



COMMISSION MEETING MINUTES  
August 23, 2022

- No.   Topic
- [Call to Order](#)
- [Roll Call of HRSD Commission](#)
1. [Awards and Recognition](#)
  2. [Consent Agenda](#)
  3. [Residential Customer Survey](#)
  4. [Low Income Household Water Assistance Program  
Virginia Department of Social Services \(LIHWAP\)  
Vendor Agreement](#)
  5. [Nutrient Compliance Plan Update](#)
  6. [Atlantic Treatment Plant Emergency Odor Control Repairs  
New CIP and Initial Appropriation](#)
  7. [Water Quality Department Instrumentation Equipment  
Initial Appropriation](#)
  8. [West Road Interceptor Force Main Extension  
Cost Sharing Agreement for the South Central Water Transmission Main and Loop –  
Phase 1](#)
  9. [Williamsburg Treatment Plant Administration Building Renovation  
Additional Appropriation](#)
  10. [Suffolk Pump Station Replacement  
Easement Acquisition  
860 Portsmouth Boulevard \(Parcel 020\), Suffolk, Virginia](#)
  11. [Water Technology and Research Annual Update](#)
  12. [COVID-19 Wastewater Surveillance Study Update](#)
  13. [Remote Participation Policy](#)
  14. [Commission Meeting Start Time](#)
  15. [Unfinished Business](#)



COMMISSION MEETING MINUTES  
August 23, 2022

- No.   Topic
- 16.   [New Business](#)
  - 17.   [Commissioner Comments](#)
  - 18.   [Public Comments](#)
  - 19.   [Informational Items](#)



COMMISSION MEETING MINUTES  
August 23, 2022

The Chair called the meeting to order and Ms. Cascio read the roll call of HRSD Commissioners.

Name	Title	Present for Item Nos.
Rodriguez, Stephen C.	Commission Chair	1-19
Elofson, Frederick N.	Commission Vice-Chair	1-19
Glenn, Michael E.	Commissioner	1-3
Lakdawala, Vishnu K.	Commissioner	1-19
Levenston, Jr., Willie	Commissioner	1-19
Stern, Nancy J.	Commissioner	1-19
Taraski, Elizabeth	Commissioner	1-11
Templeman, Ann	Commissioner	1-19

In accordance with Virginia Code § 2.2-3708.2 (A) and the HRSD Remote Participation Commission Adopted Policy Commissioner Glenn requested approval to participate in today’s meeting from Richmond, VA due to business matter which prevents the Commissioner from attending the meeting in person.

**Moved:** Frederick Elofson

**Seconded:** Willie Levenston

**Roll call vote:**

**Ayes: 8**

**Nays: 0**

1. **Awards And Recognition**

**Action:** No action required.

**Brief:** Mr. Bernas introduced the following:

**a. Commissioner Reappointments**

We are pleased to announce Governor Glenn Younkin has reappointed current Commission members Frederick N. Elofson of Newport News and Vishnu Lakdawala of Virginia Beach to continue service on the HRSD Commission. This is the fourth reappointment for Mr. Elofson and the fifth reappointment for Dr. Lakdawala.

**b. Promotion Announcements**

- (1) Jenny Reitz – Environmental Scientist

Ms. Jenny Reitz was recently promoted to Environmental Scientist and will be primarily responsible for managing HRSD’s Municipal Assistance Program. Jenny has worked in all three Water Quality Divisions, starting in 2004 as an



COMMISSION MEETING MINUTES  
August 23, 2022

Assistant in the Pretreatment and Pollution Prevention Division and then gaining experience in the CEL before moving into TSD. She left HRSD briefly and gained additional experience with the City of Norfolk in their stormwater program. After returning to HRSD, she served as a Specialist in TSD before being promoted to a supervisory role in 2014. In this position, she was responsible for managing the field activities associated with the groundwater monitoring efforts for SWIFT. Jenny holds a Bachelor of Science in Geology from Old Dominion University, and a Masters of Natural Resources from Virginia Tech. Jenny is a 2020 graduate of the WEF Water and Leadership Institute, and an HRSD apprenticeship instructor, teaching Stream Ecology since 2011.

(2) Jeff Scarano – Chief of Design and Construction – Special Projects

Mr. Jeff Scarano was recently promoted to Chief of Design and Construction in the Special Projects Division. He is a licensed professional engineer with 20+ years of experience in municipal wastewater and stormwater design and management. During his career, he has worked as a regulator, owner and consultant. He has managed the City of Lynchburg's combined sewer overflow program and helped establish their stormwater utility, managed the state of New Mexico's surface water quality monitoring and standards programs, and helped develop HRSD's Integrated Plan for SWIFT and SSO elimination. In 2017 he joined HRSD as an Interceptor Engineer in South Shore Interceptors. He has a Master's Degree in Environmental Engineering from UC California Davis and a Bachelor's Degree in Civil Engineering from Duke University

(3) Sam McAdoo – Chief of Small Communities.

Mr. Sam McAdoo was recently promoted to Chief of Small Communities. Sam was hired in 2010 as an Interceptor Engineer in South Shore Interceptors where he later served as a System Manager. In 2018, Sam transferred to North Shore Interceptors and was responsible for management of the Surry and Lawnes Point Collection Systems. Sam holds a bachelor's degree in Mechanical Engineering from Old Dominion University. He is an active volunteer with the Virginia Water Environment Association (VWEA) and served a four-year term on the Technical Programs Committee for the Annual Conference (Water JAM).





COMMISSION MEETING MINUTES  
August 23, 2022

**c. New Employee Introduction**

Mr. Steven Poe was recently hired as a Hydraulic Analysis Manager in the Engineering Department. Steve is a registered Professional Engineer and holds a master's degree in Computational Modeling and Simulation Engineering and a Bachelor of Science degree in Civil Engineering Technology from Old Dominion University. Prior to joining HRSD, he worked as an Operations Research Analyst for the Office of the Chief of Naval Operations where he applied various modeling, simulation, and machine learning techniques to predict and mitigate risk for high-risk naval operations. He has 10-years of experience working for the City of Virginia Beach, and five-years of experience in the private sector, specializing in hydraulic and hydrologic modeling, capital improvement planning, and asset management.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

2. **Consent Agenda**

**Action:** Approve the items listed in the Consent Agenda.

**Moved:** Vishnu Lakdawala

**Seconded:** Willie Levenston

**Roll call vote:**

**Ayes:** 8

**Nays:** 0

**Brief:**

a. Approval of minutes from previous meeting.

b. Contract Awards

- |    |   |           |
|----|---|-----------|
| 1. | <a href="#">ArcGIS Software License Maintenance and Support</a>   | \$579,638 |
| 2. | <a href="#">Carbon-Based Pilot Testing and Soil Aquifer Treatment Study with Virginia Polytechnic Institute and State University (Virginia Tech) Research Study</a> | \$585,000 |
| 3. | <a href="#">Flygt™ Dry Pit Submersible Pump</a>   | \$330,900 |
| 4. | <a href="#">Studying the Fate of Perfluoroalkyl and Polyfluoroalkyl Substances through Sewage Sludge Incinerators Research Study</a>                                | \$75,000  |

c. Task Orders

- |    |   |           |
|----|---|-----------|
| 1. | <a href="#">Army Base Treatment Plant Administration Building Renovation</a>      | \$286,250 |
| 2. | <a href="#">Chesapeake-Elizabeth Treatment Plant Decommissioning</a>              | \$390,311 |
| 3. | <a href="#">Interceptor Systems Valve Improvements Phase I</a>                    | \$306,842 |
| 4. | <a href="#">Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements</a> | \$230,889 |
| 5. | <a href="#">Virginia Initiative Plant Administration Building Renovation</a>      | \$447,326 |

d. Contract Change Orders

- |    |  |           |
|----|--|-----------|
| 1. | <a href="#">Atlantic Treatment Plant Digester #4 Coating Restoration</a> | \$340,395 |
|----|--|-----------|



COMMISSION MEETING MINUTES  
August 23, 2022

e. Sole Source

1. [Duperon® Compactor Sprayer and Parts](#)

f. HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award

1. [Oracle Annual Maintenance and Support for I-PACS System, WebLogic, and Service- Oriented Architecture \(SOA\)](#) \$1,029,033
2. [Utility Locating Services](#) \$450,000

g. Service Area Amendment

1. [City of Chesapeake, Grassfield Crossing Service Area](#)
2. [City of Chesapeake, Springton at Grassfield Service Area](#)

**Item(s) Removed for Discussion:** None

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

3. **RESIDENTIAL CUSTOMER SURVEY**

**Action:** No action required.

**Brief:** SIR Research recently completed an abbreviated version of the previous HRSD biennial online customer satisfaction survey of our residential customers. Staff explained the billing model and current challenges. SIR Managing Partners Rachel Yost and Grant Neely shared highlights of the survey [results](#) during the meeting.

**Discussion Summary:** Staff explained how customer questions and complaints are resolved and the difference between a HRSD bill and a Hampton Roads Utility Billing Service (HRUBS) bill. Many reported issues must be addressed by the locality (e.g. meter issues, trash pickup, etc.) HRSD bills are based on information provided by the locality, who reads the meters. If a locality provides a credit for an inaccurate meter reading or water leak, HRSD follows suit. Each locality is experiencing staffing issues which is causing delayed meter readings. A few of the localities outsource their meter reading. When a meter reading is delayed or a reading has been estimated and the bill is delayed, customers may feel the bill is inaccurate. However, it may not be inaccurate, but may be for a different billing duration than normal. Staff is working on a redesign of the bill which will hopefully provide an easier to read format.

Commissioner Elofson expressed his frustration with the different payment platforms throughout the utilities and wondered if there was a way to streamline or standardize among utilities.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

4. **Low Income Household Water Assistance Program  
Virginia Department of Social Services (LIHWAP)  
Vendor Agreement**

**Action:** Approve the terms and conditions of the vendor agreement with the Virginia Department of Social Services for the provision of water bill payments to assist low-income residential households with water and wastewater arrearages, reconnections, and ongoing services and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

**Moved:** Vishnu Lakdawala

**Seconded:** Willie Levenston

**Roll call vote:**

**Ayes:** 7

**Nays:** 0

Due to a scheduling conflict, Commissioner Glenn left the meeting at 11:00 a.m.

**Agreement Description:** The attached [agreement](#) between HRSD and the Virginia Department of Social Services (DSS) has been reviewed by HRSD legal counsel. The agreement is governed by and subject to federal and state laws and regulations and the Office of Community Services (OCS), U.S. Department of Health and Human Services, LIHWAP Supplemental Terms and Conditions attached as Attachment A and incorporated by reference.

DSS was awarded a federal grant of \$20 million across the Commonwealth of Virginia to be used on a first-come, first-served basis for low-income residential household accounts involved in the interruption or on the verge of interruption of water service.

While the application and award process is still being determined by DSS, to expedite receipt of financial assistance, staff will provide as much information and required documentation to the customer and DSS as possible.

We anticipate severance activities for customers applying for LIHWAP relief funding will be suspended for 45 days to allow DSS time for processing.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

5. **Nutrient Compliance Plan Update**

**Action: No action required.**

**Brief:** The 2022 update for the HRSD Nutrient Exchange submission is due to the Virginia Nutrient Credit Exchange Association September 1. The Exchange is a voluntary body of more than 100 regulated municipal wastewater treatment plants and industrial facilities discharging nitrogen and phosphorus into the Chesapeake Bay watershed. The purpose of the Exchange is to coordinate and facilitate nutrient credit trading among its members with the goal of improving water quality in the Chesapeake Bay watershed efficiently and cost-effectively.

As set forth by regulation, the Exchange must submit a five-year compliance plan to the Department of Environmental Quality each February on behalf of all members of the Exchange. This plan documents the Members' projected compliance with the General Permit for Total Nitrogen (TN) and Total Phosphorus (TP) Discharges and Nutrient Trading in the Chesapeake Bay Watershed ("General Permit"). In order to provide time for compilation and review, the Exchange requires that all members submit their individual plans to the Exchange several months prior to the annual February deadline. The annual update adds a new fifth year (2027), for nitrogen and phosphorus, to the rolling five year compliance plan period. It also includes the submission of three planning years, 2028 – 2030.

The Exchange uses the information provided by the annual updates to ensure that the plans in each basin are sufficient to meet the load allocations of nitrogen and phosphorus. HRSD successfully met the aggregate nutrient allocations for each of its permitted river basins (James, York, Rappahannock, and Eastern Shore).

As described with last year's submission, HRSD's aggregate allocations under the General Permit for TN and TP are being reduced beginning in 2026. Though the 2027 allocations remain unchanged, there is an additional Lower James aggregate TP allocation reduction in 2030, the last year of the planning period. The final TP allocation reduction occurs in 2032. HRSD anticipates continued compliance with the nutrient allocations in all of its discharge basins (James River, York River, Rappahannock and Eastern Shore) and presents a plan of continued compliance in its submission.

The 2027 new 5<sup>th</sup> year submission is similar to last year's submission with one key difference: 2027 is the first year the submission identifies Boat Harbor as a closed facility. In the planning years, tertiary filtration at SWIFT facilities and recharge become elements of General Permit compliance, particularly for TP compliance on the Lower James.

**Public Comment: None**



COMMISSION MEETING MINUTES  
August 23, 2022

6. **Atlantic Treatment Plant Emergency Odor Control Repairs  
New CIP and Initial Appropriation**

**Actions:**

- a. **Approve a new CIP project for the Atlantic Treatment Plant Emergency Odor Control Repairs.**
- b. **Appropriate total project funding in the amount of \$1,500,000.**

**Moved:** Willie Levenston

**Seconded:** Ann Templeman

**Roll call vote:**

**Ayes:** 7

**Nays:** 0

**CIP Project:** AT016200

**Regulatory Requirement:** None

**Project Description:** An emergency declaration was authorized on August 1, 2022 due to a fire that occurred on July 31, 2022, at approximately 6 p.m. in Train 1 of the Odor Control System (OCS) D at the Atlantic Treatment Plant. This fire, which likely was due to the fan motor or belt, destroyed the fan and motor, as well as the surrounding fiberglass ductwork, electrical wiring, sensors and also possibly impacted the second stage scrubber packing and mist eliminator. Although the plant OCS D has four trains, three are required for proper air flows and odor management for the front half of the treatment plant. The result of this fire is to leave zero redundancy in equipment. Due to long lead times on equipment and fiberglass reinforced pipe (FRP) components and recent odor challenges at this treatment facility, time is of the essence for getting the odor control system repaired and operational. Portable odor control systems may be needed if this system cannot be reactivated quickly.

HDR Engineering, Inc., with support from Crowder Construction, will perform all necessary evaluation, design, equipment procurement and installation and temporary repairs to the damaged OCS. HDR Engineering, Inc. will also conduct a forensics analysis of the damaged odor control scrubber system to determine a root cause of the fire and to determine if the other odor control systems are in jeopardy of failure.

Work will be accomplished with funds from the Fiscal Year (FY) 23 Capital Improvement Program as this work will be capitalized at year-end but in the interim would create significant stress on the FY-23 Operations Department Budget. This proposed Commission action creates and fully funds a new CIP project that will allow all future costs as well as all costs already incurred against the Operations Department Budget for this emergency to be charged to this CIP project restoring the FY-23 Operations Department Budget balance for use as planned for the remainder of FY-23.



COMMISSION MEETING MINUTES  
August 23, 2022

**Analysis of Cost:** The cost for this emergency project is based on an estimate of the work anticipated to be necessary for temporary and long-term repair based on preliminary site assessments and conversations with equipment suppliers.

<b><u>Schedule:</u></b>	Emergency Declaration	August 2022
	Construction	September 2022
	Project Completion	May 2023

**Public Comment:** None





COMMISSION MEETING MINUTES  
August 23, 2022

7. **Water Quality Department Instrumentation Equipment FY-2023  
Initial Appropriation**

**Action:** Appropriate total project funding in the amount of \$103,500.

**Moved:** Ann Templeman

**Seconded:** Vishnu Lakdawala

**Roll call vote:**

**Ayes:** 7

**Nays:** 0

**CIP Project:** GN019000

**Project Description:** This project will provide analytical equipment for the Water Quality Department for Fiscal Year 2023.

**Project Justification:** The sampling and analytical equipment will support various projects and programs led by the Water Quality Department.

**Schedule:** Individual purchases will occur throughout the fiscal year.

**Public Comment:** None



COMMISSION MEETING MINUTES August 23, 2022

8. **West Road Interceptor Force Main Extension Cost Sharing Agreement for the South Central Water Transmission Main and Loop – Phase 1**

**Action:** Approve the terms and conditions of a cost sharing agreement with the City of Chesapeake for the design and bid phase services of the South Central Water Transmission Main and Loop – Phase 1 and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

**Moved:** Vishnu Lakdawala

**Seconded:** Willie Levenston

**Roll call vote:** **Ayes:** 7 **Nays:** 0

**CIP Project:** NP014600

**Regulatory Requirement:** None

Budget	\$8,452,148
Previous Expenditures and Encumbrances	(\$1,775)
Available Balance	\$8,450,373

**Project Description:** This project involves a 24-inch force main extension of the HRSD regional interceptor system down West Road in the City of Chesapeake. The force main will extend from Cedar Road to Number Ten Lane in conjunction with a City of Chesapeake water main. The attached [map](#) depicts the project location.

**Project Justification:** The City of Chesapeake’s 2035 Land Use plan includes development on the west side of the Chesapeake Regional Airport. Chesapeake’s South Central Water Transmission Main & Loop – Phase I CIP will be extending a water main down West Road towards the airport. The airport site is approximately 3.6 miles away from the nearest HRSD interceptor. In addition to the airport area development, HRSD has been coordinating with Chesapeake regarding providing sanitary sewer service for the potential development of the Williams Farm tract, due south of the airport along the North Carolina border, commonly referred to as the Coastal Commerce site. The site is approximately 11 miles away from the nearest HRSD interceptor. West Road is a narrow country road; construction will require road closure and road reconstruction. Chesapeake has offered to coordinate an HRSD force main extension as part of their water main extension project. By extending the HRSD system at this time, it will minimize public impact, provide service for the airport area, and provide a connection point for a future pipeline from the Coastal Commerce site. It also has the potential to close a wastewater treatment plant at the Chesapeake Regional Airport.



COMMISSION MEETING MINUTES

August 23, 2022

**Agreement Description:** The attached [Agreement](#) between HRSD and the City of Chesapeake is for the design of West Road Interceptor Force Main Extension in conjunction with South Central Water Transmission Main & Loop – Phase I. The project will be administered by the City of Chesapeake, and design services will be provided by Hazen and Sawyer. The agreement has been reviewed by HRSD legal counsel. A letter of intent was previously approved by the Commission on July 27, 2021.

<b><u>Schedule:</u></b>	Design	May 2022
	Bid	December 2023
	Construction	March 2024
	Project Completion	December 2026

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

9. **Williamsburg Treatment Plant Administration Building Renovation  
Additional Appropriation**

**Action:** Appropriate additional funding in the amount of \$113,064.

**Moved:** Ann Templeman

**Seconded:** Elizabeth Taraski

**Roll call vote:** **Ayes:** 7 **Nays:** 0

**CIP Project: WB012900**

Budget	\$3,563,815
Previous Expenditures and Encumbrances	(\$3,500,747)
Available Balance	\$63,069
Proposed, Estimated Change Order No. 2 to Contractor	(\$130,000)
Owner Furnished Audio/Visual Equipment/Installation	(\$9,838)
Owner Furnished Door Security and Accessory Installation	(\$23,295)
Proposed Contingency	(\$13,000)
Project Shortage/Requested Additional Funding	(\$113,064)
Revised Total Project Authorized Funding	<u>\$3,676,879</u>

**Project Description and Justification:** The project will renovate the existing 1960's Administration Building at the Williamsburg Treatment Plant. This project will replace the 1960's toilets, sinks, showers and lockers and allow for more space in both the men's and women's restrooms. The project will provide much needed office space for plant staff; refurbish the conference room and create additional workshop space to include a new space for Electrical and Instrumentation staff who are currently located in a different building. This effort will also provide for an operations control room in the hurricane category 2 rated administration building. The existing operations control room is in the incinerator building which must be abandoned during tropical storm force winds.

**Change Order Description:** This change order includes multiple changes related to unforeseen conditions discovered during the demolition of the administration building. Additionally, owner furnished and installed audio visual equipment and door security materials are required to complete the rehabilitation.

**Analysis of Cost:** The cost for this estimated Change Order No. 2 is based on both Engineer's opinions of probable construction cost as well as negotiated change order proposals. The request includes a 10% contingency based on the proposed Change Order No. 2 value to account for potential changes in the final, negotiated cost.

**Schedule:** Construction September 2021  
Project Completion December 2022

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

10. **Suffolk Pump Station Replacement  
Easement Acquisition  
860 Portsmouth Boulevard (Parcel 020), Suffolk, Virginia**

**Action:** Approve the purchase of a +/- 6,115 square foot permanent and +/- 3,661 square foot temporary construction easements located at Tax Parcel: 35D\*D1\*B in Suffolk, VA and the associated acquisition costs for \$27,500 in accordance with the terms and conditions of the Agreement between Craig Johnson, LLC, owner of subject property in Suffolk, Virginia and HRSD and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary and further authorize the General Manager to execute the forthcoming deed of bargain and sale upon approval of legal counsel.

**Moved:** Willie Levenston  
**Seconded:** Elizabeth Taraski  
**Roll call vote:**

**Ayes:** 7      **Nays:** 0

**CIP Project: NP010620**

**Regulatory Requirement:** Rehab Action Plan Phase 2 (2025 Completion)

Budget	\$21,049,000
Previous Expenditures and Encumbrances	(\$3,092,394)
Available Balance	\$8,956,606

**Project Description:** This project will design and construct two replacement pump stations in lieu of constructing one replacement for the existing Suffolk Pump Station located at 1136 Sanders Drive, in Suffolk. The benefit of the two-pump station scenario includes abandonment/removal of over 7,000 linear feet of gravity sewer and 34 manholes along Shingle Creek and associated wetlands with ongoing concerns for potential overflows, pipe failure and difficulty accessing for maintenance.

The new station will meet current capacity needs and provides for future expansion to meet anticipated growth. The existing pump station site does not provide the needed space for expansion, is difficult to access and creates a nuisance to traffic in the surrounding residential neighborhood.

As part of the project, HRSD will require 26 temporary and permanent easements. This subject easement acquisition cost is above the \$25,000 threshold as defined in HRSD's Policy and Guidelines and requires Commission approval.



COMMISSION MEETING MINUTES  
August 23, 2022

**Attachments:** The [Agreement](#) and [Acquisition Plat](#) are attached and were reviewed by HRSD staff and legal counsel. The deed of bargain and sale will also be reviewed by HRSD staff and legal counsel before execution. The attached [map](#) depicts the project location.

**Analysis of Cost:** The cost for the easement is based on an appraisal by Brian Dundon & Associates as well as negotiated settlement with the property owner that reflects current market value acquisition costs in the area.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

11. **Water Technology and Research  
Annual Update**

**Action:** No action required.

**Brief:** Staff provided an [overview](#) of projects and studies targeted at developing and implementing more cost-effective technologies for solids handling, nutrient removal and recovery, and advanced water treatment.

**Public Comment:** None

Due to a scheduling conflict, Commissioner Taraski left the meeting at 12:00 pm.



COMMISSION MEETING MINUTES  
August 23, 2022

12. **COVID-19 Wastewater Surveillance Study Update**

**Action:** No action required.

Staff presented the latest data and status of the [COVID-19 surveillance](#) work including aggregate viral load for HRSD treatment facilities, hospitalizations and deaths; regional variant data; monitoring for influenza, and Monkeypox surveillance information.

**Public Comment:** None





COMMISSION MEETING MINUTES  
August 23, 2022

13. **Remote Participation Policy**

**Action:** Approve the revised Remote Participation Policy.

**Moved:** Vishnu Lakdawala

**Seconded:** Willie Levenston

**Roll call vote:**

**Ayes:** 6

**Nays:** 0

**Brief:** The Commission formally adopted a Remote Participation Policy on July 28, 2015. There have been several changes to the Code of Virginia related to remote participation since that time, the most recent during the 2022 Legislative Session. Changes include:

- allowance for individual Commission members to participate remotely up to 3 times per year (currently limited to 2 times per year)
- allowance of Commission to hold an all-virtual meeting for any reason up to 3 times per year (currently not allowed)
- allowance of Committees to hold an all-virtual meeting up to two times per year (currently not allowed)
- revised definitions for personal matter and medical condition of family member as reason for individual commission member to participate remotely
- procedures to allow all virtual commission or committee meetings

The Remote Participation Policy is one of several policies that are required to be reviewed by the Operations and Nominations Committee on an annual basis. The proposed changes have been reviewed by the Committee.

The attached revised [policy](#) was provided by HRSD's General Counsel.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

14. **Commission Meeting Start Time**

**Action:** Discuss and vote to approve a permanent Commission meeting start time.

Dr. Lakdawala made a motion to approve a permanent start time of 9 a.m.

**Moved:** Vishnu Lakdawala

**Seconded:** Willie Levenston

**Roll call vote:**

**Ayes:** 6

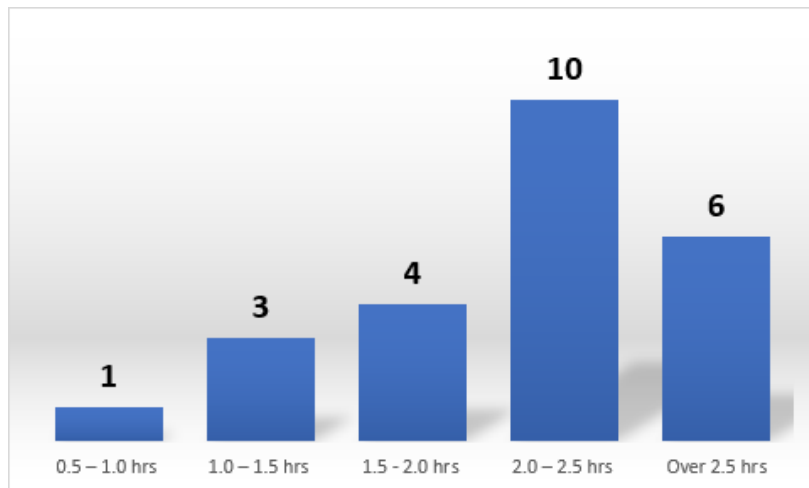
**Nays:** 0

**Brief:** At the April 26, 2022, the Commission approved a new, temporary Commission meeting start time of 10 a.m. to begin in May for four consecutive months to determine if a later start time would help alleviate traffic delays and issues.

For the last three months, the meeting duration and adjournment times were:

<u>Date</u>	<u>Duration</u>	<u>Adjournment</u>
May 22, 2022	2 hours, 51 minutes	12:51 pm
June 28, 2022	57 minutes	10:57 am
July 26, 2022	2 hours, 59 minutes	12:59 pm

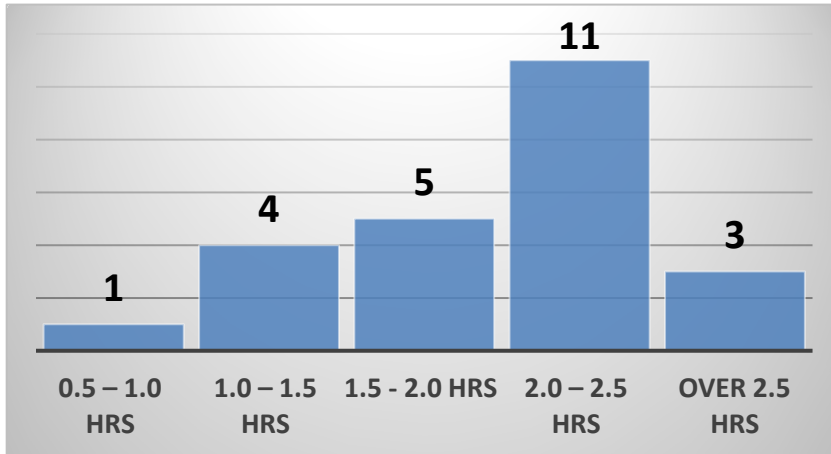
The previous 24 Commission meetings averaged almost two hours with a breakdown as follows:





COMMISSION MEETING MINUTES  
August 23, 2022

The 24-month average provided at the April meeting was:



**Discussion Summary:** The Commission discussed the pros and cons of a later start time. Several Commissioners indicated the later start time caused scheduling conflicts and desired to return to a 9 am start time.

**Public Comment:** None



COMMISSION MEETING MINUTES  
August 23, 2022

15. **Unfinished Business** – None

16. **New Business** – None

17. **Commissioner Comments**

Chair Rodriguez discussed the upcoming Water Environment Federation Technical Exhibition and Conference. He encouraged his fellow Commissioners attend if their schedule allows.

18. **Public Comments Not Related to Agenda** – None

19. **Informational Items**

**Action:** No action required.

**Brief:** The items listed below were presented for information.

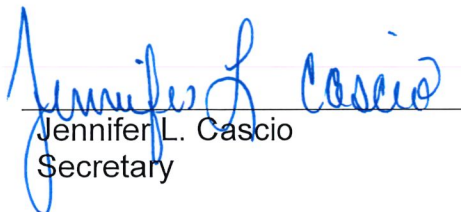
- a. [Management Reports](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Emergency Declaration -Atlantic Treatment Plant Emergency Odor Control Repairs](#)

**Public Comment:** None

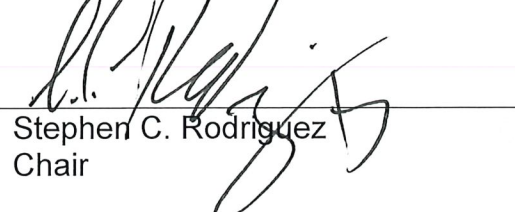
**Next Commission Meeting Date: September 27, 2022** at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

**Meeting Adjourned:** 12:23 pm

SUBMITTED:

  
\_\_\_\_\_  
Jennifer L. Cascio  
Secretary

APPROVED:

  
\_\_\_\_\_  
Stephen C. Rodriguez  
Chair

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #1

2. Consent Agenda

## AGENDA ITEM 2. – August 23, 2022

**Subject:** Consent Agenda**Recommended Action:** Approve the Consent Agenda.**Brief:** The items listed below are presented on the following pages for Commission action.

## a. Approval of Minutes

The draft minutes of the previous Commission Meeting were distributed electronically prior to the meeting.

## b. Contract Awards

- |    |  |           |
|----|--|-----------|
| 1. | <a href="#"><u>ArcGIS Software License Maintenance and Support</u></a>   | \$579,638 |
| 2. | <a href="#"><u>Carbon-Based Pilot Testing and Soil Aquifer Treatment Study with Virginia Polytechnic Institute and State University (Virginia Tech) Research Study</u></a> | \$585,000 |
| 3. | <a href="#"><u>Flygt™ Dry Pit Submersible Pump</u></a>   | \$330,900 |
| 4. | <a href="#"><u>Studying the Fate of Perfluoroalkyl and Polyfluoroalkyl Substances through Sewage Sludge Incinerators Research Study</u></a>                                | \$75,000  |

## c. Task Orders

- |    |  |           |
|----|--|-----------|
| 1. | <a href="#"><u>Army Base Treatment Plant Administration Building Renovation</u></a>      | \$286,250 |
| 2. | <a href="#"><u>Chesapeake-Elizabeth Treatment Plant Decommissioning</u></a>              | \$390,311 |
| 3. | <a href="#"><u>Interceptor Systems Valve Improvements Phase I</u></a>                    | \$306,842 |
| 4. | <a href="#"><u>Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements</u></a> | \$230,889 |
| 5. | <a href="#"><u>Virginia Initiative Plant Administration Building Renovation</u></a>      | \$447,326 |

## d. Contract Change Orders

- |    |   |           |
|----|---|-----------|
| 1. | <a href="#"><u>Atlantic Treatment Plant Digester #4 Coating Restoration</u></a> | \$340,395 |
|----|---|-----------|

## e. Sole Source

- |    |   |  |
|----|---|--|
| 1. | <a href="#"><u>Duperon® Compactor Sprayer and Parts</u></a> |  |
|----|---|--|

## f. HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award

- |    |  |             |
|----|--|-------------|
| 1. | <a href="#"><u>Oracle Annual Maintenance and Support for I-PACS System, WebLogic, and Service- Oriented Architecture (SOA)</u></a> | \$1,029,033 |
|----|--|-------------|

2. [Utility Locating Services](#) \$450,000

g. Service Area Amendment

1. [City of Chesapeake, Grassfield Crossing Service Area](#)

2. [City of Chesapeake, Springton at Grassfield Service Area](#)

CONSENT AGENDA ITEM 2.b.1. – August 23, 2022

**Subject:** ArcGIS Software License Maintenance and Support  
Contract Award (>\$200,000) to Sole Source (>\$10,000)

**Recommended Action:** Award a contract to Environmental Systems Research Institute DBA ESRI in for ArcGIS Software License Maintenance and Support the amount of \$104,900 for year one with four annual renewal options and an estimated cumulative value in the amount of \$579,638.

**Type of Procurement:** Sole Source

All parts and services were previously approved as a sole source with Environmental Systems Research Institute DBA ESRI in August 2015.

**HRSD Estimate:** \$104,900

**Contract Description:** This contract is an agreement for ArcGIS Software. Contract includes the renewal of ArcGIS software license maintenance and support for the existing ArcGIS system. The software is integrated with Regional Hydraulic Model, Computerized Maintenance Management System (CMMS), Internet-based Publicly Owned Treatment Works Administration and Compliance System (IPACS), the Disaster Assessment system and the Mobile Workforce project.

**Sole Source Justification:**

- Compatibility with existing equipment or systems is required
- Support of a special program in which the product or service has unique characteristics essential to the needs of the program
- Product or service is covered by a patent or copyright
- Product or service is part of standardization program to minimize training for maintenance and operation, and parts inventory

**Details:** Services include the renewal of ArcGIS software license maintenance and support for the existing ArcGIS software system. The software is integrated with Regional Hydraulic Model, Computerized Maintenance Management System (CMMS), Internet-based Publicly Owned Treatment Works Administration and Compliance System (IPACS), the Disaster Assessment system and the Mobile Workforce project.



CONSENT AGENDA ITEM 2.b.2. – August 24, 2022

**Subject:** Carbon-Based Pilot Testing and Soil Aquifer Treatment Study with Virginia Polytechnic Institute and State University (Virginia Tech)  
Research Study  
Contract Award (>\$200,000)

**Recommended Action:** Award a contract to Virginia Polytechnic Institute and State University in the estimated amount of \$195,000 for year one with two annual renewal options and an estimated cumulative value in the amount of \$585,000.

**Regulatory Requirement:** Integrated Plan – SWIFT

**Contract Description:** This contract is an [agreement](#) for continued research as part of the Sustainable Water Initiative for Tomorrow (SWIFT). HRSD is conducting a study of advanced treatment technologies to allow managed aquifer recharge of highly treated water. This contract will continue the Carbon-Based Pilot Testing and Soil Aquifer Treatment Study collaboration between Virginia Tech and HRSD. This multi-year project work involves emerging contaminant and pathogen removal by ozone/biofiltration, soil column studies for assessing soil aquifer treatment, and evaluation of recharge and monitoring well data at the SWIFT Research Center considering the transport of SWIFT Water in the aquifer and the potential for soil aquifer treatment. Other aspects involve continued evaluation of the removal and attenuation of antibiotic resistance genes and optimization of 1,4-dioxane removal through biofiltration.

This work is in accordance with Procurement Commission Adopted Policy.

## **Continued Virginia Tech HRSD SWIFT Collaboration: Carbon-Based Pilot/Demonstration, Aquifer Recharge, and Arsenic Mobilization**

Virginia Tech Team: PI: Amy Pruden; Co-PIs: Mark Widdowson and Madeline Schreiber

Here we propose continued collaboration between Virginia Tech and HRSD over the past five years in research aimed at understanding and optimizing carbon-based potable water reuse treatment and groundwater recharge. The research will focus on continued monitoring and testing of HRSD's Sustainable Water Initiative for Tomorrow (SWIFT) project, which employs ozone-biologically activated carbon /granular activated carbon (O<sub>3</sub>-BAC/GAC) treatment to recharge the Potomac aquifer. This effort has become an exemplar of non-reverse osmosis based potable reuse treatment. Proposed research of the SWIFT process will continue to help optimize application of the O<sub>3</sub>-BAC/GAC process at HRSD and among the water reuse community. Optimization of this process includes monitoring of the aquifer as it is recharged and proactively addressing any potential concerns, such as arsenic.

The proposed research will continue as a complementary effort to the current US Bureau of Reclamation (Bureau) grant to the Virginia Tech-HRSD team (2020-2023). The requested funds for the Virginia Tech HRSD collaboration will serve to fulfill the matching commitment for the USBR grant.

### **Objective 1: Addition of propane as a Co-substrate to Enhance 1,4-dioxane removal and associated microbial community profiling**

1,4-Dioxane is a trace contaminant of concern for water reuse and regulations and guidelines are becoming more stringent. We have demonstrated that 1,4-dioxane removal can be enhanced in the BAC filters through addition of propane and have been making progress towards scaling this up. Propane addition has recently been initiated to two of the four full-scale SWIFT Research Center biofilters. This has required a significant extent of engineering and fabrication to develop a mechanism to deliver and maintain the propane in the aqueous phase. As propane is delivered, we will profile the response of microbial communities and functional genes. This will provide insight into shifts in the microbial community composition and also the functional genes hypothetically involved in degradation of contaminants of emerging concern (CEC). This can help to build an understanding of the microbial communities and degradation pathways that are involved. In addition, microbial communities involved in stabilizing nitrogen in the finished water are also of interest. Nitrogen-cycling organisms have been hypothesized to also play a role in CEC degradation through non-specific pathways.

Shot-gun metagenomic DNA sequencing will be utilized to assess the responses of the microbial communities to various SWIFT operational conditions and water quality parameters on functional gene profiles (e.g., monooxygenase enzymes) and microbial community structure. DNA will be extracted using a FastDNA Spin Kit and sequenced using an Illumina NovoSeq. Special attention will be applied in the data analysis towards profiling the taxonomic composition of the microbial communities as well as functional genes putatively involved in CEC biodegradation. Antibiotic resistance genes will also continue to be monitored across the SWIFT treatment train and compared with prior data sets to identify trends.

### **Objective 2: Assess and model recharge of aquifer and additional removal of CECs by soil aquifer treatment**

In objective 2, we will monitor and model the recharge of the aquifer with SWIFT Water and examine evidence of further removal of CECs in the aquifer as a result of soil aquifer treatment (SAT). Notably, we will use a novel machine learning approach to quantify recharge flow distribution.

Flowmeter test results at the SWIFT Research Center have revealed the variable distribution of flow at well TW-1 during recharge operations and during backflush. Further, these results combined with analysis of solute concentration data show transient behavior of the flow distribution. This finding will be investigated at the new SWIFT Research Center recharge well (MAR\_01) with an in-situ flowmeter starting in September, 2022. Following calibration of the instrument for a range of flowrates, data will be continuously collected during periods of recharge and pumping to quantify the flow distribution in the new well. Water level data at the observation wells will be combined with the flowrate data to train machine-learning models. The machine-learning models will undergo testing using sequestered data collected under both operational scenarios. A potential outcome are models that may apply to full-scale SWIFT operations, starting with James River.

For the SAT columns, we will continue to focus on TOC, CEC, and disinfection by-product (DBP) removal over different travel times and under different redox conditions. This effort continues to require time in order to observe representative effects of travel time in soil columns and in aquifer monitoring wells. Soil column work was recently completed to evaluate contaminant removal for short-medium travel times (3-days, 1-month) at high influent dissolved oxygen concentrations (above saturation due to ozonation). This work demonstrated good removal of TOC, bromate, NDMA, and a number of trace organics over short travel times. The influent and effluent of the soil columns will be monitored for TOC, DBPs, metals, and CECs to quantify removal of contaminants. Use of a smart tracer, e.g. resazurin, may also be used to identify/quantify microbial activity through different redox conditions. Advanced methods for characterizing the effluent organic matter of the columns may be employed, e.g. size-exclusion chromatography, fluorescence spectrophotometry. These analyses will allow for a more in-depth comparison of soil column effluent to wastewater effluent and native groundwater.

DNA sequencing analysis will be performed on the effluent of the columns to characterize the microbial community with the aim of identifying specific organisms responsible for contaminant degradation. Evidence of anaerobic 1,4-dioxane degradation has been particularly intriguing and we would like to take the opportunity to attempt to identify the microorganisms involved. We will further seek to optimize the doses and demonstrate removal via biodegradation versus sorption. DNA sequencing will be carried out to help identify the organisms involved in 1,4-dioxane degradation and to determine the impact of the co-substrates on monooxygenase capabilities amongst the various members of the microbial community.

### **Objective 3: Delineating potential mechanisms of arsenic mobilization within the Potomac Aquifer System: Implications for aquifer storage and recovery**

Groundwater contamination by naturally occurring sources of arsenic (As) is an environmental problem that affects many parts of the U.S. Regional and national assessments conducted by the U.S. Geological Survey have suggested that trace elements, including As, are more widespread in groundwater than other contaminant groups (Ayotte et al., 2011; DeSimone

et al., 2014). Arsenic, of particular importance due to its carcinogenicity, is present in elevated concentrations in groundwater in many regions; more than 5% of 6,000 samples in one nationwide assessment exceeded As human health benchmarks (DeSimone et al., 2014). Recent work (Ayotte et al., 2017) suggests that over 2 million people in the U.S. are exposed to elevated As concentrations through drinking water from domestic wells. Although As has both human and natural sources, the most extensive As contamination of water supplies has been linked to naturally-occurring sources, such as hydrous ferric oxides (HFOs) to which As is adsorbed. Because As is a naturally occurring element that is found at detectable concentrations in many rocks and sediments, water-rock interactions impact its release to, and transport in, groundwater systems. These interactions involve not only the chemistries of water and minerals within the aquifer but also microbial activity, groundwater flow, recharge/precipitation patterns and human activity (Schreiber, 2021).

Recently, As has been detected in a few discrete screens of a multi-screen monitoring well during three distinct periods associated with the SWIFT managed aquifer recharge project in Virginia, with a concentration in one individual screen located in the lower zone of the Potomac Aquifer System (PAS) reaching as high as 18.1 ppb in 2019. EPA's MCL threshold is 10 ppb with compliance evaluated on a running annual average, which has remained < 10 ppb. The monitoring well where As has been detected is 50-feet from the recharge well, screened in exactly the same sections as the recharge well, and includes a FLUTE-sampling system that allows continuous sampling of individual well screens. This well was intended to evaluate the potential for aquifer treatment, and as expected, there have been beneficial changes in water quality (denitrification, debromofication, TOC removal, etc.) even in this short distance (~1-2 week travel time). The specific screen where As has been detected is localized with the lower portion of the middle Potomac (screen 9). Importantly, there have been no detections of As (< 1 ppb) in any of the conventional monitoring wells screened in the upper, middle, or lower Potomac Aquifer (300-400-feet from the recharge well), and the SWIFT Water used for recharge is consistently very low in As.

Research to date has not identified a specific source or cause; however, current data suggest that release of As adsorbed to HFOs may play a role in mobilizing As in the PAS. Under oxic conditions, circumneutral pH, and in the absence of competing oxyanions, As should strongly adsorb to HFOs and not be released to groundwater. However, biogeochemical triggers can cause release of As to groundwater. For example, introduction of bioavailable organic carbon or periods of low dissolved oxygen in recharge water can result in rapid depletion of dissolved oxygen and promote reduction of HFOs. This process, called reductive dissolution, can result in As release to groundwater and has been observed in many studies.

The overall goal of objective 3 is to characterize As distributions in PAS sediment and to conduct a systematic investigation of potential mechanisms that contribute to mobilization of As in groundwater within the PAS due to recharge operations at the SWIFT Research Center. Once the mechanisms are delineated, future research can evaluate the operational conditions in SWIFT recharge water that may cause As mobilization and define an experimental approach for evaluating As mobilization potential using aquifer sediment samples at other SWIFT sites.

*Objective 3/Task 1: Delineate As concentrations in Potomac Aquifer System sediment:*

The main goal of this objective is to develop a detailed characterization of As concentrations and other relevant parameters, such as Fe, TOC and grain size, in the PAS. To do this, we will collect sub-samples from available sediment collected from the PAS to characterize As (in addition to Fe

and other elements). We will start with drill cuttings from the Nansemond site. We also have access to remaining core samples from the VIP site and may utilize those samples for depth characterization. Later, as drilling operations commence at the James River site, we may be able to collect additional samples for characterization and placed into storage for future use. Based on available data from the PAS, we do not expect As concentrations to be exceedingly high in this sediment; however, as we found in previous work, it does not take much As in sediment to cause elevated As concentrations in groundwater (see Ziegler et al., 2017). Near-total digestions will be done using microwave-assisted acid digestion. Analysis of the digestate for As and other elements will be conducted using ICP-MS. In addition to the digestions, we will analyze samples for particle size analysis and total organic carbon using standard methods. We will analyze the sediment data using statistical methods, including multilinear regression and logistic regression (see VanDerwerker et al., 2018) to examine potential correlations of As with other elements in sediment, such as Fe, as well as characteristics of sediment (e.g. grain size, TOC). We also have access to advanced microscopic tools in the Virginia Tech Nanoscience Characterization and Fabrication Laboratory and can characterize the mineralogic content of samples of interest using these tools if needed.

#### *Objective 3/Task 2: Investigate potential As mobilization mechanisms in the PAS*

The main goal of this objective is to delineate mechanisms of As release to groundwater in the PAS. To do this, we will conduct a systematic laboratory investigation to identify mobilization mechanisms that release As from PAS into groundwater both under background conditions (native groundwater) and due to the injection of SWIFT Water. Mechanisms that we will test include: 1) desorption of As from minerals, 2) oxidation of As-bearing minerals and 3) reduction of Fe(III) minerals, such as hydrous ferric oxide (HFO) or clays to which As is adsorbed.

*Experimental Concept:* We will first conduct a pilot experiment to optimize solid to solution ratios, volumes needed for analysis, and sampling strategies. Second, we will examine the impact of desorption and oxidation of As release from PAS sediments exposed to SWIFT water and native groundwater. To do this, we will expose sediments to varying pH and concentrations of competitive anions (desorption) and DO, nitrate and possibly chlorine (oxidation). Third, we will examine the impact of reducing conditions that develop during periods of non-recharge. To do this, we will first introduce sediments to an initial slug of SWIFT Water with different TOC concentrations to promote oxidizing conditions and let the experiment progress under closed conditions to promote reducing conditions. We anticipate that the introduction of oxygen from the SWIFT recharge water will help promote Fe oxidation and precipitation as HFO, to which As can adsorb, and that the development of reducing conditions will allow for reductive dissolution of the HFO, releasing As.

*Experimental Conditions:* We will utilize sediment from the Nansemond site, the VIP core, or depending on timing, the James River site, if available. Decisions about which sediment(s) will be made after characterization in Objective 1 is completed. If available, we will utilize solutions of SWIFT Water and native groundwater; if they are not available, we can simulate the chemistry in the lab. Exact concentrations of treatment conditions and sample frequency will be determined after conducting the pilot experiment. Manipulations of oxygen/redox conditions will be done in an anaerobic chamber. Timing of sampling and volumes extracted will be determined during pilot experiments. Aqueous samples will be analyzed for pH and DO/redox using electrodes. Chemical constituents will be analyzed using standard methods. Arsenic speciation may also be measured

using a SAX separation method with analysis by ICPMS or through separation and analysis using HPLC-ICPMS. All experiments will be conducted in triplicate.

