



Virginia Department of Planning and Budget **Economic Impact Analysis**

9 VAC 25-720 Water Quality Management Planning Regulation

9 VAC 25-820 General Virginia Pollutant Discharge Elimination System Watershed Permit Regulation

Department of Environmental Quality

Town Hall Action/Stage: 5393 / 9199

April 7, 2021

Summary of the Proposed Amendments to Regulation

The State Water Control Board (Board) proposes to: i) revise the existing total nitrogen (TN) and total phosphorus (TP) waste load allocations (WLAs) and establish new floating WLAs for 36 significant municipal dischargers, ii) establish TP WLAs to meet revised water quality criteria for Chlorophyll-a for seven dischargers, iii) reassign unneeded TN and TP WLAs from facilities that have either closed or otherwise eliminated their need for an allocation to the Nutrient Offset Fund for future use, iv) make numerous clarifying changes and updates to language, and v) amend the *General Virginia Pollutant Discharge Elimination System Watershed Permit Regulation* (9 VAC 25-820) for TN and TP discharges and nutrient trading in the Chesapeake Bay watershed in Virginia in order to implement the changes to the *Water Quality Management Planning Regulation* (9 VAC 25-720) described in i through iii above.

Background

The State Water Control Law (Code of Virginia § 62.1-44.2 et seq.)¹ requires that the Board: establish requirements for the treatment of sewage, industrial wastes and other wastes; review, during 2020 and every 10 years thereafter, the basis for allocations granted in the *Water Quality Management Planning Regulation* (9VAC25-720); and, as a result of the review, revise facility specific WLAs, reallocate unneeded allocations to other facilities registered under the general permit, or reserve such allocations for future use.

¹ <http://law.lis.virginia.gov/vacode/title62.1/chapter3.1/>

According to the Department of Environmental Quality (DEQ), the purpose of this rulemaking is to protect the state waters by establishing new or revised limitations on the amount of nutrients (TN and TP) that are discharged to the Chesapeake Bay watershed. Discharges from wastewater treatment plants contribute to the overall loading of nutrients to the Chesapeake Bay and its tributaries. These nutrients have been identified as pollutants that cause adverse impacts on large portions of the Bay and its tidal rivers, which are included in the list of impaired waters as per §303(d) of the federal Clean Water Act and §62.1-44.19:5 of the Code of Virginia.

Waters that do not meet these limitations require the development of a Total Maximum Daily Load (TMDL) of nutrients. A TMDL is a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards (which is required under the same sections of federal and state laws). The federal Environmental Protection Agency (EPA) adopted the Chesapeake Bay TMDL in December 2010.² Virginia is now following the Commonwealth of Virginia's Chesapeake Bay TMDL Phase III Watershed Implementation Plan, dated August 23, 2019,³ in part by setting nutrient WLAs in regulation.

The proposed amendments to the regulations are meant to accomplish three main goals:

1. To require additional nutrient reductions from significant municipal wastewater treatment plants in accordance with the Chesapeake Bay TMDL Phase III Watershed Implementation Plan,
2. To establish newly adopted Chlorophyll-a based TP WLAs for a subset of significant dischargers in the tidal James River Basin,
3. To reassign unneeded TN and TP WLAs from facilities that have either closed or otherwise eliminated their need for WLAs to the Nutrient Offset Fund for future use.

Currently, TN and TP WLAs for significant municipal dischargers are established based on the capacity of their plants. According to DEQ, this approach has the unintended consequence of not providing appropriate incentives to treat waste from large capacity plants that tend to discharge significantly below their capacity year-round. This proposal retains the current primary

² <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document>

³ <https://www.deq.virginia.gov/home/showpublisheddocument?id=4481>

WLAs and contains new language to establish new floating WLAs. The floating WLAs are based on the average daily flow treated by the facility in a given year and nutrient concentrations of 4.0 mg/l TN and 0.30 mg/l TP.

The future effect of this proposed regulatory change is presently uncertain. As submitted to the Virginia Regulatory Town Hall, the regulatory text stipulates that 36 significant municipal dischargers would be subject to either existing WLAs or floating WLAs, whichever was more stringent. (These dischargers are those with design flows greater than or equal to 5 millions of gallons per day (MGD) west of the fall line which closely overlaps with Interstate 95 and 3 MGD or greater east of the fall line.) In other words, municipal dischargers with excess capacity would need to treat their waste to meet the benchmark nutrient concentrations, even though their discharges may be well below their primary WLAs.

