

# Arlington County Water Pollution Control Plant Arlington Re-Gen

#### **Biosolids Advisory Panel**

May 15, 2025



Meeting Logistics

- Please keep microphones muted when not speaking
- Questions can be entered in the chat or members can unmute themselves
- Phone participants can dial \*6 to request to be unmuted
- To turn on live language translation captions, click 'More' and then 'Language and speech' in the dropdown menu





# Agenda

- 6:05 6:20 Introductions
- 6:20 6:40 **Program Updates**
- 6:40 6:50 **Schedule Updates and Upcoming Site Activities**
- 6:50 7:10 **Site Plan and Architectural Updates**
- 7:10 7:30 **PFAS Risk Assessment**
- 7:30 7:35 **Community Engagement Update**
- 7:35 8:00 **Open Discussion**





#### Introductions

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### **Biosolids Advisory Panel**





**Expectation**: Prove thoughtful input on behalf of the groups represented.





### **Roles and Responsibilities**

- Arlington County Owner
- HDR Program Manager
  - Advises Arlington County
  - Assists with reviews
- PC Construction Design-Builder
  - Responsible for overall delivery
- Stantec Design Subconsultant
  - Engineer of Record





#### **Program Overview**

#### **RECOVERING RENEWABLE RESOURCES FROM WASTEWATER**







#### **Program Benefits**







Existing Water Pollution Control Plant







### **A Paradigm Shift**

#### From this...









#### To this...









# **02** Program Updates





### **Program Components**

Program	Gravity	Early Work	Main Work
Management	Thickeners	Package	Package
<ul> <li>Assistance with program development and oversight</li> </ul>	<ul> <li>Rehabilitate existing gravity thickeners</li> </ul>	<ul> <li>Demolition</li> <li>Utility relocation</li> <li>Site preparation</li> </ul>	<ul> <li>New processes and facilities</li> </ul>



### **Technical Updates**

What

- Detailed design
- Value engineering

**Completed** 

- 95% Early Work Package construction documents
- 30% Main Work Package schematic design
- Value engineering
- Hazards and Operability Study

#### C Upcoming

- Incorporation of value engineering
- 65% Main Work Package design development
- 65% Gravity Thickener design development





# What is Value Engineering?

- Team of experts not directly involved in the project:
  - Conduct a thorough review and analysis of key project issues
  - Improve the value of the project through innovative measures aimed at improving performance and/or reducing project costs
- Value engineering considered sustainability impacts, including benefits of changing from concrete to steel digesters
- The value engineering team met in February and generated 94 ideas that were then further considered by the project team
- The project team has implemented ideas that have saved ~ \$15 million to date



### **Delivery Updates**

How

• Risk analysis

operations

Site logistics

Procurement

• Schedule

planning

Constructability

Maintenance of

#### Completed

- Continued construction planning activities
- Developed work packages and construction estimates

#### C Upcoming

- Finalize construction planning documents
- Begin Early Work construction
- Develop RFP for gas marketing





### **Funding and Economic Impacts**

- Capital Improvement Plan (CIP)
  - Updated CIP has been submitted and approved
- Inflation Reduction Act Tax Credit
  - Project was not able to meet the strict timing requirements
- Other funding/financing sources are being investigated
  - County funding might be lower-cost due to high bond rating
- Design-Build contract offers opportunity to manage risk
- Current market impacts are being evaluated
- Evaluation will continue as prices are established







#### **03** Schedule Updates and Upcoming Site Activities





### **Tentative Program Timeline**







### **Near Term Project Schedule**

Project Phase	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26
Gravity Thickeners																			
Design																			
Bidding and Award																			
Construction																			
Design Build																			
Early Work Design																			
Early Work Construction																			
Main Project Design																			





# **Early Work Updates**

- Permitting underway
- Finalizing design and agreeing on price this summer
- Early Work construction expected to begin in Fall 2025
  - Initial phases include minor site work and utility relocations
  - Significant demolition activities will not occur until 2026



### **Early Work Scope**







# Main Work Package Updates

- Incorporating revisions from value engineering
- 65% Design submittal late 2025
- Permitting, pricing, and final design continues through late 2026
- Board approval late 2026







# **04** Site Plan and Architectural Updates





#### Site Layout as of Last Meeting



0



And all and that

South Eads Street

#### **Site Layout**

Configuration of raw biogas piping and location of waste gas flare Configuration and orientation of digesters and digester building

Buried/eclosed piping with screening elements under consideration

Materials of construction for digesters





South Eads Street



#### South Eads Street

![](_page_26_Picture_2.jpeg)

![](_page_26_Picture_3.jpeg)

# **Digester Tank Construction**

- Proceeding with steel tanks
- Significantly lowers the amount of concrete used in construction
- Improves overall sustainability of construction
- Medina, OH and Grand Rapids, MI
   have steel tanks

![](_page_27_Picture_5.jpeg)

![](_page_27_Picture_6.jpeg)

![](_page_27_Picture_7.jpeg)

### **Architectural Concepts**

#### Previous discussions

- Maintain the current look as much as possible (brick façade, large tanks painted similar to existing equalization tanks)
- Employ screening where possible

#### Current layout

- Thermal hydrolysis process inside solids processing building
- Odor control screened by digesters from Eads Street and by the retaining wall and solids processing building from 31<sup>st</sup> Street
- Significant piping between digesters and solids processing building
- Gas upgrading system adjacent to existing dewatering building

![](_page_28_Picture_9.jpeg)

![](_page_28_Picture_10.jpeg)

![](_page_28_Picture_11.jpeg)

### **Conceptual Design Ideas**

![](_page_29_Picture_1.jpeg)

![](_page_29_Picture_2.jpeg)

![](_page_29_Picture_3.jpeg)

