

Oregon Health Authority, Drinking Water Services

Plan Review requirements for Storage Reservoirs at public water systems.

The requirements apply to new **Storage Reservoirs** for existing or new Community, Non-Transient Non-Community, Transient Non-Community, and Non-Public (aka State Regulated) water systems which are defined on page 5. Two sets of information are provided below, 'short' and 'long' instructions. The short instructions are abbreviated. If you are unfamiliar with the plan review process, it is strongly recommended you read the long instructions.

For assistance, call (971) 673-0405 or fax (971) 673-0694.

SHORT INSTRUCTIONS:

The following shall be submitted and approved by OHA **prior to construction** of a new **Storage Reservoir**:

1. Plans prepared by an Oregon-registered Professional Engineer (PE).
2. A Land Use Compatibility Statement (LUCS), or equivalent documentation, approved by the local planning authority.
3. The appropriate plan review fee <http://healthoregon.org/pwsplanreview>.

For an upgrade or repair to an existing storage reservoir (e.g., re-coating interior, adding mixers or baffles, replacing the access hatch and/or interior ladder) items 1 and 3 may be required. When in doubt, please ask.

Specific Requirements

A. *Prior to construction*, submit at a minimum:

1. A site plan showing the project location in relation to other elements of the water system (e.g., raw water source, pumping facilities, treatment facilities, other storage reservoirs, main transmission line(s), the first customer served by the new reservoir, and security fencing;
2. Plans and Specifications;
3. Geotechnical Report supporting foundation design; and
4. Plan Review fee.

B. *After construction*, submit the following:

1. Structural detail if different from the submitted plans (aka as-built detail);
2. Written acknowledgement by the PE that the project was completed as planned, and if applicable that all conditions outlined in the Conditional Approval letter were met; and
3. Proposal for post-construction tracer study if applicable (i.e., if the reservoir is used to achieve disinfection contact time, a tracer study is required).

END SHORT INSTRUCTIONS

LONG INSTRUCTIONS:

The responsibilities associated with this process include:

- A. Water system actions [Prior to Construction](#)
- B. Drinking Water Services response for [Plan Review](#)
- C. Water system actions [After Construction](#)
- D. Drinking Water Services grants [Final Approval](#)

These are addressed in detail as follows. Additional detail may exist in the Oregon Administrative Rules under OAR 333-061-0050 and 333-061-0060.

PRIOR TO CONSTRUCTION

A water system submits the following, with some exceptions, prior to construction:

- a) Site Plan;
- b) Construction Plans and Specifications;
- c) Geotechnical Report;
- d) Land Use Compatibility Statement (LUCS); and
- e) Fee for Plan Review.

Submittal detail is provided in this section. The submittal materials are sent to:

ATTN: PLAN REVIEW
OHA DRINKING WATER SERVICES
800 NE OREGON ST., STE 640
PORTLAND, OR 97232-2162

(Materials may be sent directly to the relevant regional engineer, though the fee payment should be sent to the address above with a letter or memo providing the water system's identification and project description. Sending the fee to a regional engineer may slow processing time.)

a) **SCALED SITE PLAN – Required** in all cases

- A site plan showing where the proposed Storage Reservoir will be located in relation to the other elements of the public water system.
 - 1. Water sources controlled by the water system;
 - 2. Pumping facilities;
 - 3. Treatment facilities;
 - 4. Main Transmission line(s);
 - 5. First customer served by the new reservoir (show distribution pipe run to that point if available);
 - 6. Security fencing

• **The site plan must include the following additional information:**

1. Water system ID number
2. Water system name
3. Name, phone number, signature of the person who completed the site plan, and, if prepared by an Oregon-registered professional engineer, their stamp.
4. Name, phone number, and mailing address of the company who completed the site plan (if applicable).

b) CONSTRUCTION PLANS AND SPECIFICATIONS

• Proposed specifications shall include:

1. Construction drawings with appropriate details (e.g., foundation, overlapping watertight access hatch and curb, screened vent(s), inlet/outlet piping, silt stop, internal ladder, isolation valves, daylighting drain/overflow pipe terminus with flap valve or screened protection, water level indicator, effluent flowmeter, etc);
2. Construction specifications;
3. Storage/fire flow calculations as needed; and
4. Internal coating specifications showing compliance with NSF Standard 61.

