

INVESTING IN WASTEWATER IMPROVEMENTS

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WHY IT MATTERS

Through diligent efforts and technological advancement in our wastewater treatment facilities, the Commonwealth has made notable progress in reducing pollution and safeguarding the state's waters.¹ However, opportunities for improvement still exist, and in fact, a recent analysis² suggests that phosphorus loads to the Chesapeake Bay are higher than previously expected. Further, the majority of tidal waters in Virginia remain impaired due to nutrient pollution, and impacts from climate change are exacerbating these issues.

Upgrades to our wastewater treatment facilities play a crucial role in helping the state reach Virginia's pollution reduction goals outlined in the **Chesapeake Bay TMDL**. To date, the Chesapeake Bay reduction plan's primary source of success in reducing nutrient pollution has been through wastewater treatment plants. Wastewater upgrades have a high degree of certainty as benefits are monitored and verified on-site. And additional opportunities are on the horizon for Virginia, but these long-term solutions necessitate significant investment. Richmond, Alexandria, and Lynchburg specifically are in dire need of additional investments to upgrade their antiquated **combined sewer overflow (CSO)** systems, which routinely send raw sewage into major rivers in periods of heavy rainfall³ – storms that are being exacerbated by climate-driven increases in rainfall across the Commonwealth.

CURRENT LANDSCAPE

The Commonwealth of Virginia made significant progress in the wastewater arena by putting forth \$400M in bond funding to provide upgrades to wastewater treatment plants in the most recent biennium budget.⁴ Under this outlay, the **Department of Environmental Quality (DEQ)** will make matching grants for **Water Quality Improvement Fund (WQIF)** eligible wastewater projects that achieve Chesapeake Bay nutrient pollution reductions via the design and installation of nutrient reduction technology at publicly owned wastewater treatment plants.

Since 1997, when WQIF was established, the fund has provided more than \$1B in grants to implement nutrient removal projects. Over the past two decades, this has been further bolstered by the development of a general permit for Bay watershed treatment facilities. This permit, which places discharge limits on nutrient (nitrogen and phosphorus) pollution, also comes with a nutrient credit trading system. As a result of these investments, Virginia has achieved 97% and 75% of its nitrogen and phosphorus pollution reductions respectively to the Bay watershed from the wastewater sector.⁵

Despite these technological upgrades, our wastewater sector is still facing significant challenges given the rapid pace of development, population growth at the state level, and the baked-in impacts of a changing climate. Higher costs as a result of inflation and delayed project timelines further threaten our continued progress. Accordingly, Virginia and regional partners will have to enhance efforts to meet the goal of a restored Bay, as called for in the

Commonwealth's **Phase III WIP**.⁶

Antiquated combined sewer overflow systems in three of our major cities are easily overloaded by stormwater. CSO overflow is sending untreated stormwater and sewer water directly into nearby rivers with concerning health implications.⁷ Legislation in 2017 and 2020 put deadlines on Alexandria and Richmond to address untreated overflow events from their CSOs. But the scale of these infrastructure problems requires state help, and increased project costs and shifting timelines further impact these localities' ability to stay on track – particularly in Richmond, where 20.9% of residents are below the poverty line⁸ and already pay some of the highest wastewater rates in the state. Richmond identifies projected costs to be over \$1.3B to complete remediation work on its combined sewer system.⁹ During the 2024 General Assembly, \$50M was appropriated in the budget for Richmond's CSO efforts, but significant remaining funding is needed in order for the City to meet the state's order by 2035.

OPPORTUNITIES

According to the 2023 Commonwealth Wastewater Infrastructure Needs Assessment, the total wastewater infrastructure needed over the next 20 years in Virginia is approximately \$15.8 billion, including \$10.8B for community centralized projects. Accordingly, DEQ estimates that approximately \$539M in additional funding above historical annual levels is needed going forward.¹⁰ While the \$400m in bond proceeds as part of the 2024 budget is a strong start, there is still a gap to reach the needs assessment. According to the DEQ, \$270M in FY26 is needed to help localities meet their pollution reduction goals through infrastructure upgrades.

The General Assembly placed Richmond on a timeline to remediate its CSO system by 2035 through legislation (SB1064) passed in 2020. However, there remains a \$350M budget gap that needs to be filled to meet the state's order by 2035. This gap will need to be funded, at least in part, with state funds.

In 2021, the **Enhanced Nutrient Removal Certainty Program** was established, which will ensure Virginia achieves the wastewater treatment technology upgrades necessary to meet the Phase III WIP.¹¹ Not only will more complete wastewater treatment revitalize the Bay and its tributaries, but it will ensure that communities across the Commonwealth will more equitably receive the benefits of clean water in their communities. Rural communities, especially rural communities of color, "have long faced challenges with toxic water due to insufficient water infrastructure," while low-income ratepayers in urban areas struggle to afford wastewater and drinking water improvements.¹² State investment will help these communities maintain and improve aging infrastructure, prevent local water quality problems, and create good-paying jobs for skilled workers.¹³

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TOP TAKEAWAYS

Wastewater treatment plant upgrades have been the most effective way to reduce nutrient pollution through the Chesapeake Bay cleanup plan. These wastewater upgrades have a high degree of certainty as benefits are monitored and verified on-site.

The Commonwealth of Virginia made significant progress in the wastewater arena by putting forth \$400M in bond funding to provide upgrades to wastewater treatment plants in the most recent biennium budget.

Additional state funding is needed for localities to remediate aging CSO systems to make local rivers swimmable and fishable. The total wastewater infrastructure funding needed over the next 20 years in Virginia is approximately \$15.8 billion, including \$10.8B for community centralized projects.

| Photo by Erik Moore



ENDNOTES

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