commission's Meter and Field Services Group (MFSG). The meters record water consumption data that is then relayed over radio signals and collected monthly by the MFSG. The MFSG tracks the data and conducts water consumption surveys that can help homeowners identify leaks and assess household water use. In FY22, the MFSG performed 476 consumption surveys.

Galvanized Service Line Replacement Program

The Environmental Protection Agency finalized new Lead and Copper Rule regulations in 2021. This requires the identification and removal of all service lines known to be made of galvanized steel by 2024. The Commission has proactively contacted all properties with known galvanized lines for replacement with modern materials. In FY22, the Commission replaced 306 out of approximately 700 known galvanized service lines.

Wastewater Collection System Operations

The collection (sewer) system conveys wastewater across the Connecticut River to the Springfield Regional Wastewater Treatment Facility on Bondi's Island. The Sewer Group maintains the sewer system and conducts maintenance including jetting (cleaning) sewer mains and syphons, repairing sewer mains and services, and manhole cleaning/repair.

The Sewer Group is accessible 24 hours a day, seven days a week, all year long, to respond to emergency situations such as sewer backups. In FY22, the Sewer Group responded to 667 sewer backup calls and assisted 81 customers in the repair or replacement of their sewer service lines.

Cross Connection Control Program

Adopted in 1998 in accordance with MassDEP regulations, the Cross Connection Control Program performs regular inspections in buildings throughout Springfield and Ludlow to ensure backflow prevention devices are in place and working for water service lines that are connected to equipment or other systems containing chemicals or water of questionable quality (HVAC equipment, for example). In FY22, the program conducted 4,445 backflow inspections at 834 sites.

A Look Ahead

Field Services will continue to work more closely with Engineering on flushing and construction operations, as well as continue with galvanized service line replacements and smart meter installations.

Field Services Statistics and Activities FY22

Water and Sewer System	
Miles of Water Main	580
Number of Valves	19,810
Number of Hydrants	6,230
Number of Meters	46,782
Miles of Wastewater Mains	473
Number of Wastewater Manholes	11,491
Number of Wastewater Pump Stations	26

Water Quality Group	
Hydrants Inspected	3,189
Hydrants Repaired/Rebuilt	146
Valves Exercised	3,189
Miles of Mains Flushed (UDF Program)	146.04

Water Construction Group	
New Hydrants Installed	27
Hydrants Replaced	28
Water Main Breaks Repaired	14
Water Service Replacements	412
New Valves Installed	106
Valves Replaced	6

Meter and Field Services Group	
Meters Installed (Primary and Auxiliary)	2,269
Water Consumption Assessments	476

Sewer Group	
Manholes Cleaned	217
Sewer Jetted (feet)	982,853
Sewer Backup Responses	667
Sewer System Repairs	11
Sewer System Repair Pipe Installed (feet)	287
Residential Service Line Repairs	81

A Nod to the Past 25 Years

Field Services has become much less siloed over the past 25 years, with many different functions serving under one division. This allows for more cross training, productivity, and shared resources. Field Services has also evolved from pulling paper water and sewer service cards when heading out to a job to reaching for a tablet – mobile asset management software now tracks all work orders, equipment, resources, and labor hours.

TECHNOLOGY INFRASTRUCTURE

FACES OF TECHNOLOGY INFRASTRUCTURE

"In FY22 we were proud of being able to provide excellent IT support to the Commission," says IT Operations Manager Rick Gomez and Applications Manager Michael Olkin. "We are most proud of our effort to secure the Commission's data network from cyberattacks, and of the acceleration of our drone program in FY22, as we captured valuable aerial imagery and video footage in 53 missions."

The IT Department keeps the Commission running behind the scenes. Overseeing a vast network of digital infrastructure, IT works to protect the Commission's data from cyber-attacks and provides critical support to ensure the continuation of quality services. Improvements in FY22 included:

- Rebuild of SCADA (supervisory control and data acquisition) data center core network and service hardware.
- Communications upgrade with firewalls to secure data connectivity between pump stations and replace aging copper (phone line) communications.
- Implementation of modern "business intelligence" solutions that allows Commission staff to track ongoing work and generate essential reports in real-time. (The first significant use of this technology was the development of a more efficient and effective

system for scheduling appointments with customers.)

- Creation of a Galvanized Service Replacement Dashboard by the Applications group to track the ongoing galvanized service line replacement project and water service records revisions.

Cybersecurity Protection

While water utilities remain a target of cyber-threats, the IT Department diligently keeps the Commission well protected. Efforts include securing disclosed vulnerabilities through patching systems, firewall policies, email and endpoint protection, intrusion detection, network monitoring, network segregation, and employee awareness training, among other security measures. The layered approach strengthens the Commission's cyber security posture.

