



Screening Room

York Street Pump Station

Smaller dumpster trolley requires operator to manually dump regularly

Access to screens for maintenance is constrained by room and proximity to other equipment

Automated belt conveyor moves screenings directly to dumpster with minimal effort from operator

Four new bar screens are more accessible, easier to maintain, and add redundancy

Odors from indoor dumpster are removed by ventilation system and do not affect neighbors



Old station's screening room



New station's screening room

Screening Room: Where Treatment Begins

This is where large debris is removed from combined wastewater and stormwater entering the station. The new screening room:

- ✓ Adds capacity and redundancy
- ✓ Reduces maintenance workload
- ✓ Removes odors with advanced technology



Care for your sewer infrastructure, including York Street Pump Station, by following these tips:

Fats, Oils and Grease (FOG) are a leading cause of sewer backups into basements. FOG occurs when cooking fats are poured down the drain and coat the inside of the pipes, eventually forming a blockage.



- Dispose fats, oils and grease in the trash — not the sink.
- Scrape food scraps from dishes and pans into the trash before washing.
- Use baskets or strainers in sinks to catch food scraps.

Flushing anything other than toilet paper can lead to expensive clogs in your home pipes or in the sewer system. A household sewer repair can range in cost from a few hundred to several thousand dollars!



- Dispose all wipes, sanitary products, rags, cloths, and towels in the trash — not the toilet.
- Do not flush wipes down the toilet, even if they say "flushable."
- Only toilet paper can be flushed.



Control Room

York Street Pump Station

Newest monitoring equipment dates from 1970s- 1990s.



Old station's control room

Screens allow operators to view the status of the entire pump station locally and remotely at the Springfield Regional Wastewater Treatment Plant

Modern electrical systems meet current codes, improve operator safety, and simplify troubleshooting and repairs



New station's control room

Modernized Controls

The new York Street Pump Station control room allows operators to continuously monitor the flow of water into and out of the station using one set of displays.

85 Years of Progress

1938 Control Room

- No modern automated or computerized systems
- No remote monitoring — regular, in-person checks required
- 12 sensors monitor the operation of the overall pump station
- Manual data entry

VS.

2023 Control Room

- Shows operations of all systems, not just entire York Street Pump Station
- Automated system allows for remote monitoring and control of the station from Springfield Regional Wastewater Treatment Plant on Bondi's Island
- Over 200 sensors ensure pumps and mechanical systems are operating properly
- Room is located above extreme flood level



Interior of Pump Station

York Street Pump Station

Wastewater travels through two force mains (one seen here) to Springfield Regional Wastewater Treatment Facility

Connecticut River →
← City of Springfield

Removable skylights allow for extraction of large mechanical components for maintenance or replacement

Flow meter on force main monitors and records flow rates

Wet Well holds water coming from the screening room for pumping to the wastewater treatment plant

Suction and discharge knife gate valves are designed for operating in wastewater, and control flow to allow the isolation of individual pumps for maintenance

Swing check valves, or one-way valves, protect against backflow while pumps are not running

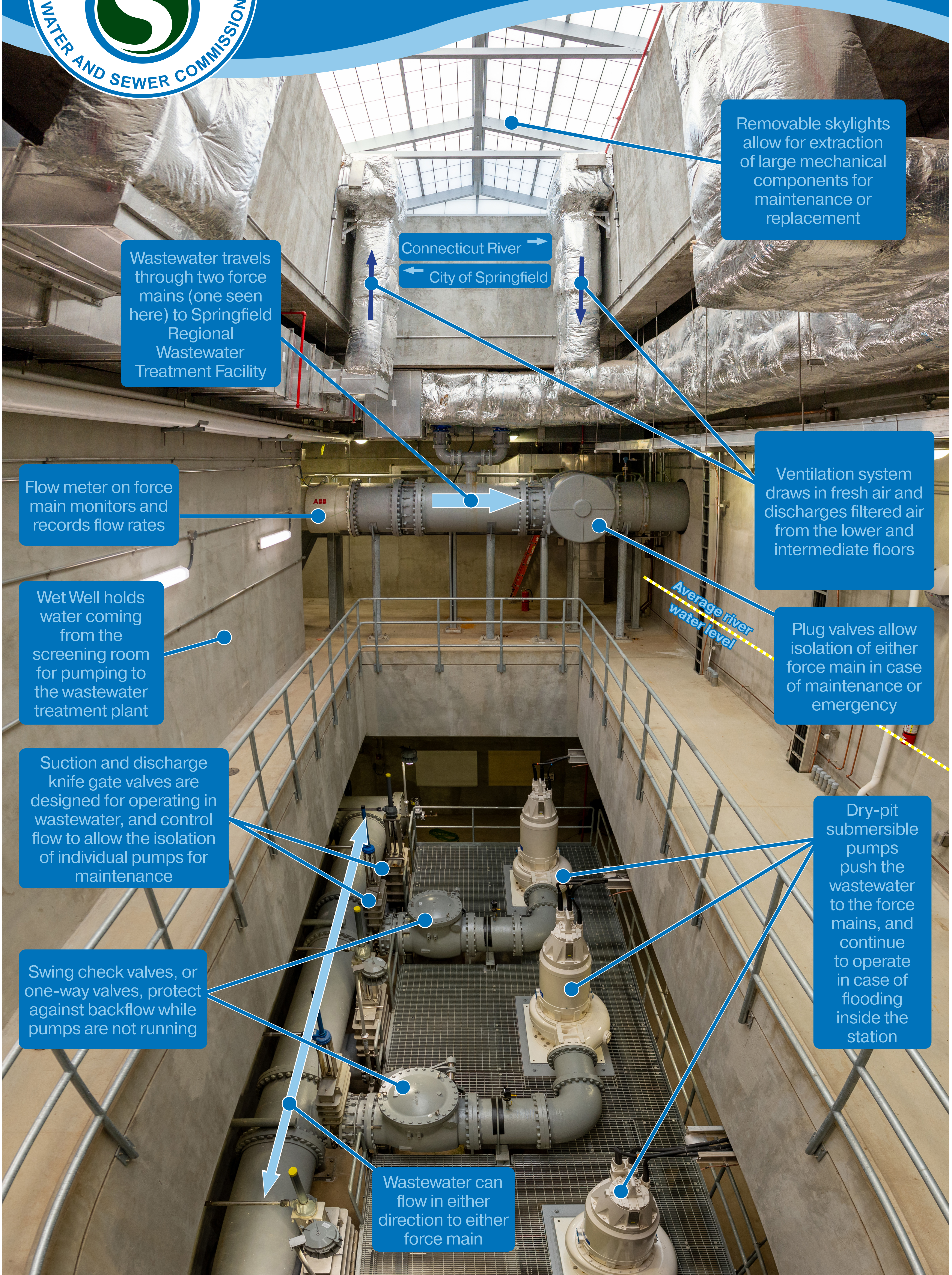
Ventilation system draws in fresh air and discharges filtered air from the lower and intermediate floors