## References

- Ayotte, J., Gronberg, J., and Apodaca, L., 2011, Trace elements and radon in groundwater across the United States, 1992-2003: U.S. Geological Survey.
- Ayotte, J. D., Medalie, L., Qi, S. L., Backer, L. C., and Nolan, B. T., 2017, Estimating the high-arsenic domestic-well population in the conterminous United States: Environmental Science and Technology.
- DeSimone, L. A., McMahon, P. B., and Rosen, M. R., 2014, The quality of our Nation's waters—Water quality in Principal Aquifers of the United States, 1991–2010.
- Schreiber, M. E., 2021, Chapter 20 - Arsenic in groundwater in the United States: research highlights since 2000, current concerns and next steps, *in* Mukherjee, A., Scanlon, B. R., Aureli, A., Langan, S., Guo, H., and McKenzie, A. A., eds., *Global Groundwater*, Elsevier, p. 275-299.
- VanDerwerker, T., Zhang, L., Ling, E., Benham, B., and Schreiber, M., 2018, Evaluating Geologic Sources of Arsenic in Well Water in Virginia (USA): *International Journal of Environmental Research and Public Health*, v. 15, no. 4, p. 787.
- Ziegler, B. A., Schreiber, M. E., and Cozzarelli, I. M., 2017, *The role of alluvial aquifer sediments in attenuating a dissolved arsenic plume: Journal of Contaminant Hydrology*.

## Budget Justification

Two 12-month graduate research assistant (GRAs) and one 7-month GRA will directly carry out the proposed research. Dr. Amy Pruden and Dr. Madeline Schreiber will supervise the two 12-month GRAs on tasks related to Objectives 1 and 3. Dr. Mark Widdowson will supervise the 7-month GRA on tasks related to Objective 2. All expenditures will be incurred in Year 1. Fringe benefits are based on rates outlined below.

The proposed funding will also serve as cost share to the US Bureau of Reclamation grant.

### Salary/Fringe Benefits (\$92,701):

PI (Pruden): 2% AY effort is requested to support Pruden's oversight of the project, this amounts to \$4,212 in salary and \$1,370 in fringes.

Co-PI (Widdowson): 2% CY effort is requested to support Widdowson's contribution to the project, this amounts to \$4,211 in salary and \$1,376 in fringes.

Co-PI (Schreiber): No effort requested. One of the two full-time GRAs will be under her supervision.

Lab Manager (Prussin): Funds are requested to support lab manager, Dr. AJ Prussin, to oversee laboratory activities related to the project. . \$666 salary + \$218 fringe (0.073 CY months salary)

GRAs: \$73,783 salary + \$6,865 fringe (Two 100% CY GRA (one M.S. level and one Ph.D. level), one 7-month AY GRA (M.S. level))

Notes: For estimation purposes, a 5% escalation factor is included, which occurs every December 1st for faculty and research faculty. For estimation purposes, a 5% escalation factor is included, which occurs every August 16th for GRAs. Fringe Benefits are calculated in accordance with Virginia Tech's federally negotiated fringe rate agreement which is available at <http://osp.vt.edu/resources/rates.html>. Rates are as follows:

FRINGE RATES	Through 6/30/23	On/After 7/1/23
Regular Faculty	32.44%	33.91%
Special Research Faculty	35.41%	37.64%
GRA	9.32%	9.21%

**Travel:** \$2,000 (To support multiple trips by Virginia Tech team to HRSD)

**Materials and Supplies:** \$12,819 (Chemicals, culturing media, gases, glassware, experimental materials)

**Tuition:** : Tuition and academic fees for the graduate research assistants during the entire duration of the project are requested. Per Virginia Tech's policy, in-state tuition is budgeted annually for the GRAs in proportion to the amount of time they work on the project. Academic year tuition plus technology, library, and engineering fee is budgeted for engineering students. Tuition escalates 3% annually on August 16 for budget preparation purposes; the total amount requested for tuition is \$44,480.

**Contractual Services:** ICP-MS analysis \$4,000

**Indirect Costs** (25% TDC, per sponsor requirements): \$39,000

**TOTAL COSTS:** \$195,000

CONSENT AGENDA ITEM 2.b.3. – August 23, 2022

**Subject:** Flygt™ Dry Pit Submersible Pump  
Contract Award (>\$200,000)

**Recommended Action:** Award a contract to Sherwood Logan and Associates, Inc. in the amount of \$330,900.

**CIP Project:** CE011827

**Regulatory Requirement:** Enhanced Nutrient Reduction Certainty Program (2023-2032 Completion)

Budget	\$9,733,130
Previous Expenditures and Encumbrances	(\$9,389,882)
Available Balance	\$343,248

**Type of Procurement:** Sole Source

All parts and services were previously approved as a sole source with Sherwood Logan and Associates, Inc. in October 2015.

**Details:** Product includes the purchase of a Flygt™ dry pit submersible pump for the Atlantic Pressure Reducing Station. This pump will serve as a spare for the pumps that were purchased for this pump station under the recent construction contract.

The Commission previously approved limited sole source authority for Flygt™ Dry Pit Submersible Pumps for the James River Treatment Plant and Urbanna Treatment Plant. This action supersedes previous actions and expands the scope to cover the Atlantic Pressure Reducing Station.



CONSENT AGENDA ITEM 2.b.4. – August 23, 2022

**Subject:** Studying the Fate of Perfluoroalkyl and Polyfluoroalkyl Substances through Sewage Sludge Incinerators  
Research Study  
Contract Award (<\$200,000 but >12 months)

**Recommended Action:** Award a no-cost extension to North Carolina State University for 10 additional months for a total period of 17 months.

**Regulatory Requirement:** None

**Contract Description:** This contract is an agreement for Studying the Fate of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) through Sewage Sludge Incinerators (SSIs). This comprehensive study will provide data on whether SSIs can be considered an effective PFAS destruction technology to limit releases of PFAS to the environment and possible impacts on public health. Detlef Knappe and his post-doctoral research associate will work with HRSD and the larger research team to evaluate, summarize, and disseminate research results.

This is an existing study that originally spanned seven months. The study is now expected to run for an additional 10 months due to COVID and instrument delays.

**Study Objectives:** Incineration can destroy Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), but the conditions required for destruction are not known. This research aims to elucidate the fate of these compounds through SSIs, and thereby provide utilities and decision makers with an indication regarding the extent SSIs can reduce PFAS discharges to the environment which is important for informing PFAS handling strategies.

**Analysis of Cost:** The cost for this research study remains the same based on the initial seven months. This is an extension of time only.

## CONSENT AGENDA ITEM 2.c.1. – August 23, 2022

**Subject:** Army Base Treatment Plant Administration Building Renovation  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with Guernsey Tingle Architects, P.C. in the amount of \$286,250.

**CIP Project:** AB011900

**Regulatory Requirement:** None

Budget	\$1,014,800
Previous Expenditures and Encumbrances	(\$114,184)
Available Balance	\$900,616

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with Guernsey Tingle	\$0
Total Value of Previous Task Orders	\$114,184
Requested Task Order	\$286,250
Total Value of All Task Orders	\$400,434
Revised Contract Value	\$400,434
Engineering Services as % of Construction	9.5%

**Project Description:** This project is to renovate the existing Administration Building and the Electrical and Instrumentation Building at the Army Base Treatment Plant.

**Project Justification:** This project will renovate existing offices and common areas and provide additional administration offices, lunchroom, conference room, lab and control area, women and unisex bathrooms, HVAC upgrades and also renovate the Electrical and Instrumentation Building.

**Task Order Description:** This task order will provide design phase services in accordance with the approved recommendations from the Preliminary Engineering Report.

**Analysis of Cost:** The cost for this task order is based on hourly rates in Guernsey Tingle's annual services contract for Architectural, Mechanical and Electrical Services. The estimated number of labor hours is considered reasonable when compared to other similar projects.

<b>Schedule:</b>	PER	January 2021
	Design	August 2022
	Bid	May 2023
	Construction	August 2023
	Project Completion	August 2024

## CONSENT AGENDA ITEM 2.c.2. – August 23, 2022

**Subject:** Chesapeake-Elizabeth Treatment Plant Decommissioning  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with Tetra Tech, Inc. in the amount of \$390,311.

**CIP Project:** CE011810

**Regulatory Requirement:** None

Budget	\$11,303,826
Previous Expenditures and Encumbrances	(\$961,971)
Available Balance	\$10,341,855

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with Tetra Tech, Inc.	\$0
Total Value of Previous Task Orders	\$222,418
Requested Task Order	\$390,311
Total Value of All Task Orders	\$612,729
Revised Contract Value	\$612,729
Engineering Services as % of Construction	4%

**Project Description:** This project will study and demolish or abandon facilities at the Chesapeake-Elizabeth Treatment Plant (CETP) site and look at other potential uses for this site after the plant has been decommissioned. Demolishment or abandonment needed at CETP may include, but is not limited to, aeration tanks, clarifiers, preliminary treatment facility, incinerator building, thickeners, chlorine contact tanks, pump stations, yard piping, and outfalls.

**Project Justification:** The Chesapeake-Elizabeth Treatment Plant Feasibility Study completed in October 2013 evaluated taking the treatment plant offline and diverting flow to other treatment plants. The study determined that the HRSD interceptor system and remaining treatment plants have the ability to serve the current and projected needs of the South Shore jurisdictions when the CETP would be taken offline in 2021. Significant capital and operation and maintenance (O&M) savings from this decision results in a high net present value compared to the former strategy.

**Task Order Description:** This task order will provide design services for the demolition of the existing CETP. This task order will also design a stormwater system, a new electrical service and redesign the existing drain pump station.

**Analysis of Cost:** The cost for this task order is based on hourly rates in Tetra Tech's annual services contract for Environmental Services. The majority of the design fee is for the demolition of the CETP. A small portion of the design fee is for the design of the stormwater system, a new electrical service, and redesign the drain pump station. The design fee is 4% of the project cost and is reasonable for the needed design services.

<b>Schedule:</b>	Design	September 2022
	Bid	June 2023
	Construction	September 2023
	Project Completion	February 2028

CONSENT AGENDA ITEM 2.c.3. – August 23, 2022

**Subject:** Interceptor Systems Valve Improvements Phase I  
Task Order (>\$200,000)

**Recommended Actions:** Approve a task order with RK&K, LLP in the amount of \$306,842.

**CIP Project:** GN015300

**Regulatory Requirement:** Rehab Action Plan Phase 2 – 2025

Budget	\$3,259,305
Previous Expenditures and Encumbrances	(\$70,643)
Available Balance	\$3,188,662

<b>Contract Status with Task Orders:</b>	<b>Amount</b>
Original Contract with Engineer	\$70,643
Total Value of Previous Task Orders	\$70,643
Requested Task Order	\$306,842
Total Value of All Task Orders	\$306,842
Revised Contract Value	\$377,485
Engineering Services as % of Construction	12.9%

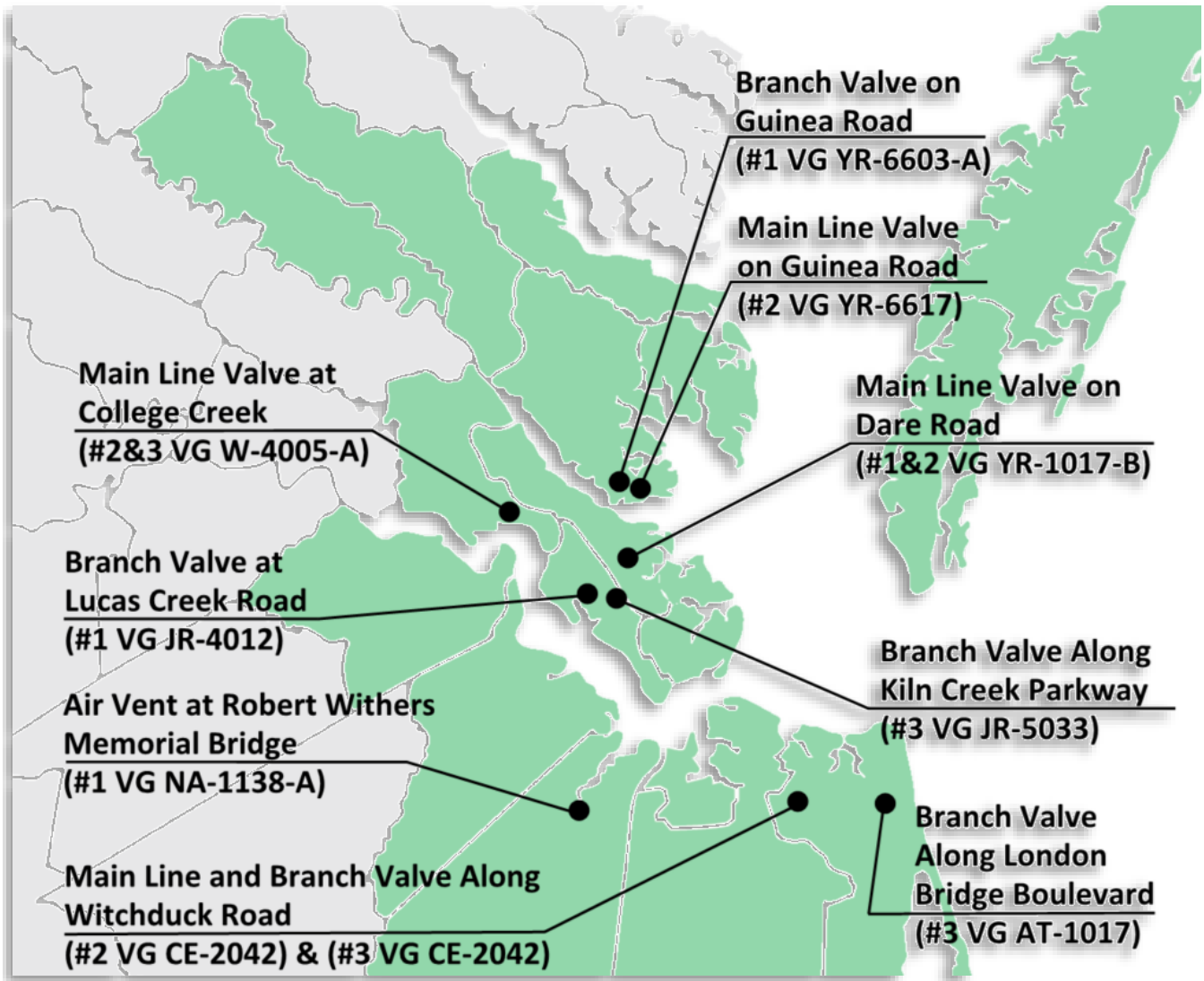
**Project Description:** This project will address multiple valves assessed to be at material risk of failure observed during the Condition Assessment Program. Assets to be replaced under this effort are located between both the North and South Shore Interceptor System. The attached [map](#) depicts the project location.

**Project Justification:** This project is necessary due to condition assessment activities and/or preventative maintenance reviews suggesting that these assets are either at material risk of failure, in need of replacement or in need of repair.

**Task Order Description:** This task order will provide the design services for the subject project. A fee of \$306,842 was negotiated with RK&K, LLP, and is 8.34% of the current estimated construction cost. The fee proposal is comparable to other projects of similar size and complexity.

**Analysis of Cost:** The cost for this task order is based on a negotiated cost and is in agreement with other similar efforts.

<b>Schedule:</b>	Design	September 2022
	Preconstruction	July 2023
	Construction	September 2023
	Project Completion	September 2024



## CONSENT AGENDA ITEM 2.c.4. – August 23, 2022

**Subject:** Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with Rummel, Klepper & Kahl, LLP (RKK) in the amount of \$230,889.

**CIP Project:** CE011600

**Regulatory Requirement:** Rehab Action Plan Phase 2 (2025 Completion)

Budget	\$2,262,394
Previous Expenditures and Encumbrances	(\$72,200)
Available Balance	\$2,190,194

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with RKK	\$0
Total Value of Previous Task Orders	\$72,200
Requested Task Order	\$230,889
Total Value of All Task Orders	\$303,089
Revised Contract Value	\$303,089
Engineering Services as % of Construction	10.2%

**Project Description:** This project is to rehabilitate and/or replace 1,600 linear feet of 24-inch diameter gravity sewer and associated manholes. The attached [map](#) depicts the project location.

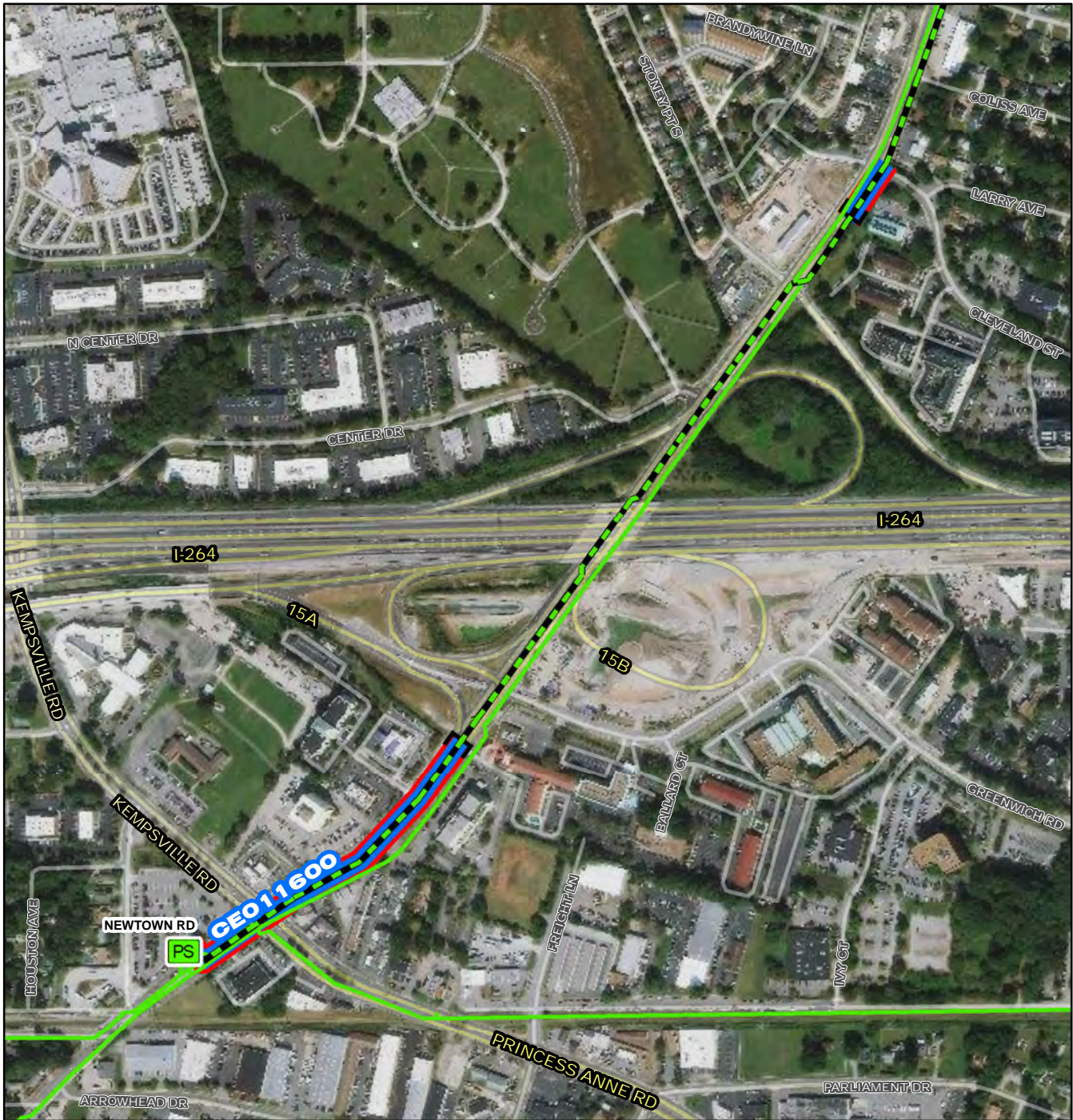
**Project Justification:** Condition assessment activities indicate that these assets, late 1960's era, present a material risk of failure due to physical condition defects.

**Task Order Description:** This task order will provide design and pre-construction phase services to competitively bid the construction project in accordance with the approved recommendations from the Preliminary Engineering Report.

**Analysis of Cost:** The cost for this task order is based on hourly rates in RKK's annual services contract for Interceptor System Projects. The estimated number of labor hours is considered reasonable when compared to other similar projects.

<b>Schedule:</b>	PER	November 2021
	Design	August 2022
	Bid	September 2023
	Construction	January 2024
	Project Completion	December 2024





**CEO 11600**

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

Feet

0    195    390    780    1,170    1,560

## CEO 11600

### Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements

N  
W    E  
S

**CIP Location**

Virginia Beach

## CONSENT AGENDA ITEM 2.c.5. – August 23, 2022

**Subject:** Virginia Initiative Plant Administration Building Renovation  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with Guernsey Tingle Architects, P.C. in the amount of \$447,326.

**CIP Project:** VP018800

**Regulatory Requirement:** None

Budget	\$2,162,200
Previous Expenditures and Encumbrances	(\$127,273)
Available Balance	\$2,034,927

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with Guernsey Tingle	\$0
Total Value of Previous Task Orders	\$127,273
Requested Task Order	\$447,326
Total Value of All Task Orders	\$574,599
Revised Contract Value	\$574,599
Engineering Services as % of Construction	11.3%

**Project Description:** This project will renovate the existing Administration Building, Parts Inventory Building, and Incinerator Building and construct a new, prefabricated, Operations and Maintenance Building at the Virginia Initiative Treatment Plant.

**Project Justification:** This project will renovate existing offices and common areas and provide additional administration offices, lunchroom, conference room, bathrooms, and unisex bathrooms, enlarge locker facilities, exterior window protection, provide upgrades to HVAC, electrical, plumbing, and instrumentation and construct a new, prefabricated, operations and maintenance building.

**Task Order Description:** This task order will provide design phase services in accordance with approved recommendations from the Preliminary Engineering Report.

**Analysis of Cost:** The cost for this task order is based on hourly rates in Guernsey Tingle's annual services contract for Architectural, Mechanical and Electrical Services. The estimated number of labor hours is considered reasonable when compared to other similar projects.

<b>Schedule:</b>	PER	January 2021
	Design	September 2022
	Bid	August 2023
	Construction	October 2023
	Project Completion	December 2024



## CONSENT AGENDA ITEM 2.d.1. – August 23, 2022

**Subject:** Atlantic Treatment Plant Digester #4 Coating Restoration  
Contract Change Order (>25% or \$50,000)

**Recommended Action:** Approve a change order with Commonwealth Epoxy Coatings, Inc. in the amount of \$340,395.

<b>Contract Status:</b>	Amount	Cumulative % of Contract
Original Contract Commonwealth Epoxy Coatings, Inc.	\$484,643	
Total Value of Previous Change Orders	\$0	0%
Requested Change Order No. 1	\$340,395	
Total Value of All Change Orders	\$340,395	70.23%
Revised Contract Value	\$825,038	

Time (Additional Calendar Days)		0
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**Project Description:** This task order will provide services for interior steel restoration of digester #4 at the Atlantic Treatment Plant. Services also include preservation of immersion surface steel ceiling, support structure and piping.

**Change Order Description:** This change order includes the coating restoration of the attic space of the #4 digester at the Atlantic Treatment Plant. This is a change in scope from original task of coating just the digester roof, manways and interior steel.

**Analysis of Cost:** The cost for this change order is based on the pre-negotiated rates under the Annual Coating Services Agreement.

CONSENT AGENDA ITEM 2.e.1 – August 23, 2022

**Subject:** Duperon® Compactor Sprayer and Parts  
Sole Source (>\$10,000)

**Recommended Action:** Approve the use of the Duperon® Compactor Sprayer and Parts by Duperon Corporation at the Nansmond Treatment Plant.

**Sole Source Justification:**

- Compatibility with existing equipment or systems is required
- Support of a special program in which the product or service has unique characteristics essential to the needs of the program
- Product or service is covered by a patent or copyright
- Product or service is part of standardization program to minimize training for maintenance and operation, and parts inventory

**Details:** Product includes the purchase of a custom fabricated sprayer and drain pan to replace the existing parts used with the Duperon® Compactor. The compactor is used in the dewatering process in which the liquid coming from the bar screen is squeezed out and discharged into a hopper. The existing sprayer being used with the compactor needed modifications in order to better allow product to come down the conveyor rather than sit in the strainer causing a clogging issue.

The Duperon® Compactor was purchased under a CIP in April 2021 and was installed in July 2021.

CONSENT AGENDA ITEM 2.f.1 – August 23, 2022

**Subject:** Oracle Annual Maintenance and Support for I-PACS System, WebLogic, and Service-Oriented Architecture (SOA)  
HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award (>\$200,000)

**Recommended Actions:**

- a. Approve the use of the Virginia Information Technology Agency (VITA) contract number VA-170130-MYTH for purchase of Oracle Software and Related Services from Mythics Inc.
- b. Award a contract for Oracle Annual Maintenance and Support to Mythics Inc. in the estimated amount of \$326,418 for year one with two annual renewal options and an estimated cumulative value in the amount of \$1,029,033.

**HRSD Estimate: \$326,418**

**Contract Description and Analysis of Cost:** This contract is for annual software and maintenance subscription to include the Oracle I-PACS System, WebLogic, and Service-Oriented Architecture (SOA) Suite. This is licensing renewal for multiple databases. WebLogic and SOA are distributed middleware platforms used by the Oracle Enterprise Systems at HRSD. SOA suite is the application development tool used to extend and develop our Oracle applications.

By utilizing the cooperative contract through VITA, HRSD is receiving a yearly two percent cost savings.

CONSENT AGENDA ITEM 2.f.2. – August 23, 2022

**Subject:** Utility Locating Services  
HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award  
(>\$200,000)

**Recommended Actions:**

- a. Approve the use of the City of Newport News contract #18-2542-00 for Utility Locating Services with C3 Communication Construction Corporation.
- b. Award a contract to C3 Communication Construction Corporation in the amount of \$450,000.

**HRSD Estimate:** \$450,000

**Regulatory Requirement:** None

**Contract Description and Analysis of Cost:** This contract is for utility locating services for South Shore Interceptors. Services include locating underground sewer utilities to assist in protecting and maintaining vital HRSD sanitary sewer underground facilities within the Cities of Virginia Beach, Portsmouth, Norfolk, Chesapeake and portions of Suffolk and Isle of Wight.

This contract is being awarded for one year to provide supplemental labor due to staff shortages with South Shore Interceptors and allow HRSD staff to concentrate on duties needed for maintaining the interceptor system. HRSD will re-examine if use of this cooperative is still needed or determine if a competitive Solicitation will be advertised for a multi-year Agreement.

CONSENT AGENDA ITEM 2.g.1. – August 23, 2022

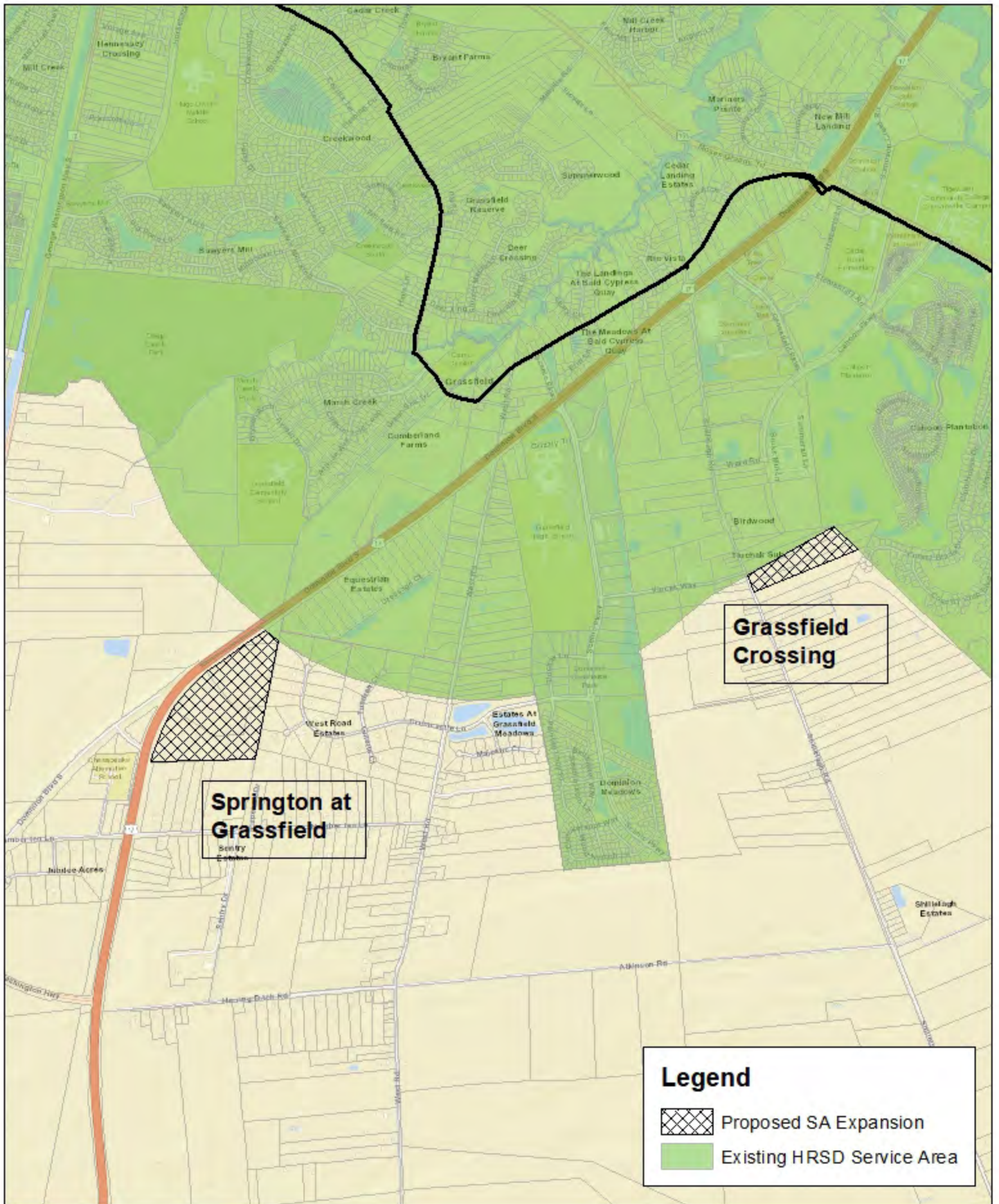
**Subject:** Service Area Amendment  
City of Chesapeake, Grassfield Crossing Service Area

**Recommended Action:** Approve the modification to the existing HRSD Service Area as requested by the City of Chesapeake.

**Project Description:** The City of Chesapeake has requested a modification to the HRSD Service Area boundary in the Grassfield Crossing area of the City as shown on the attached [map](#).

HRSD has capacity to accept flows from development within this amended service area as shown.



This work is in accordance with [Service Area Expansion](#) Commission Adopted Policy.



**Grassfield Crossing**

**Springton at Grassfield**

**Legend**

-  Proposed SA Expansion
-  Existing HRSD Service Area



CONSENT AGENDA ITEM 2.g.2.– August 23, 2022

**Subject:** Service Area Amendment  
City of Chesapeake, Springton at Grassfield Service Area

**Recommended Action:** Approve the modification to the existing HRSD Service Area as requested by the City of Chesapeake.

**Project Description:** The City of Chesapeake has requested a modification to the HRSD Service Area boundary for the Springton at Grassfield area of the City as shown on the attached [map](#).

HRSD has capacity to accept flows from development within this amended service area as shown. Further service area expansion in Southern Chesapeake will necessitate HRSD system upgrades to accept additional flow.

This work is in accordance with [Service Area Expansion](#) Commission Adopted Policy.

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #2

3. Residential Customer Survey





Customer Billing – An Overview  
Commission Meeting  
August 23, 2022

## Customer Billing Business Model

62%

**HRSD**

- County of York
- Gloucester
- Isle of Wight
- Mathews County
- Newport News Water Works
- Portsmouth
- Virginia Beach
- Windsor

38%

Hampton Roads Utility Billing Service

**HRUBS**

- Chesapeake
- Norfolk
- James City Service Authority
- King William County
- Suffolk
- County of Surry
- Town of Surry
- Urbanna
- Smithfield

- General environmental conditions for Customer Care are difficult
  - COVID 19, inflation, staffing challenges, etc.
- Business model is unique
  - Originally, established to save region \$
    - HRSD – customer receives 2 bills
    - HRUBS – consolidated bills
  - Adds levels of complexity

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## Some Current Challenges

---

- Localities own and read meters initiating the billing process
- Arrangements with HRUBS clients varies greatly
- Calls are often about services not provided by HRSD
  - Customer must be referred to locality
- Varying arrangements creates confusion and complexity

- 5+ Year Strategic Plan Development
  - Improved Customer Experience
    - Bill Redesign
    - Retail Payment Locations (Walmart, 7-11, etc)
    - Leverage social media for enhanced communications
    - Improved self-service
  - Billing System Improvements
    - Cloud conversion
    - Functional efficiencies
    - Standardize HRSD Billing models and service



**Hampton Roads Sanitation District  
Customer Satisfaction Study  
Wave 3**

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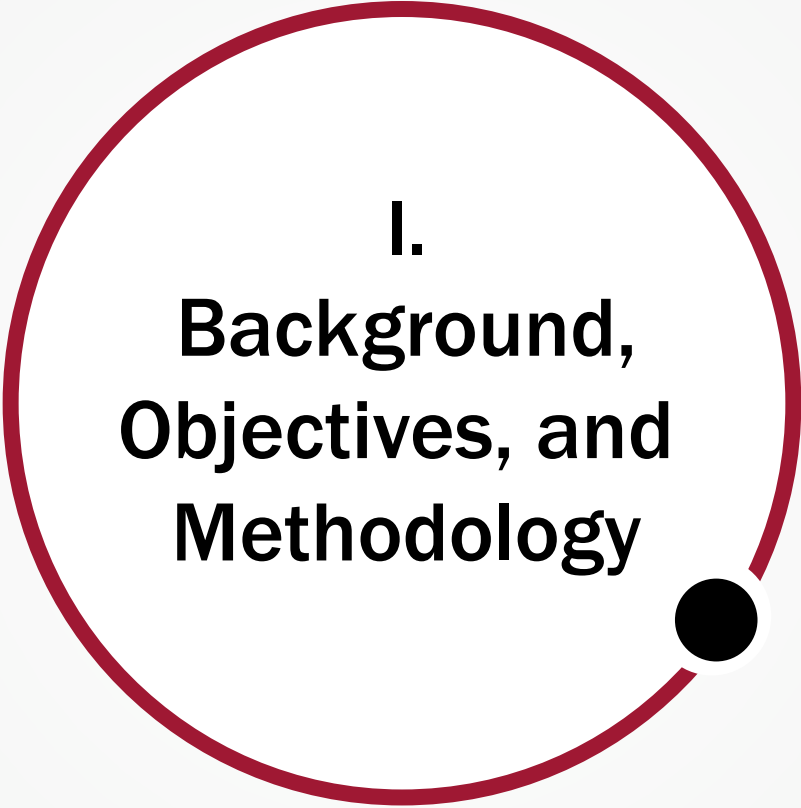
August 5, 2022

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# Table of Contents

- I. Background, Objectives, & Methodology
- II. Executive Summary
- III. Respondent Profile
- IV. Situation Review
- V. Key Findings & Implications
- VI. Additional Recommendations





**I.  
Background,  
Objectives, and  
Methodology**

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# Background

The Hampton Roads Sanitation District was created in 1940 to protect public health and the waters of Hampton Roads by treating wastewater effectively. HRSD's service area includes 19 cities and counties, covering over 3,000 square miles, and 1.7 million citizens.

SIR was engaged to survey residential customers as part of a biannual tracking study of awareness, satisfaction, and communications preferences. Prior studies were conducted by another research company in 2009, 2011, 2013, and 2015, SIR conducted its Benchmark Wave of this study in 2018 and again in 2020.

**This document  
shares the results of  
Wave 3 of the  
survey, conducted  
June-July 2022.**



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# Objectives

**The overall goal of SIR's work is to monitor residential customer satisfaction via a tracking tool that provides rich insights and actionable findings. Specific objectives include:**

- Measure residential customers' awareness, satisfaction, and value of HRSD/HRUBS.
- Assess customer satisfaction of specific topics, including:
  - Customer service
  - HRSD/HRUBS bills
  - Fees charged for sewage treatment
  - Payment options (including through the website)
- Measure residential customer satisfaction and use of the HRSD website.
- Collect relevant demographic information among respondents.
- Compare 2022 Wave 3 results to 2018 and 2020 Benchmarks where possible.

---

# Methodology

## ONLINE SURVEY

- Conducted among HRSD residential customers ages 18 and older who play a role in the payment of utility bills across the 18 different geographical areas served.
- The survey fielded June 27 through July 8, 2022 and took an average of 10 minutes to complete.
- 1,791 completed surveys were recorded and analyzed.
- Participants were incentivized by an opportunity to participate in a drawing for a \$10 Starbucks e-gift card.

# Segmentation & Survey Geography

- SIR analyzed the survey responses based on a wide range of variables to identify important differences among residential customers. Those include:
  - Geography and region
  - Respondent age or generation
  - Gender
  - Household income
  - HRSD vs. HRUBS customers
- In most cases, few significant differences appear; however, segments with large significant differences in responses are noted in this report.
- Only residents residing in the 19 counties and cities were offered the opportunity to participate.
- Respondents were also screened to ensure they have a primary or shared role in utility bill payment.





## **II. Executive Summary**

# Overall ratings of HRSD

There have been no significant changes in familiarity or satisfaction over three waves of the survey.

## FAMILIARITY

2018  
29%

2020  
31%

2022  
32%

## SATISFACTION OVERALL

2018  
56%

2020  
56%

2022  
58%



# 40%

of respondents say there is high value of services for the fees paid

Overall, satisfaction with customer care is down significantly this year. Respondents rate the friendliness, knowledge, and ease of contact as top attributes.



**57%**

of respondents are satisfied with HRSD customer care

Satisfaction is significantly down from 2020, by 4%.

TOP ATTRIBUTES of HRSD customer care



Website satisfaction continues to be strong, especially among those who use it to pay their bill. Telephone remains the most popular way customers prefer to receive support for billing issues that arise, especially among older generations.



**74%**

Receive bills via email or online, which was also the most popular in 2020



**91%**

Use the website to view or pay their bill



**70%**

Are satisfied with the website



**63%**

Reach out via phone when faced with a billing issue.

Email support (18%) and online chat (17%) were the next channel chosen.

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HRSD Bill Pay has an opportunity for improvement in several key areas.

2020

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98%

Customers report **Consistent Service** and **Bill Accuracy** as the two most important aspects of service in 2020

2022

---



**Payment Options (79%)** and **Consistent Service (72%)** have the highest degree of satisfaction of all services and billing attributes measured. Understanding Fees is ranked lowest (48%).



Wave 3 found that **Consistent Service** and **Bill Accuracy** have both been significantly declining in satisfaction since 2018.





**III.  
Respondent  
Profile**

# Respondent demographic information

DEMOGRAPHIC	GROUP	COUNT	SAMPLE PROPORTION
GENDER	Male	550	31%
	Female	1,091	62%
GENERATION	Generation Z (born 2000–2012)	5	<1%
	Millennials (born 1983–1999)	521	29%
	Generation X (born 1965–1982)	504	28%
	Boomers (born 1946–1964)	438	24%
	Silent Generation (prior to 1945)	64	4%



# Respondent demographic information (cont'd)

DEMOGRAPHIC	GROUP	SAMPLE PROPORTION
HISPANIC ETHNICITY	Hispanic or Latino	4%
	Not Hispanic or Latino	82%
RACE	White	80%
	Black or African-American	14%
	Asian	4%
	American Indian or Alaska Native	1%
	Native Hawaiian or Pacific Islander	<1%
	Other	1%
	Mixed Race	2%

Q29. Are you of Hispanic or Latino origin?

Q30. Which of these do you consider yourself to be? Select all that apply.

Note: Nearly all questions included a “prefer not to answer” option. The proportion selecting “prefer not to answer” is not presented above, so percentages may not sum to 100 percent.

# Respondent tenure

NUMBER OF YEARS	HRSD BILLING RESPONDENTS (n = 1,011)	HRUBS BILLING RESPONDENTS (n = 776)
Up to 1 year	10%	14%
Over 1 and up to 5 years	23%	24%
6 to 10	17%	19%
11 to 20	22%	21%
21 or more	27%	22%
<b>AVERAGE YEARS AS A CUSTOMER</b>	14	13



# Respondent geography

GEOGRAPHY	COUNT	SAMPLE PROPORTION
Virginia Beach	491	27%
Chesapeake	270	15%
Norfolk	223	12%
Newport News	186	10%
Williamsburg	173	10%
Hampton	134	7%
Suffolk	98	5%
Portsmouth	84	5%
Yorktown	68	4%
Toano	21	1%
Poquoson	13	1%
Other areas	47	3%



# IV. Situation Review

**It is important to set the stage and recognize the wave 3 survey was fielded in an unusual and historic time. As a result of the COVID-19 pandemic, HRSD, the region, and the country are reeling from impacts on both labor shortages as well as a general lapse in resident and customer sentiment.**

# The Impact of COVID-19

- In 2021, residents and businesses with past due bills were offered opportunities to apply for payment relief.
- By 2022, as funds were expended and the pandemic effects were waning, standard billing and water shutoff practices were re-instated.
- More recently, signs of inflation and rising costs are creating additional pain for many residents and businesses.

## HRSD receives \$8.7 million in CARES Act funding to help customers with overdue water bills



By: Web Staff

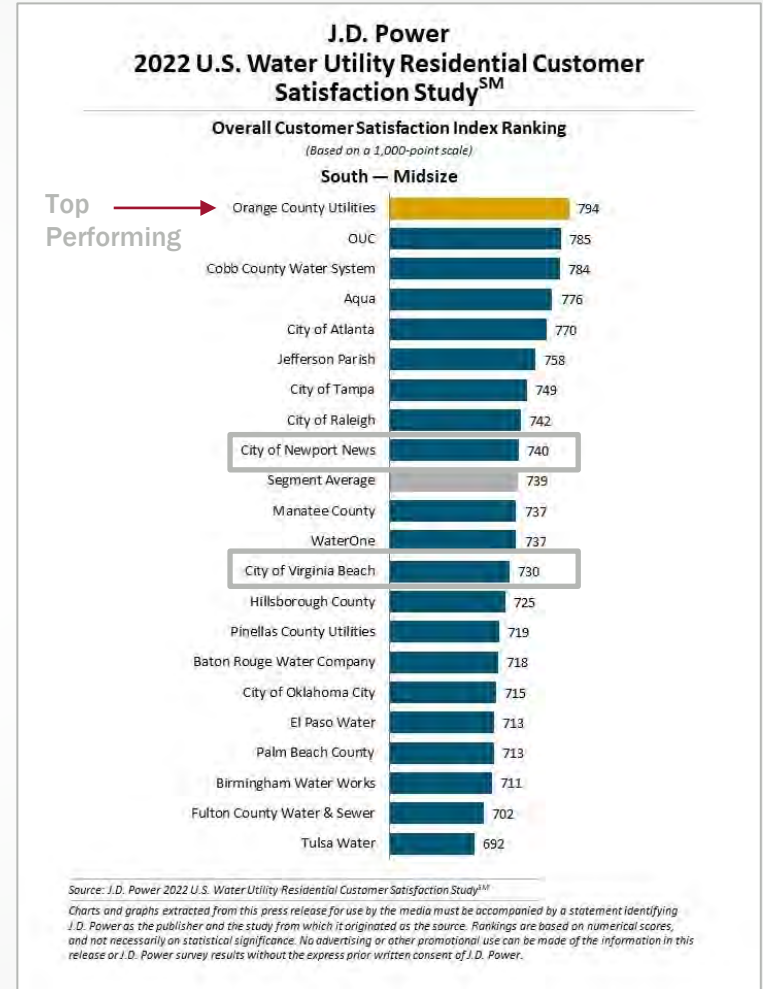
Posted at 10:10 AM, Dec 18, 2020 and last updated 2:02 PM, Dec 18, 2020

VIRGINIA BEACH, Va. – HRSD has received \$8.7 million in funding from the CARES Act program to help customers faced with past-due water and wastewater bills resulting from COVID-19-related financial hardships.



# Satisfaction with water utilities is down across the board

- The 2022 J.D. Power U.S. Water Utility Residential Customer Satisfaction Study found that, while **customer satisfaction is down in every factor of the study, they are most pronounced in the areas of communications and price.**
- Customer satisfaction was found to be highest when interacting with customer service digitally, which could be a good area to explore expanding first.



---

“The **rate relief efforts put in place during the pandemic have come to an end** just as the forces of inflation have driven a significant increase in the monthly bills of residential customers. **Customer satisfaction has declined in every factor of [our] study,** as the average monthly water utility bill in the U.S. is now up \$5.73 from 2020—**without a corresponding increase in consumption.** Utilities looking to combat this negative sentiment really need to get serious about proactive customer communications and customer service.”

---

**Andrew Heath, senior director of utilities intelligence at J.D. Power**  
**J.D. Power 2022 U.S. Water Utility Residential Customer Satisfaction Study**

# HRSD's resulting operational challenges

Like organizations across the country, during the pandemic HRSD began facing labor force challenges that continue to this day.

HRSD is currently dealing with a **40% drop in their labor force**. This impacts the efficiency and effectiveness of many departments including customer care and billing.

## STAFFING CHALLENGES ARE NOT UNIQUE TO HRSD

- The American Water Works Association (AWWA) conducted a survey, Covid-19 Impacts On the Water Sector in October 2021, which found that **40% of utilities say they are having issues hiring new employees**.
- Nationwide staffing shortages leave remaining workers to pick up the slack, often resulting in **burn out, resentment, or resignation**. This often has an impact on customer satisfaction too.
- In addition, in 2021 the EPA reported that roughly **one-third of the water sector workforce is eligible to retire in the next 10 years**, meaning that the current labor shortage will be felt even more in the coming years
- Yet, water sanitation jobs offer salaries up to 50% higher for workers at the lower end of the income range (Brookings, 2018).