Geographic Information System (GIS) Efforts

GIS personnel worked with the Communications team to develop a robust, user-friendly WIFIA storymap highlighting all the WIFIA-funded projects. The storymap, which is featured on the Commission's website, showcases text, photos, videos, and maps that detail the forthcoming projects as part of the landmark infrastructure improvements project.

The GIS team has also been actively building the Commission's drone footage portfolio. A second GIS staff member obtained an FAA drone pilot license, which is the third Commission staff member overall to have one. This allows for more flexibility in drone mission scheduling.

Drone missions capture aerial footage of ongoing significant projects, including projects on the West Parish campus, the York Street Pump Station and Connecticut River Crossing Project, and various infrastructure inspections. Drone flights are regularly performed over project sites to document progress.

DID YOU KNOW?

The GIS team conducted 53 drone missions in FY22.

Drone missions document the progress of the many infrastructure renewal projects underway.

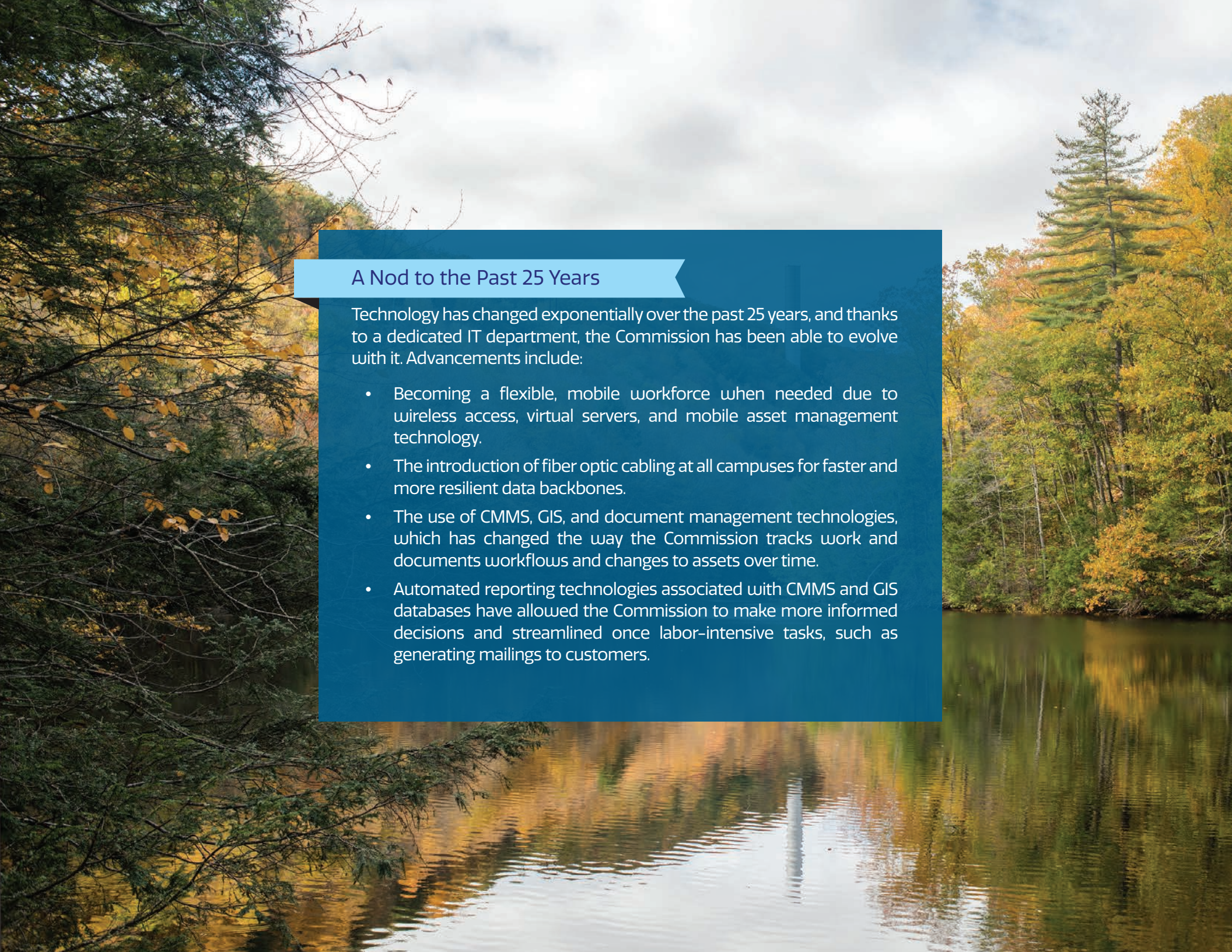
A Look Ahead

Digital infrastructure is ever-evolving, and as such, the IT team has a full docket of initiatives, including:

- The completion of the SCADA data center rebuild, which will move SCADA services to newly installed hardware. The new equipment is scalable, modern, and resilient, and the new network allows for larger and enhanced data throughput to support future Commission data access needs and security.
- Replacement of an end-of-life network, switching hardware at all Commission locations.
- Procurement of an advanced drone with automated flight planning capabilities to aid with repeatable inspections and footage capture.