Plug valves allow isolation of either force main in case of maintenance or emergency

Average river water level

Dry-pit submersible pumps push the wastewater to the force mains, and continue to operate in case of flooding inside the station

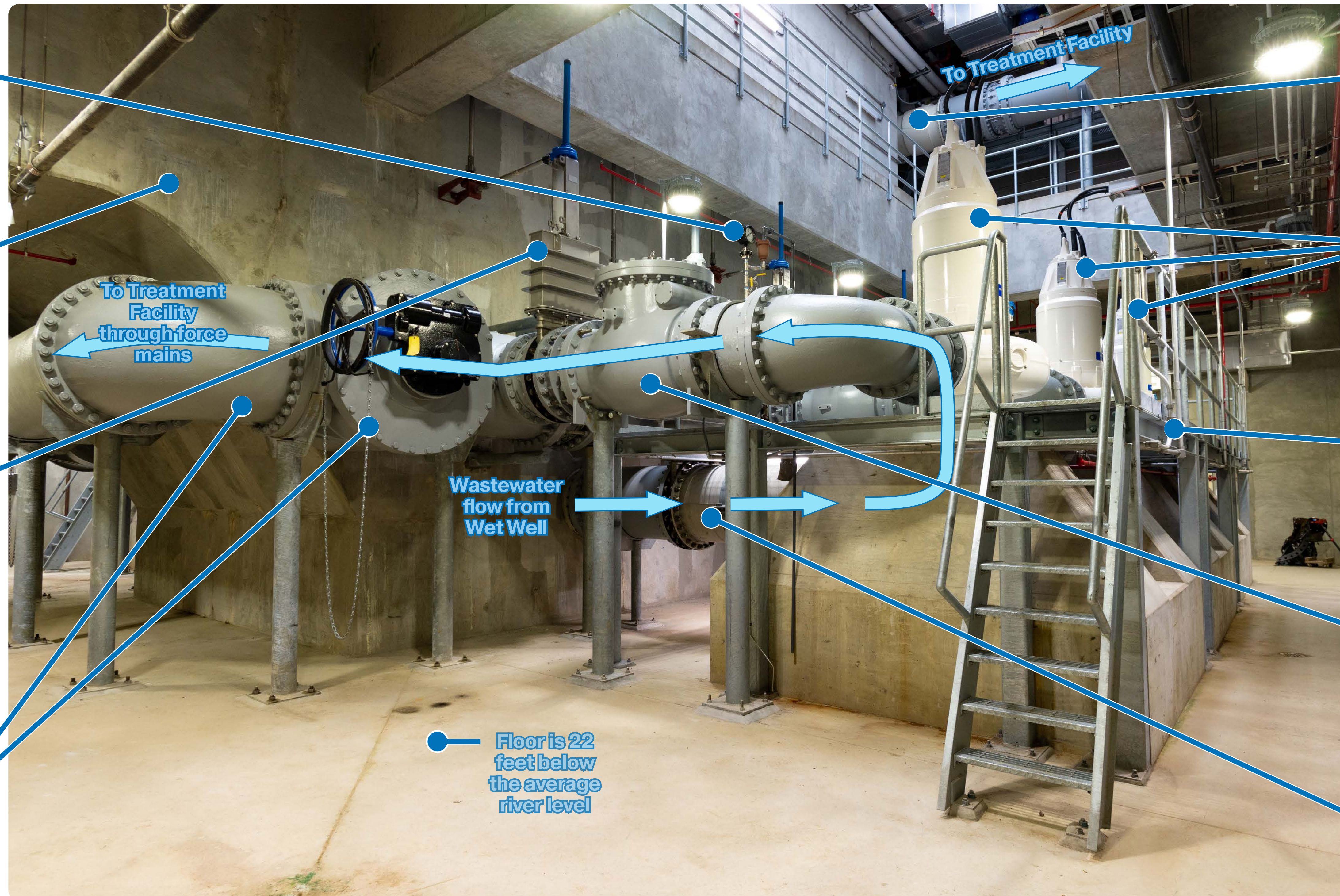
Wastewater can flow in either direction to either force main





Interior of Pump Station

York Street Pump Station



Suction and discharge pressure gauges assist in troubleshooting pump performance

Wet Well, behind the concrete, is ramped to improve cleaning during maintenance

Suction and discharge knife gate valves allow the station to remain in operation while individual pipes are maintained

Internal pipe and valving allow pumping through either or both force mains to the Springfield Regional Wastewater Treatment Facility

Flow meter monitors and records flow rates on force mains that discharge to the Springfield Regional Wastewater Treatment Facility

Dry-pit submersible pumps push the wastewater to the force mains, and continue to operate in case of flooding inside the station

Elevated maintenance platform allows direct access to each pump and its associated valving

Swing check valves, or one-way valves, protect against backflow while pumps are not running

