

Report to Council

Date: June 15, 2023

To: Mayor Ted Wheeler
Commissioner Mingus Mapps
Commissioner Rene Gonzalez
Commissioner Carmen Rubio
Commissioner Dan Ryan
Robin Castro, Portland Utility Board Co-Chair
Karen Williams, Portland Utility Board Co-Chair

From: Gabriel Solmer, Portland Water Bureau Director
Jodie Inman, P.E., Portland Water Bureau Chief Engineer

Subject: Bull Run Treatment Projects Annual Report

This Annual Report updates City Council on the status of the Bull Run Treatment Projects. The report highlights progress over the past fiscal year, including nearing completion of design for the planned water filtration facility and pipelines and meeting the second of three major Bull Run Filtration compliance milestones with the Oregon Health Authority.

***Our water: Safe and abundant
for generations to come***

The Portland Water Bureau is making long-term investments with the Bull Run Treatment Projects that will help keep Bull Run water safe and abundant for the nearly one million people who rely on it today and for future generations. The new facilities are needed to protect public health and comply with safe drinking water regulations.



For our health

Making sure our water is safe for everyone.



For our economy

Creating jobs and investing in infrastructure to help our community thrive.

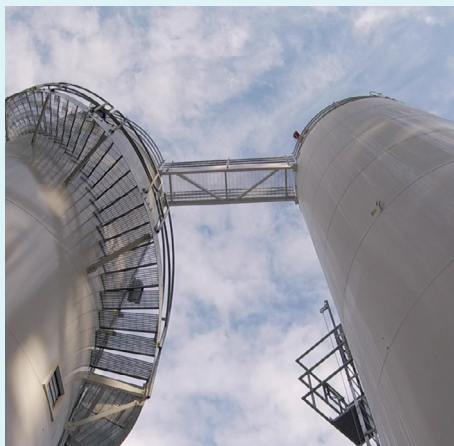


For our future

Providing a more resilient water system and greater protection.

We are using community values to guide project decisions and continuing a robust community outreach process for these important water system improvements.

- Ongoing customer outreach through monthly e-newsletters, the annual water quality report, social media videos, website updates, and more.
- Engagement with local schools, water providers, farm operators, first responders, sensitive users, environmental interests, and other interested parties.
- Continuing to assess opportunities to honor Indigenous culture and lifeways at the facility site.
- Working with other water utilities to research how water systems can better prepare to respond to fire impacts.



Stepping up improved corrosion control

Since April 2022, the Improved Corrosion Control Treatment project has been helping further reduce the risk of lead at customers' taps. The upgraded treatment uses soda ash and carbon dioxide to make Bull Run water less corrosive to metals found in some home plumbing.

Last September, we reached the target 8.5 pH in most of our system. The first monitoring results since achieving the target pH show nearly half the lead levels in homes with known lead components compared to levels the previous year. Testing shows that filtration combined with corrosion treatment will reduce lead levels even more.

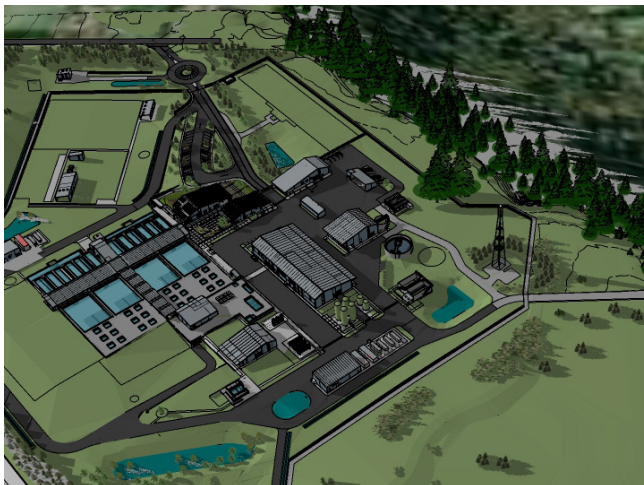
Filtration

In FY2022-23, the Water Bureau took big strides toward completing design of the planned water filtration facility and pipelines and engaged with equity contractors and the workforce community to prepare for the start of construction.

