# SSTS structure setbacks and other requirements

## Siting septic systems near structures, buildings, and lot improvement

A Subsurface Sewage Treatment System (SSTS) setback is the required distance between a septic system and nearby structures, buildings, and lot improvements (known collectively as "structures" in Minnesota rules). Setbacks ensure the protection of health and safety, and that construction, use, or operation of a septic system does not damage or hinder the construction, use, or operation other nearby structures, and vice versa.

## Setback requirements

Structures should be a minimum of 10 feet from sewage tanks, and a minimum of 20 feet from the adsorption area of the drainfield. Further requirements:

- The soil dispersal unit/drainfield must never be covered by an impermeable surface that cuts off oxygen.
- Sewage tanks must not be buried where heavy equipment will drive over them, unless the tank is designed for the anticipated load.
- Lot improvements must not damage or prohibit use of the secondary (back-up) soil dispersal site.
- A setback is required from all occupied structures.

Common lot improvements where setbacks come into play:

- Dwellings with basements or frost footings
- Dwellings with foundations (mobile homes)
- Garages or decks with frost footings
- Buildings with slab-on-grade foundations
- Driveways, patios, and other paved areas
- Sheds, gazebos, saunas, and kennels
- Fences, retaining walls, and swimming pools

## Setback decision guidance

Except the instances listed above, many setback determinations need case-by-case consideration by the local government unit. This section is intended to help guide those local decisions, in instances where:

### An existing structure could be damaged during SSTS installation

Some parts of SSTS installation create a risk to nearby structures, such as:

- When a septic tank is being swung into an excavation
- A tail swing from excavation equipment
- Driving SSTS construction equipment on paved areas that are not designed for heavy loads

However, it may not be prudent to require setbacks on all structures. Carefully consider possibilities for damage during SSTS construction, and require setbacks or restrictions based on the specific risk and the value of the nearby structures.

## The in-ground structural integrity of an existing structure could be damaged during SSTS installation

Building designers must consider how a sewage tank may affect the building's foundation or footings, which come in many different designs and materials (e.g., piers, piles, wood, pea gravel, masonry, etc.). Several factors must be considered when siting a sewage tank near a building's footings or foundation:

- **Frost depth and frost protection:** Soil protects footings and foundations from freezing and soil movement. In southern Minnesota, a minimum of 42 inches of soil coverage is required; it's 60 inches in northern Minnesota. More coverage may be required depending on soil type and conditions. Septic tank placement must not affect soil coverage minimums. Placing tanks in the upper or downside toe of a nearby slope may be preferable to siting it next to the foundation.
- **Minimum soil-bearing capacity:** Usually, a minimum 2:1 ratio is needed for soil bearing (projection area) under, and extending away from, a building's footing. The footing or foundation design must be reviewed if sewage tanks are placed in or below this area. Placing tanks in the upper or downside toe of a nearby slope may be preferable to siting it next to the foundation.
- **Tank weight:** A sewage tank's weight or even pressure from the tank installation can affect foundations.
- **Insulation:** The building code requires soil coverage extensions or foundation insulation for some frost-free foundation designs. The soils or insulation can extend out as much as six feet from the building and would affect sewage tank placement.
- **Deck- or porch-type pier (isolated) footings:** Differential movement or settlement of nearby soils could affect these types of footing when sewage tanks are placed too close.
- **Drainage:** Most buildings' footings or foundations include exterior drainage systems to remove hydraulic loading in the soils. Excavations must be located where they don't affect foundation drainage at the surface or below ground.
- **Other:** The building code doesn't address damage to foundations from existing sewage tanks that leak. In addition, the pressure from pump trucks driving in or near foundations must be considered.

## An SSTS could be damaged during construction of a nearby structure

Septic systems can be damaged by nearby construction activities, including equipment driving over and crushing or compacting either the drainfield or the sewage tank. If it's a concern, impose a restriction such as fencing around the SSTS.

## Operating and maintaining the SSTS is hindered by operation or use of nearby structures

For example:

- Adding a new structure changes how rain and spring meltwater drain on the site. Water coming off a new roof or a new parking lot sloped toward the SSTS direct more water to the septic system
- A new structure blocks pump trucks or SSTS repair/replacement equipment from accessing the system
- A new structure hinders access to maintenance hole covers

Some of these issues may require a setback; others can handled with a restriction or guidance.

## Operation or maintenance of SSTS could hinder operation or use of a nearby structure

The building code doesn't require a setback from a structure or septic system for operational issues, but a setback may be useful in some situations. For example, the noise and possible odors of an aerobic treatment unit should perhaps be setback from a dwelling's window.

## Personal and public health and safety are at risk

An example of this would be sewage effluent travelling laterally into the foundation drain tile/sump and odors emitting from the sump basket.