However, House Bill (HB) 2129 (passed by the 2021 General Assembly Special Session I)⁴ appears to have effectively rendered the proposed floating WLAs in this action moot. Given the new legislation, which goes in effect on July 1, 2021, DEQ agrees that the Board will not have the authority to adopt or enforce floating WLAs after July 1, 2021. Therefore, the economic impact of floating WLAs included in this action on 36 significant municipal dischargers is not estimated in this analysis.

This analysis also does not address the item numbered “v” above that would amend the General Virginia Pollutant Discharge Elimination System Watershed Permit Regulation. Changes to the general permit regulation are exempt from the Administrative Process Act, and hence its requirement for an economic impact analysis, per §2.2-4006 (A)(8) of the Code of Virginia. Those changes are included in this regulatory action for administrative convenience for the agency.

This analysis discusses the remaining parts of the proposed amended language that DEQ believes are unaffected by the new legislation. Those are the proposed Chlorophyll-a based WLAs and the reassignment of unneeded TN and TP waste load allocations from plants that have either closed or otherwise eliminated their need for an allocation to the Nutrient Offset Fund for future use.

⁴ See <https://lis.virginia.gov/cgi-bin/legp604.exe?212+ful+CHAP0363>

Estimated Benefits and Costs

Chlorophyll-a related reductions in TP WLAs

The *Water Quality Management Planning Regulation* currently includes WLAs adopted in 2005 that are not consistent with the amended water quality criteria that are currently in place for Chlorophyll-a. These amended criteria (which were developed in accordance with Appendix X to the Chesapeake Bay TMDL), were approved by the Board on June 27, 2019. Following approval by EPA, the amended criteria became effective on January 9, 2020.⁵ DEQ has used the results of updated water quality modeling to establish TP WLAs to meet the recently amended Chlorophyll-a criteria. The Chlorophyll-a criteria does not affect the TN WLAs; only TP allocations would change.

These facilities now have a combined TP WLA of 286,316 lbs./year. Under the proposal, TP allocations would be 141,233 lbs./year for all of the seven facilities, representing a 50.7 percent reduction.⁶ This change would reduce the TP allocation by 1,089 lbs./year for the private facility that is still in business. For six municipal facilities, the total reduction would be 143,994 lbs./year; the individual reduction amount varies by facility from 6,320 lbs./year to 46,934 lbs./year. The affected municipal wastewater treatment plants (WWTP), localities, and the individual reductions amounts are as follows: Richmond WWTP (City of Richmond, 28,161 lbs./year); Falling Creek WWTP (Chesterfield County, 6,320 lbs./year); Proctor's Creek WWTP (Chesterfield County, 16,896 lbs./year); Henrico County WWTP (Henrico County, 46,934 lbs./year); Hopewell WWTP (City of Hopewell, 31,290 lbs./year); and South Central WWTP (City of Petersburg, the City of Colonial Heights, Chesterfield County, Dinwiddie County, and Prince George County, 14,393 lbs./year). Although the quantity of reductions varies, the amounts represent a 50.7 percent reduction for each of the affected facilities. Thus, the relative size of the reduction on individual facility allocations is the same.

DEQ estimates that the compliance costs for the single private facility that would experience a 1,089 lbs./year reduction would be approximately \$4,000/year if it were to purchase credits from the WLA trading program. The 2021 Virginia Nutrient Credit Exchange

⁵ The adoption of the final regulation for Chlorophyll-a standard can be found at: <https://townhall.virginia.gov/l/ViewStage.cfm?stageid=8678>

⁶ This change would also reduce WLA from 1,556 lbs./year to 768 lbs./year for a now out-of-business private facility. The impact on this particular facility is discuss later as the remaining allocation of 788 lbs./year would be reallocated to the Nutrient Offset Fund.

Compliance Plan Annual Update⁷ lists Class A TN and TP WLA prices for 2021 compliance year at \$3.87 and \$5.82 per lbs./year. Class A credits are for trades that take place well before the compliance year based on expectations and planning and are generally priced lower than the Class B credits. Class B credits are more like a spot market for the regulants to true up their actual discharge compared to their allocations usually at the end of the compliance year when the actual discharges exceed the expectations. Therefore, using the Class A credit prices, and including the reduction amounts for the six municipal facilities, the value of the proposed combined 145,083 lbs./year of TP WLA reduction in 2021 compliance year would be \$844,383.

