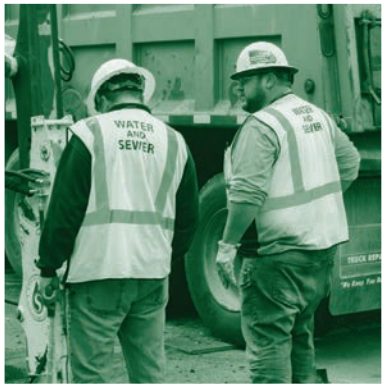
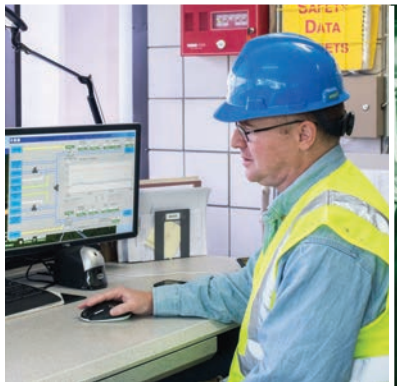
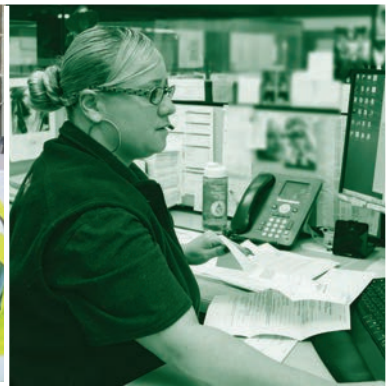


SPRINGFIELD WATER AND SEWER COMMISSION

FY 2020 ANNUAL REPORT





DELIVERING THE ESSENTIAL

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 reasonable water and wastewater rates
5. Maintain an accountable, safe and professional workforce
6. Understand and respond to customers' expectations for service

Contents

A virtual Commission Board meeting in the Covid era. ***Bottom left:*** *FY20 Chairwoman Vanessa Otero;* ***Top middle:*** *Commissioner Daniel Rodriguez;* ***Bottom right:*** *Commissioner William E. Leonard.*

Message From the Commissioners

The Board of Commissioners is proud to present the annual report for fiscal year 2020 (FY20). Over the year between July 2019 and June 2020 we oversaw a period of tremendous progress, and also of great change and adaptation. Prior to the outbreak of the pandemic, the Commission was focused on the initial stages of several large, important multi-year projects that are critical to future drinking water and wastewater operations, regulatory compliance, and climate resiliency. These projects will ensure that the delivery of essential drinking water and wastewater services remains dependable and reliable for this and future generations.

As FY20 showed, dependability and reliability among the Commission's workforce are just as essential as any infrastructure project. The Board is proud of the way Commission leadership and staff stepped up to maintain a smooth continuity of operations for their customers in the face of the rapidly changing conditions starting in March 2020. Even the Board itself had to adapt, such as by holding its first-ever virtual annual public hearing in June 2020 in addition to holding regular virtual monthly board meetings. Never was there a time in recent memory where the essential role of safe drinking water and clean wastewater service – and the need to maintain reliability and continuity of those services – was brought to the forefront more than during a public health crisis.

As that essential role came to the forefront, so too did the need to keep the Commission's services accessible and affordable not only during public health crises but into the future. At the very beginning of the pandemic the Board suspended many provisions related to account collections in order to support public health efforts through uninterrupted access to clean water. The Board maintained the suspension of these provisions for the remainder of FY20 and into FY21, but not without recognizing the need for more long-standing customer assistance programs that support affordability for water and wastewater services. These included increasing the annual discount available for Senior, Disabled, and Disabled Veteran homeowners, enhancing payment plan options, as well as directing Commission staff to develop a new program for FY21 that provides financial assistance to help low-income homeowners with their water and sewer bills.

Renewing direct state and federal investment in water and wastewater infrastructure is vital to maintaining affordability in the long-run, and Commissioners are supportive of and involved in advocating for such investment with state and federal elected officials. The Board believes that the pandemic showcased that water is just as vital as our roads, hospitals, and schools. State and federal infrastructure budgets should begin reflecting this once again, just as they did generations ago. The Board looks forward to continuing to serve our region by overseeing the provision of safe, reliable, and affordable drinking water and wastewater service.

Message From the Executive Director

For most of Fiscal Year 2020, our main focus was on advancing an aggressive 20-year capital plan designed to address the many impending challenges presented by aging infrastructure, regulatory requirements, and climate change. We began digging in (literally) on the largest wastewater project in the region in decades, the York Street Pump Station and Connecticut River Crossing Project. We piloted various drinking water treatment alternatives to inform much-needed 21st century upgrades to the West Parish Filters Water Treatment Plant. And we moved ahead with implementing a forestry plan critical to protecting long-term resiliency and water quality at our emergency supply at Ludlow Reservoir. These are just a few highlights of dozens of projects underway in FY20, which ranged from the practical to the transformational.

In other words, our vision and activities in FY20 were conceived and implemented around re-building for the future. And then in March 2020, our focus suddenly transitioned back to our core - or rather, essential - services. Keeping water flowing for our customers is always a priority, but especially so during a public health crisis. On top of that, our regular commitment to protecting the safety of our water workforce was amplified by the threat of the novel coronavirus. Routine operations such as staffing the treatment plant control room, responding to sewer backups, and answering customer calls suddenly needed to be re-thought, re-configured, and re-deployed in a new and efficient manner that kept our employees and customers safe.

Fortunately, our ongoing focus on technology and regular training in emergency management - as well as teamwork - made us prepared and able to quickly adapt. The Commission was perhaps the first water utility in the state to fully implement a continuity of operations plan ensuring critical functions were properly staffed and personnel were properly protected and split into multiple isolated standby teams. Customer service staff carried on answering every call without a lapse, and crews continued to respond to water main breaks and assist customers with sewer backups in modified form. The many capital projects in progress also advanced or were re-programmed to resume as soon as safety metrics allowed.

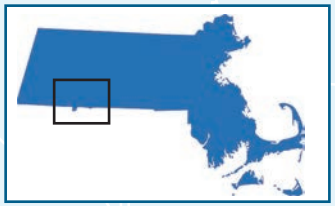
Delivering the essential - to public health and safety, to the economy, to daily life - is the core of our mission. Our customers should expect to be able to turn on a faucet with safe water to drink or wash their hands whenever necessary, whether during a pandemic or at any other moment. Even though the result is the same - safe, clean, reliable water and wastewater service - the planning, investment, and adaptation that goes into ensuring the delivery of this essential resource is ever-evolving, as FY20 clearly showed. I am proud of how our Commission staff stepped up to the many changes and challenges presented by this year in order to continue serving our community. And I look forward to applying that same sense of purpose to the years ahead.

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.

SWSC System Map

Major System Components



West Springfield
- Peak Emergency Water
- Wholesale Wastewater

Springfield Regional Wastewater Treatment Facility
Agawam
67 Million Gallon / Day Capacity

Ludlow Watershed

West Parish Filters Water Treatment Plant
Westfield
100 Million Gallon / Day Capacity

Chicopee
- Peak Emergency Water

Westfield
- Peak Emergency Water

Little River Watershed
17,485 Acres Total

Ludlow
- Retail Water
- 80 Miles of Water Distribution Pipe
- Wholesale Wastewater

Provin Mountain
Water Storage Facility
60 Million Gallon Capacity

Ludlow Reservoir
Standby Water Supply
2.2 Billion Gallon Capacity

Wilbraham
- Peak Emergency Water
- Wholesale Wastewater

Springfield
- Retail Water
- 500 Miles of Water Distribution Pipe
- Retail Wastewater
- 471 Miles of Collection Pipe

Borden Brook Reservoir
Primary Water Supply
2.2 Billion Gallon Capacity

East Longmeadow
- Wholesale Water
- Wholesale Wastewater

Cobble Mountain Reservoir
Primary Water Supply
22.5 Billion Gallon Capacity

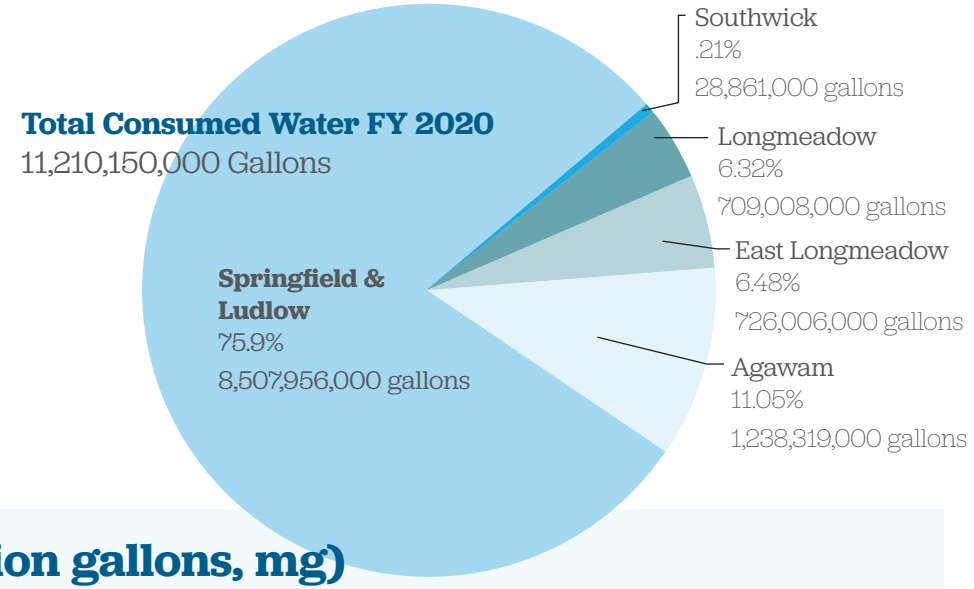
Southwick
- Peak Emergency Water

Agawam
- Wholesale Water
- Wholesale Wastewater

Longmeadow
- Wholesale Water
- Wholesale Wastewater

Water Supply & Consumption

The Commission serves approximately 250,000 people in the lower Pioneer Valley with their drinking water. 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 FY20, the output from West Parish Filters Water Treatment Plant was approximately 11.2 billion gallons among all Commission customers.