To view the WIFIA storymap, click here online or scan the QR code

The IT department manages a complex, ever-evolving network of digital infrastructure.



A Nod to the Past 25 Years

Technology has changed exponentially over the past 25 years, and thanks to a dedicated IT department, the Commission has been able to evolve with it. Advancements include:

- Becoming a flexible, mobile workforce when needed due to wireless access, virtual servers, and mobile asset management technology.
- The introduction of fiber optic cabling at all campuses for faster and more resilient data backbones.
- The use of CMMS, GIS, and document management technologies, which has changed the way the Commission tracks work and documents workflows and changes to assets over time.
- Automated reporting technologies associated with CMMS and GIS databases have allowed the Commission to make more informed decisions and streamlined once labor-intensive tasks, such as generating mailings to customers.

CUSTOMER SERVICE

FACES OF CUSTOMER SERVICE

"During FY22, Commission programs such as the Customer Assistance Program and extended payment agreements, coupled with outside assistance from partner agencies, helped resolve close to $1.5 million in delinquent balances without shutting off water services," says Customer Service Manager Anne Kulig.

Customer service is at the heart of the Commission's mission. As the largest public water utility in the region, strong customer service is critical to its more than 175,000 retail drinking water and wastewater customers through roughly 43,000 service points.

Supporting Customers

Customer service representatives (CSRs) are often the first line of response when customers are concerned about water quality. Positive, trusting relationships with customers is critical to the success of the Commission's daily operations. The Customer Service Group (CSG) comprises two areas: billing and accounts, and field operations, which schedule water and sewer emergencies, service appointments, and inspections. In FY22, the CSG answered 55,096 calls.

Customer Assistance Programs

Water and sewer service is critical to everyday life, and whenever necessary, CSRs work with customers to identify assistance programs that help them maintain manageable account balances:

- The Commission's Customer Assistance Program (CAP) was launched in 2020 and provides a $250 annual credit on eligible low-income customers' bills. In FY22, 747 applications were submitted, 412 of which were awarded credits.
- Non-beneficial use abatements are one-time abatements of up to $500 if the customer can show they had a leak in their home. There were 103 abatements issued in FY22.
- Payment plans set a fixed monthly amount to be repaid over a set amount of time. In FY22, 295 plans were created, and 64 of those were signed and returned.

The CSG also began collaborating with the Massachusetts Homeowners Assistance Fund, a state program, to assist customers with outstanding mortgage and utility balances.

Leak Detection Program

Leaks may be invisible to the untrained eye, but are trackable through the Commission's Leak Detection Program. The CSG monitors and reviews accounts and alerts the customer if an account displays a sudden spike or drop in usage, which may indicate a leak or vacancy. The CSG's goal is to increase its leak detection outreach. In FY22, CSRs reached out to 2,221 customers regarding unusual usage.

While not officially part of the Leak Detection Program, the CSG also works to identify properties whose water should be turned off due to a vacancy or other unsafe condition. This ultimately helps save ratepayer money and reduce water consumption waste. In FY22, 2,230 usage investigations were initiated.

Updated Practices and Programs

The CSG continued its returned mailing update program, which advances the accuracy of mailings to limit their return. When the program began in 2018, 2,000 mailed paper statements were returned monthly. Now, that number is down to 600.