Although the purchase of credits would ensure compliance, credits must be available for purchase. DEQ reports that currently there is an oversupply of credits. The market condition for credits could change however, forcing the facilities to incur capital costs to upgrade their treatment technology, which is the only other way to ensure compliance.⁸ In fact, DEQ reports that there are not enough credits available through the fund to ensure compliance with the proposed reductions and therefore, at least some of the facilities will have to either upgrade or do better with the facilities that they already have sometime in the future. If that were the case, the compliance costs of achieving the same reduction in WLAs would likely depend on specific circumstances of each facility. At this time, however, DEQ does not have any facility specific compliance cost estimates for the affected six municipal facilities.

Nutrient offset fund

The proposed regulation would reassign unneeded TN (311,443 lbs./year) and TP (20,755 lbs./year) WLAs from four private facilities that have closed, and from two municipal plants that eliminated their need for a portion of their current allocation, to the Nutrient Offset Fund for future use. Further, the proposal stipulates that WLAs (243,099 lbs./year TN and 170 lbs./year TP) for a facility currently in operation, but expected to cease operations in the near future, be transferred to the fund when the facility is retired. Of this particular facility's WLAs that would revert to the fund, a 82,240 lbs./year TN reallocation would be held in reserve and may be made available by the DEQ to Chesterfield County for an expansion of the Proctor's Creek WWTP provided that a) the expanded facility provides treatment to achieve an annual average TN

⁷ <https://www.deq.virginia.gov/home/showpublisheddocument?id=6987>, Attachment B on pp. 8-17.

⁸ DEQ can sell credits from the Nutrient Offset Fund (see 9VAC25-820-70 J.3 at \$4.60 and \$10.10 lbs./year for TN and TP WLAs), but that has yet to happen.

concentration of 3.0 mg/l or less, and b) Falling Creek WWTP is designed meet its individual TN WLA.

One of the four private facilities was located in the Potomac River Basin and was a poultry processing facility. It has permanently closed and no processed wastewater is being discharged from the facility. TN and TP WLAs respectively in the amounts of 18,273 and 914 lbs./year would be moved to the Nutrient Offset Fund in accordance with Virginia Code § 62.1-44.19:14.D.⁹ Another private facility, which was located in York River Basin, has permanently closed and thus it no longer generates significant nutrient loads. Its 167,128 lbs./year TN and 17,689 lbs./year TP WLAs would be moved to the fund. The remaining two of the four private facilities were located in the James River Basin. One was originally granted 25,583 and 768 lbs./year of TN and TP WLAs respectively for a cigarette manufacturing facility which subsequently closed and the WLAs would revert back to the fund. The second private facility in the James River Basin had an allocation of 80,000 lbs./year of TN, and no TP WLAs, for the construction of a proposed paper mill which was acquired from another facility through a private agreement. The proposed mill was never constructed and the WLAs would revert back to the fund. In total, 290,984 lbs./year TN and 19,371 lbs./year TP WLAs would be reassigned back to the fund from the four private facilities. These WLAs may be made available for future economic development as the fund serves as a source of last resort for the WLA credits.

The reassignment of unneeded WLAs to the fund does not appear to have an adverse economic impact on the four private facilities. Using the exchange prices, the 290,984 lbs./year TN and 19,371 lbs./year TP WLAs could be valued at \$1,126,109 and \$112,739 respectively. According to DEQ, however, despite aggressive efforts of the at least two facilities to sell their credits, they could not find a buyer, primarily due to excess supply of credits that exists currently. The exchange prices are “firm” due to the trading association’s goal to provide certainty to its members. Thus, the credit prices are not “market based” in the usual sense as they are not determined based on supply and demand. These facilities would have sold them if they could, but they could not. Now using the authority granted by § 62.1-44.19:14.D, the Board is proposing “reservation of such allocations for future use” because the facilities are currently closed. According to DEQ, this adjustment allows for additional economic development.

⁹ <http://law.lis.virginia.gov/vacode/title62.1/chapter3.1/section62.1-44.19:14/>

Similarly, both of the municipal plants whose allocations would be adjusted are located in the James River Basin. The original WLAs for these two facilities were based upon design flows that were greater than the design flow of the treatment plants actually constructed. The excess portions of the combined WLAs (20,459 lbs./year TN and 1,384 lbs./year TP) from these two facilities would be reallocated back to the fund. This change also does not appear to have an adverse economic impact because the actual capacity is lower than originally planned for the two municipal dischargers. DEQ believes this adjustment provides for more equitable WLA distribution and also allows for additional economic development.

