Landscaping Septic Systems

The following is a fact sheet published by the University of Minnesota College of Agricultural, Food and Environmental Sciences.

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Landscaping near and around septic systems is of concern to many homeowners. Whether drainfields or mounds, Minnesota septic systems must have a minimum of three feet of unsaturated soil between the drainfield or point of infiltration and limiting soil condition such as hardpan, bedrock, or saturated soil in order to properly treat sewage. A mound system is required if three feet of separation cannot be achieved with an inground trench system. Mound systems are designed to maximize the absorption capacity of existing soil (see Figure 1). Mound location, size, shape, construction procedures, and maintenance of the mound all interact in determining how well the system will function. Placement of plants on and near the mound must be done with care to ensure a properly functioning septic system. Plants enhance the system by removing moisture and nutrients from the soil and providing cover to prevent erosion.

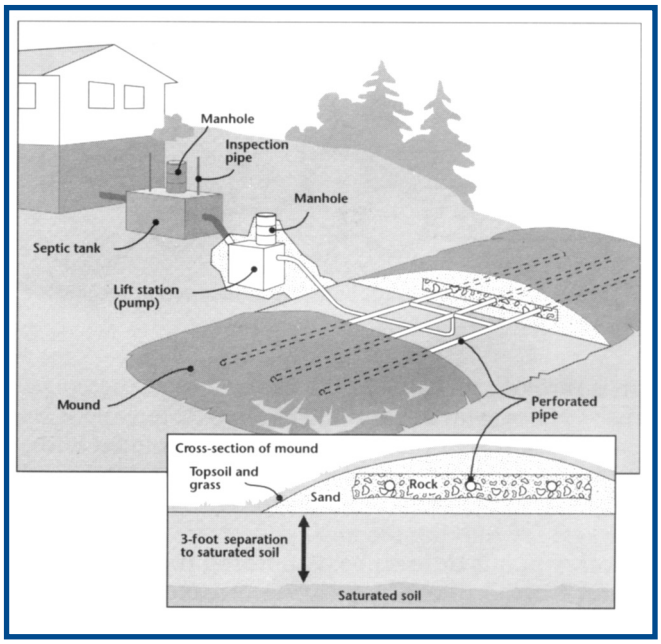

Figure 1. Cross section of a mound system. Illustration by James Kiehne.

Mound Placement

A rectangular mound rising 18 inches to 5 feet above the surface of a relatively flat home landscape may be quite noticeable and possibly very unsightly. Careful design planning before the mound system is installed can help to create a sustainable landscape with lower maintenance costs, greater environmental benefits, and much higher aesthetic value. Mounds can be placed to suit individual landscaping and lot size needs (see Figures 2 and 3). Properly landscaped areas around the mound can serve as privacy barriers, windbreaks for homes, and a screen from unsightly views.

As a homeowner considering the placement of a septic mound, know your options. The earlier in the process that you become involved in expressing your preferences, the more options you will have. For instance, before the house is designed or built, potential septic locations, along with soil borings and percolation tests, can give some control over the placement and final outcome. County or city ordinances set distances from wells or lakes, based on the appropriate state standards and rules (typically 100 feet) or 10 feet from property lines (PL) or rights-of-way (see Figure 4). Additionally, on even a slight slope, it is paramount that the mound rockbed be on the contour for proper operation of the system. Soil must not be moved to create a different slope, as this reduces the ability of the soil to accept the effluent. Once the drainfield or mound is determined, protect it

