

Adverse impact notification sent to Joint Commission on Administrative Rules, House Committee on Appropriations, and Senate Committee on Finance (COV § 2.2-4007.04.C): Yes  Not Needed

If/when this economic impact analysis (EIA) is published in the *Virginia Register of Regulations*, notification will be sent to each member of the General Assembly (COV § 2.2-4007.04.B).



## Virginia Department of Planning and Budget Economic Impact Analysis

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**12 VAC 5-613 Regulations for Alternative Onsite Sewage Systems**  
**Virginia Department of Health**  
**Town Hall Action/Stage: 4737 / 7791**  
February 17, 2017

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### **Summary of the Proposed Amendments to Regulation**

The Board of Health (Board) proposes amendments to reduce the burden for property owners when the owner has an installed sewage system that disperses effluent into groundwater with an average daily sewage flow of less than 1,000 gallons per day, and the owner wants to repair or upgrade the installed sewage system. Additionally, the Board proposes clarifying amendments.

### **Result of Analysis**

The benefits likely exceed the costs.

### **Estimated Economic Impact**

The Regulations for Alternative Onsite Sewage Systems (Regulations) establish performance and operation and maintenance requirements for alternative onsite sewage systems. In the Regulations, alternative onsite sewage system (AOSS) is defined as “a treatment works that is not a conventional onsite sewage system and does not result in a point source discharge.”

Conventional onsite sewage systems use a septic tank and rely on unsaturated soil below the drainfield to treat septic tank effluent. Septic tank effluent has many of the same characteristics as raw sewage and typically contains viruses and bacteria that number in the millions per 100 ml. Typical soil treatment processes include biological breakdown of organic

material, physical filtering, predation and die-off between pathogens and naturally occurring microorganisms, and chemical reactions. A septic tank and drainfield combination is the oldest and most common type of conventional onsite sewage system.

AOSSs typically utilize a treatment device that resembles a scaled-down municipal treatment plant to produce an effluent that is “cleaner” than septic tank effluent with respect to the amount of organic material, the total nitrogen load, and the number of microorganisms present in the effluent. Typically, AOSSs remove 90 to 95% of contaminants before the effluent is released into the soil. Using technology to treat wastewater before it is released into the soil allows AOSSs to achieve high performance levels on sites where limited drainfield area, soil permeability, soil saturation, groundwater, or landscape position preclude the use of conventional systems.

Under the current regulation, property owners who have an installed sewage system that disperses effluent into groundwater with an average daily sewage flow of less than 1,000 gallons per day, and wish to repair or upgrade their system, must meet the same requirements that exist for new systems. According to the Department of Health, compliance with current requirements can cost in excess of \$40,000 for many owners with previously developed properties, and operation and maintenance costs can exceed \$2,000 per year. In order to improve affordability and compliance, the Board proposes less stringent requirements for existing property owners to repair or upgrade systems that would cost less than fifty percent of the compliance cost in the current regulation (see Appendix for detail).

Many existing systems do not meet site and soil criteria established under the current regulations. When the existing system fails the owner is faced with the cost of installing additional treatment or pressure dosing to repair the system. In some cases, the cost of the new treatment or pressure dosing requirements is a barrier for property owners seeking to repair a failing onsite sewage system. In 2004, the General Assembly of Virginia approved legislation to address this issue by amending Virginia Code § 32.1-164.1:1 to allow property owners to request a waiver from additional treatment or pressure dosing requirements beyond the level provided by the existing system when repairing a failing onsite sewage system.

A waiver granted under Virginia Code § 32.1-164.1:1 to repair a failing system is not transferable (unless specifically exempt) and expires upon property transfer. In 2011, the General

Assembly of Virginia approved legislation which again amended Va. Code § 32.1-164.1:1 and added Virginia Code § 32.1-164.1:3 to allow for the voluntary upgrade of onsite sewage systems and alternative discharging sewage systems. As amended, property owners that voluntarily upgrade their onsite sewage system can also request a waiver from additional treatment or pressure dosing requirements, similar to waivers granted to repair failing onsite sewage systems. However, unlike waivers granted to repair failing systems, waivers granted for voluntary upgrades do not become null and void upon sale of the property.

Waivers pursuant to Virginia Code § 32.1-164.1:1 allow homeowners located anywhere within the Commonwealth, including within the Chesapeake Bay Watershed, to simply waive additional treatment and continue to discharge untreated septic effluent into groundwater. Waivers do not apply to operation and maintenance (O&M) requirements. The Board's proposed amendments change the performance requirements and O&M schedule for direct dispersal of a voluntary upgrade or repair; it does not change the statute, and the law allows the property owner to receive a waiver.

Since promulgation of the AOSS Regulations on December 7, 2011, the Commissioner of Health has granted more than 30 variances to owners claiming financial hardship for repairs and voluntary upgrades, and about 750 owners have waived requirements pursuant to Virginia Code § 32.1-164.1:1. The proposed amendments will provide a more financially attainable level of treatment for previously developed properties, while still providing a high level of public health protection and encouraging owners to not waive regulatory requirements. The proposed amendments will also eliminate the need for an individualized variance for most situations. To the extent that the proposed less costly requirements do result in more affected property owners complying with the requirements, there will likely be reductions in contaminants released into groundwater and potential improvements in public health. Additional compliance would also produce additional business for septic contractors that repair or upgrade AOSSs, as well as engineering firms and authorized onsite soil evaluators that design AOSSs.

### **Businesses and Entities Affected**

The proposed amendments potentially affect property owners with an installed sewage system that disperses effluent into groundwater with an average daily sewage flow of less than

1,000 gallons per day, septic contractors, authorized onsite soil evaluators, and engineering firms that design alternative onsite sewage systems.

