Residential Sources of Fecal Bacteria and Sediment Pollution Bulletin- November 2013

Crab Creek Water Quality Improvement Plan, Montgomery County, VA

The Purpose for Developing a Water Quality Improvement Plan

The Commonwealth of Virginia has determined that fecal bacteria (E. *coli*) and sediment levels in many of Virginia's streams, including Crab Creek, commonly exceed state water quality standards. These impairments can expose people to a higher risk of gastrointestinal illness or infection during recreational activities in the water and they can also harm the aquatic life present in the creek.

Virginia state law requires the development of a water quality improvement plan that describes the actions needed to meet water quality standards in the affected water bodies. The process for developing a water quality improvement plan provides communities with an opportunity to provide input on how to protect water quality in their watershed. The completed plan is a tool for acquiring state, federal, and private funds to complete projects that protect water quality by reducing pollution.

How Citizens Can Participate in the Development of the Water Quality Improvement Plan

Citizens can participate in the development of the water quality improvement plan by serving on a residential or agricultural workgroup. Citizens may also serve on the steering committee, which will review the recommendations of the work groups prior to their incorporation in the final plan, or may provide comments on the draft final document during public comment period. Strong public participation in these groups ensures that the final implementation plan reflects local concerns and ideas about improving water quality.

The Residential Workgroup

The residential workgroup consists of homeowners, local citizen organizations, and local and state agency representatives. The principle goal of the workgroup is to discuss information (e.g. opportunities, practical approaches, costs) associated with the residential practices needed to reduce the amount of fecal bacteria reaching streams from septic systems, untreated discharges of human sewage and grey water (straight pipes), and pet waste as well as the amount of sediment from stormwater runoff.

The residential work group will focus on the following tasks:

- Identifying practical approaches for addressing straight pipes, failing septic systems, pet waste issues and stormwater runoff and the costs for individual practices
- Evaluating technical assistance needs and ways to deliver assistance
- Determining educational tools that are most likely to be effective at reducing current and future residential bacteria and sediment sources

Questions? Contact Patrick Lizon, Virginia Department of Environmental Quality by phone at (276) 676-4803 or by email at patrick.lizon@deq.virginia.gov.

Residential Best Management Practices to Reduce Human Sources of Bacteria

Benefits of Correcting Residential Wastewater Problems:

- Septic maintenance, such as routine septic pump-outs, save homeowner time and money in the long run
- Lower risk of people becoming sick as a result of swimming in streams
- Reduced contamination and treatment costs for wells and surface water used as drinking water supplies

Septic tank pump-outs

The solids that accumulate in septic tanks need to be periodically removed by a licensed septic pumper in order to ensure that the septic system functions properly. An inspection of the system during a pump-out can help to verify that the system is functioning properly or can detect problems before the system malfunctions and potentially causes sewage to back-up into the home.

Septic tank system repair:

Repairing a malfunctioning septic system improves water quality by eliminating raw or partially treated sewage that reaches surface or ground water. A repair may include a septic tank pumpout, and repair or partial replacement of the components of the septic tank system including the septic tank, distribution box, and subsurface drainfield.

Septic tank system installation/replacement:

Replacement of a malfunctioning septic system that cannot be repaired, or replacement of a straight pipe with a septic system, will improve water quality through the appropriate treatment of sewage. Septic system installation typically includes the placement of a septic tank and subsurface drainfield components. Before a malfunctioning septic system can be replaced, the septic tank may require pumping in order to remove solids from the tank.

Alternative on-site waste treatment systems:

In some cases, an alternative waste treatment system is required to replace a malfunctioning septic system or straight pipe. Alternative systems are capable of functioning under conditions where a conventional septic system may not be appropriate (e.g., insufficient land area available for drainfield, unsuitable soils for drainfield). Examples of alternative systems include: aerobic treatment units, low pressure and drip irrigation distribution systems, sand filters, elevated sand mounds, constructed wetlands, and peat filters.

Connection of malfunctioning system or straight pipe to public sewer:

A malfunctioning septic system can cause seepage of raw or partially treated sewage into nearby ditches, waterways or groundwater. Where sewer is available, connecting to a public sewer system permanently eliminates the potential for non-maintained septic systems to degrade water quality and expose people to unnecessary health risks.