

Appendix F. Water & Sewer Separation Policy

I. **APPLICABILITY:**

This policy applies to all City of Portland staff, consultants, developers, contractors, utilities, and public agencies who plan, design, construct, operate, and maintain the physical infrastructure that comprises the Portland Water Bureau (PWB) system. It also applies to developer initiated and interagency projects that result in new PWB water infrastructure, modifications to existing PWB infrastructure, or sanitary sewer (including combined sewer) projects which impact water infrastructure. PCC 21.12.130 defines limits of Portland Water Bureau assets vs private property owner assets for purposes of maintenance, repair, and replacement. This Appendix and Rule apply to Portland Water Bureau public assets, not private water systems which are covered by Plumbing code.

II. **BACKGROUND:**

The Oregon Health Authority (OHA) OAR 333-061-0050-(9) and the complementary Department of Environmental Quality (DEQ) OAR 340-52, both specify required clearances between sanitary sewer and water assets for public health and safety. Per OAR 333-061-0060 all projects installing new water lines, or replacing existing with a larger size, must be approved by OHA (same size replacement in same location does not require OHA approval). Pursuant to section 333-061-0060(4), Portland Water Bureau (PWB) has been granted and maintains a Plan Review Exemption from OHA which authorizes PWB to review water plans (for PWB, developer, and interagency projects) for conformance with OARs as long as PWB provides annual certification and maintains the minimum requirements.

Sewer line construction is regulated by DEQ, but currently DEQ does not have a formal plan review requirement. Currently with DEQ consent, PWB reviews new sewer line projects to ensure conformance with (DEQ) OAR 340-52.

This policy will clarify requirements needed to meet public water and sewer regulations, Portland Water Bureau standards, and document the process for review and approval of plans related to meeting public water and sewer separation requirements. Please note that additional requirements for separation or mitigation measures may be required to address other applicable standards, constructability and/or maintenance needs, see Appendix D.

III. DEFINITIONS:

Line: For water, includes the public water main as well as the public water service up to the meter, and all public potable water runs, such as fire services, fire hydrant runs, drinking fountains, and water quality sampling stations. This does not apply to private water mains or services. For sewer, includes the sanitary or combination sewer main as well as the lateral to the property line and the catch basin lead pipe for combination sewer systems.

New Water or Sewer Line: A new line is either an entirely new line, a replacement line in a different zone, see Figures 1 and 2, or a replacement line that is upsized.

Types of Approvals:

- A Design Exception is processed and granted by PWB.
- A Construction Waiver is processed by PWB using the DE application but is granted by OHA.