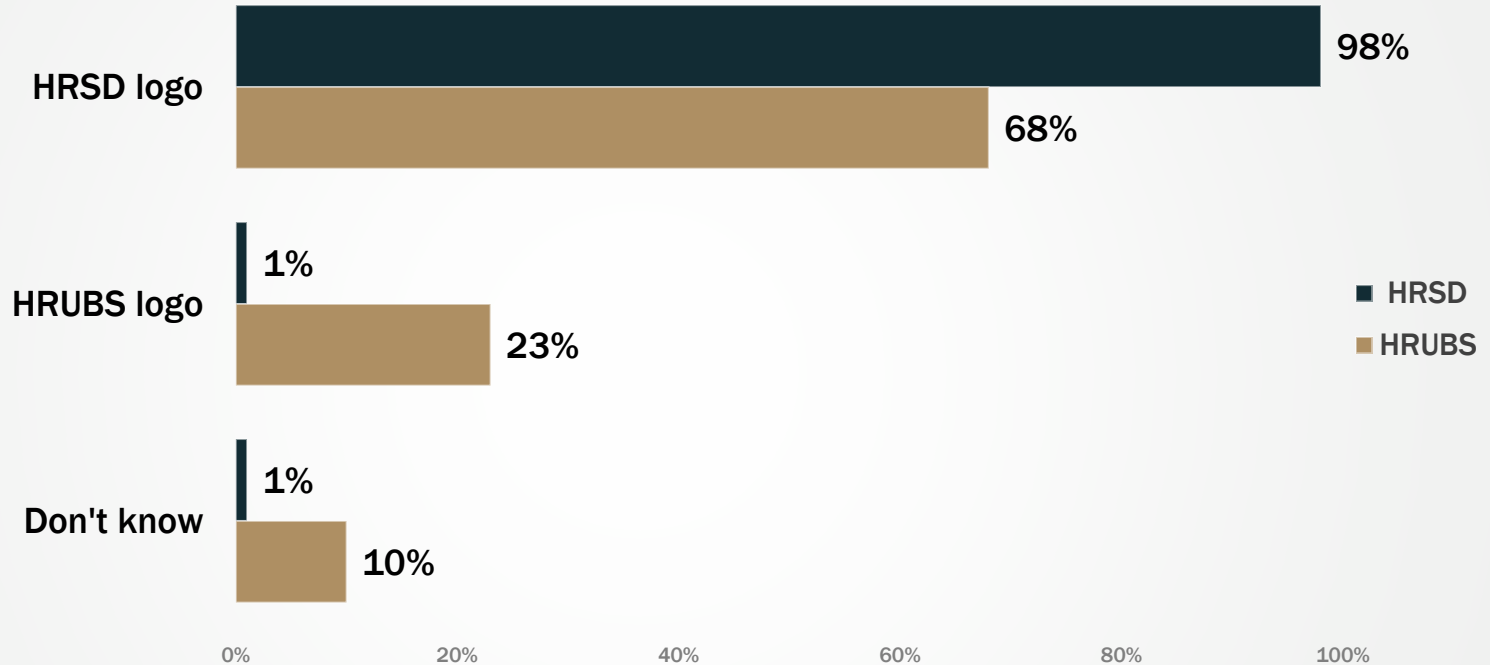
**IV.  
Key Findings  
& Implications**

# FAMILIARITY AND OVERALL SATISFACTION

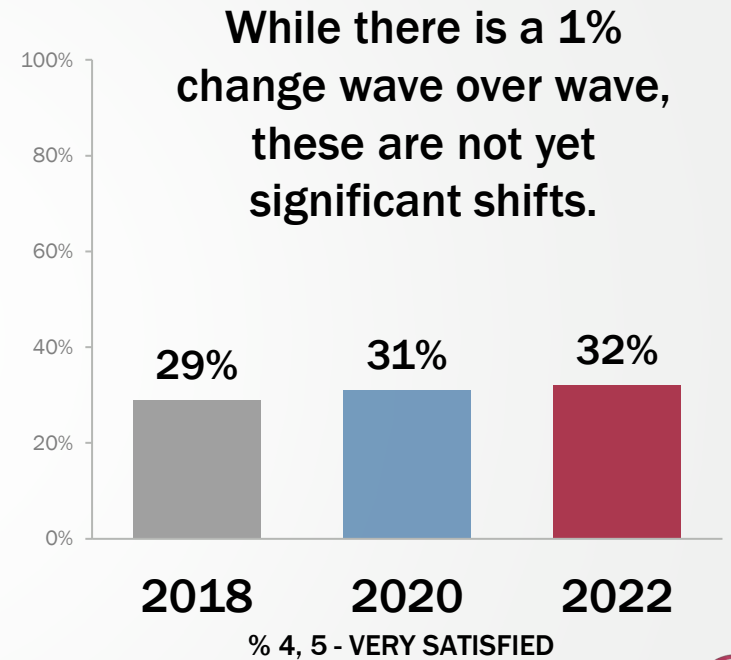
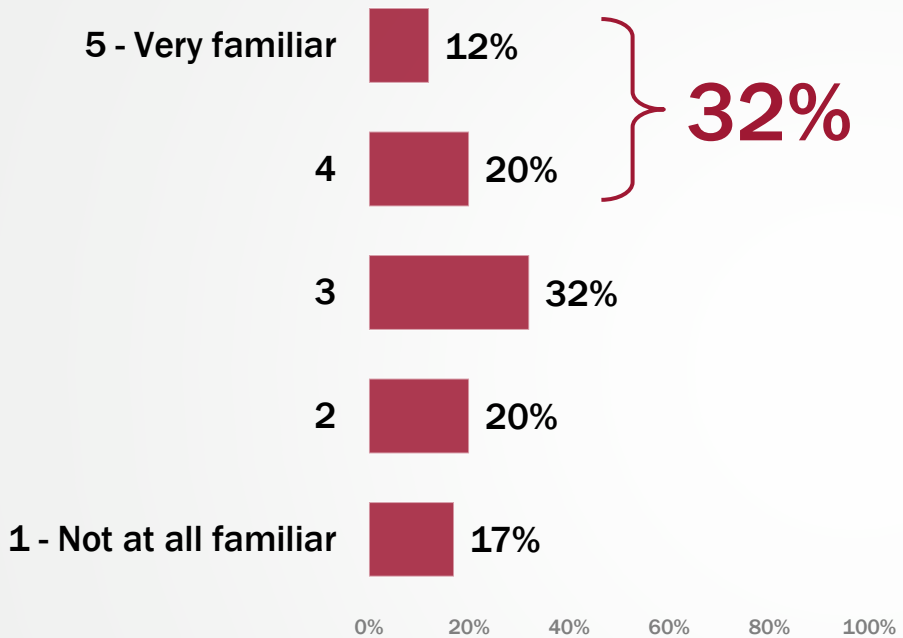
1

**Familiarity and overall satisfaction scores continue to remain unchanged. A new measure of value of services for the fees paid, indicates an opportunity for improvement.**

# Nearly all HRSD customers correctly identify the HRSD logo while a quarter of HRUBS customers correctly identify the HRUBS logo as being on correspondence

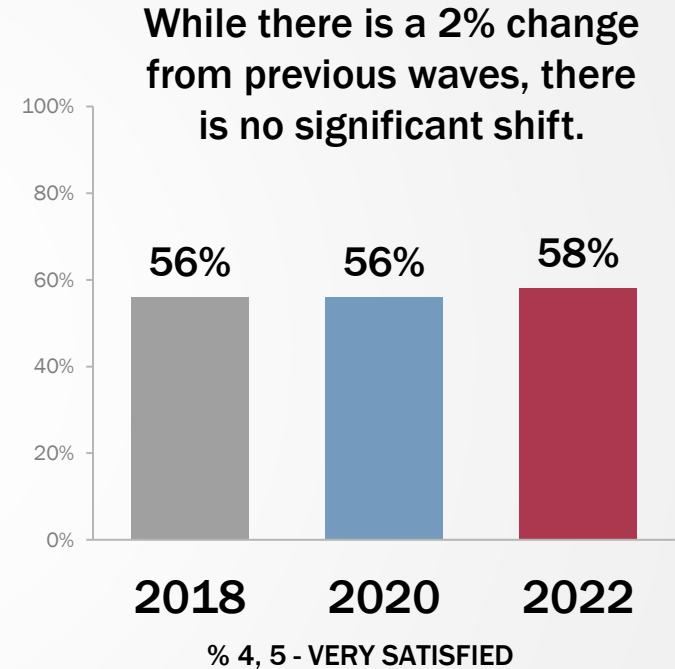
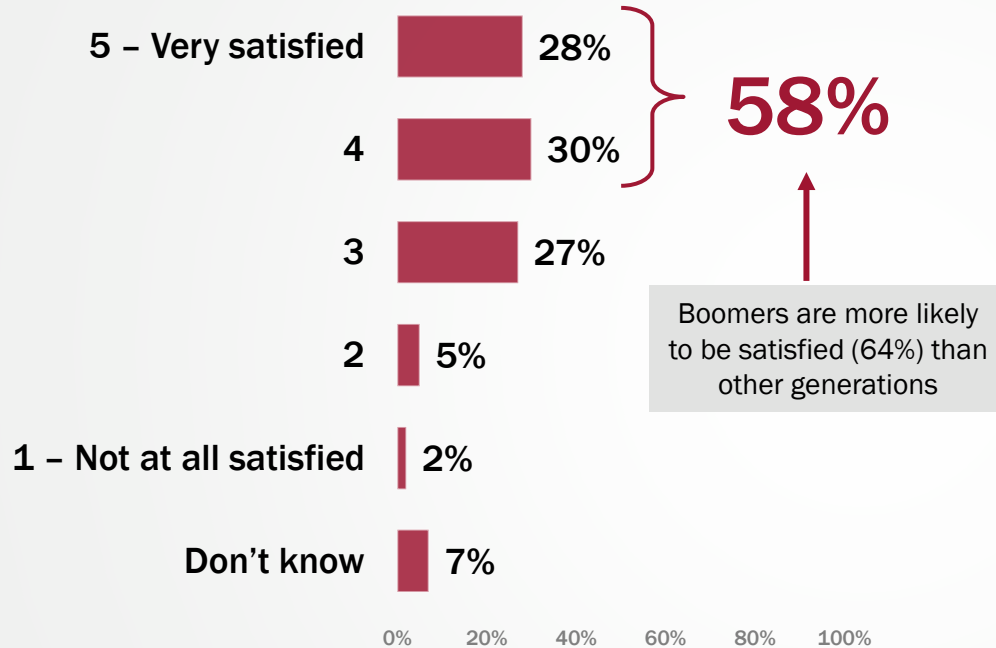


# FAMILIARITY remains low at 32% and has not changed significantly over the past two waves





# Despite low familiarity, nearly three in five respondents report high levels of **SATISFACTION** with HRSD



# HRSD and HRUBS respondents cite similar themes when asked *why* they are dissatisfied

## HRSD



## HRUBS



**There has been a noticeable spike in dissatisfaction around four specific areas.**

**The primary source of concern is a perceived spike in service cost, for which customers largely do not understand the reason.**

- 1 Expensive**
- 2 Billing Inaccuracy**
- 3 Communication**
- 4 Water Quality**

# Comments about overall dissatisfaction

Q6. Why are you dissatisfied with HRSD/HRUBS services overall?

## HRSD Customers

### EXPENSIVE | BILL CALCULATION | COMMUNICATION | TRUST

- *“The cost keeps going up. Like doubling. With no explanation why.”*
- *“... I also do not have faith that my water meter is read accurately.”*
- *“Just don't understand why you have to pay for extra water bill.”*
- *“I do not understand how the sewer bill is calculated. The sewer bill is always higher than the water bill by about 50%... I'm being charged for water that HRSD does not need to treat.”*
- *“...I'm paying twice. City water and sewer, and HRSD. Why?”*
- *“Not responsive to email. No accountability. No interest in helping. York County Utilities is so good, but HRSD is brutal to work with.”*

### DIS/MIS-INFORMATION | MISTRUST | INCONSISTENCY

- *“Not enough information about HRSD. I used to pay my bill with same price every two months until lately my bill seems to increase drastically.”*
- *“They are not responsive and often are behind in billing and correspondence.”*
- *“Trash/recycling pick up is late or doesn't come at all...”*
- *“You can't keep "estimating" my bills based on my "estimated" use. It means whatever water conservation efforts I take are meaningless.”*
- *“You are a private entity that has weaseled its way into becoming a part of government. You collect payment for a service that is already taken care of by the city itself. And somehow hold the power to disconnect my water if I don't want to pay a criminal organization for something I didn't ask for.”*

# Comments about overall dissatisfaction

Q6. Why are you dissatisfied with HRSD/HRUBS services overall?

## HRUBS Customers

### METER ACCURACY | TRUST | CUSTOMER SERVICE

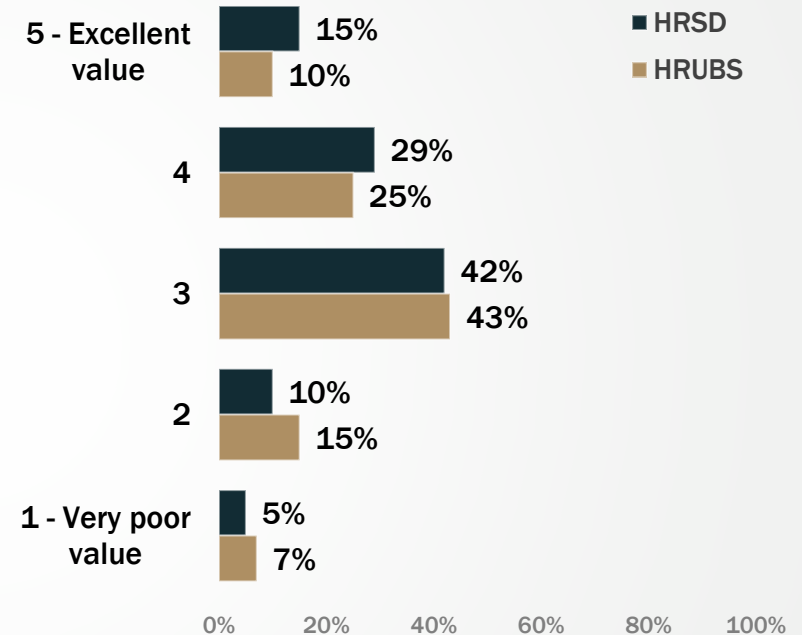
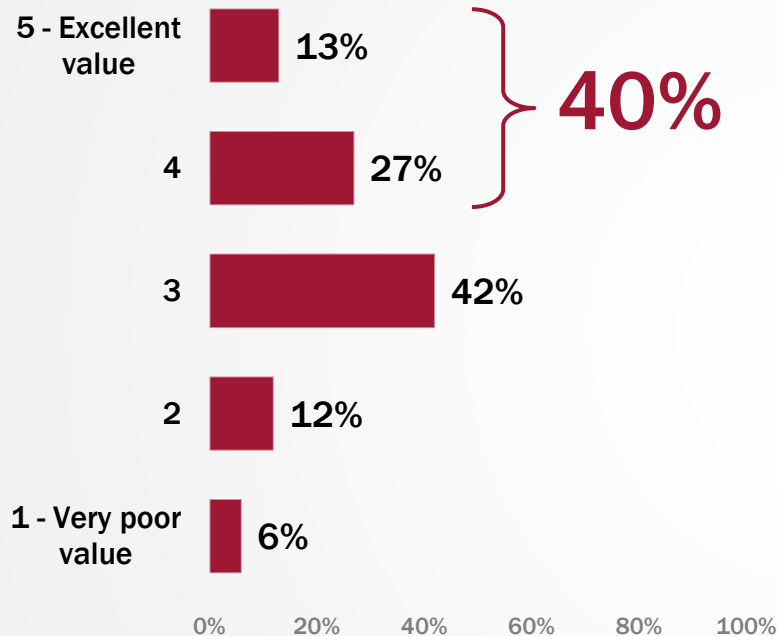
- *“Recently - we had a bill that was more than 1/2 the expected cost. It was clear that the meter was not read and quantity of 10 CCFs were charged. This was a nice savings for the month - but we knew there was an issue since we average 20 CCF. Then the most recent bill was 29 CCF and near \$500.00. **When we called to ask - the customer service rep just asked if we wanted someone to come read again** - and assumed we conserved water for the 10 CCF usage for 60-day cycle. Luckily - we set aside the money to cover the anticipated larger bill - but not all end users would do that and the lack of consistency in meter reading could cause issues...”*

### EXPENSIVE | BILLING | COMMUNICATION | CONSISTENCY | VALUE

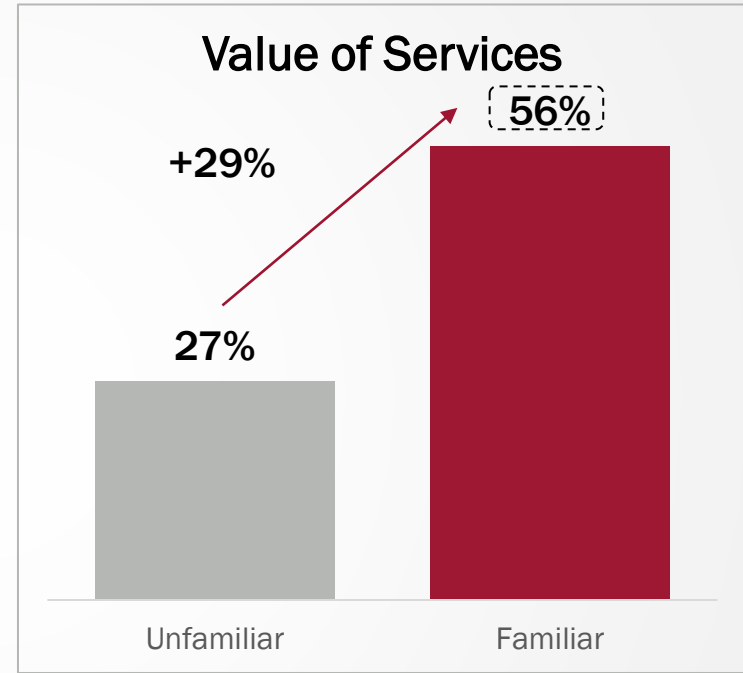
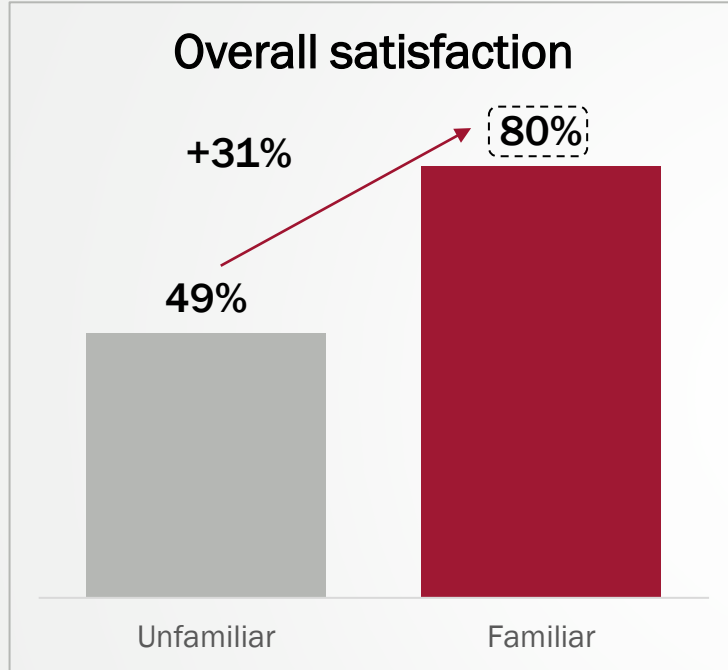
- *“Late services, not showing up at all.”*
- *“Way too expensive for what you're paying for”*
- *“Poor communication. Poor response times. High prices.”*
- *“Too expensive”*
- *“Not entirely willing to help with large bills”*
- *“Billing”*
- *“I have no water the bill has been paid. My mom has no running water and no emergency assistance is available in Suffolk, Virginia...”*

# When it comes to perceived value, two in five respondents give high ratings for the overall value of services for the fees paid

HRSD and HRUBS customers gave similar ratings.



# Familiarity significantly lifts ratings of overall satisfaction and value for services



*\*Significantly higher,  
95% confidence*

Q5. Based on what you may know about HRUBS, how satisfied are you with HRSD/HRUBS's services overall?  
Q7. How would you rate the overall value of services for the fees paid to HRSD?  
Note: "Don't know" responses were removed

Familiar Avg n = 470  
Unfamiliar Avg n = 626



# IMPLICATION

While consistent over time, familiarity and satisfaction scores continue to demonstrate an opportunity for improvement. Moreover, the new metric of the value of services for the fees paid indicates an additional opportunity for improvement. Building greater familiarity should pay big dividends as it is highly correlated to overall satisfaction and value.

The top four areas of dissatisfaction (expensive, billing inaccuracy, communication, and water quality) reveal areas that may require more immediate attention. Particular focus should be on the growing perception of raised prices and billing inaccuracy. Respondents say they feel prices are being raised for no apparent reason or at least not for one that HRSD has communicated. The lack of communication may be a perception issue rather than reality but reinforces a need to overcommunicate, especially when it relates to pricing and billing.

**Only two in five respondents rate the overall value of services for fees paid highly. This points to an opportunity for a communications effort that reinforces the value of HRSD - something that's clearly not understood at the current moment.**





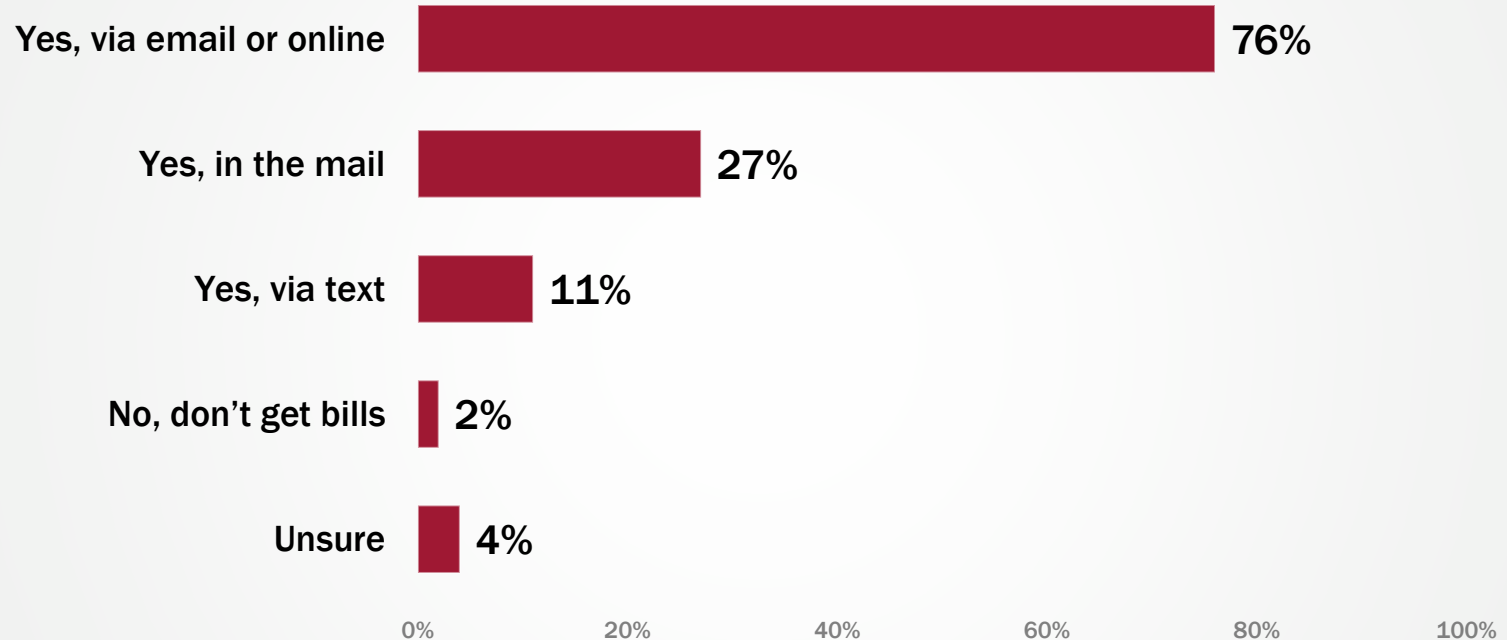
# BILL PAYMENT

2

**While online bills and payment options are the primary preference, there is still a need for mail and in-person options for older generations.**

**2022 demonstrates further significant drops in satisfaction with consistency of service and bill accuracy as reported in 2020.**

# Three quarters of respondents say they receive their HRSD/HRUBS bills via email or online and a quarter say in the mail



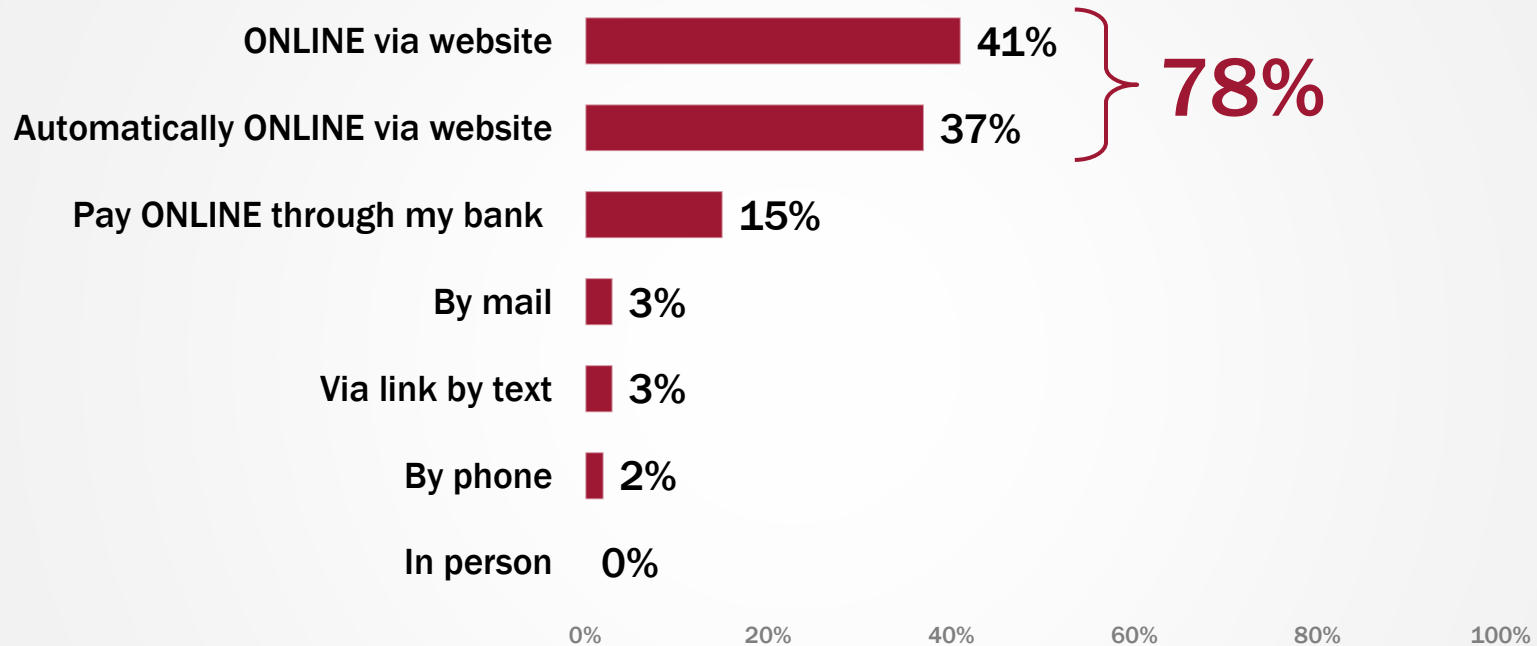
While respondents, regardless of generation, receive bills via email or online, the Silent generation respondents are more likely to select by mail than others; Gen X respondents are more likely than other respondents to select via text

GET BILLS FROM HRSD OR HRUBS?	MILLENNIALS	GEN X	BOOMER	SILENT
Yes, via email or online	81%	79%	73%	59%
Yes, in the mail	26%	24%	27%	31%
Yes, via text	12%	14%	9%	6%
No, don't get bills	2%	2%	3%	0%
Unsure	6%	3%	3%	11%

*\*Significantly higher/lower, 95% confidence*



# Nearly all respondents pay their bill on the website with over a third of those using auto-pay on the website



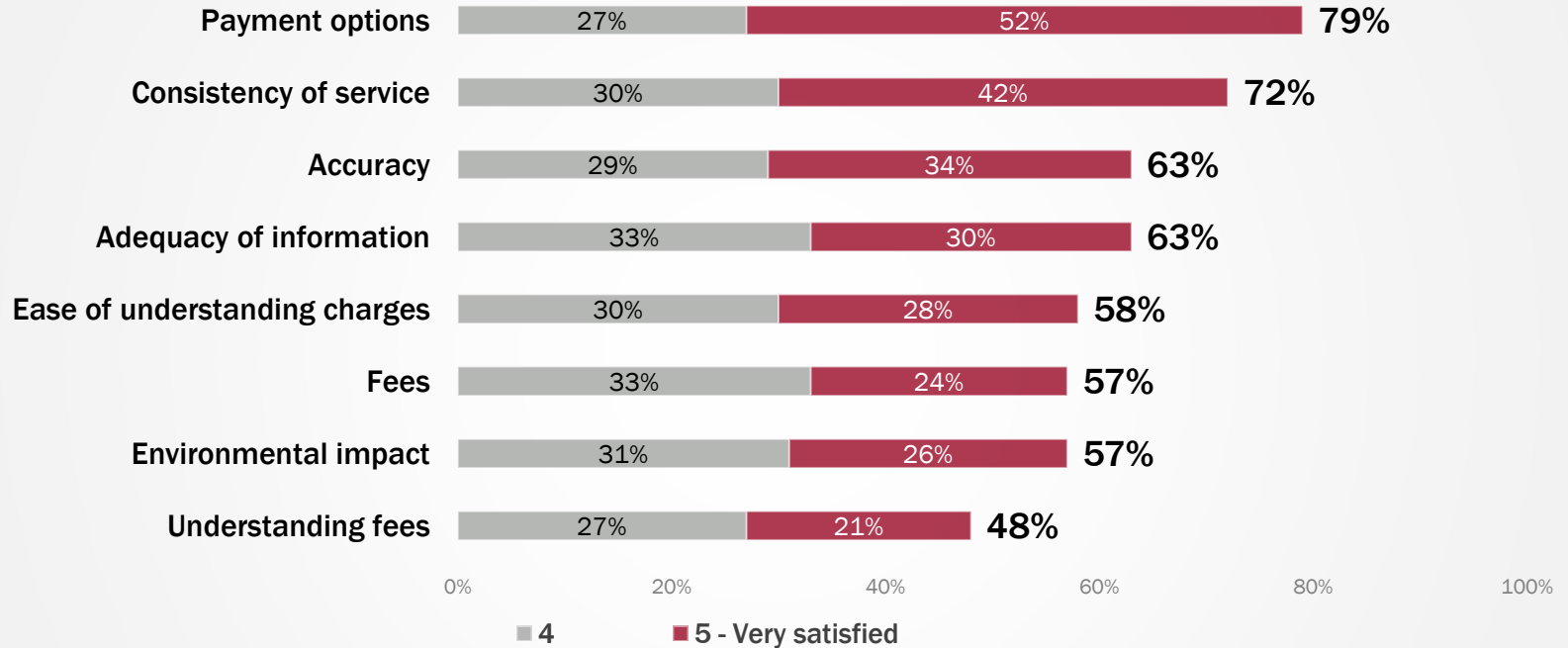
# Younger respondents are more likely to pay their bill through the website, while older respondents are more likely to use automatic payments through their bank

PAY BILLS	MILLENNIALS	GEN X	BOOMER	SILENT
<b>ONLINE</b> via website	47%	44%	32%	24%
Automatically <b>ONLINE</b> via website	41%	33%	38%	38%
Pay <b>ONLINE</b> through my bank	7%	15%	23%	25%
By mail	1%	3%	3%	11%
Via link by text	3%	4%	2%	1%
By phone	1%	1%	2%	0%
In person	0%	0%	1%	0%

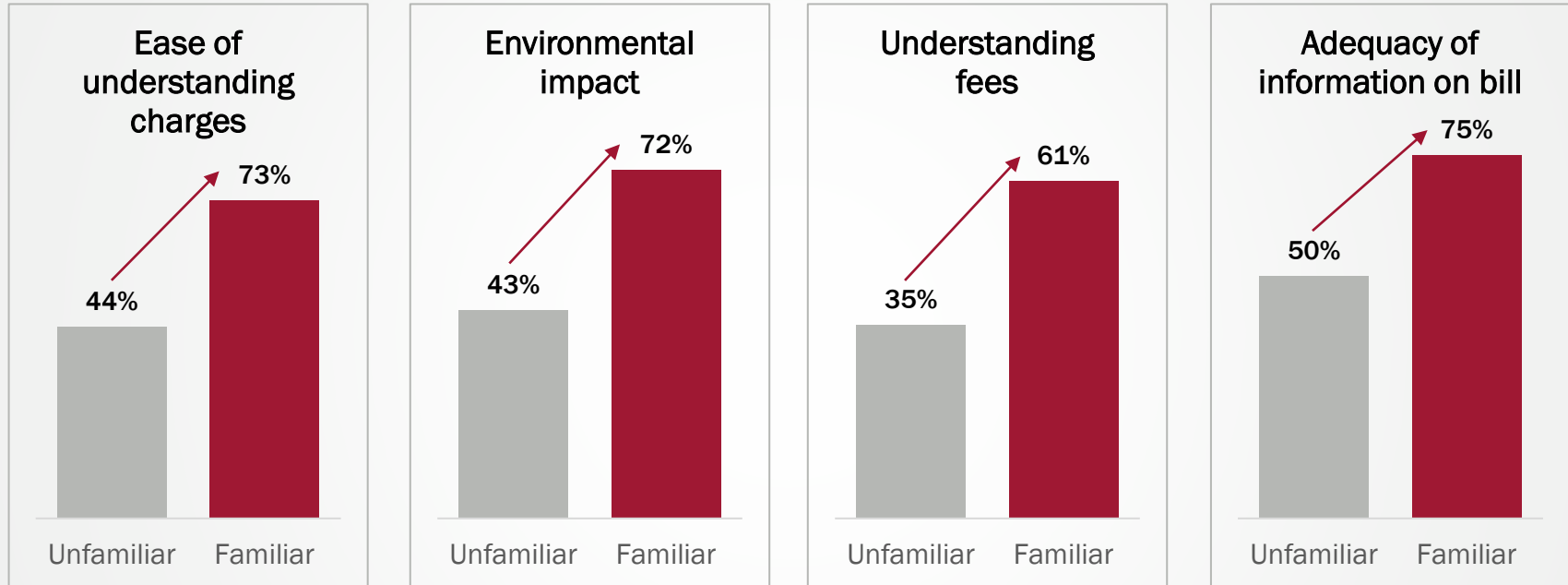
\*Significantly higher. 95% confidence



## When it comes to services and billing, respondents are most satisfied with payment options and consistency of service, they are least satisfied when it comes to understanding fees

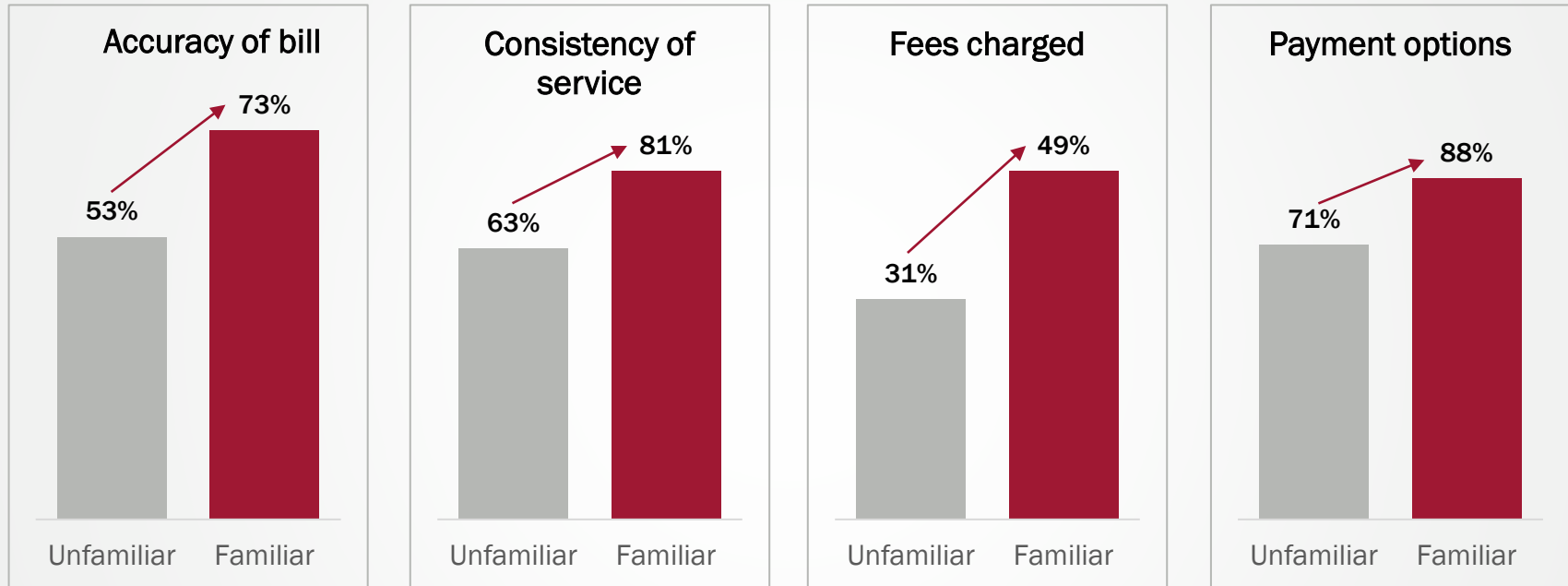


**Familiarity** lifts ratings for all aspects of services and billing, with significant boosts for ease of understanding charges (+29%), environmental impact (+29%), ease of understanding fees (+26%) and adequacy of information on bill (+25%)





**Familiarity** also significantly lifts respondents' rating of accuracy of bill (+20%), consistency of service (+18%), fees charged (+18%), and payment options (+17%)



Satisfaction with **SERVICE CONSISTENCY** and **BILL ACCURACY** has declined significantly year-on-year since 2018, with the biggest drop occurring in 2022. And, while understanding fees is still low, satisfaction has improved.

ASPECT OF SERVICE (% 4 or 5-Very Satisfied)	2018	2020	2022
Payment options available	77%	78%	79%
Consistency of service	80%	77%	72%
Accuracy of your bill	71%	68%	63%
Adequacy of information in bill	63%	62%	63%
Ease of understanding charges	58%	58%	59%
Minimizing environmental impact	51%	57%	57%
Ease of understanding additional fees	45%	44%	48%
The fees that are charged	37%	35%	39%



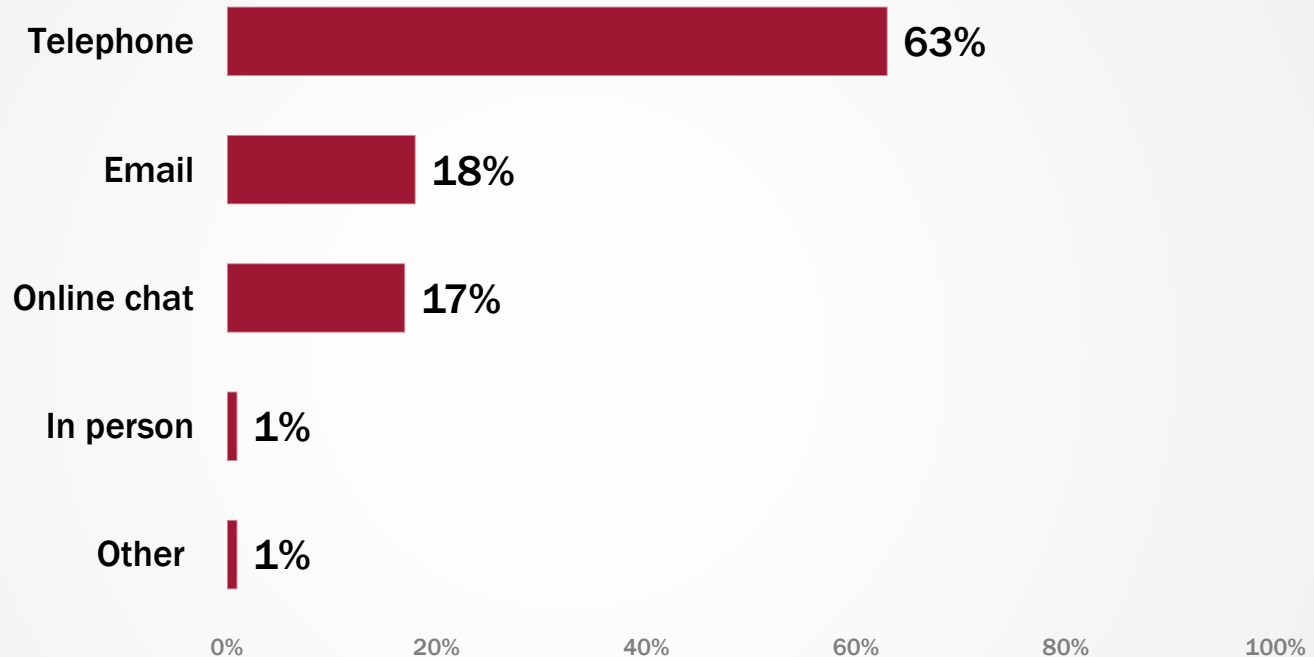
**HRUBS customers report lower satisfaction with every aspect of wastewater services and billing than HRSD customers. Accuracy of bills, ease of understanding charges, and fees are significantly lower for these customers.**

<b>ASPECT OF SERVICE (% 4 or 5–Very Satisfied)</b>	<b>HRSD BILLING RESPONDENTS</b>	<b>HRUBS BILLING RESPONDENTS</b>
Payment options available	80%	77%
The consistency of service	73%	71%
The accuracy of your bill	67%	57%
Adequacy of information on bill	65%	60%
Ease of understanding utility charges	60%	57%
Minimizing environmental impact	59%	55%
Ease of understanding additional fees	50%	45%
Fees that are charged	42%	34%

*\*Significantly  
difference, 95%  
confidence*



## Nearly two thirds prefer using the phone to contact HRSD for billing support, while another third prefer either email or online chat



# While telephone support remains the overall choice, this preference goes down significantly by generation in favor of digital channels

BILLING SUPPORT PREFERENCE	MILLENNIALS	GEN X	BOOMERS+
Telephone	53%	60%	72%
Email	22%	17%	18%
Chat	23%	21%	8%
In-person	1%	1%	2%

*\*Significantly different, 95% confidence*



# IMPLICATION

While most customers get bills via email or online, there is a small, yet significant, proportion of older respondents still preferring hard copies delivered via mail. This indicates that while it's incredibly important to continue investing in online and digital billing options, it's not yet time to give up on the mail option.

When facing a billing issue, customers prefer to contact support through the telephone while a third prefer email or online chat. This demonstrates a growing utilization of digital tools and support services and an area where HRSD should continue its investment.

Improvement efforts should focus on service consistency and increased bill accuracy. After two consecutive waves showing significant decreased satisfaction, this is now a downward trend. This is especially relevant for HRUBS customers, who have lower satisfaction in nearly every area of wastewater services and billing.

# CUSTOMER CARE

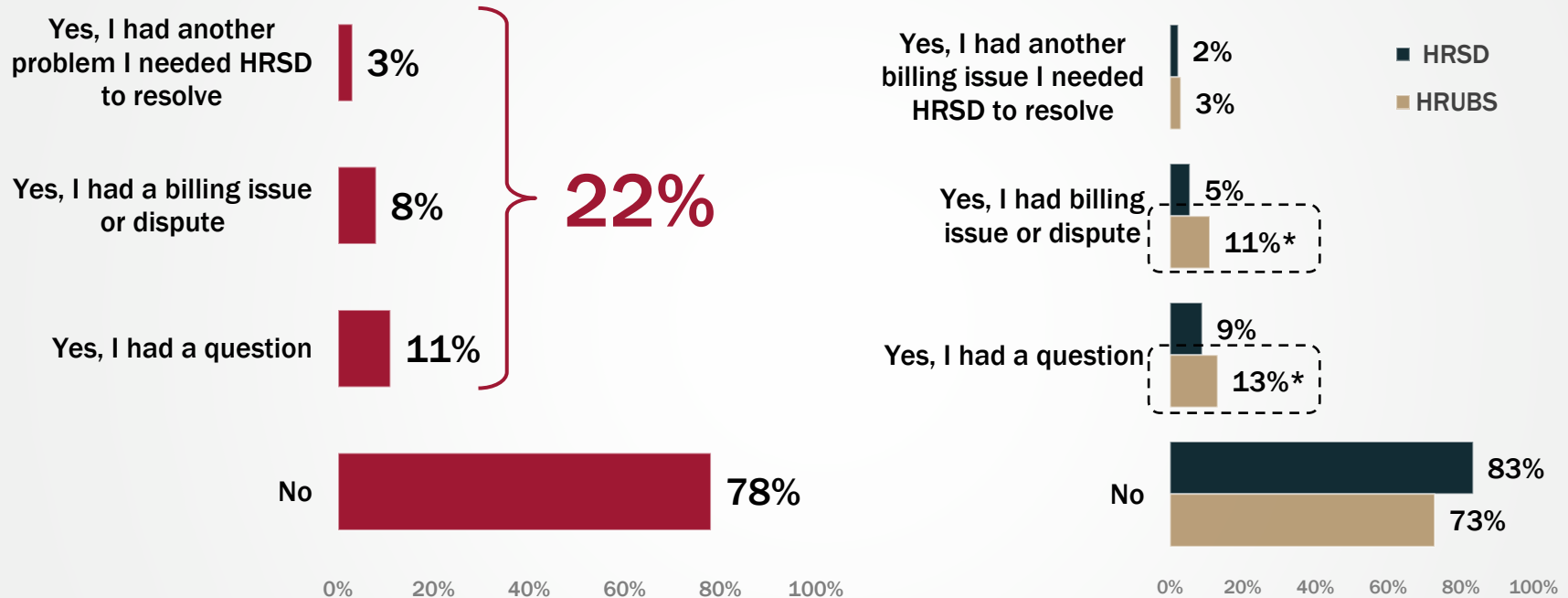
3

While the percent of respondents needing to contact customer care is similar to that in 2020 (and down from 2018), overall satisfaction is significantly down from past years. Of note, HRUBs respondents are significantly more likely to have an issue and say it's taking longer to resolve.



