Nitrogen-Reducing Systems – Frequently Asked Questions

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Code of Maryland Regulations, COMAR 26.04.02, established new requirements for on-site sewage disposal systems within the Chesapeake Bay Watershed. Nitrogen-reducing units approved by the Maryland Department of the Environment as Best Available Technology (BAT) are required for:

1. new construction applications countywide;
2. building addition applications that require an upgrade to the existing septic system for building permit approval; and
3. repair or replacement applications for existing on-site sewage disposal systems located in the Critical Area.

What are the benefits of nitrogen-reducing sewage disposal systems?

With 533 miles of shoreline along the Chesapeake Bay and its tributaries, Anne Arundel County has a special interest in using nitrogen-reducing systems to treat sewage. This technology is designed to reduce the amount of nitrogen discharged from a septic system. These units are also capable of producing cleaner wastewater, which can help extend the life of a septic system. Reducing excess nitrogen from a septic system helps protect against algal blooms, low oxygen and fish kills.

Development and redevelopment, particularly in the resource-protected Chesapeake Bay Critical Area, increase the need for improved methods of wastewater treatment and disposal. Nitrogen-reducing systems are required by County law for development projects on existing lots and subdivisions in the Critical Area.

To help County property owners with the purchase, installation and 5-year maintenance cost of a nitrogen-reducing pretreatment units, the Department of Health set up the Anne Arundel County Bay Restoration Fund in February 2007. The Fund is supported by a Maryland State Grant.

How does a nitrogen-reducing system work?

A nitrogen-reducing system consists of the advanced pretreatment unit and the sewage disposal field. The advanced pretreatment units used in Anne Arundel County typically replace or work in combination with the septic tank. The units may use aeration or recirculation to promote biological action. Through this action, nitrogen is released as a harmless gas to the atmosphere. Advanced pretreatment units include electrical and mechanical components such as pumps, blowers, floats, alarms, diffusers and electronic control panels.

What maintenance is required for nitrogen-reducing systems?

Since advanced pretreatment units have electrical and mechanical components, periodic maintenance and inspections by a qualified contractor are essential. The frequency of inspection and maintenance

will vary based on the type of unit. Manufactured units should follow the manufacturer's maintenance requirements. Engineer-designed units should follow inspection and maintenance requirements recommended by the installer. An operation and maintenance service contract with a certified service provider is **required** for properties with nitrogen-reducing units in the Critical Area. An operation and maintenance service contract is **recommended** for all other properties with a nitrogen-reducing unit.

Property owners who install a nitrogen-reducing system must enter into an agreement with the County, which is recorded against the deed of the property. This agreement will specify the amount of square footage and number of bedrooms approved for the property, along with the maintenance responsibilities associated with the nitrogen-reducing unit.

The overall effectiveness of a nitrogen-reducing system and its level of wastewater treatment depend upon the use of the system. Bleach, detergents and household chemicals should be used sparingly. According to County Code, garbage disposal units are prohibited on properties served by on-site septic systems. All leftover food and grease should be discarded as solid waste in garbage cans.

Septic Systems Do's and Don'ts

What is the best type of nitrogen-reducing unit for my property?

The Bay Restoration Fund is only used to support State-approved nitrogen-reducing units that have demonstrated consistent and reliable performance.

Before selecting a nitrogen-reducing unit, a homeowner should consider the following:

- **The purchase, installation and 5-year maintenance cost of the unit.** The property owner is responsible for paying the cost difference if a unit is selected that exceeds the lowest bid or grant award.
- **Long-term operational and maintenance cost** including electricity, maintenance of the unit beyond the 5-year service agreement and the cost for extending the service agreement beyond the five years.
- **Aesthetics**. Appearance of the unit, noise and odors.

To view a complete list of pre-qualified licensed disposal system contractors, see Bay Restoration Installers, Anne Arundel County.

What programs can assist County property owners with the cost of the nitrogen-reducing system or with septic system repairs and replacement?

The Bay Restoration Fund provides grants to cover part or all of the cost for nitrogen-reducing pretreatment units. For more information, see Bay Restoration Fund or call 410-222-7193.

The Linked Deposit Loan Program discounts the loan interest rate to install a nitrogen-reducing system or to repair or replace a failed septic system. **The Well and Septic System Assistance Program** helps income-qualified applicants repair or replace failing septic systems. For more

information about these programs, call 410-222-7193. See Well and Septic System Assistance Program.

Where can I get more information about nitrogen-reducing systems?

Sanitary Engineering Program
Bureau of Environmental Health
Anne Arundel County Department of Health
3 Harry S. Truman Parkway
Annapolis, Maryland 21401
410-222-7193