



CITY MANAGER'S OFFICE

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January 19, 2018

Kelly Janes
U.S. Army Corps of Engineers
Attention: PM-E
PO Box 2946
Portland, Oregon 97208-2946

SUBJECT: Detroit Dam and Lake Downstream Passage Project

Dear Ms. Janes:

This letter serves as the City of Salem's public scoping comments for the construction of projects that allow for downstream juvenile fish passage and temperature control at Detroit Dam on the North Santiam River. The North Santiam River is the City of Salem's primary source of drinking water for over 192,000 customers and three wholesale customers: the City of Turner, Suburban East Salem Water District, and Orchard Heights Water Association. The City of Salem's drinking water treatment facility, Geren Island, is located 45 miles downstream from Detroit Dam. Construction of these two structures will likely cause significant impacts to the City's water treatment process, which may limit the ability to serve City of Salem water customers.

Water Quality

For more than 75 years, the North Santiam River has served as the primary drinking water source for the City of Salem. The high water quality of the North Santiam River allows the City to use slow sand filtration as part of the treatment process. Slow sand filtration is a natural filtration process, allowing naturally existing biota in the river to form a biological layer which then degrades and/or removes particulates and microbial contaminants in the water.

Under normal operating conditions, the slow sand filters are operated without pretreatment (coagulation, filtration, and sedimentation). Normal operating conditions require raw water turbidity of less than 10 Nephelometric Turbidity Units (NTU). The construction of this project will likely create significantly increased and sustained levels of turbidity that will be released to the North Santiam River downstream of the dams. This turbid water will dramatically affect the City's ability to utilize slow sand filtration under normal operations. The City can maximize operations during short, flashy turbid events, however, sustained turbidity will create significant operational challenges. The City is aware of increased and sustained turbidity caused in the McKenzie River during the construction of the temperature control structure at Cougar Dam in 2002, which created an average turbidity in the river of 106 NTU for four months.

EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

Women, minorities, and disabled are encouraged to apply • ADA Accommodations will be provided upon request

Lower water elevations in Detroit Reservoir and Big Cliff Reservoir may lead to higher water temperatures in the North Santiam River. Any deviations from normal water quality parameters have the ability to impact the operations of the water treatment plant including but not limited to changes in filter performance and chemical dosage.

Higher water temperatures may also increase the occurrence and magnitude of algal blooms in Detroit Reservoir and the North Santiam River. Algal blooms can negatively impact the water treatment process by (1) clogging filters and inhibiting the City's ability to meet water demand, (2) production of algal toxins, and (3) taste and odor issues caused by Geosmin and 2-Methylisoborneol (MIB). The City maintains a robust Watershed Monitoring Program which is vital in identifying the presence of a bloom and sampling for identification/enumeration of the algae in addition to sampling for the presence of cyanotoxins.

Ongoing access to Detroit Reservoir during the summer months is imperative for the success of water quality monitoring program. The City accesses Detroit Reservoir at Mongold State Park. The City would be opposed to using Mongold State Park for a staging area during construction. Additionally, the City would request construction of a ramp extension to allow for continued access to allow for year-round access to the reservoir should the reservoir level drop below the low water boat ramp.

The City is also concerned about the possible release of contaminants in the silt at the bottom of the reservoir. During the construction period of the temperature control structure at Cougar Dam, it was reported that DDT bound to sediment was released downstream. The release of any contaminant from the sediment may impact the City's ability to meet regulatory requirements under the Safe Drinking Water Act.

Water Quantity

The Geren Island Water Treatment Facility is located on an island in the middle of the North Santiam River east of the City of Stayton. The facility's water intake, also known as the Middle Intake, is located on the north channel of the North Santiam River. In order for the treatment plant to function properly, river stage in the North Santiam River at the Middle Intake must be at least 2.3 feet. Flows of 700 cubic feet per second (cfs) at Mehama are needed to meet this critical river stage level. Any flow lower than that will drastically affect the City's ability to produce drinking water to meet Salem water customer demands.

The City is concerned that during the construction of these projects, sustained flow will be minimal in the North Santiam River and the channel elevation may even reach that critical threshold of 2.3 feet at the Middle Intake. If this occurs, the City will be unable to produce enough drinking water to meet the needs of its community.

