

NKNWD Construction standards

For a new residential water service line in the Neahkahnie area, trench bedding requirements must adhere strictly to the **Oregon Plumbing Specialty Code**, localized **Tillamook County Public Works road and coastal soil guidelines**. Properly bedding your pipe prevents it from cracking or puncturing due to shifting coastal soils, rocky native earth, or heavy ground traffic.

The Bedding Layer (The Trench Bottom)

- **Firm Bedding Mandate:** Per OPSC Section 313.5, the water piping must be laid on a **firm, continuous bed** for its entire length to prevent sagging and joint stress
- **Rock Excavation Rule:** If you dig into rocky native soil or shale, you cannot lay the pipe directly on the trench floor. You must over-excavate the trench depth by **at least 4 to 6 inches** and replace it with an engineered bedding material.
- **Approved Materials:** The standard accepted material for the pipe bedding is **3/4-inch minus crushed rock, pea gravel, or clean coarse sand**

The Pipe Zone (Surrounding the Pipe)

- **Shading the Pipe:** Once the pipe is placed on the bedding layer, it must be shaded (covered) with the same clean, fine material up to **6 inches above the top (crown) of the pipe**
- **Zero Sharp Fragments:** The bedding and shading material in this pipe zone **cannot contain any rocks or fragments larger than 1.5 inches**. Large stones will press directly against flexible pipes (like PEX or copper) and cause eventual punctures under ground traffic load.
- **No Side-Wedging:** Do not use random native dirt or large stones to wedge the sides of the pipe to keep it straight; only use uniform, compacted bedding materials.

Tillamook County Coastal Soil & Sand Prohibitions

Because Neahkahnie sits near the coast with a high water table and variable slopes, Tillamook County Public Works applies strict rules if your trench encroaches on or runs near a public right-of-way Tillamook County Road Construction Plan Standards:

- **No Sand Below Water Table:** Sand bedding or sand backfill **cannot be used** if your utility trench cuts at or below the local water table Tillamook County Road Construction Plan Standards. Wet sand shifts and loses compaction, risking pipe failure.
- **No Sand on Slopes > 2%:** Sand is prohibited as a primary bedding or backfill material if the trench runs on a road or property grade **greater than 2%** Tillamook County Road Construction Plan Standards, as it easily washes out during heavy coastal rain events. On these slopes, you must use **crushed rock** instead

Backfill & Tracer Wire Placement

- **Tracer Wire Layout:** For non-metallic pipes (such as PEX-a or PVC), a **blue 18-gauge or 12-gauge solid copper tracer wire** must be laid directly along the pipe or inside the bedding layer for future tracking.
- **Final Backfill Compaction:** Native soil can be used for the final backfill above the 6-inch pipe zone cushion, but OPSC requires it to be mechanical or hand-compacted in thin lifts to ensure proper soil density and prevent ground settling later.

The Customer-Side Pipe (Meter to House)

Everything from the output side of the meter box to the house is the property owner's financial and maintenance responsibility. You must build to these specific structural standards:

- **Pipe Diameter:** The private water service line must have a **minimum 3/4-inch inside diameter**.
- **Upsizing Rule:** If the total line run from the water meter to the home exceeds **100 lineal feet**, you must upsize the pipe diameter (typically to 1 inch) to combat pressure drop over long distances.
- **Mandatory PRV:** Because of major elevation drops around Neahkahnie Mountain, the district mandates that homeowners install a **Pressure Reducing Valve (PRV)** near the entry point of the house to prevent internal plumbing blowouts.
- **Isolation Valve:** A dedicated hand-operated shutoff valve must be placed inside or adjacent to the home within 5 feet of the line's entry point. The valve inside the District's meter box cannot legally serve as your home's primary shutoff

Cross-Connection & Backflow Prevention

To protect the community's coastal aquifer, NKNWD strictly enforces OHA cross connection rules.

- **Trigger Features:** You must install an approved backflow prevention assembly if your residential site features a **landscape irrigation system, hot tub, pool, or hydronic heating**.
- **Testing:** Newly installed backflow devices must be tested immediately upon installation by an Oregon-certified tester, with reports submitted to the District.
- **Thermal Expansion:** If a backflow check valve is installed, Oregon plumbing code mandates that you also install an approved **expansion tank** on your water heater line.