# One in five respondents contacted HRSD Customer Service in the past 12 months with a question or issue

HRUBS respondents are more likely to have contacted customer service

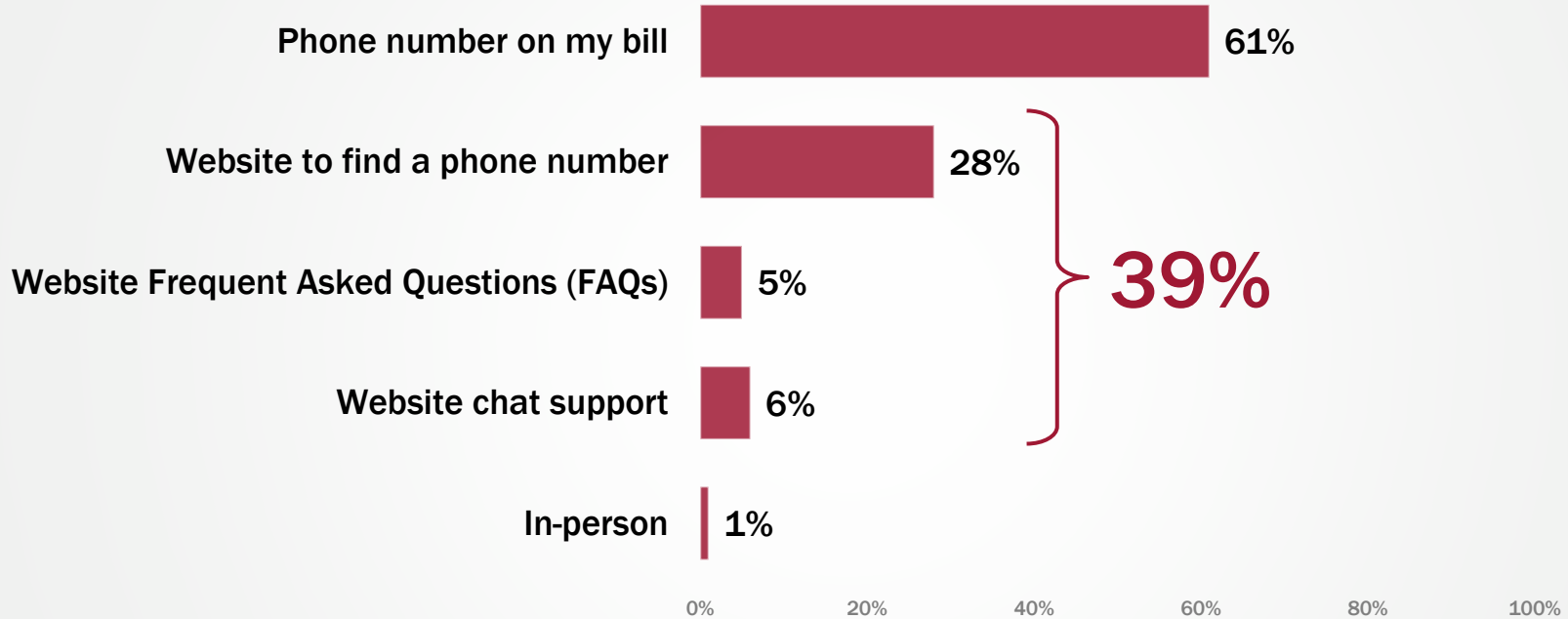


# Fewer respondents report contacting customer service this year than in 2018 but at about the same rate as in 2020

CONTACT IN PAST 12 MONTHS	2018	2020	2022
Yes, I had another problem I needed HRSD to resolve	4%	3%	3%
Yes, I had a question	12%	10%	8%
Yes, I had a billing issue or dispute	11%	9%	11%
No	73%	80%	78%



# While nearly all respondents who contacted customer care search for a phone number, nearly two in five went to the website to find the contact info they needed



**And, while telephone is the preferred method for all, younger generations are more likely to prefer going to the website to find support while Silents are more likely than other generations to go in-person**

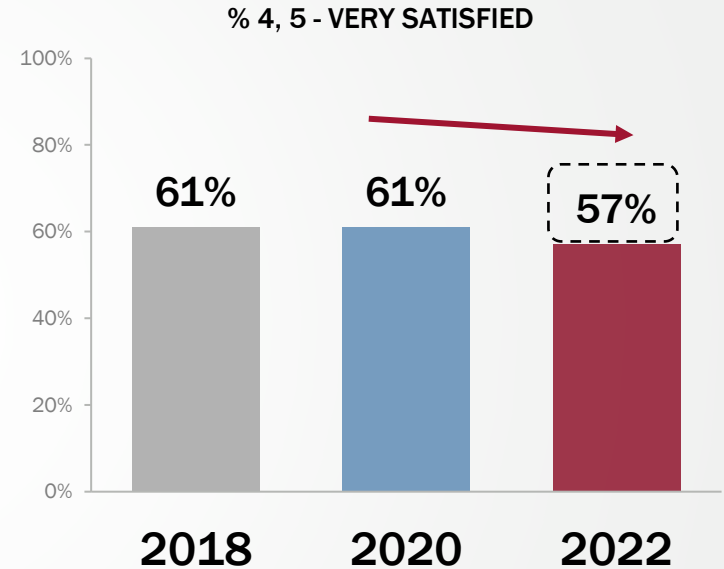
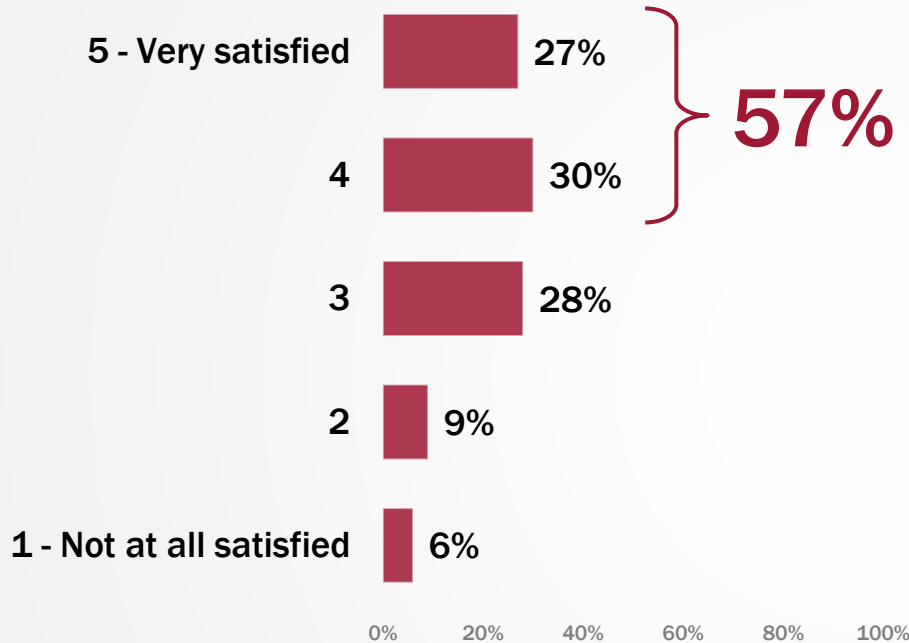
PROBLEM RESOLUTION CHANNEL	MILLENNIAL	GEN X	BOOMER	SILENT
Phone number on my bill	50%	61%	65%	69%
Website to find a phone number	34%	28%	27%	13%
Website Frequent Asked Questions (FAQs)	6%	6%	4%	6%
Website chat support	10%	5%	4%	0%
In-person	0%	0%	0%	13%

*Significantly different, 95% confidence*

Q14. Where is the first place you usually go to resolve a question or problem?  
 BASE: those contacting customer service, Q13



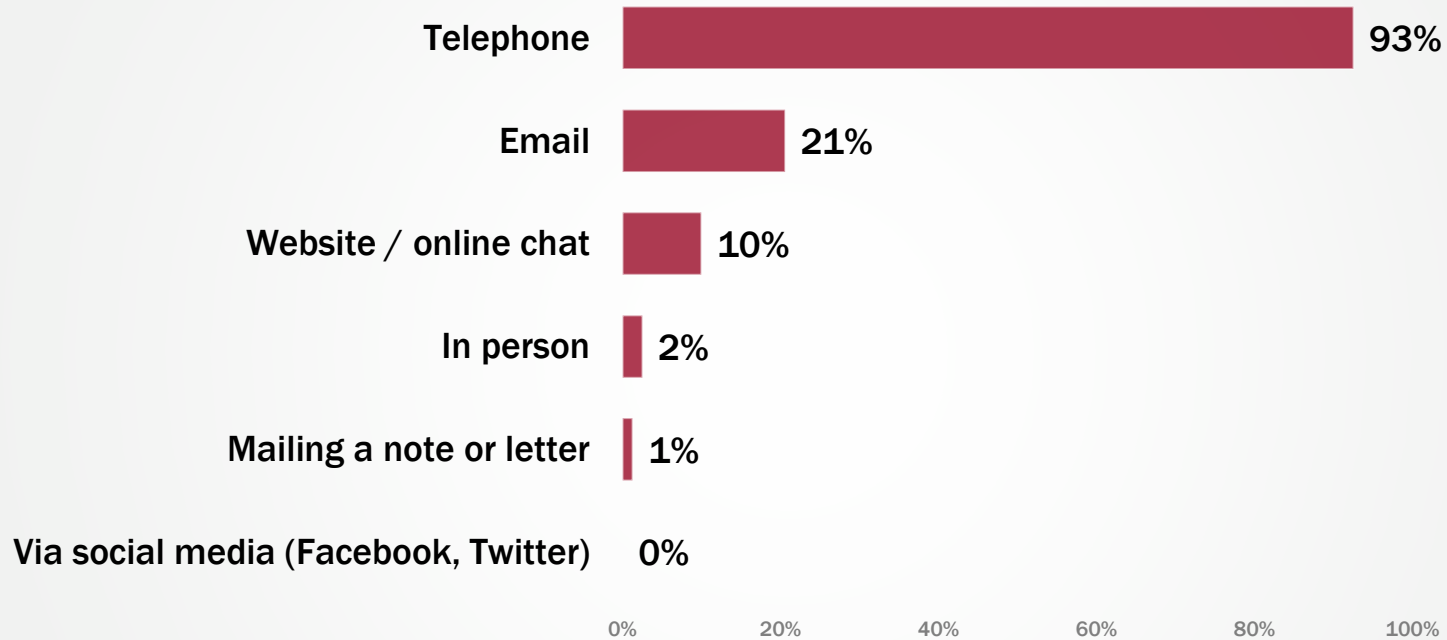
# Overall, satisfaction with customer care has dropped significantly from previous waves



## Compared to 2020, Millennial and Boomer respondents appear to be less satisfied while Gen X respondents appear to be more satisfied

4, 5-VERY SATISFIED	2020	2022
MILLENNIALS	69%	60%
GEN X	56%	60%
BOOMERS+	67%	63%

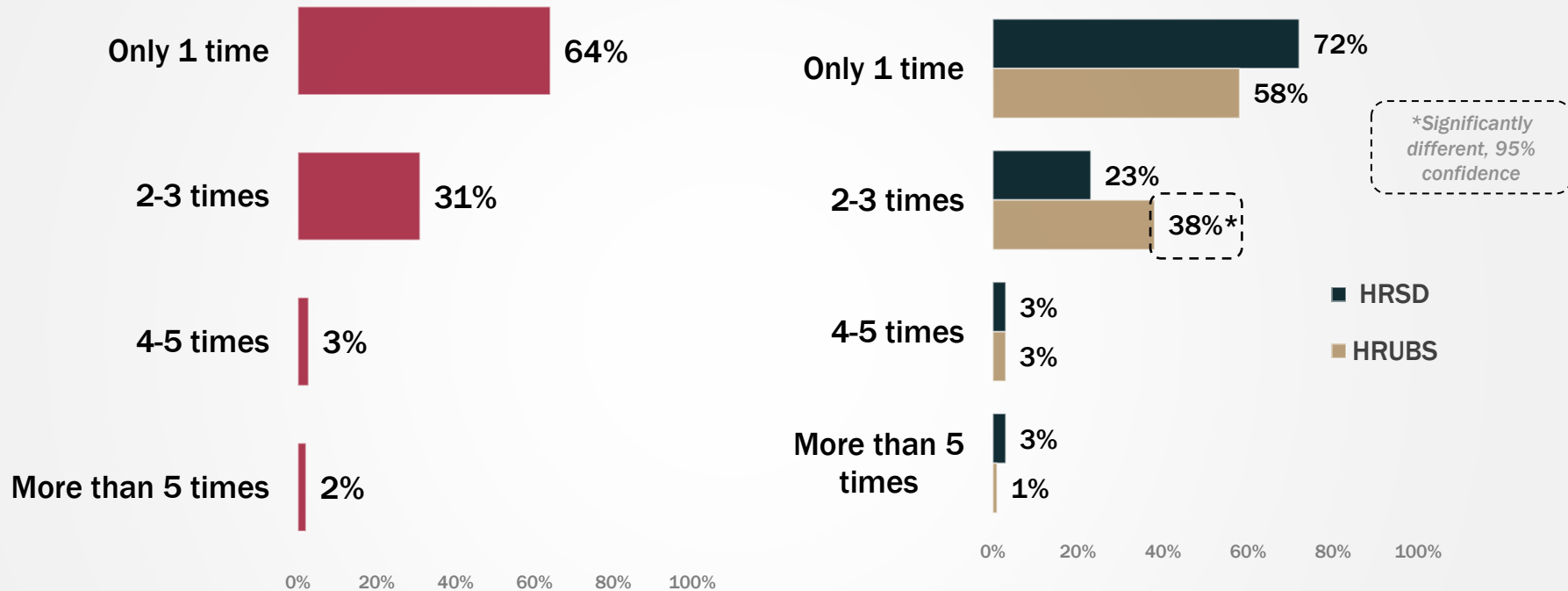
# Nearly all respondents who contacted HRSD customer service for their most recent issue, used the telephone



Q16. In which ways did you contact HRSD about your most recent issue? Select all that apply.  
BASE: those contacting customer service, Q13

Nearly two-thirds of those contacting customer service did so only once regarding their most recent issue or question.

HRUBS customers are significantly more likely to have contacted 2-3 times



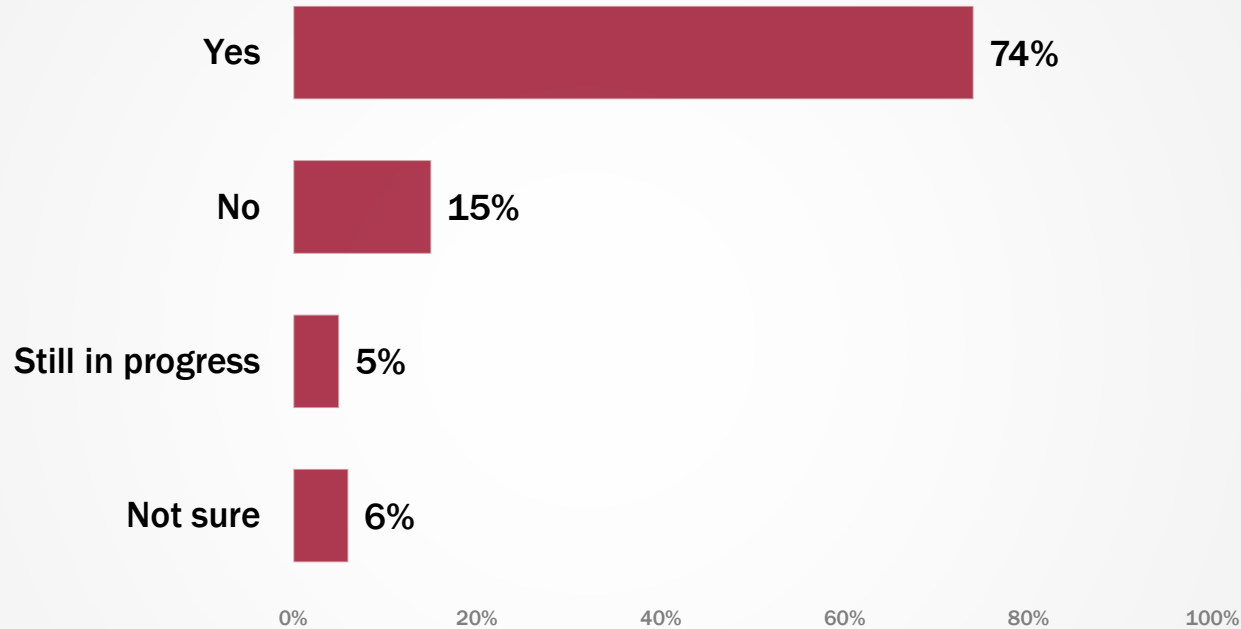
Q17. How many times have you contacted [HRSD or HRUBS] customer service regarding your most recent issue or question?  
BASE: those contacting customer service, Q13

HRSD n = 151  
HRUBS n = 187





# Three quarters say their issue or questions has been resolved to their satisfaction



# Those contacting customer service for a billing issue were more likely to be unsure about the resolution of the problem

ISSUE RESOLUTION	Number of times have you contacted customer service (Q17)		Reason for contacting customer service (Q13)		
	Only 1	2+ times	General Question	Billing issue / dispute	Problem Resolution
Yes	82%	61%	80%	63%	69%
No	8%	27%	11%	24%	19%
Still in progress	4%	7%	4%	5%	10%
Not sure	6%	6%	5%	8%	2%

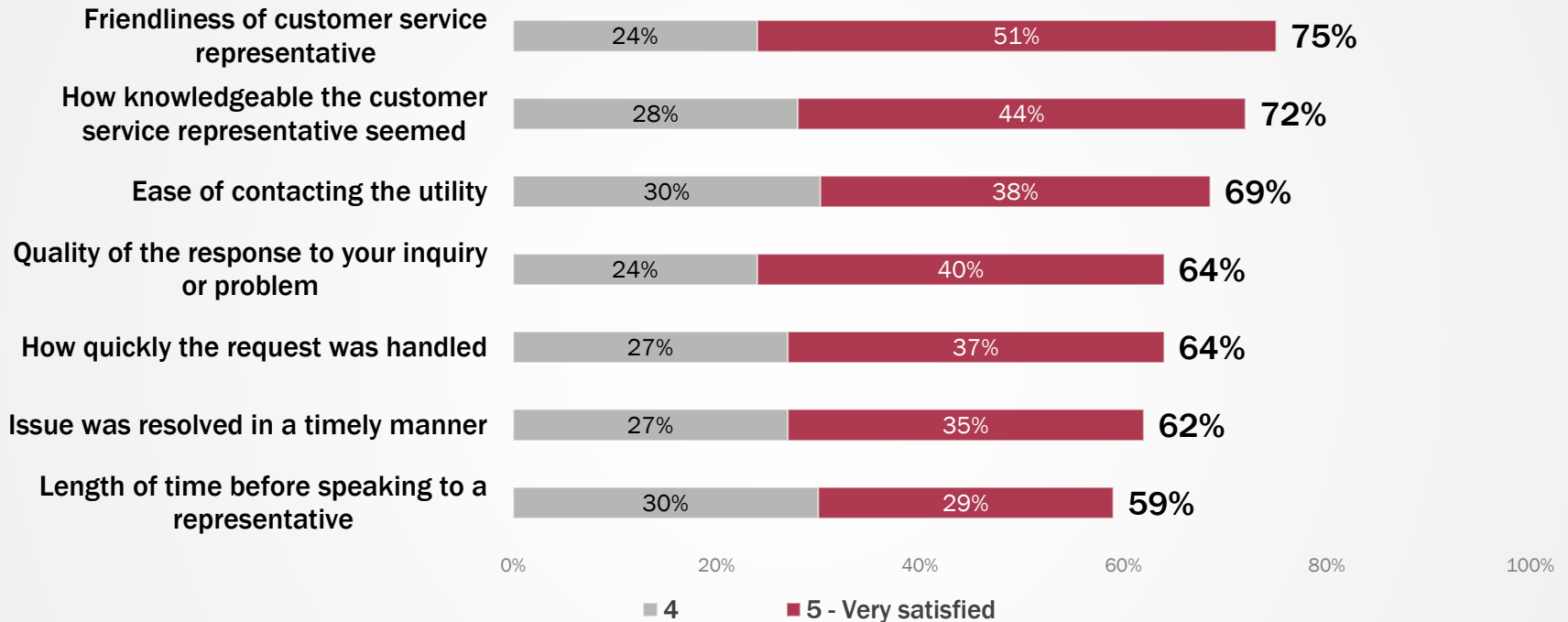
Significantly higher,  
95% confidence

Q18. Was this issue resolved or the question answered to your satisfaction?  
BASE: those contacting customer service, Q13

n = 336




# Respondents who contacted customer care are most satisfied with the friendly and knowledgeable reps and least satisfied with the length of time it took to reach someone and for the issue or question to be resolved



# IMPLICATION

With decreased satisfaction levels, there appears to be a need to more closely examine the customer care experience. One area that may be contributing to this is the experience among HRUB customers who are more likely to have a need and contact HRSD. Another area surfaces when looking at specific aspects of satisfaction, those related to resolution time and time required to speak to a rep were rated lowest. These may be initial places to examine.

Respondents contacting customer service for a billing issue or dispute are more likely to be unsure about the resolution of the problem and many say it still has yet to be resolved. This may also be contributing to the lower satisfaction ratings and an area to examine how these cases are handled.

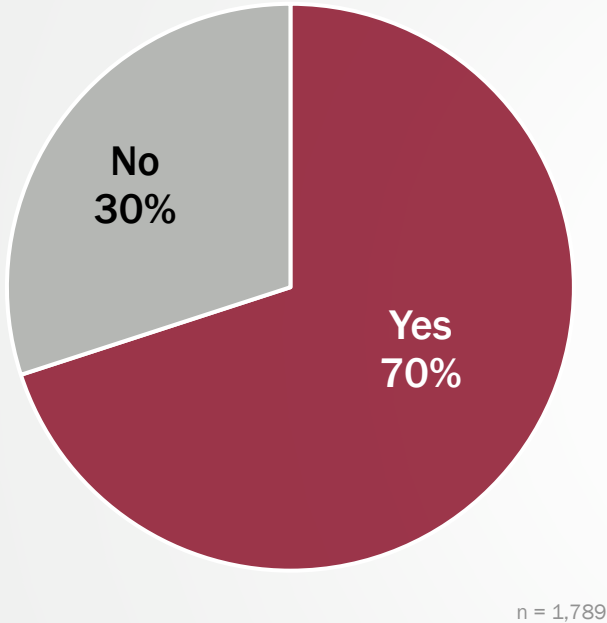
 Customer care and support has an opportunity for improvement, especially for HRUBS customers. The most popular way to reach out for support is via phone. Since all customer care calls are managed by the same call center and HRSD customers remain relatively content, we can infer there is a deeper issue that contributes to the differing audience experiences.

# HRSD WEBSITE

4

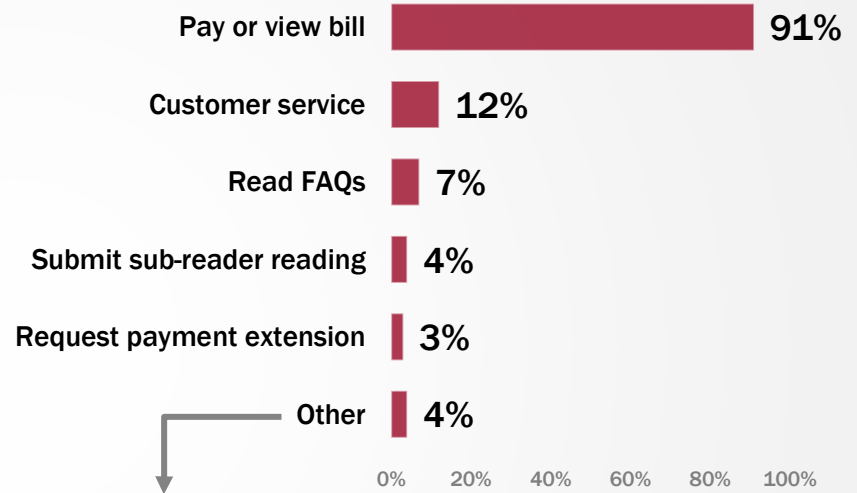
**Satisfaction with the HRSD website continues to be strong. The main reason for visiting is to view or pay their bill. Among those less satisfied, they reference usability, the login process, navigation, lack of needed information.**

# Seven in ten respondents visited the HRSD website in the past 12 months and nearly all did so to pay or view their bill



67

Q20. In the past 12 months, have you visited the HRSD website?



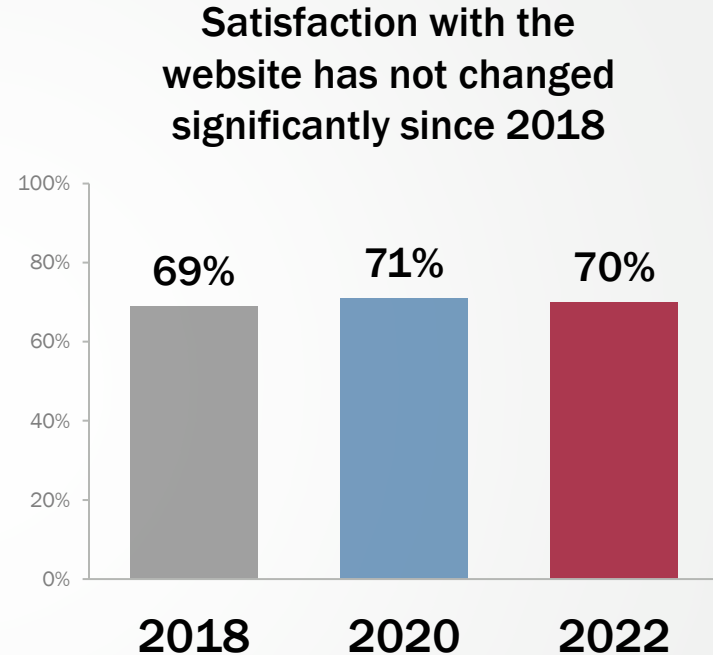
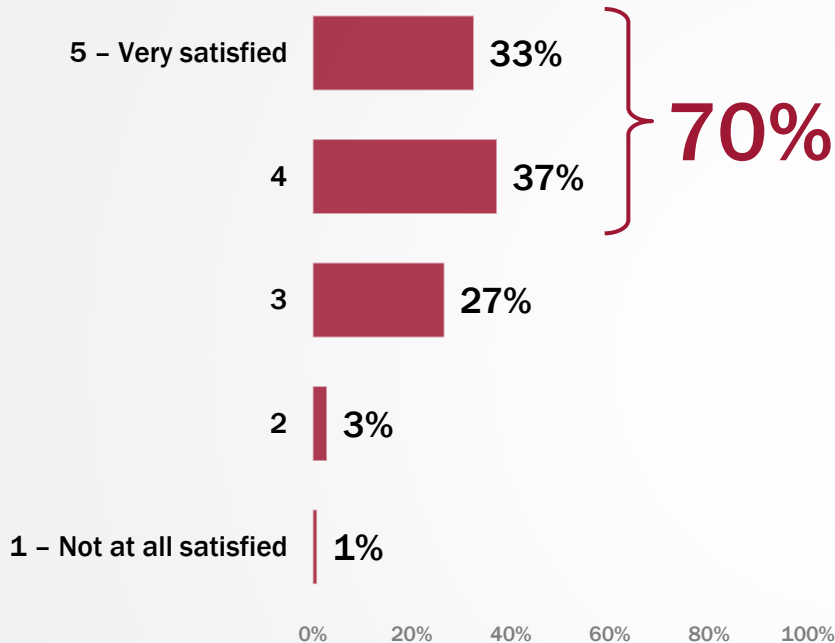
- To Start Service
- Autopay Set-Up
- Service Transfers
- Understand New Charges
- View Usage
- Update Payment Info

n = 1,251

Q21. For which reason(s) have you visited the HRSD website? Select all that apply. BASE: those visiting HRSD website



# Satisfaction with the website is high among those who visited the website, consistent with previous waves





# Despite steady website satisfaction, respondents noted four main areas to continue focusing improvement measures



Website UX/UI Issues



Difficulty with Logging In and Password Changes



Cumbersome Navigation and Functionality



More Robust Communication

# Despite steady website satisfaction, respondents noted several areas for improvement

## POOR UX/UI DESIGN

- Website doesn't feel user friendly
- It was not well designed, too many redirects
- Lack UI and poor explanation of invoice items.
- The site is not extremely user friendly. *It is better than what it used to be but still not great.*
- It is too hard to get online and *figure out how to register for a full account.* If you do click on register, it brings up your bills and *asks you to register each individual bill.* Not very user friendly.
- It could be more user friendly
- Very poor design

## DIFFICULTY LOGGING IN

- Difficult to login to and also to reset password.
- It is so hard to log on just to view my bill
- Hard time setting up account and not being able to set up login and auto pay
- The viewing of the bill and ease of sign in
- Took forever to get logged in

# Despite steady website satisfaction, respondents noted several areas for improvement (cont.)

## CUMBERSOME NAVIGATION & FUNCTION

- *It keeps looping you around.*
- *Site navigation is poor*
- *The website was not as easy to maneuver as I thought it would be.*
- *It's cumbersome and **requires you to download a lot of documents** just to view them*
- *Ease to find what I was looking for*
- *Too much information that is jumbled up. Needs more direction and simplicity.*
- *When I try to submit the Submeter reading it doesn't work.*
- *Far too many steps in paying the bill online and the steps are confusing. Just let me click once to pay...*

## COMMUNICATION

- *Could not get in contact with anyone about issue- they kept pawning it off onto someone else until I was eventually hung up on.*
- *Can't always find answers to questions, better to talk to someone.*
- *Vague, not user friendly, misses a lot of information*
- *I have an emergency and no one was available to help... all we get are recorded [messages]...*

# IMPLICATION

Strong website satisfaction scores should be celebrated! Yet, there are some opportunities for continued improvement. This includes its user experience and design, navigation, as well as general log-in and bill-pay functionality. This is important since a vast majority of respondents that visit the website do so to view and pay their monthly bill.

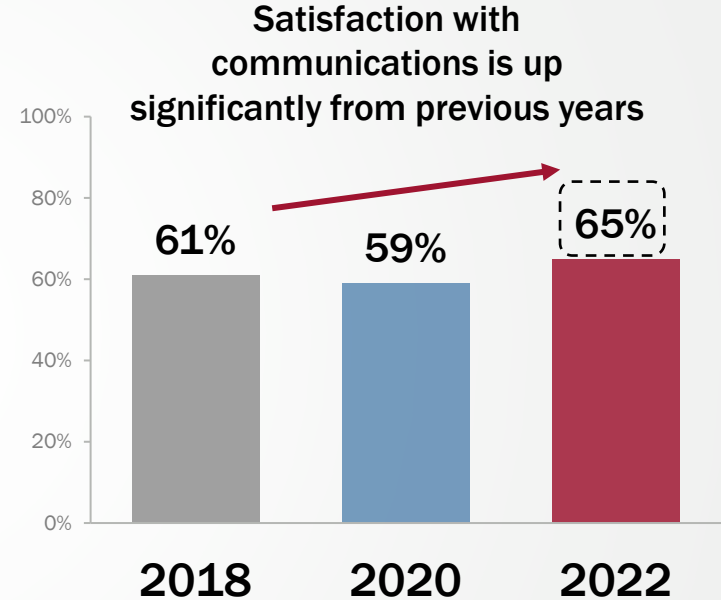
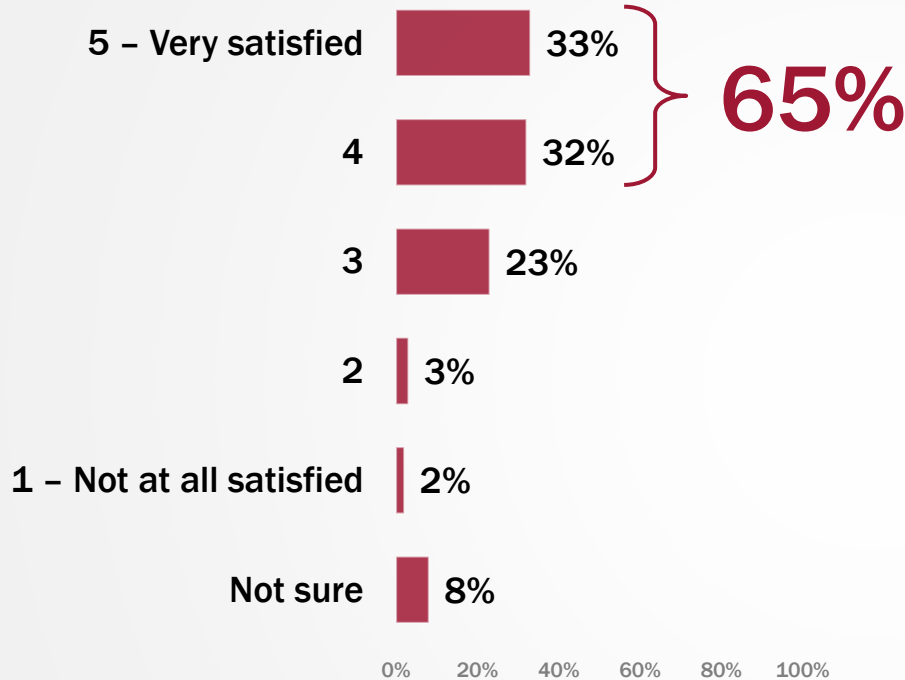
Continued focus on the website and its usability should be a primary focus. As younger generations continue to become customers this will be only more important.

# COMMUNICATIONS

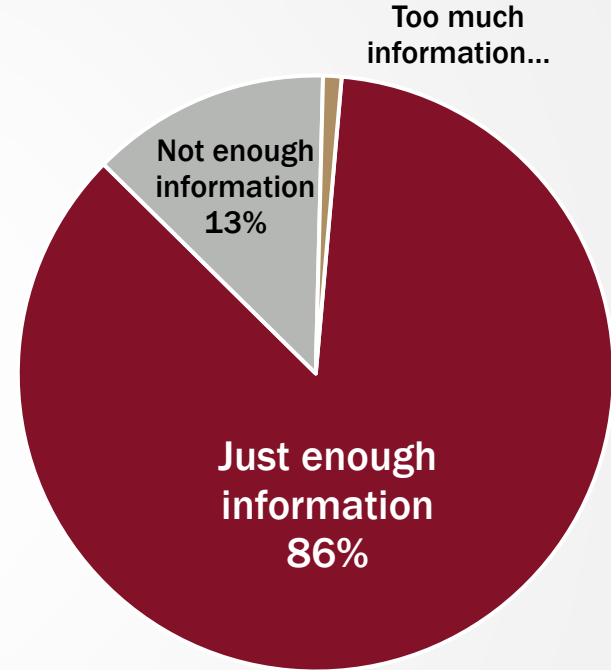
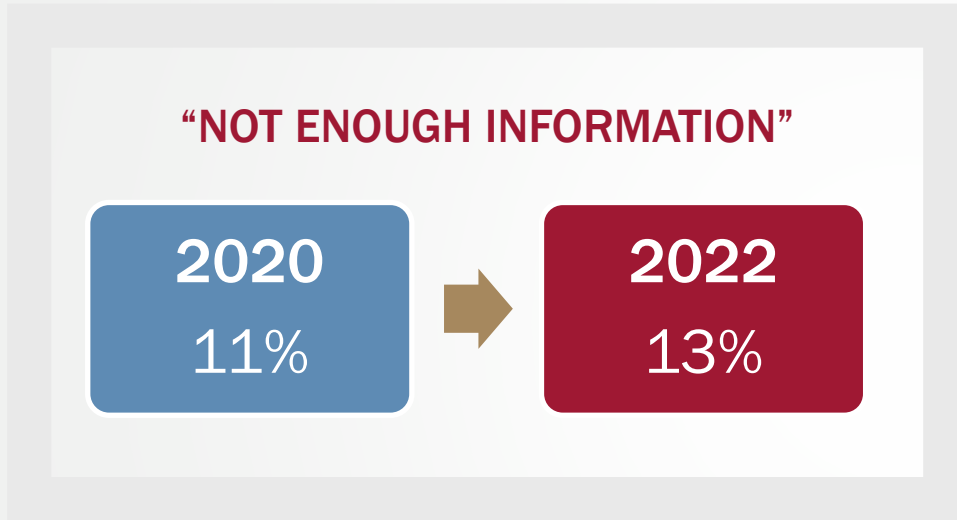
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**2022 shows a significant improvement in overall satisfaction with communications! And there is a slight increase in demand for more information.**

# Nearly two thirds of customers are satisfied with HRSD's communications – this is a significant increase since the last two waves.



Most customers feel the amount of information they receive from HRSD is just right, but there has been a slight increase in demand for additional information since the last wave





**Recommendations from  
respondents that may inform  
future communications...**

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## FEEDBACK

Respondents had these recommendations and questions for HRSD:

TELL ME MORE ABOUT WHAT  
HRSD DOES!

WHY HAS MY BILL BEEN MORE  
EXPENSIVE LATELY?

AM I BEING CHARGED TWICE  
FOR WATER?

WHY DOESN'T MY BILLING  
CYCLE FOLLOW A CONSISTENT  
SCHEDULE?

IS MY METER BEING READ  
ACCURATELY?

I WANT TO BE INFORMED  
ABOUT HRSD

# Respondents had these additional recommendations and questions for their service providers:

## WHAT DOES HRSD EVEN DO? TELL ME MORE!

- “...Also, *no one even knows what you do or why the bill amount changes so much*- it's all over Nextdoor.”
- “The beginning of the survey asks about my knowledge of what HRSD does - *maybe communicate that more effectively.*”
- “Thank you for all you do! The residents in the area need more awareness about what HRSD is and *what exactly they are paying for.*”
- “Stop assuming everyone is familiar with your company.”
- “*Provide an introduction email with information, when there are new account owners, to break down the services they are getting.*”

## WHY HAS MY BILL BEEN SO EXPENSIVE RECENTLY? PLEASE MAKE IT EASY TO UNDERSTAND.

- “...lower cost of service. Explain why fee jumps up with no change in use.”
- “Let us know what is causing the bill to increase.”
- “If rates change or increase, *please provide simple basis for increase*”
- “I basically stopped using my irrigation system because it's too expensive to water my lawn. I was shocked when I got my first bill. *It was not explained that you get charged a lot more per gallon when you go over a certain amount.*”
- “Have a better way to deal with larger than expected bills.”

# Respondents had these additional recommendations and questions for their service providers:

## WHAT DOES MY BILL MEAN - AM I BEING CHARGED TWICE FOR WATER?

- “The bill needs to be arranged in a way that *charges are clearly delineated.*”
- “Still *not really sure why I have to pay HRSD and VB for water.*”
- “...*don't understand why treatments are split up* and the amount can't be attached to our preexisting water bill.”
- “Negotiate with the cities to *tie in to one bill.*”
- “It is confusing to understand the charges for water. Or how HRSD and VB utilities work/work together. *It seems like we are paying for water in two places.*”

## IS MY METER BEING READY ACCURATELY?

- “Rely too much on Waterworks for all information regarding billing, usage, problem resolving any questions or concerns. *HRSD unable to fix any problems or concerns until waterworks is contacted* & then waterworks must fix problem before HRSD can “fix” their billing errors.”
- “Find a *new way to read the water meter.*”
- “Figure out *how to not charge for sewage treatment* on water used to fill our pool.”
- “Fees seem quite high when *based on water usage per household.*”

# Respondents had these additional recommendations and questions for their service providers:

## WHY ISN'T BILLING FOLLOWING A CONSISTENT SCHEDULE? PLEASE FIX THIS.

- “Tell me what the billing cycle is. *I cannot determine how many days between payments* and that makes it difficult to budget.”
- “...Send text *before* bill is due.”
- “Keep the same number of days in each billing cycle. Right now *some cycles are longer and bills are more.*”
- “I can't figure out *why the components of my bill vary so much from month to month.* Things you don't actively monitor jump all over the place.”
- “...Consistency in *billing and meter reading practices.*”

## PLEASE IMPROVE YOUR COMMUNICATION SO WE FEEL MORE INFORMED.

- “For military movers, *help understand the disconnect process* as it is intertwined with NNWW.”
- “Explain the *rationale for the tiered pricing structure for water usage*, as well as efforts to replenish the aquifer like the SWIFT facilities. I know there's no foolproof way of ensuring customers read the information ... it's worth some effort on the part of HRSD.”
- “Better *transparency* when there's billing delays.”
- An *introduction letter would be very helpful.* I've been a customer/paying for over 2.5 years and I still have no idea exactly what the company does.

# IMPLICATION

Increased satisfaction with HRSD's communication shows that customers are happy with the information they are receiving – some are even interested in additional resources.

This presents an opportunity for HRSD. Recall the lower familiarity, satisfaction, and value scores. Consider increasing communications and focus those communications on messages that will help build greater familiarity and understanding of HRSD, demonstrating the value of the great services.

Closely review feedback from respondents and consider ways to include some of these topics, themes, and messages throughout HRSD communications.



HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #3

4. Low Income Household Water Assistance Program  
Virginia Department of Social Services (LIHWAP)  
Vendor Agreement



# Low Income Household Water Assistance Program Vendor Agreement

This Agreement is entered into this 23rd day of August, 2022 by and between the Virginia Department of Social Services (“Agency”) and the Hampton Roads Sanitation District or Hampton Roads Utility Billing Service (“Vendor”) for the provision of water bill payments to assist low-income residential households with water and wastewater arrearages, reconnection, and ongoing services.

WHEREAS, the Agency has been awarded a federal grant under the Low Income Household Water Assistance Program (LIHWAP); and

WHEREAS, federal funds awarded under the LIHWAP grant shall be used as part of an overall emergency effort to prevent, prepare for, and respond to the COVID-19 pandemic, with the public health focus of ensuring that low-income households have access to drinking water and wastewater services; and

WHEREAS, the Agency is entering into this Agreement with the Vendor to provide for water bill payments to the Vendor from the LIHWAP grant funds on behalf of households eligible for LIHWAP assistance; and

WHEREAS, the funds provided under this Agreement will be used to cover and/or reduce arrearages, and pay rates and fees associated with reconnection or prevention of disconnection of service, for eligible residential households; and

WHEREAS, LIHWAP payments may be used to pay past due and/or outstanding balances for customers whose accounts are currently open/active and the household is approved for LIHWAP assistance; and

WHEREAS, this Agreement is governed by and subject to federal and state laws and regulations and the Office of Community Services (OCS), U.S. Department of Health and Human Services, LIHWAP Supplemental Terms and Conditions attached as Attachment A and incorporated by reference.

NOW, THEREFORE, for and in consideration of the mutual undertaking of the parties to this Agreement and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the Agency and the Vendor hereby agree as follows:

## **1. Term of Agreement**

This Agreement shall be in effect from the date a completed, signed, and dated Agreement is received by the Agency and will remain in effect until December 31, 2023. The Agreement shall not bind, nor purport to bind, the Agency for any commitment in excess of the term of the Agreement.

## **2. Modifications of Agreement**

Any and all modifications to this Agreement shall be in writing and agreed upon by both parties.

## **3. Termination of Agreement**

This Agreement will terminate effective immediately upon determination by the Agency that the Vendor is not in compliance with the terms of this Agreement. The Vendor will be notified within fifteen (15) calendar days of the termination.

Either the Agency or the Vendor may terminate this Agreement with or without cause and without cost by giving the other party at least sixty (60) calendar days written notice. Termination under this provision shall not discharge any obligation owed by either party on behalf of households that have been awarded LIHWAP benefits prior to the effective date of termination.

#### 4. Agency Responsibilities

The Agency shall:

- a. Provide outreach activities in an equitable manner to ensure that notification of LIHWAP is given to potentially eligible households.
- b. Screen for low-income households—particularly those with the lowest incomes—that pay a high proportion of household income for drinking water and wastewater services.
- c. Based on established criteria, determine household eligibility for the LIHWAP based on the Virginia LIHWAP Grant Implementation Plan in a timely manner.
- d. Make every effort to coordinate closely with the Vendor to facilitate and expedient the exchange of data and/or funding.
- e. Accept referrals for LIHWAP benefits from the Vendor.
- f. Provide authorization for approved services.
- g. Review arrearage and billing information for potentially eligible households submitted or made available by the Vendor. The Agency may request additional documentation and/or clarification of charges as needed. No payment will be made without all required documentation and/or clarification of charges.
- h. After receipt of proper documentation, and any additional required documentation or clarification, for services rendered pursuant to this Agreement, and upon full compliance by the Vendor with the terms herein, Agency shall:
  - i. Set up payments for eligible households. All payments will be issued by the Agency to the Vendor on behalf of the Vendor's customer.
  - ii. Provide notice of award to Vendor ahead of payment so Vendor may remove customer from severance field activities or restore water service as appropriate.
  - iii. Deliver LIHWAP relief funds to Vendor.
- i. Comply with all relevant state and federal laws and regulations in its implementation of the LIHWAP. The Agency shall follow all Supplemental Terms and Conditions (Attachment A). The Agency shall provide notice to the Vendor of any changes or amendments to policies or guidelines for the LIHWAP. Such notice may be distributed by email. Collect and retain the following LIHWAP data indicators from households receiving benefits as set forth in Terms 10 and 11 of the supplemental terms and conditions (Attachment A):
  - i. Number and income levels of households that received assistance;
  - ii. Number of households that received such assistance and include one or more individuals who are sixty (60) years or older, include a household member with a disability, or include children ages five (5) and younger;
  - iii. Gather administrative information regarding local providers (if applicable), agreements with water utilities, recommendations, accomplishments, unmet needs and lessons learned.

Be responsible for planning and prioritizing funds for households in communities throughout the Agency's jurisdiction with the exception of households within tribal jurisdictions for which OCS has reserved a portion of LIHWAP funds.

## 5. Vendor Responsibilities

The Vendor shall:

- a. Provide the Agency a copy of the Employer Identification Number document or Social Security card which was issued to the Vendor and which displays the number used by the IRS as the Vendor's tax identification number.
- b. Notify the Agency immediately if the Vendor's tax identification number changes by submitting a new W-9 form to the Agency.
- c. Provide the Agency with at least one designated contact person who shall be available to respond by telephone and electronic mail to all reasonable inquiries regarding LIHWAP household accounts, including, but not limited to, inquiries on bills, payments, and services.
- d. Notify the Agency within ten (10) days if the Vendor's ownership, contact person, contact/billing information, services provided, or service coverage area changes.

*The following three provisions only apply to privately owned water companies:*

- e. Notify the Agency if the business owner or other key employee is employed by the Agency or if an immediate family member of the Vendor's owner or other key employee is employed by the Agency.
  - i. "Immediate family member" means either a spouse or any other person who resides in the same household as the owner and who is a dependent of the owner.
  - ii. "Conflict of Interest" means a situation that has the potential to undermine the impartiality of a person in an official position because of the possibility of a clash between the person's self-interest and professional interest or public interest.

In such event, the Agency will evaluate the relationship to determine if there is a conflict of interest that will preclude the Vendor from providing LIHWAP services to a designated locality(s).

- f. Not serve as the Vendor for a household in which s/he is a current recipient of assistance from the LIHWAP. (For these purposes, "current" will be defined as during the present federal fiscal year.)
- g. Not serve as the Vendor for a dwelling/property that s/he owns.

### **Financial Information/Billing/Services:**

- h. Provide water and/or wastewater services to each eligible and approved residential household that has an account with the Vendor for which payment is provided under LIHWAP as follows:
  - i. Restore water services to eligible and approved residential households upon full payment of arrearages. Full payment means the entire balance on the account including fees, interest, penalties, and service transfer balances.
  - ii. After receiving full LIHWAP payment for restoration of water services, maintain services for at least 90 days.
- j. Charge all LIHWAP eligible households the same price charged for drinking water and/or wastewater services billed to non-eligible households, as determined by the approved rate setting process and continue invoicing LIHWAP households using the Vendor's normal billing process.
- k. Apply LIHWAP payments only to the eligible open residential customer accounts authorized by the Agency.
- l. Not apply LIHWAP payments to account balances that have previously been written off or fully paid with other funds.

- m. Not discriminate against a LIHWAP eligible household with respect to terms, deferred payment plans, credit, conditions of sale, or discounts offered to other customers.
- n. Post all payments to customer accounts within three (3) to five (5) business days from receipt of the funds.
- o. Inform each LIHWAP recipient that a LIHWAP payment has been applied to the account; include amount of payment.
- p. Continually maintain accurate records of LIHWAP credit balances and annually reconcile accounts. After one (1) year, credit balances must be refunded to the Agency, in compliance with LIHWAP Vendor Refund Policies, no later than forty-five (45) days following the end of the program year in which the payment was received.
- q. Not exchange the household's credit authorization for cash or give any cash equivalent for excess credit.
- r. Cooperate with any Federal, State, or local investigation, audit, or program review as set forth in the Supplemental Terms and Conditions, Term 11.p. (Attachment A). The Vendor shall allow Agency representatives access to all books and records relating to LIHWAP for the purpose of verification of compliance with this Agreement.
- s. Understand that failure to cooperate with any Federal, State, or local investigation, audit, or program review may result in the immediate disqualification from participation in the LIHWAP.
- t. Take corrective action in the timeframe specified by the Agency if violations of this Agreement are discovered. Corrective action may include, but is not limited to, providing detailed documentation of changes made and detailed plans for future changes that will bring the Vendor into compliance.
- u. Understand that failure to implement corrective actions may result in the immediate disqualification from participation in the LIHWAP.

**Data Collection:**

- v. Provide, at no cost to the Agency or the household, the data requested below by or on behalf of the Agency as set forth in the Supplemental Terms and Conditions (Attachment A):
  - i. Written information to the Agency on an applicant's household drinking water and/or wastewater costs, bill payment history, and/or arrearage history for no more than the previous twelve (12) monthly billing periods.
  - ii. The itemized amount, cost, and type of water assistance and services (e.g., drinking water, wastewater) provided for households approved for assistance under LIHWAP.
  - iii. The impact of the LIHWAP program on recipient households (e.g., amount of assistance to each household, and whether assistance restored water service or prevented shutoff).

The data must be provided within a timeframe specified by the Agency and must be provided in the format agreed upon by the Vendor and the Agency. The data must be provided to the Agency (or an authorized agent for the Agency) for the purposes of verification, research, evaluation, analysis, and reporting. The household's signed LIHWAP application will authorize the Vendor to release this information to the Agency.

- w. Notify the Agency of any water service-related household situation that threatens life, health, or safety of which the Vendor has knowledge.

**6. Joint Duties**

Both the Vendor and the Agency agree to meet quarterly at a mutually agreed upon date to review any recommendations, accomplishments, unmet needs and lessons learned as specified in the Supplemental Terms and Conditions (Attachment A).