Suction pipes from wet well pull the water to the dry-pit submersible pump

Floor is 22 feet below the average river level

To Treatment Facility through force mains

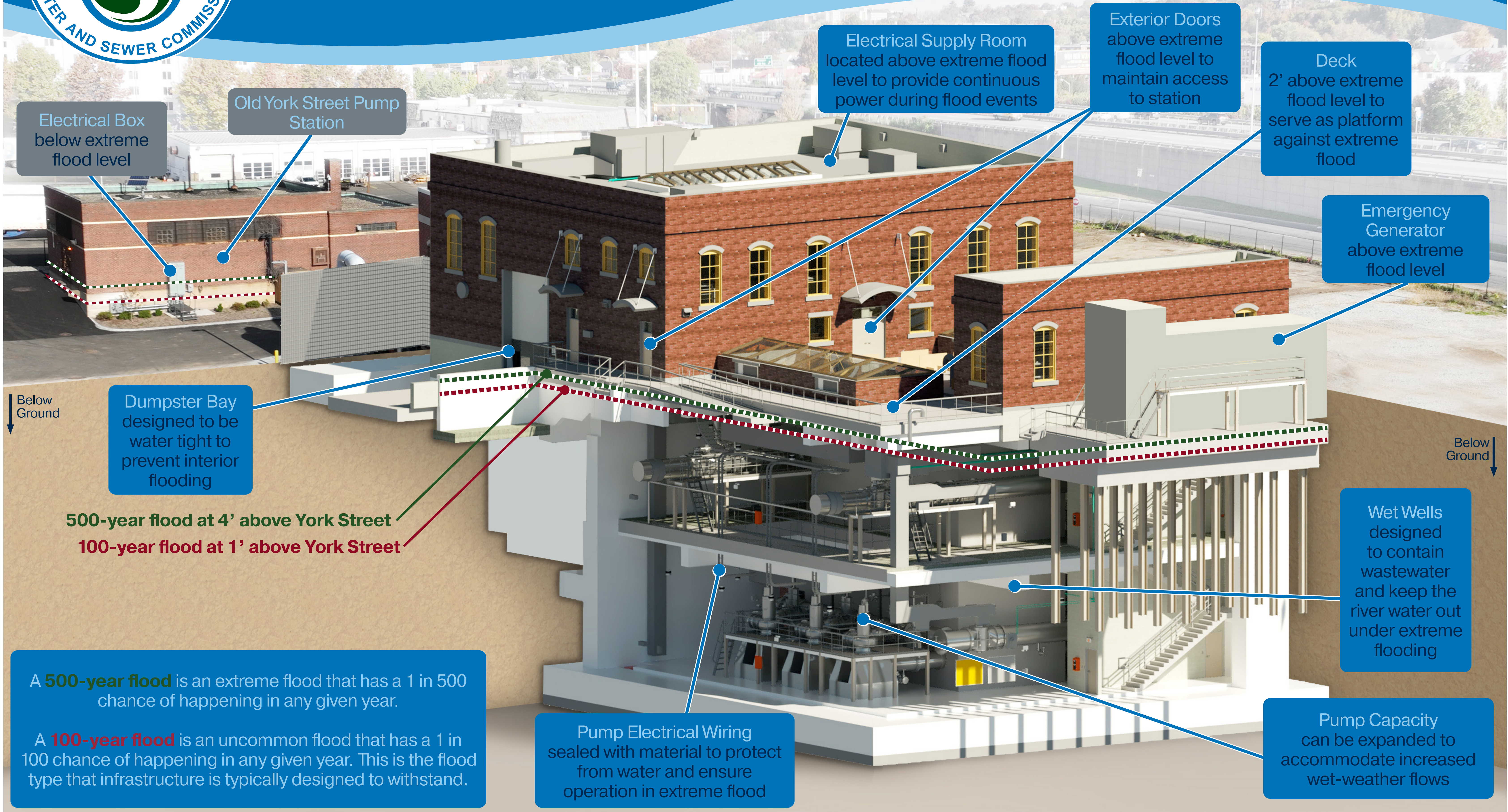
Wastewater flow from Wet Well

To Treatment Facility



Climate-Resilient Design

York Street Pump Station



A **500-year flood** is an extreme flood that has a 1 in 500 chance of happening in any given year.

A **100-year flood** is an uncommon flood that has a 1 in 100 chance of happening in any given year. This is the flood type that infrastructure is typically designed to withstand.



York Street Pump Station At-A-Glance



Emergency Generator

Control Room
(side of building facing river)

Screening Room
(side of building facing river)