Wholesale Water Consumption (million gallons, mg)

Yearly usage (mg)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	3-year Avg
Agawam	1,512.5	1,261.8	1,182.5	1,100.1	1,238.4	1,173.6
East Longmeadow	701.8	714.7	657	625.4	726	669.4
Longmeadow	707.6	726.8	671.2	626.3	709	668.9
Southwick	15.3	17.3	22.4	17.8	28.9	23.1
Springfield et. al.	8,711	8,445.1	8,269.1	8,207.5	8,508	8,328.1
West Parish Output	11,648.2	11,165.7	10,802.2	10,577	11,210.2	10,863.1

% of output	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	3-year Avg
Agawam	12.9	11	11	10.4	11.1	10.8
East Longmeadow	6.0	6.4	6.1	5.9	6.5	6.7
Longmeadow	6.1	6.5	6.2	5.9	6.3	6.2
Southwick	0.1	0.2	0.2	0.2	0.3	0.2
Springfield et. al.	74.8	75.6	76.6	77.6	75.9	76.7
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Infrastructure Renewal

ESSENTIAL for the Future

The reliability of a water system is a function of the age and maintenance of its many components. As parts of the Commission's water and wastewater systems have remained in continuous service for approximately a century (and sometimes more), the Commission has been making strategic and coordinated efforts in recent years to reinvest in infrastructure renewal.

As science and regulations evolve, and climate change becomes the norm, the Commission is advancing a 20-year capital plan to upgrade major system components. Investments are designed to respond to the demands of today and those of the future. Projects are also sequenced to maximize ratepayer dollars in order maintain affordability. Though the pandemic delayed advancement on some select projects, this section highlights capital projects that were planned or carried out in FY20.

West Parish Filters Water Treatment Plant Upgrades

Due to the onset of the pandemic in spring 2020, several ongoing projects at the water treatment plant were paused to reduce exposure risk to essential water treatment plant operators. These included chemical bulk storage improvements, a replacement of an inlet valve in the slow sand filters, and a chemical cleaning and refurbishing project to improve filter operation. These projects are scheduled to be completed in FY21.

Other projects were able to carry on. As one example, variable frequency drive pumps, which control energy consumption and efficiency for treatment processes in the plant, were replaced with full redundancy to improve system reliability.

Another project that advanced despite the pandemic was construction to replace two aging arched concrete bridges originally built in the 1920s. New bridges were necessary to support the delivery of chemicals and more frequent passage of Commission vehicles and heavier truck traffic. The project kicked off in November 2019 and was ongoing through FY20. The project involved a stream flow diversion, temporary relocation of electrical and communications utilities, excavation and demolition of the existing 1924 bridges, construction of the new buried structural plate bridges, and site restoration. The new bridges have a completion date in FY21.

In FY20 the Commission received a competitive, low-interest loan award for $15 million from the State Revolving Fund, which is administered by the Massachusetts Clean Water Trust. The loan was for final design and construction of a new clearwell and replacement of backwash pumps at the treatment plant. The existing clearwell was built in 1925 and the backwash pump station was constructed in 1974. Both are at the end of their useful lives. An assessment indicated that these facilities were in severe need of upgrades to ensure reliable drinking water treatment, distribution and regulatory compliance.

Dam Maintenance

The Commission oversees the maintenance of ten dams, constructed between the late 1800s and 1960s. Regular inspections as mandated by the Massachusetts Office of Dam Safety were completed and reported by March 2020. Plans for a future inspection and exercising of gates and valves at the Borden Brook Reservoir dam were also completed with implementation scheduled for FY21.

Highlights of Major FY20 Capital Improvements ($)

Water treatment system improvements projects	$1.1 million
Transmission system rehabilitations	379,000
Water distribution system assessment and rehabilitation	1.5 million
Hydrant projects	94,000
Meter replacements	695,000
Wastewater collection system assessment and rehabilitation	1.5 million
Wastewater treatment system improvement projects	1.1 million
York Street and Connecticut River Crossing project	27 million
Water and sewer main rehabilitation projects	3 million
Provin Reservoir tank projects	3.3 million
Various other rehabilitation and improvement projects	1.3 million

FY20 Water and Sewer System Upgrades

Water Main Replacment	9,604 linear feet
Sewer Pipe Installed	1,887 linear feet
Sewer (Rehabilitation) Lining	1,767 linear feet

Opposite page, top: *A historic image of one of two original bridges nearing completion on the campus of West Parish Filters in 1924.* ***Opposite page, middle:*** *One of two replacement bridges at West Parish Filters nearing completion in 2020.* ***Opposite page, bottom:*** *The two 1974 backwash pumps at West Parish Filters, which are scheduled for replacement in FY21.*

Hydro-Electric Power Plant

The Commission owns a hydro-electric power plant built in 1930 that is operated by Holyoke Gas & Electric. The plant takes advantage of Cobble Mountain Reservoir's elevation to generate electricity as water flows by gravity 800 feet below to the city. Revenue from electricity is used to offset the costs of capital projects. In FY20, 12,445 Mega Watts were generated, totaling $2,563,470 in revenue. Power generation in FY20 was somewhat curtailed due to ongoing projects at the power plant. This included the replacement of two governors, which control the flow of water through the turbine. The new programmable logic controller (PLC) governors as well as improved electro-mechanical hybrid controls will enable increased plant automation. In addition, new roll-up doors were installed to allow for easier and wider access to equipment.

Water Transmission and Storage Systems

There are three pathways to bring raw water from Cobble Mountain Reservoir to West Parish Filters. In FY20, a valve serving a 42-inch diameter raw-water conveyance main experienced a failure, prompting plans to upgrade redundant conveyance routes. Plans were initiated for improvements to the Diversion Gate House at Cobble Mountain Reservoir as well as the construction of a new bypass transmission pipe at the power station.

Treated water is stored in large tanks within Provin Mountain in Agawam before distribution into the city. Four tanks were constructed between 1909 and 1960. In FY20, the oldest tank (Tank 1) was permanently removed from service, after being taken offline in FY19 following an engineering analysis that determined the tank was structurally unsound and its storage capacity was no longer needed. Tanks 2, 3, and 4 remain in service.

In FY20 a cover was added to Provin Tank 2 to eliminate the possibility of inflow and protect water quality in the system. A perimeter stormwater collection system was built to capture rainfall runoff from the roof and discharge all water away from the tank to the east side of the mountain. Soil and grass also encase the membrane for added protection. Construction was completed using lightweight equipment to minimize loads on top of the concrete. Although this lengthened the construction period, the project was completed in time for the peak demand summer months of 2020.

York Street Pump Station and Connecticut River Crossing Project

The York Street Pump Station and Connecticut River Crossing Project (YSPS) is a cornerstone of the Commission's Integrated Wastewater Plan, which was adopted in 2014. The multi-year project is designed to address multiple issues, including aging infrastructure, regulatory compliance, and system resiliency, thereby maximizing ratepayer dollars. The project broke ground in 2019.

In FY20 construction work on either side of the river made significant progress, despite the pandemic. At York Street, a support structure was installed that allowed for the pouring of the foundation 50 feet below grade. Work progressed to installing reinforcing steel and pouring concrete walls. On the Bondi's Island side of the river, a bypass pipe was installed to receive wastewater at the treatment plant while a new influent structure is constructed. The bypass allows the contractor to prepare and place the three new pipes that will traverse the Connecticut River.

The project also involves the laying of three new wastewater conveyance pipes across the Connecticut River. This will allow for maintenance on the two existing pipes, which have each been in continuous service since their construction in 1938 and 1974. Studies and information to secure numer-

ous environmental permits for the river crossing portion of the project were submitted to state and federal regulatory agencies in FY20.