#### **Conceptual Design Ideas**

![](_page_30_Figure_1.jpeg)

ACCENT COLOR BRICK AT FAUX ENTRY AS FOCAL POINT FOR COMMUNITY CONNECTION

![](_page_30_Picture_3.jpeg)

![](_page_30_Picture_4.jpeg)

![](_page_30_Picture_5.jpeg)

### **Next Steps**

- Finalize concepts with architect
- Present project updates and architectural concepts to adjacent civic associations
  - Aurora Highlands June 2025
  - Crystal City September 2025

![](_page_31_Picture_5.jpeg)

![](_page_31_Picture_6.jpeg)

![](_page_32_Picture_0.jpeg)

#### **05** PFAS Risk Assessment

![](_page_32_Picture_2.jpeg)

![](_page_32_Picture_3.jpeg)

#### **The PFAS Family**

![](_page_33_Picture_1.jpeg)

Over 12,000 PFAS compounds

Stain-resistant Water-resistant Difficult to destroy

![](_page_33_Picture_4.jpeg)

HIGH SOLUBILITY Mobile in Water Systems PERSISTENT Doesn't Degrade BIOACCUMULATE Biomagnify Up the Food Chain

#### Found in...

#### Ends up in...

![](_page_34_Picture_2.jpeg)

Industrial activities Manufacturing Firefighting foams Waxes and polishes Food packaging Cookware Glass cleaners Carpets Furniture Clothing Electronics Mascara Lipstick Paints Nail Polish Moisturizer Shampoo **Dental Floss** 

![](_page_34_Picture_4.jpeg)

![](_page_34_Picture_5.jpeg)

#### **Treated Effluent**

![](_page_34_Picture_7.jpeg)

Biosolids

#### **Clean Water Act: Regulatory Process**

#### Risk Assessment & Hazard Identification

#### Risk Evaluation & Control Strategies

#### Economic Impact Analysis

#### Rule Promulgated

#### **Risk Assessment** ≠

- A Regulation
- Proposed Guidelines
- A Risk Prevention Plan

![](_page_35_Picture_9.jpeg)

#### **Draft Risk Assessment**

PFOA and PFOS: well-studied, legacy compounds

- Quantified risks to "a hypothetical farm family" from biosolids land application
- Didn't quantify risks from landfilling or incineration
- Didn't model risks to general public

United States Environmental Protection Agency

Office of Water

4304T

EPA-820P25001

January 2025

DRAFT SEWAGE SLUDGE RISK ASSESSMENT FOR PERFLUOROOCTANOIC ACID (PFOA) CASRN 335-67-1 AND PERFLUOROOCTANE SULFONIC ACID (PFOS) CASRN 1763-23-1

January 2025

U.S. Environmental Protection Agency Office of Water, Office of Science and Technology, Health and Ecological Criteria Division

Washington, D.C.

![](_page_36_Picture_12.jpeg)

#### **Draft Risk Assessment**

#### What does this draft sewage sludge risk assessment suggest?

The draft risk assessment focuses on those living on or near impacted sites (*e.g.,* farm families and their neighbors) or those that rely primarily on their products (*e.g.,* food crops, animal products, drinking water); the draft risk assessment does *not* model risks for the general public. Based on the modeling in the draft sewage sludge risk assessment, the EPA finds that there may be human health risks exceeding the EPA's acceptable thresholds for some modeled scenarios when land-applying sewage sludge that contains 1 part per billion (ppb) of PFOA or PFOS. The EPA also finds that there may be human health risks associated with drinking

- Widespread questions about data, assumptions, and depth of study
- EPA extended public comment period from March to August 2025
- Industry encourages EPA to address comments and finalize risk assessment

![](_page_37_Picture_6.jpeg)

### **Arlington in Context**

![](_page_38_Figure_1.jpeg)

![](_page_38_Picture_3.jpeg)

**Sources**: California Geotracker, 2021 (data). EGLE, Evaluation of PFAS in Influent, Effluent, and Residuals of Wastewater Treatment Plants in Michigan, 2021 (data)

![](_page_38_Picture_5.jpeg)

# What Are We Doing?

- Preparing for future sampling to confirm initial findings
- Tracking regulatory process, treatment technologies, and landapplication risk research
- Participating in emerging technology pilot study (Water Research Foundation)

![](_page_39_Figure_4.jpeg)

![](_page_39_Picture_5.jpeg)

### **The Bottom Line**

- EPA is in the early risk identification phase of a longer regulatory process.
- Early sampling suggests Arlington's PFOA/PFOS concentrations are low by national standards.
- The best way to remove PFAS from Arlington's wastewater is to remove PFAS from our daily lives.
- Techniques for removing PFAS from biosolids are being developed. We're
  participating in the research.
- Re-Gen will substantially reduce the volume of biosolids from the WPCP, an important first step for future PFAS management (if it's needed).
- In the meantime, land application provides beneficial nutrient recycling and resource recovery.

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![](_page_41_Picture_0.jpeg)

### **06** Community Engagement Update

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![](_page_41_Picture_3.jpeg)

#### **Good Neighbor = Good Communication**

Working Together

How can we best support communication to your organization?

#### **Outreach Tools**

- Neighborhood meetings
- Biosolids Advisory Panel
- Stakeholder briefings
- Pop-up outreach events
- On-site open house
- Videos
- Social media
- Re-Gen website (www.arlingtonregen.com)
- Public tours of the WPCP

![](_page_42_Picture_13.jpeg)

![](_page_43_Picture_0.jpeg)

# **07** Open Discussion

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![](_page_43_Picture_3.jpeg)

### **Project Contact**

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![](_page_44_Picture_3.jpeg)

![](_page_45_Picture_0.jpeg)