

Frequently Asked Questions

H.L. Mooney Advanced Water Reclamation Facility-Wide Improvements

1. What is the best method to obtain current information for this project?

The project website address is [H.L. Mooney Advanced Water Reclamation Facility Wide Improvements | Prince William Water](#). Additionally, a project-specific e-mail address is mooneyimprovements@pwcsa.org.

2. Why is Prince William Water improving the H.L. Mooney Advanced Water Reclamation Facility (AWRF)?

This infrastructure project is designed to improve operational resiliency and levels of service, provide additional odor control, and allow the plant to continue meeting regulatory requirements.

3. Is there a list or map that shows the Project Components being improved?

The Project Summary is available on the website, which lists and shows a map of improved components.

4. When will the construction of the project start and finish?

Construction is anticipated to start in Fall 2023 and be completed by Summer 2027.

5. What areas of the community are going to be disturbed during construction?

All construction activity will be within the H.L. Mooney AWRF property line and away from the surrounding buffer areas.

6. Will there be any public road closures and road interruptions?

Work will only occur within the H.L. Mooney AWRF's property. Construction traffic entering and leaving the facility will increase during normal business hours. However, no disruption to public roads is anticipated for this project.

7. What procedures do you have to ensure all construction traffic does not track dirt onto our roads?

The Construction Contractor must comply with Virginia Erosion and Sediment Control requirements. Any deficiencies will be addressed immediately.

8. What architectural design will the new buildings have?

The proposed design will mostly match existing facilities' architecture while pursuing sustainability.

9. What noise level is rated for this location’s operation, and will that change?

The design will meet the noise requirements set forth in the Prince William County Zoning Ordinance. The improvements will incorporate the best available technology related to noise control at the time of construction.

10. What improvements are being made for odor control at the AWRF?

The project includes expanding the odor control system to capture and treat odorous air emanating from primary treatment and Solids treatment. The additional odor control system at the AWRF plant will consist of ventilating and scrubbing the air space where odors typically emanate.

11. How does this Project benefit the Customers/ Community?

Some of the benefits from these improvements include Odor Control Improvements, reinvesting in infrastructure, added resiliency for continuous treatment, enhanced sustainability impact, and potential Institute for Sustainability Infrastructure (ISI) Envision certification and Environmental stewardship outreach opportunities.

12. After the project is complete in 2027, how long will this facility be able to handle the community's needs with the rapid pace of construction and new homes?

Based on regional population projections and data from the Council of Governments, the facility is designed to meet the community's needs through at least 2045. Specifically, the headworks is designed for 80 million gallons per day (MGD), much higher than current usage, allowing for significant growth in water flow to accommodate the rapid pace of construction and new homes in the county. Moreover, the county wastewater system is part of a broader network that includes the Upper Occoquan Service Authority, which also serves parts of Prince William County. This distribution of load further ensures that no single plant is overwhelmed by the community's wastewater needs.

Additionally, the design includes improvements to equalization (EQ) basins, which help to even out fluctuations in water flow. This means that during periods of high flow or low flow, the plant can maintain consistent operations without requiring frequent adjustments.

13. Is there a difference in operational efficiency during peak times between a parallel system and a single-lane plant like this?

Yes, there are differences in operational efficiency between a parallel system and a single-lane plant like this AWRF Plant. This plant's design, although unique, offers distinct advantages during peak times. The inclusion of EQ basins allows for the minimization of fluctuations in water flow, whether it's high volume during heavy rain or low volume during dry periods, contributing to operational stability. Furthermore, the reliance on gravity flow from the EQ basins enhances resilience and reduces dependency on power compared to systems in low-lying areas like New Orleans or Long Island, which rely heavily on pumps. While power is still necessary for operations, the plant can continue to function even during power outages due to its gravity-based design.

14. How do you measure odor reduction, and how will residents nearby be affected?

To measure odor reduction and assess the potential impact on nearby residents, we conducted extensive data collection and analysis. This involved detailed discussions with engineers to select appropriate technologies, such as carbon or scrubbers, based on the specific odorous compounds present. We also analyzed odor samples collected from various locations around the plant, considering factors such as wind direction, wind speed, seasons, and vegetation cover to create a comprehensive computer model.

Additionally, we installed odor loggers along the fence line to establish baseline odor levels before implementing any changes. This allows us to compare pre-and post-improvement data to assess the effectiveness of our measures accurately. By taking these comprehensive steps, we aim to provide residents with a tangible improvement in odor control, backed by thorough data analysis and ongoing monitoring. While it's understood that the complete elimination of odors is challenging due to variable conditions, the aim is to ensure that odors are primarily contained within the plant's perimeter.

15. How is this project funded, by tax dollars or rate increases?

This project is funded primarily through rates rather than tax dollars. The need for rate increases is driven by several factors, including stricter environmental regulations mandated by laws like the Clean Water Act and EPA standards. Compliance with these regulations requires ongoing investments to meet new requirements, such as addressing emerging contaminants like PFAS (per and poly-fluoroalkyl substances). Additionally, inflation and supply chain disruptions have led to increased costs for materials and equipment used in the project, further necessitating rate adjustments.

Overall, the investment in this project, totaling over \$180 million, reflects a proactive approach to infrastructure maintenance and upgrades. By addressing issues before they lead to significant failures, we aim to minimize long-term impacts on both service quality and customer bills.

16. Was there any value engineering performed to manage construction costs?

Yes, value engineering was indeed performed to manage construction costs for the project. While it wasn't conducted in a formal manner, typical of traditional value engineering processes, it was integrated into the project's workflow. Due to the project's complexity and size, delaying it for a separate value engineering process would have been impractical, potentially resulting in significant project delays.

Instead, value engineering occurred continuously throughout the project's lifecycle, with the collaborative efforts of the contractor, designers, and project team. The project team also prioritized needs and scrutinized the scope to ensure cost-effectiveness and balancing project goals with fiscal responsibility. Furthermore, decisions regarding the project's design and construction were informed by competitive bidding processes. Subcontracts, such as those for electricians, painters, and HVAC specialists, underwent an open-book bidding process, with a minimum of six bids solicited for each. This transparent approach ensured competitive pricing and provided opportunities for participation by small, women, and minority-owned businesses.

17. Is there a measurement of the air toxicity from the odors currently?

The air emitted from the facility is not toxic, and therefore, no measures are taken. The odors are primarily a result of natural biological processes within the wastewater treatment system rather than the presence of harmful substances. The facility meets and exceeds all regulations, including OSHA standards, to ensure safety of Prince William Water's workers and the surrounding community.

There is no evidence to suggest that prolonged exposure to these odors poses any health concerns to those working at the facility or residing in the vicinity.

The stack on the fluidized bed incinerator is equipped with sophisticated scrubbers and other equipment to remove any potential pollutants before emission. What exits the stack is primarily water vapor and nitrogen. The investment in odor control measures focuses on being a good neighbor and mitigating any nuisance odors for the community.