

The Montgomery County Dept. of Environmental Protection, in cooperation with the Dept. of Permitting Services and the Washington Suburban Sanitary Commission, has prepared the following information to respond to residents' questions about septic systems and public sewer service in the Glen Hills study area. (9/10/15)

SEPTIC SYSTEMS

Q: *Can a house with an existing septic system be enlarged or replaced using that same system?*

A: This depends on the existing septic system permit and on the nature of the proposed house addition or replacement. Whether or not a house with an existing septic system can be enlarged or replaced using the existing septic system is determined by the Dept. of Permitting Services, Well and Septic Section, on a case-by-case basis.

Q: *What should a property owner do to maintain an existing septic system?*

A: Proper maintenance of a septic system includes pumping out the septic tank every two to five years. The pump-out frequency depends on the intensity of use -- typically the number of persons in the house using the system. More use creates the need for more frequent pumping. Users should also be aware of what should not go into the septic system. These include: any paper products (other than toilet paper approved for septic systems), personal hygiene products, food scraps and coffee grounds, and commercial septic system chemical additives or enzymes.*

** These products are advertised to reduce the need for septic tank pumping. However, they act to keep more waste solids in suspension, rather than settling to the bottom of the tank. This allows more solids to flow out of the tank, leading to premature clogging and failure of the drainfield.*

Q: *How does a property owner with a septic system know when that system is starting to fail?*

A: The first sign may be a sewage odor outside near the septic tank or the drainfield or inside the house. Sink drains or toilets may also run slowly. Sewage either coming to the surface of the yard or backing up into the house are clear signs of a septic system failure. Property owners with these conditions need to contact the Dept. of Permitting Services (DPS), Well and Septic Section. DPS will determine whether correcting a failed septic system requires replacement of the septic system or if it can be addressed by a pump-out or a relatively simple repair, such as fixing a break or clearing a blockage in a pipe.

Q: *What are the different types of septic systems available for Montgomery County residents and how are they used?*

A: Three types of septic systems—referred to as “conventional” systems—are suitable for new construction (new buildings, replacement buildings, or substantial additions to existing buildings):

- Deep stone-trench septic systems
- Shallow stone-trench (or shallow tile) septic systems
- Sand mound septic systems

Alternative/innovative septic systems (such as shallow field dosing systems) are allowed as replacement systems for existing houses only. They are used only in cases where a conventional system replacement will not work.

Q: *What are the “BAT” systems the State now requires?*

A: The State requires the use of best available technology (BAT) for nutrient removal for all new and replacement septic systems. This technology is expected to reduce pollutant flow to groundwater and surface waters, and ultimately the Chesapeake Bay, and to extend the useful life of a septic system beyond that for a system lacking a BAT installation. BAT systems require electricity for operation of the aeration system installed in the septic tank. The state also requires owners of

BAT systems to have a minimum five-year maintenance contract with a licensed contractor. Grants of up to \$15,000 from the State's Bay Restoration Fund (BRF) are available to help owners install BAT systems.

Q: *What factors does the County consider in permitting a suitable location for a septic system?*

A: Finding a suitable site on a property for a new septic system under County and State regulations requires an approved:

- Water table test to determine the depth to the water table and subsurface rock.
- Percolation test to determine the soil percolation rate.
- Site layout plan to ensure:
 - Adequate area for the placement of the initial system and reserve drain fields -- typically at least 10,000 square feet.
 - Required minimum setbacks (separation) from features such as structures; property lines; wetlands, streams, stream buffers, and flood plains; trees; wells and other septic systems; and steep slopes

Specific requirements can vary depending on the type of septic system proposed. Testing results may also result in the need to use a specific type of septic system. For example, a water table test showing shallow ground water could indicate the need to use a sand mound system instead of a deep trench system.

Regulations require a 100-foot well separation between all wells and septic systems. The availability and use of public water service can therefore allow for more flexibility in the siting of a septic on a property.

Q: How much does it cost to install a new septic system?

A: The following information was developed for the Phase 2 report from the Glen Hills Study:

“The costs listed in Table 4.2 are for new construction, but excludes the cost of BAT technology, except in the case of drip systems. The cost of engineering design, permit application fees, and testing has also been excluded. BAT technology can add \$6,000 to \$8,000 or more to the cost of a system.”

