

# Summary

Project:	Arlington County Biosolids Upgrade	
Subject:	Biosolids Advisory Panel	
Date:	Monday, February 12, 2024	
Location:	Teams	
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 Lauren Bailey, Arlington Ridge Civic Association Wes Bringham, Arlington Ridge Civic Association	Mary Strawn, Arlington County Water Pollution Control Plant Antron Sutton, Arlington County Water Pollution Control Plant Lisa Racey, Arlington County Water Pollution Control Plant Fasil Haile, Arlington County Water Pollution Control Plant Kiara Candelaria Nieves, Arlington County DES Communications Brian Balchunas, HDR Stephanie Spalding, HDR Rahkia Nance, HDR Dan Stromberg, PC Construction

## Agenda

1. Introductions
2. Overall Program Updates
3. Procurement Update
4. Schedule Update
5. Envision Report Out
6. Carbon Capture

### Welcome and Introductions (R. Nance)

Rahkia opened the meeting and welcomed the Biosolids Advisory Panel to the meeting. She shared details of how to use the Teams virtual meeting platform. Rahkia reviewed the agenda and introduced the team. Antron Sutton then gave welcoming remarks.

Mary Strawn provided an update on the Communications Team. Samantha Villegas has accepted a role with the US Environmental Protection Agency and will no longer be involved with the project. Rahkia Nance from HDR will coordinate all future Advisory Panel discussions.

### Program Updates (B. Balchunas)

Brian reviewed 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.

He 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. HDR will oversee the design and construction. HDR is prohibited in participating in any design or construction contracts for the program.

The technical team has completed all preliminary technical work and is considering the use of carbon capture. During Q2 2024, the technical team will confirm and prepare a detailed design.

The program components include program management, gravity thickeners, early work package, and the main work package. The County has finalized the selection of a design builder for the early work and main work packages, and HDR is separately overseeing the design of the gravity thickeners. Gravity thickener design will continue in 2024 followed by procurement of a construction contractor. Construction is projected to begin in 2025.

The County has been working closely with Virginia Tech, which is supporting the THP/ digester pilot. The results have been positive and the County will continue to monitor this research.

The County has continued in its investigation of potential commercial partners for marketing and disposition of environmental credits for renewable natural gas. A request for information was issued to better understand the options available.

#### **Communications Update (M. Strawn)**

- The latest blog post was published to the Arlington Re-Gen website in January and discusses how the Envision rating system will be used in the Re-Gen program.
- The County participated in Rock N' Recycle in September 2023 and it was a highly successful event to get the Arlington Re-Gen message out to the community.
- The County won the National Association of Clean Water Agencies' 2024 National Environmental Achievement Award for the video "It Starts With a Flush."
- Mary reminded stakeholders that the WPCP staff are available to assist with questions/concerns related to the Plant and can route storm, sanitary and drinking water questions to the appropriate person.

#### **Funding Update (M. Strawn)**

- Updates have been submitted to the County Manager for the CIP reflecting escalation seen in the water and wastewater industry over the last two years. The County is going through the biannual review process.
- The Inflation Reduction Act tax credit has the potential to act as a grant toward the project. The County is working through the process to confirm suitability.

#### **Procurement Update (M. Strawn)**

Mary shared that the RFQ for the design build procurement was issued in June 2022. Three firms were prequalified and all responded to the request for proposals in May 2023. Interviews

were held in June 2023 and negotiations concluded in December 2023. The contract was awarded to PC Construction by the County Board on January 20, 2024.

Mary introduced PC Construction Project Manager Dan Stromberg to the group. Dan provided a brief overview of the PC Construction team, including their design consultant Stantec.

#### **Schedule Update** (B. Balchunas)

Brian shared the tentative program timeline and anticipated activities in 2024, including the design of the gravity thickeners and the continued support of design and construction oversight. He also shared what was schedule to occur in the next quarter before the next advisory panel meeting.