Original 1938 pump station

Electrical Supply Room

Below Ground

Below Ground

Discharge Force Main

Dry-Pit Submersible Pump

Screening Channels

Wet Wells

Wet Well Ramp



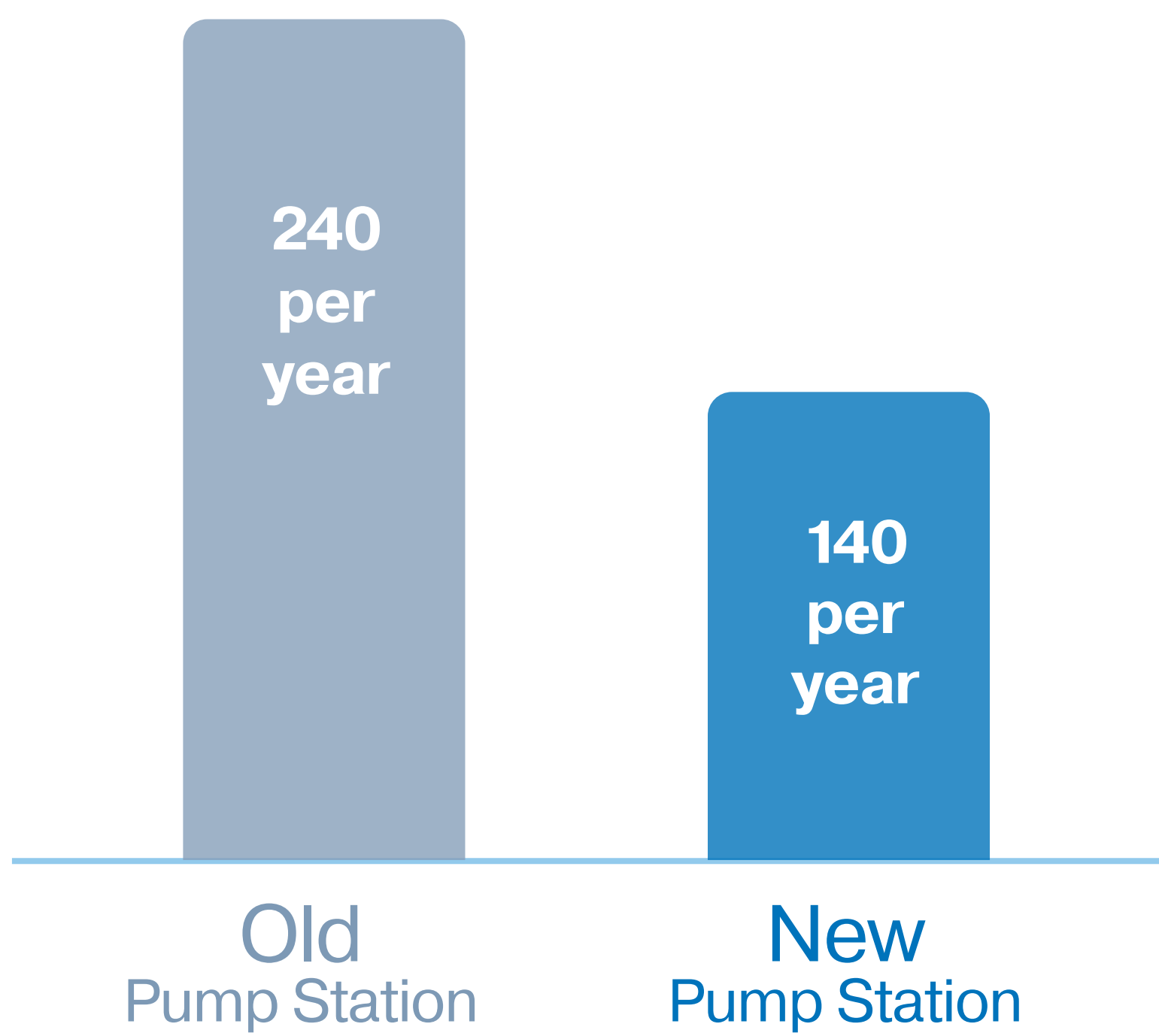
Environmental Protection

York Street Pump Station

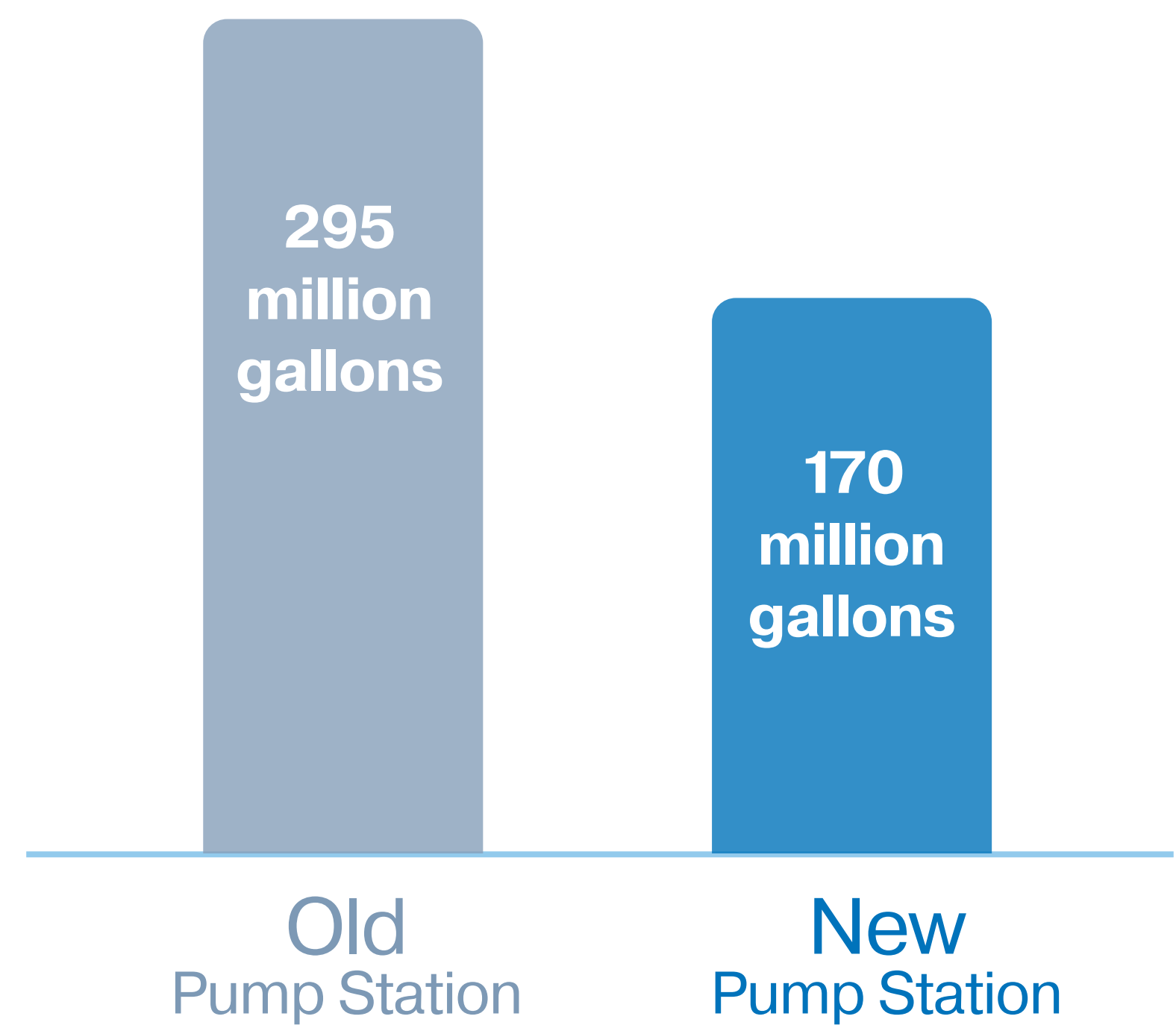
Reduced CSOs Supports a Healthier Connecticut River

The new York Street Pump Station will reduce combined sewer overflow (CSO) discharges by 100 million gallons in a typical year.