## **7. General Conditions**

a. **AUTHORITY:** Nothing herein shall be construed as authority for either party to make commitments that will bind the other party beyond the scope of services contained herein.

b. **DISCRIMINATION:** The Vendor shall not discriminate against any household because of race, religion, color, sex, national origin, age, disability, political beliefs, sexual orientation, gender identity, or any other basis prohibited by state law relating to discrimination.

c. **CONFIDENTIALITY:** The Vendor and the Agency agree that any information and data obtained as to personal facts and circumstances related to households as part of the performance of this Agreement shall be collected and held confidential, during and following the term of this Agreement, and shall not be disclosed without the individual's and Agency's written consent except as required by federal or state law. Vendors who utilize, access, or store personally identifiable information as part of the performance of this Agreement are required to safeguard this information and immediately notify the Agency of any breach or suspected breach in the security of such information. In the event of a security breach affecting personally identifiable information utilized, accessed, or stored in the performance of this Agreement, the Vendor shall allow the Agency to both participate in the investigation of incidents and exercise control over decisions regarding external reporting.

d. **SUBCONTRACTS:** The Agency reserves the right to require the Vendor to obtain permission to subcontract any portion of the work. If requested by the Agency, the Vendor shall furnish the Agency the names, qualifications, and experience of their proposed subcontractors. The Vendor shall require its subcontractor(s) to remain fully liable and responsible for the work to be done and shall assure compliance with all requirements of the Agreement.

e. **FRAUD:** The Vendor will be permanently disqualified from participating in the LIHWAP upon the first finding that the Vendor has committed LIHWAP fraud. Fraud includes, but is not limited to, intentionally providing false information to the Agency or knowingly allowing others to do so; intentionally failing to notify the Agency of a change in circumstances that materially affects payments received by the Vendor; intentionally accepting payments that the Vendor knows, or by the exercise of reasonable diligence would know, the Vendor is not entitled to by virtue of an overpayment or otherwise; or intentionally making a claim for a payment to which the Vendor is not entitled pursuant to the terms of this Agreement and all applicable rules, regulations, laws and statutes. In the event the Vendor receives payment from the Agency that the Vendor is not entitled to as a result of the Vendor's fraud, the Vendor must repay the payment unless contrary to a court order.

f. **NON-FRAUD OVERPAYMENTS:** If the Vendor receives an overpayment from the Agency, the Vendor shall promptly repay the overpayment amount to the Agency.

g. **BINDING ON HEIRS AND ASSIGNS.** This Agreement shall be binding upon and inure to the benefit of the respective successors and assign of each party, but does not otherwise create, and shall not be construed as creating, any rights enforceable by any person not a party to this Agreement.

h. **DUE AUTHORIZATION.** The persons executing this Agreement represent and warrant to the other party that he or she has been duly authorized to so execute this Agreement.

i. SEVERABILITY. If any provision of this Agreement or the application thereof to any person or circumstance is held to be invalid, the invalidity shall not affect other provisions of this Agreement, which shall be given effect without regard to the invalid provision or application.

j. GOVERNING LAW. This Agreement shall be governed by the laws of the Commonwealth of Virginia, excepting its laws regarding the conflict of laws.

k. ENTIRE AGREEMENT. This Agreement contains all the terms and conditions agreed to by the parties. No other agreements, oral or written, are valid or bind the parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement. The parties to this agreement acknowledge the responsibilities, specified above, and will provide the accomplishment of this service in a mutually acceptable and efficient manner.

**Virginia Department of Social Services**

**By:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Vendor Name:** Hampton Roads Sanitation District or Hampton Roads Utility Billing Service

**Signature of Authorized Representative**  \_\_\_\_\_

**Printed Name/Title of Representative** Jay Bernas / General Manager

**Date** 8/23/22 \_\_\_\_\_

# Water Utility Information Form

**Company Name:** Hampton Roads Sanitation District or Hampton Roads Utility Billing Service

**Doing Business As (DBA), if applicable:** HRSD or HRUBS

**Vendor Legal Name (as used on Federal Tax Return for Business):** Hampton Roads Sanitation District or Hampton Roads Utility Billing Service

**Company Owner Name:** N/A

**Type of Entity:**

- Utility:  Investor Owned     Municipal
- Cooperative
- Sole Proprietor     Partnership
- Corporation     Government Entity
- Trust     Estate
- Limited Liability Company (LLC)
- Is the LLC incorporated?  Yes     No
- Single Member or  Multiple Member

**Taxpayer Identification (ID) Number:**

- Social Security Number (SSN)
- Employer Identification Number (FEIN)
- Individual Taxpayer Identification Number (ITIN)

HRSD: 54-6001749  
HRUBS: 54-1721019

**Program Primary Contact Name/Title:**  
Dwanda Curry/Debt Solutions Manager

**Telephone Number:** 757-460-7019

**Office Physical Address:**  
1434 Air Rail Avenue, Virginia Beach, VA 23455

**Mailing Address for Correspondence:**  
1434 Air Rail Avenue, Virginia Beach, VA 23455

**Email Address:**  
dcurry@hrsd.com

**Office Fax Number:**  
757-460-2058

**Contact Name/Title Regarding Payments:**  
Tammy Stevenson/Payments Supervisor

**Telephone Number Regarding Payments:**  
757-460-7243

**Mailing Address for Payments:**  
1434 Air Rail Avenue, Virginia Beach VA 23455

**Email Address Regarding Payments:**  
Payments1@hrsd.com

**SERVICES PROVIDED AND BILLED BY VENDOR**

- Water Fees                       Wastewater/Sewer Fees                       Other
- Stormwater Fees                       Groundwater Fees                      Municipal utility billing includes other charges (ex. Trash collection)

<b>LOCALITIES SERVED</b>						
<b>Please indicate which localities you will serve by placing an "X" in the box in front of the locality.</b>						
X	001 Accomack		079 Greene		161 Roanoke Co.	510 Alexandria
	003 Albemarle		081 Greensville		163 Rockbridge	520 Bristol
	005 Alleghany		083 Halifax		165 Rockingham	530 Buena Vista
	007 Amelia		085 Hanover		167 Russell	540 Charlottesville
	009 Amherst		087 Henrico		169 Scott	X 550 Chesapeake
	011 Appomattox		089 Henry		171 Shenandoah	560 Clifton Forge
	013 Arlington		091 Highland		173 Smyth	570 Colonial Heights
	015 Augusta	X	093 Isle of Wight		175 Southampton	580 Covington
	017 Bath	X	095 James City		177 Spotsylvania	590 Danville
	019 Bedford	X	097 King & Queen		179 Stafford	595 Emporia
	021 Bland		099 King George	X	181 Surry	600 Fairfax
	023 Botetourt	X	101 King William		183 Sussex	610 Falls Church
	025 Brunswick		103 Lancaster		185 Tazewell	620 Franklin City
	027 Buchanan		105 Lee		187 Warren	630 Fredericksburg
	029 Buckingham		107 Loudoun		191 Washington	640 Galax
	031 Campbell		109 Louisa		193 Westmoreland	X 650 Hampton
	033 Caroline		111 Lunenburg		195 Wise	660 Harrisonburg
	035 Carroll		113 Madison		197 Wythe	670 Hopewell
	036 Charles City	X	115 Mathews	X	199 York	678 Lexington
	037 Charlotte		117 Mecklenburg			680 Lynchburg
	041 Chesterfield	X	119 Middlesex			683 Manassas City
	043 Clarke		121 Montgomery			685 Manassas Park
	045 Craig		125 Nelson			690 Martinsville
	047 Culpeper		127 New Kent			X 700 Newport News
	049 Cumberland	X	131 Northampton			X 710 Norfolk
	051 Dickenson		133 Northumberland			720 Norton
	053 Dinwiddie		135 Nottoway			730 Petersburg
	057 Essex		137 Orange			X 735 Poquoson
	059 Fairfax Co.		139 Page			X 740 Portsmouth
	061 Fauquier		141 Patrick			750 Radford
	063 Floyd		143 Pittsylvania			760 Richmond City
	065 Fluvanna		145 Powhatan			770 Roanoke City
	067 Franklin Co.		147 Prince Edward			790 Staunton
	069 Frederick		149 Prince George			X 800 Suffolk
	071 Giles		153 Prince William			X 810 Virginia Beach
X	073 Gloucester		155 Pulaski			820 Waynesboro
	075 Goochland		157 Rappahannock			X 830 Williamsburg
	077 Grayson		159 Richmond Co.			840 Winchester

**AFTER SIGNING THE AGREEMENT AND COMPLETING THE VENDOR PROFILE DATA  
PAGES, MAIL THEM TO:  
Virginia Department of Social Services, LIHWAP/EAP – Floor 9, Richmond, VA, 23219  
Remember to keep a copy for your records.**





ADMINISTRATION FOR  
**CHILDREN & FAMILIES**

330 C Street, S.W., Washington, DC 20201 | [www.acf.hhs.gov](http://www.acf.hhs.gov)

### **SUPPLEMENTAL TERMS and CONDITIONS**

The **General Terms and Conditions** apply to all mandatory grant programs. These Supplemental Terms and Conditions are additional requirements applicable to the program named below.

By acceptance of awards for this program, the grantee agrees to comply with the requirements included in both the General and Supplemental Terms and Conditions for this program.

#### **Office of Community Services (OCS)**

#### **LOW INCOME HOUSEHOLD WATER ASSISTANCE PROGRAM (LIHWAP)**

Assistance Listing No. 93.568(B) (with modifications based on P.L. 116-260)

#### **APPLICABLE LEGISLATION, STATUTE, REGULATIONS**

1. The administration of this program is authorized under Section 533 Title V of Division H of the Consolidated Appropriations Act, 2021, Public Law No: 116-260. Consistent with legislative instructions, program requirements use existing processes, procedures, and policies currently in place to provide assistance to low-income households. In particular, OCS has closely modeled the Low Income Household Water Assistance Program's (LIHWAP) terms and conditions on assurances and requirements outlined in the Low Income Household Energy Assistance Act, 42 U.S.C. 8621 *et seq.*
2. The Uniform Administrative Requirements, Cost Principles, and Audit Requirements for HHS Awards is located under 45 CFR Part 75. In accordance with 45 CFR 75.101 applicability, this program must comply with 45 CFR Part 75 in its entirety. No exceptions have been identified.
3. Additional applicable regulations and requirements can be found in the General Terms and Conditions for Mandatory: Formula, Block and Entitlement Grants.

#### **COST SHARING OR MATCHING (NON-FEDERAL SHARE) OF PROGRAM FUNDING**

4. The federal financial participation rate (FFP) is 100 percent for this program. The federal award provides funds for 100 percent of allowable, legitimate program costs.
5. There is no non-federal cost share/matching required for this program. Program funds for this program are awarded with a 100 percent FFP rate for program costs.

#### **FINANCIAL REPORTING AND REQUIREMENTS**

6. The OMB approved Financial Reporting form for this program is the SF-425 Federal Financial Report SF-425 Federal Financial Report. Grantees must track and report on LIHWAP funds separately from appropriated LIHEAP funds.

- a. This report is submitted annually and must be submitted no later than December 30, which is 90 days following the end of each federal fiscal year (FFY).
  - b. A first interim report is due 90 days following the end of FFY 2021.
  - c. A second interim report interim report is due 90 days following the end of FFY 2022.
  - d. A final report (cumulative, covering the entire project period) is due 3 months following the end of FFY 2023.
7. Project Period. The project period for this award is synonymous with the obligation period, as follows: from the date of the award through the end of FFY 2023 (September 30, 2023). Any federal funds not obligated by the end of the obligation period will be recouped by this Department.
8. Liquidation Deadline. All obligated federal funds awarded under this grant must be liquidated no later than 3 months after the end of the project period (i.e., December 31, 2023). Any funds from this award not liquidated by this date will be recouped by this Department.
9. The following are the grant/fiscal requirements based on modifications of existing LIHEAP policies and requirements:
- a. The grantees may use up to 15 percent of grant funds for planning and administering the funds under this award. The grantee will pay from non-federal sources the remaining costs of planning and administering the program under this award and will not use federal funds for such remaining cost. Administrative costs of the owners or operators of public water systems or treatment works that may be charged to this award, if any, are subject to this limitation and must be included together with the grantee's costs of planning and administration when calculating compliance.
  - b. The grantee will ensure that fiscal control and fund accounting procedures will be established as may be necessary to assure the proper disbursement of and accounting for federal funds paid to the state under this award, including procedures for monitoring the assistance provided under this award, and provide that the grantee will comply with the provisions of chapter 75 of title 31, United States Code (commonly known as the "Single Audit Act").
  - c. The grantee may expend funds for immediate expenses necessary for planning and administering the use of funds upon receipt of the award. However, prior to the expenditure of grant funds for any payments to owners or operators of public water systems or treatment works on behalf of low-income households, the grantee must submit an implementation plan for OCS review and acceptance in a format provided by OCS that will (a) include the eligibility requirements to be used by the state for each type of assistance to be provided under this grant, (2) describe the benefit levels to be used by the state, territory, or tribe for LIHWAP assistance, (3) describe any steps that will be taken to target assistance to households with high home water burdens, and (4) provide a plan of administration including a plan of oversight and monitoring of any subrecipient organizations comparable to the processes and procedures for comparable grant programs. Not later than May 30, 2021, OCS will make available a Model State and Tribal Implementation Plan format to be used in developing and submitting the implementation plan for review.

## **PROGRAM REPORTING AND REQUIREMENTS**

10. Grantees must track and report on LIHWAP program activities under this award separately from LIHEAP. The grantee must report annually on the following data elements, using an OMB-approved reporting format to be provided by OCS:
- a. the amount, cost, and type of water assistance provided for households eligible for assistance under this award;
  - b. the type of water assistance used by various income groups;

- c. the number and income levels of households assisted by this award;
  - d. the number of households that received such assistance and include one or more individuals who are 60 years or older, include a household member with a disability, or include young children (ages 5 and younger);
  - e. the impact of each grantee's LIHWAP program on recipient and eligible households (e.g., amount of assistance to each household, and whether assistance restored water service or prevented shutoff); and
  - f. administrative information regarding local providers (if applicable), agreements with water utilities, recommendations, accomplishments, unmet needs and lessons learned.
11. The following are the program requirements, consistent with instructions in P.L. 116-260, Section 533 and consistent with existing program requirements for Low-Income Home Energy Assistance Program (LIHEAP) and other closely related programs:
- a. Federal funds awarded under this grant shall be used as part of an overall emergency effort to prevent, prepare for, and respond to the coronavirus, with the public health focus of ensuring that low-income households have access to safe and clean drinking water and wastewater services.
  - b. Funds will be used to provide assistance to low-income households—particularly those with the lowest incomes—that pay a high proportion of household income for drinking water and wastewater services. Assistance to households will be accomplished by providing funds to owners or operators of public water systems or treatment works to reduce arrearages of and rates charged to such households for such services. Grantees may use LIHWAP funding to cover arrearages arising at any time, including prior to this award.
  - c. Grantees shall, in carrying out programs funded with this grant, as appropriate and to the extent practicable, use existing processes, procedures, policies, and systems in place to provide assistance to low-income households, including by using existing programs and program announcements, application and approval processes.
    - i. Grant resources may be used to make payments only with respect to households in which one or more individuals are receiving the following:
      1. assistance under the State program funded under part A of title IV of the Social Security Act;
      2. supplemental security income payments under title XVI of the Social Security Act;
      3. food stamps under the Food Stamp Act of 1977;
      4. payments under section 415, 521, 541, or 542 of title 38, United States Code, or under section 306 of the Veterans' and Survivors' Pension Improvement Act of 1978; or
      5. payments under the Low Income Home Energy Assistance Program (LIHEAP);  
or
    - ii. households with incomes that do not exceed the greater of the following:
      1. an amount equal to 150 percent of the poverty level for such state; or
      2. an amount equal to 60 percent of the state median income;
      3. except that a state, territory, or tribe may not exclude a household from eligibility in a fiscal year solely on the basis of household income if such income is less than 110 percent of the poverty level for the state; but, the state, territory, or tribe may give priority to those households with the highest home water costs or needs in relation to household income.
  - d. The grantee will establish criteria and procedures for determining income eligibility comparable to established procedures and requirements for LIHEAP. The grantee will conduct outreach activities designed to ensure that eligible households, especially those with the lowest incomes,

that pay a high proportion of household income for drinking water and wastewater services, are made aware of the assistance available under this title and any similar assistance available under the Community Services Block Grant program or through other emergency relief such as the Pandemic Emergency Assistance Fund and the U.S. Department of Treasury's Emergency Rental Assistance Program.

- e. The grantee will coordinate its activities under this title with similar and related programs administered by the Federal Government and such state, territory, or tribe, particularly low-income utility support programs such as LIHEAP, the Community Services Block Grant (CSBG), Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), the Social Service Block Grant, and the Emergency Rental Assistance Program.
- f. The grantee will provide, in a timely manner, that the highest level of assistance will be furnished to those households that have the lowest incomes and the highest water costs or needs in relation to income, taking into account family size, except that the state, territory, or tribe may not differentiate in implementing this section between the households described in condition 11(c)(i) and 11(c)(ii) (above).
- g. The grantee will establish policies, procedures, and benefit levels on behalf of households that prioritize continuity of water services, including prevention of disconnection and restoration water services to households for which water services were previously disconnected.
- h. The grantee will provide funds to owners or operators of public water systems or treatment works ("owners or operators") to reduce arrearages of and rates charged to eligible households for such services. For all payments to owners or operators on behalf of individual households, the grantee must establish procedures to:
  - i. notify, or require the owner or operator to notify, each participating household of the amount of assistance paid on its behalf;
  - ii. ensure that the owner or operator will charge the eligible household, in the normal billing process, the difference between the actual amount due and the amount of the payment made by the LIHWAP grant;
  - iii. ensure that any agreement the grantee enters into with an owner or operator under this paragraph will contain provisions to ensure that no household receiving assistance under this grant will be treated adversely because of such assistance under applicable provisions of state, territorial or tribal law or public regulatory requirements;
  - iv. ensure that the provision of payments to the owner or operator remains at the option of the grantee, in consultation with local subgrantees; and
  - v. ensure that the owner or operator provides written reconciliation and confirmation on a regular basis that benefits have been credited appropriately to households and their services have been restored on a timely basis or disconnection status has been removed if applicable.
- i. The amount of any home water assistance benefits provided under this program for the benefit of an eligible household shall not be considered income or resources of such household (or any member thereof) for any purpose under any State, Territorial, or Tribal law, including any law relating to taxation, public assistance, or welfare programs.
- j. The grantee will not exclude income-eligible households (described above in condition 11(c)(ii)) from receiving home water assistance benefits.
- k. The grantee will establish procedures to treat owners and renters equitably under the program assistance provided with these grant resources.

- l. The grantee will provide for timely and meaningful public participation in the development of a state, territory or tribe's LIHWAP implementation plan, such as publication and acceptance of comments via the grantee's website.
- m. The grantee will provide an opportunity for a fair administrative hearing to individuals whose claims for assistance under a LIHWAP plan are denied or are not acted upon with reasonable promptness. Administrative hearing opportunities will be comparable to and may utilize existing processes, procedures, and systems currently in place for the state, territory, or tribe's Low Income Home Energy Assistance grant.
- n. The grantee will be responsible for planning and prioritizing funds for households in communities throughout the state with the exception of households within tribal jurisdictions for which OCS has reserved a portion of LIHWAP funds. If the governing organization of any eligible tribal government or organization located within the state declines or is not able to successfully apply for available LIHWAP funds, the state grantee will then be responsible for including eligible households within the tribe's jurisdiction in its outreach and service coverage.
- o. LIHWAP grant funds may not be used by the grantee, or by any other person with which the grantee makes arrangements to carry out the purposes of this grant, for the purchase or improvement of land or the purchase, construction, or permanent improvement of any building or other facility.
- p. The grantee will permit and cooperate with federal investigations undertaken in accordance with the following procedures:
  - i. OCS shall, after adequate notice and an opportunity for a hearing conducted within the affected state, territory, or tribe, withhold funds from any grantee that does not utilize its allotment substantially in accordance with the terms and conditions.
  - ii. OCS shall review and respond in writing in no more than 60 days to matters raised in complaints of a substantial or serious nature that a grantee (or any person with which the grantee makes arrangements to carry out the purposes of the grant) has failed to use funds in accordance with these terms and conditions. Any violation of any one of the terms and conditions that constitutes a disregard of such assurance shall be considered a serious complaint.
  - iii. If OCS determines that there is a pattern of complaints from any state, territory, or tribe during the grant period, OCS shall conduct an investigation of the use of funds received under this award by the grantee in order to ensure compliance with terms and conditions.
  - iv. The HHS Office of the Inspector General (OIG) may conduct an investigation of the use of funds received under this title by a state, territory, or tribe in order to ensure compliance with the provisions of this title.
  - v. In the event of an investigation conducted by OCS, OIG, or another federal entity designated by OCS, the grantee shall make appropriate books, documents, papers, and records available to the Secretary or the Comptroller General of the United States, or any of their duly authorized representatives, for examination, copying, or mechanical reproduction on or off the premises of the appropriate entity upon a reasonable request thereof.
  - vi. In conducting any investigation under the procedures described above, OCS will not request any information not readily available to such state, territory, or tribe, or require that any information be compiled, collected, or transmitted in any new form not already available.

## **REAL PROPERTY REPORTING**

12. Real Property Reports (SF-429s). The SF-429 Real Property forms are not applicable to this program. Purchase, construction, and major renovation are not an allowable activity or expenditure under this grant.

**EFFECTIVE PERIOD**

13. These program-specific Supplemental Terms and Conditions are effective on the date shown at the bottom of the pages of this document and will remain in effect until updated. They will be updated and reissued only as needed whenever a new program-specific statute, regulation, or other requirement is enacted or whenever any of the applicable existing federal statutes, regulations, policies, procedures, or restrictions are amended, revised, altered, or repealed.

---

**Signature of Governor's Authorized Official**

Name of State/Territory: \_\_\_\_\_

LIHWAP State/Territory Lead Agency: \_\_\_\_\_

I certify that the LIHWAP State/Territory Lead Agency has reviewed and will abide by the conditions outlined above.

\_\_\_\_\_  
X  
\_\_\_\_\_

Governor's Authorized Official

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #4

8. West Road Interceptor Force Main Extension  
Cost Sharing Agreement for the South Central Water Transmission Main and Loop –  
Phase 1

**COST SHARING AGREEMENT  
BETWEEN  
THE CITY OF CHESAPEAKE AND  
HAMPTON ROADS SANITATION DISTRICT  
FOR DESIGN AND BID PHASE SERVICES OF THE  
SOUTH CENTRAL WATER TRANSMISSION MAIN AND LOOP – PHASE 1**

THIS COST SHARING AGREEMENT (“Agreement”), between the CITY OF CHESAPEAKE (“City”) and the HAMPTON ROADS SANITATION DISTRICT (“HRSD”) is entered into this \_\_\_\_ day of \_\_\_\_\_, 2022 (“Effective Date”).

**RECITALS**

**R:1.** The South Central Water Transmission Main and Loop - Phase 1 (the “Project”) is a project owned by City and will be partly owned by HRSD.

**R:2.** City is designing its portion of the Project as shown on **Exhibit 1** (“City Facilities”).

**R:3.** City is also designing HRSD’s portion of the Project as shown on **Exhibit 2** (“HRSD Facilities,” and together with the City Facilities, the “Improvements”).

**R:4.** City and HRSD agree that it is in the best interest of the parties to have the Improvements designed as one project.

**R:5.** City agrees to include the design of HRSD Facilities with the design of City Facilities in accordance with the approved plans and specifications.

**R:6.** HRSD agrees to reimburse City for that portion of the costs of the design of the Improvements attributable to HRSD Facilities under the terms and conditions of this Agreement.

**R:7.** City and HRSD also agree that, in addition to the design of the Improvements, it is in the best interest of the parties to construct the Improvements as one project. Accordingly, it is the intent of the City and HRSD to negotiate and execute a separate cost share agreement that governs the City’s obligation to construct the Improvements and HRSD’s obligation to reimburse the City for that portion of the costs of construction for the Improvements that are attributable to HRSD Facilities. This agreement will be negotiated after the bidding process is completed.

**TERMS**

In consideration of the recitals stated above and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:



I. DESIGN OF IMPROVEMENTS

A. Design Contract Documents

1. City has employed a Hazen and Sawyer, P.C., “Engineer”) to design the plans and specifications for the construction of the Improvements.
2. HRSD approves and accepts City’s choice of Engineer by executing this Agreement.
3. Engineer will meet with City and HRSD staff to coordinate, review, and approve a set of final design plans and specifications for the Improvements (the “Final Plans and Specifications”).
4. City is administrating the design phase and bid services contract for the Improvements, specifically, Task Order 2021-02, for the South Central Water Transmission Main and Loop - Phase 1, dated May 12, 2021, executed by the City of Chesapeake and Engineer, which is incorporated by reference into this Agreement (hereinafter “Task Order”).
5. One or more contracts may be issued to efficiently complete the Improvements, including the cost share agreement for construction of the Improvements pursuant to R:7 of this Agreement.

B. Payment of the Design Costs

1. The cost share for City will be 82.59% of the total amount due to the Engineer under the Task Order and any amendments thereto, and the cost share for HRSD will be 17.41% of the total amount due to the Engineer under the Task Order and any amendments thereto. The Design Phase and Bid Phase services budget estimate for the Improvements as of the date of this Agreement is \$2,297,355.00.
2. City will pay Engineer for all design costs for the Improvements required by the Task Order and any amendments thereto.
3. HRSD shall then reimburse the City for HRSD’s share of the amounts paid to Engineer in accordance with paragraph I.B.1 of this Agreement.
4. City shall provide HRSD with quarterly invoices detailing HRSD’s share of the design costs and notifying HRSD of its obligation to reimburse City. Within thirty (30) days of HRSD’s receipt of such invoice(s), HRSD shall reimburse City for its cost share in accordance with paragraph 1.B.1 of this Agreement.

5. For the purposes of this Section B, only, HRSD invoices can be sent via standard U.S. Mail postage prepaid with delivery confirmation, to: HRSD Accounts Payable, P.O. Box 5915, Virginia Beach, VA 23471-0915 or by overnight mail prepaid with delivery confirmation to: HRSD Accounts Payable, 1434 Air Rail Avenue, Virginia Beach, VA 23455.

C. Compliance

All design work shall comply with:

1. The City's Department of Public Utilities' Special Provisions to the *HRPDC Regional Construction Standards*, latest edition, for City Facilities and Improvements, and;
2. HRSD's Design and Construction Standards, latest edition, for HRSD Facilities.

Any changes to the Final Plans and Specifications shall be approved by HRSD and the CITY

D. Deeds and Easements

1. City shall obtain any and all necessary fee simple deeds and/or deeds of easement or temporary construction easements needed for City Facilities.
2. City shall also obtain any and all necessary fee simple deeds and/or deeds of easements or temporary construction easements for Improvements that are attributable to HRSD Facilities with coordination with and assistance from HRSD. HRSD shall be responsible for 100% of the costs associated with any property acquisition needed for Improvements that are attributable to HRSD Facilities.
3. For temporary construction easements acquired to serve both City Facilities and Improvements that are attributable to HRSD Facilities, the cost share for HRSD shall be 50% of the total acquisition cost of such temporary construction easement(s).
4. If the City must acquire a property interest by condemnation for an Improvement, HRSD shall bear 100% of the cost associated with condemning any property interest needed for Improvements attributable to HRSD facilities.
5. City shall invoice HRSD for its property acquisition costs under paragraph I.D. of this Agreement as part of the quarterly invoices detailing HRSD's share of the costs pursuant to paragraph 1.B.1. Within thirty (30) days of HRSD's receipt of such invoice(s), HRSD shall reimburse City 100% of the costs invoiced for HRSD property acquisition pursuant to paragraphs 1.B.1. and 1.B.5.

II. GOVERNING LAW

This Agreement shall be deemed to be a Virginia Contract and shall be governed as to all matters whether of validity, interpretations, obligations, performance or otherwise exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with Virginia law. Regardless of where actually delivered and accepted, this contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia. Venue shall be in the Circuit Court for the City of Chesapeake, Virginia or the Eastern District of Virginia, Norfolk Division.

III. TERMINATION

This Agreement may be terminated by City or HRSD in the event that the other party materially breaches this Agreement and such breach is not cured within sixty (60) days of the defaulting party's receipt of written notice of such breach from the non-defaulting party, or by mutual agreement of City and HRSD. In the event this Agreement is terminated before HRSD has fully reimbursed City for its share of costs under this Agreement, HRSD shall pay all invoices issued, and/or due and owing at the time of termination under this Agreement, within forty-five (45) days of the date of termination. City shall retain ownership of all design plans and specifications delivered under the Task Order.

IV. NOTICE

Any notice, communication or request under this Agreement shall be provided in writing by either (a) certified mail, return receipt requested, postage prepaid, or (b) a nationally recognized overnight delivery service (such as FedEx or U.P.S. with next business day service), or (c) hand-delivery, if the receipt of the same is evidenced by the signature of the addressee or authorized agent, and addressed to the following:

TO HRSD

If by U.S. Postal Service, with delivery confirmation:  
General Manager  
P. O. Box 5911  
Virginia Beach, VA 23471-0911

If by Overnight Mail:  
General Manager  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

With Copy to:

Robyn H. Hansen, Esquire  
Sands Anderson PC  
263 McLaws Circle, Suite 205  
Williamsburg, VA 23185

TO City of Chesapeake  
If by U.S. Postal Service, or Overnight Mail:  
City Manager  
306 Cedar Road  
Chesapeake, VA 23322

With copy to:  
City Attorney  
306 Cedar Road  
Chesapeake, VA 23322

V. ASSIGNMENT

No party may assign its rights under this Agreement without the prior written consent of the other party.

VI. AMENDMENT

This Agreement may be amended only by a written instrument duly executed by the City's Director of Public Utilities and HRSD's General Manager.

VII. SEVERABILITY

If any provision of this Agreement shall be determined to be invalid, illegal or unenforceable to any extent, the remainder of this Agreement shall not be affected and shall continue to be valid, in effect and enforceable to the fullest extent permitted by law.

VIII. TERM OF AGREEMENT

The term of the Agreement will commence on the date the Agreement is entered into and be completed when each party has completely performed its obligations hereunder.

IX. FORCE MAJEURE

In the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond the control of City or HRSD and without their fault or negligence, including, but not restricted to, acts of God or of the public enemy, acts of the government, fires, floods, epidemics, government mandated quarantine restrictions, strikes, freight embargos, and unusually severe weather or delays of subcontractors due to such causes; it being the purpose and intent of this provision that in the event of the occurrence of any such enforced delay, the time or times for

performance of the obligations of the parties shall be extended for the period of the enforced delay.

X. WAIVER

No waiver of breach of any term or provision of this Agreement shall be construed to be, or shall constitute, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the parties waiving the breach.

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Such rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

XI. INTEGRATION

This Agreement constitutes the entire understanding between the parties. No provision of this Agreement may be waived, modified or amended except by an instrument signed by the party against whom the enforcement of such waiver, modification or amendment is sought. No waiver by either party of any failure or refusal by the other party to comply with its obligations hereunder shall be deemed a waiver of any other or subsequent failure or refusal to comply.

**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on August 23, 2022.

**HAMPTON ROADS SANITATION DISTRICT**

By   
Jay Bernas, P.E., General Manager

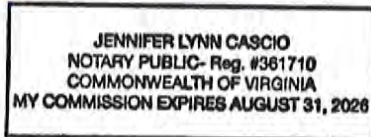
COMMONWEALTH OF VIRGINIA,  
CITY OF VIRGINIA BEACH, to-wit:

The foregoing Agreement was acknowledged before me this 23<sup>rd</sup> day of August, 2022, by Jay Bernas, HRSD General Manager.

 [SEAL]  
Notary Public

My commission expires:

Registration No.:



**IN WITNESS WHEREOF**, the City of Chesapeake has caused this Agreement to be signed by the City Manager on its behalf pursuant to Resolution Number \_\_\_\_\_ adopted by the City Council on \_\_\_\_\_, 2022,

**CITY OF CHESAPEAKE**

By \_\_\_\_\_  
Christopher M. Price, City Manager

ATTEST:

\_\_\_\_\_  
Sandra M. Madison, City Clerk

STATE OF VIRGINIA  
CITY OF CHESAPEAKE to-wit:

I, \_\_\_\_\_, a Notary Public in and for the City of Chesapeake, in the State of Virginia, whose term of office expires on the \_\_\_\_\_ day of \_\_\_\_\_, 2022, do hereby certify that Christopher M. Price, City Manager and Sandra M. Madison, City Clerk, respectively, of the City of Chesapeake, whose names as such are signed to the foregoing Agreement have acknowledged the same before me in my City and State aforesaid.

Given under my hand this \_\_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_[SEAL]  
Notary Public

Approved as to Content:

\_\_\_\_\_  
Deputy Director of Public Utilities

Approved as to Availability of Funds in Paragraph I.B.1:

\_\_\_\_\_  
Director of Finance

Cost Sharing Agreement for the SOUTH CENTRAL WATER TRANSMISSION MAIN AND LOOP – PHASE 1

Approved as to Procurement Procedure:

\_\_\_\_\_  
Chief Procurement Officer

Approved as to Form and Correctness:

\_\_\_\_\_  
Deputy City Attorney



Exhibit 1 - City Facilities Location Map





Exhibit 2 - HRSD Facilities Location Map



File # 021317-HRSD31317-011 - South Central Water Main - Design/Construct/Procure/Install/Operate/Transfer Location Exhibits Saved by mbaudt Service date = 9/22/2021 1:44 PM



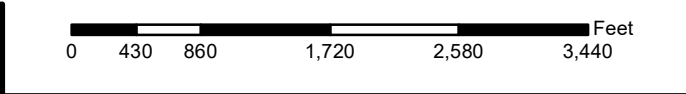


**NPO 14600**

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



**NPO 14600**

**West Road Interceptor Force Main Extension**

N  
W E  
S

**CIP Location**

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #5

10. Suffolk Pump Station Replacement  
Easement Acquisition  
860 Portsmouth Boulevard (Parcel 020), Suffolk, Virginia

TAX PARCEL NO.: 35D\*D1\*B  
PROJECT: Suffolk Pump Station Replacement Phase 1 (NP010610)  
ROUTE/STREET: 860 Portsmouth Boulevard  
CITY/COUNTY: Suffolk, VA

### PURCHASE AGREEMENT

**THIS CONTRACT FOR PURCHASE AND SALE**, made this 8/5/ day of 2022 2022, by and among **HAMPTON ROADS SANITATION DISTRICT** ("HRSD"), a political subdivision of the Commonwealth of Virginia, located at 1434 Air Rail Avenue, Virginia Beach, Virginia 23455 their successors and/or assigns (the "Buyer"), and **Craig Johnson, LLC**, a Virginia limited liability company, (the "Landowner"). Collectively, Buyer and Landowner shall be referred to as the "Parties."

WITNESSETH: That for and in consideration of ten dollars (\$10.00) and other valuable consideration, receipt of which is hereby acknowledged, Landowner agrees to convey to HRSD, its successors and assigns, forever, the perpetual right, privilege, easement and right of ingress/egress over, across under and through hereinafter described, for the purpose of laying, erecting, constructing, operating, and maintaining underground wastewater and/or water reuse force mains and/or gravity mains together with above and/or below ground equipment, accessories, and appurtenances the following described property of the Landowner, by deed of easement, properly executed, acknowledged, and delivered.

The land and improvements subject to this Purchase Agreement for a Permanent Utility Easement and Temporary Construction Easement (hereinafter referred to as "the Property") are described as follows:

Being as shown on attached plat prepared by Rouse-Sirine Associates, Ltd., entitled "PLAT SHOWING 30' & VARIABLE WIDTH PERMANENT HRSD UTILITY EASEMENT AND VARIABLE WIDTH TEMPORARY HRSD CONSTRUCTION EASEMENT TO BE ACQUIRED FROM CRAIG JOHNSON, LLC BY HAMPTON ROADS SANITATION DISTRICT " and dated November 11, 2021, signed May 21, 2022, and containing 0.140 acres (6,115 square feet), more or less land for the proposed permanent HRSD utility easement vested and containing 0.083 acres (3,661 square feet), more or less land for the Temporary HRSD Construction Easement vested in Craig Johnson, LLC, a Virginia limited liability company, pursuant to deed dated December 28, 2020 from Lee Ann Properties, LLC which is recorded in the Clerk's office of the Circuit Court of the City of Suffolk Virginia, on February 29, 2020 as Instrument No. 200019190. (Temporary easement will terminate at such time as the construction of the aforesaid project is complete).

Together with all and singular the buildings and improvements, tenements, hereditaments, rights, privileges, and appurtenances thereunto belonging or in anywise appertaining (the "Property"), a copy of which plat is attached hereto and made a part hereof.

The total consideration for the conveyance provided for herein is as follows:

**CONSIDERATION: TWENTY-SEVEN THOUSAND FIVE HUNDRED AND 00/100 DOLLARS (\$27,500.00)** in full for the easements described hereinbefore and for all damages, if any.

The consideration hereinabove mentioned represents the value of all estates or interests in such land, and the damage to remaining lands of the Landowner which may result by reason of the use to which HRSD will put the land to be conveyed. The Landowner agrees to accept his legal proportionate share of such total consideration for his interest and right in the said land.

The Landowner hereby covenants and agrees for himself, his heirs and assigns and successors, that the consideration herein mentioned shall be in lieu of any and all claims to compensation and damages by reason of the location, construction and maintenance of the project by HRSD, including such drainage facilities as may be necessary.

In the event the Landowner is unable to convey clear title to the above easement to HRSD as herein provided, and HRSD should elect to institute condemnation proceedings for the purpose of acquiring such easements, it is agreed by the Landowner that this instrument may be introduced in such proceedings as evidence of the value of land and damages, if any, to the remaining property of the Landowner.

The Landowner by execution of this instrument acknowledges that the plans for the aforesaid project as they affect the subject property have been fully explained to the undersigned.

HRSD or its contractor will restore Landowner's land and Parcel affected as a result of construction of the project as closely as is reasonably possible to its pre-construction condition (or better) upon completion of the Project including replacing with acceptable landscaping.

HRSD or its contractor hereby agrees that it will perform all such measures in a manner causing as little inconvenience and disruption to the Landowner, and Landowner's invitees, licensees and occupants as is reasonably possible.

HRSD shall have the right to trim, cut and remove trees, shrubbery or other obstructions which interfere with or threaten the efficient and safe construction, operation, and maintenance of said facilities. All brush, branches, and other debris resulting from any cutting, trimming, or clearing of said right of way shall be removed from lands of Landowner for disposal.

HRSD, or its agents, successors and assigns may exercise the unimpeded right to enter upon so much of the parcel or land needed for such purposes as may be necessary for the construction operation or maintenance of said facilities, and further provided that such use is not inconsistent with any laws, ordinances or codes pertaining to the construction, operation or maintenance of said facilities, without further notice to the Landowner. Landowner shall not place any permanent improvements within the easement without permission of Buyer, or its successors, including but not limited to houses, buildings, pools, sheds, signs, or similar permanent structures. Landowner may install fences, driveways, pavement and landscaping (trees and shrubs shall be varieties that will not exceed 20 feet tall at maturity).

Notwithstanding the above, should the property on which the aforesaid perpetual easement lies be subdivided, then the access rights to the easement as above enumerated shall be along the publicly dedicated streets within the said subdivision as far as practical, and then the access shall be on subdivided lots within the subdivision which shall efficiently provide access for the purposes of the Buyer as herein enumerated.

**ETHICS IN PUBLIC CONTRACTING:** By executing this Agreement, the undersigned Landowner or its representative, and the representative of HRSD, certify that the prices agreed to in this Agreement were arrived at without collusion or fraud and that they have not offered or received any payment, kickbacks or other

inducement from any other party to this Agreement or its agent or employee in connection with this Agreement, and that they have not conferred on any public employee having responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised unless disclosed in this Agreement.

Landowner acknowledges that HRSD has relied upon these covenants, representations, and warranties in purchasing the above easement.

This Agreement is contingent on the review and approval of the purchase by the Hampton Roads Sanitation District Commission and upon such Commission granting authorization to the General Manager to proceed under the terms of this Agreement.

Settlement shall be within ninety (90) days, or as soon thereafter, allowing a reasonable time to correct any title defects reported by the title examiner and preparation and signing of the necessary documents to enable the HRSD to take proper title.

THE COVENANTS, AGREEMENTS, REPRESENTATIONS, WARRANTIES OF THE LANDOWNER CONTAINED IN THESE PARAGRAPHS SHALL SURVIVE THE CLOSING AND DELIVERY OF THE DEED OF EASEMENT ACROSS THE SUBJECT LAND.

WITNESS the following signatures and seals:



IN WITNESS WHEREOF, the Hampton Roads Sanitation District Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on August 23, 2022. This Agreement is expressly subject to approval by the HRSD Commission

**BUYER:**

**HAMPTON ROADS SANITATION DISTRICT (HRSD)**

By: Jay Bernas Date: 8/23/22

Name: Jay Bernas, P.E.

Title: General Manager

Contact Address: 1434 Air Rail Avenue, Virginia Beach, Virginia 23455

COMMONWEALTH OF VIRGINIA

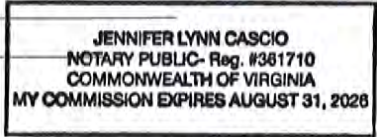
City of Virginia Beach, to-wit:

The foregoing instrument was acknowledged before me this 23<sup>rd</sup> day of August, 2022, by Jay Bernas, P.E., General Manager, Hampton Roads Sanitation District.

Jennifer Lynn Cascio  
Notary Public

Notary Public Registration No. \_\_\_\_\_

My commission expires: \_\_\_\_\_





**LANDOWNER(S):**

**Craig Johnson, LLC**

*Craig Johnson*  
*Craig Johnson, Managing Member*

COMMONWEALTH OF VIRGINIA

City/County of Suffolk . to-wit:

The foregoing instrument was acknowledged before me this 5<sup>th</sup> day of August, 2022, by  
*Craig Johnson, Managing Member.*

*Christopher Robert Swartz*  
Notary Public

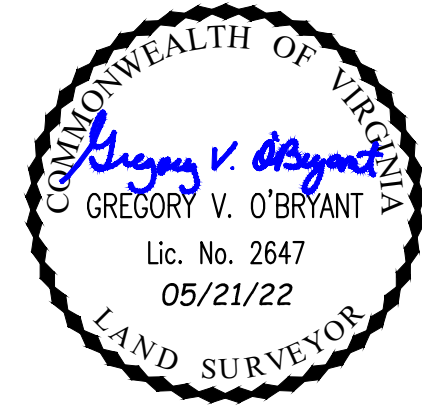
Notary Public Registration No. 7960292

My commission expires: August 31, 2025

**CHRISTOPHER ROBERT SWARTZ  
NOTARY PUBLIC  
REGISTRATION # 7960292  
COMMONWEALTH OF VIRGINIA  
MY COMMISSION EXPIRES  
AUGUST 31, 2025**

**PROJECT PARCEL NO. 020 HRSD CIP#NP010620 – SHINGLE CREEK**

PROPERTY OF: CRAIG JOHNSON LLC  
 PROPERTY ADDRESS: 860 PORTSMOUTH BOULEVARD  
 OWNER ADDRESS: 860 PORTSMOUTH BOULEVARD SUFFOLK, VA 23434  
 TAX MAP #: 35D\*D1\*B



TAX MAP NO.	TOTAL PARCEL AREA		30' & VARIABLE WIDTH PERMANENT HRSD UTILITY EASEMENT		VARIABLE WIDTH TEMPORARY HRSD CONSTRUCTION EASEMENT			RESIDUAL PARCEL AREA	
	SQ. FT.	ACRES	SQ. FT.	ACRES	AREA	SQ. FT.	ACRES	SQ. FT.	ACRES
	35D*D1*B	54,624 +/-	1.25 +/-	6,115	0.140	"A"	2,973	0.068	44,848 +/-
				"B"	688	0.015			
				TOTAL	3,661	0.083			

020

PLAT SHOWING

**30' & VARIABLE WIDTH PERMANENT  
 HRSD UTILITY EASEMENT AND  
 VARIABLE WIDTH TEMPORARY  
 HRSD CONSTRUCTION EASEMENT**

TO BE ACQUIRED FROM  
**CRAIG JOHNSON LLC**

BY  
**HAMPTON ROADS SANITATION DISTRICT**

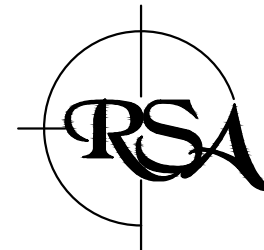
SUFFOLK BOROUGH - CITY OF SUFFOLK, VIRGINIA  
 PROJECT: HRSD CIP#NP010620 - SHINGLE CREEK  
 DATE : NOVEMBER 11, 2020 / CADD: SRE

**ROUSE-SIRINE ASSOCIATES, LTD.**

LAND SURVEYORS, MAPPING CONSULTANTS & S.U.E. QUALITY LEVELS "A-D"  
[www.rouse-sirine.com](http://www.rouse-sirine.com)

333 OFFICE SQUARE LANE  
 VIRGINIA BEACH, VIRGINIA 23462  
 TEL.(757)490-2300  
 FAX:(757)499-9136

1311 JAMESTOWN ROAD  
 SUITE 103  
 WILLIAMSBURG, VIRGINIA 23185  
 TEL.(757)903-4695



**NOTES:**

- MERIDIAN SOURCE WAS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NAD83(HARN)). COORDINATE VALUES ARE SHOWN IN U.S. SURVEY FEET.
- THIS PLAT WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND THEREFORE MAY NOT SHOW ALL EASEMENTS OR PROPERTY REFERENCES THAT AFFECT THIS PROPERTY.
- THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY. PARCEL AREAS SHOWN ARE APPROXIMATE AND BASED ON PLATS AND DEEDS OF RECORD, OR CITY TAX RECORDS AND ARE APPROXIMATE IN NATURE.

	03/24/21		05/21/22
1	OWNER CHANGE	2	REVISED EASEMENT

PROCTOR STREET

020

PROPERTY OF  
CRAIG JOHNSON LLC  
(INST. #200019190)  
(P.B. 12, P. 49)  
TAX MAP: 35D\*D1\*B

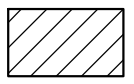
VARIABLE WIDTH  
TEMPORARY HRSD CONSTRUCTION  
EASEMENT TO BE ACQUIRED  
AREA "A" = 2,973 S.F. / 0.068 ACRE

30' & VARIABLE WIDTH  
PERMANENT HRSD UTILITY  
EASEMENT TO BE ACQUIRED  
AREA = 6,115 S.F. / 0.140 ACRE

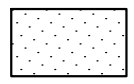
PORTSMOUTH BOULEVARD  
ROUTE 13, 58 & 460  
(121' RIGHT-OF-WAY)

VARIABLE WIDTH TEMPORARY  
HRSD CONSTRUCTION EASEMENT  
TO BE ACQUIRED  
AREA "B" = 668 S.F. / 0.015 ACRE

LEGEND



30' & VARIABLE WIDTH  
PERMANENT HRSD UTILITY  
EASEMENT TO BE ACQUIRED

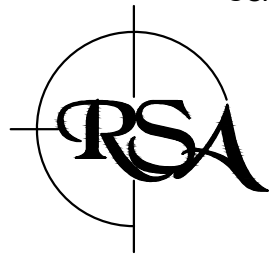


VARIABLE WIDTH TEMPORARY  
HRSD CONSTRUCTION EASEMENT  
TO BE ACQUIRED

CURVE TABLE						
CURVE NO.	ARC LENGTH	RADIUS	DELTA	TANGENT	CHORD BEARING	CHORD
C1	106.21'	6,951.00'	00°52'32"	53.10'	S09°39'23"W	106.21'
C2	11.77'	6,951.00'	00°05'49"	5.89'	S09°16'02"W	11.77'
C3	35.40'	6,951.00'	00°17'30"	17.70'	S09°27'42"W	35.40'
C4	59.04'	6,951.00'	00°29'12"	29.52'	S09°51'03"W	59.04'

LINE TABLE		
LINE NO.	BEARING	DISTANCE
L1	N67°24'33"E	10.12'
L2	N67°24'33"E	35.68'
L3	S67°24'33"W	4.42'

03/24/21	05/21/22
1	2
OWNER CHANGE	REVISED EASEMENT



SEE SHEET 1 FOR ALL NOTES AND AREA TABLE.