#### **Envision Report Out** (P. Guttridge)

Paul provided a report out from the Envision Subgroup meeting held in October 2023. Envision is a rating system and framework that is similar to LEED but is used for civil infrastructure projects.

Envision credits are divided into five categories and several subcategories which align well with the Re-Gen Sustainability Goals and the Arlington County Goals, as outlined in the Arlington County Green Building Incentive Policy.

The Envision Categories and Subcategories are:

- Quality of Life – Well-being, Mobility, Community
- Leadership – Collaboration, Planning, Economy
- Resource Allocation – Materials, Energy, Water
- Natural World – Siting, Conservation, Ecology
- Climate & Resilience – Emissions, Resilience

The point system ranges from two to 26 points for each credit. The program team considers the Envision framework and the resulting sustainability discussions as bringing an additional level of value to the project.

The Re-Gen Program is on track to attain Silver verification level, with a strong possibility of achieving Gold or Platinum verification level. The team is also continuing to review habitat opportunities for Natural World credits as the site plan is refined.

Stephanie noted that Arlington Re-Gen is the first County project to use the Envision framework.

#### **Carbon Capture** (S. Spalding)

The technical team evaluated the current state of carbon capture technologies and the carbon dioxide (CO<sub>2</sub>) market. The purpose of the evaluation was to determine the state of market maturity and potential for future implementation. Stephanie noted that carbon capture is not a part of the Re-Gen Program.

There are two pathways for CO<sub>2</sub> use— conversion (fuels, chemicals, and building materials) and non-conversion or direct use (yield boosting, solvent, heat transfer fluid, and other uses).

Stephanie shared that the tail gas created during gas upgrading as part of RNG creation consists primarily of CO<sub>2</sub>.

The County has identified a few local users for CO<sub>2</sub>. One local CO<sub>2</sub> distributor currently gets CO<sub>2</sub> from an industrial facility in Hopewell, Virginia. However, that facility has an annual shutdown and makes only beverage-grade CO<sub>2</sub>. This local company could potentially be interested in the CO<sub>2</sub> generated at the WPCP, however it would have to develop the market for the lower grade CO<sub>2</sub>. Stephanie noted that the distributor would need a new truck to haul lower grade CO<sub>2</sub> because all existing trucks are dedicated to higher grade CO<sub>2</sub>.

The County will continue to monitor the market for CO<sub>2</sub> as well as the maturity of the equipment required to process, capture, and pressurize the gas at the WPCP prior to transportation.

**Next Steps** (M. Strawn)

Mary noted that the group will reconvene in Summer/Fall 2024. If there are any topics of interest to the group, please let her or Rahkia know.

**Questions and Responses**

<b>Question</b>	<b>Response</b>
John Bloom: What is the timeline of the [RNG] RFI process? What's the timeline for sorting this out?	Brian Balchunas: The RFI was released in October, with responses received in early January. The project team is reviewing responses and determining path forward. No decisions have been made yet.
Paul Guttridge: Is there an option for another entity to cover the capital cost for the gas cleaning equipment? Design will happen for this equipment either way, right? Is the DB aware that this scope could be removed?	Brian Balchunas: Yes, the scope is currently included to design and construct these [RNG Upgrading] facilities. There will be a scope deduct from the DB if another entity is responsible for design and construction.
Paul Guttridge: What's the deadline when this decision [RNG approach] must be made?	Brian Balchunas: The decision will be made sometime during this calendar year.
Mary Glass: There is a logical and pragmatic approach for this [RNG analysis]. Do you have a particular economic model for analysis the RFI responses?	Brian Balchunas: We did not receive detailed revenue-sharing information as the RFI process is not a formal solicitation for services and does not constitute a binding proposal. When we did the initial modeling of the value of the gas, we were very conservative in the analysis, including a 15% payment to the broker.
Claire Noakes: Could you go into more detail of the risk you're perceiving [for RNG]? Is the risk the County's personnel time and resources with less benefit?	Brian Balchunas: The risk is pertaining to the commercial and market risk. The more control you give a potential marketing firm, the more of those commercial risks they will take on: RIN pricing, finding an off taker, finding a buyer, etc. These are things that County isn't set up for and how much is contracted out determines the level of risks.