We also met the second of three major compliance milestones with the Oregon Health Authority for the Bull Run Filtration projects.

- **November 30, 2020 (complete):** Submit pilot study and preliminary planning.
- **October 31, 2022 (complete):** Submit final filtration construction plans and schedule.
- **September 30, 2027:** Water being served meets all surface water and *Cryptosporidium* treatment requirements.

Filtration facility



Purpose: Removes *Cryptosporidium* and other potential contaminants from the Bull Run supply and makes the water system more resilient to future water quality risks.

Schedule: On schedule to begin construction in fall 2023 to meet the compliance deadline with the Oregon Health Authority in September 2027.

Budget: \$90.1M spent to date (May 2023)

Filtration pipelines



Purpose: Connects the water filtration facility to the existing Bull Run water system and improves resilience by allowing an aging segment of pipeline to be retired.

Schedule: On schedule to begin construction in spring 2024.

Budget: \$26.1M spent to date (May 2023)



Finalizing design

We are nearing final design for this complex project. Getting the details right is part of our commitment to providing the best value for our ratepayers and maximizing the public health benefits and longevity of the new facilities.

Design milestones include:

- Completed 100 percent design for the water filtration facility (2,428 drawings and 6,328 pages of specifications).
- Completed 90 percent design for the pipelines (606 drawings and 2,075 pages of specifications).
- Submitted land use applications to Multnomah and Clackamas counties. The Multnomah application is nearly 3,000 pages including technical appendices.
- Received Council authorization for pipeline easement property acquisition. Continued outreach to property owners where pipeline easements are planned.
- Developed plan for facility operations staffing and startup and commissioning.

Sustainable design

We are taking a holistic approach to sustainability for these projects that starts with maintaining use of gravity flow. Using gravity to carry water through the filtration facility and to town is more reliable and energy-efficient than using pumped systems.

Other sustainability elements include:

- Planned use of low-carbon concrete for facility process basins and structures to help reduce supply-chain greenhouse gas emissions.
- Designed Administration Building to meet Energy Trust of Oregon Path to Net Zero goals and made a commitment to no fossil fuels for heating during routine operations.
- Registered the filtration facility with the Institute of Sustainable Infrastructure's Envision program, which assesses sustainability, resilience, and equity in civil infrastructure.
- Worked with Energy Trust of Oregon to reduce filtration facility energy use, improve sustainability, and identify over \$500,000 in potential qualifying energy incentives.

Enhancing supply resilience

We continue to use our pilot filtration facility to gather data about filtration treatment and our unique water supply.

When heavy November storms stirred up sediment and *Cryptosporidium* and disrupted the Bull Run supply, the filtration treatment at the pilot continued to produce water meeting all quality goals. In total, we ran the pilot for 247 days in 2022 and produced 6,750,000 gallons of clean and safe filtered water.



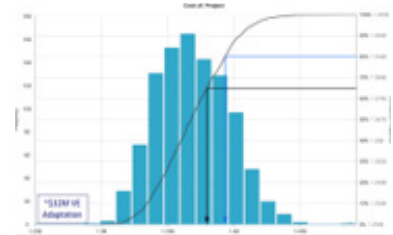
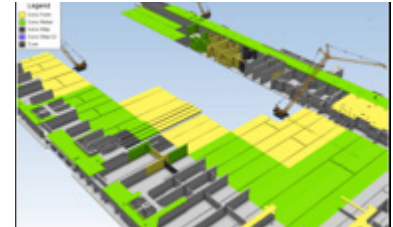


Preparing for construction

We value the public health benefits filtration will provide to everyone in our community and are committed to building these projects as efficiently as possible. We are working to maintain schedule momentum for a fall 2023 construction start with workzone and community safety as a priority.