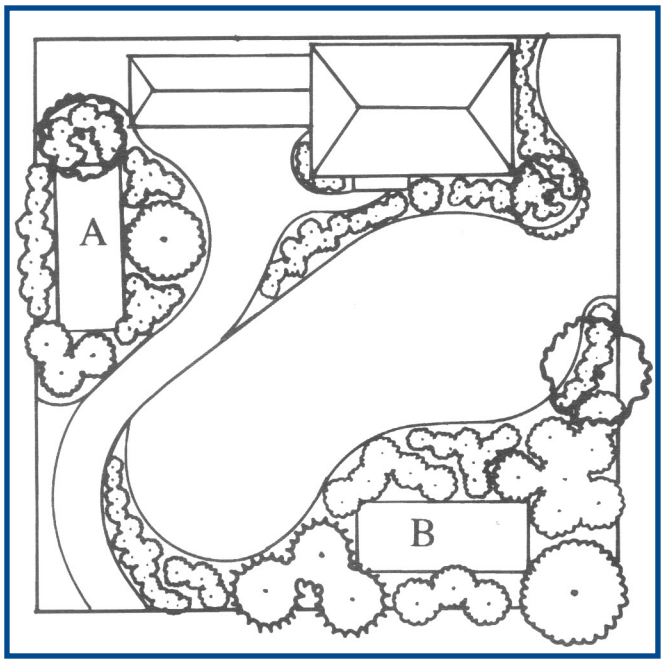

Figure 2. A and B represent possible placement of mound septic systems.

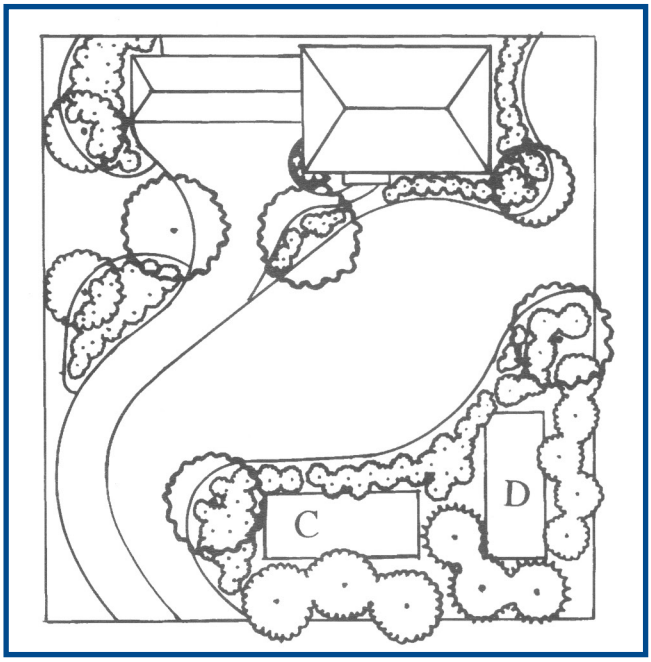

Figure 3. C and D show additional mound system locations.

from compaction and disturbance to ensure proper sewage treatment.

When planning a landscape, there should be an invisible or concept line the eye follows around the yard (see Figures 2, 3 and 4). Where space allows, this line is a graceful curve that represents the division between two different types of plant material (turf or ground cover versus shrubs) or between plants and hard goods (turf, patio, or deck). The concept line becomes a real bedline where the lawn ends and the shrubs begin. If your property is large enough to plan an unbroken turf area as the first priority, then place the septic system beyond the bedline, disguising it as part of a shrub or perennial area or screening it with trees or large shrubs. If your property is smaller, blending the mound into the overall landscape is still the key. Try moving the focal point from the mound to other plants or features. Extending the actual berm with additional topsoil at the same height and curving the perimeter, then sloping down and away can conceal the existence of the system (see Figure 4). If the drainfield must be located near a drive, patio, or walkway, retaining walls may be used to save space, but only on the uphill side of the berm. Connect the extended berm to another large feature in the yard, such as a pool enclosure or other fenced area, using retaining walls for transition. ALWAYS design with the entire yard or viewing area in mind—connect it to the whole picture.

Guidelines for Planting on and Near Septic Mounds

It is very important that the integrity of the mound be kept intact and that soil does not wash away. A permanent vegetation cover is required to minimize topsoil loss. Open sites are more susceptible to frost, heaving, and erosion. Plants trap snow, which acts as a mulch and prevents erosion.