Question	Response
<p>John Bloom: As the ART buses electrify, the gas will have to go elsewhere. Are you trying to keep it in Arlington?</p>	<p>Brian Balchunas: There are many drivers in the County to reduce natural gas use. We need to find additional users. We are not concerned about a market, however it may be difficult to keep the sale of the RNG within Arlington County.</p> <p>Mary Strawn: The next big customer on the line is the WPCP, so the gas will be used.</p>
<p>Sandra Borden: Can we share the video at our organization meetings?</p>	<p>Mary Strawn: Yes, we will send you a link directly to the video.</p>
<p>Paul Guttridge (responding to County coordination with the community): The vibration/hum is an issue, but the door is not shaking. Thank you for being open to the communications. There are small complaints that they texted about today.</p>	<p>Mary Strawn: We believe the vibration issue the neighbor was experiencing has been permanently resolved. We have been focusing on odor control at the dewatering building in the last couple of weeks, and we have gotten to one of the root causes of the recent odor issue. We are currently monitoring to see if the action has rectified the issue.</p>
<p>Paul Guttridge: Will the THP and new process get rid of the lime stabilization process?</p>	<p>Mary Strawn: Yes, the lime stabilization process will be removed as part of this upgrade. There will be other odors present, however, but we are hoping to have better containment and treatment of the new odors.</p>
<p>Paul Guttridge: What is the plan for the open pad when things are dumped here? Often the odor from the masking agent is what I'm smelling. I can pass along information to my neighbors, if you provide additional updates.</p>	<p>Mary Strawn: Long term, I would like that put inside a building. However, it is not a part of this current Program. I will remind Operations not to let things sit on the pad longer than necessary.</p>
<p>Paul Guttridge: DC Water applied for WIFIA. Do you have folks apply for these grants?</p>	<p>Mary Strawn: Yes, the County's Department of Management and Finance is working with the WPCB to determine the best mix of funding sources. We are also looking at fund availability from DEQ and SRF.</p>
<p>John Bloom: There is a lot of money in grant programs. Infrastructure Recovery Act (IRA) should also apply to isolating and marketing CO<sub>2</sub>, and maybe even food waste. It may be important to include food waste during the availability of IRA funds.</p>	<p>Mary Strawn: One of the issues/considerations for food waste is the available space at the plant as well as the nutrients (nitrogen and phosphorus) that would be recycled to the head of the plant and would need to go through liquids treatment for removal. From a site footprint consideration, food waste digestion can be very difficult. There is a timing element of the IRA that we are working through.</p>
<p>Paul Guttridge (to PC Construction): As a resident, who lives on the hill behind the plant, the pile driving caused a lot of</p>	<p>Dan Stromberg: Arlington has already pointed out that noise control and awareness is critical. Auger-cast is an option. Noise and</p>