Schedule compliance strategies:

- Bringing contractors on early in design to improve constructability and scheduling.
- Using state-of-the-art project controls such as virtual design and construction to plan work sequencing.
- Reviewing project schedules monthly to coordinate activities and drive the critical path.
- Recruiting specialty subcontractors and qualified tradecraft workforce.
- Identifying suppliers of long-lead time equipment.
- Optimizing planned construction shifts, labor, and support equipment.



Equity contracting

The construction contracts for these projects include commitments to equity contractor and diverse workforce participation as well as anti-racist workspaces. These are the first large regional projects to implement the new Regional Workforce Equity Agreement, which sets diverse workforce goals at both apprentice and journey levels.

To help meet our equity goals, we are working with the local contracting community and using a mix of procurement strategies such as limited competition and direct negotiation with local equity contractors for certain bid packages.

Contracting opportunities outreach

We are reaching out to dozens of groups in the local contracting community to spread the word about upcoming work opportunities and encourage equity contractor participation.

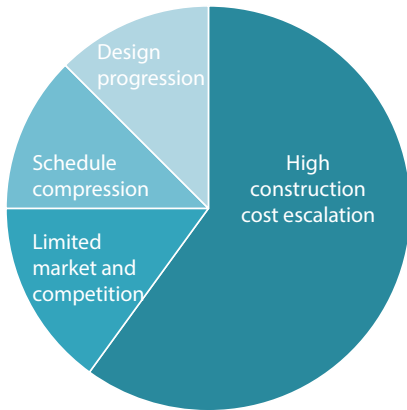
This includes outreach to LatinoBuilt, Oregon Association of Minority Engineers, Constructing Hope, Oregon Tradeswomen, Portland Youth Builders, Professional Business Development Group, and others.



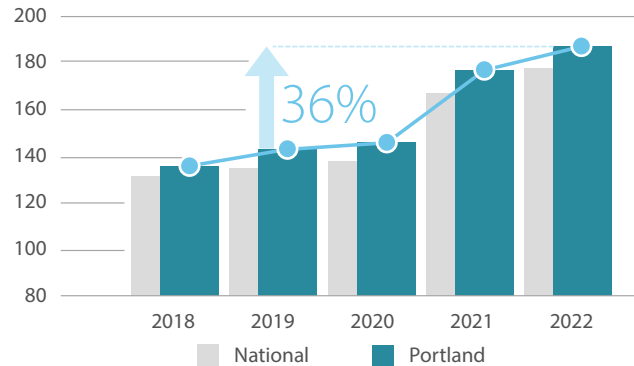
Budget status

With design nearly complete and construction anticipated to start this fall, we now have greater certainty about the anticipated costs to build the water filtration facility and pipelines. Current program funding needs have increased by about 24 percent from the \$1,483M funding plan due to several factors, including high construction cost escalation and limited labor market and bid competition.

Key drivers for increase in estimated costs



High construction cost escalation since 2019 (Mortenson construction cost index)



We continue to take steps to manage project costs while achieving project water quality and resilience goals.

Cost management steps:

- Secured a Water Infrastructure Finance and Innovation Act (WIFIA) loan that significantly lowers the cost of investment for ratepayers to build these projects.
- Ongoing value engineering that identified scope adjustments to reduce estimated construction costs by more than \$200M.
- Developed two-phase GMP approach to help avoid costly delays and maintain the compliance schedule.



WIFIA financing benefits Portland ratepayers:

- Interest rate of 1.89 percent is locked in for the life of the loan.
- Saves ratepayers at least \$247M of debt service over the loan term.

	Filtration Facility Construction	Filtration Pipelines Construction
GMP1 Early Work	\$287M	\$52M
GMP2 (estimated)	\$782M	\$352M
Equity Contracting	Goal: 25 percent hard construction costs	Goal: 25 percent hard construction costs
Estimated Total	\$1,069M	\$404M

Looking ahead to FY2023-24

The coming fiscal year will mark the start of construction for the water filtration facility and pipelines. A fall 2023 construction start provides the best opportunity to achieve the ultimate compliance deadline and begin providing filtered Bull Run water in September 2027.