020

PLAT SHOWING  
30' & VARIABLE WIDTH PERMANENT  
HRSD UTILITY EASEMENT AND  
VARIABLE WIDTH TEMPORARY  
HRSD CONSTRUCTION EASEMENT  
TO BE ACQUIRED FROM  
CRAIG JOHNSON LLC

BY  
**HAMPTON ROADS SANITATION DISTRICT**

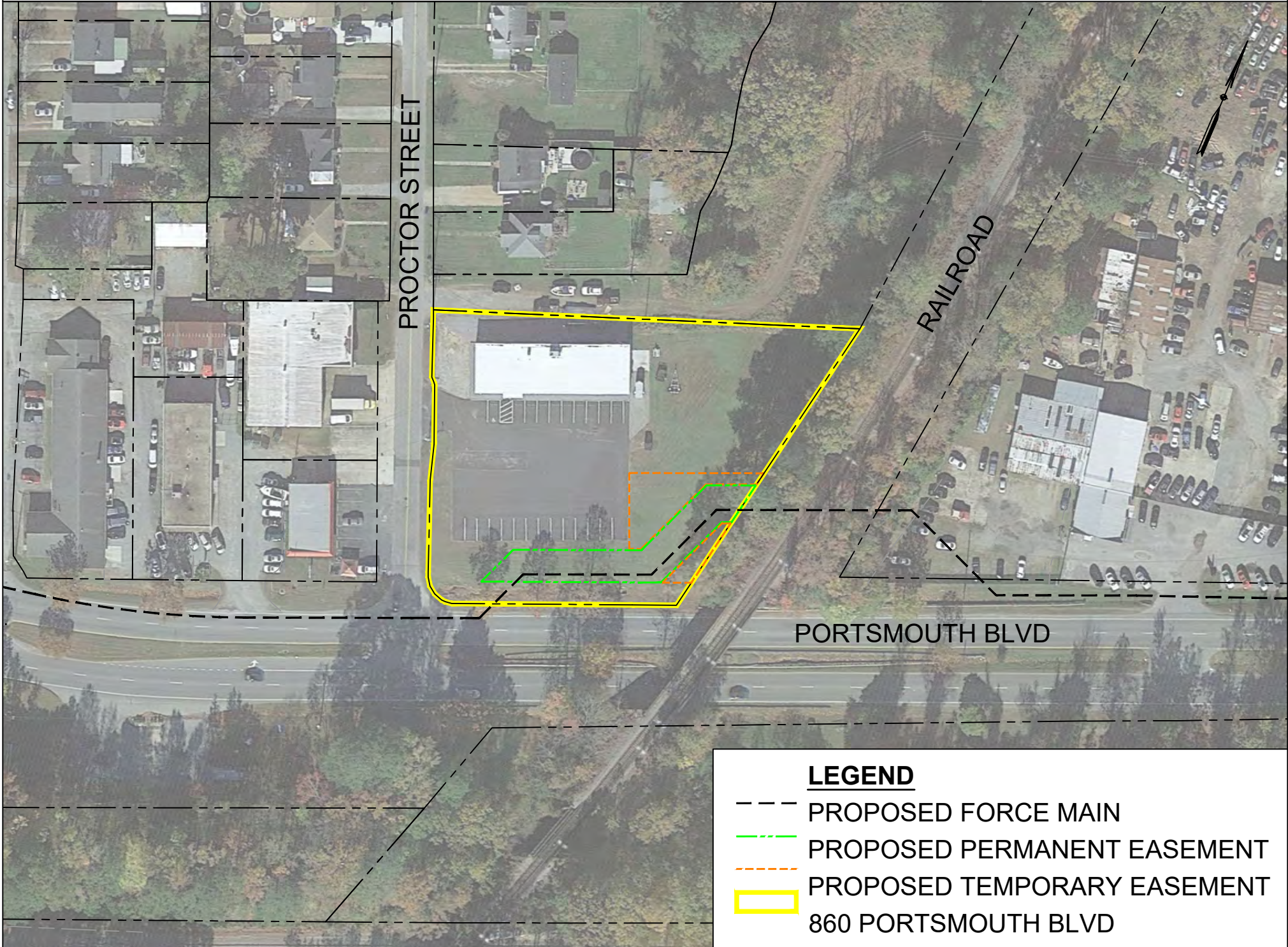
SUFFOLK BOROUGH - CITY OF SUFFOLK, VIRGINIA  
PROJECT: HRSD CIP#NP010620 - SHINGLE CREEK  
SCALE: 1" = 40' DATE : NOVEMBER 11, 2020 / CADD: SRE

**ROUSE-SIRINE ASSOCIATES, LTD.**

LAND SURVEYORS, MAPPING CONSULTANTS & S.U.E. QUALITY LEVELS "A-D"  
www.rouse-sirine.com

333 OFFICE SQUARE LANE 1311 JAMESTOWN ROAD  
VIRGINIA BEACH, VIRGINIA 23462 SUITE 103  
TEL.(757)490-2300 WILLIAMSBURG, VIRGINIA 23185  
FAX:(757)499-9136 TEL.(757)903-4695





HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #6

11. Water Technology and Research  
Annual Update

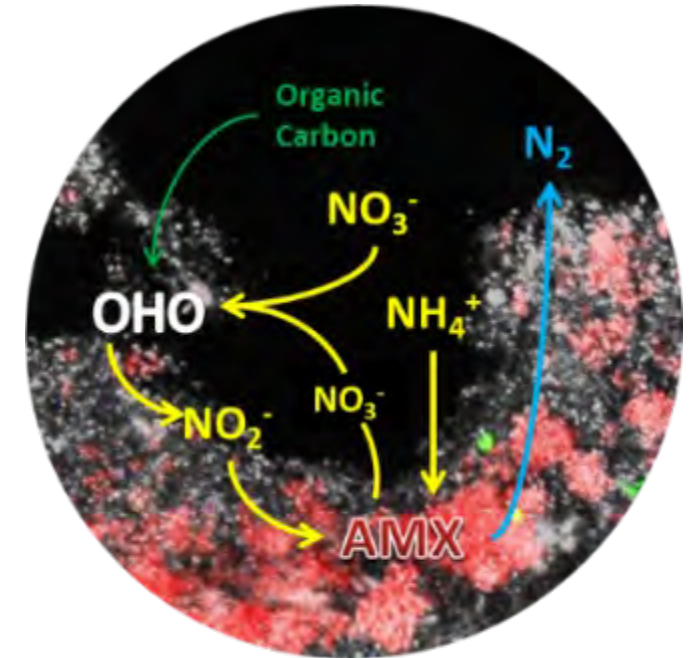


# Water Technology, Process Engineering, and Research

Charles B. Bott, PhD, PE, BCEE

Director of Water Technology and Research

Hampton Roads Sanitation District



# HRSD Drivers for Technology Research and Innovation

- **Process Intensification**
- Virginia Enhanced Nutrient Removal Certainty Program (ENRCP)
  - Load equivalent of TN = 4 mg/L by 2026
  - Load equivalent of TP = 0.3 mg/L by 2032
- SWIFT demands on wastewater nutrient removal
- Minimizing SWIFT capital and O&M costs
- Emerging treatment issues – PFAS, 1,4-dioxane, etc
- Biosolids – stabilization, land app, dewatering, product quality
- [Other research needs and objectives are managed by HRSD Water Quality]

# Technology Implementation at HRSD is Driven by:

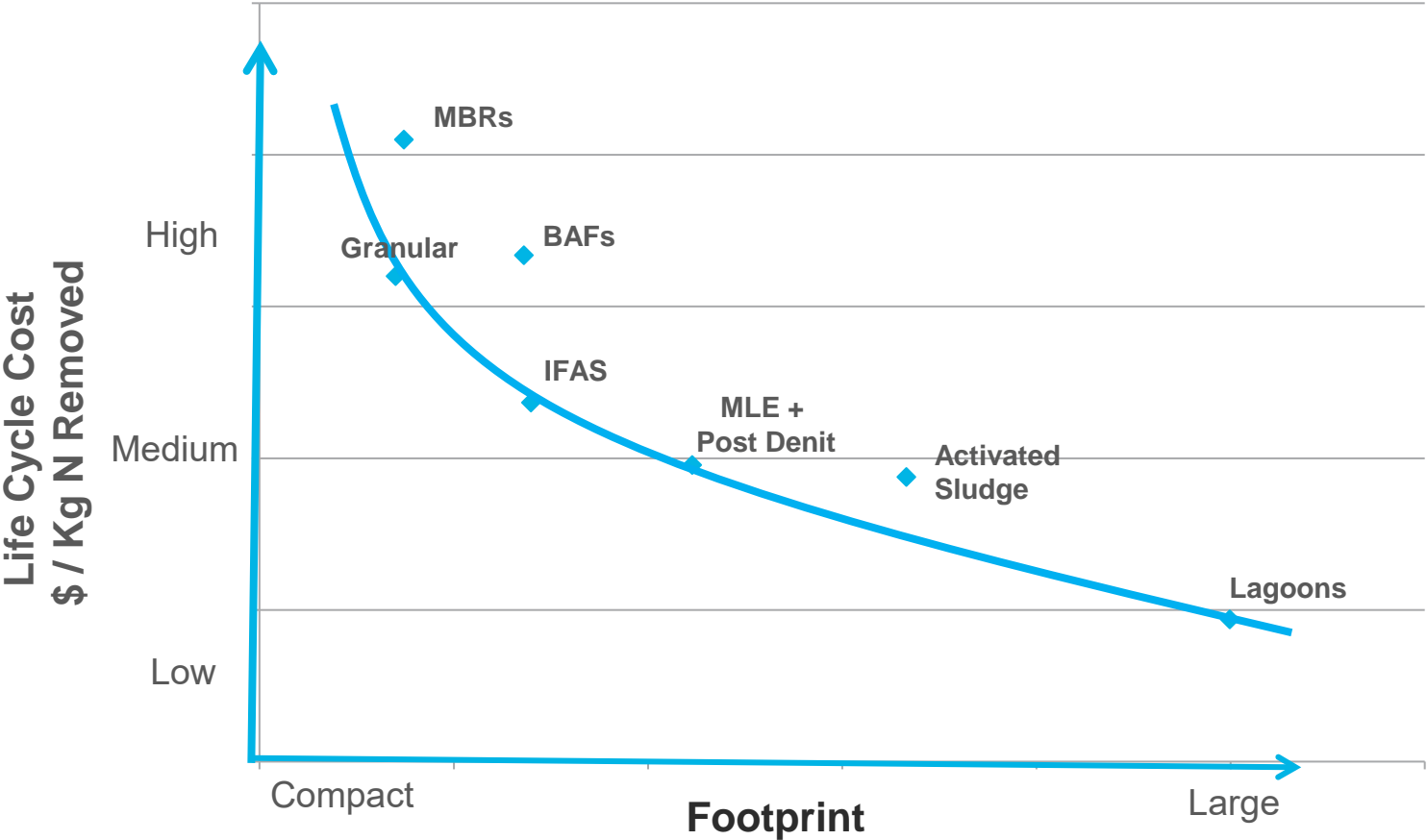
- MINIMIZING Resource Utilization:

- Energy
- Chemicals
- Labor (operations, maintenance, instrumentation...)
- Concrete, footprint, land area (CAPEX)

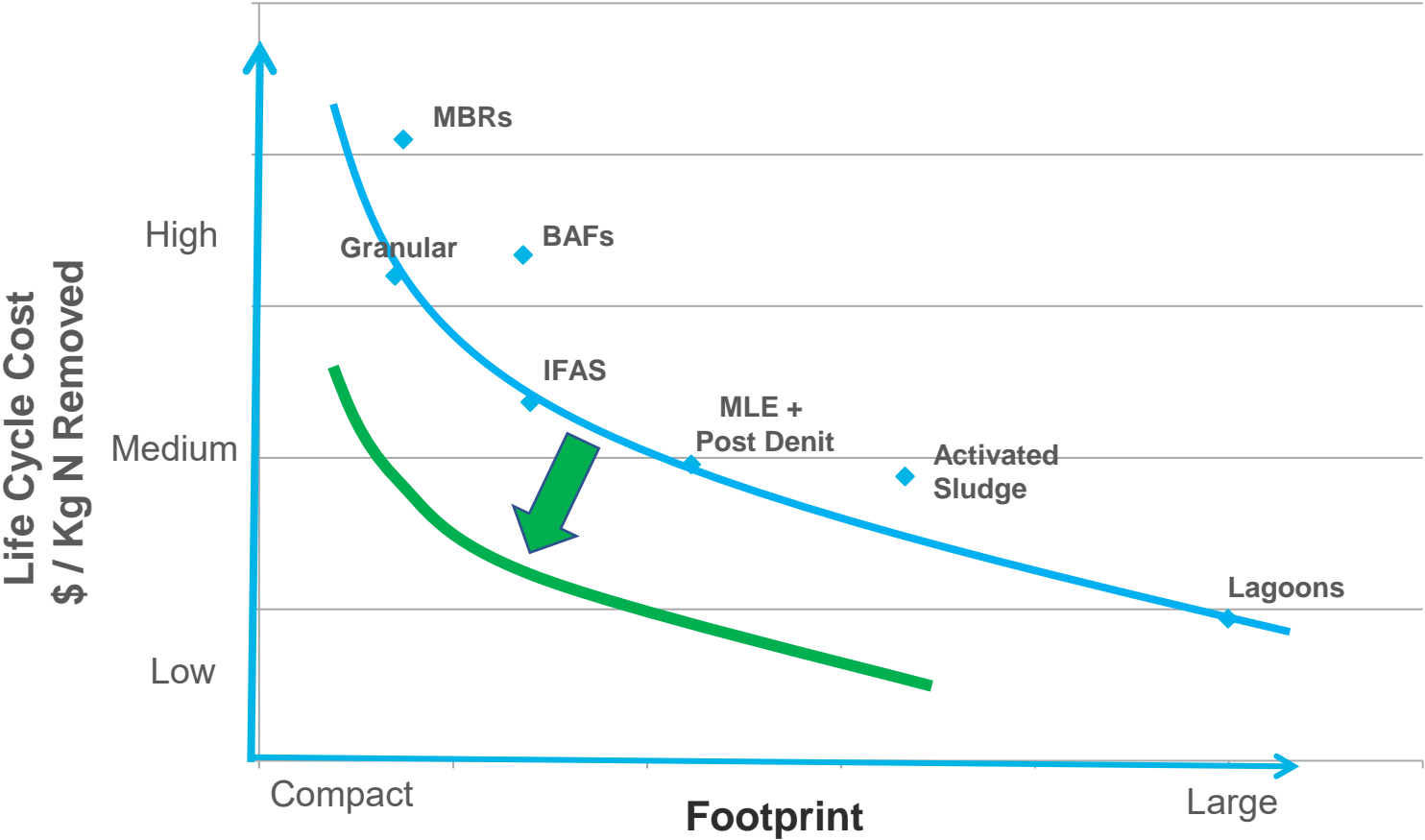
**Intensification**



# Nitrogen Removal Technologies - Conventional



# Nitrogen Removal - Intensified



# Technology Implementation at HRSD is Driven by:

- MINIMIZING Resource Utilization:
  - Energy
  - Chemicals
  - Labor (operations, maintenance, instrumentation...)
  - Concrete, footprint, land area (CAPEX)
- MAXIMIZING Resource Recovery (business case must be good)
  - Water (SWIFT)
  - P
  - N (can't compete right now)
  - CH<sub>4</sub> – biogas (electricity, RNG, etc)
  - Heat
  - Hydraulic energy?
  - Chemicals of interest (maybe)
  - Biosolids (N, P, organics)
  - Etc, etc, etc

**Intensification**

# Operations – Water Technology, Research, and Process Engineering

**1** Department Director - Bott

**1** Chief of Process Engineering & Research – Chris Wilson

**~15** MS and PhD student interns from VT, ODU, and other universities

- Environmental Engineering, but with varied backgrounds

---

**5** Treatment Process Engineers

**1** SWIFT RC Manager

- Plant operations assistance and troubleshooting
- Participation in capital project planning and design
- HRSD Water Technology & Research projects
  - HRSD staff support – TSD, CEL, E&I, Treatment, Facility Support, etc
  - Project work at an HRSD facility
  - Benefits – cost, education, university collaboration
- External research projects of interest to HRSD
  - HRSD funds/efforts leveraged to obtain grant funding
  - WRF, EPA, NSF, DOE, USBR

# HRSD-VT/ODU Collaborative Research Program MS & PhD



- Required: US citizen or permanent resident
- HRSD Provides
  - Internship salary (from start to finish)
  - Tuition and fees paid by HRSD on behalf of student – MS and PhD
  - Furnished apartment/house if needed (lease from HRSD)
  - Health insurance, if needed
  - Travel and conference expenses

## Student Expectations

Produce MS thesis or PhD dissertation  
Research work fulltime in Hampton Roads area, at one of our facilities

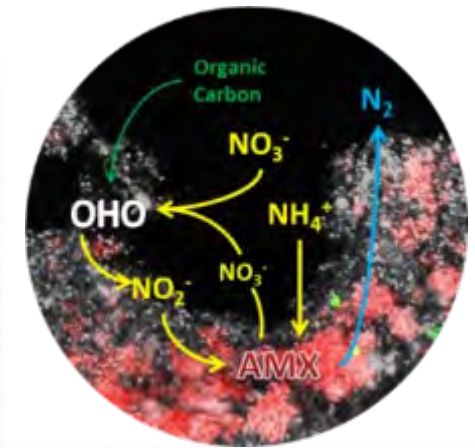
## Schedule – MS (18-24 months)

Pre-summer – located in Hampton Roads for initial project training  
Fall and Spring semesters – complete coursework at VT  
Summer – fulltime research work at HRSD  
MS thesis defense and final thesis submission



# Scale of “Research”

- Lab/Bench
- Pilot facilities:
  - VIP BNR Pilot Facility
  - SWIFT Research Center
  - James River PdNA Pilot Facility
- Full-scale plants - examples:
  - DEMON and AnitaMox startup/optimization
  - Ostara struvite recovery pilot testing
  - Ammonia-based aeration control & AvN implementation
  - Hydrograv technology evaluation
  - inDENSE® testing
  - Primary solids + FOG fermentation pilot study
  - AvN-PdNA testing and development
  - THP and dewatering improvements







# Ongoing Federal Grants – SWIFT & Mainstream Biological Treatment

- **EPA:** When a Detour becomes a Shortcut: Mainstream Partial Denitrification/Anammox
  - Lead: WRF
  - Partners: DC Water, Northwestern, Columbia, others
  - \$886,000 total, \$105,000 over two years to HRSD (SK time)
- **DOE:** Crossing the Finish Line: Integration of Data-Driven Process Control for Maximization of Energy and Resource Efficiency in Advanced Water Resource Recovery Facilities
  - Lead: WRF
  - Partners: DC Water, Denver Metro, BV, University of Michigan, Northwestern, ORNL, others
  - \$1.2 million, \$120,000 over 2 years to HRSD (SK, AG, JS time)
  - \$315,900 cost share
- **DOE:** Transforming Aeration Energy in Water Resource Recovery Facilities (WRRFs) through Suboxic Nitrogen Removal
  - Lead: Carollo
  - \$2 million total, \$80,000 over 2 years to HRSD (SK time and pilot supplies)
  - \$175,000 cost share
- **USBR:** Ensuring the Sustainability of Indirect Potable Reuse and Aquifer Recharge
  - Lead: Virginia Tech
  - Partners: Jacobs, transitioned to Hazen
  - \$0.5 million total, \$65,000 over 3 years to HRSD (pilot equipment and Hazen support)
  - ~\$660,000 cost share (attributed to SRC staff and operation)

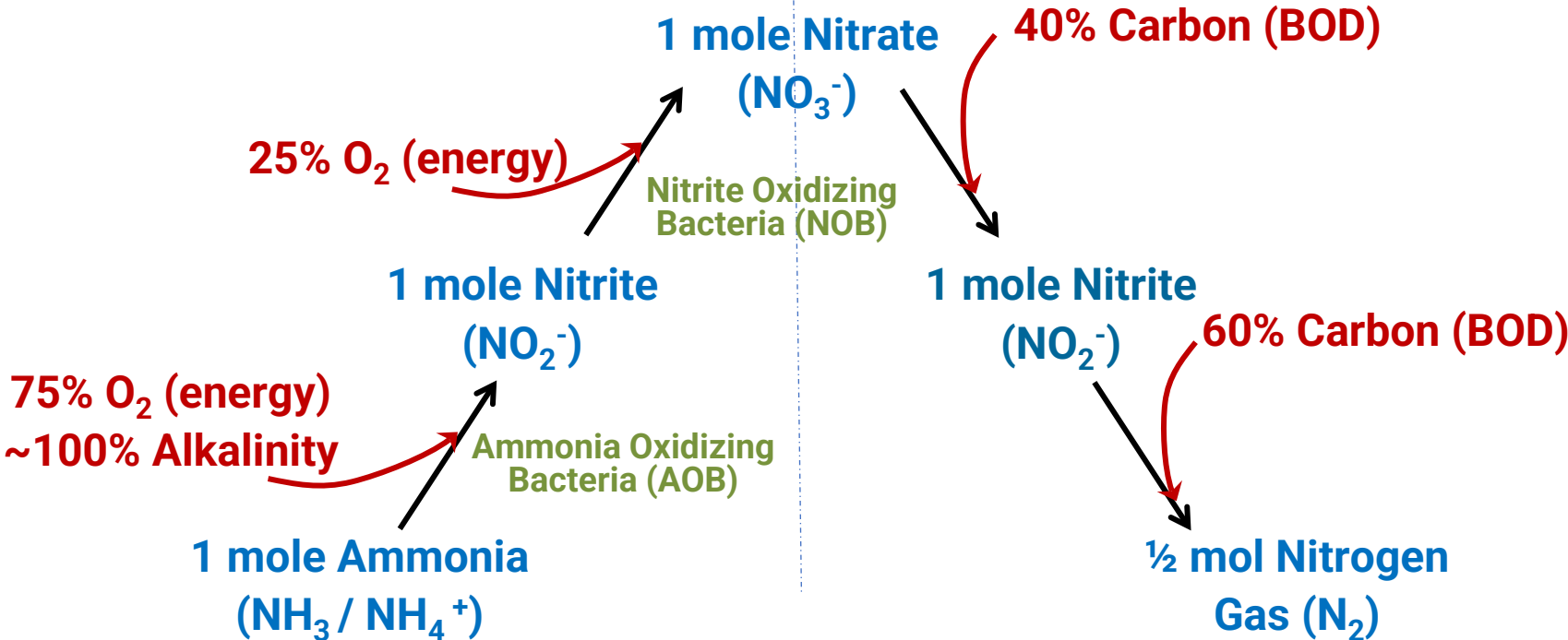




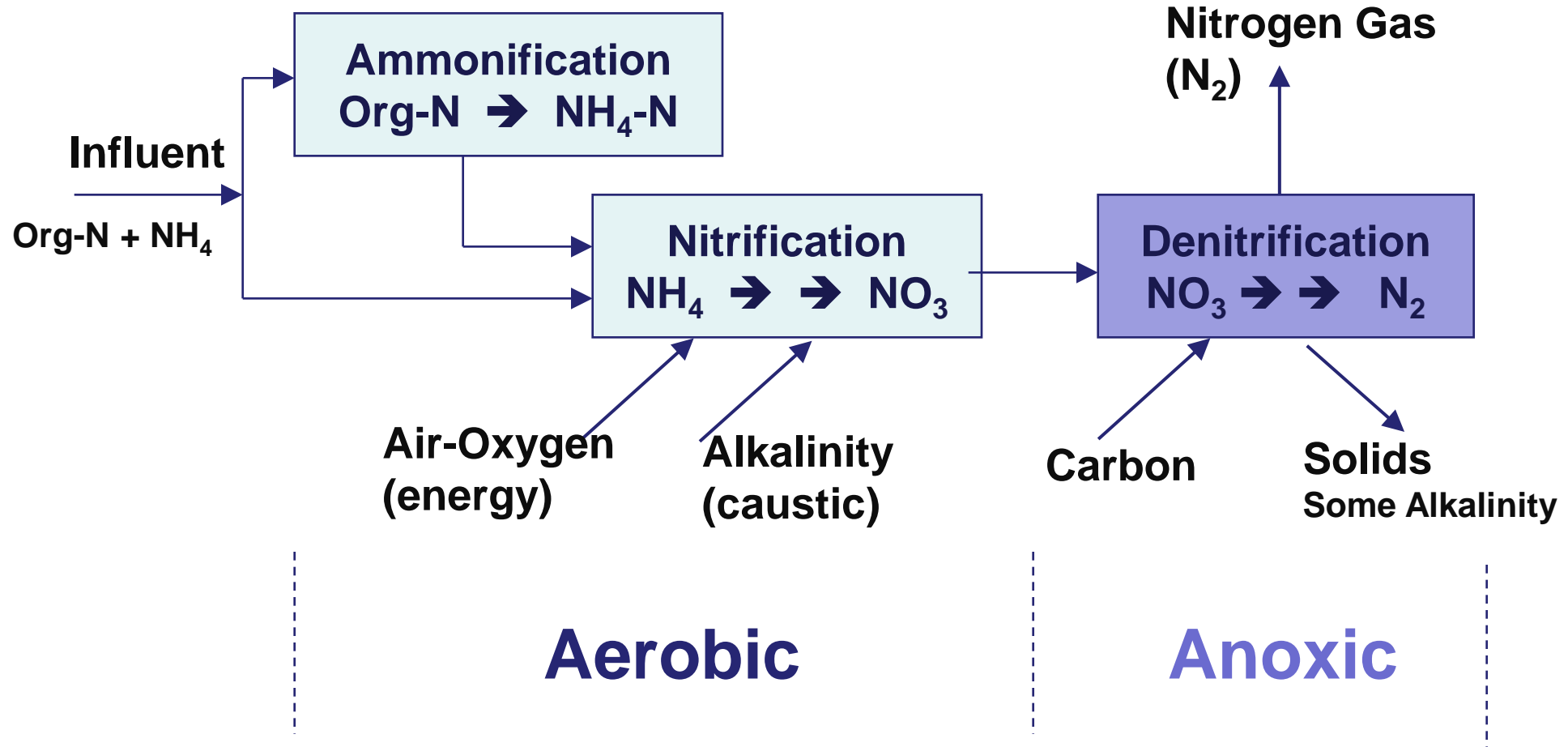
# Conventional Nitrification-Denitrification

**Autotrophic Bacteria**  
**Aerobic Environment**

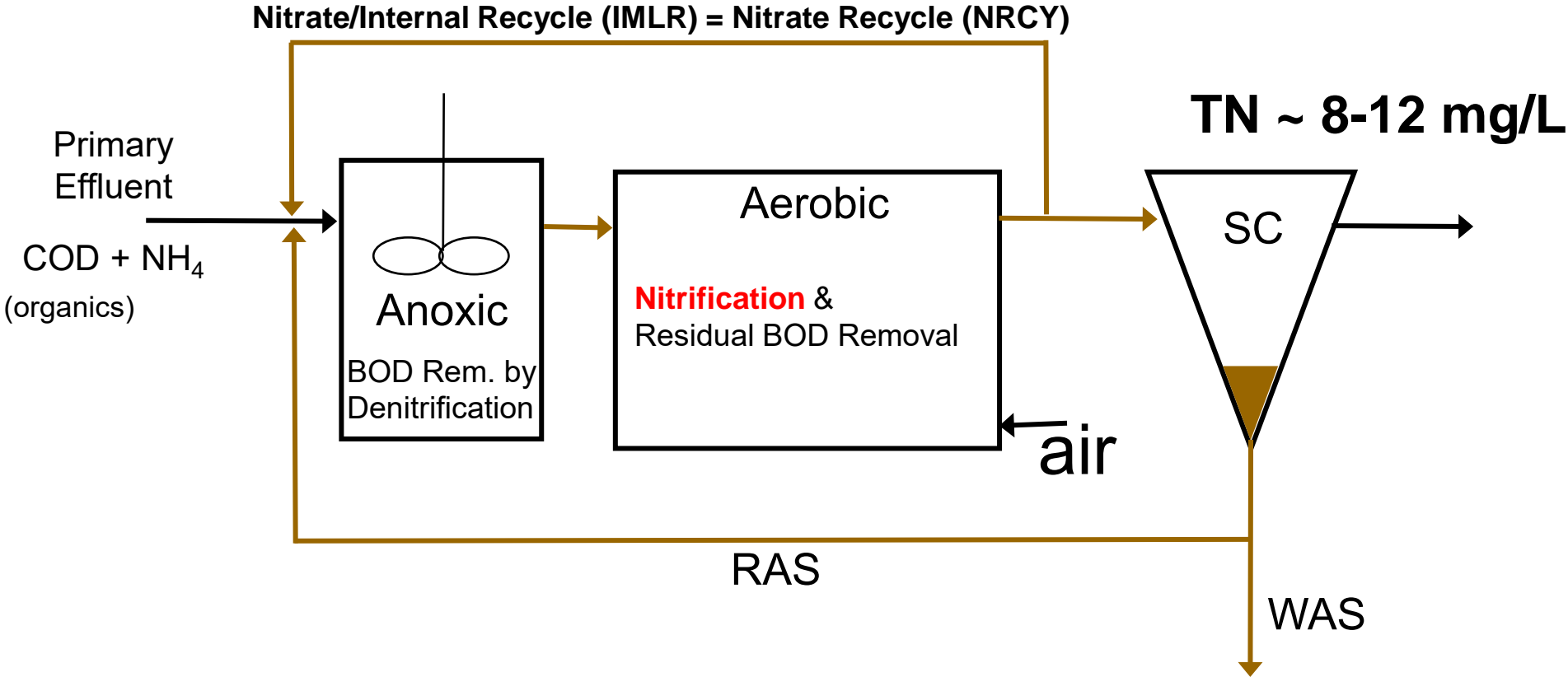
**Heterotrophic Bacteria**  
**Anoxic Environment**



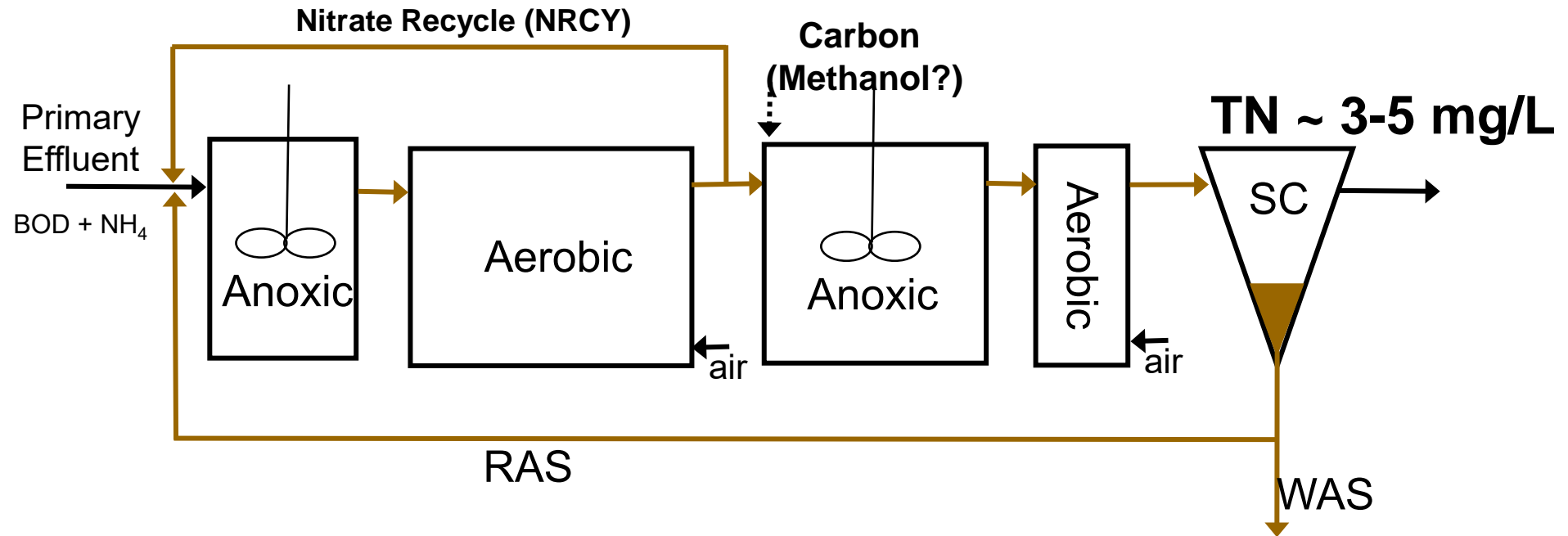
# Nitrogen Removal



# MLE Process (N Removal)



# 4-Stage Bardenpho (Better N Removal)



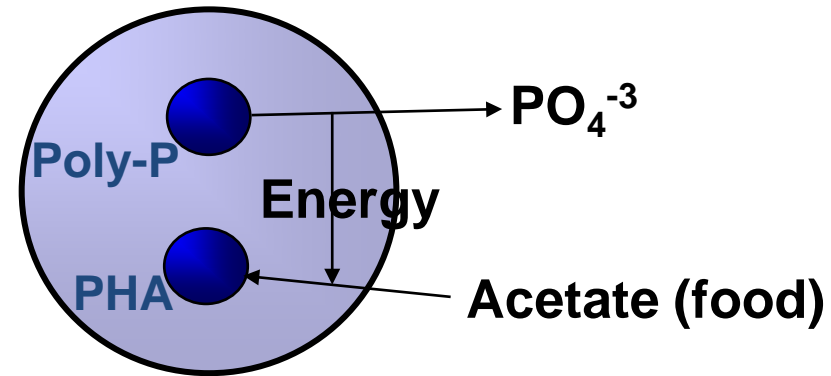
## What about phosphorus removal?

- Chemical precipitation
  - Alum = aluminum sulfate
  - Ferric = ferric sulfate OR ferric chloride
  - consumes alkalinity, generates solids
- Biological P removal (bio-P, EBPR, etc)

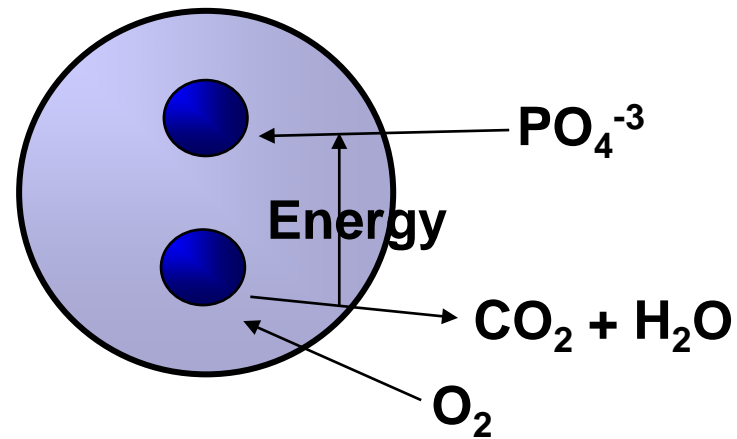
# Biological Phosphorus Removal (Bio-P)

Phosphorus accumulating organisms (PAOs) have a unique anaerobic/aerobic metabolism

## Anaerobic Conditions



## Aerobic Conditions

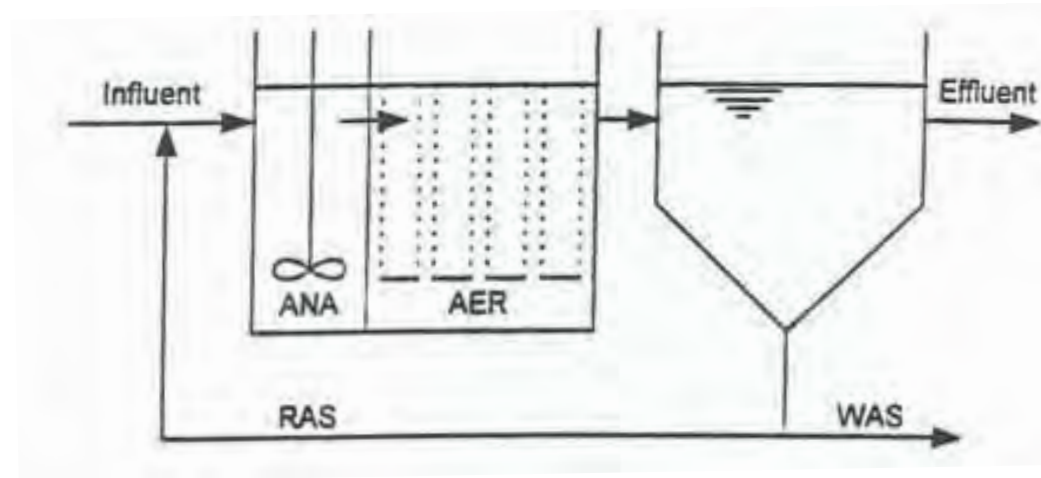


Poly-P = granule of poly-phosphate

PHA = granule of polyhydroxyalkanoate

# Bio-P in A/O Process

A/O Process

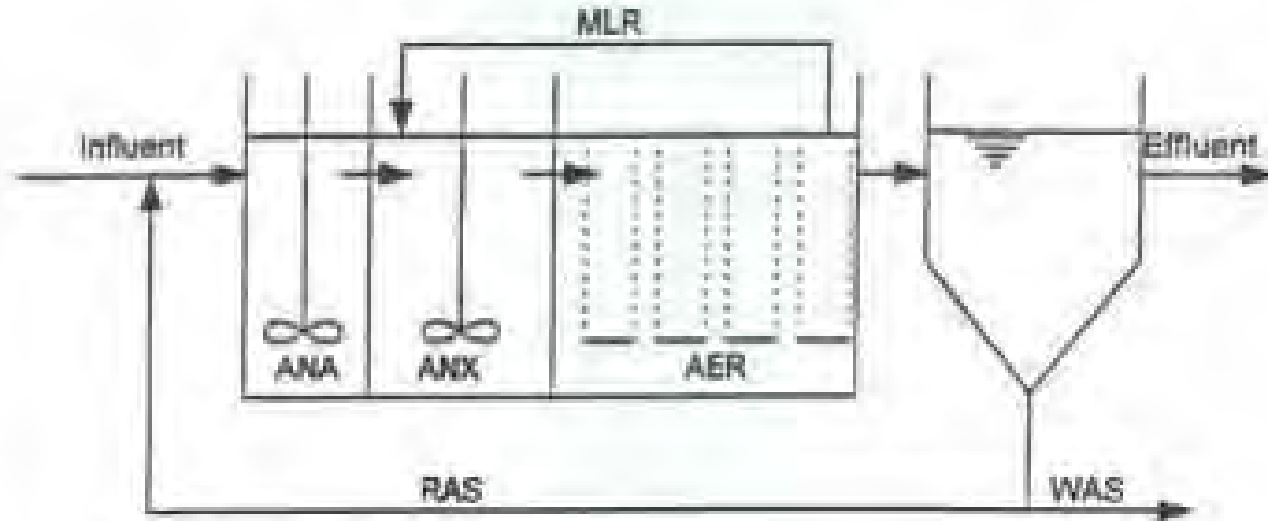


ANA = Anaerobic

AER = Aerobic

Addition of an anaerobic selector...

# Add Bio-P to MLE... “A2O Process”



A<sup>2</sup>O or Phoredox Process

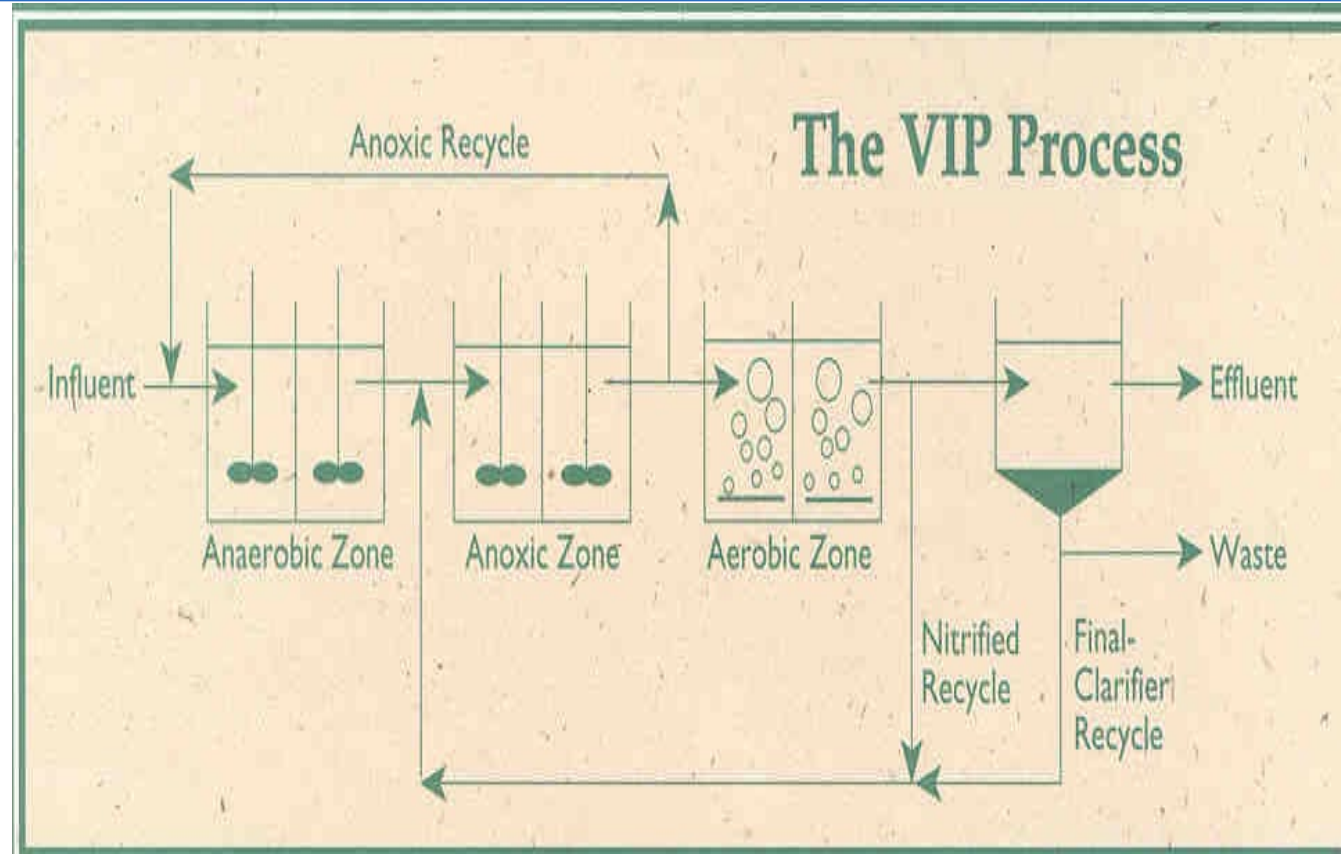
ANA = Anaerobic

ANX = Anoxic

AER = Aerobic

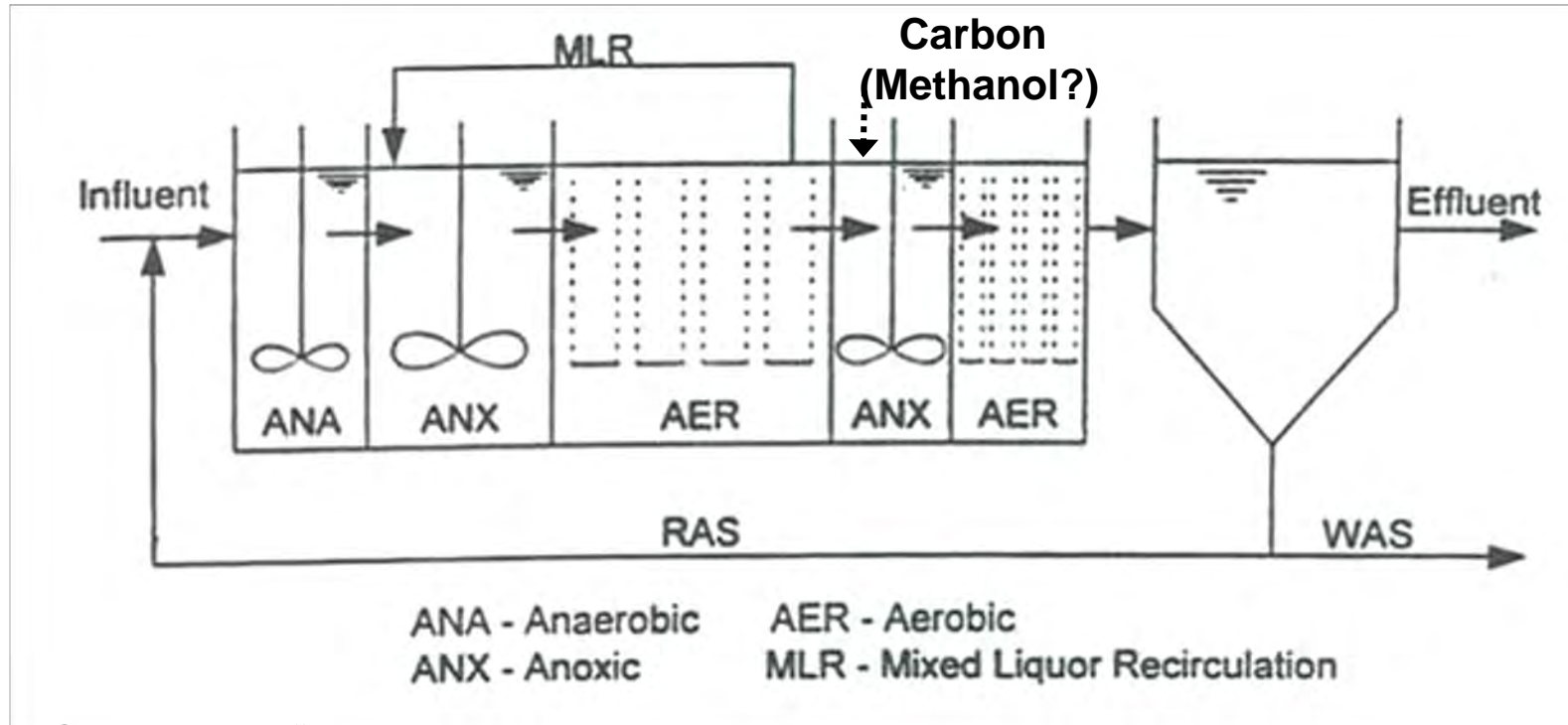


# Virginia Initiative Process (VIP)



- Developed collaboratively by HRSD, Virginia Tech, and CH2M Hill
- Biological N and P removal

# 5-Stage Bardenpho



Generally - "5-stage BNR"

Add second anoxic zone to a Bio-P processes  
(for example VIP + 2, MUCT+2, A2O+2, etc)



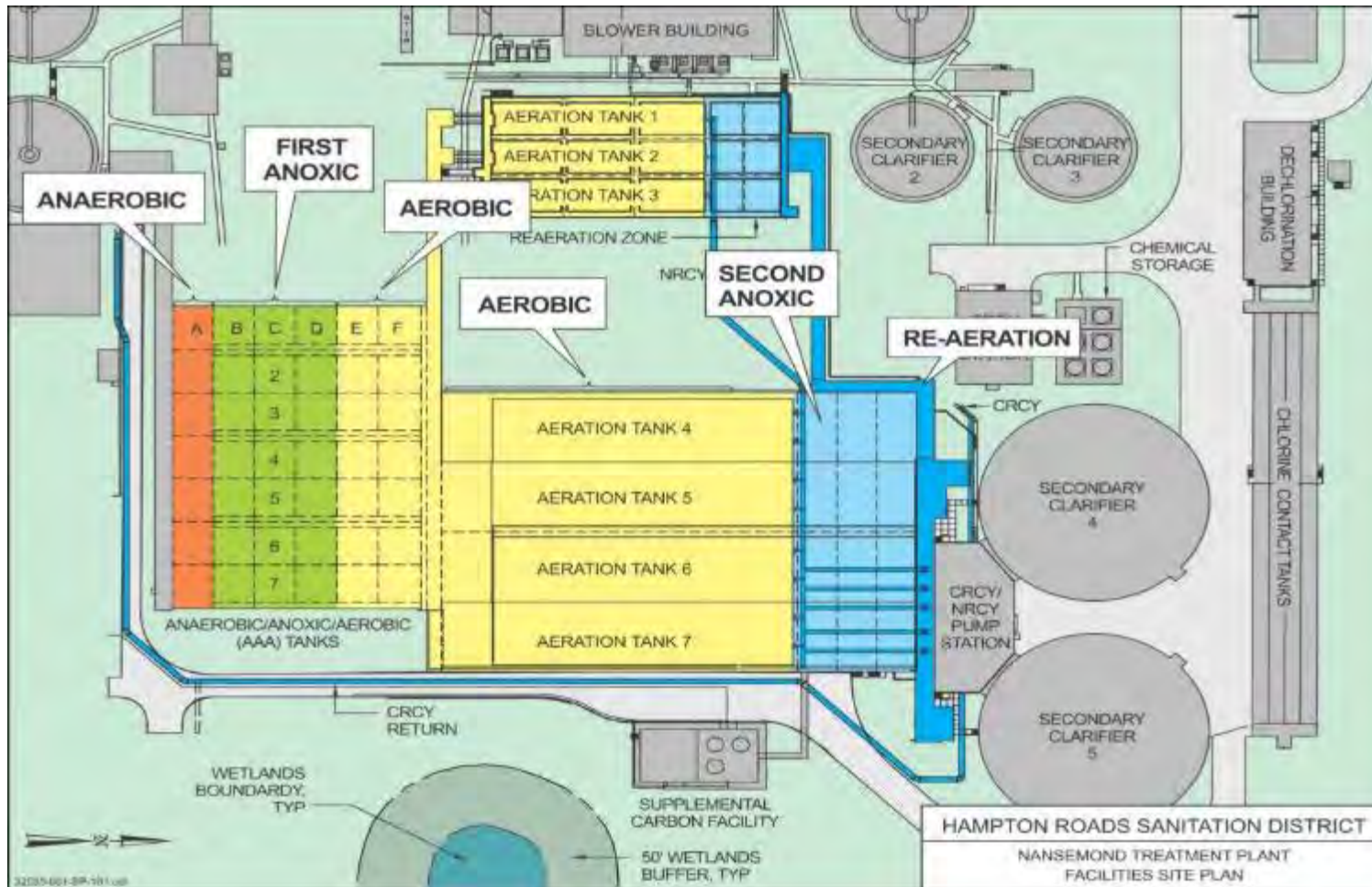
# SWIFT Research Center (1 MGD) at HRSD Nansemond Treatment Plant (30 MGD)