New Service Connections

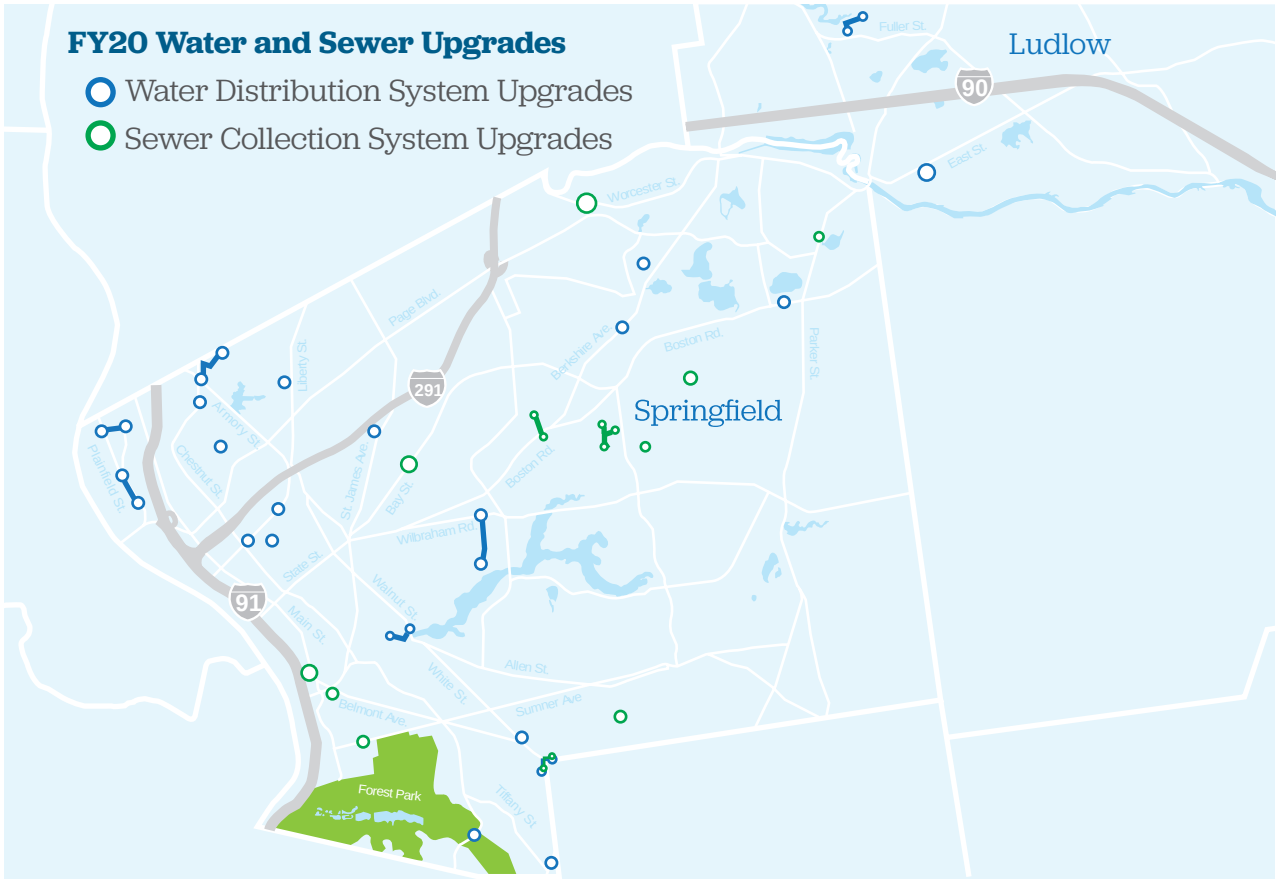
The Commission's Engineering and Technical Services (ETS) group inspects new or redevelopment projects that connect to the drinking water or wastewater systems. In FY20, 82 residential projects (an increase of 56% from the prior year) and 29 commercial projects were reviewed and approved by ETS in order to ensure proper connection. Project highlights included a new 42-unit apartment building (formerly the Brookings School), Walburgers Restaurant, and Chapin Street Elementary School in Ludlow. In addition, ETS performed 4,806 utility markouts, 602 of which were for emergency requests.

In FY20 the Commission joined DigSafe, the regional utility clearinghouse, streamlining the way ETS marked Commission underground facilities for its customers. The total number of utility markouts performed by Commission crews more than doubled from FY19.

Water and Sewer Distribution System Renewal

Data from the Asset Management and Maintenance Program, which was initiated in 2008, is used to prioritize repairs and replacements in the wastewater collection system. Each year the Commission collects this data from annual routine jetting (cleaning) and maintenance activities. In FY20, upgrades were made to 73,654 feet of sewer infrastructure. Data on water main breaks and infrastructure age also helps the Commission's Field Services group prioritize water main replacements. In FY20, 9,604 feet of water main was replaced. The upgrades are funded through the Infrastructure Improvements Program, which allocated $1.75 million for water and $1.63 million for sewer in FY20.

Opposite page, top: *Inside the Diversion Gate House at Cobble Mountain Reservoir.* ***Opposite page, middle:*** *A liner being installed on Provin Mountain Storage Tank 2.* ***Opposite page, bottom:*** *Aerial photograph of the new York Street Pump Station under construction.* ***At right:*** *Replacing water main on Farnsworth Street, Springfield.*



Above: *Collecting daily water samples in the city during the initial months of the pandemic.*

Drinking Water Treatment

ESSENTIAL Process

Water treatment is one of the most critical functions of the Commission, as it protects public health by removing potentially harmful pathogens and compounds from the region's drinking water. Some treatment processes in use at the Commission, such as chlorination, are credited with virtually eliminating waterborne diseases in the developed world over the past century.

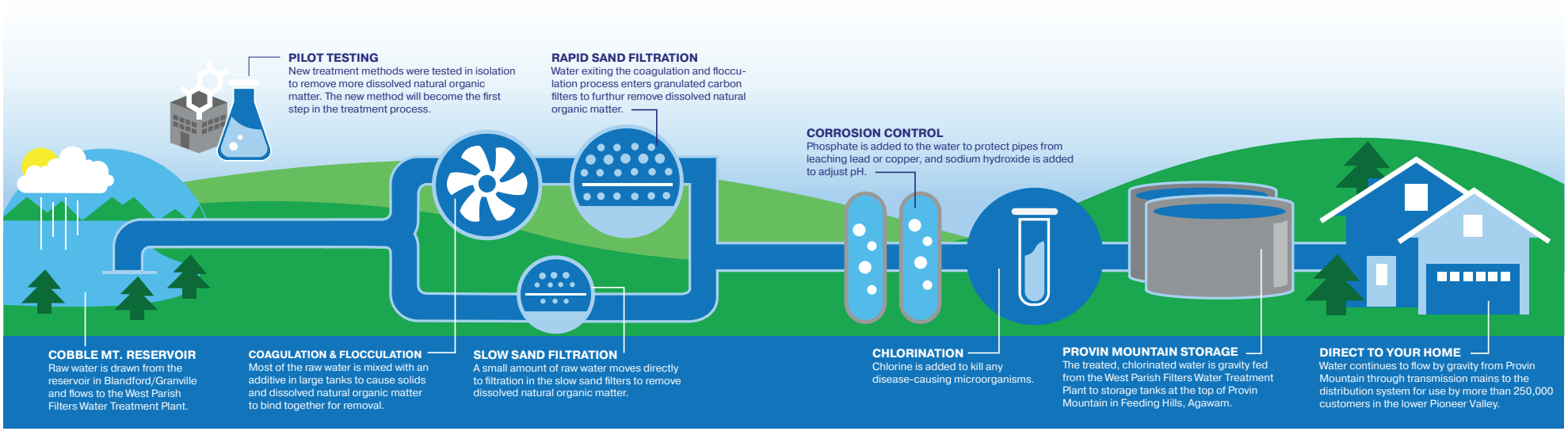
In FY20 a clean, safe water supply was again a key force in the fight against disease. This time, safe water was crucial for handwashing, hygiene, cleaning, and more to prevent the spread of COVID-19. The Commission spent approximately $20 million on water treatment-related operations in FY20.

West Parish Filters Water Treatment Plant Maintenance

To make water safe to use and drink, raw water from Cobble Mountain Reservoir is filtered and treated at the West Parish Filters Water Treatment Plant in Westfield.

West Parish Filters has been the site of the region's drinking water treatment plant since it was built in 1909. While some original components are still in operation today, in 1974 the plant underwent a significant upgrade, including installation of rapid sand filters.

The Commission's drinking water operators are crucial to keeping the treatment plant in working order at all hours. In spring 2020, during the initial height of the pandemic, operators were instrumental late one night in repairing a broken valve (original to the 1974 upgrade) critical to the backwash (cleaning) process for the rapid sand filters. Their depth of knowledge about the plant's mechanical operations enabled the plant to run uninterrupted and highlighted the essential but hidden role that operators play in supporting the region's essential services. Without this type of response the Commision would not have been able to produce enough water to meet demand. The incident also emphasized the need to replace water infrastructure that has reached the end of its useful life. A failed actuator controlling the valve was replaced on an emergency basis. Five other actuators are scheduled to be replaced in FY21.



West Parish Filters Water Treatment Plant Facilities Plan

A multi-year, comprehensive facilities plan for the West Parish Filters Water Treatment Plant was initiated in 2016. The plan aims to identify key plant upgrades for the 1974 water treatment plant in order to meet current and future regulatory and workforce requirements. In FY20 facilities planning progressed in identifying treatment improvements to remove more dissolved natural organic matter (NOM) from raw water (see below).

In addition, planning efforts to improve raw water conveyance from the reservoir to the treatment plant revealed the opportunity to explore the feasibility of in-line hydro-power generation. In-line hydro-power generates carbon-free electricity from within water transmission mains. The West Parish Filters Facilities planning effort is expected to be finalized in FY22.

Pilot Water Treatment Plant

As part of the planning process for plant modernization, a pilot plant study commenced in October 2019 and continued throughout FY20. This small-scale model treatment plant, constructed on the grounds of West Parish Filters, assessed alternative treatment processes throughout different seasons using raw water from Cobble Mountain Reservoir. Results determined which treatment process upgrades are necessary to enhance treatment, protect water quality, and meet 21st century regulatory standards.

The upgrades will specifically address the need to remove more NOM from the raw water. NOM enters the water in Cobble Mountain Reservoir through rain runoff from the surrounding forest. Above-average precipitation in the fall

of 2018 elevated levels of NOM in Cobble Mountain Reservoir. When elevated NOM reacts with the chlorine required for disinfection, elevated disinfection by-products (DBPs), including haloacetic acid (HAA5), can result. DBPs were first regulated in the 1990s, and those regulations were updated in 2012.

The existing treatment processes at West Parish Filters pre-date the regulation and are not designed to adequately remove elevated levels of NOM. In mid-FY19 the Commission issued its first public notification about HAA5 due to an exceedance of the HAA5 regulatory standard, a situation that continued throughout FY20.

The pilot study identified a treatment method, dissolved air floatation (DAF), that will permanently resolve HAA5. Through DAF, more suspended particles and NOM are removed from the raw water prior to filtration by way of pressurized bubbles floating to the surface. Commission staff, consulting engineers, and experts from the University of Massachusetts at Amherst oversaw the pilot study. Following completion of the results analysis, the Commission will move forward with design and construction of the new DAF treatment facility upon approval by MassDEP. Construction is expected to begin in FY24.