Question	Response
<p>disruptions during the last major upgrades. I would urge you to try to do auger-cast piles rather than driven piles.</p>	<p>vibration is something we will keep in mind as we are confirming the design.</p>
<p>Sandra Borden (to PC Construction): Are you in DC?</p>	<p>Dan Stromberg: We are an employee-owned construction company headquartered in Vermont, but all our people are local. Stantec has an office in Arlington. We have 25-30 administrative staff and 25-30 craft workers here locally in the Mid-Atlantic.</p>
<p>Paul Guttridge: Is THP still Cambi? Or are there others out there at this time?</p>	<p>Brian Balchunas: We completed a pre-qualification step recently and Cambi was pre-qualified.</p>
<p>Steve Young: Biophilic design should be considered, and may need some creative thinking. These additions could be low-cost.</p> <p>Claire Noakes: Agreed; habitat and soil health should be considered.</p>	<p>Stephanie Spalding: These aspects can be included in the Envision evaluation.</p>
<p>Paul Guttridge: Why is a Platinum 50% of points?</p>	<p>Stephanie Spalding: The Envision framework covers a lot of different project types and industries, and so it is not expected that any project can achieve all the credits.</p>
<p>Paul Guttridge: What are the next steps for the Envision Subgroup?</p>	<p>Stephanie Spalding: We got a lot of feedback from the Subgroup on the Natural World credits. We will continue the discussion on whether there are opportunities to improve the score in this category.</p>
<p>Claire Noakes: Does carbon sequestration interfere with other carbon reduction initiatives, such as low-carbon concrete? Are they compatible – it would be a shame to opt for one initiative that precludes another that has even greater benefit?</p>	<p>Stephanie Spalding: Concur, the overall holistic environmental benefits of any approach will be compared.</p>
<p>John Bloom: 11 tons a day is a lot of greenhouse gas. It's larger than Arlington schools' bus fleet. What would it take to make carbon capture part of the project?</p>	<p>Stephanie Spalding: At this time, carbon capture is not in the project. The high-level equipment cost is \$4 million and has not yet been implemented in the US. The County is cautious when it comes to new technology implementation and prefers to implement technology that's mature and proven. We will continue to evaluate and have discussions as time progresses, to track the market conditions for CO<sub>2</sub> and the maturity of the capture technology. We will design the new</p>

Question	Response
	facilities to be able to add this technology in the future. We are constrained by budget.
<b>Emailed Questions</b>	
<p>Q: The slide on commercial uses for renewable natural gas suggests that the County is still exploring options for marketing and selling the environmental credits from the gas. Are there any significant changes from the plan to sell the RINS and inject the gas into the pipeline?</p>	<p>There are no plans at this time to change the approach from injecting the RNG into a pipeline so that the environmental attributes (RINs) can be marketed and sold to obligated parties as part of the Renewable Fuel Standard. Additional evaluations are being conducted relative to the commercial approach to achieve that outcome with the goal of balancing the benefits and risks to the County.</p>
<p>Q: This slide also indicates that the gas will be used for the ART buses until the shift to zero emission buses. Will RNG be delivered directly to the ART filling depot or via the existing natural gas pipeline? Is the intent to not to sell the RINS for this gas?</p>	<p>The plan remains to provide gas to the existing gas pipeline for conveyance to the end user(s). The environmental attributes (RINs or other) for this gas will be marketed and sold to obligated parties as part of the Renewable Fuel Standard or other similar programs. We anticipate that the WMATA CNG fueling station adjacent to the ART depot will continue to be in operation after ART fully electrifies.</p>
<p>Q: The slide also indicates that the desire is to keep the GHG emission credits within Arlington. What potential outlets for this gas does Re-Gen anticipate for the future as ART demand winds down?</p>	<p>There are many drivers in the County to reduce natural gas use – additional users will need to be identified. The next large users of natural gas in the pipeline are the WPCP itself and WMATA.</p>
<p>Q: Is Re-Gen reconsidering whether to directly use RNG produced by the plant for the digesters rather than pulling from the existing pipeline as discussed in earlier presentations?</p>	<p>Flexibility will be included in the design to use either RNG produced at the WPCP or pipeline gas for the needs on site. Details of the RNG/NG plans for the program will be defined during the detailed design process.</p>
<p>Q: The Envision Framework appears to be a good match for this facility. What are the barriers to achieving or exceeding the high estimates for potential points? Would tapping into some of the grant programs mentioned allow Re-Gen to maximize the credits for this project.</p>	<p>The level of achievement for the Envision credits will be re-evaluated throughout the detailed design process, narrowing the range shown in the preliminary assessments completed during the Facility Planning phase. The County is still evaluating potential funding options for the program.</p>



<b>Question</b>	<b>Response</b>
Q: Looking into capturing and reusing the CO <sub>2</sub> is encouraging and I hope the County will move forward with this option as the market matures.	Having mature and reliable options in the future for beneficially using the CO <sub>2</sub> is encouraging. The technology maturity and market for recovered CO <sub>2</sub> will continue to be monitored.