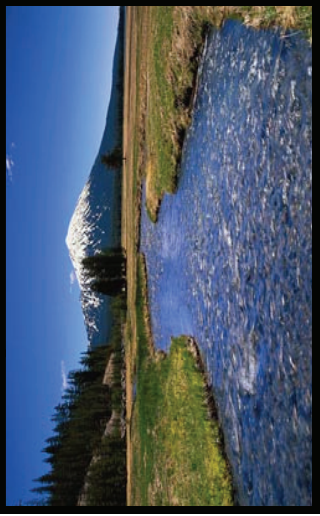




# Drinking Water Protection in South Deschutes County



## 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: \$18,000 - \$22,000\*
- **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:** \$3,250 - \$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 ft<sup>2</sup> 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

## 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

\*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.