Provin Mountain Water Storage Tank Maintenance

The Commission maintains a complex transmission and distribution system that carries treated water from West Parish Filters to homes and businesses across the Springfield region. A key component of this system is four storage tanks located at Provin Mountain in Agawam, which each hold approximately 12-17 million gallons. The tanks help maintain system pressure, and ensure that even during periods of high demand, water flows out of customers' taps.

As part of the Provin Mountain Tank Maintenance and Cleaning Project, restoration of Tank 2 also started in FY20. Tank 2 is a 12-million-gallon finished water storage tank built in 1931. An inspection of the tank revealed that the concrete roof was leaking after rain events. In September 2019 Tank 2 was taken offline to allow for the installation of an impermeable membrane cover over the tank (see chapter on Infrastructure Renewal, page 8).

Laboratory and Regulatory Program

Commission personnel collect water quality samples from locations throughout the distribution system in Springfield and Ludlow as well as the watershed each day, weekends and holidays included. In spring 2020, while many businesses shifted to remote operations, Commission staff continued to conduct sampling. In FY20 approximately 52,000 water quality test results were analyzed by the Commission's laboratory staff.

An enhanced sampling program launched in FY19 continued into FY20. Commission personnel collected samples of the raw water from different depths of Borden Brook and Cobble Mountain Reservoirs. The enhanced sampling was intended to characterize the dynamics of NOM in the reservoir water in an effort to address elevated levels of HAA5.

At left, top: *Treatment plant operators managed to keep a 1974-era valve in place following a mechanical failure due to a failed actuator, spring 2020. The failed actuator was replaced immediately.* ***At left, bottom:*** *The pilot plant in its final stages tested DAF using a portable trailer lab.* ***Opposite page, top left:*** *A slow sand filter chamber, constructed c. 1925.* ***Opposite page, top right:*** *A rapid sand filter chamber, constructed in 1974.* ***Opposite page, bottom left:*** *The interior of the expanded pilot plant trailer with a model DAF system inside.* ***Opposite page, bottom right:*** *The interior of the Commission's laboratory at West Parish Filters.*


FLAMMABLE
KEEP FIRE
AWAY

Wastewater Collection & Treatment

ESSENTIAL Environmental Protection

Before wastewater treatment plants were developed over a century ago, sanitation was dependent on rivers and streams to carry away human waste in its raw form. Today the Springfield Regional Wastewater Treatment Facility (SRWTF) returns the region's wastewater to the Connecticut River clean after treatment, vastly reducing pollution and protecting public health.

The SRWTF receives wastewater from the City of Springfield through a network of 470 miles of collection pipe, some of which date to the late 1880s. Agawam, East Longmeadow, Longmeadow, Ludlow, Wilbraham, West Springfield, and part of Chicopee also convey wastewater to the SRWTF after collection in their own respective municipal sewer systems. In FY20, the SRWTF treated 13.5 billion gallons of wastewater, for an average of 37 million gallons/day (MGD). The Commission spent approximately $17.7 million on wastewater treatment in FY20.

Springfield Wastewater Collection System

The Commission owns, operates and maintains the wastewater collection system that runs beneath the City of Springfield. The Commission's Sewer Division is responsible for addressing sewer backups, repairs, and inspections of the system. The 34 pump stations, 23 combined sewer outfalls, and intercepting sewers (large transmission pipes) associated with the collection system are also owned by the Commission but maintained by SUEZ Water Environmental Services, whose 20-year operating contract with the Commission was renewed in October 2020.

Asset Management and Maintenance Program (AMMP)

Each year the Commission conducts high-pressure cleaning and remote camera/robotic assessment of a portion of the sewer system. The information gathered from the process enables targeted prioritization of repair and rehabilitation resources. In FY20 the Commission completed assessing 12 miles of pipe and cleaning 238 miles of pipe. Culmulatively since 2008, this totaled 93% of the entire collection system. The remaining 7% of unassessed pipes is predominantly under 30 years old, of low criticality, or is geographically isolated from large groups of other unassessed pipes. In FY21, the Commission will begin re-assessing pipes that were inspected and cleaned at the beginning of the program and are at high risk of failure or require significant maintenance.

In addition to providing valuable data and conserving resources for areas in the collection system most in need of repair, the AMMP facilitates compliance with federal and state environmental regulations. In FY20 there were 13 sanitary sewer overflows (SSOs), which can be caused by blockages, stormwater or groundwater infiltration, or other defects in the sewer system. SSOs are reported to EPA and MassDEP. This is a decrease of 30 SSOs since FY19, and is part of a large downward trend in SSOs since the AMMP began in 2008 (when there were 122 SSOs).

Wastewater Treatment

Investments, planning, and contracts set in motion now will enable the Commission to adapt to future regulations, technological advancement, and energy and environmental issues in the future. In FY20 work continued that would set the course for wastewater treatment at the Commission for the coming decades.

Top: *The Springfield Regional Wastewater Treatment Facility, with its new influent structure under construction.*

Wastewater Operations Contract Renewal

In anticipation of the end of SUEZ's 20-year contract to operate the SRWTF and key elements of the collection system (pump stations, sewer interceptors, etc.), the Commission issued RFPs in FY19. In FY20, final proposals from two companies were evaluated and SUEZ was selected among them to enter into negotiations with the Commission for a new 20-year contract. The new contract includes provisions to upgrade certain portions of the plant that align with future discharge permit requirements. The contract was in effect as of October 2020.

NPDES Permit Renewal

EPA issued a new draft National Pollutant Discharge Elimination System (NPDES) permit in late 2017, the first new permit in 17 years. Regulations and limits set by the NPDES permit influences the number and amount of capital investments that must be made to the SRWTF in order to comply with regulations. In FY20, EPA had not yet responded to comments on the draft submitted by the Commission in FY18.

Nitrogen Monitoring

EPA regulates nitrogen loading from wastewater treatment plants in the Connecticut River watershed via a Total Maximum Daily Load (TMDL) established for Long Island Sound in 2001. Though the TMDL threshold for nitrogen reduction has been met, EPA is seeking to further reduce nitrogen levels through the issuance of new NPDES permits to Massachusetts wastewater treatment plants in the Connecticut River watershed. Currently data on nitrogen loading into the Connecticut River from other sources in Massachusetts is lacking or outdated. To better understand the full picture of nitrogen loading and inform future federal regulatory efforts, the commission partnered with the United States Geological Survey (USGS) and the Massachusetts Department of Environmental Protection (MassDEP) on a nitrogen sampling program in 2018. Weekly sampling and remote monitoring are ongoing. USGS will report program results in 2022.

In FY20 the Commission installed nitrogen analyzers at the SRWTF with the support of a National Fish and Wildlife Foundation (NFWF) grant. The Commission has used these nitrogen analyzers to monitor both the influent and effluent ammonia and effluent nitrate to optimize nitrogen removal at the SRWTF. Specifically, operators adjusted the dissolved oxygen (DO) parameters in the aeration basins to improve ammonia nitrogen removal based on observed influent ammonia loading patterns, thus saving energy in oxygen delivery. The results led to the award of a second NFWF grant for the expansion of the monitoring and control system in FY21.

Industrial Pretreatment Program

The Commission regulates 48 industrial customers through its Industrial Pretreatment Program (IPP). These include laundry facilities, chemical processing plants, and other industries that produce contaminated wastewater. Pretreatment of wastewater from these facilities is required to protect the functioning of the collection system and wastewater treatment plant as well as the health of the Connecticut River. In FY20 51 wastewater discharge permits were regulated through the IPP program, representing 4.7 million gallons/day. Commission staff performed 223 IPP inspections in FY20.

Above:

Opposite page, bottom, and this page: *Assessing and cleaning the collection system as part of the AMMP.*

Watershed Protection

ESSENTIAL Resiliency

A strong, resilient forest, protected from development, is critical in maintaining a high-quality drinking water supply. Surrounding the Commission's Borden Brook, Cobble Mountain, and Ludlow Reservoirs are approximately 17,000 acres of forestland that are protected from development by the Commission in order to maintain water quality. Ludlow Reservoir, which serves as an emergency water supply, is surrounded by approximately 2,232 acres of protected forestland in Ludlow and Belchertown.

As water treatment technology and techniques have advanced over the past century, source water protection has remained a fundamental element of water treatment all along. Protected forestland serves to capture, store, and release water and provide a natural buffer to water quality threats (development, agriculture, etc.).

The Commission continues to actively protect and manage the watershed areas for the purpose of water supply protection.

Land Acquisition and Protection Program

Approximately 49% of the forestland in the Little River Watershed is owned, protected, and maintained by the Commission. An additional 9% is protected by public or non-profit land protection organizations. The Commission maintains an active land acquisition program to pursue land protection opportunities in the Little River Watershed and Ludlow Reservoir watershed areas. In FY20 the Commission purchased 83 acres in Granville for water supply protection.

The Commission prioritizes land parcels for future potential protection, and considerations include whether parcels contain acreage that is within 400 feet of a water body (known as Zone A land), their role in the watershed ecosystem, and the potential market for sale. Geographic Information System (GIS) mapping is a helpful tool that allows the Commission to more easily identify parcels that meet the criteria and may have the potential to be purchased as a protected source.

Watershed Management

Further protection of the water supply requires active watershed management, including maintenance of watershed infrastructure (roads, bridges, culverts, etc.), monitoring for encroachment and potential sources of contamination, and other forest management activities to promote a healthy and resilient forest.

To perform these duties, the Commission employs a team of watershed staff including land stewards. In FY20 Commission land stewards monitored 5,237 total acres of Commission property. These monitoring activities included inspecting boundaries and shoreline, assessing culverts, examining trees and plants for invasive species, and observing signs of wildlife.