Table 4.2 – Range of Costs for Replacement of On-Site Disposal Systems

Septic System Type	Estimated Cost of installed system - 3 or 5 Bedroom House	
	3 Bedrooms	5Bedrooms
Deep Stone Trench ^A	\$10,000	\$17,500
Shallow Stone Trench ^A	\$11,500	\$20,500
Sand Mound ^B	\$20,000	\$30,000
Drip Disposal ^C	\$37,000	\$48,000
^A Deep trench and shallow trench costs also include excavation, trenching, fill, piping, and seeding. Costs taken from RMS Means (2012). ^B Sand mound system costs provided by MCDPS (April 2011). ^C Drip disposal system costs provided by MCDPS and discussions with manufacturer. The cost of Best Available Technology (BAT) tank is included; required for replacement drip disposal systems only		

As noted previously, grants of up to \$15,000 from the State's Bay Restoration Fund (BRF) are available to help owners install of best available technology (BAT) nutrient reduction systems.

PUBLIC SEWER SERVICE

Q: What environmental concerns exist about using public sewer service?

A: Construction of new sewer mains can result in short-term disturbance along main alignments, typically along streets. However, run-off from construction areas has to be controlled and disturbance within construction areas has to be mitigated as soon as possible. Some longer-term tree loss may also occur. The Washington Suburban Sanitary Commission (WSSC) will work with affected property owners to minimize the effects of construction on existing trees.

Sewerage systems may leak due to pipe breaks that tend to occur in trunk sewers located along stream valleys. Stream channel and bank erosion can expose formerly buried pipes and manholes leaving them vulnerable to breaks. The County has also experienced sewage discharge leaks due to the failure of central wastewater pumping stations and breaks in their associated force mains. Pumping station operations are monitored at all times. Where force mains are sited in remote locations, leaks are sometimes more difficult to discover. Sewer system leaks from local service mains (typically from manholes along public streets) more often result from pipe blockages due to tree roots, debris, and/or fats/grease. These leaks are usually noticed and resolved quickly by clearing the blockage.

WSSC operates under a consent agreement with EPA to repair and rehabilitate existing sewer mains to reduce sanitary sewer overflows (SSOs), and to quickly respond to SSOs when they occur.

Q: Who should someone noticing a sewer leak contact to report it?

A: Call the Washington Suburban Sanitary Commission's 24-hour emergency center at either 301-206-4002 or EmergencyCallCenter@wsscwater.com.

Q: If there is a back up in the sewer system, who is responsible for clearing it?

A: Once built, sewer mains in the street and service connections between the main and the customer's property line are the responsibility of the Washington Suburban Sanitary Commission. The service hookup between the property line and the house is the customer's responsibility.

Q: Where are gravity sewers and pressure sewers used and why?

A: The Washington Suburban Sanitary Commission (WSSC) prefers to use gravity sewerage systems wherever possible. However, WSSC will allow the use of low-pressure sewerage systems, which require an on-site pump (grinder pump) for each house served, where needed to avoid 1) construction of new gravity mains through environmentally sensitive areas, and/or 2) construction of extraordinarily long main extensions. Gravity systems, as the name implies, operate using the force of gravity to pull sewage flows down through the mains to a treatment plant. This makes them cheaper to operate than pressure systems, which require owners to use electricity to run the pumps.

Q: How much does it cost to connect a house to an existing sewer main?

A: The Washington Suburban Sanitary Commissions (WSSC) charges approximately \$11,000 for installing a new sewer service connection. The connection runs between WSSC's sewer main, usually along the street, and the property line. This charge can be deferred over a 20-year payback period.

WSSC also assesses a Systems Development Charge (SDC) for new customers. The SDC serves to support the cost of major new facilities and of expansion of existing major facilities required to accommodate new customers throughout WSSC's service area. WSSC's SDC rates currently range from approximately \$3,100 for a house with one or two toilets to \$7,100 for a house with five toilets. These rates are based on new water and sewer service and would be less if an owner is connecting the property only to sewer service. There are also a variety of

application, permit, and inspection fees WSSC charges as part of this process, although ranging from \$35 to \$550 they are not as nearly significant as the connection and system development charges.

On site work is the other major cost component for connecting to an existing main. A WSSC-registered plumber will need to construct the sewer house hookup that will run from WSSC's service connection at the property line to the house. Abandonment of the existing septic system is also needed. On site costs can vary substantially depending on factors such as subsurface conditions, location of the existing septic tank and distance of the house from the property line.

Total project costs for a connection to an existing sewer main are estimated to range from \$23,000 to \$31,000.

WSSC's website at www.wsscwater.com provides a detailed explanation of the various requirements, fees and processes. On the homepage, go to the menu bar at the top, select "Business and Construction" and scroll down and select "Development and Construction Services." From this page select "Permit Services," which will provide detailed, step-by-step connection processes along with the fees, forms, flow charts and various informational items.

Q: How much does it cost to build new sewer mains?