- Note: Storage Reservoirs must meet the requirements set forth in OAR 333-061-0050(6) [*Construction Standards for Finished Water Storage*]

c) PLAN REVIEW FEE – Required in all cases involving the construction/installation of Storage Reservoirs

A plan review fee is required for all submittals and must be received before DWS starts the review. For a current fee schedule, check <http://healthoregon.org/pwsplanreview>.

The fee check should be made *payable to*: **OHA Drinking Water**

d) LAND USE COMPATIBILITY STATEMENT – may not be required

The site plan is typically accompanied by a Land Use Compatibility Statement (LUCS; see attached form, or go to <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/PlanReview/Documents/LUCS.pdf>) or equivalent. A LUCS demonstrates that the proposed storage reservoir and any related construction project is compatible with every local government entity (e.g. city and/or county) having comprehensive planning authority over the site of the proposed project.

PLAN REVIEW

The Oregon Health Authority – Drinking Water Services (DWS) will:

- a) Assign a **plan review number** (e.g., PR 1000-2011);
- b) Review all submitted information
- c) Based on the submitted information, the Program will **send a letter** to the water system indicating if

the proposed reservoir is approved for construction or asking for additional information. **Construction cannot begin until the water system has obtained a letter from DWS with 'approval' in the reference lines.** There are three types of approvals for reservoirs: conditional, preliminary, and final. The letter includes, at minimum, the following information:

- The water system ID and name;
- The plan review number;
- Contact information of the reviewing State engineer.

An 'approval' is effective as of the date of an approval letter, if granted. More than one conditional approval is possible, in which case the conditions of the most recent conditional approval take precedence if the conditional approvals conflict.

AFTER CONSTRUCTION

Once an 'approval' letter for the project is received, the water system may begin construction.

UNTIL 'FINAL APPROVAL' OF THE PROJECT IS GRANTED BY DWS, THE NEW INFRASTRUCTURE SHOULD NOT BE USED TO SERVE WATER TO THE PUBLIC.

Be sure to add the following identifying information on submitted materials:

- a) Water system ID number (for example 'OR4199999');
- b) Water system name;
- c) Plan review number; and
- d) Name, phone number, and mailing address of the person who can be contacted regarding this information.

As with pre-construction, mail to:

ATTN: PLAN REVIEW
OHA – DRINKING WATER SERVICES
800 NE OREGON ST., STE 640
PORTLAND, OR 97232-2162

Water systems may mail or email the materials directly to the appropriate DWS regional engineer. For assistance, you are welcome to call (971) 673-0405, or fax (971) 673-0694.

FINAL APPROVAL

The Oregon Health Authority – Drinking Water Services will:

- a) Review all submitted information;
- b) Based on the submitted information, DWS may **send a letter** to the water system **indicating if the Storage Reservoir has been granted final approval.** Water system's receipt of final approval concludes the plan review process for that project. If final approval cannot be granted, the letter will indicate what steps must be taken.

Definitions:

"Community (C) Water System" means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.

"Non-Transient Non-Community (NTNC) Water System" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.

"Transient Non-Community (TNC) Water System" means a public water system that serves a transient population of 25 or more persons.

"Non-Public (NP)" or "State Regulated Water System" means a public water system, which serves 4 to 14 service connections or serves 10 to 24 people. Monitoring requirements for these systems are the same as those for Transient Non-Community water systems.

Suggested Design Standards:

Recommended Standards for Water Works, 2012 Edition [Great Lakes--Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers]

American Water Works Association Standards:

D100-11 Welded Carbon Steel Tanks for Water Storage

D102-11 Coating Steel Water-Storage Tanks

D103-09 Factory-Coated Bolted Steel Tanks for Water Storage

D104-11 Automatically Controlled, Impressed-Current Cathodic Protection for the Interior of Steel Water Tanks

D106-10 Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Storage Tanks

D110-04 Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks

D115-06 Tendon-Prestressed Concrete Water Tanks

D120-02 Thermosetting Fiberglass-Reinforced Plastic Tanks

D130-02 Flexible-Membrane Materials for Potable Water Applications

C652 Disinfection of Reservoirs/Tanks