- Topsoil on the mound should be a minimum of 6 inches and a maximum of 30 inches.
- Use minimal tilling when planting and establish a cover as soon as possible to limit erosion.
- Always wear gloves when working over septic systems to minimize your contact with soil.
- Use plants that do not like water or wet soils near the septic system. This will prevent their root systems from interfering with the septic system. The larger the plant, the more extensive (not necessarily deeper) the root system.
- Do not place trees and shrubs ON the mound; they may be planted at the foot or on side slopes. Frame the mound with trees and shrubs at a distance, but use only herbaceous (non-woody) plants on the mound itself. Trees should be planted a minimum of 20 feet from the edge of the mound. Trees known for seeking water reservoirs, such as poplar, maple, willow, and elm, should be planted at least 50 feet from the mound. Shrubs should not be planted on top of the mound.
- Avoid irrigation and fertilization on a mound; in fact, never plan to irrigate this area. Use plants that can withstand dry conditions. Plants listed below tolerate and thrive on natural rainfall in Minnesota.
- Minimize traffic on the mound, both human and animal, to avoid soil compaction. Do not exercise pets or stake pets on septic mounds. Never drive a car or other vehicle across the mound or mow when the soil is wet. Compacted soil can lead to soil erosion and impedes the flow of air around the system. In winter, activity on a mound can cause frost to penetrate, resulting in freezing problems.
- Do not plant edible plants, such as vegetables and herbs on a mound or drainfield.
- Annually inspect the mound for animal damage, such as burrowing and tunneling. Control animals at the first sign of tunneling or burrowing before damage is extensive.

• Root barriers (geotextiles impregnated with a long-lasting herbicide that kills plant roots) have been used around mounds. Installation is expensive and can be avoided with proper plant selection.

Suggested Plants for Use on Septic Mounds

Herbaceous plants, such as wildflowers and grasses, are good choices for mound plantings. Grasses are especially desirable due to their fibrous root systems, which hold soil in place. Grasses also provide year-round cover.

The following native prairie plants grow well on dry soils and would be good choices for a mound septic system:

Wildflowers

prairie onion (Allium stellatum)
pussytoes (Antennaria neglecta)
butterflyweed (Asclepias tuberosa)
heath aster (Aster ericodes)
bigleaf aster (Aster macrophyllus)*
Pennsylvania sedge
(Carex pensylvanica)*
prairie clover (Dalea spp.)
pale purple coneflower
(Echinacea angustifolia)
rattlesnake master
(Eryngium yuccifolium)
wild geranium
(Geranium maculatum)*
prairie smoke (Geum triflorum)
oxeye (Helianthus helianthoides)
rough blazing star (Liatris aspera)
wild bergamot (Monarda fistulosa)
penstemon (Penstemon spp.)
pasqueflower (Pulsatilla patens)
violets (Viola spp.)*

Grasses

sideoats grama
(Bouteloua curtipendula)
blue grama (Bouteloua gracilis)
little bluestem
(Schizachyrium scoparium)
prairie dropseed
(Sporobolus heterolepis)
June grass (Koeleria macrantha)

* shade tolerant

These plants are propagated by seed or plants. A combination of both will make a faster cover. Use a mulch of clean straw or a cover crop of annual ryegrass or oats to prevent erosion while the plants become established.

Low- maintenance lawn grasses, such as fine fescues, can make a dense cover and only need to be mowed once or twice a year. Mow in October and late June to reduce weeds. Fescues are traditional lawn grasses that tolerate dry soils and shady sites. A mixture of fine-textured fescues, such as creeping red, hard, and sheep's fescues (Festuca rubrum, Festuca longifolia, Festuca ovina), in equal proportions can be seeded at the rate of 3.5 pounds per 1,000 square feet. Traditional lawn grasses, such as common Kentucky bluegrass and perennial ryegrass, can be planted on a mound and regularly mowed. Mowing will increase evaporation from the mound and aid in rodent control.

