

November 19, 2021

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<http://public.health.oregon.gov/PHD/OEPH/DWP/Pages/index.aspx>

**Re: Neahkahnie Water District – February 2021 Water Master Plan (PWS #00506)
Concurrence of Findings - Plan Review #179-2021**

Dear Mr. Pavlich:

The Drinking Water Services (DWS) received a copy of the February 2021 *Water Master Plan Update* for the Neahkahnie Water District (DWS Plan Review #179-2021) and payment in the amount of \$4,125 on November 2, 2021. After reviewing the master plan, I e-mailed comments to you on 11/17/21. The comments in my 11/17/21 e-mail were relatively minor and discussed during our phone conversation the same day. **I concur that the updated Master Plan was completed in accordance with OAR 333-061-0060(5).**

The Master Plan serves as an update to the September 2015 Master Plan and represents a 20-year planning horizon for the District to the year 2040 (2020-2040).

The Master Plan included:

1. A description of existing service area, sources, water rights, treatment, pumping facilities, tanks, distribution system, and regulatory compliance;
2. February 2021 *Water Management and Conservation Plan Update* (Appendix I)
3. Seismic risk assessment and a plan to mitigate those risks for critical facilities (Appendix J);
4. Planning criteria and level of service goals including fire flow requirements, distribution system pressures, and projected future population and related demands for a 20-year period to 2040;
5. An assessment of the water system's ability to meet the planning criteria based on EPANET hydraulic modelling;
6. Identification of water system deficiencies;
7. Alternatives of projects to address deficiencies and meet the planning criteria;

8. A list of recommended Capital Improvement Projects (CIPs) and construction schedule for the next 20 years along with costs indexed to the June 2020 Engineering News Record Construction Cost Index (ENR CCI) of 11436; and
9. Options available to finance the recommended projects.

After having read through the master plan, I have the following comments/recommendations for the Neahkahnie Water District to consider:

1. The intertie with Manzanita should be tested and the availability/capability of Manzanita to supply water through this intertie should be evaluated for longer-duration emergencies such as under drought conditions (Manzanita may also be subject to water supply issues during drought conditions). The intergovernmental agreement to provide for the use of this intertie under emergency conditions may have already accounted for drought conditions and should allow for routine testing of the intertie.
2. Unaccounted for water should be kept to 10% or less.
3. Improvements identified for HWY 101 near Spring #3 should be shared with ODOT as the improvements include additional guardrail and drainage improvements that may fall under ODOT jurisdiction. ODOT may prioritize this section of HWY 101 if they were made aware of the recommended improvements identified in *Appendix K – Feasibility Study of Protective Measures Related to Highway Construction Akana Engineering, July 25, 2017*. The addition of a storage building near Spring #3 housing spill response materials may also be recommended to ODOT and/or the local fire department as they are typically first responders in spills (at a minimum make ODOT and the fire department aware of the risk to Spring #3 and provide them with contact information in the event of a spill). Identifying the critical mile markers along HWY 101 would also help as the location and extent of spills are commonly described using mile markers. Perhaps a sign can be erected noting the proximity to a source water protection area along with the number for Oregon Emergency Response System (OERS, 1-800-452-0311) and/or the Neahkahnie Water District for reporting spills.
4. Information on asset management planning is available on USEPA's site: <https://www.epa.gov/dwcapacity/interactive-tools-owners-and-operators>. The CUPPSS asset management tool can be downloaded here: https://19january2017snapshot.epa.gov/dwcapacity/information-check-program-small-systems-cupss-asset-management-tool_.html
5. Implement annual valve/hydrant exercising and flushing programs.
6. Develop a routine meter replacement program and routine water audits to determine unaccounted for water.

7. A desktop analysis using existing as-built plans and specifications for the tanks compared to current seismic design standards may be helpful to determine if they meet current seismic codes or if operational changes can improve code compliance. Tank failure at the sidewall to roof connection points due to sloshing may be mitigated, at least part of the year, by operating the tanks at a lower level, allowing more slosh height.
8. Looking at ways to improve and/or verify disinfection contact time to provide 4-log viral inactivation for all three treatment locations may help in emergency situations since they may be subject to fecal contamination due to future development, failed septic tanks, and/or seismic events. In most cases a CT of 6 is needed for adequate viral/fecal/E.coli contamination and can be achieved with 30 minutes of contact time and a free chlorine residual of 0.2 mg/l. Evaluate the capability of the chlorine dosing pumps to provide a higher chlorine dose (not to exceed 4 mg/l) if there is insufficient contact time to meet a CT of 6 to 8. **CT** = chlorine residual Concentration in mg/l x contact **T**ime in minutes (e.g., 0.2 mg/l x 30 minutes = 6 = CT achieved through disinfection).
9. Please be aware of plan review requirements and construction standards for new water facilities when implementing capital improvement projects. Construction standards and plan review requirements can be found on our website at:
<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Pages/index.aspx>

Thank you for your cooperation during this plan review process and if you have any questions or would like this information in an alternate format, please feel free to contact me at any time at 971-200-0288 or via e-mail at: evan.e.hofeld@dhs.ohs.state.or.us

Sincerely,



Evan Hofeld, Regional Engineer
Oregon Health Authority – Drinking Water Services

cc:

Richard Felley, Neahkahnie Water District - nwdmanager@nehalem.tel.net
Jaime Craig, Tillamook County Environmental Health - jcraig@co.tillamook.or.us