IV. POLICY:

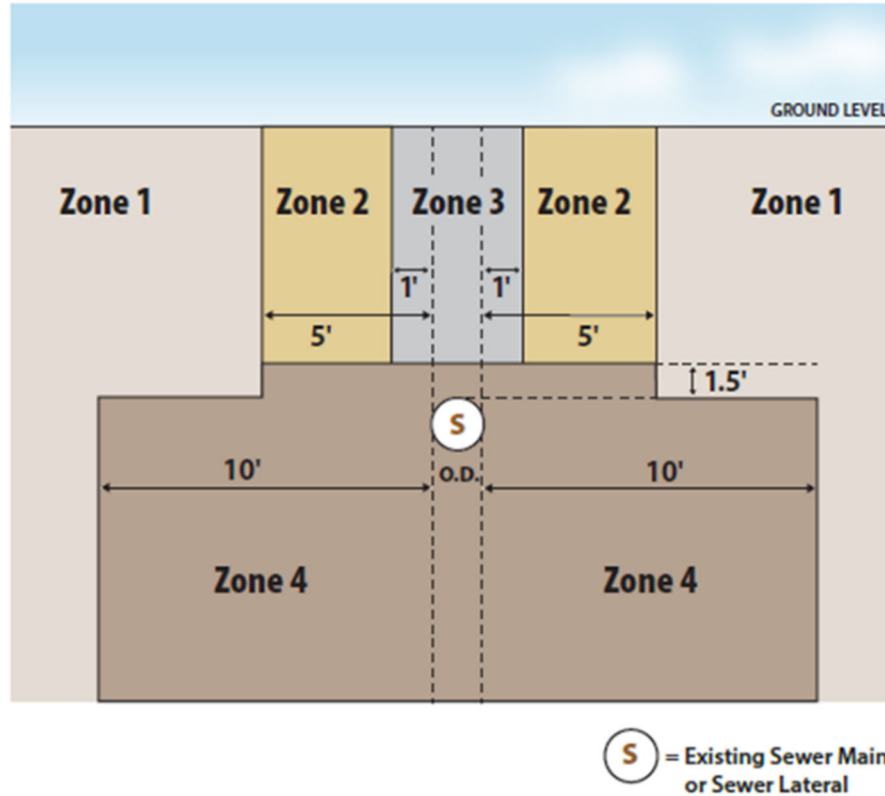
1. New Water projects

OHA has designated four Water Line Zones, identified as Zone 1, Zone 2, Zone 3, and Zone 4; see (OAR 333-061-0050(9) - Figure 1: Water Line – Sewer Line Separation) or Figure 1 below. As part of the PWB Plan Review, if the water line installation falls in Zone 1, then PWB is authorized to approve the construction under the OHA Plan Review Exemption. If the water line installation falls in Zone 3, which is a prohibited Zone, then PWB will deny the application.

For plans that indicate water line installation in Zones 2 or 4, a Construction Waiver must be obtained from OHA. Installation in Zone 4 is strongly discouraged, and Construction Waivers are unlikely. Prior to submittal to OHA for installation in Zone 4, PWB requires demonstration of extreme circumstances of why re-design to an acceptable zone not feasible and subsequent proposed substantial mitigation and protection measures is. PWB staff process and submit specific Construction Waiver requests to OHA for approval. Typically, Construction Waiver requests involve mitigation measures, see Section 4 of this appendix.

New Water Main

Parallel Placement Restrictions near Existing Sewer Lines



Water Line Zones

- Zone 1:** Only crossing restrictions apply.
- Zone 2:** Case-by-case determination.
- Zone 3:** Parallel water line prohibited
- Zone 4:** Parallel water line prohibited

Figure 1:
Water Line-Sewer Line Separation
OAR 333-061-0050(9)(b), effective 8/13/2010

Figure 1 – OHA OAR 333-061-0050(9)

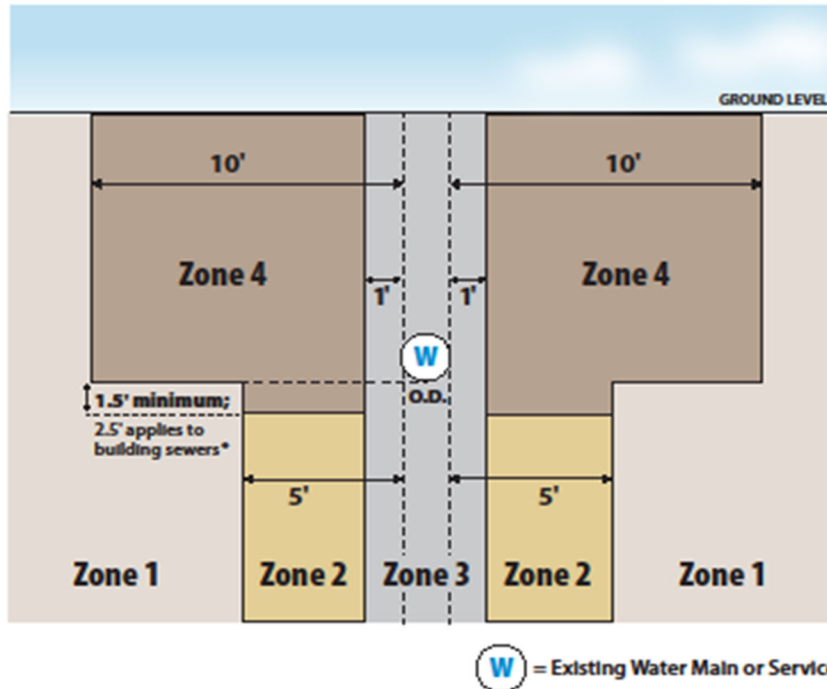
2. New Sewer projects

DEQ has designated four Sewer Line Zones, identified as Zone 1, Zone 2, Zone 3, and Zone 4; see (OAR 340-52 Appendix A Figure A1: Sewer Line Zones or Figure 2 below. As previously described in the background section PWB reviews new sewer line projects to ensure conformance with (DEQ) OAR 340-52.

