

DBP Compliance

EPA Quarterly Update



Quarter 1 Update: January – March 2025

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The Springfield Water and Sewer Commission (Commission) has embarked on large-scale upgrades to replace 50- to 100-year-old drinking water infrastructure and to achieve compliance with regulatory limits for disinfection by-products (DBPs). This is a quarterly update on projects related to DBP compliance and water supply capacity.

The following projects to reduce DBPs in the Commission's drinking water and maintain a consistent supply of safe drinking water have progressed over the last quarter:

- **New Water Treatment Plant** – Over this last quarter, Walsh has worked towards modifying the existing treated water transmission mains to reroute infrastructure around the new WTP project site. Walsh conducted test pits to identify critical infrastructure, including raw water mains, process water mains (used for chemical carrying water), and the transmission mains. Once infrastructure was located, Walsh began excavating for the transmission main tie-ins and installing support of excavation for the work. Over the next couple of months, Walsh will construct a new connection to the WTP's hydraulic control structure (including a new chemical injection vault), complete line stops, and construct a temporary 36-inch HDPE transmission main to route water around the site. Once this work is complete, Walsh will demolish the eight slow sand filter structures that are in the footprint for the new WTP. The Commission is providing regular construction updates at <https://www.newwestparish.com/>.
- **42-inch Raw Water Transmission Main / Energy Dissipating Valve (EDV) and Equalization Tank Facility** – On the pipeline, Northern has excavated manways and pipe sections for repair/replacement and has removed concrete encasements/anchor blocks and replaced specific sections of prestressed concrete cylinder pipe that were identified for replacement in the design. At the EDV site, Northern has continued rock removal and made progress on construction of the EDV structure, including installing rebar for the floors and walls, pouring the foundation slabs, erecting formwork for the walls, and installing buried/embedded electrical and signal conduit.
- **Cobble Mountain Hydroelectric Station Improvements for Primary Raw Water Conveyance** – The Commission is finalizing a memorandum of understanding with Holyoke Gas & Electric, the contracted plant operator, to manage the completion of the final design of selected improvements. A task order with HDR for the design of the project is also anticipated to be executed soon. Improvements to the power plant and penstock lining are projected to be completed in 2027 but the schedule may change as design progresses.

We have included additional information for each project on the following project update pages.

Please contact us if you would like more information about these projects. More information is also available at <https://waterandsewer.org/projects/> and at <https://www.newwestparish.com/>.



New West Parish Water Treatment Plant

- Project Purpose:** This project is for design and construction of a new water treatment plant (WTP) to meet system demand while providing a higher level of treatment to achieve long-term, consistent compliance with the Disinfection By-Product (DBP) Rule. The new WTP will replace the existing direct filtration and slow sand filtration plants, which were not designed to remove adequate dissolved natural organic matter (NOM) to meet current regulatory limits for HAA5s and THMs.
- The Commission has been in periodic non-compliance for HAA5s since 2018. To address this issue, after completing several studies, the Commission identified that modifications to the existing plant processes would not be sufficient to achieve compliance, and that the addition of clarification was needed to reliably remove NOM and maintain compliance. Based on the results of a three-season pilot plant operation, Dissolved Air Flotation (DAF) with a polyaluminum chloride coagulant was selected as the clarification process for the new conventional plant.
- Delivery Approach:** Design-Bid-Build with Hazen (Engineer) and Walsh Construction (Contractor). Planned financing using WIFIA and SRF.
- Progress:** Over this last quarter, Walsh has worked towards modifying the WTP treated water transmission mains to reroute infrastructure around the new WTP project site. Walsh conducted test pits to identify critical infrastructure, including raw water mains, process water mains (used for chemical carrying water), and the transmission mains. Once infrastructure was located, Walsh began excavating for the transmission main tie-ins and installing support of excavation for the work. Over the next couple of months, Walsh will construct a new connection to the WTP's hydraulic control structure, including a new chemical injection vault, complete line stops, and construct a temporary 36-inch HDPE transmission main to route water around the site. Once this work is complete, Walsh will demolish the eight slow sand filter structures that are in the footprint for the new WTP. The Commission is providing regular construction updates at <https://www.newwestparish.com/>.
- Supply Chain:** Walsh provide a letter to the Commission in March indicating that new tariffs may result in price increases and extended lead times.
- Schedule:** The EPA Administrative Consent Order dated April 22, 2024 requires the plant to be online by September 30, 2028. Substantial completion is projected for August 30, 2028 final completion is projected for November 24, 2028.

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Breaking ground for transmission main relocations (photo by Hazen, 2/10/2025)



Excavating for transmission main relocations (SWSC drone photo 03/10/2025)



42-inch Raw Water Transmission Main, Energy Dissipating Valve, and Equalization Tank

Project Purpose: This project is for the repair of the 42-inch bypass raw water conveyance PCCP pipeline and construction of a new energy dissipating facility (EDV) at the outlet. The pipeline and EDV facility were damaged when a new EDV failed in 2019. The pipeline and EDV facility provide a critical route for raw water to bypass the Cobble Mountain Hydroelectric Station (CMHS), the Intake Reservoir, and the 72-inch Intake Tunnel. The EDV facility provides necessary energy dissipation for the 42-inch outlet, which conveys high pressure water (approximately 200 psi) directly from Cobble Mountain Reservoir. The project also includes the design of a new raw water equalization (EQ) tank that will be used in the future to directly provide raw water to the new water treatment plant. The EQ tank will eventually replace the need to use the sedimentation basin for raw water storage.