Land stewards are also responsible for water quality sampling from feeder streams, brooks, and reservoirs to better understand the characteristics of the raw water. An expansion of the raw water sampling program was launched in 2019 and was ongoing in FY20. As part of the expanded program, land stewards collected samples from three different depths along transects across the reservoirs. Samples are then tested and analyzed by Commission laboratory staff and the data are tracked for water quality monitoring.

At Borden Brook Reservoir Commission maintenance staff completed culvert replacements and improvements along

the perimeter road of the reservoir in FY20. These maintenance projects are critical to source water protection as they prevent washouts, erosion, and sedimentation during rain events.

Forest Management Program

In FY20 the Commission continued the development of its "Watershed Forest Vision," an overarching framework for several Forest Stewardship Plans for land surrounding the three Commission reservoirs. The "Watershed Forest Vision" is being developed in consultation with forestry consultants and is expected to take several years. These plans take into account the latest scientific forest management concepts and potential impacts of climate change.

As the plans continue to be developed, implementation of management recommendations will be ongoing, including a tree harvesting program to promote resilient and diverse forests. In FY20, the Commission concluded a tree harvesting project at Ludlow Reservoir that was initiated in response to a gypsy moth outbreak. The outbreak fatally impacted many of the oak trees surrounding the reservoir. Tree harvesting plans were submitted for approval by state regulatory agencies and a licensed forester oversaw implementation.

The Borden Brook Forest Stewardship Plan, addressing 1,700 acres of forestland near the headwaters of Borden Brook Reservoir, was completed in FY20. The next phase of the plan will include tree harvesting in FY21.

Opposite page, top: *A land steward inspects a culvert in the watershed.* ***Opposite page, middle:*** *A feeder stream into Cobble Mountain Reservoir.* ***Opposite page, bottom:*** *Inspecting boundary lines in the watershed.* ***This page:*** *A land steward and laboratory technician gather samples from a feeder stream in the watershed.*

Watershed Maintenance and Monitoring

Part of managing a healthy and resilient forest to protect the source water supply includes a comprehensive maintenance program. The Commission's watershed maintenance crews and land stewards perform many routine maintenance tasks like mowing dams, road maintenance, culvert repairs, and watershed monitoring activities. Crews also respond to unforeseen events, such as a heavy rainstorm that causes downed trees, or illegal dumping on protected watershed property. Removing new debris as quickly as possible helps to protect the watershed, keep contaminants and hazardous materials out of the water supply, and prevent erosion and sedimentation issues. In FY20 Commission crews intercepted and swiftly removed glass, metal, tires, a television, furniture, bottles of antifreeze, and mylar balloons from Commission watershed property.

Ludlow Reservoir

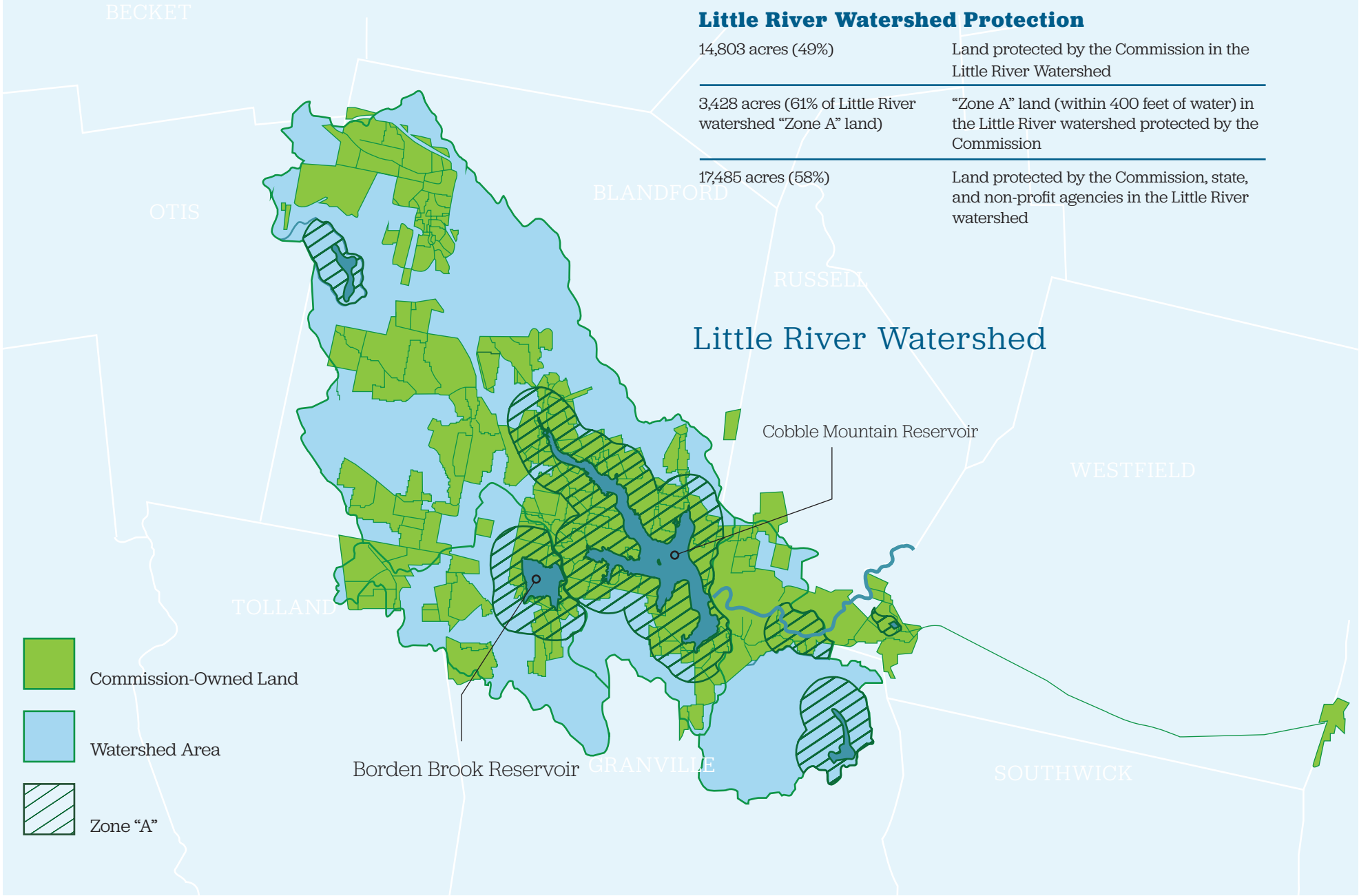
Ludlow Reservoir, originally developed in 1872, is maintained as an emergency water supply. The land surrounding the reservoir is managed by the Commission for the purpose of source water protection. Parts of Ludlow Reservoir and surrounding watershed are open for public recreational use. In FY20 access was limited at times due to forest harvesting in the watershed. The reservoir was also closed to the public for a two-month period in FY20 due to public health and safety concerns amid the COVID-19 pandemic, but safely reopened for passive recreation and public enjoyment in May 2020. There were 22,374 visitors to Ludlow Reservoir in FY20.

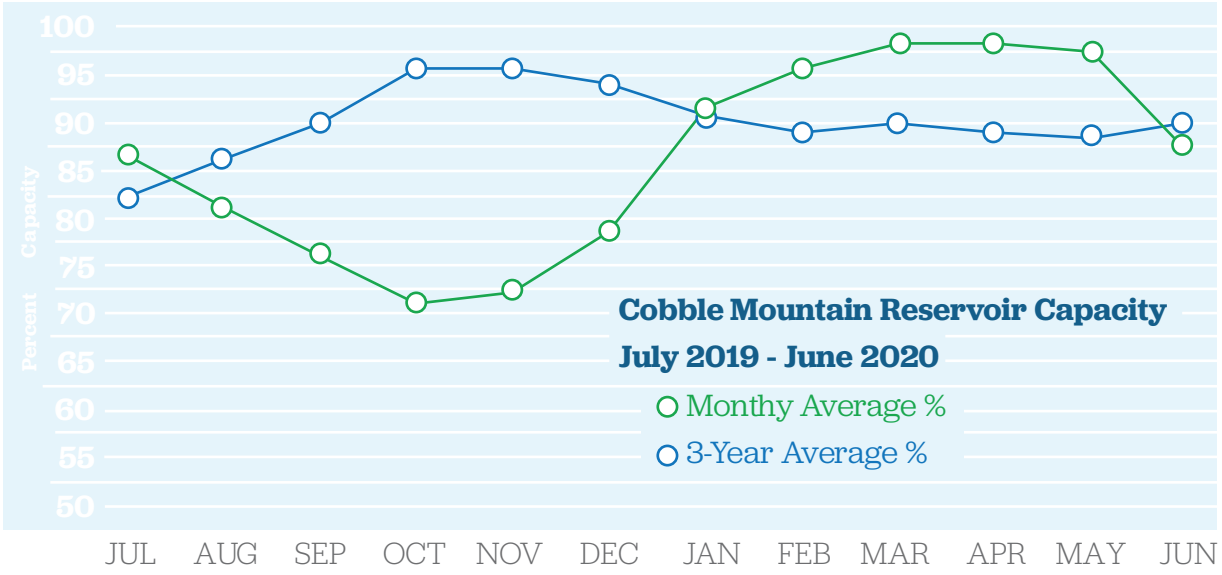
At left, top and middle: *Wildlife in the watershed includes moose and wild turkey.* ***At left, bottom:*** *An oak tree fatally injured by a gypsy moth infestation was cut as part of a planned forestry reslience project in Ludlow Reservoir, fall 2019.* ***Opposite page, top row:*** *Scenes from around Cobble Mountain Reservoir.* ***Opposite page, bottom left:*** *A land steward inspecting the shoreline of Cobble Mountain Reservoir.* ***Opposite page, bottom right:*** *A rainbow ends at Ludlow Reservoir, fall 2019.*