# Nansemond Plant - 5-Stage Bardenpho Configuration

## Stable and reliable TN removal is a must!

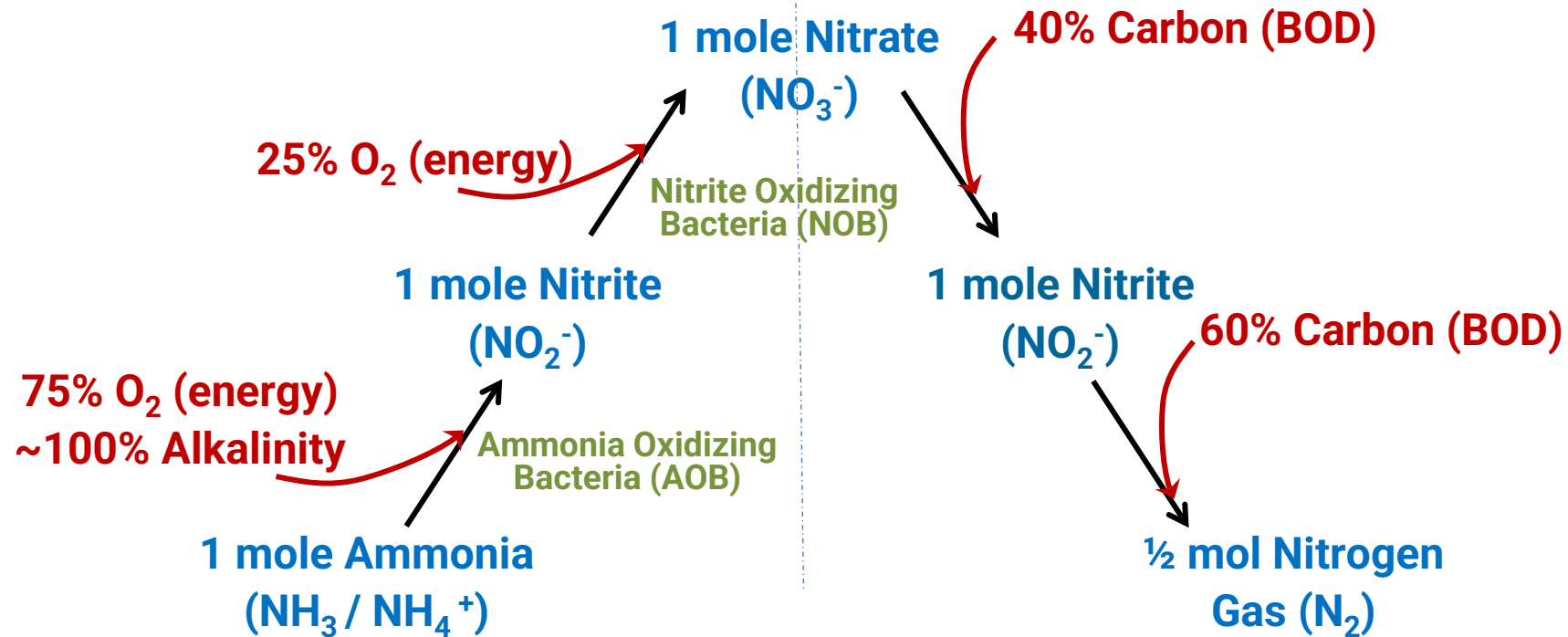


- **Feedback ammonia-base aeration control**
- **Feedback nitrate-based internal mixed liquor recycle (NRCY) flow control**
- **Feedforward/feedback methanol feed control**

# Conventional Nitrification-Denitrification

**Autotrophic Bacteria**  
**Aerobic Environment**

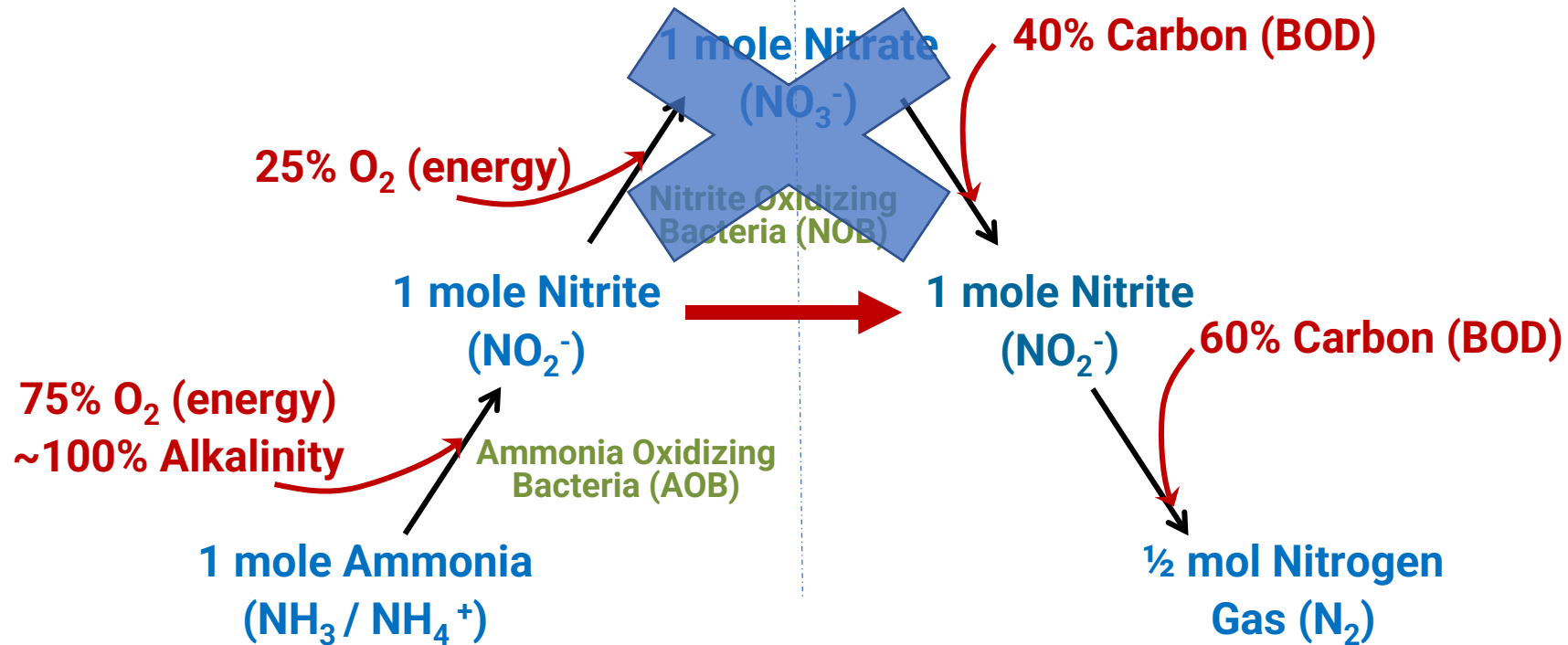
**Heterotrophic Bacteria**  
**Anoxic Environment**



# Nitrite Shunt - a form of "Shortcut Nitrogen Removal"

Autotrophic Bacteria  
Aerobic Environment

Heterotrophic Bacteria  
Anoxic Environment

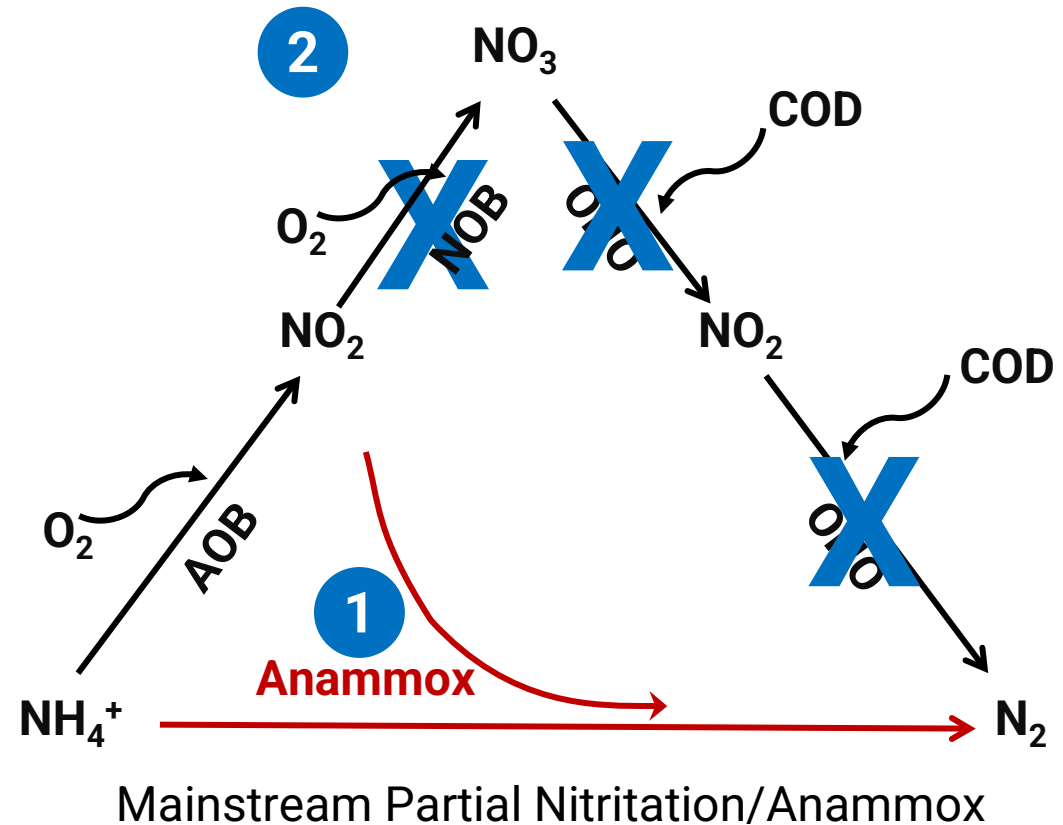


# Deammonification through Partial Nitritation-Anammox (PNA)

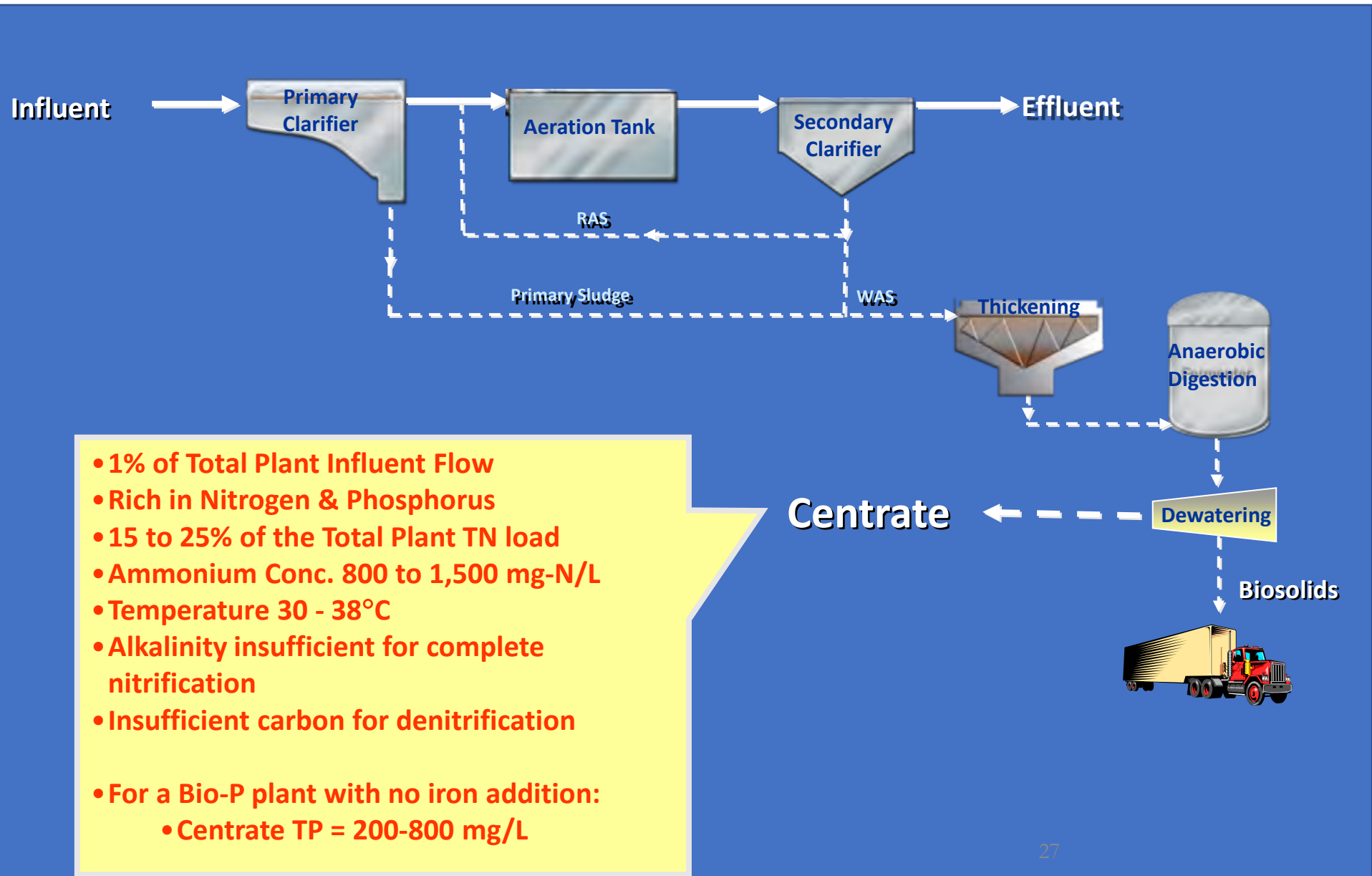
{PNA is the “best” form of Shortcut Nitrogen Removal}

## Main challenges:

1. Sufficient **retention of anammox** while allowing for SRT pressure on other organisms
2. Nitrite availability for anammox through **NOB out-selection**



# Sidestream Treatment – N & P

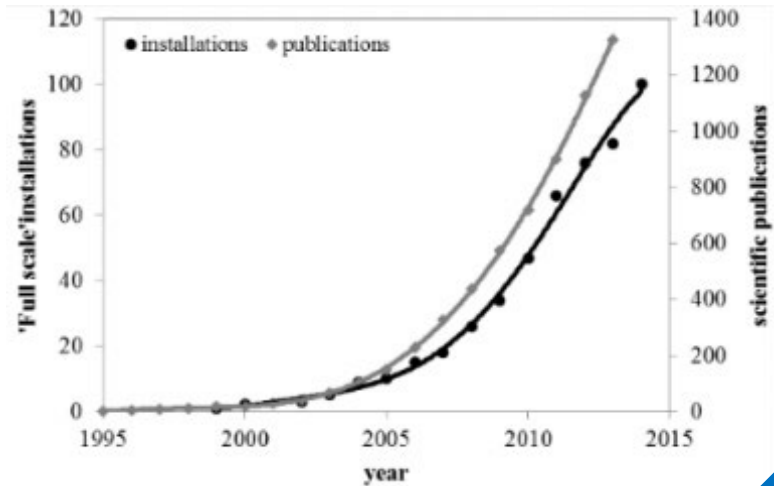




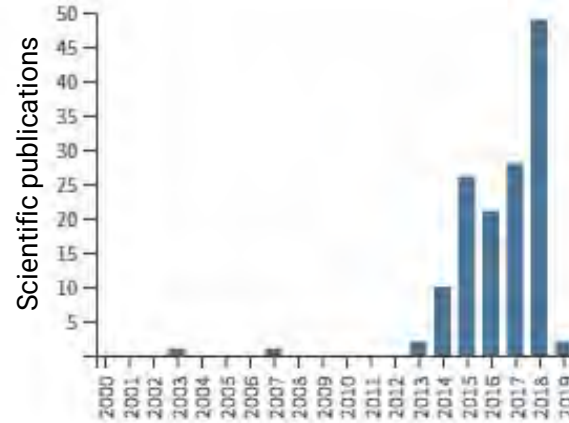


**DEMON<sup>®</sup> PNA at HRSD York River (15 MGD) - 2012**

# Partial Nitrification-Anammox (PNA) Sidestream vs. Mainstream



Lackner et al., 2014, WR



**Mature and robust process with 100-200 Full-Scale installations including:**

- HRSD York River TP Demon (2012)
- HRSD James River TP AnitaMox (2013)

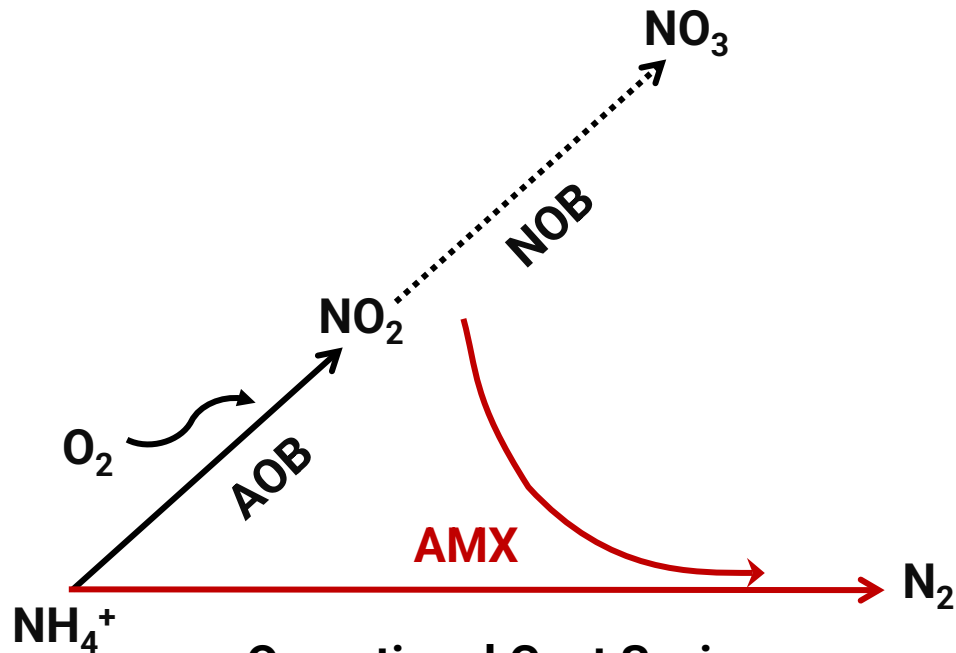
**Limited full-scale reports of mainstream PNA:**

- Strass, Austria (Wett et al, 2013)
- PUB Changi, Singapore (Cao et al, 2016)
- Xi'an, China (Li et al, 2019)

**The complexity of NOB out-selection limits full scale implementation of mainstream deammonification**

# Taking a DETOUR to achieve mainstream shortcut N removal – Partial Denitrification-Anammox (PdNA)

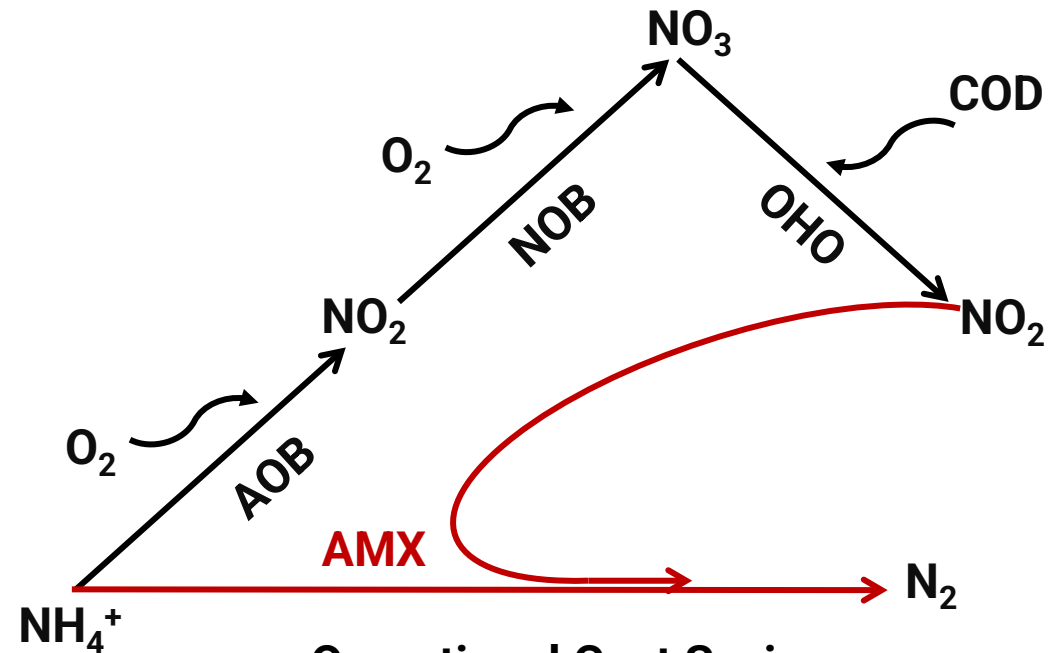
## PNA = NOB Out-Selection Route



### Operational Cost Savings:

- 60% in aeration
- 100% in carbon

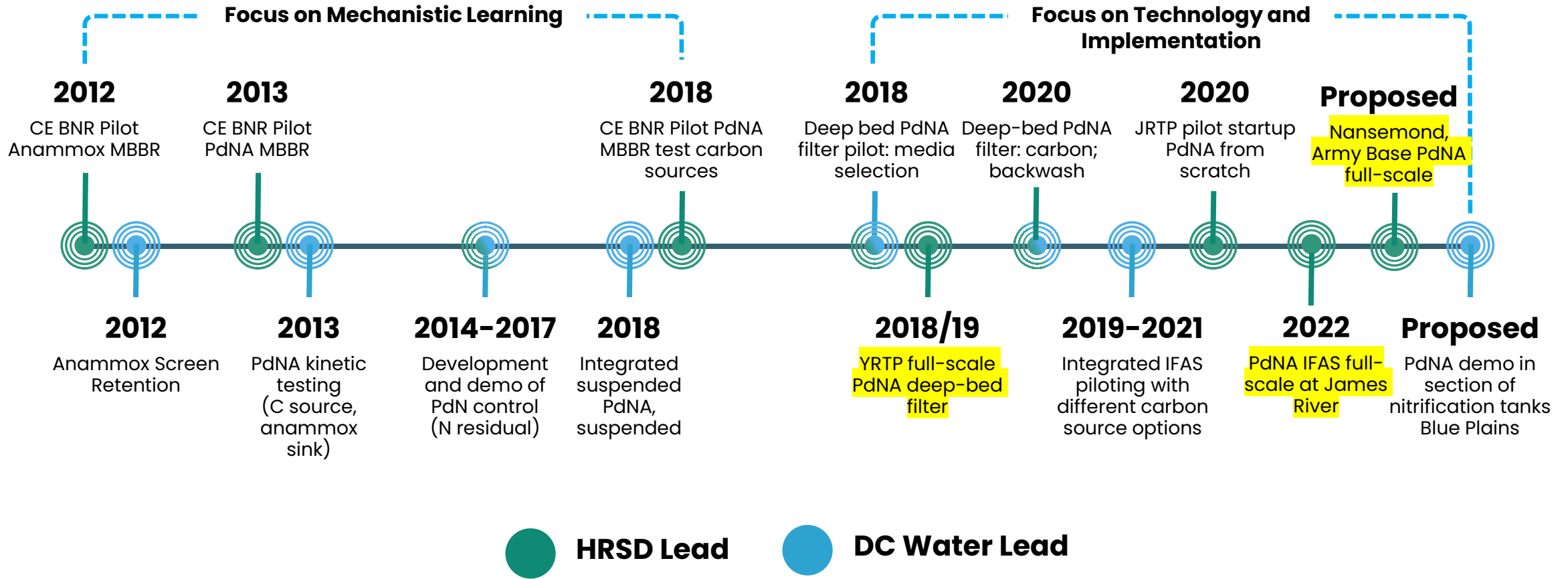
## PdNA Route



### Operational Cost Savings:

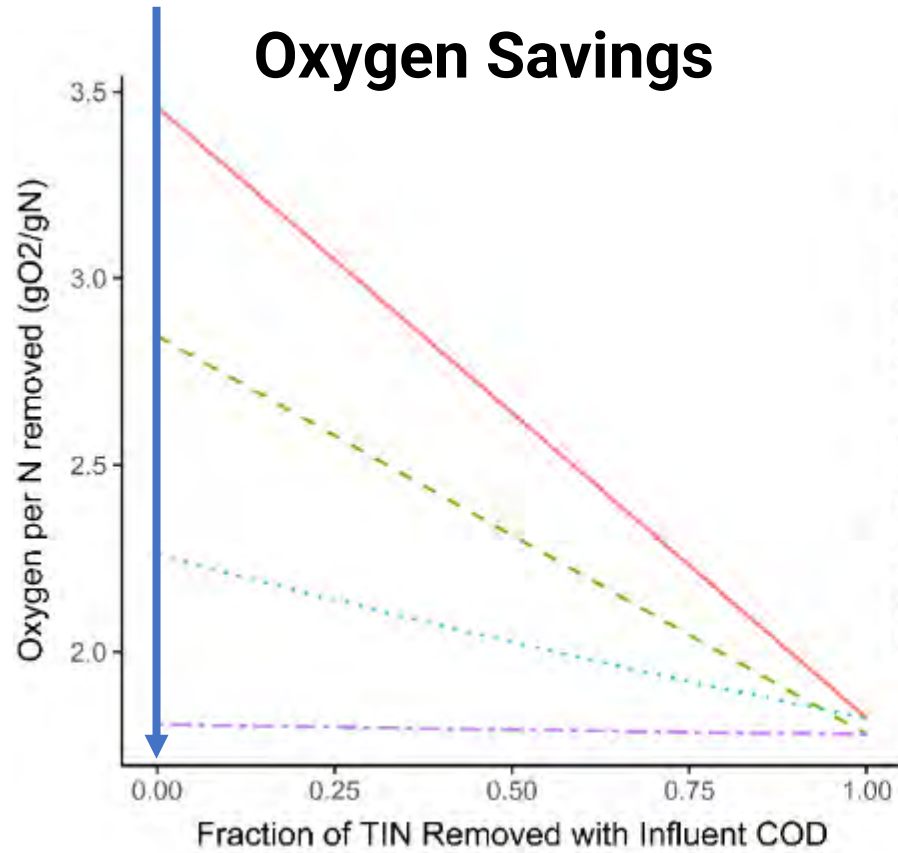
- 50% in aeration
- 80% in carbon

# Partial Denitrification/Anammox (PdNA) Development Timeline

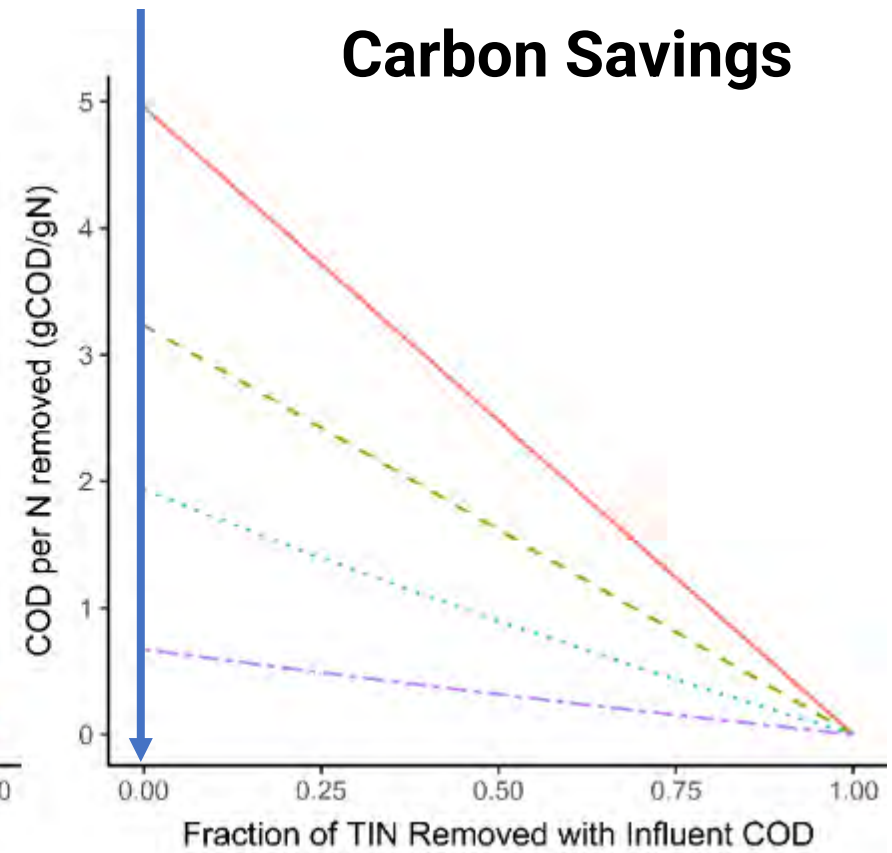


# Benefits of Shortcut N Removal

PNA 60%  
PdNA 50%



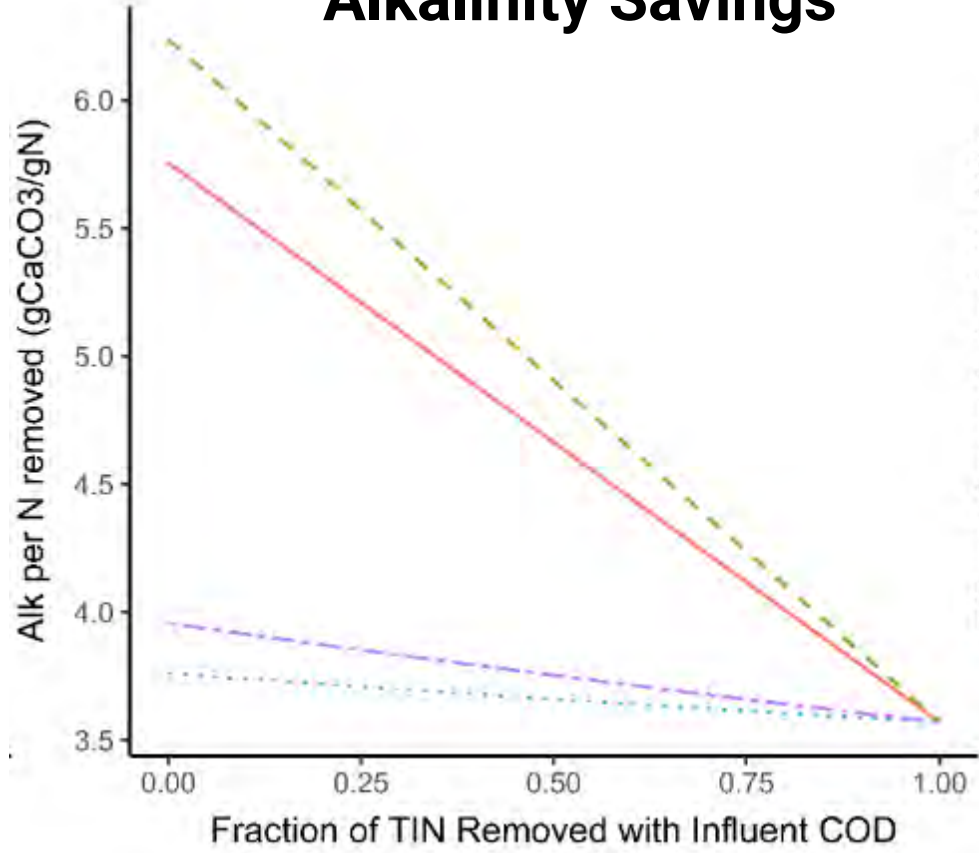
PNA 100%  
PdNA 80%



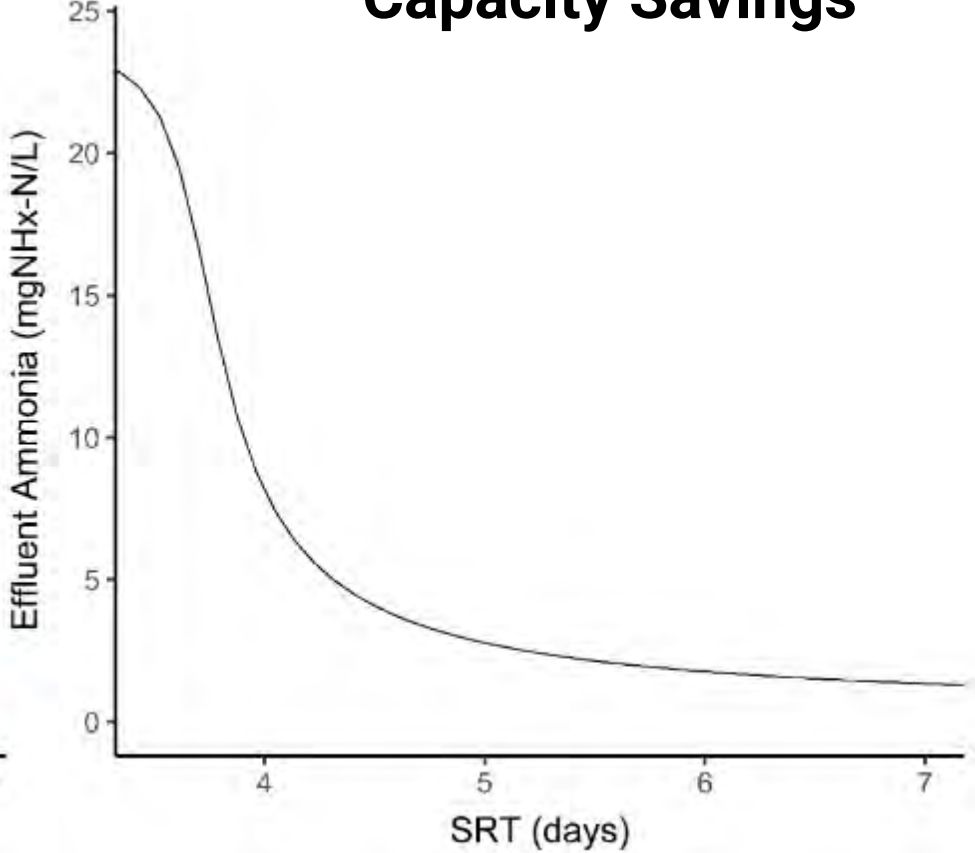
— Conventional — Nitrite Shunt ... PdNA - - PNA

# Benefits of Shortcut N Removal

## Alkalinity Savings

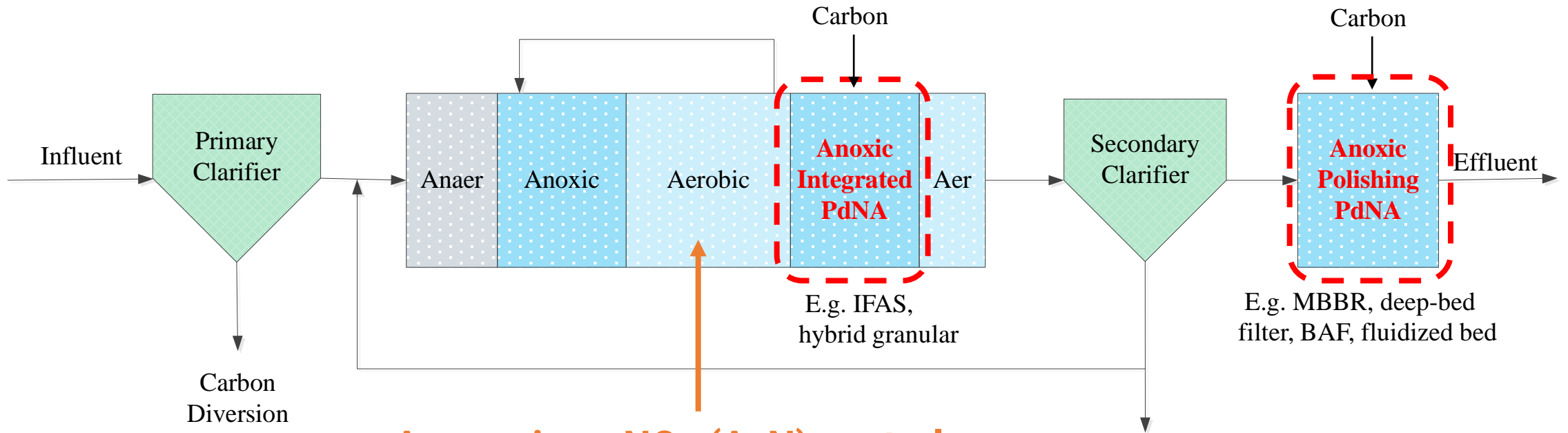


## Capacity Savings



— Conventional    - - Nitrite Shunt    ... PdNA    - . PNA

# Polishing PdNA Implementation – Post Anoxic



**Ammonia vs NO<sub>x</sub> (AvN) control =**  
**Maintain target NH<sub>3</sub>/NO<sub>x</sub> ratio based on controlling:**

- DO
- Aeration time
- Step feeding
- etc



# PdNA in York River Full-Scale Denite Filters since 2018/19



Deep-bed filters with 2 to 3 mm silica sand and NO<sub>3</sub>-based feedforward-feedback methanol dosing control

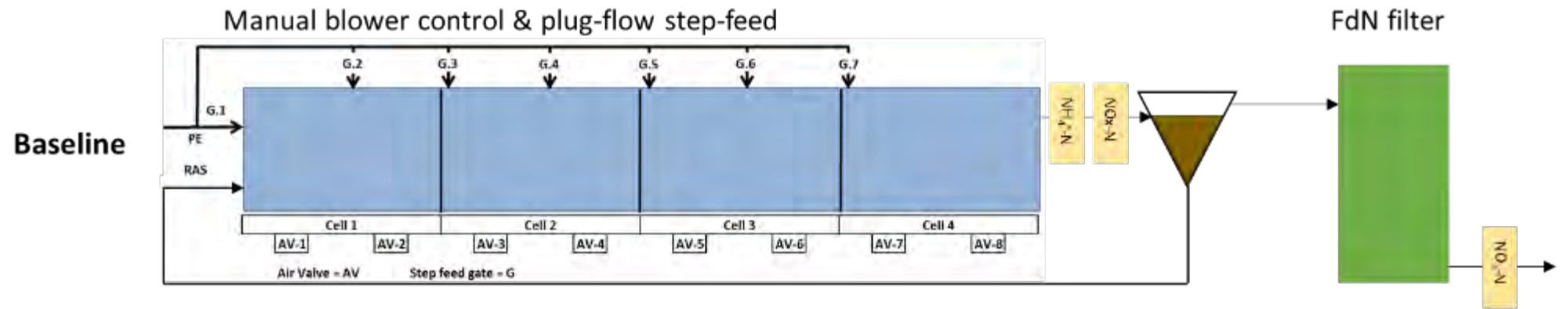


## How did we grow mainstream anammox?

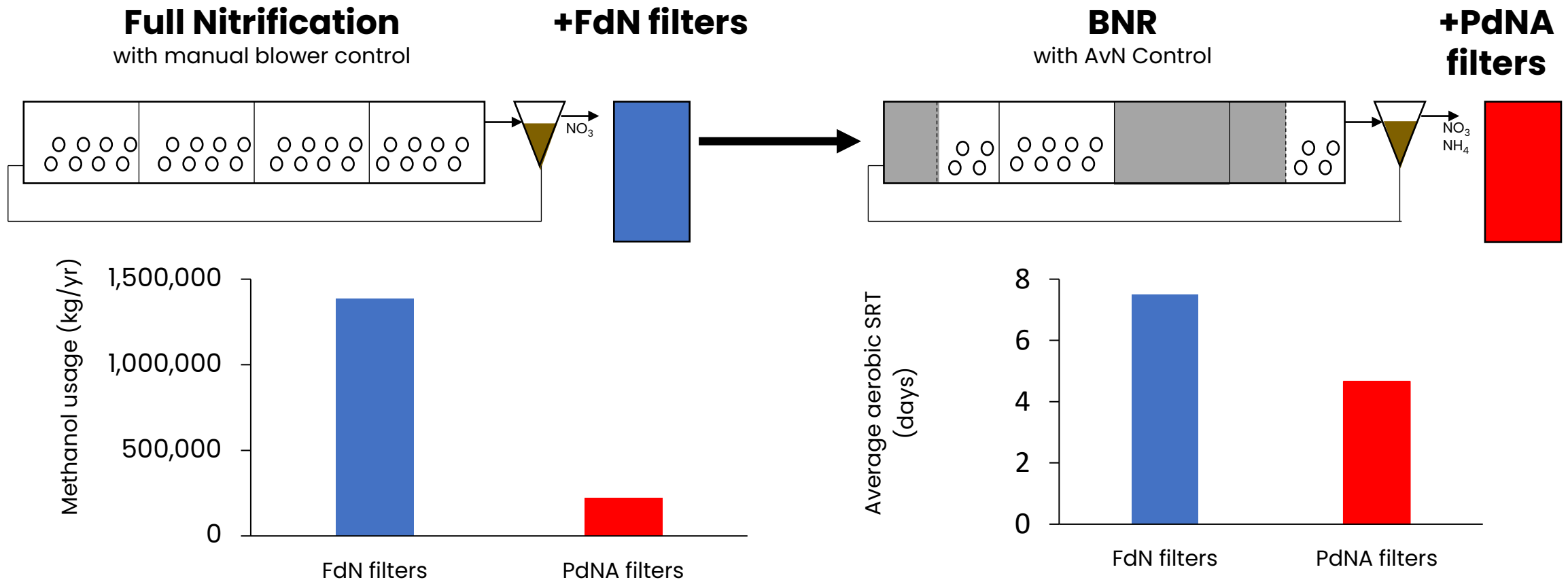
1. Tight methanol dosing control (provide stable nitrate residual)
2. Rough AvN control upstream
3. Minimize backwash and air scour
4. Wait patiently



# York River Full-Scale Filters

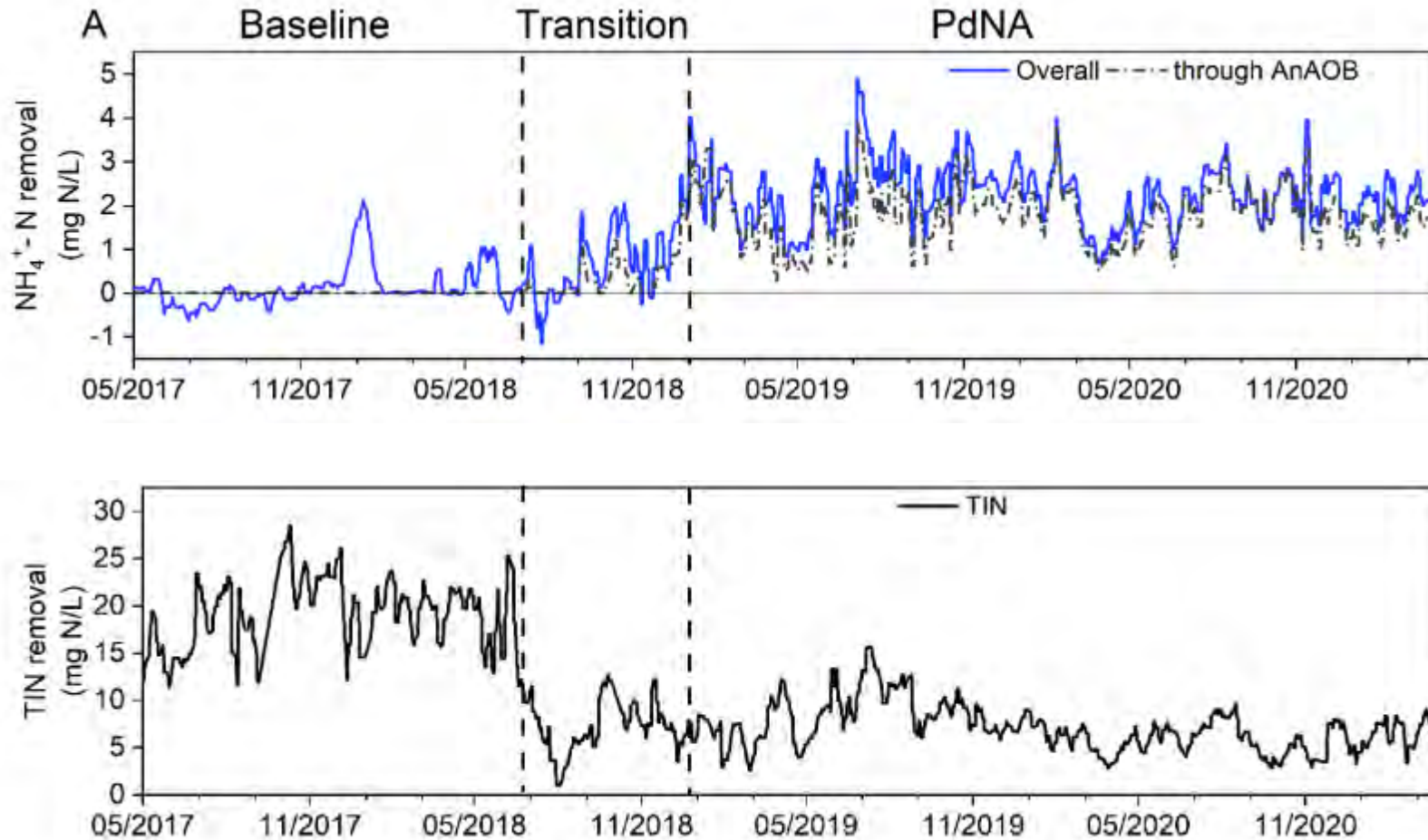


# Chemical/Energy Savings and Increased Capacity (York River)



Fofana, R., Parsons, M., Long, C., Chandran, K., Jones, K., Klaus, S., Trovato, B., Wilson, C., De Clippeleir, H., & Bott, C. 2022. Full-scale transition from denitrification to Partial denitrification – anammox (PdNA) in Deep-Bed filters: Operational strategies for and benefits of PdNA implementation. *Water Environment Research*.