With the 42-inch raw water transmission bypass out of service, the Commission currently relies on the Diversion Gates (the low-level dam outlet) to release water from the Cobble Mountain Reservoir when the CMHS is offline for routine maintenance. This outlet was not designed to operate as a regular intake and is not operable remotely, requiring staff to regularly perform a complicated confined space entry that would require assistance from a technical rescue team should an emergency evacuation be required. With the 42-inch bypass out of service, there is currently no bypass for the 72-inch Tunnel.

Returning this route to service will allow the Commission to take the CMHS and 72-inch Intake Tunnel offline for maintenance when needed while maintaining raw water supply to the current and future water treatment plants.

Delivery Approach: Design-Bid-Build with AECOM (Engineer).

Progress: On the pipeline, Northern has excavated manways and pipe sections for repair/replacement and has removed concrete encasements/anchor blocks and replaced specific sections of prestressed concrete cylinder pipe that were identified for replacement in the design. At the EDV site, Northern has continued rock removal and made progress on construction of the EDV structure, including installing rebar for the floors and walls, pouring the foundation slabs, erecting formwork for the walls, and installing buried/embedded electrical and signal conduit.

Supply Chain: The knife gates valves and Mokveld valves have long lead times and are critical path items for Northern. Northern has expressed concerns regarding the impacts on new US tariffs, specifically on the cost and schedule for the Mokveld axial flow control valves.

Schedule: The combined project is projected to be completed in December 2025. Some project delays were related to securing a waiver from EPA WIFIA program for the specified valves, which are not made in America. Other delays have been related to the need to coordinate some aspects of the design with the design of the new WTP.

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Installing rebar at EDV site (photo by AECOM, 03/19/2025)



Replacing sections of PCCP pipe (photo by AECOM, 03/12/2025)

Cobble Mountain Hydroelectric Station Improvements for Primary Raw Water Conveyance

Project Purpose: The Cobble Mountain Hydroelectric Station (CMHS) is an essential component of the Commission's raw water conveyance system. As part of the primary raw water conveyance route, the CMHS delivers water from the Broome Gate Intake down to the Intake Reservoir while generating power by using the 450-foot elevation difference between the two reservoirs. This project will identify alternatives for upgrades to hydropower generation in response to failing infrastructure at the facility. The existing 1930 turbines are mostly beyond the end of their operational lives, with only one out of the original three turbines currently operational on a limited schedule to limit wear and reduce the risk of failure.

When the CMHS is offline for maintenance, the remaining routes for raw water conveyance are the 42-inch bypass (currently out of service) and the low-level Diversion Gates, which are not designed for regular operation. Restoring the CMHS conveyance route is vital to establishing reliable raw water conveyance for the Commission.

Delivery Approach: Design-Bid-Build with some Design-Build improvements being considered.

Progress: The Commission is finalizing a memorandum of understanding with Holyoke Gas & Electric, the contracted plant operator, to manage the completion of the final design of selected improvements. A task order with HDR for the design of the project is also anticipated to be executed soon. Improvements to the power plant and penstock lining are projected to be completed in 2027 but the schedule may change as design progresses.

Supply Chain: Supply chain impacts on this project are currently unknown but long lead times are anticipated for turbine manufacturers.

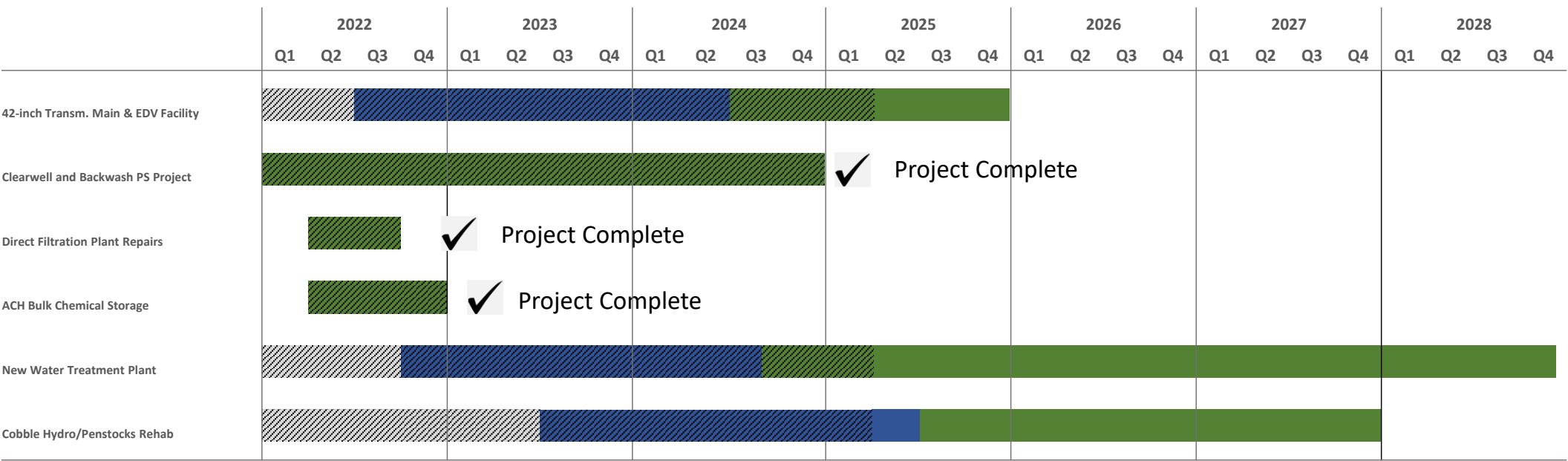
Schedule: This project is currently projected to be completed in 2027, but this date is subject to change as design progresses.



CMHS Existing Turbine #1

Engineering Capital Projects Schedule

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Note: Schedule is generalized and subject to change