As part of the PWB Plan Review, if the sanitary or combination sewer installation falls in Zone 1, then PWB requests no additional water system protection requirements. If the sanitary or combination sewer installation falls in Zone 3, which is a prohibited Zone, then PWB will deny the application in conformance with OAR 340-52 and as a public health risk.

For plans that indicate sanitary or combination sewer installation in Zones 2, where additional justification is required, PWB will review on a case-by-case basis and may require additional mitigation measures. For plans that indicate sanitary or combination sewer installation in Zones 4, PWB will require additional mitigation measures, see Section 4 of this appendix.

New Sewer Line Parallel Placement Restrictions near Existing Water Mains



Sewer Line Zones

- Zone 1:** Sewer line can be laid in this area with no special requirements of either construction or materials.
- Zone 2:** Installing a sewer line in this zone is not advisable and must be justified in each case. Water line should be located on a bench of undisturbed earth when constructed concurrently and a common trench with sewer line.
- Zone 3:** Installing a sewer main directly over a water main or directly under a water main in this zone is prohibited since tapping and O&M of each line would be impaired.
- Zone 4:** Sewer line construction in this zone would generally not be permitted. Each installation must be justified. If construction was permitted, pressure pipe materials for this sewer line would be required.

* Building Sewer - the pipe that carries sewage from the outside wall of the building to the public sewer.

Figure 2 – DEQ OAR 340-52

3. Replacement of water or sanitary sewer lines with same size or smaller in same location

Replacement of existing water or sanitary sewer lines in the same location with the same size or smaller do not require approval from OHA. However, PWB in the interest of protecting public health consistent with new installation requirements, will deny replacement of water line in OAR 333 Zone 3 and will not approve sewer installation applications which indicate placement of sewer line in OAR 340 Zone 3. Replacement of water or sanitary/combination sewer lines in either OHA or DEQ Zones 2 or 4 will be required by PWB to propose and utilize appropriate mitigation measures per Section 4. These projects will document the PWB approval and approved mitigation measures through the Design Exception process. See Section 7, Figure 5 of this appendix.

4. Mitigation Measures

Potential mitigation measures which may be used include:

- a. Use of pressure rated pipe (125 psi or higher) for the sanitary or combination sewer main or lateral with watertight gaskets. For perpendicular crossings, center so the sanitary sewer pipe joints are as far as possible, or at least 10 feet, from the water pipe joints. Compact material from approved material list to 95% and verify construction by use of pressure testing (15 psi hydraulic) or closed-circuit television (CCTV) inspection.
- b. Controlled low strength material (CLSM) fill in the sanitary sewer or water trench. If used in the water trench, water pipe and fittings must be wrapped with minimum of 8 mils thickness polyethylene encasement before concrete placement per COP SCS 01140.44 and CLSM must be fly ash free.
- c. Casing of the water pipe.
- d. Relocate the water or sewer main or lateral to achieve clearance.

5. Sanitary Sewer Lining or Spot Repair Projects

Projects which propose to line existing sanitary sewer main or laterals with cured-in-place pipe (CIPP) or by slip-lining are permitted without requiring additional measures. It should be noted that open cut access pits will need to be reviewed on a case-by-case basis and may have additional requirements. In addition, spot repairs to repair a limited section of line do not require additional measures. A spot repair is considered a repair to an existing main that does not extend from one maintenance hole to another. Pipe bursting is considered a new line if it increases the size and subject to Section 2 of this appendix. Pipe bursting of equal size is the same as lining and not subject to Section 2.