Finally, the Chesterfield County may be allocated 82,240 lbs./year TN after another facility retires, whose allocations revert to the fund, and held in reserve until the county improves the treatment levels at two of its plants.

Other Changes

This proposal would also make numerous clarifying changes and updates. For example, many facilities have gone through name changes and the new language would update the names. In addition, the WLAs in the regulation would be updated to reflect private trades; this change would help DEQ and the public keep an accurate inventory of WLAs by entity. This group of clarifying changes and updates are not expected to have a significant economic impact other than improving the clarity and accuracy of the regulatory language.

Businesses and Other Entities Affected

The proposed Chlorophyll-a related reductions in TP WLAs appear to adversely affect¹⁰ one private and six municipal facilities.¹¹ The proposed reallocations are occurring either because the facility is closed or their current capacity does not call for it.¹² In addition, while the private facilities could have sold their allocations, there does not appear to be a market for them at this time. Thus, the reallocation of unused WLAs does not appear to have an adverse impact on the four private and two municipal facilities affected. The conditional possible allotment of 82,240 lbs./year TN for one of its plants presents an opportunity to the Chesterfield County.

¹⁰ Adverse impact is indicated if there is any increase in net cost or reduction in net revenue for any entity, even if the benefits exceed the costs for all entities combined.

¹¹ Data source: DEQ

¹² DEQ reports that so far no substantial objections to the proposed reallocations have come from the facilities that have closed.

Small Businesses¹³ Affected:

The proposed Chlorophyll-a related reductions in TP WLAs appear to adversely affect one private facility, but that facility is not a small business. Thus, the proposal does not appear to adversely affect small businesses.

Localities¹⁴ Affected¹⁵

The proposed Chlorophyll-a related reductions in TP WLAs would adversely affect six municipal facilities. The impact would be greater on localities that discharge more in the James River Basin. The quantity of reductions in descending order are as follows: Henrico County WWTP (Henrico County, 46,934 lbs./year); Hopewell WWTP (City of Hopewell, 31,290 lbs./year); Richmond WWTP (City of Richmond, 28,161 lbs./year); Proctor's Creek WWTP (Chesterfield County, 16,896 lbs./year); South Central WWTP (City of Petersburg, the City of Colonial Heights, Chesterfield County, Dinwiddie County, and Prince George County, 14,393 lbs./year); Falling Creek WWTP (Chesterfield County, 6,320 lbs./year).

When assessing the disproportionate impact, it is worth noting that the proposed reduction amounts represent a 50.7 percent reduction for each of the affected facilities. Thus, the relative size of the reduction on individual facility allocations is the same.

The proposed Chlorophyll-a related reductions for the six municipal facilities could introduce approximately \$844,383 in costs if they were to purchase the credits from the exchange at published prices. If they choose to make facility upgrades to their plants to achieve proposed reductions, costs could be higher, but they may also draw approximately 25 percent of the costs from the state as the state usually funds a portion of similar upgrades under the Water Quality Improvement Fund program. At some point, it appears at least some of the facilities would have to upgrade as the credits available for sale may not be enough to ensure compliance in the long term.

Finally, the conditional possible allotment of 82,240 lbs./year TN for one of its plants presents an opportunity to the Chesterfield County and if the stipulated allotment is granted, the

¹³ 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.”

¹⁴ “Locality” can refer to either local governments or the locations in the Commonwealth where the activities relevant to the regulatory change are most likely to occur.

¹⁵ § 2.2-4007.04 defines “particularly affected” as bearing disproportionate material impact.

adverse impact on Chesterfield County due to Chlorophyll-a related TP reductions would be offset.

Projected Impact on Employment

The proposed amendments do not appear to have a significant effect on total employment.

Effects on the Use and Value of Private Property

The proposed reductions in TP WLAs would introduce approximately \$4,000 in compliance costs for a non-small private business, but are unlikely to have any noticeable impact on its asset value. Also, this action would help clean the Chesapeake Bay and its tributaries and improve water quality. Such changes, if significant, could contribute to real estate development where such environmental improvements would be realized.

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(D): 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.