

# Summary

Project:	Arlington County Biosolids Upgrade	
Subject:	Biosolids Advisory Panel Meeting 5	
Date:	Wednesday, May 24, 2023	
Location:	WebEx	
Attendees:	John Bloom, C2E2 Sandra Borden, Crystal City Civic Association Claire Noakes, C2E2 Energy Committee Steve Young, Joint Facilities Advisory Commission Paul Guttridge, Aurora Highlands Civic Association Mary Glass, Arlington County Civic Association	Mary Strawn, Arlington County Water Pollution Control Bureau Lisa Racey, Arlington County Water Pollution Control Bureau Fasil Haile, Arlington County Water Pollution Control Bureau Mike Collins, Arlington County Department of Environmental Services Alyson Jordan Tomaszewski, Arlington County Department of Environmental Services Kiara Candelaria Nieves, Arlington County Department of Environmental Services Brian Balchunas, HDR Stephanie Spalding, HDR Melanie Deggins, HDR Jessica Host, HDR Samantha Villegas, Raftelis

## Agenda

1. Introductions
2. Overall Program Updates
3. ART RNG and Environmental Attributes and Updates
4. PFAS Results and Analysis
5. Envision Checklists
6. Next Steps

### **Welcome and Introductions** (S. Villegas)

Samantha opened the meeting and welcomed attendees to the fifth advisory panel meeting. She shared details of how to use the WebEx virtual meeting platform, reviewed the agenda, and introduced the team.

Mike Collins introduced himself to the team and thanked the advisory panel for their continued work in the project.

### **Overall Program Updates (M. Strawn)**

Mary Strawn reminded the advisory panel about the overall scope of the program and the program goals. The upgrades to the solids handling facilities will reduce the volume of biosolids produced, make a higher quality biosolids product, and generate biogas.

She explained that HDR is the program manager and acts in an advisory capacity for the County to help define the scope and implementation plans for the program. In the future, HDR will oversee the design and construction. HDR is prohibited in participating in any design or construction contracts for the program.

The technical program has completed 21 technical memos, the biogas utilization report, and the facilities plan. In the next quarter, the team will be investigating carbon capture, planning for asset management, and preparing for the design phase.

The County has awarded the design contract for the gravity thickeners and issued a request for proposals for the design build work. In the next quarter, the team will begin the design of gravity thickeners and continue the selection process for a design builder.

The program components include program management, gravity thickeners, early work package, and the main work package. The County is in the procurement process for the main work package and HDR is overseeing the design of the gravity thickeners. In 2024 the County will get started on the majority of the upgrades including design and construction.

### **ART RNG and Environmental Attributes and Updates (B. Balchunas)**

Brian shared an update on where the project team is headed with ART and Renewable Natural Gas (RNG). ART would like to utilize RNG (in lieu of fossil fuel-based natural gas) before the bus fleets transitions to electric. He also noted that the WPCB has no input in the bus transition timing.

Brian reminded the group on the greenhouse gas (GHG) impacts of the biosolids improvement projects as compared to continuation of the existing lime stabilization process. The data presented assumes no GHG emissions from electricity because the County has already transitioned to 100% renewable energy.

Brian noted that the Re-Gen project could use renewable natural gas in the boilers but that would not change the net GHG emissions. Scope 3 emissions are lower because of fewer solids trucks and chemicals. Before considering RNG, the existing process and the Re-Gen program have the same GHG footprint, as all energy for Arlington County operations is now 100% renewable. Inclusion of RNG would result in a net reduction of GHG emissions of 6,150 tons per year.

The County team has continued to discuss the disposition of environmental attributes as it relates to renewable identification numbers (RINs) with marketers and other owners. The consensus is that as Arlington is voluntarily tracking GHG emission reductions outside of State

and Federal requirements, GHG reductions associated with the use of RNG should count towards Arlington's goals if the gas is used within Arlington County.