Approximate CSO **Occurrence** per Typical Year of Precipitation

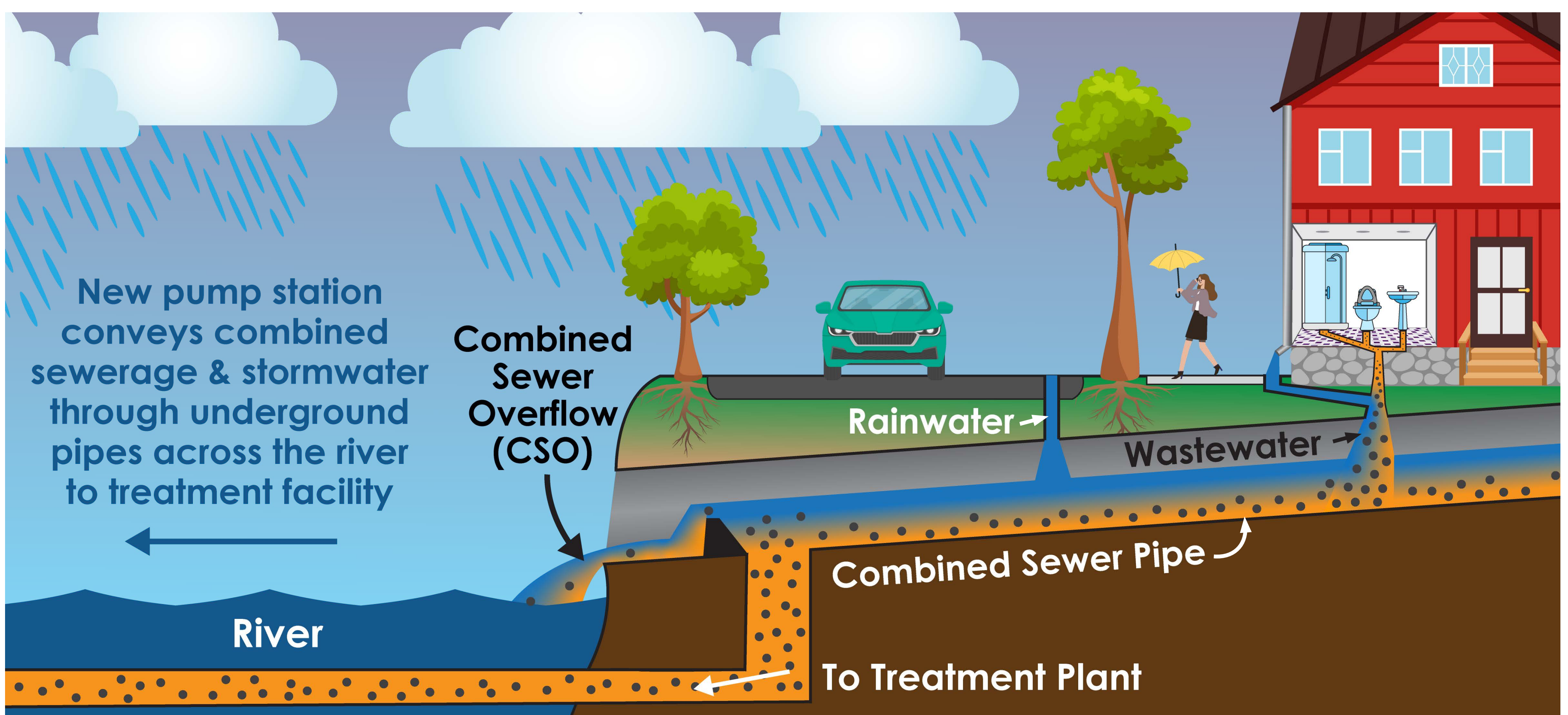


Approximate CSO **Volume** per Typical Year of Precipitation



What is a CSO?

A combined sewer overflow (CSO) occurs when a large storm overwhelms the combined sewer system, which forces mixed rainwater and wastewater to discharge to a nearby water body. Though outdated, this design is intended to prevent combined sewage backups into buildings and streets. The new York Street Pump Station will reduce CSOs by pumping more combined sewage to the treatment plant during storm events.





Connecticut River Crossing Project

Construction Process

Three new pipelines were laid across the Connecticut River to accommodate additional flows from the new York Street Pump Station (YSPS) to the Springfield Regional Wastewater Treatment Facility (SRWTF) and add redundancy to existing pipelines.



