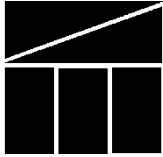


Adverse impact notification sent to Joint Commission on Administrative Rules, House Committee on Appropriations, and Senate Committee on Finance (COV § 2.2-4007.04.C): Yes  Not Needed

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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**9 VAC 25-260 Water Quality Standards**  
**Department of Environmental Quality**  
**Town Hall Action/Stage: 3522 / 8399**  
November 20, 2018

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

The State Water Control Board (Board) proposes to amend the Chlorophyll-*a* water quality criteria applicable to the tidal James River to reflect findings from a comprehensive scientific study overseen by the Department of Environmental Quality (DEQ) that focused on chlorophyll-*a* dynamics and linkages to aquatic life effects in the James River.

### **Result of Analysis**

The proposed regulation would pave the way to provide a cost avoidance of a possible \$695.3 million for 36 industrial and municipal point sources while adequately protecting the water quality of the James River.

### **Estimated Economic Impact**

Chlorophyll is the green pigment found within the cells of algae and plants. It is a commonly used indicator of phytoplankton biomass in surface waters of large rivers, lakes, estuaries, and oceans. High concentrations of chlorophyll are indicative of nutrient pollution in the water. Based on a comprehensive analysis, the Board proposes to amend all ten of the current established chlorophyll-*a* criteria in this regulation, which represent five segments of the James River across two seasons, March 1 - May 31 (spring) and July 1 - September 30 (summer). The proposed changes to the ten criteria would lower the magnitude of the acceptable chlorophyll

content (micrograms per liter) for eight of the criteria and would raise it for the other two criteria. The Board also proposes to revise the allowed exceedances (frequency) and the assessment methodology. The proposed allowable exceedance frequency is less stringent<sup>1</sup> than the rule applied to the current criteria, resulting in a less stringent standard overall. DEQ believes that despite this reduced stringency, the protection to aquatic life is maintained.

Less stringent chlorophyll criteria would lead to lower reductions in total nutrient (nitrogen and phosphorus) loads for compliance. DEQ estimates that attainment of the proposed criteria would require point source annual discharges up to 10.1 million pounds of nitrogen and 580.5 thousand pounds of phosphorus compared to 8.7 million pounds of nitrogen and 490.7 thousand pounds of phosphorus required to achieve the current criteria.

Lower nutrient reductions would reduce both capital and operation and maintenance (O&M) costs associated with pollution controls. Affected facilities have been required to comply with the current more stringent standard as soon as possible, but not later than January 1, 2023. DEQ provided estimates that are based upon a 2002 study<sup>2</sup>, adjusted for inflation, indicating that the proposed change has the potential to reduce total future capital costs of 11 industrial point sources from \$98.1 million to \$51.7 million, and O&M costs from \$6.4 million to \$3.4 million. Similarly, aggregate future capital and O&M costs of 25 municipal point sources may be reduced from \$784.8 million to \$171.6 million and from \$59.5 million to \$26.7 million, respectively. The total future compliance costs for all point sources could decrease from \$948.8 million to \$253.5 million, a possible \$695.3 million or a 73.2% cost avoidance.

However, these cost avoidances would be realized not upon promulgation of this regulation, but instead when the permits for point sources are revised to reflect the less stringent chlorophyll-a criteria, which could take two to four years. In other words, this regulation sets the stage for the potential reductions in point source pollution control costs, but cannot reduce those costs without further action by DEQ. The proposed regulation is beneficial in that it signals and paves the way for potential cost avoidances to be eventually realized by the affected point sources.

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<sup>1</sup> Change from no more than 10% space-time exceedance rate over three consecutive summer seasons to no more than two exceedances over six consecutive spring or summer seasons.

<sup>2</sup> [https://www.chesapeakebay.net/content/publications/cbp\\_13136.pdf](https://www.chesapeakebay.net/content/publications/cbp_13136.pdf)

It should be noted that while there is the potential for lower compliance costs to control the point source nutrient discharges to the James River, wastewater facilities are not the only source of nitrogen and phosphorus loads that can lead to excessive chlorophyll levels. A large part of the total loadings comes in the form of nonpoint source runoff from agricultural land, urban/suburban land, air deposition and even forested land. It remains to be determined, through the development of Virginia's Bay Watershed Implementation Plan what the respective load reduction responsibilities will be for the point sources and nonpoint sources in the James River basin.

### **Businesses and Entities Affected**

There are 11 industrial and 25 municipal point sources that would eventually be affected by the proposed less stringent criteria. None of the affected industrial facilities are small businesses.

### **Localities Particularly Affected**

The 38 counties and 17 cities that drain into the James River are counties of Albemarle, Alleghany, Amelia, Amherst, Appomattox, Augusta, Bath, Bedford, Botetourt, Buckingham, Campbell, Charles City, Chesterfield, Craig, Cumberland, Dinwiddie, Fluvanna, Giles, Goochland, Greene, Hanover, Henrico, Highland, Isle of Wight, James City, Louisa, Montgomery, Nelson, New Kent, Nottoway, Orange, Powhatan, Prince Edward, Prince George, Roanoke, Rockbridge, Surry, and York; and cities of Buena Vista, Charlottesville, Chesapeake, Colonial Heights, Covington, Hampton, Hopewell, Lexington, Lynchburg, Newport News, Norfolk, Petersburg, Portsmouth, Richmond, Suffolk, Williamsburg, and Virginia Beach.

The 36 affected industrial dischargers and municipal wastewater plants are located in counties of Albemarle, Alleghany, Amherst, Bedford, Campbell, Chesterfield, Fluvanna, Hanover, Henrico, James City, Nottoway, Powhatan, Prince Edward, and Rockbridge and cities of Buena Vista, Covington, Hopewell, Lexington, Lynchburg, Newport News, Norfolk, Petersburg, Richmond, Suffolk, and Virginia Beach.

### **Projected Impact on Employment**

The proposed regulation is not expected to have an impact on employment upon promulgation. However, when individual permits are revised, the demand for labor associated with reduced need for capital investment and O&M efforts may decrease. On the other hand, cost

avoidances made possible by the criteria change may avoid possible facility downsizing or even closures and avoid a possible negative impact on employment.

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

The proposed regulation is not expected to have an impact on the use and value of private property upon promulgation. The potential cost avoidances for industrial point sources would likely avoid a possible future negative effect on their asset values.

### **Real Estate Development Costs**

The proposed regulation is unlikely to affect real estate development costs. Albeit less stringent criteria, DEQ concludes that the proposed criteria is adequately protective of James River water quality.

### **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 regulation would not create costs and other effects for small businesses.

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

The proposed regulation does not adversely affect small businesses.

### **Adverse Impacts:**

#### **Businesses:**

The proposed regulation does not adversely affect businesses.

#### **Localities:**

The proposed regulation does not adversely affect localities. In fact, it is expected to have a positive impact on municipal point sources in terms of reduced future capital and O&M costs of pollution control.

**Other Entities:**

The proposed regulation does 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 14 (as amended, July 16, 2018). 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.