6. Process

Plans will be reviewed according to the following process. “New Water/Sanitary Sewer Line” refers to both main and laterals and includes replacement in the same zone with a larger size. Replacement in same zone with same size or smaller will follow same process as a new sewer line only, see Figure 5.

a. PWB new water line projects:

Projects which are designed and approved by the PWB will be reviewed as part of the PWB Design process. New water lines identified in Zones 2 or 4 will require a Design Exception form for a Construction Waiver request to the PWB WQ designated personnel who will coordinate with OHA for approval. See Section 7, Figure 3 of this appendix. See also Section IV.1, paragraph 2 for additional criteria regarding Zone 4 requests. Approved Design Exceptions or Construction Waivers shall be identified on the construction documents for all projects going out to bid.

b. Developer new water/sanitary sewer line projects:

Developer projects are projects submitted to PWB for review through the Bureau of Development Services permit application process. Projects will include plans that include water, sanitary sewer, or combined sewer improvements. Plans are reviewed by PWB staff for conformance with OAR 333-061-0050. New water lines identified in OHA Zone 1 will be approved for conformance with the OAR’s and new water lines in Zone 3 will be denied. New water lines identified in Zones 2 or 4 will submit a Design Exception form with a Construction Waiver request. The Design Exception form and Construction Waiver process will require identification of justification and proposed mitigation measures. See also Section IV.1, paragraph 2 for additional criteria regarding Zone 4 requests. This Design Exception form and Construction Waiver will be processed by PWB staff, who will also coordinate obtaining OHA approval for the Construction Waiver.

If the proposed project includes a new sanitary sewer line, then per Section 2 of this appendix, PWB will review and may require a Design Exception form and appropriate mitigation based on the proposed Sewer Line Zone. A Construction Waiver will not be required if there is no concurrent new water line. See Section 7, Figure 4 & 5 of this appendix. Approved Design Exceptions or Construction Waivers shall be identified on the construction documents.

c. Interagency projects:

Projects which are designed and approved by other agencies or City Bureaus, such as the Bureau of Environmental Services, ODOT or Tri-Met are submitted and reviewed by PWB’s Interagency Liaison or Design PM, who reviews the plans for conformance with PWB standards and the OAR statute. Plans which identify new water lines in OHA Zone 1 will be approved for conformance with the OAR’s and new water lines in Zone 3 will be denied.

New water lines identified in Zones 2 or 4 will submit a Design Exception form with a Construction Waiver request. The Design Exception form and Construction Waiver process will require identification of justification and proposed mitigation measures. This Design Exception form and Construction Waiver will be processed by PWB staff, who will also coordinate obtaining OHA approval for the Construction Waiver.

If the proposed project includes a new sanitary sewer line, then per Section 2 of this Appendix, PWB will review and may require a Design Exception form and appropriate mitigation based on the proposed Sewer Line Zone. A Construction Waiver from OHA will not be required if there is no concurrent new water line. See Section IV.7, Figure 4 & 5 of this appendix. Approved Design Exceptions or Construction Waivers shall be identified on the construction documents.

7. Flow Charts

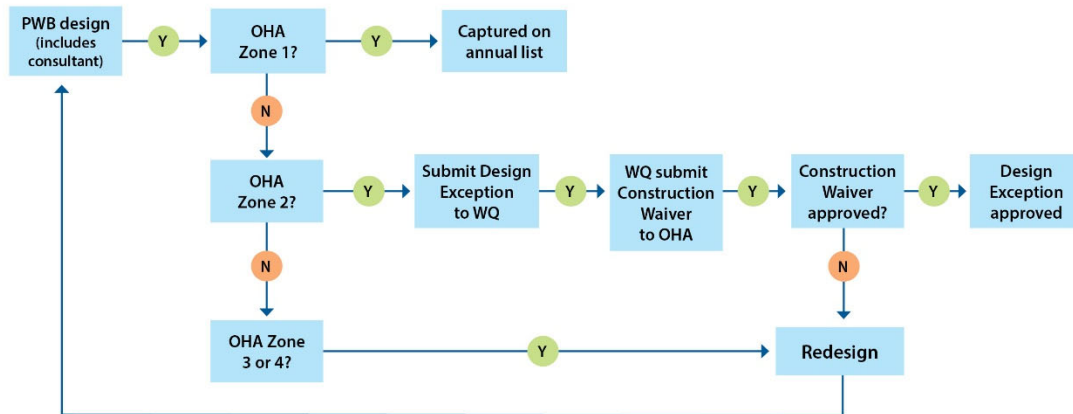
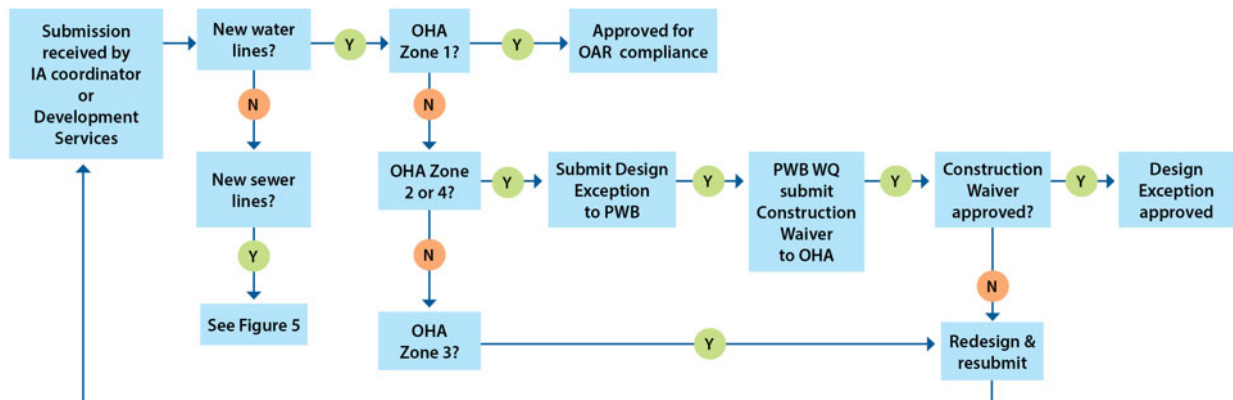