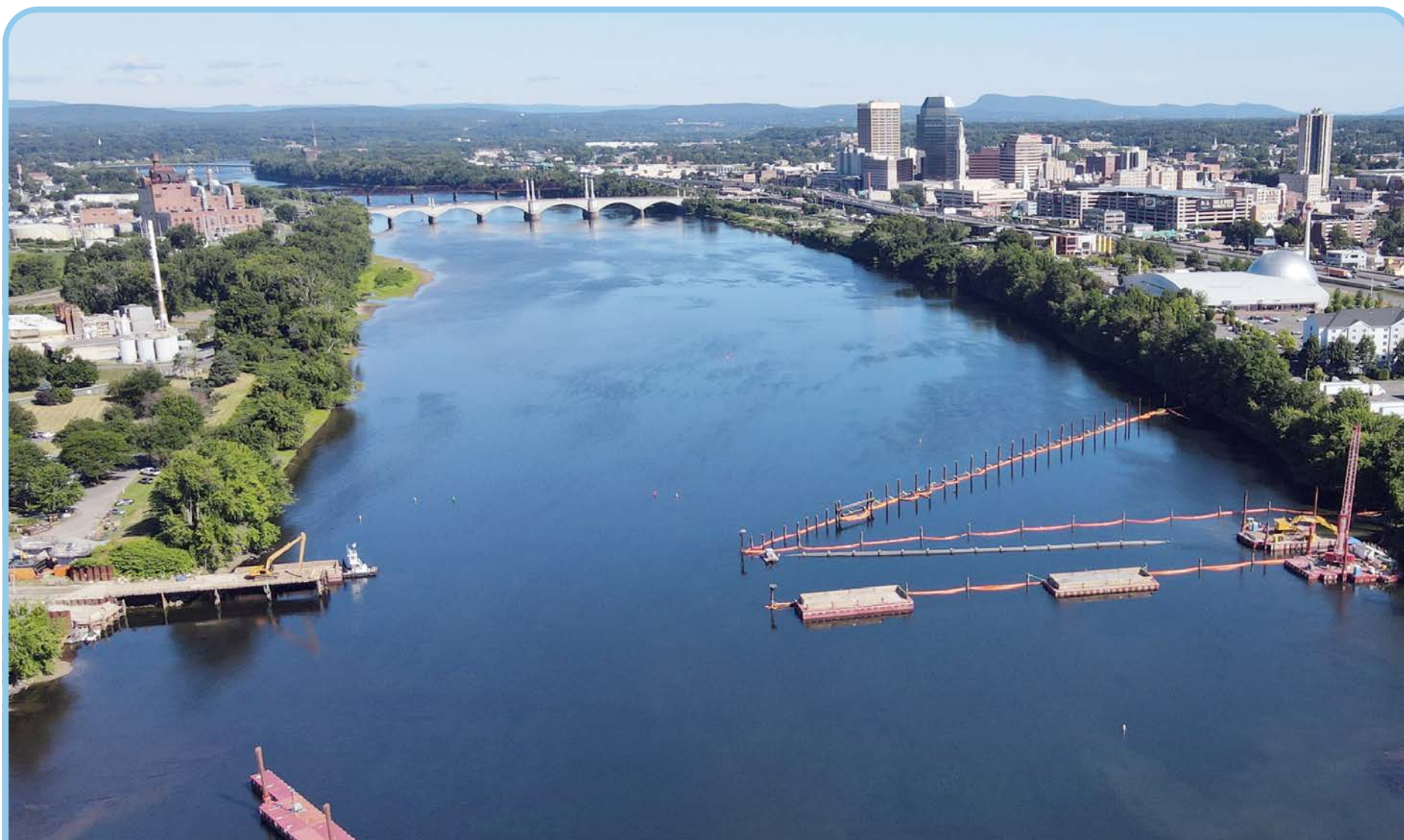
1

A trench was dug under water across the river. While the trench was excavated, pipe segments were fused into one continuous pipe (seen above) to span the excavated trench. The fused segments will become the force main that connects the pump station to the treatment plant.



2

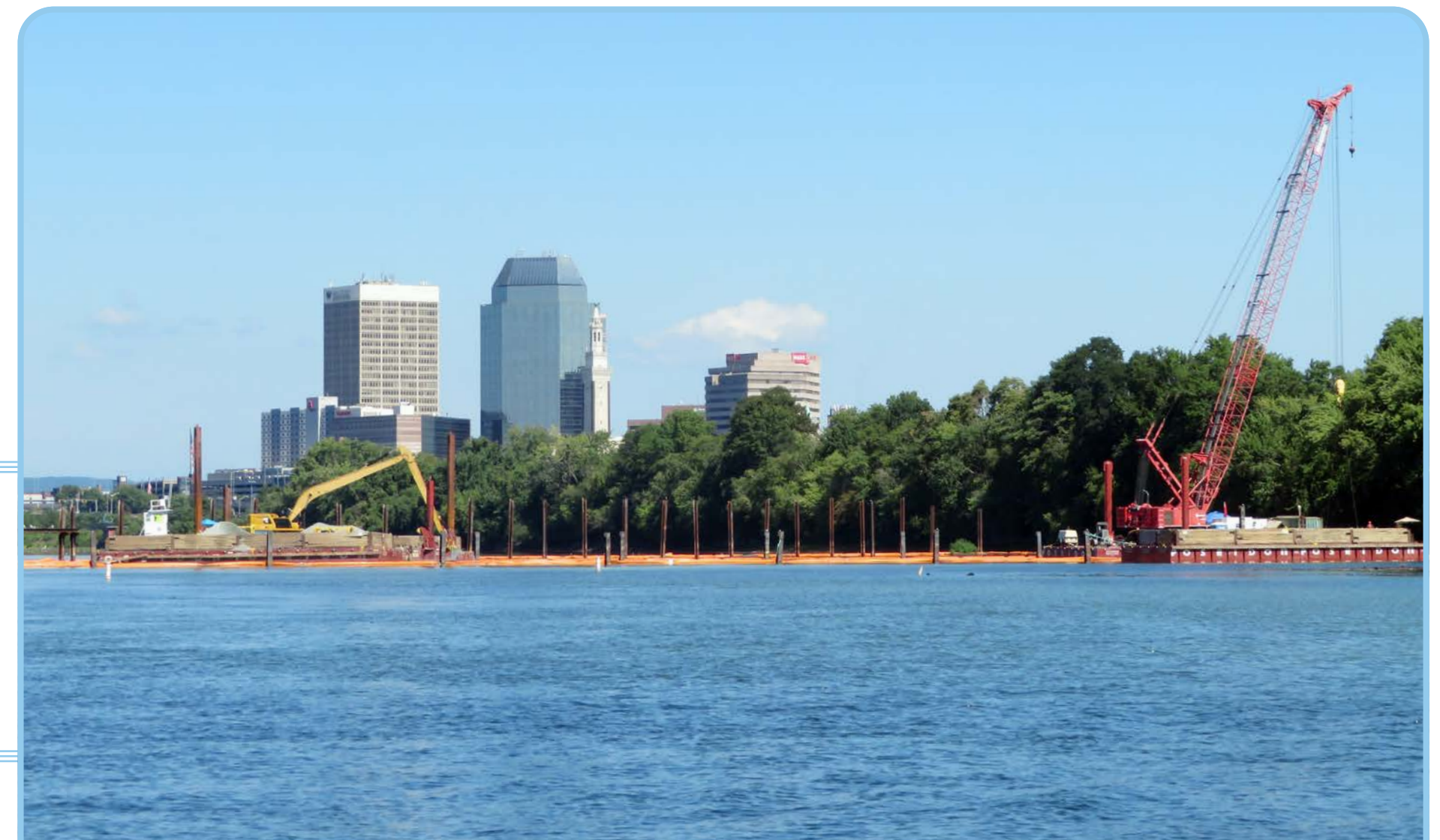
The fused pipeline was floated into place and positioned by crane. It was then connected to pipes previously installed under the railroad and floodwall.