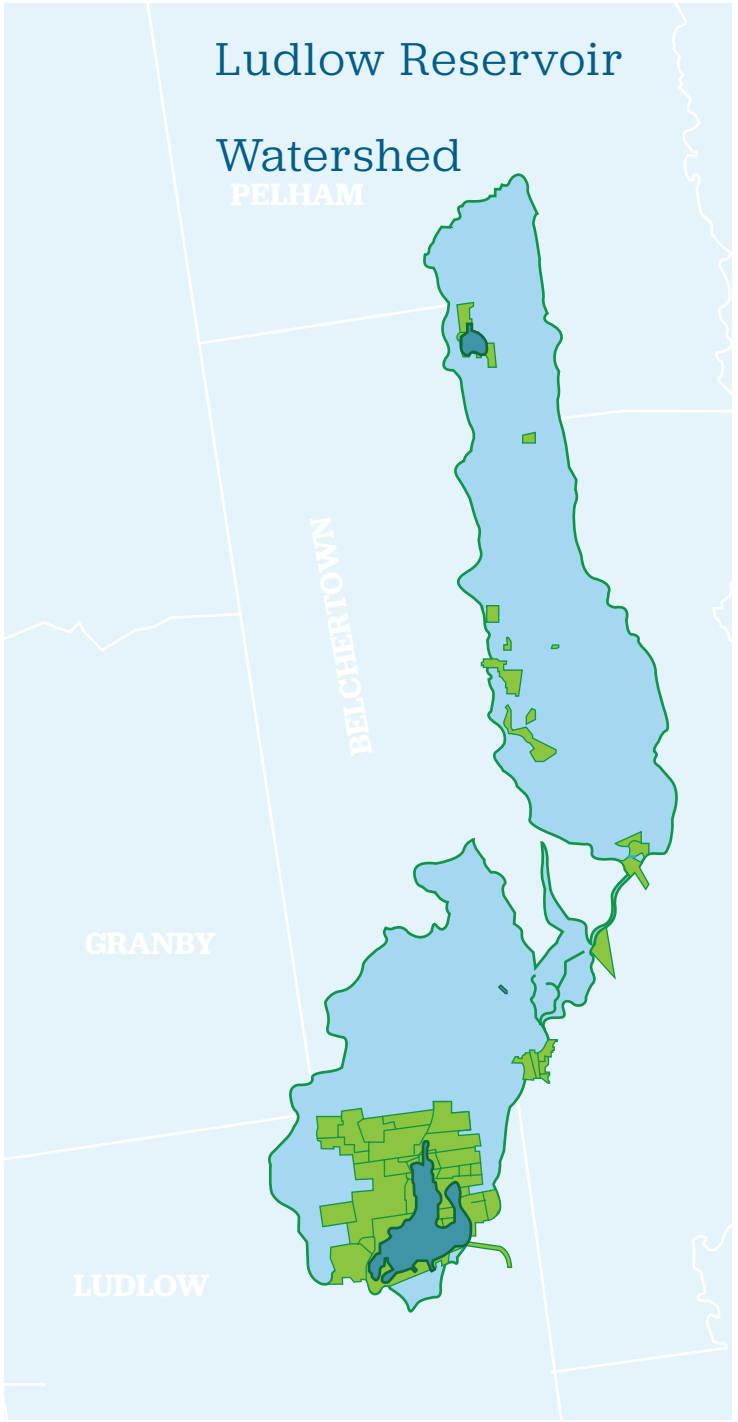
Watershed Lands

Little River Watershed Protection

14,803 acres (49%)	Land protected by the Commission in the Little River Watershed
3,428 acres (61% of Little River watershed "Zone A" land)	"Zone A" land (within 400 feet of water) in the Little River watershed protected by the Commission
17,485 acres (58%)	Land protected by the Commission, state, and non-profit agencies in the Little River watershed




100
95
90
85
80
75
70
65
60
55
50
Percent Capacity
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
Cobble Mountain Reservoir Capacity
July 2019 - June 2020
Monthy Average %
3-Year Average %


Ludlow Reservoir
Watershed
PELHAM
BELCHERTOWN
GRANBY
LUDLOW

Top: *Painting hydrants.* ***Below:*** *Testing water meters.* ***Opposite page:*** *Flushing hydrants as part of the UDF Program.*

Field Services

ESSENTIAL Operations

Among the system infrastructure is hundreds of miles of water and sewer pipes, buried beneath city streets. The Commission's Field Services Division is responsible for maintaining every inch - from pipes, to valves, to hydrants, and more. Field Services crews also assist customers with installation, repairs, and replacements of water and sewer service lines at individual properties, and provide additional services such as water consumption surveys and water quality checks. All these activities are funded through the Commission's operations budget. In FY20, approximately $42 million was spent on these activities.

Transmission System Maintenance

Treated water from West Parish Filters Water Treatment Plant is stored in three storage tanks at Provin Mountain in Agawam. Each tank has the capacity to store 12 to 17 million gallons of treated water to maintain pressure and provide emergency supply. Water then flows through three transmission mains that pass through Westfield, Agawam, and West Springfield.

Commission staff stationed at Provin Mountain are responsible for the maintenance of the tanks and any Commission property or easements under which the mains are buried. Staff monitor for leaks, encroachments, and excessive vegetation growth along the 37-mile span of transmission mains. In FY20 crews cleared vegetation along 16 miles of the transmission system.

Water Quality Protection

The Commission's Water Quality Group (WQG) conducts inspections and maintenance throughout the drinking water distribution system, regularly inspecting valves and hydrants. To clean sediment out of mains and increase water flow, they also carry out the Unidirectional Flushing (UDF) Program through high-powered flushing of mains and hydrants. UDF is conducted in coordination with engineers and operators at West Parish Filters to ensure safe chlorine levels and water age throughout the system. In FY20, 60 miles of pipe were flushed.

To further protect water quality, the Commission's Cross Connection Control Program conducts inspections in buildings throughout Springfield and Ludlow to ensure backflow prevention devices are in place for water lines that are connected to equipment or other systems containing chemicals or water of questionable quality (such as HVAC equipment). The Commission adopted the Cross Connection Control Program in 1998 in accordance with MassDEP regulations. All backflow prevention devices in commercial, industrial, and institutional plumbing are inspected regularly. In FY20, 870 sites were visits for inspections.

Water Infrastructure Maintenance and Upgrades

Maintaining hundreds of miles of water pipes, thousands of hydrants, and infrastructure dating back to the 1800s is the work of the Commission's Water Construction Group (WCG). The WCG is responsible for responding to unpredictable water main breaks, replacing aging water mains, rebuilding hydrants, and performing other routine or emergency repairs and maintenance within the distribution system in Springfield and Ludlow. Crews of the WCG are always ready to respond to emergencies, 24 hours a day, 7 days a week. The WCG also works with customers on water service line replacements and inspections. In FY20 the WCG responded to 22 water main breaks, a decrease of 10 from the previous year.

Field Services Statistics and Activities FY 2020

Water and Sewer System

Miles of Water Main	596.3
Number of Valves	19,804
Number of Hydrants	6,227
Number of Meters	46,528
Miles of Wastewater Mains	4,72.1
Number of Wastewater Manholes	11,448
Number of Wastewater Pump Stations	27

Water Quality Group

Hydrants Inspected	1,803
Hydrants Repaired/Rebuilt	89
Valves Exercised	3,409
Miles of Mains Flushed (UDF Program)	61

Water Construction Group

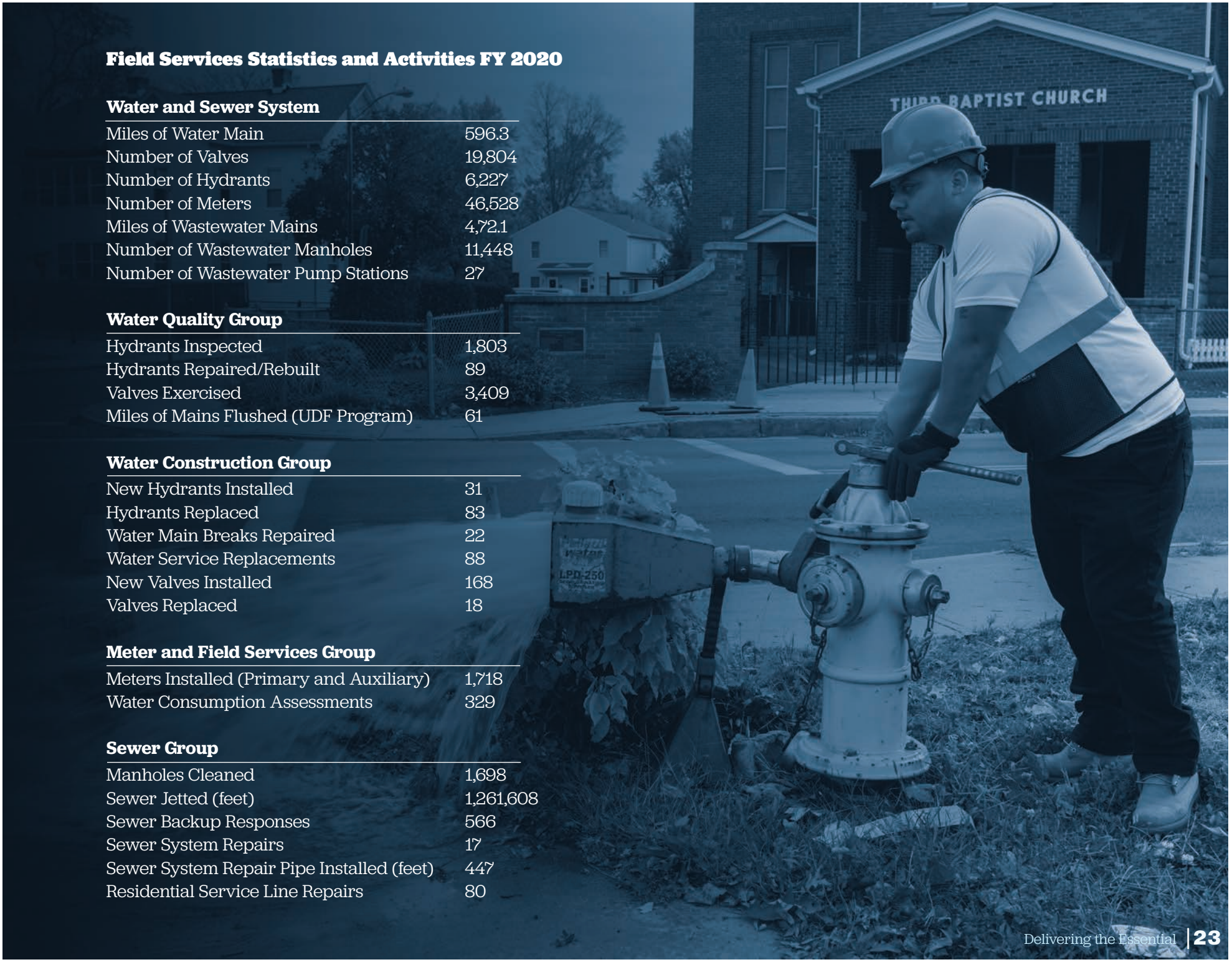
New Hydrants Installed	31
Hydrants Replaced	83
Water Main Breaks Repaired	22
Water Service Replacements	88
New Valves Installed	168
Valves Replaced	18