The WPCP is drafting a request for information to obtain additional feedback on contractual arrangement and the disposition of environmental attributes from the private market. This will hopefully solicit interest from the private market and provide feedback that can be used in a future procurement document.

### **PFAS Results and Analysis (M. Strawn and B. Balchunas)**

Mary shared that the results of the PFAS sampling submitted last fall are now available and came back normal for domestic wastewater. She noted there is no comparison between the County and industrial contaminated solids.

#### **PFAS OVERVIEW**

Brian shared context of PFAS and what it means for the Re-Gen Program. There are over 6,000 compounds that exist, and PFAS compounds are a concern because they can be soluble in water, they do not degrade quickly, can biomagnify the food chain, and some have shown to have adverse health effects. The EPA has been researching and providing regulations on PFAS in drinking water and wastewater.

While some of the original PFAS compounds are no longer manufactured, the newer PFAS compounds can sometimes break down to legacy PFAS compounds. At the wastewater treatment plant, the County is a receiver of PFAS and are not a generator of PFAS.

There is nationwide research that is ongoing to investigate impacts of biosolids on soils and groundwater. It is important to note that there is no direct human consumption of PFAS in the wastewater or biosolids. Humans are also exposed to products containing PFAS through their everyday lives (food containers, stain resistant products, makeup, etc.). Wastewater levels do not involve direct consumption and exposures are different than to exposures we see in our everyday lives.

Based on the low levels of PFAS seen at the plant, it is expected that land application of biosolids will continue to be a viable end use. However, if additional treatment is required the County will have 50% fewer solids to treat after the Re-Gen program.

#### **TESTING RESULTS**

For testing we took influent, effluent, and biosolids samples and included a blank to show samples were not contaminating with human error. Unfortunately, there was miscommunication with the lab on the blanks and they were not tested. The sampling was completed in November 2022 (update from presentation which noted October 2022).

#### **COMPARING ARLINGTON'S RESULTS**

Brian shared results of the testing at Arlington based on mass equivalency. Brian also compared the results to publicly available information, including data from a comprehensive Michigan study, DC Water, and WSSC Water. All results showed that Arlington wastewater and

biosolids are consistent with levels seen in other municipal wastewaters. Wastewaters with an industrial component see much higher levels.

Brian also noted that research is ongoing, including a nationwide study to evaluate impacts of biosolids land application on PFAS levels in soils and groundwater by Dr. Ian Pepper from the University of Arizona. Mary shared that there is one site in Virginia that is participating in the University of Arizona study. Arlington will continue to monitor the results of the research.

**CONCLUSION**

Brian shared that after reviewing the PFAS results the team does not expect any changes to the Re-Gen Program and will continue to comply with regulations as they are implemented.

**Envision Checklists (S. Spalding)**

Stephanie reminded the group that envision will be pursued during the program. The Envision sustainability goals are closely aligned with the County goals.

She reminded the group that there are 59 credits that add up to 1000 points that can be achieve. Based on what is in the program scope there are 834 points applicable to the County.

The County’s goal is to achieve Envision Gold recognition level by achieving 40% of applicable points.

If there is interest, Stephanie would set up a workshop with a subgroup to review the Envision scorecard (including current expected level of achievement). The meetings can be tailored to the level of interest.

- Paul Guttridge is interested
- \*Anyone else interested in participating in an Envision subgroup should reach out to Samantha Villegas.

**Next Steps (M. Strawn)**

Mary thanked the group for attending and for their input during the meeting.

Mary noted that the group will reconvene in Fall 2023 and she is hoping to meet the group in-person.