3

After connecting to the upland pipes, the force main pipe was sunk to the bottom by slowly filling it with water. During this process, divers ensured the force main settled into the intended location.

4



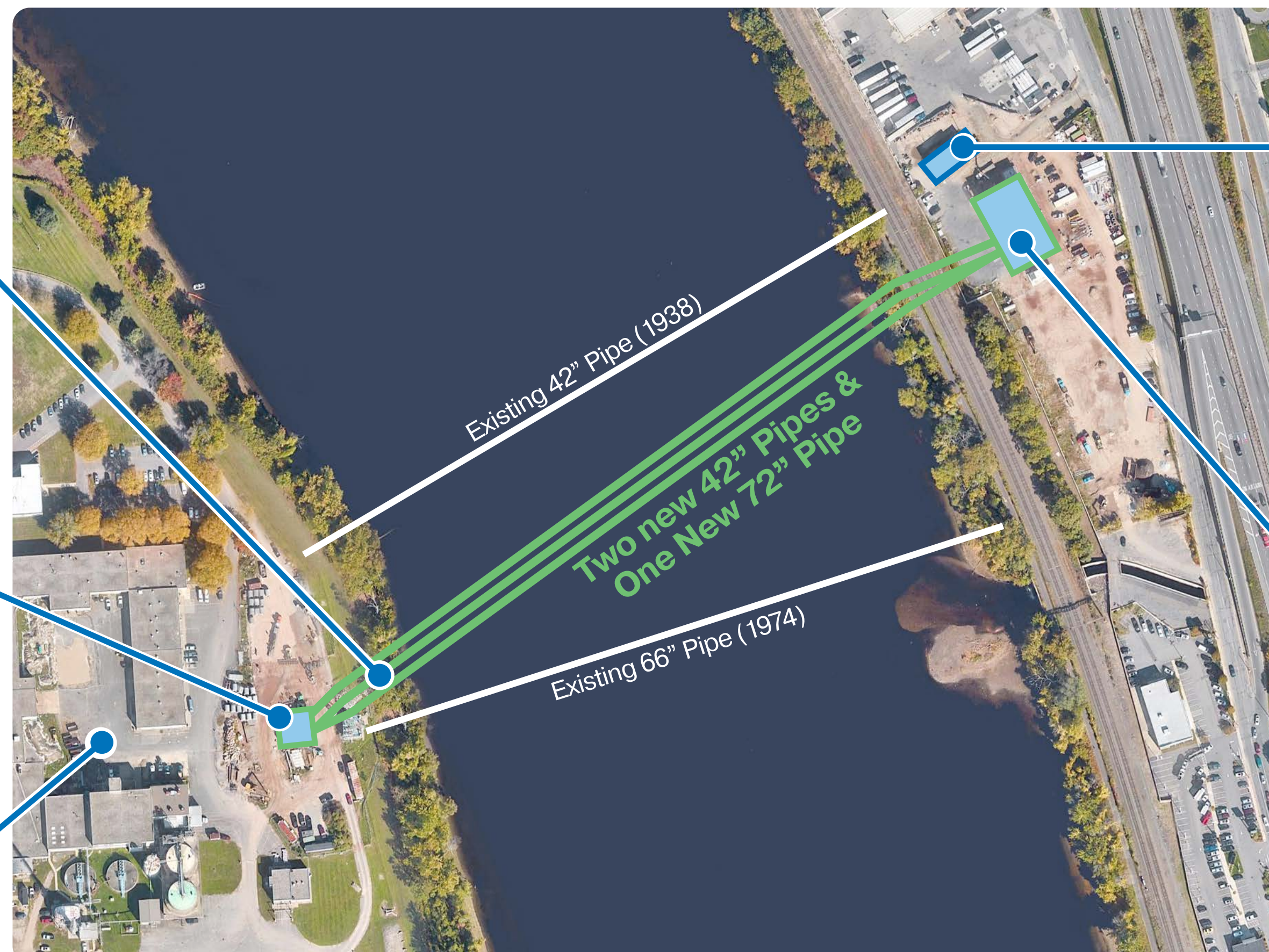
Once the pipes were sunk into their final location, the trench around the pipes was filled with crushed stone, concrete erosion protection mats, and a layer of the soil originally excavated from the river bottom to restore mussel and sturgeon spawning habitat.

Site Aerial Map

Three new additional pipes will allow for shut-down of a pipe for maintenance or in an emergency. This means a pipe can be shut down for maintenance without disrupting service to the region.

The new **Influent Structure** receives flow from the new pipelines and combines it with the flow arriving from six other communities through existing pipelines.

The **SRWTF** treats up to 180 million gallons per day of combined sewerage from seven member communities.



