



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

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TO: Commissioners Simpson, Helgeson, Manning and Brown
FROM: Wally McCullough, Water Engineering Supervisor; Steve Mital, Commissioner
DATE: July 19, 2016
SUBJECT: New Water Filtration Plant – Summary of Preliminary Design Workshop No. 1
OBJECTIVE: Information Only

Issue

Preliminary design efforts have begun on the Water Utility's proposed new water filtration plant. As part of this effort a series of workshops will be held to discuss alternatives and set the direction of the project. This memo provides a summary of the first workshop.

Background

Staff have been working towards a redundant water source for years and in 2014 a point of diversion was solidified on the Willamette below the confluence of the Middle Fork and Coast Fork. Since then efforts have ramped up with property acquisition and due diligence activities. The goal is to have a redundant filtration plant operational by end of 2021. The majority of the work to date is summarized in two previous Board Memos presented on March 3, 2015 and February 2, 2016.

In the spring of 2016, staff initiated the most significant effort to date for the new Plant – Preliminary Design. Carollo Engineers was retained for this effort with contract approval by the Board on May 3, 2016. A key part of the preliminary design effort is a series of workshops where work will be discussed and decisions made on project direction.

Related to the preliminary design is the assignment of a Board Liaison. Steve Mital volunteered for this assignment at the June 7th Board Meeting and this will be affirmed by a resolution at the July 19th Board Meeting

Discussion

Topics discussed at the first Preliminary Design workshop included water quality, plant capacity, operations, and level service goals. The topics discussed are summarized in a 'bulleted format' below:

Workshop 1 Objectives

- Intent of Workshop 1 was to define preliminary parameters and guiding principles for the predesign effort.

Raw Water Quality

- Raw water quality for the Willamette River was presented and compared with that of the McKenzie.

- Concentrations of regulated compounds in the raw water of both rivers are almost all below the finished water maximum contaminant level (MCL) prior to any treatment.
- Total organic carbon (TOC) in the Willamette may be high enough to trigger requirements for removal during some times of the year. TOC is important because, when chlorinated, it can form disinfection by-products (DBPs)
- Higher microbial (bacteriological) counts were observed in the Willamette.
- Raw water quality in the Willamette is very similar to water quality elsewhere in the region and is high quality relative to other supplies in the US.
- Additional sampling is needed for both plant design and public outreach
- At the proposed intake site, approximately 75% of flow is from the Middle Fork. Additional clarity on the mixing between the Middle and Coast Forks, which would vary at different river flows, would help in threat assessment and targeting watershed protection measures.
- Mercury and lead levels observed to date are very low, but there is a need to get more granular information given heightened public concern around this parameter.
- There is a need to gather additional information on wastewater treatment facilities on the Coast Fork. (Staff believe LCC and Creswell do not discharge during the summer)
- Summer algae blooms are an increasing concern in the region. There is a need to focus more attention on this issue going forward.

Finished Water Quality Goals

- Routine plant operation must achieve water quality better than or equal to Hayden Bridge.
- **BOARD INPUT OPPORTUNITY:** There may be opportunities to achieve greater capacity (MGDs) with lower water quality in an emergency operation. Should we pursue this?
- Turbidity: Match Hayden Bridge goal of 95% below 0.1 NTU (a unit of measurement associated with the ability for light to pass through a substance) and always less than 3.
- TOC-Disinfection Byproducts: Maintain DBPs at less than 50% of regulatory limits.

Plant Capacity

- Near term capacity will be determined during course of predesign as cost estimates are developed.
- Future is 19 million gallons per day (MGD) with provisions for expansion.

Operational Strategies

- Regular stop/start capability could reduce O&M costs as plant would not need to be staffed overnight or on weekends.
- Routine start/stop (daily) instead of long term stop is preferable.
- Could be possible to reduce distribution storage because of diversity of supply.
- Staff from both Hayden Bridge and the new Plant on the Willamette should cross-train to increase resiliency in managing facilities.

Level of Service Goals

- Design for 2,500 year seismic event.
- Recovery from a seismic event should be 24 hours.
- Capacity following a seismic event should be 100% of minimum winter demand.
- Water quality – plant needs to meet regulatory requirements at all times. A plant with higher capacity and lower water quality goals could be acceptable under emergency conditions.

Recommendation

None. This is an information item only.

Requested Board Action

None. This is an information item only. Staff will be available to answer questions at the July 19, 2016 Board meeting.

If you have any questions please contact Wally McCullough, Water Engineering Supervisor at 541-685-7435 or email wally.mccullough@eweb.org.