Contact Us

**On-site Sewage Program**

General questions: ehsepticsystems@tpchd.org or (253) 798-6470
Asbuilt/record drawing request line: (253) 798-6577

**Tacoma-Pierce County Health Department**

3629 S. D St.
Tacoma, WA 98418

info@tpchd.org
(253) 798-6500

**Key Peninsula Office**

Key Center Corral
9013 Key Peninsula Hwy N
Lakebay, WA 98349

Tuesdays and Thursdays: 9 a.m.-2 p.m.
(253) 432-4948

**Resources**

General septic system information—www.tpchd.org/septic
List of septic system service companies—www.tpchd.org/professionals
List of certified installation firms—www.tpchd.org/installers
Septic repair loan information—www.tpchd.org/septichelp
Report of System Status information—www.tpchd.org/RSS
As-built look up—http://forms.tpchd.org/asbuilt.php
3D septic system models—www.tpchd.org/3Dseptic
Septic System Basics for Homeowners

Tacoma-Pierce County Health Department
Healthy People in Healthy Communities
This booklet features pictures of our 3-D models of many septic systems. You can interact with these 3-D models on a computer, tablet or mobile phone. Scan the QR codes in this booklet to see the 3-D model on your device. You can also visit www.tpchd.org/3Dseptic.
What is a Septic System?

When a home is not connected to a public sewer system, an on-site septic system treats its sewage.

**Septic systems protect you, your family and your environment.**

A working septic system:

- Keeps sewage from surfacing on your property.
- Protects ground, surface and drinking water from contamination.
- Keeps shellfish harvested from public waters safe to eat.

**Regular septic system maintenance saves you money.**

The cheapest septic system you will ever have is the one you’re using now. Repairs can cost thousands of dollars. Save money and hassle—get your system inspected!

**Good maintenance keeps your septic system working.**

A certified septic professional should inspect your septic system. Your system type dictates how frequently it should be inspected. Look up your type of system in this booklet for more information.

Septic tanks usually need to be pumped every three to five years, depending on household size and use. Pump your system when your certified septic professional says it needs pumping or when the total sludge and scum layer is more than 18 inches.

Find a certified septic professional at www.tpchd.org/septicservicecompanies.

Contact at least three companies to compare prices. Ask about any discounts they offer.

**Financial help is available.**

*Clean Water Loans with Craft3*

Nonprofit lender providing affordable loans with flexible qualification to cover the costs of designing, permitting, installing and maintaining your failing septic system.

Visit www.craft3.org/CleanWater for more information.

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*Protect your investment, your family and your community.*

*Keep your septic system working properly.*
Anatomy of a Septic System

**Septic Tank**
Waste that goes down the drain enters the septic tank. Solids are separated from liquids here.

**Drainfield**
Effluent is distributed into the ground through the drainfield. The soil cleans the effluent before it enters the groundwater.

Risers allow for easy access to the septic tank.

The drain field laterals distribute effluent into the ground. Gravel allows effluent to enter the soil. Filter fabric keeps soil out of the gravel and laterals.

The access port allows the drainfield to be flushed and inspected.

Light solids float to the top and form the scum layer.

Effluent is the liquid part of sewage.

Heavy solids sink to the bottom and form the sludge layer.

The effluent filter keeps solids from entering the pump chamber or drainfield. It should be rinsed during inspection.
Gravity System

Gravity systems are common in older homes with older systems. A gravity system doesn’t require any electricity to operate.

Inspect every three years.

The D box evenly distributes effluent across the drainfield.

Scan to see a 3-D model of a gravity septic system.
Pump/Pressurized Distribution System

Septic systems with pumps allow for effluent to be pumped uphill to the drainfield. The pump adds a set amount of effluent to the drainfield. This prevents the drainfield from being overloaded.

The manifold distributes effluent evenly through the drainfield.

The control panel is above ground. It houses electronics used to run the pump. Its alarm will sound when the pump has a problem. Contact a septic professional if the alarm sounds.

The pump adds a set amount of effluent to the drainfield.

Floats turn the pump on or off based on the effluent level. A second float sets off an alarm if the level of effluent in the pump chamber is too high.

A shroud is recommended to keep any solids from entering the pump.

Scan to see a 3-D model of a pump septic system.
Sand Filter System

Septic systems may have a sand filter. Sand filters can be used when the effluent needs additional treatment before going to the drainfield.

Sand filters are built in plywood boxes or trenches lined with plastic.

Gravel surrounds laterals.

Sand treats effluent as it trickles through.

Effluent enters perforated pipes at the bottom of the sand filter. This carries effluent to a pump. The pump moves the effluent to the drainfield.

Plastic covers the sand filter so water can’t enter.

Scan to see a 3-D model of an sand filter septic system.
Aerobic Treatment Units

Aerobic treatment units (ATUs) are proprietary devices that use oxygen to treat effluent. Systems with ATUs usually require a UV light to disinfect effluent. ATUs are used when the native soil is poor.

The ATU may sit in the septic tank or be in a separate chamber after the septic tank. Treated effluent enters the inner chamber then flows into the pump chamber.

Aerators release air into the ATU to encourage bacterial treatment of sewage.

An above-ground air pump pumps air into the ATU.

Scan to see a 3-D model of an ATU septic system.
An above-ground air pump pumps air into the ATU. A UV lamp disinfects the effluent. This reduces harmful bacteria in the treated sewage. Floats turn the pump on or off based on the effluent level. A second float sets off an alarm if the level of effluent in the pump chamber is too high. The control panel is above ground. It houses electronics used to run the air pump, UV light and effluent pump. Its alarm will sound when the pump has a problem. Contact a septic professional if the alarm sounds. The pump adds a set amount of effluent to the drainfield.
Types of Drainfields

Drainfields can be arranged in many ways. How big your drainfield is depends on the estimated water usage of your house. Drainfields can be on flat land or on hills.

Your property is required to have a reserve area the size of your current drainfield. If your drainfield fails, a new drainfield can be put in the reserve area.

Mound drainfield

Mound drainfields are used when the native soil is shallow or if the water table is high.

Sand is put above the shallow soil to treat sewage. Access ports allow the mound to be inspected where gravel meets sand and where sand meets soil.

Scan to see a 3-D model of a mound septic system.
Sand-lined beds

Septic systems use sand-lined beds for additional treatment below the drainfield. Installers dig trenches and fill them with sand and gravel.

Subsurface drip drainfields

Subsurface drip systems deliver small doses of effluent through emitters. They are useful in locations with poor soil or high water tables. Drip systems need pre-treatment, such as an aerobic treatment unit (ATU).