Distribution of deposition downstream from Big Cliff Dam is also of concern. As previously mentioned, the City's drinking water intake is located on North Channel of the North Santiam River. Increased sediment transport through the dams and into the North Santiam River will eventually accumulate in the bed. The location and quantities of this additional sediment deposition may alter and/or restrict flows to the North Channel which can significantly challenge

operations at the treatment plant. Furthermore, instream work needed to dredge problematic deposition in the North Santiam River is bounded by permit constraints and triggered mitigation actions.

Economic Impacts

There is the potential for significant economic impact from the construction of these projects. City of Salem water customers, both residential and commercial/industrial, depend on a reliable, high quality drinking water. Any negative changes to the quality and quantity of the North Santiam River affects the City's ability to meet customer's expectations. Furthermore, should production of water be limited, Salem water customers may face some level of water curtailment for potentially long periods of time. Restricting water uses creates significant hardships for Salem water customers, especially commercial and industrial customers.

Sustained water curtailment would lessen the City's utility revenues. Revenue projections are based on assumed water demand without curtailment considerations. Reduced revenues impede the City's ability to suitably maintain the utility infrastructure systems. These reductions could lead to increased utility rates for Salem's water customers.

Regulatory Impacts

The City of Salem is a Designated Management Agency (DMA) under the U.S. Environmental Protection Agency (EPA) 2006 Willamette Basin Total Maximum Daily Load (TMDL) and the 2008 Molalla-Pudding TMDL, and is responsible for development and implementation of strategies to minimize and address the discharge of TMDL pollutants. TMDLs were established to define allowable pollutant load discharges for DMAs in order to meet water quality standards. The Willamette Basin TMDL addresses bacteria, mercury, pesticides, turbidity, and temperature; and the Molalla-Pudding TMDL addresses temperature, bacteria, pesticides (DDT, dieldrin, chlordane), nitrate, and iron/manganese/arsenic. Total suspended solids (TSS) serve as a surrogate for pesticides and is managed as a water quality pollutant.

The City is concerned about the possible release of contaminants in the silt at the bottom of the reservoir, and its impact to water quality downstream as it flows through the City and into the Willamette River. The City currently implements a 5-year TMDL plan to reduce all pollutants, and the release of any TSS from projects at Detroit Dam may hinder progress to remove this pollutant from the Willamette River.

Aesthetic Impacts

The City of Salem has a total of 102 cfs in water rights for recreation and aesthetics for Mill Creek, a tributary of the Willamette River, which flows through the City of Salem. To meet this water right during the summer months, flow in Mill Creek is augmented by the North Santiam via flow control gates on Salem Ditch and Stayton Canal. Both gates are located in the Stayton area and both are managed and operated by the Santiam Water Control District. Additionally, the Santiam Water Control District can, and often does, divert water from Mill Creek to Pringle Creek to meet irrigation demand. Mill Creek and a portion of Pringle Creek are classified as

Essential Salmonid Habitat and any increases above background turbidity levels and higher stream temperatures could degrade this habitat. Furthermore, the City of Salem operates three fish ladders on these streams that were engineered based on the 102 cfs water right. Therefore, any reduction in flow lower than 102 cfs could affect anadromous fish passage through these structures.

Mill Creek and Pringle Creek are both important natural resources to the Salem community. Many homes and businesses are located streamside. Lower flows with increased turbidity in Mill and Pringle Creeks will likely have a negative effect on water quality by causing increased stream temperatures, algal blooms, and offensive odors. The City is also concerned about harmful algal blooms extending into the various waterbodies within the City parks, which are fed by North Santiam River source water.

Alternative to Standard Construction Practices

The City would like the U.S. Army Corps of Engineers to investigate alternative construction practices to minimize effects on the North Santiam River. Such practices may include sinking a pneumatic caisson to construct the foundation of the temperature control structure. This type of construction could reduce the time period of impact and minimize the reservoir drawdown level.

The City of Salem greatly appreciates the opportunity to provide comments on this proposed project. We hope our concerns are included in your project scope.

Sincerely,



Steven D. Powers
City Manager

cc: Peter Fernandez, PE, Public Works Director
Lacey Goeres, Water Quality Treatment Supervisor