Key project activities are highlighted below.

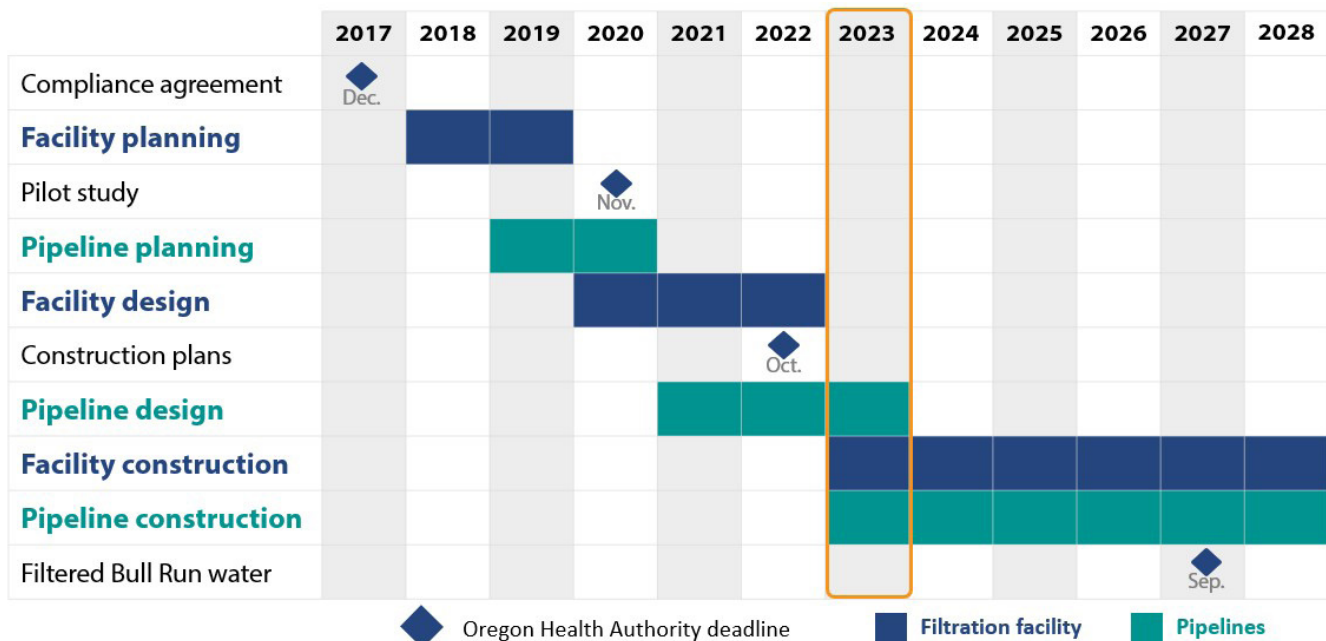
- Continue multi-step process to achieve favorable land use permitting decisions.
- Finalize sequencing and bid packages for planned construction start in fall 2023.
- Collaborate with the contracting community to maximize equity participation in construction.
- Begin early works construction for water filtration facility and pipelines.
- Continue engagement with customers, site neighbors, and other interested parties.

Upcoming City Council actions:

- Reports to Council for second GMPs for filtration facility and pipelines
- Authorize Pleasant Home Water District and City of Sandy Intergovernmental Agreements
- Receive and accept annual report

Bull Run Filtration schedule

We are scheduled for substantial completion of the water filtration facility and pipelines by September 2027, with some work continuing at the facility site into 2028.



Once online, the new water filtration facility will enhance resilience of the Bull Run supply, helping Portland comply with drinking water regulations and continue to provide clean and safe water for generations to come.