**Questions and Responses**

Question	Response
<p>John Bloom: Great to hear carbon capture is in consideration. Can the project benefit from the Inflation Reduction Act for carbon capture and the other portions of the project? They offer credits for AD equipment, etc. Has that changed this project at all?</p>	<p>Mary Strawn: We are evaluating applicability of the Inflation Reduction Act provisions and will provide relevant information to the County Department of Management and Finance (DMF). In addition, the County continues to consider other sources of funding (both grants and loans).</p>

<p>Paul Guttridge: Do we have a cost estimate yet for this project? What is in the CIP right now?</p>	<p>Mary Strawn: We submitted the CIP to the board. There remain some key decisions to be made about the path forward (reuse of the DWB, etc.). We do have some numbers. The budget number is in the CIP.</p> <p>Brian Balchunas: The overall (including all phases of SMP) is more than \$175 million. We anticipate the \$175 million for the design build pieces of the program. Other costs include the gravity thickeners, program management, and administrative costs.</p>
<p>Paul Guttridge: Are you looking for SRF funding for this? As a ratepayer, I'd like to see every effort for grant funding be pursued. I'd like to see that information on future presentations.</p>	<p>Mary Strawn: We have been coordinating with the Department of Management and Finance (DMF) on potential funding opportunities.</p>
<p>John Bloom: I recall the GHG emissions of RNG relative to fossil fuels showing a lower carbon intensity. I think that was grid-based electricity was use. What's is the number for reduced carbon intensity? Trying to square up claims from another HDR consultant - showing 100% reduced carbon intensity.</p>	<p>Brian Balchunas: What is shown is the correct number, with 100% renewable electricity. In the GHG emissions technical memo, impacts with the current electrical grid emission profile were also included. The net difference now is 6,150 tons/year net reduction over continuing with lime stabilization.</p>
<p>John Bloom: I want us to look at the gas as the market might – what is the carbon intensity of the gas? I thought I recalled a 55% reduction as one of the numbers I had seen. The report looked like it had a carbon intensity.</p>	<p>Brian Balchunas: We have not yet done a carbon intensity calculation for the gas. We will look at that in the future. All our calculations have been on GHG emissions.</p>
<p>Steve Young: "I'd just like to put on the table: 1. I would like to see some documented research on the potential feasibility of generating "Green Hydrogen" that could either be sold or potentially used as an alternative to RNG. 2. Continued interest in possibilities to claw back some footprint from the site so other uses could be accommodated. For example, there is a continuing need for more space for bus parking for ACPS and ART."</p>	<p>Mary Strawn: 1. In the upcoming RFI for gas market, we will include some questions about the potential for green hydrogen. 2. On the space issue, everything on the surface is not everything you can see on the plant. We need to maintain access to underground facilities. We have partnered with ART on the parking facility across the street from the plant. We will continue to coordinate.</p>
<p>John Bloom: I have gotten the answers I need on carbon accounting. Is there some advantage to the WPCP to work/develop the market and sell to ART versus third parties?</p>	<p>Brian Balchunas: In the near term, there could be some advantages, potentially simpler contracts, etc. In essence, it would be a contract between different Arlington</p>

	<p>departments. Since ART bus fueling timing does not match the WPCP’s production rate, consideration would need to be made of how to handle the gas when it is not needed by ART.</p>
<p>John Bloom: Market rates are high, per ART, but if they could work with the WPCP, it would be much more affordable and could have RNG for the whole fleet.</p>	<p>Mary Strawn: ART reached out to their CNG provider to see if they could provide RNG as part of their contract. I believe that was offered at a premium so it may not be comparable to our situation where we are looking at market rate.</p> <p>Brian Balchunas: We modeled everything at market rate for natural gas. The gas will separate the RENs from the commodity itself. WPCB does not have any additional information to where that stands.</p>
<p>John Bloom: It should be a commodity rate regardless of it's a 3rd party or produced by the WPCP - maybe cutting out the middleman? I'm hoping we can get RNG rates for this - that was my assumption.</p>	<p>Brian Balchunas: RNG has two marketable features: the commodity value of the natural gas to the end user and the environmental value of the RINs to the RFS obligated parties. The RIN value is separate from the commodity rate.</p> <p>Natural gas commodity value is around \$4/MMBTU versus \$15/MMBTU for RINs. The revenue would be the commodity pricing plus the RINs. The county is looking to see if there are other ways interested parties might value the RNG to meet the goals of the program.</p>
<p>Steve Young: This was very useful and encouraging to hear. It adds a lot to what's on my mind, I appreciate the presentation. This is encouraging news. I was thinking about other contaminants that could be in biosolids - have we looked at microplastics? I understand it's a separate topic.</p>	<p>Brian Balchunas: We have not yet looked at any microplastics. HDR is monitoring the emerging research on this topic.</p> <p>Stephanie Spalding: We do have new screens with the Re-Gen program that will capture anything greater than 5 millimeters. While this will not capture microplastics, it may help from additional microplastics being formed.</p>
<p>Claire Noakes: I appreciate you bringing it up, although I’m horrified by what we’re going through. The sources are now going throughout our brains.</p>	<p>Agreed—consumer products make up a large part of the microplastics issue.</p>