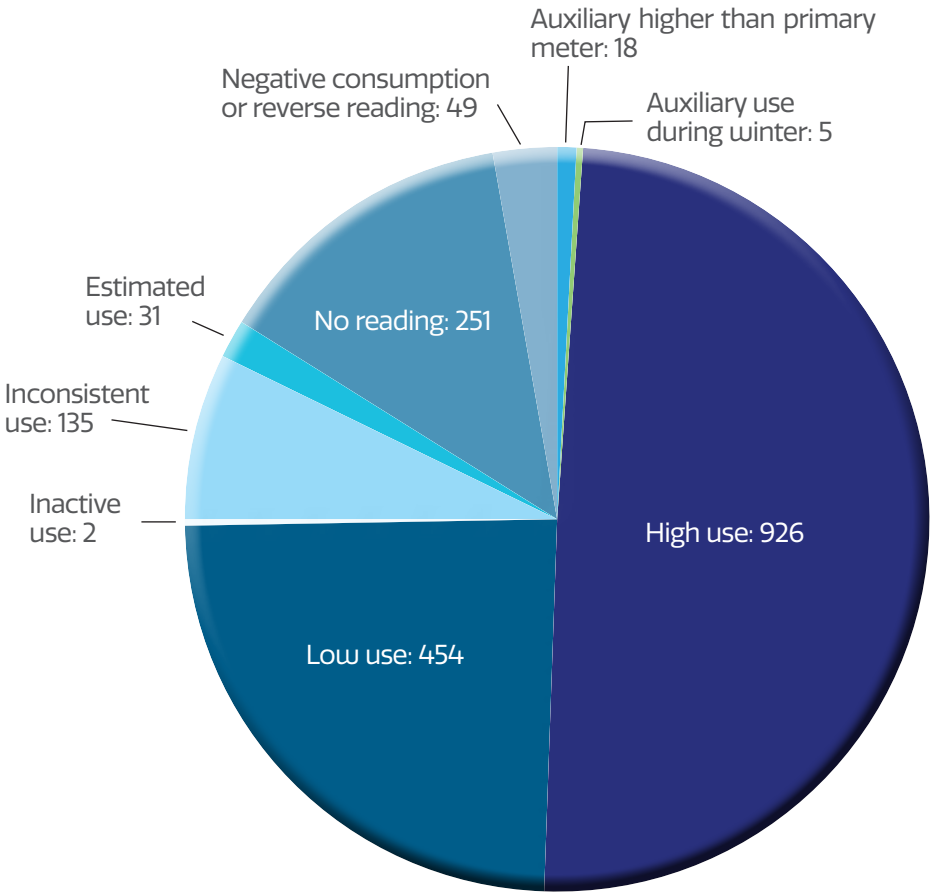
A Look Ahead

The CSG is constantly working to enhance and streamline processes and procedures to improve the experience between the CSG and the customer. Prior to the pandemic, most interactions with the customers occurred at the Commission Administrative Building. When offices closed to the public during the pandemic, the CSG promoted and is now working on enhancing the online tools available to provide customer service.

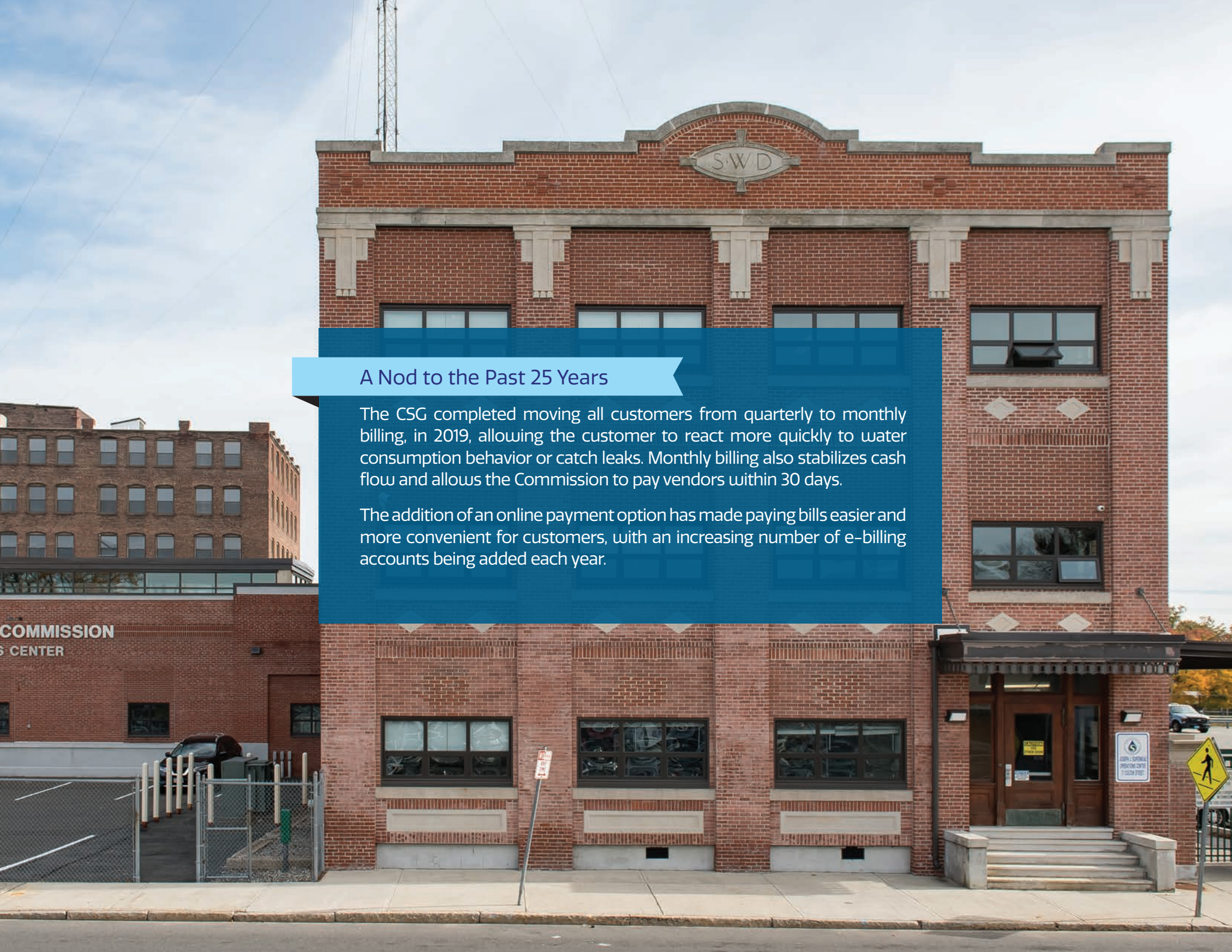
The CSG is also working toward expanding engagement with customers with outstanding balances well ahead of the possibility of shutoff in order to maximize support and assistance.