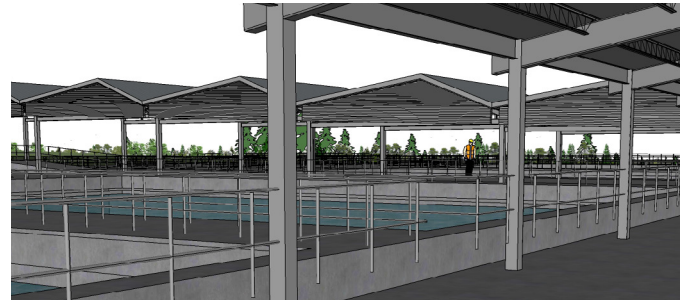
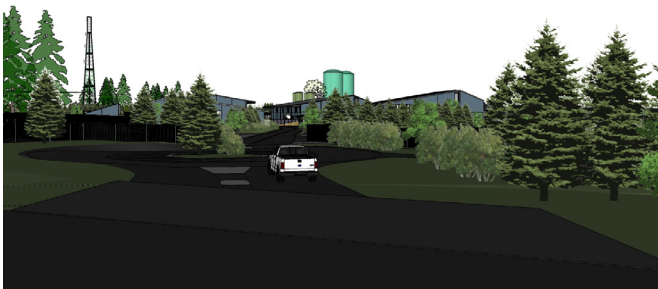
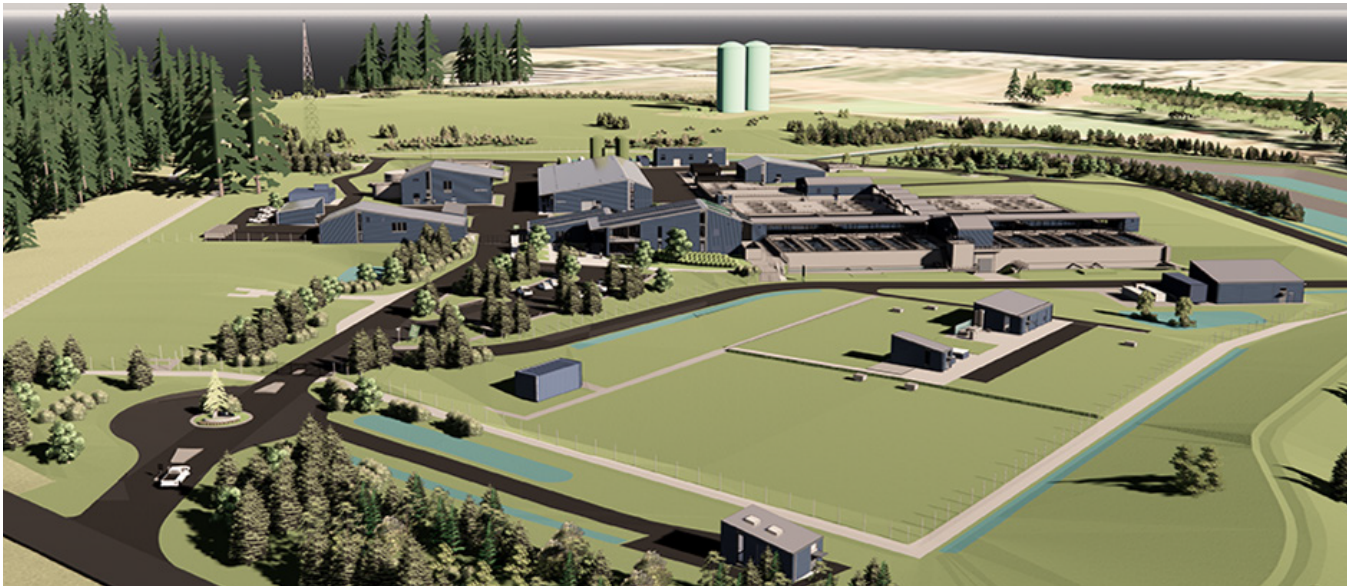
**Design
underway
2020-23**



**Construction
expected
2023-28**



**Filtered
water
Sept. 2027**



Proposed water filtration facility design: view of site with existing water towers in background, view over filtration basins, and view of main entry gate set back from roadway (clockwise from top).

Learn more: portland.gov/bullrunprojects



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