Figure 3: New Water Line – Designed by PWB internal staff



* Under extreme circumstances, a request for a Design Exception and OHA Construction Waiver for Zone 4 may be submitted. See Section IV.1, paragraph 2 for additional information.

Figure 4: New Water or Sewer Line – Designed by external agency or developer

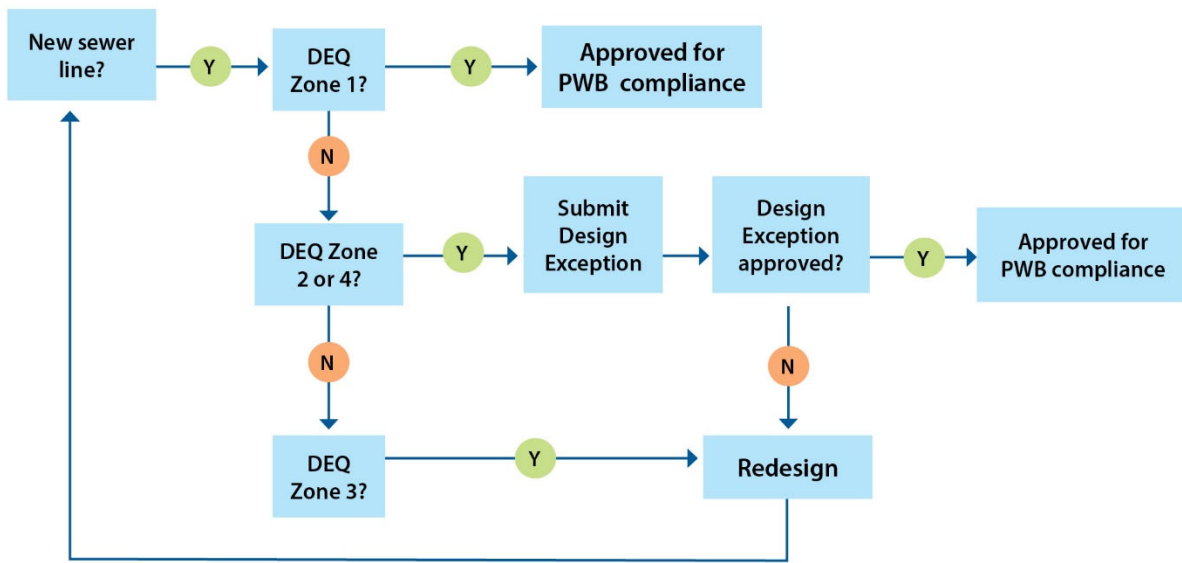


Figure 5: New Sewer Project or Replacement Sewer line (larger size in the same location or any size in new location)