

DBP Compliance

EPA Quarterly Update



Quarter 2 Update: April – June 2025

To: Andrea Traviglia, Drinking Water State Program Coordinator, USA EPA Region 1
Kelsey Sullivan, Enforcement Officer, USA EPA Region 1
Kate Abazis, SDWA Compliance Officer/Inspector, USA EPA Region 1

Copy: Yvette DePeiza, Program Director, Drinking Water Program, MassDEP
Dan Hall, Acting Deputy Regional Director, MassDEP WERO
Andrew Kelly, Drinking Water Section Chief, MassDEP WERO

From: Joshua Schimmel, Executive Director, Springfield Water and Sewer Commission

Date: June 26, 2025

The Springfield Water and Sewer Commission (Commission) has embarked on several large-scale projects to replace 50- to 100-year-old drinking water infrastructure needed to maintain a consistent supply of safe drinking water and to achieve compliance with regulatory limits for disinfection by-products (DBPs). This is a quarterly update on the progress made on those projects.

- **New Water Treatment Plant** – Walsh has continued to reroute the existing treated water transmission mains around the new WTP project site and is behind schedule with this work. Walsh is nearing completion on the installation of a temporary 30-inch HDPE pipeline to reroute filtered water around the north and east extents of WTP project site, but are struggling with stormwater and groundwater management in the trenches, exacerbated by heavy rains in the last quarter and proximity of the project to a residuals lagoon. At the existing effluent hydraulic control structure for Commission's primary plant, Walsh is currently working to make a new connection between the structure and an existing slow sand filter effluent line to maintain two separate transmission flow paths, flow metering, and chemical treatment for the Commission's transmission mains. Once this work is complete, Walsh will demolish the eight slow sand filter structures and existing utilities that are in the footprint for the new WTP. Walsh has begun some preliminary hazardous materials abatement in the slow sand filters in advance of the upcoming demolition activities.
- **42-inch Raw Water Transmission Main / Energy Dissipating Valve (EDV) and Equalization Tank Facility** – On the pipeline, Northern continues to repair and replace sections of pipe and complete modifications to manholes and vent structures. Structural Technologies, the internal pipe repair sub-contractor, mobilized to the site and is performing pipe testing and internal repairs, working extended days and Saturdays. At the EDV site, activities included installing rebar, installing formwork, pouring concrete for structure walls and pipe supports, and installing the steel manifold and 42-inch and 60-inch steel piping. The contractor is currently projecting a substantial completion date of March 2026, which is a three-month delay.
- **Cobble Mountain Hydroelectric Station Improvements for Primary Raw Water Conveyance** – HDR has begun design for rehabilitation of the Unit #3 turbine and generator, which includes electrical updates, replacement of the inlet butterfly valve and actuator, lining the penstock to Unit #3, structural assessments and improvements, and rehabilitating the existing bridge crane. Holyoke Gas & Electric, the contracted plant operator, is managing the work. Improvements 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: Walsh has continued to reroute the existing treated water transmission mains around the new WTP project site and is behind schedule with this work, which was required to be completed by April 30, and is now projected to be completed in July.

Walsh is nearing completion on the installation of a temporary 30-inch HDPE pipeline to reroute filtered water around the north and east extents of WTP project site, but are struggling with stormwater and groundwater management in the trenches, exacerbated by heavy rains in the last quarter and proximity of the project to a residuals lagoon.

At the existing effluent hydraulic control structure for Commission's primary plant, Walsh is currently working to make a new connection between the structure and an existing slow sand filter effluent line to maintain two separate transmission flow paths, flow metering, and chemical treatment for the Commission's transmission mains.

Once this work is complete, Walsh will demolish the eight slow sand filter structures and existing utilities that are in the footprint for the new WTP. Walsh has begun some preliminary hazardous materials abatement in the slow sand filters in advance of the upcoming demolition activities.

The Commission is providing regular construction updates at <https://www.newwestparish.com>.

Supply Chain: Walsh provided a letter to the Commission in March indicating that new tariffs may result in price increases and extended material lead times.

