City of Stayton

Administration • Finance
362 N. Third Avenue • Stayton, OR 97383
Phone: (503) 769-3425 • Fax (503) 769-1456

June 17, 2025

By U.S. Mail and E-Mail (willamette.eis@usace.army.mil)

Liz Oliver, Portland District Project Manager

United States Army Corps of Engineers

Attn: CENWP-PME-E / Willamette EIS
P.O. Box 2946
Portland, OR 97208-2946

Re: Comments on Proposed 2026 Detroit Reservoir Drawdown

Dear Ms. Oliver,

This letter provides the comments by the City of Stayton ("Stayton"), Oregon for consideration of the United States Army Corps of Engineers' (the Corps) in the Corps' preparation of the Supplemental Environmental Impact Statement with respect to future drawdowns of the Detroit Dam reservoir. Stayton is extremely concerned about the prospect of any drawdown that releases sediments into the North Santiam River. Sediments will cause the City's drinking water treatment plant to fail, leaving the City's residents, emergency services, wastewater treatment system, among other critical water users, without water. The Corps must understand that a deep drawdown, and indeed any drawdown that releases a significant amount of sediment, will have catastrophic consequences for the City, its infrastructure and its 8,200 residents.

Stayton is located 35 miles downstream from the Detroit Dam.[1] Stayton is a vibrant small city of about 8,200 people nestled in Marion County, Oregon, where generations of families, young professionals, and retirees share a strong sense of community. Stayton's median household income is $72,557, below both the state and national numbers. While household income is lower, Stayton's average household size is larger than the state and national average at about 2.65 persons per household and roughly a family size of 3.15. Stayton residents are proud, hardworking people who build life through effort, not necessarily ease.

Stayton obtains its drinking water from the North Santiam River. The City's water intake is located on a Santiam Water Control District canal that is fed exclusively from the river. From the intake, pipes carry the river water by gravity directly to the City's drinking water treatment plant. The plant comprises three slow sand filters (SSFs), pH correction, and disinfection to render the river water potable. The SSFs are constructed of lower support gravels and underdrains, a lower buffer sand layer (18-inches deep), and an upper working sand layer (also 18-inches deep) topped by the dirt built

[1] This distance is equal to or shorter than the distance of several of the cities from the Green Peter reservoir (e.g. Albany, Lebanon) that experienced adverse effects during the 2023 drawdown from the Green Peter dam.

up layer called the schmutzdecke, which is biologically active, retaining the silt, clay, and organic contaminants from the river water.

Typical turbidity of the Santiam River water taken in by Stayton is 3-7 NTUs. The City's SSFs can handle turbidity levels of less than 10 NTUs. This turbidity limit is not unique to the City's SSFs. In fact, the United States Environmental Protection Agency ("EPA") (in collaboration with the Oregon Health Authority) recommends that SSFs be operated at less than 10 NTU and with no colloidal clays. *See* U.S. EPA Area-Wide Optimization Program (AWOP) "Water Quality Goals and Operational Criteria for Optimization of Slow Sand Filtration" at p. 16 (2024). Ten NTUs is the upper limit even for design of new SSF facilities. *Id.*

The effect of prolonged increased turbidity in water intake is not merely slowing purification. Rather, all purification, and indeed as the dirt layer builds, filtered water production declines until potentially all flow of water through the filters ceases, because the schmutzdecke becomes clogged with sediment.

Under normal operations, either on a time or production basis, for maintenance the SSF is taken out of service, drained of water, and the surface is mechanically scraped to remove the schmutzdecke. Once cleaned, the filter goes into a ripening phase where water is passed through the filter to waste[2] as growth of the schmutzdecke is initiated and the filtering process returns to an acceptable level of discharge turbidity at which time the filter is returned to service. The skimmed layer of schmutzdecke and sand is between one quarter inch to one half an inch thick.[3]

EPA's "no colloidal clays" warning for SSFs is particularly concerning with respect to a Detroit Dam drawdown. Clays are extremely fine particles and are often found in the sediment behind dams. Because fine clays are so small, they may penetrate deep into the sand layers of SSFs. This is particularly true when the schmutzdecke is not fully formed, as in immediately following a filter cleaning, potentially contaminating and blocking the working filter layer or worse, passing through the filter sand and migrating into the water distribution system. Penetration of the clays into the deeper filter layers will result in a complete shutdown of the filter and require replacement of the sand media. Even were the City to stockpile fresh sand, the process to remove and replace it, and regenerate the schmutzdecke layer, will take days (or longer) for each SSF.

Depending on the depth of the contamination various repairs may be necessary. Just a schmutzdecke removal physically takes 1-2 days at a cost about $5-10,000 per filter. A replacement of the working sand layer takes several weeks at a cost of about $1-2 million per filter, a rebuilding of the filter may take several months at a cost of about $4-7 million per filter. A total filter rebuild, which is necessary if the sediments penetrate to the lower sand layer and underdrain of the SSF, will cost $10-15 million.

Equally problematic is that the drawdown is not a short event but is planned to occur over months. The costs of responding to clogged SSFs is significant. Crucially, however, replacement after clogging is not a viable option given that the turbidity likely will continue for weeks or months, completely preventing operation of the City's system as replaced media will shortly become clogged, requiring continual replacement. In addition to the material costs, the near-constant additional staff time would be significant as well.