Old York Street Pump Station (1938):

This pump station formerly served both flood control and combined sewer conveyance roles, pumping up to 34 million gallons per day to the SRWTF. This facility will now serve as a flood control station.

New York Street Pump Station (2023):

This station conveys up to 62 million gallons of combined sewerage per day to the SRWTF, significantly increasing the amount of flow that can be conveyed across the river to be treated.



Generational Reinvestment



Your Ratepayer Dollars at Work!

The York Street Pump Station and Connecticut River Crossing Project is the Springfield Water and Sewer Commission's first completed project under the Commission's Water & Wastewater Infrastructure Renewal Program (WWIRP).

The WWIRP is a generational-scale reinvestment that features more than 20 water and wastewater infrastructure projects supported in part by EPA's Water Infrastructure Finance and Innovation Act (WIFIA) and the Massachusetts Clean Water and Drinking Water State Revolving Funds (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 span the Commission's drinking water and wastewater systems.

Critical Projects include:

New West Parish Water Treatment Plant

The new modern plant will ensure compliance with 21st-century drinking water regulations, increase resiliency, and eliminate risk associated with aging infrastructure so customers can rely on clean, safe drinking water into the future.

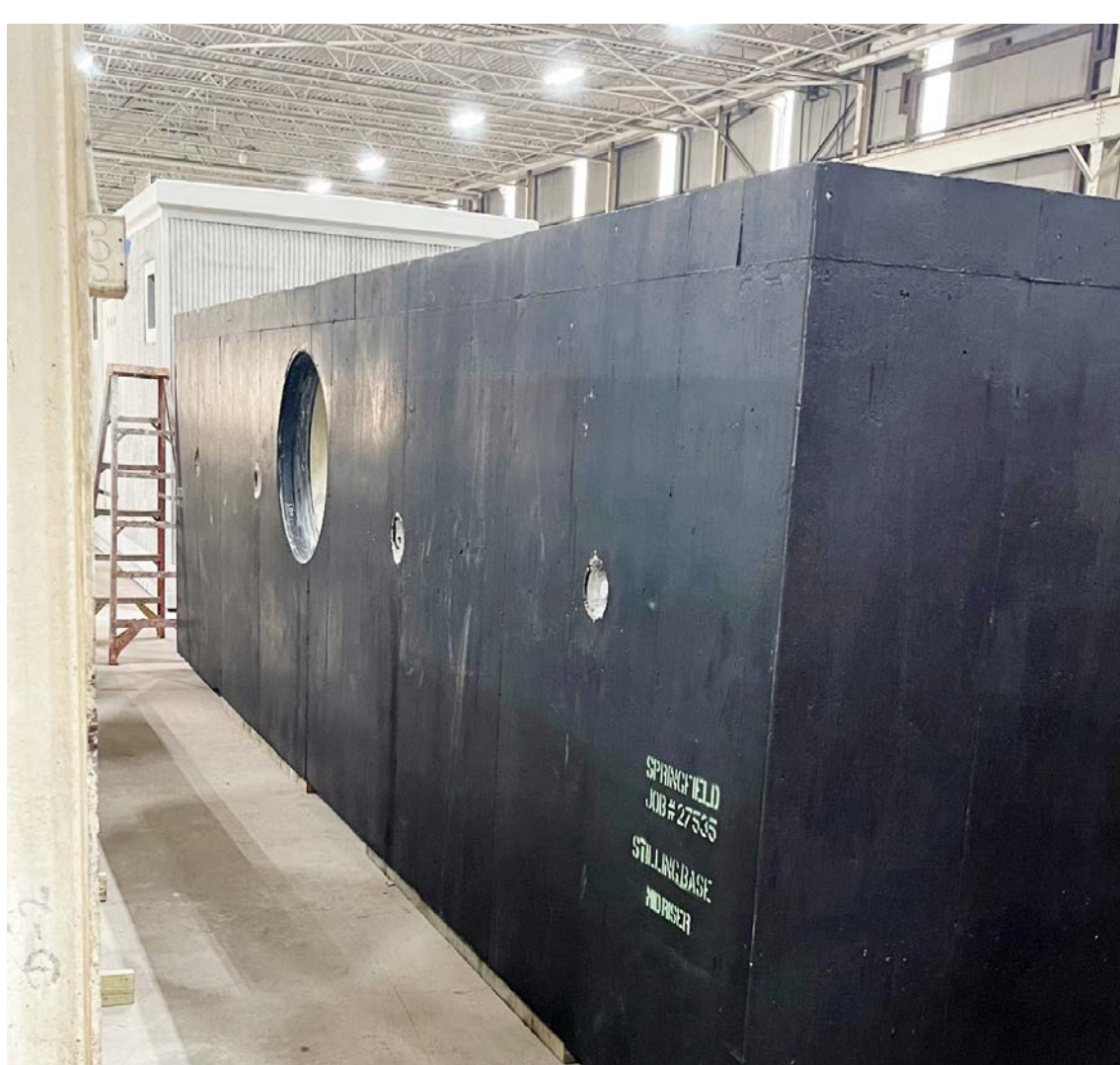


New Backwash Facility

The new Backwash Facility (online starting November 2023) replaces obsolete infrastructure, protects water quality, and will be integrated into the new West Parish Water Treatment Plant.

Springfield Regional Wastewater Treatment Facility Upgrades

Located on Bondi's Island, this facility is undergoing a series of enhancements, including wastewater grit removal improvements, biological nutrient removal upgrades, and electrical system improvements. The facility provides wastewater treatment services to seven communities in the region.



Locust Street Water and Sewer Upgrade Project

A stilling chamber will be installed as part of water and sewer upgrades to Locust Street. The chamber will decrease CSO activations to the Mill River by adding sediment and solids control upstream of existing siphon barrels (pipes designed to cross obstructions) that cross the Mill River on Dickinson Street. The structure will also improve access for routine cleaning and removal of sediment and debris that is known to build up over time.