Meter and Field Services Group

Meters Installed (Primary and Auxiliary)	1,718
Water Consumption Assessments	329

Sewer Group

Manholes Cleaned	1,698
Sewer Jetted (feet)	1,261,608
Sewer Backup Responses	566
Sewer System Repairs	17
Sewer System Repair Pipe Installed (feet)	447
Residential Service Line Repairs	80



Water Consumption Tracking and Assessments

Water meters installed at all residential and commercial properties serviced by the Commission record water consumption data, and report information through radio signals that are collected monthly. The Meter and Field Services Group (MFSG) is responsible for maintaining the meter system and tracking and collecting meter data. The MFSG also conducts water consumption surveys, which assist homeowners in identifying leaks, assessing household water use, and determining if there are any inefficient or faulty household fixtures. The MFSG conducted 329 water consumption assessments in FY20, a similar level to FY19 despite the Covid-19 pandemic.

Wastewater Collection System Operations

The collection (sewer) system removes wastewater from homes and businesses in Springfield, conveying it across the Connecticut River to the Springfield Regional Wastewater Treatment Facility on Bondi's Island. This system supports sanitary conditions in homes and neighborhoods and prevents the spread of bacteria and disease. The Commission's Sewer Group is responsible for daily maintenance of the wastewater collection (sewer) system, including jetting (cleaning) sewer mains and syphons, repairing sewer mains and services, and manhole cleaning/repair.

The Sewer Group also responds to emergency situations such as sewer backups at all hours, every day of the year. In FY20 the Sewer Group responded to 566 sewer backup calls and assisted 80 customers in the repair or replacement of their sewer service lines.

Essential Workforce

At the onset of the COVID-19 pandemic, when many other businesses were closed or operating remotely, the Commission's Field Services crews continued to ensure essential water and sewer services kept flowing - particularly since a lack of drinking water or an unsanitary sewer backup would further exacerbate the public health crisis. Commission crews continued responding to main breaks in neighborhoods and matching residents with appropriate services and resources in the event of sewer backups. Crews also remained on the job to ensure adequate distribution system flushing in order to support water quality. During the initial months of the Covid-19 pandemic, sewer system cleaning and jetting became particularly important as more people flushed disposable wipes used for household disinfection, leading to increased clogs and backups.

Top: *Crews respond to a sewer backup at a residence, spring 2020.* ***Middle:*** *Crews respond to a water main break on Methuen Street, spring 2020.* ***Bottom:*** *Replacing a water main, fall 2019.*

Technology Infrastructure

ESSENTIAL Efficiency

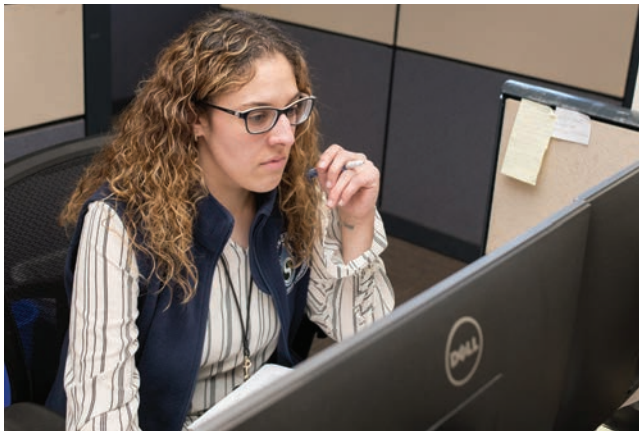
We believe that clean water is the most essential service, and we stand by that assertion - but in FY20 information technology was a very close second in that ranking. When the coronavirus pandemic suddenly unfurled in March 2020, many Commission staff were forced to reposition from their traditional work settings. Due to preparations and swift action by the IT Department, 90% of eligible employees were transitioned to remote work stations within one week of state stay-at-home orders. Staff as well as the Board of Commissioners utilized fully supported technology to remain in regular contact to ensure that essential water and wastewater services remained uninterrupted throughout the public health crisis. The Commission's IT department was ready for the temporary transition by having already adopted a cloud-based email and work productivity system that enabled on-demand, secure video-conferencing and remote server interaction. With these tools the Commission was able to maintain regular business, as well as to conduct the first-ever virtual annual public buget hearing in June 2020.

Water utilities are no less a target of cyber-threats than municipal and governmental entities in recent years, and cybersecurity remained an ongoing focus for the Commission. In FY20 the Commission conducted regular cybersecurity awareness training among all employees. To protect business continuity and resilience, the Commission also implemented a "site to site" server replication system in case of a data outage. This system will minimize critical service downtime and allow for technology systems to continue operating while maintenance or repairs are addressed.

The Commission's Geographic Information System (GIS) team (part of the IT Department) rolled out new initiatives in FY20 such as the automation of DigSafe (utility markout) tickets. Upon joining DigSafe in 2020, the Commission became the only DigSafe member to implement a completely automated solution for transforming DigSafe tickets into work orders followed by completion notifications to customers. Also, in its continual efforts to improve asset data collection, the GIS team deployed another high-accuracy GPS unit to the Engineering team. The unit is capable of mapping features to within three centimeters. Features collected with this new unit are immediately available for making revisions to the Commission's ever-growing GIS database.

As it looks ahead to better improve security and productivity, the IT Department is also working on completing the full transition towards an "End User Computing" (EUC) platform that streamlines and provides better overall security than existing VPN configurations. EUC provides a scalable, secure method to access critical applications and desktops both internally and remotely. The project was moved into production weeks before the pandemic and proved to be useful in the quick transition to temporary remote work. Full transition is to be completed in FY21.

Top and bottom: *Members of the Commission's IT department provide technological support to all Commission locations.*



Customer Service

ESSENTIAL Relationships

As the largest public water utility in the region, the Commission supplies essential drinking water and wastewater services to over 175,000 retail customers through approximately 43,000 service points. Vital to this operation is a team of dedicated and experienced customer service representatives (CSRs) to respond to customers' inquiries regarding water and sewer services. The CSG is comprised of two teams, one focused on billing and accounts, and the other on field operations such as water and sewer emergencies or new connections. In FY20, 43,939 customer calls were answered by the CSG.

The CSRs have extensive experience in assisting customers, managing billing, responding to emergency calls, and scheduling service appointments. CSRs also work with contractors working on retail and commercial construction projects to coordinate inspections and other construction-related activities. Many of the CSRs have worked at the Commission for over a decade and are very familiar with the many complex questions or issues that may arise.

Members of the CSG play a proactive role in educating customers on leak detection and timely repair, which protects customers from potential high water and sewer bills due to an ongoing leak or plumbing issue. The CSG monitors and reviews accounts for high use or possible leaks through the Leak Detection Program. The customer is alerted by a CSR if an account displays an unusual water meter reading, such as sudden high or low usage, which may indicate a leak or vacancy. In these cases, the CSG can coordinate with the customer to schedule a Leak Detection or Water Consumption survey at the property. The CSG may also dispatch crews to an address with high use to check for flooding or abandonment in order to protect the building and the surrounding neighborhood from flooding. In FY20 customer service representatives reached out to 1,239 customers regarding unusual usage.

CSRs are also there to answer the call when a customer has an emergency, such as a sewer backup in their home, or a leaking water service line in their front yard. When this occurs CSRs dispatch a crew to the property and provide helpful advice over the phone to minimize the situation until the crews arrive. Similarly, CSRs are instrumental in responding to customers' concerns about water quality issues, sending flushing or sampling crews when necessary to provide extra reassurance about drinking water quality. Building these positive relationships with customers is critical to the Commission's daily operations.

Besides responding to customer inquiries or emergency situations, the CSG also administers the many customer assistance programs offered by the Commission. This includes payment arrangements; senior, disabled, and disabled veteran homeowner discounts; and non-beneficial water use (leak) abatements. In FY20 planning for the new Customer Assistance Program (CAP) was underway, which is intended to provide an annual credit to low-income Commission customers that qualify for state heating fuel assistance. A formal launch of the low-income water and sewer credit program is scheduled for FY21.