Schedule: The MassDEP 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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Trench boxes for HDPE Transmission Main (SWSC drone photo 05/27/2025)



Groundwater Control at Transmission Main Connection (SWSC drone photo 05/27/2025)

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New connection at the Hydraulic Control Structure (SWSC drone photo 05/19/2025)



New pipe connection to Hydraulic Control Structure (Hazen photo 06/16/2025)



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 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 continues to repair and replace sections of pipe and complete modifications to manholes and vent structures. Structural Technologies, the internal pipe repair sub-contractor, mobilized to the site and is performing pipe testing and internal repairs, working extended days and Saturdays. At the EDV site, activities included installing rebar, installing formwork, pouring concrete for structure walls and pipe supports, and installing the steel manifold and 42-inch and 60-inch steel piping.

Supply Chain: The knife gates valves and Mokveld valves have long lead times and are critical path items for Northern. According to recent correspondence with the Mokveld valve manufacturer, additional tariff charges will be incurred. The final impact to the Commission will be known when the valves arrive in port, but is currently estimated at 10%, or \$100,000.

Schedule: Over this last quarter, 42-inch PCCP pipe manufacturing and quality control issues and well as 42-inch steel pipe quality assurance issues have caused additional delays. The contractor is currently projecting a substantial completion date of March 2026, a three-month delay from the established substantial completion date of December 2025.

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Construction of the EDV structure (SWSC drone photo, 06/05/2025)



Steel pipe manifold at EDV structure (SWSC drone photo, 06/18/2025)

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 for items such as the turbine and generator unit and associated structural foundation improvements.

Progress: HDR has begun design for rehabilitation of the Unit #3 turbine and generator, which includes electrical updates, replacement of the inlet butterfly valve and actuator, lining the penstock to Unit #3, structural assessments and improvements, and rehabilitating the existing bridge crane. Holyoke Gas & Electric, the contracted plant operator, is managing the work. Improvements 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.

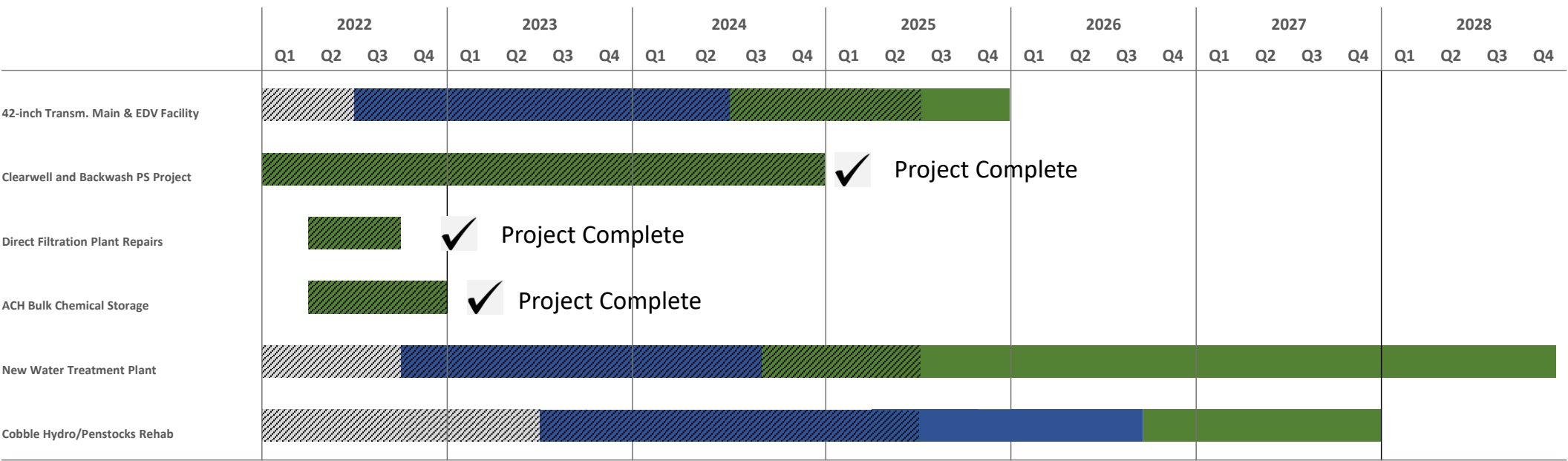
Schedule: This project is currently projected to be completed in 2027, but this date is subject to change as design progresses.



CMHS Existing Turbine #1

Engineering Capital Projects Schedule

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Note: Schedule is generalized and subject to change