A: Applicants for new sewer main extensions should expect extension costs to start at \$400 to \$500 per linear foot of main. Owing to economies of project scale, shorter extensions (those less than 500 feet) will tend to cost more per foot. Other factors can also raise extension costs such as cutting existing pavement, constructing through rock or at excessive depth, and using the WSSC-built extension program. Extension costs as high as \$1,000 per linear foot of main are possible. Under the Washington Suburban Sanitary Commission's (WSSC's) system extension permit (SEP) program, commonly used for new main installation, applicants have to finance main design, permitting and construction. In order to address cost magnitude and equity problems with the existing extension program, the County is pursuing the feasibility of an alternative financing system with WSSC and Prince George's County.

Q: *Is there enough capacity in existing sewer mains to serve the Glen Hills neighborhood?*

A: WSSC requires a minimum diameter of 8 inches for its gravity sewers. Sewers of this size will have more than sufficient capacity to handle local flows from residential public sewer users in an area such as Glen Hills. Small-diameter, low-pressure sewers are designed based on expected flows into the main and can have limitations of the number of connections allowed.

SEPTIC SYSTEMS OR PUBLIC SEWER SERVICE

Q: *If there is available sanitary sewer capacity why do sewer service categories not allow homes using septic systems to connect to public service?*

A: In the case of the Glen Hills area, sewer service policy, rather than sewer main capacity, controls which properties are allowed to connect to public sewer service. The neighborhood is zoned as RE-1, or one house per 40,000 square feet of land. An acre equals 43,560 square feet. Zoned as such, the Glen Hills area is not generally intended for public sewer service by long-standing, Council-adopted Water and Sewer Plan policies. Most properties are therefore intended to use on-site septic systems and are designated as sewer category S-6. In general, the County's land use policies for areas zoned for lower-density development expect that actual density of residential development will depend on the suitability of the land for septic systems. The 2002 master plan supports this general policy through its sewer service recommendations. Master plan service recommendations existing before 2002 were different in this regard and did allow for some sewer service extensions to support new development within the study area.

Q: *Why is public sewer service approved for and available to some but not all properties in the study area?*

A: Several different sewerage system policies have applied to the study area over time, resulting in a patchwork pattern of public sewer service approvals.

Currently, the service recommendations from the 2002 Potomac Subarea Master Plan prevail. The only justification for providing new public sewer service in the Glen Hills area is to relieve a documented public health problem resulting from a septic system failure. Providing sewer service to relieve failed septic systems has long been a reason that sewer mains were built in the study area.

Water and Sewer Plan service policies generally intend that areas such as Glen Hills, zoned for lower-density development (see above), will use individual septic systems. However, before the adoption of the current master plan in 2002, prior master plan recommendations allowed the County to consider public sewer service to areas zoned for lower-density development on a case-by-case basis. This resulted in some sewer main extensions in the study area such as those built in the early 1990s along Jasmine Hill Terr. and Autumn Oaks La. Before that, some sewer mains were extended into the neighborhood in the late 1960s following construction of the trunk sewer main along Watts Branch. This occurred before the State delegated water and sewer service planning authority to the County government in the early 1970s.

Also before the adoption of the 2002 master plan, properties that abutted an existing or approved sewer main and existed when the main was built were allowed a single service connection to that main.

Q: *Why did some properties along Scott Dr. and Veirs Dr. receive public sewer service?*

A: These properties are located within Rockville's public water and sewer service area as designated by the State. The approval and provision of sewer service to these properties required annexation into the city. Until annexation occurs, other properties also in the city's service area need to use on-site septic systems.

Q: *In terms of a property owner's responsibilities, what is the major difference between having public sewer service versus an on-site septic system?*

A: Customers using public sewer service pay an authorized utility to have their sewage collected and treated at a central treatment facility. The utility and its operation of the collection system and treatment plant are regulated by federal, state, and local governments. Homeowners using a septic system are essentially their own wastewater utility, responsible for the management, maintenance and replacement of their septic systems.

Maryland has enacted environmental regulations aimed at significantly reducing pollutant discharges from wastewater plants. These efforts are supported by revenue from the Bay Restoration Fund (BRF) paid by property owners using public sewer service. The State is working to control the use of septic systems throughout the state and is seeking to improve the nutrient reduction performance of new and replacement septic systems (BAT as explained above). MDE has said that houses using septic systems generate more nitrogen that flows into groundwater and streams, and ultimately to the Chesapeake Bay, than do houses connected to public sewer systems. The State allocates up to \$15,000 of BRF revenue per house to assist owners with costs for BAT upgrades for existing septic systems. This allocation comes from BRF fees paid by property owners using septic systems,

Annual BRF charges are the same for residential users of public sewerage systems and for residential users of septic systems.