Drinking Water Protection in South Deschutes County

Example Retrofit Costs

Factors Affecting the Costs of Retrofits

These scenarios provide estimates of the cost to upgrade or retrofit existing onsite wastewater treatment systems based on:

1. Type of Existing System
2. Integrity of the Existing System
3. Property Location and Groundwater Loading Requirements (based on Nitrate Loading Management Model)
4. Site Characteristics (for example: depth to groundwater, setbacks, available area, etc.)
5. Operation and Maintenance
6. Type of Nitrogen Reducing System Chosen by the Property Owner

**Scenario 1:**
- **Existing System:** New Bottomless Sand Filter with 2 compartment concrete tank and time dosing installed in 2002
- **Existing System Condition:** Components and Site Conditions are good
- **Performance Standard:** 35% reduction needed to meet groundwater nitrate loading management model needs.
- **Property Owner Decision:** Property owner decides to use the Multi-Flo System from Consolidated Treatment Systems Inc.
- **Installation Costs:** Installed costs with electrical approximately $6,000-$9,000*
- **Financial Assistance**:** Pollution Reduction Credit (PRC) Rebate $3,750
- **Operation and Maintenance costs:** $25-$35 per month
- **Total Installation Cost Range:** $2,250 - $5,250

**Scenario 2:**
- **Existing System:** 750 gallon steel tank with two 30 ft lines (total 60') installed in 1972 with minimal seasonal hunting use cabin
- **Existing System Condition:** Components are old but can potentially add to drainfield (meets separation to the water table)
- **Site Conditions:** Useable area behind cabin and owner plans to build new home in the future
- **Performance Standard:** 78% minimum reduction needed to meet groundwater nitrate loading management model for this area.
- **Property Owner Decision:** Property owner chooses to install Orenco Systems, Inc. AX-20 system with additional standard drainline: between $12,000-$16,000*
- **Financial Assistance**:** PRC Rebate of $3,750
- **Operation & Maintenance Costs:** $30-$35 per month
- **Total Installation Cost:** $8,250 - $12,250

**Scenario 3:**
- **Existing System:** Old 1,000 gallon steel septic tank with 150' of drain line installed in 1978 serving a 3 bedroom/2 bath house (water table rises to between 2-3' below ground surface)
- **Existing System Condition:** Components are old and don’t meet separation to the water table
- **Site Conditions:** Shallow water table requires a Bottomless Sand Filter (complete new system is needed)
- **Performance Standard:** Model indicates the system that provides the highest nitrogen reduction available is required
- **Property Owner Decision:** Property owner chooses the AX-20 system from Orenco Systems, Inc with the final absorption system a 360 square ft. bottomless sand filter: Approximately $7,000 - $11,000*
- **Financial Assistance**:** PRC rebate $3,750
- **Operation & Maintenance Costs:** $30-$35 per month
- **Total Installation Costs:** $14,250 - $18,250

**Scenario 4:**
- **Existing System:** Surface mounted bottomless sand filter installed in 1993 with an 1,100 gallon concrete dosing septic tank.
- **Existing System Condition:** Some existing components are usable but a new tank will be necessary
- **Performance Standard:** Maximum available nitrogen reduction possible is needed for the property’s management area.
- **Property Owner Decision:** Property owner selects the Enviro-Guard system, Consolidated Treatment Systems Inc. and uses the existing tank as a dose tank to existing sand filter. Approximately $7,000 - $11,000*
- **Financial Assistance**:** PRC Rebate $3,750
- **Operation and Maintenance Cost:** $25-$35 per month
- **Total Installation Cost:** $3,350 - $7,250

*These costs are based on the best information available. The variability in the estimates is a result of differences between sites and contractors.

**$3,750 is the PRC rebate currently available. Additional financial assistance will include loans and grants. Other assistance may take the form of tax credits or rebates.
### Scenario 5:
- **Existing System:** 30-year old standard system with 1000-gallon steel tank and 150’ of line serving an existing 3 bdrm/2 bath house
- **Existing System Condition:** Entire system needs replacing
- **Site Conditions:** Test pits show the water table within 24 inches of the ground surface; therefore, the site does not meet current separation requirements for any type of onsite treatment system.
- **Performance Standard:** Maximum level of nitrogen reduction possible and 120 ft² bottomless sand filter needed to meet groundwater protection goals.
- **Property Owner Decision:** Property owner decides to use the Multi-Flo System from Consolidated Treatment Systems Inc.
- **Installation Costs:** Installed costs for new septic tank, Multi-Flo unit, effluent pump chamber and small bottomless sand filter with electrical approximately $13,000-$16,500*
- **Financial Assistance**: Pollution Reduction Credit (PRC) Rebate $3,750
- **Operation and Maintenance costs:** $25-$35 per month
- **Total Installation Cost Range:** $9,250 - $12,750

*These costs are based on the best information available. The variability in the estimates is a result of differences between sites and contractors.

### Scenario 6:
- **Existing System:** Pressure distribution system installed in 2005 with a 1,500-gallon two-compartment concrete septic tank and 150’ of drainline
- **Existing System Condition:** Components are in good condition and useable
- **Site Conditions:** No siting restrictions
- **Performance Standard:** 35% minimum reduction needed to meet groundwater nitrate loading requirements for this area.
- **Property Owner Decision:** Property owner chooses to install Orenco Systems, Inc. AX-20 system with a new effluent dosing chamber. The existing septic tank can be altered and used: between $10,000-$14,000*
- **Financial Assistance**: Pollution Reduction Credit Rebate of $3,750
- **Operation & Maintenance Costs:** $30-$35 per month
- **Total Installation Cost:** $6,250 - $10,250

**$3,750 is the PRC rebate currently available. Additional financial assistance will include loans and grants. Other assistance may take the form of tax credits or rebates.**