Leak Detection Program Outreach

The chart below shows the number of customers who were contacted regarding their unusual water usage as part of the Commission's Leak Detection Program.



Commission staff inspects a project site in an effort to anticipate and answer questions from customers.



A Nod to the Past 25 Years

The CSG completed moving all customers from quarterly to monthly billing, in 2019, allowing the customer to react more quickly to water consumption behavior or catch leaks. Monthly billing also stabilizes cash flow and allows the Commission to pay vendors within 30 days.

The addition of an online payment option has made paying bills easier and more convenient for customers, with an increasing number of e-billing accounts being added each year.

EDUCATION & COMMUNITY

"Education about the value of water is more important than ever as we embark on a generational reinvestment in our infrastructure," says Jaimye Bartak, the Commission's Communications Manager.

Understanding the value of water is critical as the Commission begins a historic reinvestment in its water and wastewater systems. While community events were more muted in the summer of 2021 due to the pandemic, the Commission held a kickoff event announcing the Water and Wastewater Infrastructure Renewal Program in September 2021. Highlights included:

- Attendance by Congressman Richard Neal, EPA Assistant Administrator of Water Radhika Fox, Mayor Domenic Sarno, DEP Commissioner Martin Suuberg, and other dignitaries.
- Announcement of $250 million EPA loan to fund the Commission's $550 million Water and Wastewater Renewal Program.
- Launch of accompanying storymap of the 27 renewal projects that are included in the WIFIA portfolio.

Helping the public understand the value of water is at the heart of the Commission's outreach efforts.

Community Outreach

The Commission conducted public outreach at neighborhood councils to educate the public about the need for water infrastructure investment. Outreach included details on the status of water quality compliance issues, and the progress of renewal projects, including the new water treatment plant and the upcoming Locust Street Sewer Upgrade Project in the South End. The Commission met with the following neighborhood councils:

- Maple/High/Six Corners Neighborhood Council
- South End Citizens Council
- Outer Belt Civic Association
- Forest Park Civic Association
- East Forest Park Civic Association

The Commission reached out to legislators including Congressman Neal, who visited West Parish Filters in June 2022 for a roundtable discussion on water issues with other area water systems and the Massachusetts Water Works Association. Outreach also included:

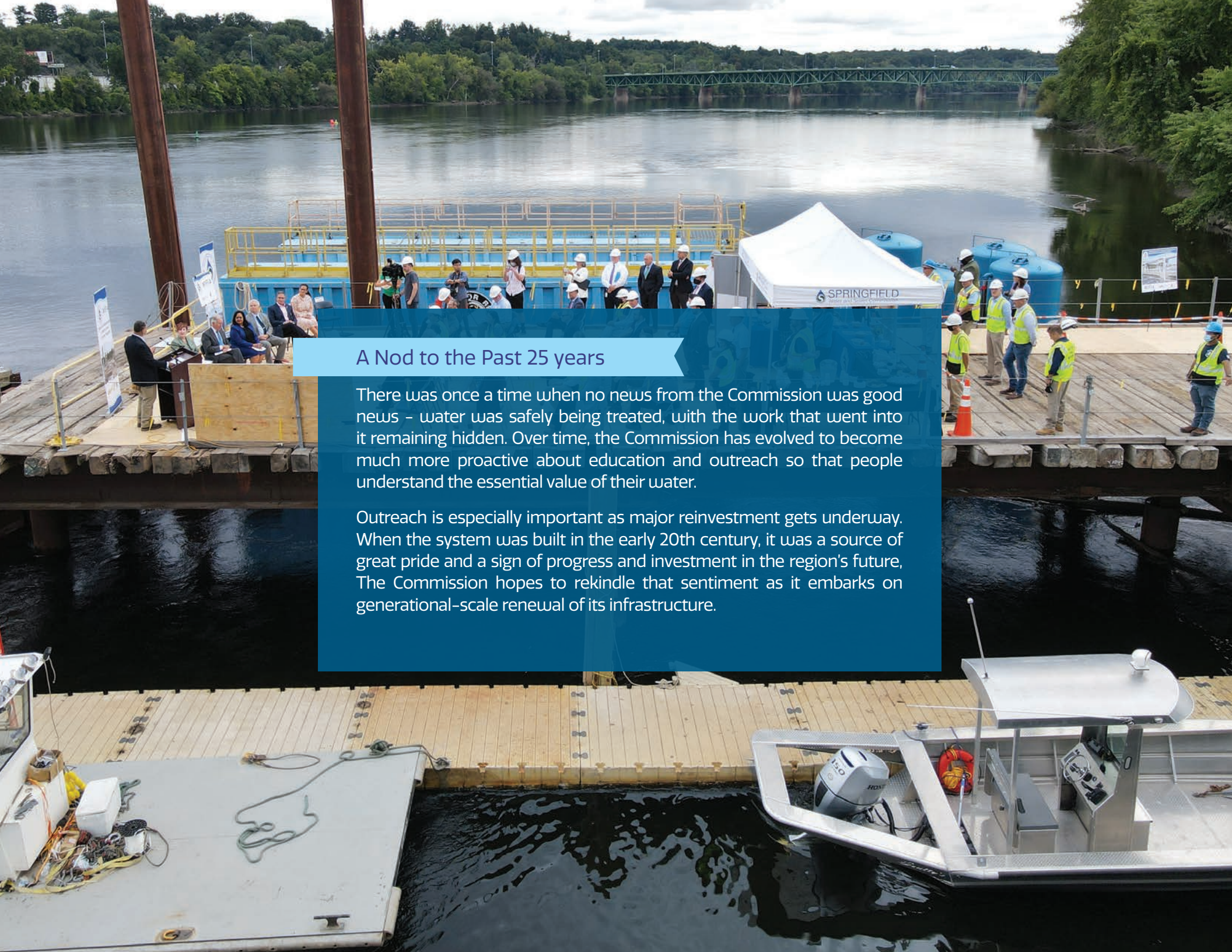
Top: The Commission attended several end-of-school celebrations. Bottom: The media event announcing the $550 million Water and Wastewater Infrastructure Renewal Program in September 2021.

- Water bottles delivered to students at various schools as well as to community organizations as water fountains remained shut down due to the pandemic.
- Media interviews explaining the launch of a new Combined Sewer Overflow Notification System.
- Return of the Commission's water station at beloved community events in 2022, including the Earth Day Festival at Springfield Museums and the Pancake Breakfast, as well as various end-of-school celebrations and neighborhood events.

A Look Ahead

As the post-pandemic world re-opens, the Commission is looking forward to attending and hosting more community events and eager to help the public see progress on the Water and Wastewater Infrastructure Renewal Program. Work will also include reaching out to legislators to bring more focus on maintaining a sustainable and affordable water system, and rebuilding educational programs to engage today's students and develop new pools of talent for tomorrow's water workforce.

Top: Congressman Richard Neal, left, tours the rapid sand filters at West Parish Filters. Bottom: Congressman Richard Neal, Commissioners, Executive Director Josh Schimmel, Massachusetts Water Works Association Executive Director Jen Pederson, and other regional utility managers attended a roundtable discussion on water issues at West Parish Filters in June 2022.



A Nod to the Past 25 years

There was once a time when no news from the Commission was good news – water was safely being treated, with the work that went into it remaining hidden. Over time, the Commission has evolved to become much more proactive about education and outreach so that people understand the essential value of their water.

Outreach is especially important as major reinvestment gets underway. When the system was built in the early 20th century, it was a source of great pride and a sign of progress and investment in the region's future, The Commission hopes to rekindle that sentiment as it embarks on generational-scale renewal of its infrastructure.

FINANCIAL REPORT

The management of the Springfield Water and Sewer Commission (Commission) provides this narrative overview of the financial activities of the Commission for the fiscal year ended June 30, 2022 (FY22). A full accounting and analysis of all financial activities is provided in the Commission's FY22 Annual Comprehensive Financial Report (ACFR), available on the Commission's website or by request.

Financial Highlights

The Commission ended the year with an operating income of approximately $27.4 million. The following paragraphs give an overview of the activities in FY22.

It is a requirement that the Commission establish its rates and charges for water and wastewater services at levels sufficient to produce revenues adequate to defray all operation and maintenance expenses, debt service and reserve deposits projected by the Commission's Consulting Engineers and to maintain net revenues available for debt service in excess of the coverage requirements mandated by the General Bond Resolution. Until fiscal year 2010, the Commission had historically adjusted its rates and charges for water and wastewater services on a basis which stabilized rates and charges over a multi-year period. Beginning in fiscal year 2011, the Commission has adopted single-year rate schedules to more closely match revenues to expenditures.