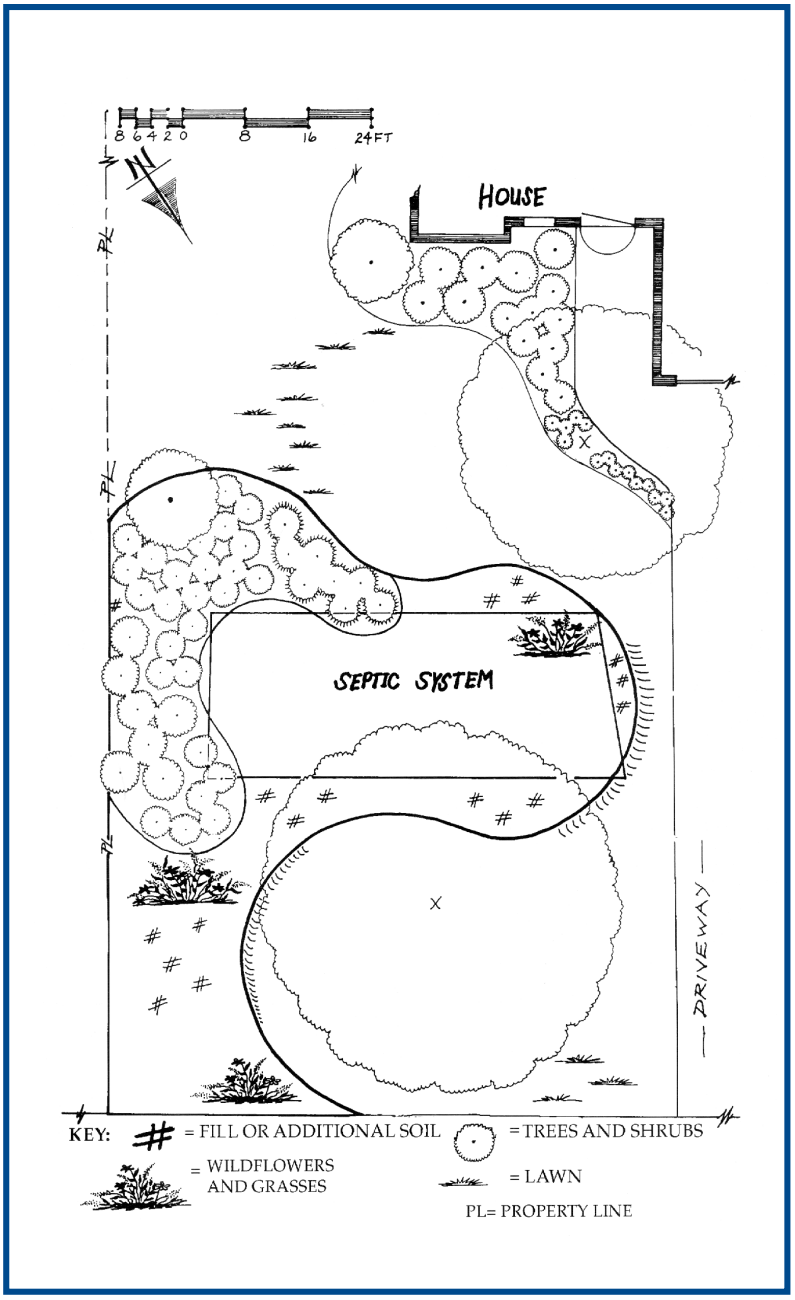

Figure 4. Model landscape plan for mound septic system.

Perennial flowers, such as daylilies and peonies, can be grown; however, extra care must be taken to mulch or plant close together so soil will not be exposed and erode. Low maintenance plants that do not need tending and care (remember minimal traffic on the mound) are best. Enjoy from afar, and do not walk on the mound.

Proper selection and placement of plants best suited to the site means that those plants will be healthier, more attractive, and have fewer pest problems.

References and Further Information

Septic System Owners Guide, PC-6583

Plants in Prairie Communities, FO-3238.

The publications can be ordered from the University of Minnesota Extension Service. Call (612) 624-4900 or (800)976-8636.

For landscape design publications, refer to SULIS URL in Extension site: www.sustland.umn.edu.