This page: *Customer Service Representatives respond to both billing and water/sewer service inquiries.* ***Opposite page, top:*** *Members of the public tour tree harvesting areas of Ludlow Reservoir, fall 2019.* ***Opposite page, middle:*** *Students from Springfield Public Schools visit Stowe Stream in the watershed as part of the "A Day at Cobble Mountain" program, fall 2019.* ***Opposite page, bottom:*** *Field Services staff organize PPE for contactless distribution to fellow Western Massachusetts water utilities.*

Education & Community

ESSENTIAL Connections

When staff welcomed students for a tour of the reservoir and water treatment plant in March 2020, no one envisioned it would be the last time the Commission would welcome visitors for quite some time. Prior to the restrictions put in place for the Covid-19 pandemic, the Commission was planning to attend numerous spring and summer events with its water station. Fortunately, the Commission was able to engage with the community in many ways prior to the pandemic, and continue to do so virtually afterwards.

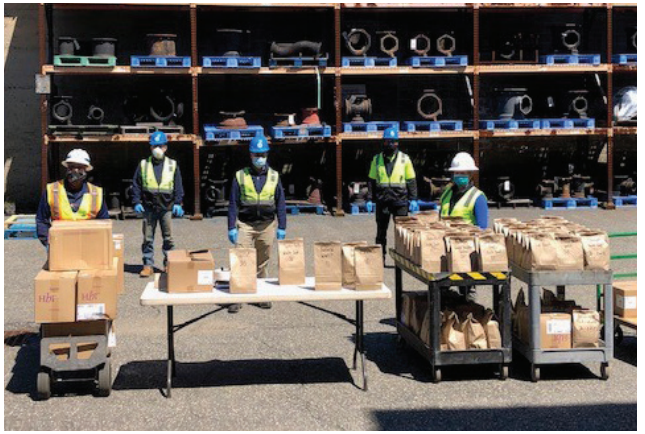
In September 2019, the Commission offered a second tour of tree harvesting activities at Ludlow Reservoir. An initial tour in December 2018 explained to visitors the rationale for the tree harvesting in the context of protecting water quality; how it would be completed; and what kind of changes could be expected. Commission staff and consultants that managed the tree harvesting provided a thorough follow-up tour, complete with walking through harvested areas.

In October 2019, the Commission also hosted tours of the drinking water and wastewater treatment plants for Imagine a Day Without Water for the second year in a row. The nationwide advocacy day is intended to raise awareness of the criticality of water in everyday life and the need for increased investment in water infrastructure. The tours were well-attended and allowed an unusual opportunity for members of the local public to see first-hand how their drinking water and wastewater is treated.

In the fall of 2019, the Commission's watershed and treatment plants were also visited by hundreds of students from various Springfield Public Schools. The Commission has partnered with World Is Our Classroom, a non-profit organization, since 2001 to bring "A Day at Bondi's Island" and "A Day at Cobble Mountain" to Springfield fifth- and seventh-graders, respectively. Students are introduced to concepts related to the water cycle and life cycles of organisms within the watershed through hands-on, on-site activities at the reservoir and wastewater and drinking water treatment plants. While visits were suspended in spring 2020 due to the pandemic, the Commission embarked on a virtual version of the program to be introduced in FY21.

By springtime the Commission was excited to welcome students from Springfield Technical Community College (STCC) enrolled in the second iteration of an online drinking water treatment training course developed in coordination with the Massachusetts Water Works Association (MWWA) with support of the Commission. Students were provided an in-depth tour of the reservoir and drinking water treatment plant, including immersive time with the key staff overseeing watershed, laboratory, and treatment plant operations. The online course was the first of its kind in the state, and is intended to expand access to the training required to become a treatment plant operator. As it happened, the class was well-position to continue uninterrupted as the pandemic unfolded.

During the pandemic the Commssion was also proud to serve its fellow water utilities in Western Massachusetts by hosting personal protective equipment (PPE) distribution events. Masks and other PPE provided by MassDEP and the Environmental Protection Agency were allocated to the Commission for contactless distribution. This enabled fellow water utility workers to stay safe as they provided their essential services.



Financial Report

ESSENTIAL Management

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, 2020 (FY20). A full accounting and analysis of all financial activities is provided in the Commission's FY20 Comprehensive Annual Financial Report, available on the Commission's website or by request.

Financial Highlights

In FY20 the Commission had a decrease in net position of $5,253,961. The following paragraphs provide an overview of the activities in FY20.

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, 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.

In fiscal year 2020, there was again an increase in collection efforts and an increase in rates; however, overall usage was less than anticipated. As a result, wastewater charges revenue and fees were approximately $1.2 million less than budget. Wholesale water charges and fees were less than budget by approximately $1.7 million. Power generation revenues were less than estimates by approximately $153,000.

These and other factors resulted in total operating revenue of approximately $81 million in fiscal year 2020, approximately $4.7 million less than budget, and $2 million more than the prior year.

Operating expenses were less than budget by approximately $4.9 million, primarily as a result of vacant positions and less overtime needed than anticipated due to the Covid-19 pandemic. In addition, there was conservative budgeting for general operational expenses and, in some cases, reduced expenditures as a result of the COVID-19 outbreak.

Summary of Net Position

In fiscal year 2011, the Commission implemented FASC 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, which was a decrease of $(20,415,649) for fiscal year 2020.

Capital Asset and Debt Administration

Total investment in capital assets at year-end amounted to $376,413,115 (net of accumulated depreciation). This investment in capital assets includes land, buildings and improvements, machinery and equipment, and infrastructure.
At the end of the current fiscal year, total bonded debt outstanding was $196,877,365, 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 FY20 Comprehensive Annual Financial Report.

Requests for Information

The FY20 Comprehensive Annual Financial Report is available on the Commission's website, waterandsewer.org.

Questions concerning any of the financial 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 FY20

Depreciation Expense	$9.6 million
Hydrant Projects	$94,000
Meter Replacements	$695,000
Water Treatment System Improvement Projects	$1.1 million
Wastewater Treatment System Improvement Projects	$272,000
York Street Pump St. and CT River Design Projects	$27 million
Water Main Rehabilitation Projects	$3.2 million
Sewer Main Rehabilitation Projects	$3.3 million
Transmission System Rehabilitation	$379,000
Collection System Assessment and Rehabilitation	$1.5 million
Distribution System Assessment and Rehabilitation	$1.5 million
Electrical Distribution Improvement Projects	$92,000
New Vehicle and Equipment Purchases	$579,000
Computer Software and Equipment Purchases	$700,000
Land Acquisition	$313,000
Provin Reservoir Tank Projects	$3.3 million
West Parish Filters Projects	$799,000
Various Other Rehab and Improvement Projects	$1.3 million

Additional information on the Commission's capital assets can be found at Footnote 10 on page 46 in the FY 2020 Comprehensive Annual Financial Report.

Summary of Net Position	2020 ($)	2019 ($)
Current Assets	216,067,645	125,867,127
Non-Current Assets	2,523,481	2,627,726
Capital Assets	376,413,115	339,755,313
Total Assets	595,004,241	468,250,166
Deferred Outflows of Resources	107,098,137	108,470,893
Total Assets and Deferred Outflows		
Current Liabilities	141,359,600	42,625,175
Non-Current Liabilities	281,425,830	272,038,137
Total Liabilities	422,758,430	314,663,312
Deferred Inflows of Resources	148,358,514	125,845,352
Net Investment in Capital Assets	159,325,678	152,176,660
Restricted - Other Purposes	59,930,406	50,334,806
Unrestricted	(88,297,650)	(66,299,071)
Total Net Position	130,958,434	136,212,395
Operating Revenues	81,063,786	79,022,695
Operating Expenses	(63,643,785)	(61,242,938)
Operating Income	17,420,001	17,779,757
Non-Operating Revenues (Expenses)	(2,258,313)	(2,511,874)
Special Items	(20,415,649)	(3,950,991)
Increase (Decrease) in Net Position	(5,253,961)	11,316,892
Beginning Net Position	136,212,395	124,895,503
Ending Net Position	130,958,434	136,212,395

Last Five Fiscal Years - Water Rates (per 100 CF)	2021	2020	2019	2018	2017
Residential	3.96	3.62	3.22	3.01	2.89
Commercial	3.96	3.62	3.22	3.01	2.89
Municipal	2.96	2.70	2.40	2.24	2.15
Industrial	2.96	2.70	2.40	2.24	2.15
Solutia contract (per 100 CF)	2.90	2.65	2.32	2.11	1.99
Town contracts (per million gals)	1,340.94	1,727.00	1,491.03	1,717.86	1,526.61
Residential Water % Change	9.4%	12.4%	7.0%	4.2%	4.0%

Sewer Rates (per 100 CF)	2021	2020	2019	2018	2017
Residential	6.25	5.71	5.32	4.93	4.74
Commercial	6.88	6.28	5.85	5.42	5.21
Industrial	7.50	6.85	6.38	5.92	5.69
Municipal	6.25	5.71	5.32	4.93	4.74
Food Service	8.13	7.43	6.92	6.41	6.16
Medical	6.88	6.28	5.85	5.42	5.21
Solutia contract (per million gals)	1,340.94	1,138.91	1,197.77	1,145.39	1,060.86
Town contracts (per million gals)	1,340.94	1,138.91	1,197.77	1,145.39	1,060.86
Residential Sewer % Change	9.5%	7.3%	7.9%	4.0%	3.9%
Average Combined Rate Increase	9.4%	9.9%	7.4%	4.1%	4.0%

Source: Fiscal Year 2020 Adopted Rules and Regulations, Chapter 5

Above: *The City of Springfield is visible on the other side of the Connecticut River from the vantage of Bondi's Island in Agawam. Construction of the new influent structure for the Springfield Regional Wastewater Treatment Facility appears in the lower left.*