---

[2] "Filter to waste" is a technical term referring to a plant releasing water back to its origin, rather than as purified drinking water, because the schmutzdecke is not yet mature enough to fully purify the water.

[3] Note the City's SSF system is different from conventional and membrane filtration systems. (The filtration systems damaged during the 2023 Green Peter drawdown were membrane and ceramic filters). Those systems, while suffering significant infrastructure impacts and slowing operations, could continue to purify water due to their rapid backwash/cleaning capabilities. SSF's are not back washable, and cleaning a SSF is a prolonged physical activity which, depending on raw water condition take days to months.

The City uses 1.5 million gallons of water per day in the winter, so there is no simple alternative for supplying water in the event the SSFs become clogged. The City is investigating alternative water sources, pre-filtration water treatment systems, and complete alternative treatment processes. Based on initial investigation, the cost of any alternative processes may exceed one-third of the City's annual budget.[4] This is not sustainable, and it is not reasonable to ask the residents of Stayton to bear this burden.

Finally, the impacts are not limited only to drinking water, as the Stayton Fire District relies on the availability of water from the plant to fight fires, and the City's sewage system likewise relies on water. Not only do the residents of Stayton rely on drinking water from the plant, but the wastewater discharges from residential, commercial and industrial water users are used for flushing the City's wastewater lines, which provide wastewater service not just for the residents of Stayton but also City of Sublimity (3,000 residents).

The Corps has referenced the potential for a staggered 2026 drawdown to mitigate some of the expected impacts based on those seen during the Green Peter Dam drawdown in 2023. Even a significantly slower and/or more incremental drawdown has the potential to destroy the City's ability to provide clean water to its residents. Given that, during the Green Peter Dam drawdown, the City of Lebanon experienced 300-500 NTUs for several months, and spikes even higher (700 NTUs), a significant drawdown of the Detroit reservoir, even at a gradual pace, is highly likely to exceed the 10 NTU capacity of the City of Stayton's treatment plant.

If the Corps nevertheless moves forward with an incremental but still deep drawdown, the Corps must determine:

- Where and how frequently turbidity will be measured, and ensure quick and representative results are provided to all stakeholders,
- Stayton obtains its drinking water from the North Santiam River. The City's water intake is located on a Santiam Water District canal that is fed exclusively from the river. From the intake, pipes carry the river water directly to the City's drinking water treatment plant. The plant relies on three slow sand filters (SSFs) to purify the river water. The SSFs are comprised of lower sand layers and How the Corps will ensure immediate communication of turbidity readings,
- What process will be in place to ensure that the City and residents of Stayton maintain access to clean water, and
- How and when compensation will be available for costs incurred by the City in preparation for, during and following the drawdown.

When the true costs of a deep drawdown are considered, the cost of building fish collection devices, and/or dredging the reservoir sediment before a drawdown occurs, become reasonable alternatives. The Corps must consider these options in the SEIS. The Corps also should evaluate the likelihood that the flow of water becomes river-like and dislodges even more, or further-afield sediment, and how that situation could be mitigated if not fully addressed by pre-drawdown dredging. Finally, the Corps must consider whether a deep drawdown would accomplish the originally intended goals. The February 2024 Willamette Basin Fifth Bi-Annual Status Report suggests that the Corp had not yet been able to draw conclusions about the efficacy and significant side effects of the Green Peter drawdown. The data and analysis supporting such conclusions must be robust if it will be used as the basis for an action (drawdown at Detroit) that has such significant consequences for Stayton and other cities in the watershed.

A deep drawdown of the Detroit Lake reservoir imposes severe costs on Stayton and its residents, as well as surrounding municipalities, by threatening their access to a reliable water supply for drinking, sanitation, and fire protection. The

[4] Even if Stayton could identify a drinking water alternative, shutting down the treatment plant for even part of the duration of the drawdown would cause significant damage to the plant. For example, as a biologically active filter layer, the schmutzdecke would perish and some or all of the filter material would require replacement and regeneration.

Corps must consider these real risks to public health and safety. Cities like Stayton do not have the resources to implement costly emergency measures, including alternative water sourcing and treatment. The Corps' SEIS must identify how these concerns will be mitigated. Stayton is committed to sustaining the daily life and community well-being that leads people to choose to live here, and looks forward to further dialogue with the Corps.

Sincerely,

Brian Quigley
Mayor

Steve Sims
Council President

POLICE
386 N. THIRD AVENUE
STAYTON, OR 97383
(503) 769-3423
FAX (503) 769-7497

PLANNING
362 N. THIRD AVENUE
STAYTON, OR 97383
(503) 769-2998
FAX (503) 767-2134

PUBLIC WORKS
362 N. THIRD AVENUE
STAYTON, OR 97383
(503) 769-2919
FAX (503) 767-2134

WASTEWATER
950 JETTERS WAY
STAYTON, OR 97383
(503) 769-2810
FAX (503) 769-7413

LIBRARY
515 N. FIRST AVENUE
STAYTON, OR 97383
(503) 769-3313
FAX (503) 769-3218