<p>This is a whole other level of things I'm worried about. What happens when we need to inform owners of stuffed animals to remove them from the house?</p>	
<p>Steve Young: It's scary, I agree, but we'd rather know. It's great that we're advocating for source control. Are there ways we can support more source control? That's a big question.</p>	<p>Mike Collins: We will be providing comments to EPA next week on the draft PFAS drinking water regulations. As an industry, the drinking water utilities are in agreement that there needs to be source control. If anyone wants to publicly comment to EPA about drinking water regulations, feel free to do so.</p>
<p>Paul Guttridge: At DC water, we're looking at funding to identify locations in the collection system for sources, if there are industrial contributors. We will find that it's coming from everywhere. Is there a way to find out exactly where it's coming from?</p>	<p>Mary Strawn: We have discussed this; we are looking at redoing some sampling and may consider collection system sampling in the future.</p> <p>We will take repeat samples from the plant to ensure we have accurate results. We will possibly go up stream to get additional samples.</p> <p>Brian Balchunas: Most of the PFAS in Arlington wastewater are from everyday consumer products. It will take consumer awareness to reduce these compounds.</p>
<p>Paul Guttridge: It looks like Envision is meant to drive decision making. How are you approaching that to determine outcomes?</p>	<p>Stephanie Spalding: The County has an Envision working group, so we look at the score sheets and discuss what is realistic for the County and what is a stretch goal. We have refined what we want to accomplish to reach the gold category.</p> <p>We will continue to work with the designer and builder to make sure it meets that Envision standard</p>
<p>Claire Noakes: Could you recap what type of interaction you were thinking with deeper dive as a Envision subcommittee?</p>	<p>Stephanie Spalding: We are open. There was some interest expressed at our last stakeholder meeting to form a group. We can do a deeper dive on how the scorecards are created and how we are filling them out.</p> <p>One thing the smaller Envision group of advisory panel members could do is bring ideas to the larger group on what should and shouldn't be considered by the WPCP as possible ways to earn more points.</p>

**CHAT:**

- Steve Young to everyone: 6:25 PM
  - I'd just like to put on the table: 1. Would like to see some documented research on the potential feasibility of generating "Green Hydrogen" that could either be sold or potentially used as an alternative to RNG. 2. Continued interest in possibilities to claw back some footprint from the site so other uses could be accommodated. For example, there is a continuing need for more space for bus parking for ACPS and ART.
- Kiara Candelaria Nieves - DES-CAPE to everyone: 6:32 PM
  - Need to hop off for an evening commitment. Good overview of Re-Gen as someone who is new to it.
- Samantha Villegas to everyone: 7:03 PM
  - I read recently contact lenses also contain PFAS.
- Mike Collins to everyone: 7:22 PM
  - <https://www.epa.gov/dockets/commenting-epa-dockets>
- Mike Collins to everyone: 7:23 PM
  - Docket ID No. EPA-HQ-OW-2022-0114
- Steve Young to everyone: 7:26 PM
  - The EPA proposal and comment link are here:  
<https://www.regulations.gov/document/EPA-HQ-OW-2022-0114-0027>