The COVID-19 outbreak in the United States (and across the globe) has resulted in economic uncertainties. The disruption is expected to be temporary, but there is considerable uncertainty around the duration and scope. The extent of the impact of COVID-19 on the Commission's operational and financial performance will depend on certain developments, including the duration and spread of the outbreak, impact

on employees, and vendors, all of which are uncertain and cannot be predicted. At this point, the extent to which COVID-19 may impact the Commission's financial condition or results of operations remains uncertain.

The Commission is required to file each year with Electronic Municipal Market Access (EMMA), the Commission's Annual Comprehensive Financial Report (1) the filing is being made merely to comply with contractual commitments, not to provide all information material to an investment in the linked securities, and does not purport to provide all such information, (2) COVID-19 is expected to adversely affect the issuer's future financial performance to an extent that could be material, and (3) consequently, the information set forth in the filing should not be relied upon as indicative of future financial performance.

In fiscal year 2022, there was an increase in collection efforts, however, overall usage was lower than anticipated. As a result, wastewater charges revenue and fees were approximately $2.8 million lower than budget. Wholesale water charges and fees were lower than budget by approximately $1.2 million. Power generation revenues were higher than estimates by approximately $473,000. These and other factors resulted in total operating revenue of approximately $91.9 million in FY22, approximately $2.3 million less than budget, and $1.3 million more than the prior year.

Requests for Information

The FY22 Annual Comprehensive Financial Report is available on the Commission's website, waterandsewer.org. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

Communications Manager
Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA 01101-0995
413-452-1300 | info@waterandsewer.org

MAJOR CAPITAL ASSET EVENTS FY22

Hydrant Projects	$54,000
Meter Replacements	$503,000
West Parish Filters Water Treatment Plant Projects	$9.4 million
Water Treatment System Improvement Projects	$907,000
Wastewater Treatment System Improvements Projects	$1.6 million
York Street and CT River Design Projects	$39.3 million
Sewer Main Rehabilitation Projects	$1.5 million
Collection System Assessment and Rehabilitation	$730,000
Distribution System Rehabilitation Projects	$1.6 million
Provin Reservoir Tank Projects	$28,000
Bypass and Tunnel Construction	$1 million
New Vehicle and Equipment Purchases	$271,000
Computer Software and Equipment Purchases	$485,000
Various Other Rehab and Improvement Projects	$2.8 million

Additional information on the Commission's capital assets can be found in the ACFR's Notes to the Financial Statements, Note 10, Capital Assets.

Summary of Net Position	2022 ($)	2021 ($)
Current Assets	441,442,380	213,556,589
Non-Current Assets	3,152,345	3,253,779
Capital Assets	455,656,564	405,398,449
Total Assets	900,251,289	622,208,817
Deferred Outflows of Resources	98,559,706	105,775,469
Total Assets and Deferred Outflows	998,810,995	727,984,286
Current Liabilities	124,232,253	101,571,327
Non-Current Liabilities	547,168,634	320,057,192
Total Liabilities	671,400,887	421,628,519
Deferred Inflows of Resources	188,116,462	162,998,353
Net Investment in Capital Assets	201,071,124	181,781,706
Restricted – Other Purposes	62,790,797	62,948,144
Unrestricted	(124,568,275)	(101,372,436)
Total Net Position	139,293,646	143,357,414
Operating Revenues	91,884,507	90,547,174
Operating Expenses	(64,477,335)	(63,792,232)
Operating Income	27,407,172	26,754,942
Non-Operating Revenues (Expenses)	(5,325,184)	1,016,622
Special Items	(26,145,756)	(15,372,584)
Increase (Decrease) in Net Position	(4,063,768)	12,398,980
Beginning Net Position	143,357,414	130,958,434
Ending Net Position	139,293,646	143,357,414

Last Five Fiscal Years Water Rates ($ per 100 CF)	2023	2022	2021	2020	2019
Residential	4.46	4.19	3.96	3.62	3.22
Commercial	4.46	4.19	3.96	3.62	3.22
Municipal	3.33	3.13	2.96	2.70	2.40
Industrial	3.33	3.13	2.96	2.70	2.40
Solutia contract (per 100 CF)	3.26	3.07	2.90	2.65	2.32
Town contracts (per million gals)	1,950.32	1,656.62	1,340.94	1,727.00	1,491.03
Residential Water % Change	6.4%	5.8%	9.4%	12.4%	7.0%

Sewer Rates ($ per 100 CF)	2023	2022	2021	2020	2019
Residential	7.05	6.62	6.25	5.71	5.32
Commercial	7.76	7.28	6.88	6.28	5.85
Industrial	8.46	7.94	7.50	6.85	6.38
Municipal	7.05	6.62	6.25	5.71	5.32
Food Service	9.17	8.61	8.13	7.43	6.92
Medical	7.76	7.28	6.88	6.28	5.85
Solutia contract (per million gals)	1,326.36	1,288.93	1,340.94	1,138.91	1,197.77
Town contracts (per million gals)	1,326.36	1,288.93	1,340.94	1,138.91	1,197.77
Residential Sewer % Change	6.5%	5.9%	9.5%	7.3%	7.9%
Average Combined Rate Increase	6.5%	5.9%	9.4%	9.9%	7.4%

Source: Commission's adopted Rules and Regulations, Chapter 5

Operating expenses were less than budget by approximately $3.4 million, primarily as a result of conservative budgeting for general operational expenses and, in some cases, reduced expenditures as a result of the ongoing COVID-19 pandemic. There were also vacant positions and less overtime needed than anticipated.

