

# **H.L. Mooney Advanced Water Reclamation Facility- Wide Improvements Project**

# AGENDA

- ▶ Welcome and Introductions
- ▶ What is the Prince William County Service Authority?
- ▶ What is the H.L. Mooney Advanced Water Reclamation Facility?
- ▶ What is the Facility-Wide Improvements Project?
- ▶ Questions

The background is a dark blue color with a subtle grid pattern. Overlaid on this are several light blue water droplets of varying sizes, arranged in a staggered pattern. A white arrow-shaped box points from the left towards the center of the slide.

What is the Prince  
William County  
Service Authority?

# About the Service Authority

- ▶ Established in 1983 by the Board of County Supervisors as an independent entity
- ▶ 40 years of service to the Prince William community
- ▶ Fully funded by rate payer dollars (no tax money)
- ▶ A high-performing, customer-first culture
- ▶ Performance Highlights:
  - 99.999% reliability and availability for water and sewer service
  - 90% satisfaction in annual customer surveys
  - Numerous state and national awards for safety, operations and community outreach

A circular icon containing a target symbol with an arrow hitting the bullseye, positioned at the top right of the Mission circle.

## MISSION

Prince William County Service Authority protects public health and the environment by reliably providing clean, safe and dependable water and wastewater reclamation services to our community.

A circular icon containing a stylized eye with a colorful iris, positioned at the top right of the Vision circle.

## VISION

The Prince William County Service Authority is a trusted public steward and nationally recognized model for performance excellence. We reflect the diverse and vibrant community we serve and nurture diversity, equity and inclusion in relationships with our community, customers, businesses and industry colleagues. We create value for our community through our Areas of Excellence.

# AREAS OF EXCELLENCE



**Exceptional  
Customer  
Experience**

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**Sustainable  
Operations**

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**Workplace  
of Choice**

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**Financial  
Stewardship**

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**Environmental  
Leadership & Community  
Engagement**



**Continuous  
Improvement &  
Innovation**

# By the Numbers




**1.6**   
Billion Dollars in Assets

**11.9** Billion Gallons  
of Water Distributed per Year 


**65** Wastewater  
Pump Stations

**15**  WATER  
BOOSTER  
STATIONS

**10.1** Billion Gallons  
of Wastewater Treated per Year

 **44,000**  
VALVES



1,100 Sewer  1,300 Water

**2,400 MILES OF PIPELINE**

**22**

**350**  
EMPLOYEES

Water Capacity  
**67.8**  
Million Gallons/Day 

Wastewater Treatment  
Capacity **43.8**  
Million Gallons/Day

 **12,500**  
FIRE HYDRANTS

WATER  
STORAGE  
TANKS





What is the H.L. Mooney  
Advanced Water  
Reclamation Facility?