### **Localities Particularly Affected**

The Board proposes amendments that particularly affect localities near the Chesapeake Bay and within the coastal plain physiographic province of the Commonwealth since these regions are more likely to have shallow groundwater and sewage systems dispersing effluent close to, or into, the shallow groundwater.

### **Projected Impact on Employment**

To the extent that the proposed less costly requirements do result in more affected property owners complying with the requirements, septic contractors that repair or upgrade AOSSs, as well as engineering firms and authorized onsite soil evaluators that design AOSSs may have more business, which may moderately increase employment.

### **Effects on the Use and Value of Private Property**

The proposed amendments potentially increase the likelihood that owners of property with an installed sewage system that disperses effluent into groundwater with an average daily sewage flow of less than 1,000 gallons per day have their system repaired or upgraded.

### **Real Estate Development Costs**

The proposed amendments do not affect costs of new real estate development, but do lower costs for repairing or upgrading some sewage systems on existing developed real estate.

### **Small Businesses:**

#### **Definition**

Pursuant to § 2.2-4007.04 of the Code of Virginia, small business is defined as “a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.”

#### **Costs and Other Effects**

The proposed amendments reduce the costs of repairing or upgrading sewage systems that disperse effluent to groundwater for small businesses that own property with such systems.

### **Alternative Method that Minimizes Adverse Impact**

The proposed amendments do not adversely affect small businesses.

#### **Adverse Impacts:**

##### **Businesses:**

The proposed amendments do not adversely affect businesses.

##### **Localities:**

The proposed amendments do not adversely affect localities.

##### **Other Entities:**

The proposed amendments do not adversely affect other entities.

#### **Legal Mandates**

**General:** The Department of Planning and Budget has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007.04 of the Code of Virginia (Code) and Executive Order Number 17 (2014). Code § 2.2-4007.04 requires that such economic impact analyses determine the public benefits and costs of the proposed amendments. Further the report should include but not be limited to: (1) the projected number of businesses or other entities to whom the proposed regulatory action would apply, (2) the identity of any localities and types of businesses or other entities particularly affected, (3) the projected number of persons and employment positions to be affected, (4) the projected costs to affected businesses or entities to implement or comply with the regulation, and (5) the impact on the use and value of private property.

**Adverse impacts:** Pursuant to Code § 2.2-4007.04(C): In the event this economic impact analysis reveals that the proposed regulation would have an adverse economic impact on businesses or would impose a significant adverse economic impact on a locality, business, or entity particularly affected, the Department of Planning and Budget shall advise the Joint Commission on Administrative Rules, the House Committee on Appropriations, and the Senate Committee on Finance within the 45-day period.

If the proposed regulatory action may have an adverse effect on small businesses, Code § 2.2-4007.04 requires that such economic impact analyses include: (1) an identification and estimate of the number of small businesses subject to the proposed regulation, (2) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the proposed regulation, including the type of professional skills necessary for preparing required reports and other documents, (3) a statement of the probable effect of the proposed regulation on affected small businesses, and (4) a description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation. Additionally, pursuant to Code § 2.2-4007.1, if there is a finding that a proposed regulation may have an adverse impact on small business, the Joint Commission on Administrative Rules shall be notified.

Appendix<sup>1</sup>

## Estimated Operation and Maintenance Costs

Parameter/Action	Cost	Current Requirements		Proposed Requirements Generally Approved		Proposed Requirements Non-Generally Approved	
		Frequency	5 year cost	Frequency	5 year cost	Frequency	5 year cost
<b>Sampling:</b>							
<b>BOD5</b>	\$43.75	4/yr	\$875.00	2 per 5 yr	\$87.50	8 total (5 samples over 2 years and annually thereafter.)	\$350.00
<b>TSS</b>	\$25.00	4/yr	\$500.00				
<b>TN</b>	\$125.00	4/yr	\$2,500.00				
<b>TP</b>	\$62.50	4/yr	\$1,250.00				
<b>Fecal Coliform</b>	\$56.25	4/yr	\$1,125.00	2 per 5 yr	\$112.50	8 total (5 samples over 2 years and annually thereafter.)	\$450.00
<b>Operator Visits</b>	\$250.00 - 400/yr*	4x/yr	\$5,000.00	1x per yr	\$2,000.00	8 operator visits over 5 years.	\$2,000.00
<b>Total:</b>			<b>\$11,250.00</b>		<b>\$2,200.00</b>		<b>\$2,800.00</b>

\* Typical maintenance contracts for 1-2 visits per year cost about \$400/yr based on previous surveys of operators. Costs above assume 4 operator visits per year and that the overall cost per visit would reduce with multiple visits and routine maintenance.

<sup>1</sup> All information in the appendix was provided by the Virginia Department of Health.

### Estimated One-time Installation and Construction Costs

	<b>Current Requirements</b>	<b>Proposed Requirements</b>
Treatment Unit	\$15,000 (membrane bioreactor)	\$5,000 - \$10,000
UV disinfection	\$1,000	
Pump to gravity dispersal	Not allowed	Allowed, \$5,000 - \$10,000
Pump tank, drip dispersal, site clearing and development	\$15,000 - \$20,000.	Not required, same cost if used.
Chemical feed for alkalinity	\$1,000	Not required
Nitrogen polishing filter	\$5,000	Not required
TP filter and chemical feed	\$2,500	Not required
Final filter	\$2,000	Not required
Disinfection	\$1,000	\$250 to \$500
Total Estimated Cost	\$42,500 - \$47,500	\$10,000 to \$15,000 for pump to gravity dispersal \$26,000 with drip dispersal

“BOD5” means Biochemical Oxygen Demand 5-day

“TN” means Total Nitrogen

“TP” means Total Phosphorous

“TSS” means Total Suspended Solids

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