Summary of Net Position

In fiscal year 2011, the Commission implemented Accounting Standards Codification (ASC) 980, *Accounting for the Effects of Certain Types of Regulation,* which essentially adjusts for differences between how revenue/rates are budgeted and how they are accounted for on a Generally Accepted Accounting Principles (GAAP) basis. In the Commission's case, revenue intended to fund capital asset acquisitions is set aside (deferred) and is recognized equal to the annual depreciation expense on those assets; depreciation expense on assets funded in other ways (such as through bonds) is removed from the income statement because those costs are not factored into the budget process; conversely, because principal debt repayment costs are funded through the budget, those costs are reflected in the income statement as a reduction to net position. The net effect of these adjustments is reported under the line "Excess revenues used to fund deferrals" on the Statement of Revenues, Expenses and Changes in Fund Net Position. This was a decrease of $(26,145,756) for FY22.

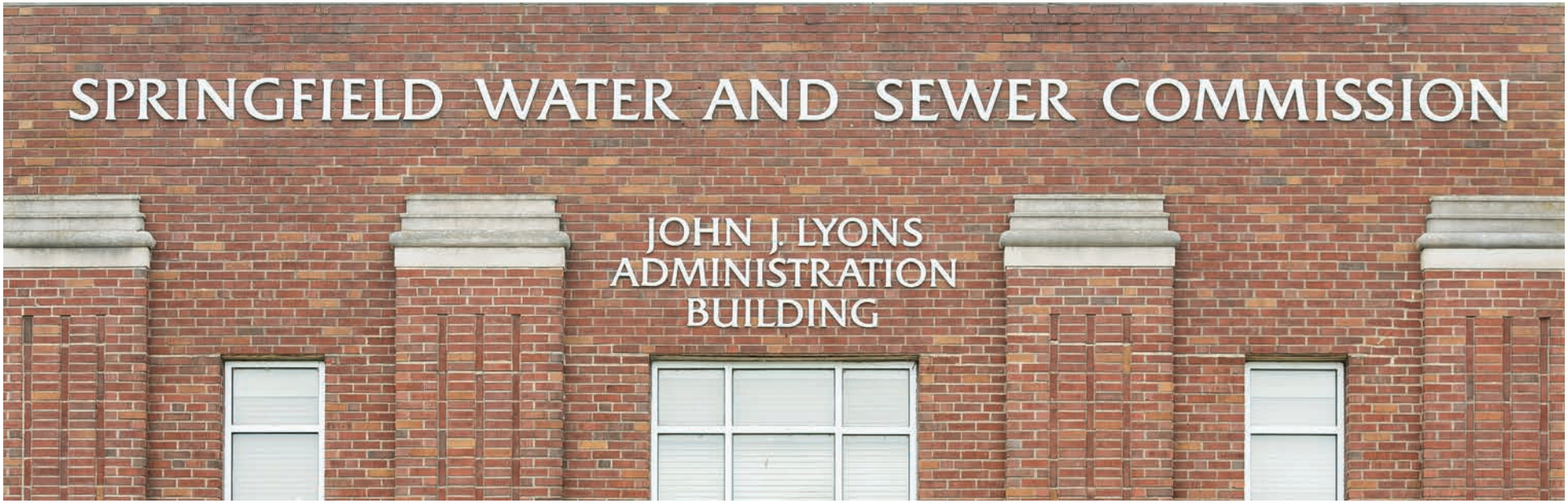
As a result of the key elements described above, the activities for the year resulted in a change in net position of $(4,063,768).

Capital Asset and Debt Administration

Total investment in capital assets at year-end amounted to $455,656,564 (net of accumulated depreciation). This investment in capital assets includes land, buildings and improvements, furniture and fixtures, vehicles and equipment, and infrastructure.

Long-Term Debt

At the end of the current fiscal year, total bonded debt outstanding was $471,571,568, all of which was backed by dedicated revenues of the Commission. Additional information on the Commission's long-term debt can be found in the Notes to the Financial Statements, Note 13, *Long-Term Debt.*



The face of the Springfield Water and Sewer Commission's Administration Building.

SPRINGFIELD WATER AND SEWER COMMISSION

ANNUAL REPORT FY2022

LAUNCHING FORWARD