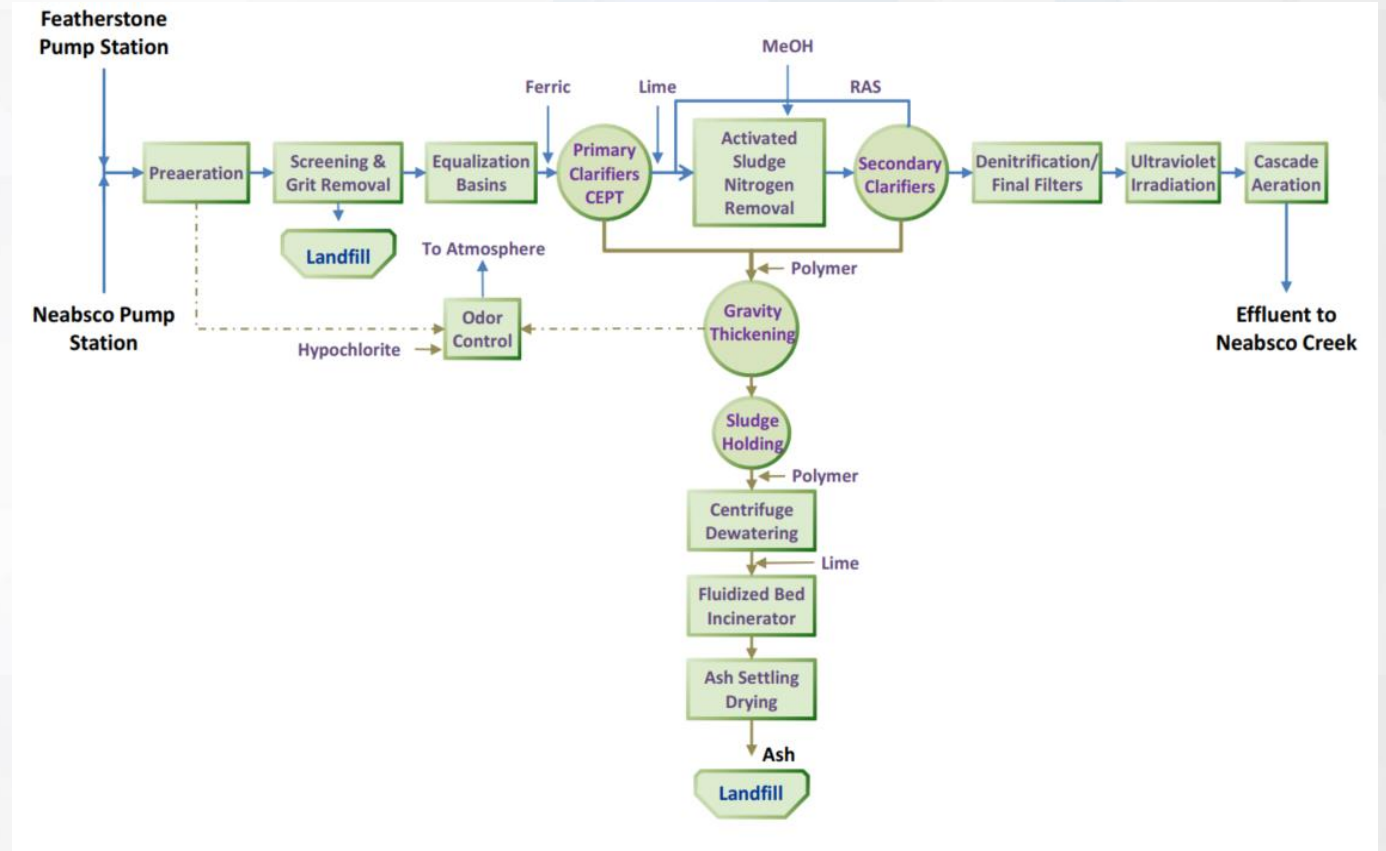






# About the H. L. Mooney AWWRF

- ▶ Mooney AWWRF can treat up to 24 Million Gallons per Day (MGD) of municipal wastewater.
- ▶ Mooney AWWRF discharges treated water into Neabsco Creek, meeting the Chesapeake Bay watershed pollutant discharge requirements.
- ▶ 100% regulatory compliance for 15 years.



# History of the H. L. Mooney AWWRF

- ▶ **1979** – Construction completed under EPA's Clean Water Act Grant Program, with a capacity of 12 MGD.
- ▶ **1997** – Facility undergoes a major upgrade, increasing treatment capacity to 18 MGD.
- ▶ **2010** – \$131.7 million upgrade enhances nitrogen and phosphorus removal, expanding capacity to 24 MGD to meet county growth and safeguarding the Chesapeake Bay.
- ▶ **Current** – The Service Authority embarks on Facility-wide Improvements Project encompassing 19 components, to enhance operational resiliency, improve service levels, and ensure regulatory compliance.



What is the Facility-Wide  
Improvements Project?



# 19 Projects In One!

## Key Components of the Mooney AWRF Facility-Wide Improvements Project

### HEAD OF PLANT

- 01. Equalization Basin Modifications
- 05. EQ Basin Flow Metering Improvements
- 14. Headworks-Related Improvements

### CENTRALIZED ODOR CONTROL

- 16. Centralized Odor Control Improvements

### PRIMARY & SECONDARY CLARIFIER

- 02. Covers and Ductwork
- 03. Collection Eq. Replacement
- 04. Electrical Bldg and Ancillary Facility Upgrades
- 11. Secondary Clarifier Improvements

### CHEMICAL SYSTEMS

- 08. Methanol System Improvements
- 09. Alkalinity System Upgrade
- 10. Ferric Chloride System Improvements

### ULTRAVIOLET (UV) BUILDING

- 06. Disinfection (Ultraviolet System) Improvements

### SOLIDS FACILITIES

- 15. Solids Facilities Improvements
- 18. Fluidized Bed Incinerator Rehabilitation

### FACILITY-WIDE IMPROVEMENTS

- 07. Yard Valve Replacement
- 12. Plant Structural Protection
- 17. Solar and EV Charging Stations (NA)
- 19. Freight Elevator Improvements



# Project Benefits

- ▶ Improve the facility's operational resilience
- ▶ Provide additional odor control to minimize impact on local area
- ▶ Ensure the plant continues to meet regulatory requirements
- ▶ Allow the Service Authority to maintain the level of service we are proud to provide our customers
- ▶ Invest in new and rehabilitate existing infrastructure



# Project Team

## ▶ Service Authority:

- ▶ Glenn Pearson, Director of Environmental Services & Water Reclamation (ESWR)
- ▶ Shannon Spence, Director of Project Management Office (PMO) and Project Manager

## ▶ Design-Builder:

- ▶ Zach Lenkay, USC
- ▶ Meredith J Welle, HDR

## ▶ Owner's Consultant:

- ▶ Yalda Mokhayeri, AECOM
- ▶ Stephen James, AECOM





# PROJECT TIMELINE

November 2023 to July 2027

2021

**Start Design Phase**



2023

**Finalize Design;  
Guaranteed Maximum  
Price (GMP) Delivery**



2024

**Construction**



2025

**Construction**



2026

**Testing and  
Commissioning**



2027

**Estimated  
Construction  
Completion**

# Construction – Hours and Noise

- ▶ Working hours:
  - ▶ 6:00 AM to 4:00 PM, Monday – Friday
  - ▶ Work outside of normal hours will only occur for emergencies, necessary catch-up or planned shutdowns – will post on webpage
- ▶ Noise levels at the facility will remain similar to current operations
  - ▶ For safety, there may be occasional backup alarms from trucks and crane horns during construction
  - ▶ Excavation methods were selected to eliminate vibration and drastically reduces noise levels
  - ▶ Noisiest operation to demolish the existing gravity thickeners has already taken place!

# Traffic Impacts

- ▶ Majority of traffic impact will be on-site rather than on public roads
- ▶ Minor increase of personal vehicle traffic during early morning and early afternoon expected
- ▶ Volume of truck traffic will vary based on construction activities
  - ▶ Beginning early summer 2024
    - ▶ Increase in truck traffic for earthwork removal
    - ▶ Increase in truck traffic for concrete installation. Approximately 10-12 concrete trucks per day
  - ▶ Ending summer 2026

# Mud & Light Control

- ▶ Contractor will monitor on-site traffic for dirt tracking and dust control on public roadways
- ▶ Street cleaning equipment will be used daily onsite and on standby to clean public roadways
- ▶ Night work will be minimized, barring any critical service disruptions or seasonal needs
- ▶ If extended night work is required, barricades and shields will be installed to provide protection from long-term night lighting

# Impacts After Project Completion



No change to truck deliveries to/from the plant



No increased noise levels



Dark Sky Lighting requirements in the design



Headworks designed for long-term resilience



Covering of Primary Clarifiers will result in odor reduction



No impacts to the existing wastewater reclamation system



# Stay Connected!

- ▶ Follow the progress of our project on our website
- ▶ Engage with us during the project!



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# Questions?

Project website:

<https://www.pwcsa.org/mooney-improvements>

Email: [mooneyimprovements@pwcsa.org](mailto:mooneyimprovements@pwcsa.org)