# York River Full-scale PdNA Outcome



## • O&M Savings

- Methanol = \$600k/yr
- Caustic = \$140k/yr
- Ferric = \$200k/yr
- Electricity = >\$100k/yr
- TOTAL = ~\$1M/year

## • Capital cost avoided

- ~\$50M, but wouldn't have achieved as much OPEX reduction

# York River Filter Pilot (HRSD/DCWater/Xylem)



**Glycerol**  
VS  
**Methanol**



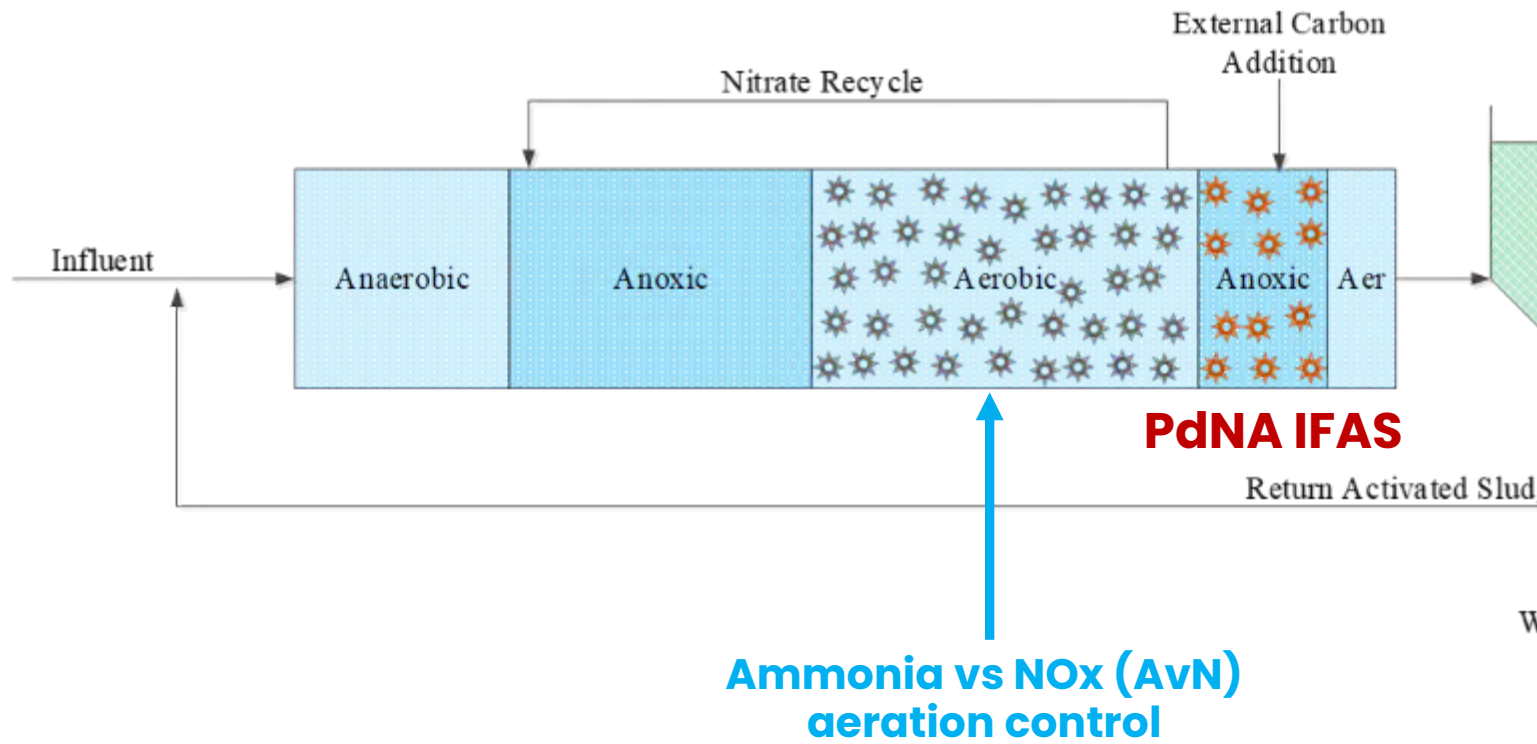
- Two downflow filters
- 6 ft deep bed x 1 ft<sup>2</sup>
- Feedback carbon dosing control
- Seeded media from full-scale filters

## Results:

1. Glycerol filter had higher PdN efficiency but not different enough to justify switching from methanol to glycerol in the full-scale filter.
2. Anammox could not be washed out of the system under the extreme stresses applied to the filters
3.  $AvN < 0.55$  (MeOH) and  $AvN < 0.65$  (Glyc) were required to achieve effluent  $TIN < 3$  mg N/L
3. Anammox biomass was not limited
4. PdNA filters functional at typical design loads for denite filters, in fact PdN efficiency improved at higher loading rates which means...
5. No compromises in full-scale design to accommodate PdNA, other than sensors and controls



# PdNA Plans for the James River Upgrade





# Post Anoxic Zone – IFAS PdNA Startup Pilot



Methanol  
WWW2 (800 m<sup>2</sup>/m<sup>3</sup>)  
50% FF

Glycerol  
WWW1 (650 m<sup>2</sup>/m<sup>3</sup>)  
50% FF

# PdNA Startup Results

Startup of a mainstream PdNA in an MBBR and IFAS configuration is possible within 2-3 months without anammox biomass seeding with low ammonia and nitrite concentrations.

Reactor	Ammonia removal first detected in-situ (days from startup)	Anammox activity confirmed with maximum activity test (days from startup)	Reactor NH <sub>3</sub> concentration prior to detection of anammox (mg/L)	Reactor NO <sub>2</sub> <sup>-</sup> concentration prior to detection of anammox (mg/L)
PdNA MBBR Preliminary Biofilm	45	52	0.92 ± 0.88	1.3 ± 0.8
PdNA MBBR Virgin Media	60	86	1.94 ± 1.32	2.17 ± 0.94
PdNA IFAS 1 (Glycerol and W1)	64	96	1.31 ± 0.97	1.3 ± 0.64
PdNA IFAS 2 (Methanol and W2)	85	96	1.23 ± 1.07	1.18 ± 0.57

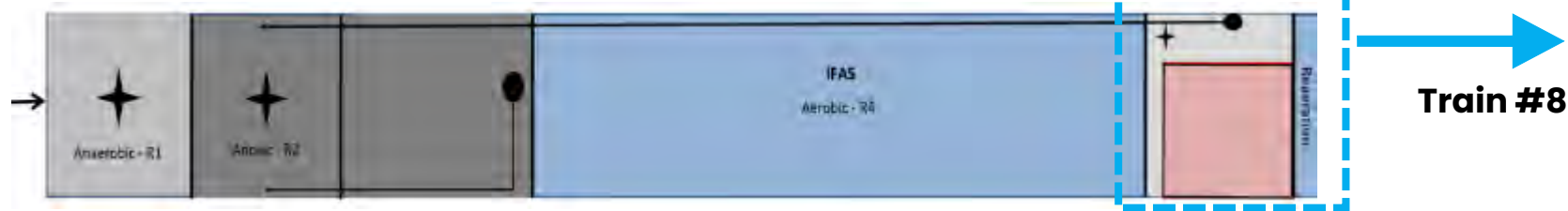


# Full-Scale PdNA IFAS Demonstration



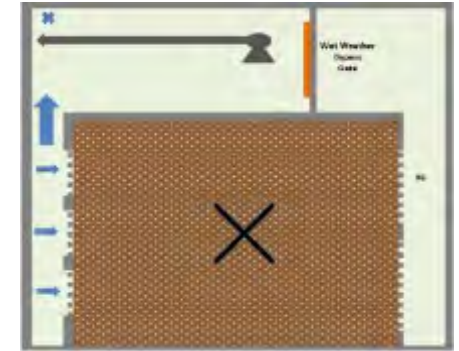
Converting second anoxic zone of 2 of the 9 trains to PdNA

- HRT is roughly 20 minutes
- This concept can apply to any plant with a second anoxic zone

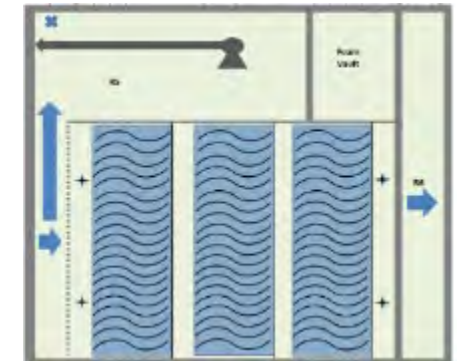


▲ Each train is A2O process with small second anoxic zone

## Moving Media IFAS



Train #5



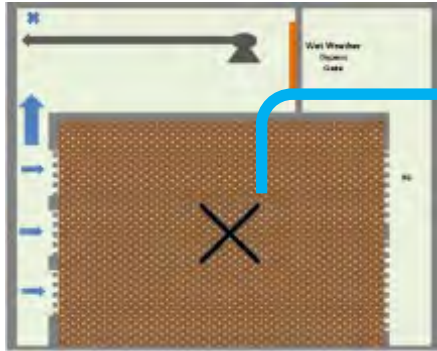
Train #8

## Fixed Media IFAS

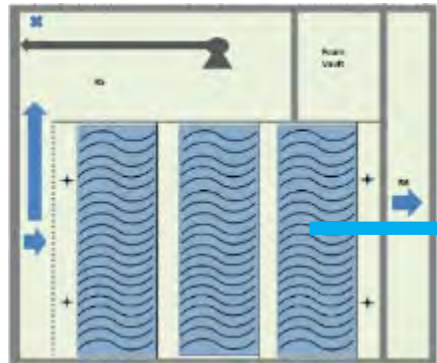


# Full-Scale PdNA IFAS Demonstration

**Moving Media IFAS**

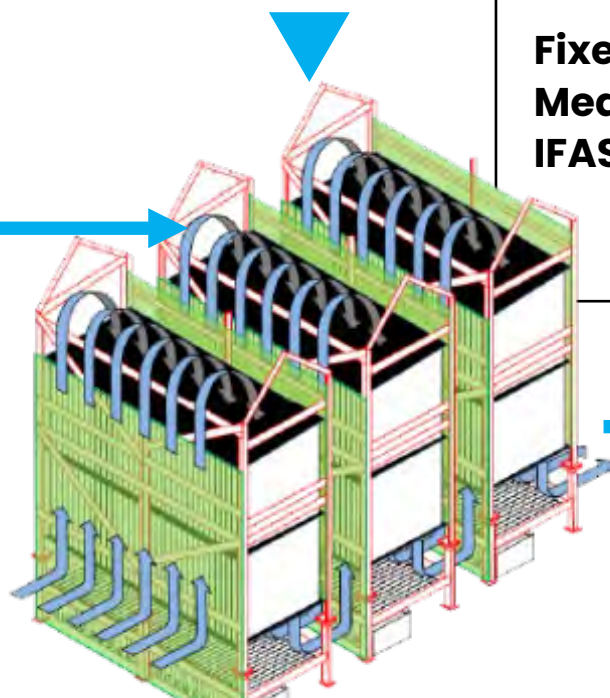


**Plastic media biofilm carriers**

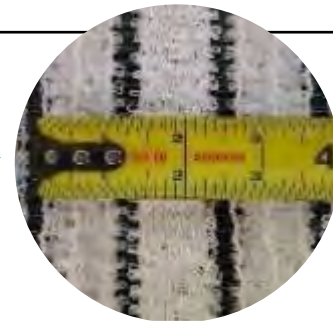


**Fixed Media IFAS**

**Modules**



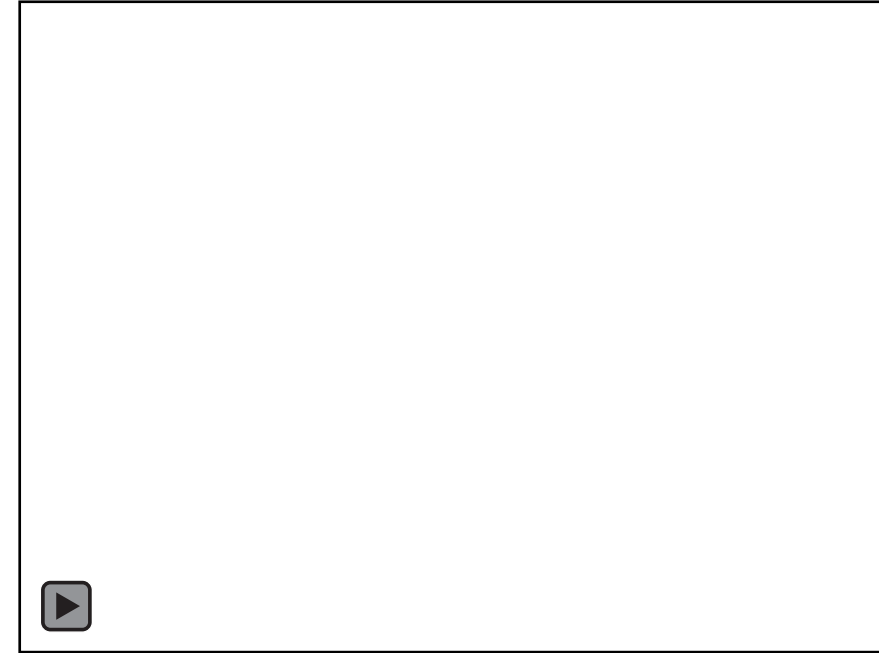
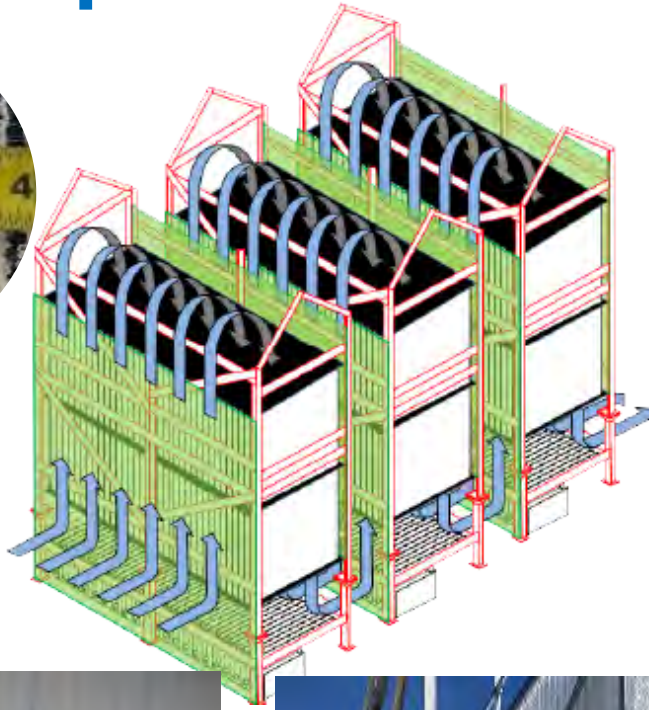
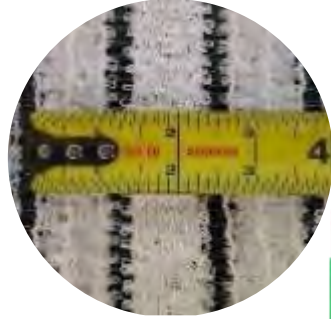
	Construction	Pros	Cons
<b>Moving Media IFAS</b>	Baffle walls Retention screens Mixers	Media: Tried and true, lots of options, higher specific surface area  Experience at pilot-scale  Lots of full-scale installations	Hydraulic restrictions (head loss) require wet weather bypass for retrofit
<b>Fixed Media IFAS</b>	Modules	Plug-and-play means easy retrofit  No head loss  Better suited for plug flow than moving media	Media: Limited options available, lower specific surface area  Need to provide effective mixing and biofilm control



**Biofilm attached to fabric sheets**



# FIFAS – Design and Development



# Full-Scale PdNA IFAS Demonstration: Current Status

1. MIFAS in tank 5 starting up now
2. FIFAS in Tank 8 to be completed in September
3. Based on very successful pilot work, we decided to move ahead beyond the demonstration to build out MIFAS in the 7 remaining tanks. In construction, to be completed by the end of summer.





# Nansemond Plant Expansion – 30 to 50 MGD





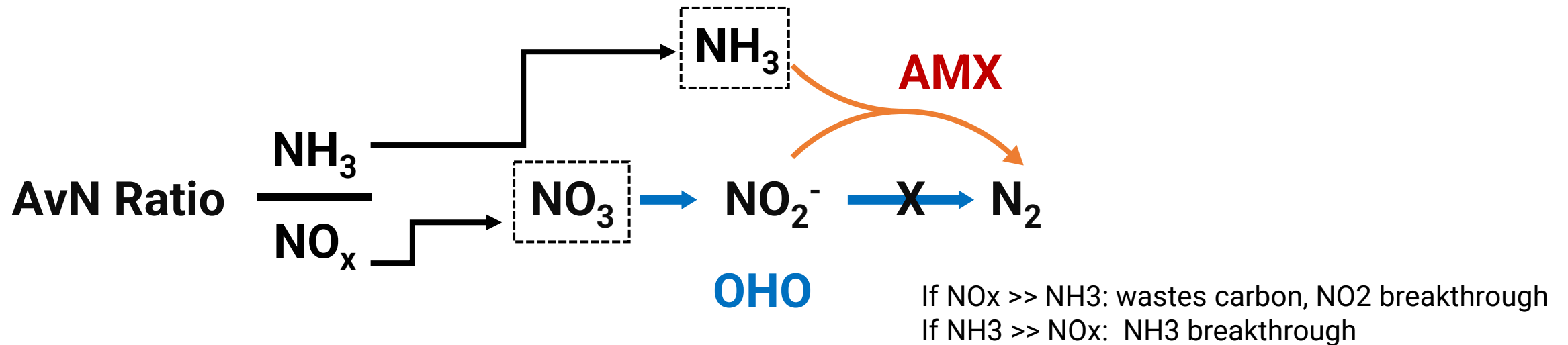
# PDNA IFAS REACTOR



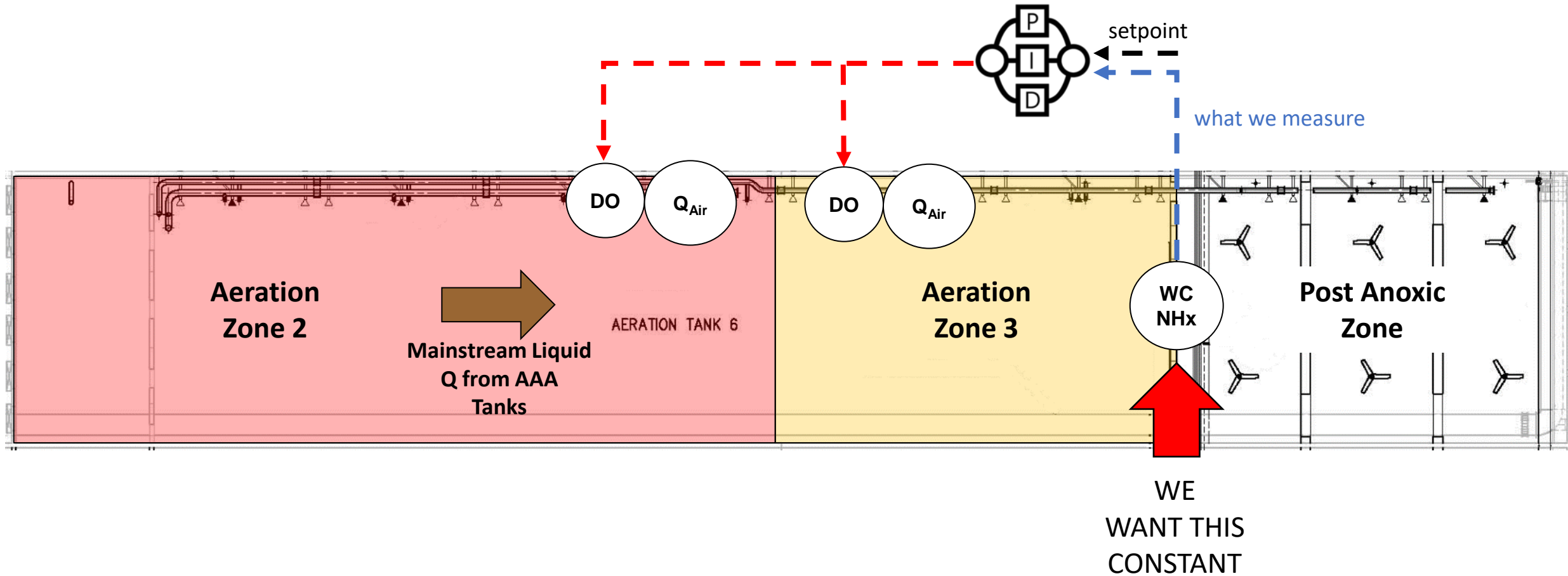
- 2<sup>nd</sup> Anoxic Zone – First Cell
- Inlet Concept
- Mechanical Mixing
- Wall Sieve
- Media
- PdNA Capable

# New technologies and intensification required big improvements in process control systems

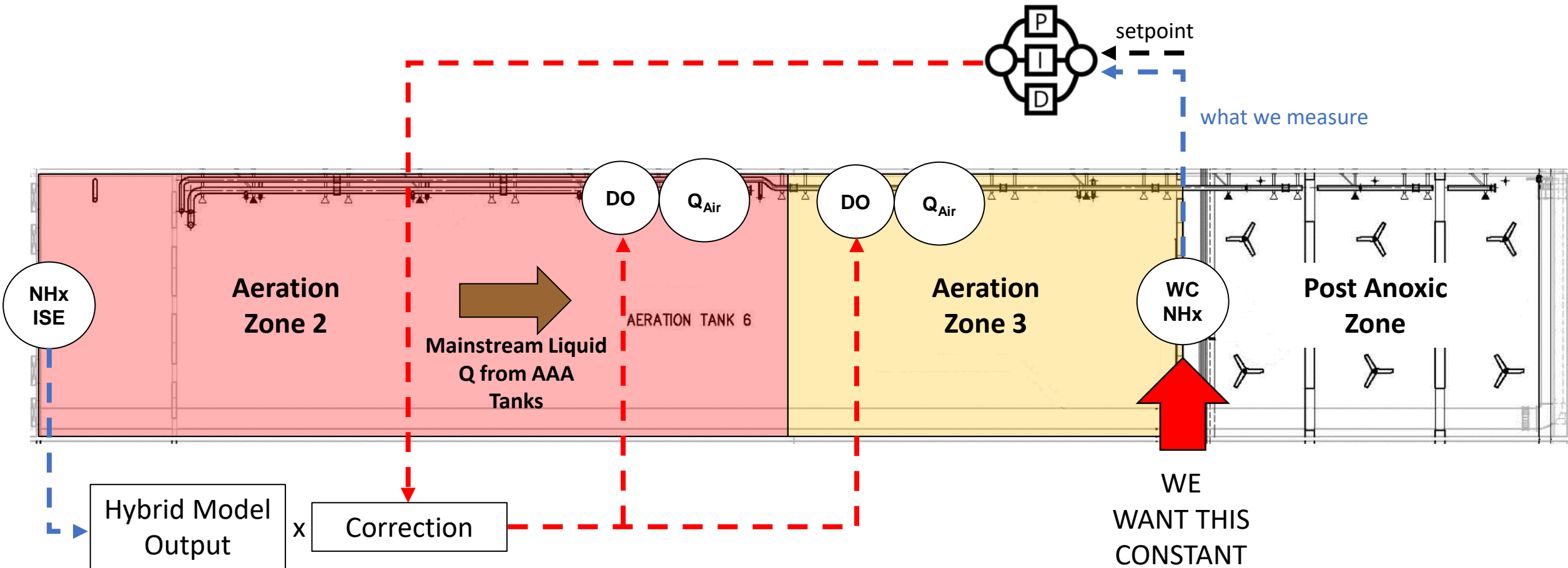
- The biggest challenge to implementing mainstream anammox was NOB out-selection
- Now the biggest challenge is operating AvN aeration/step feed control to consistently meet the required effluent targets out of a PdNA zone



# Existing ABAC – Feedback only, PI control



# Upgraded ABAC (to be extended to AvN – future) Feed Forward + Feedback





# Hybrid Model Output (feedforward part)

- Mechanistic model:

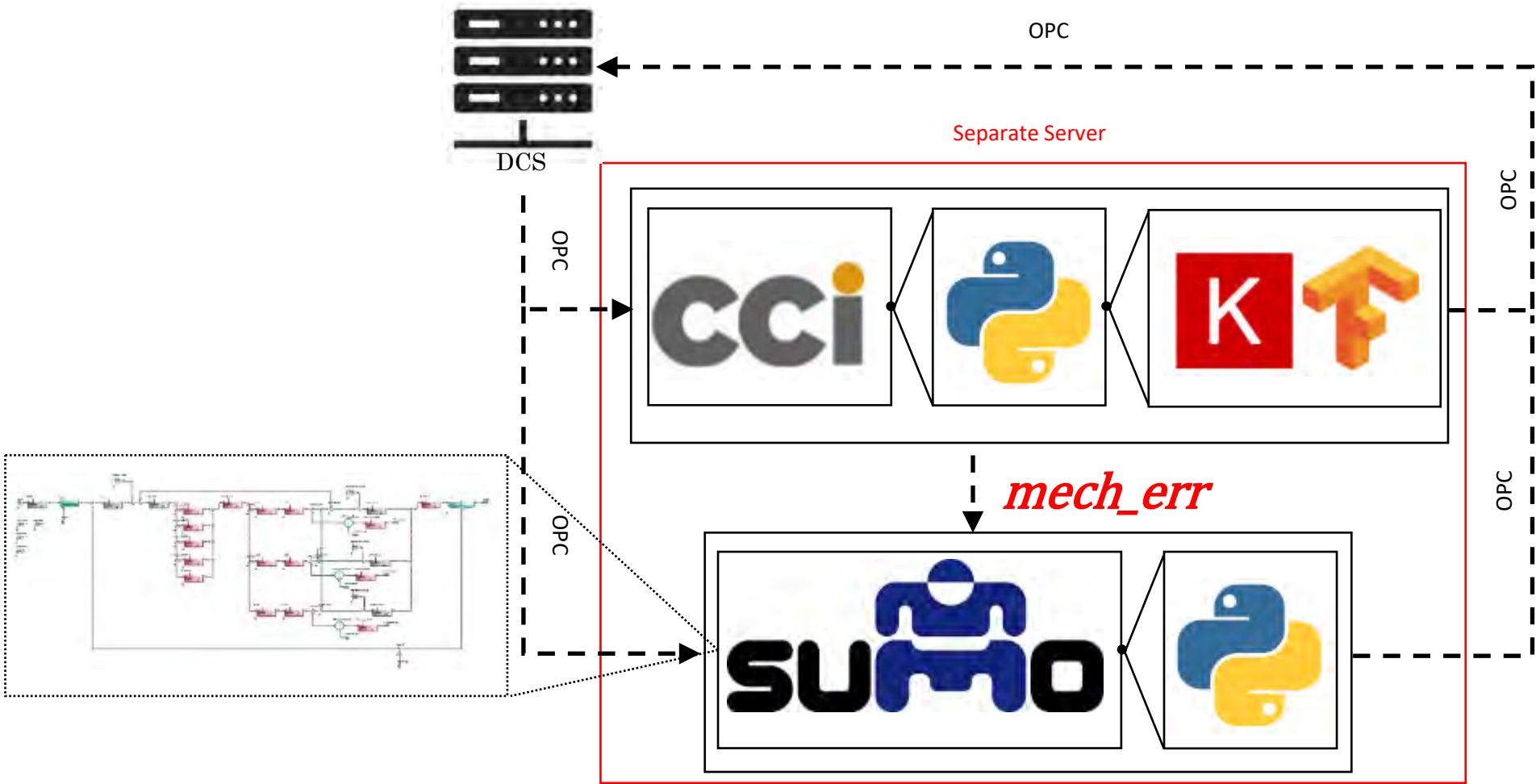
$$DO_{SP} = \frac{K_{O,A}}{\frac{(X_{B,A} \cdot V \cdot S_{NH_{SP}} \cdot \mu_A)}{Q(S_{NH_0} - (S_{NH_{SP}} - mech\_err))(S_{NH_{SP}} + K_{NH})Y_A} - 1}$$

- **Blue** = measured
- **Green** = setpoint
- **Red** = data-driven model output
- **Yellow** = determined via optimization (Python)
- Others = from mechanistic model (Sumo)

*D. Vrečko, N. Hvala, and B. Carlsson, "Feedforward–feedback control of an activated sludge process: a simulation study," Water Science and Technology, vol. 47, no. 12, pp 19-26, 2003.*

- Data-driven model: XG Boost

# Hardware/Software in Full-Scale Treatment Plant



# HRSD's Online Analyzer – “Jarbalyzer” NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>, OP



# What's next?

- PdNA – continued development and deployment
- PNA – this is the future goal
- Using wastewater carbon most efficiently
- Sensors and controls...
- Stabilizing biological P removal (future more stringent limits)



# HRSD Chesapeake-Elizabeth Plant - BNR Pilot









# Our new VIP BNR Pilot Facility



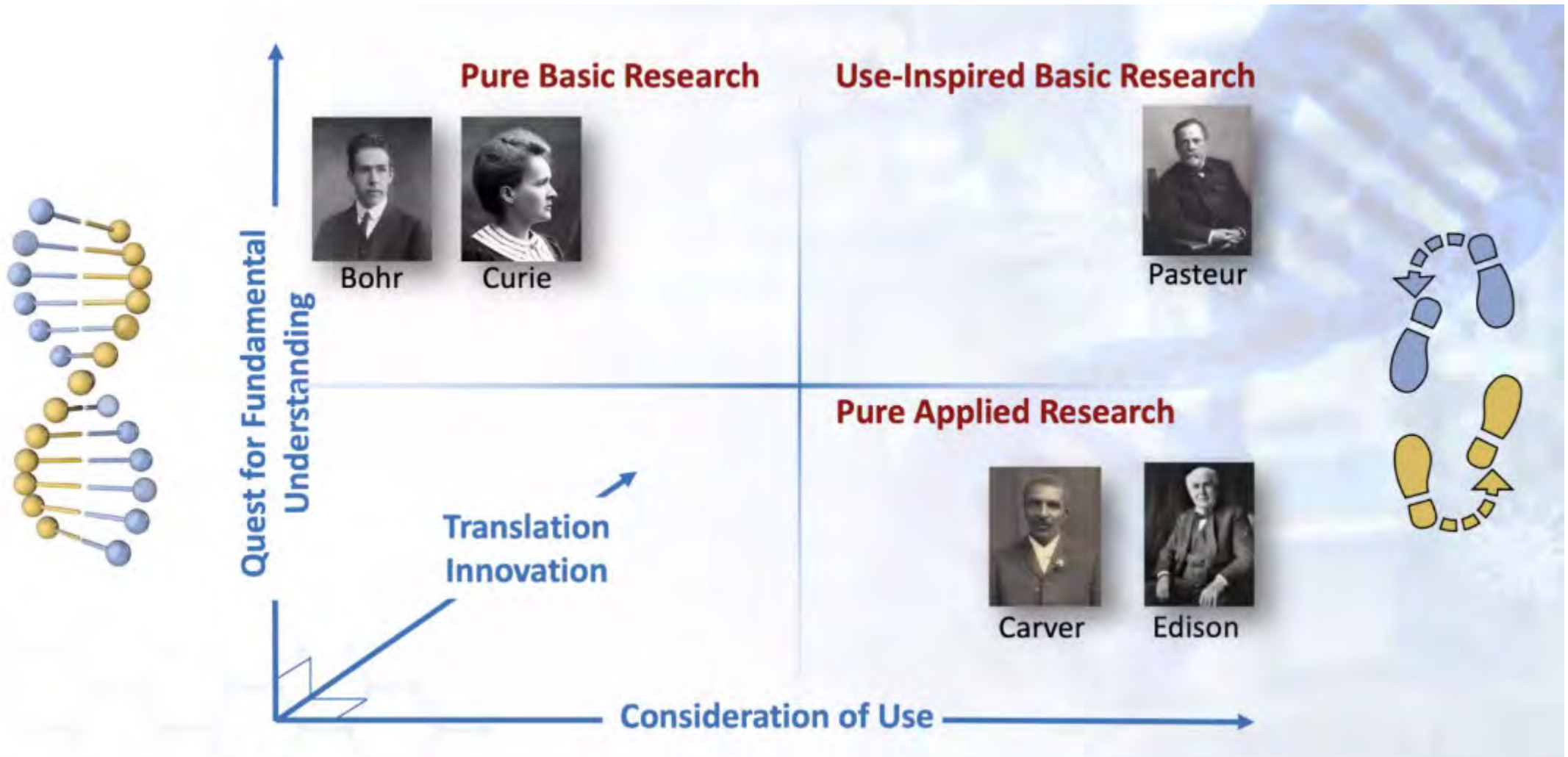


# Low DO – Mechanistic Understanding of Acclimation of Autotrophs and Heterotrophs (and other practical issues)

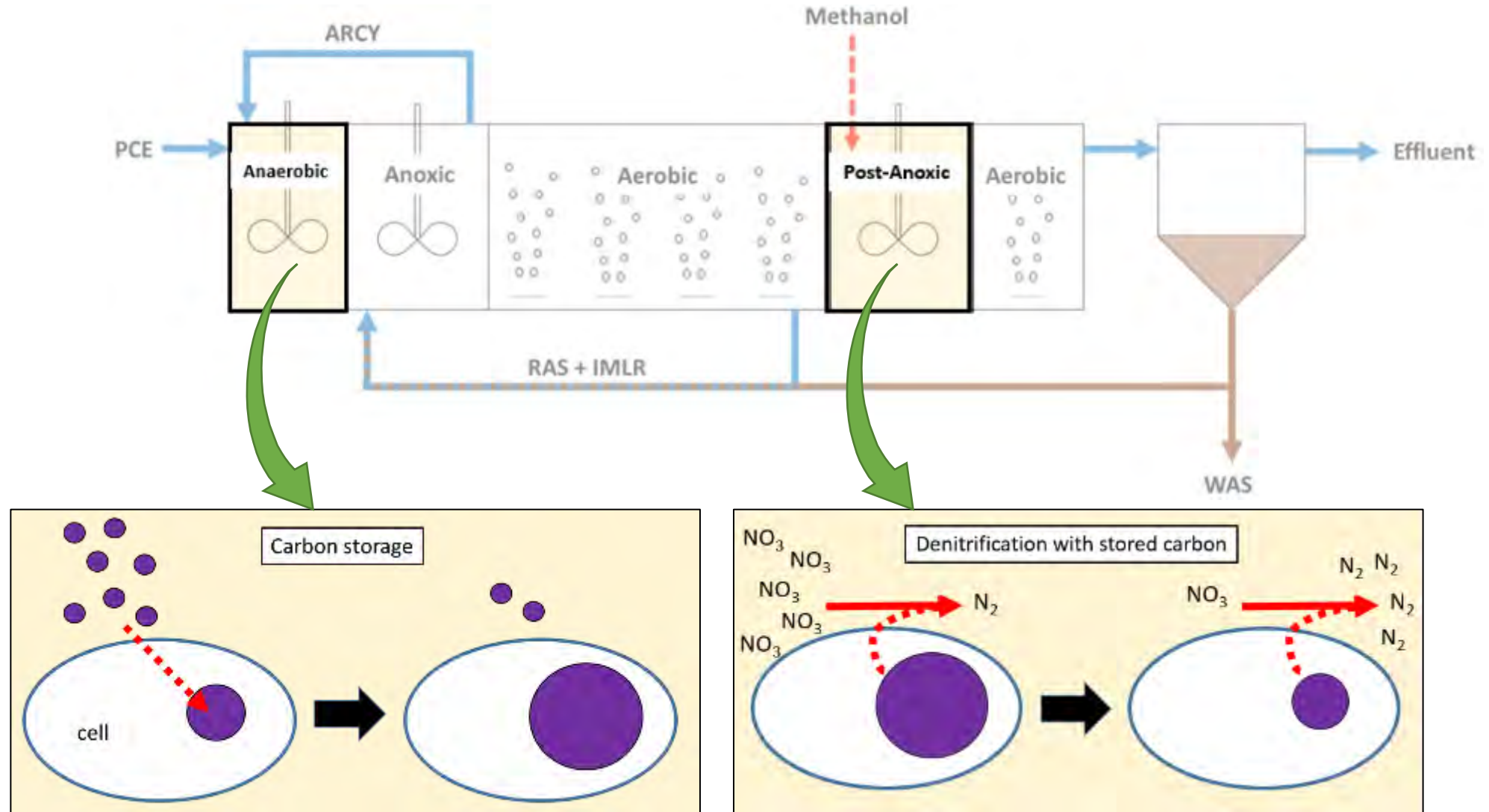




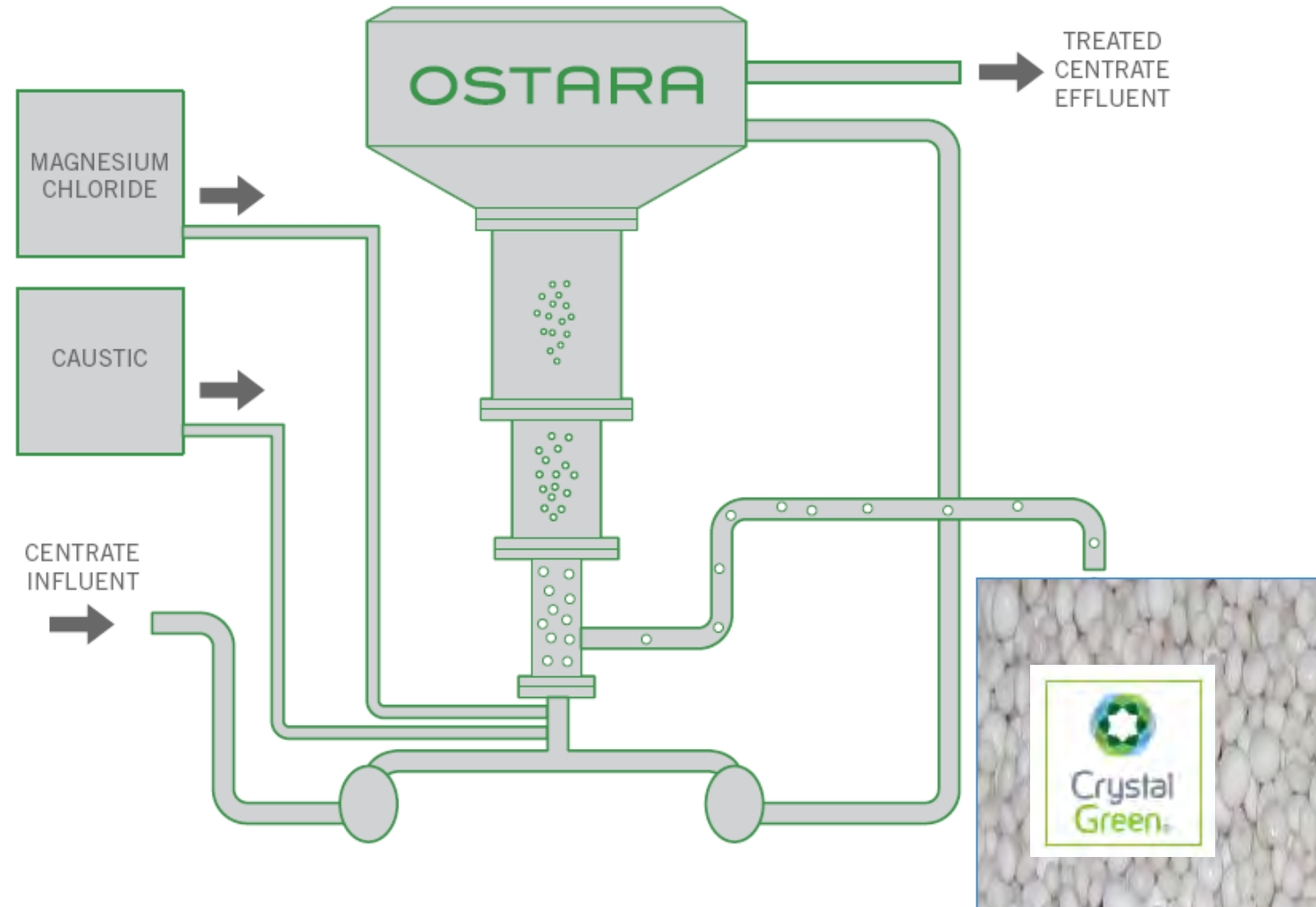
# Basic Versus Applied Research



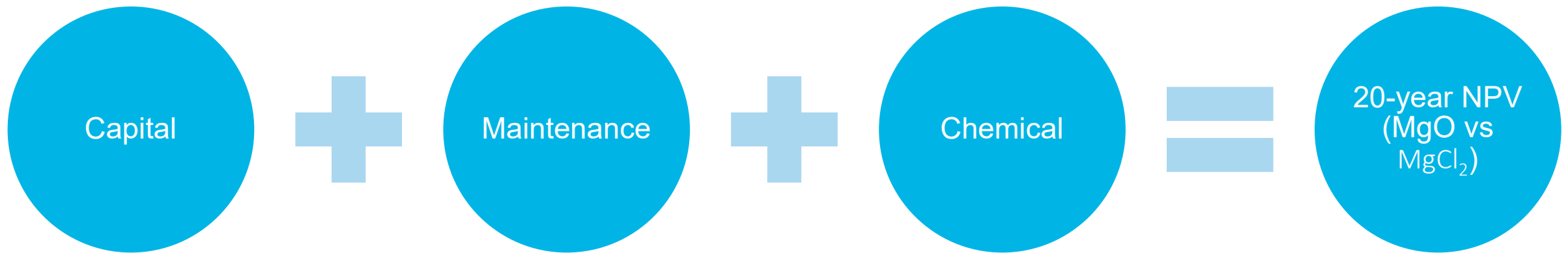
# Can anaerobically stored carbon be used for post anoxic denitrification (and PdN)?



# Nansemond Struvite Recovery Expansion & Pilot Testing



# MgO vs MgCl<sub>2</sub> Business Case Analysis



- MgO requires slaker feed system
- MgCl<sub>2</sub> requires additional reactor capacity and caustic system upgrade

- MgO requires more maintenance

- ✓ MgO costs significantly less than MgCl<sub>2</sub>
- MgCl<sub>2</sub> requires alkalinity addition (NaOH)

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #7

12. COVID-19 Wastewater Surveillance Study Update



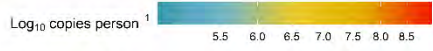
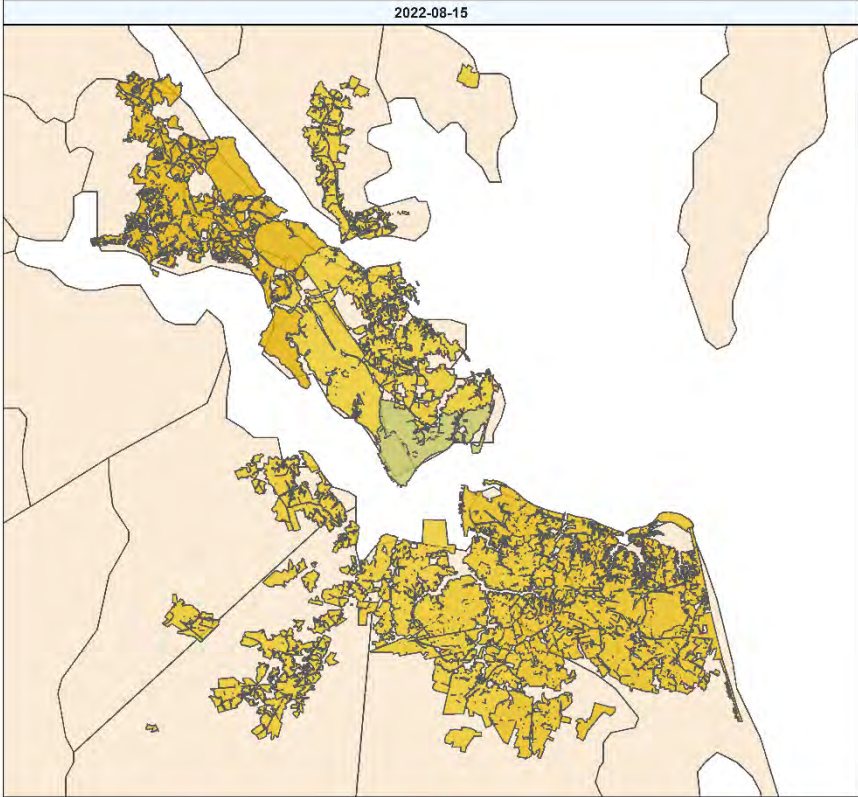
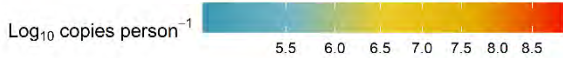
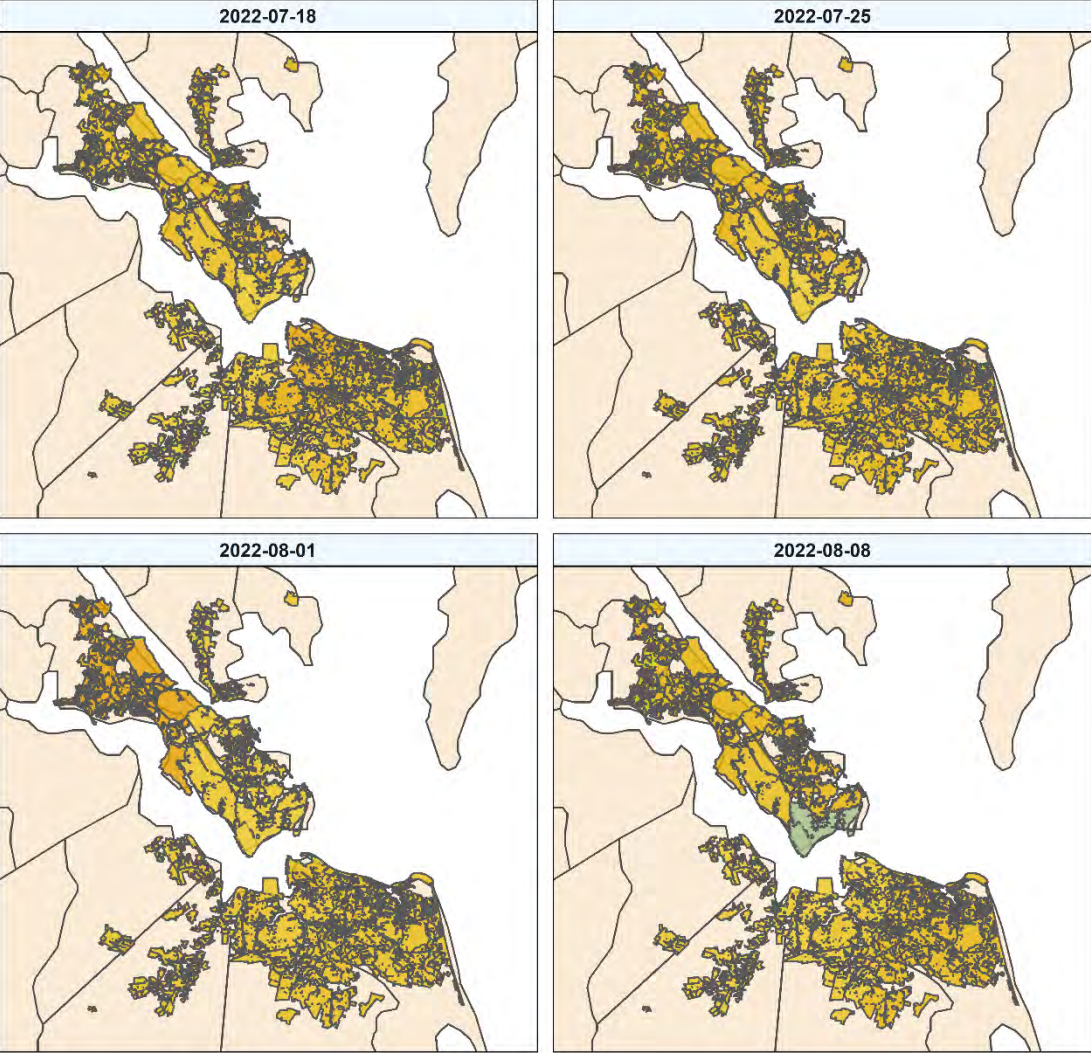
# COVID-19 Surveillance Commission Update

August 23, 2022

- Data through 8/15 presented
- General notes;
  - Downward regional trend since early July
  - Surveillance of pathogens
    - SARS-CoV-2 variants --- BA.4/BA.5 dominant in our region
    - Possibility to include influenza
    - Monkeypox



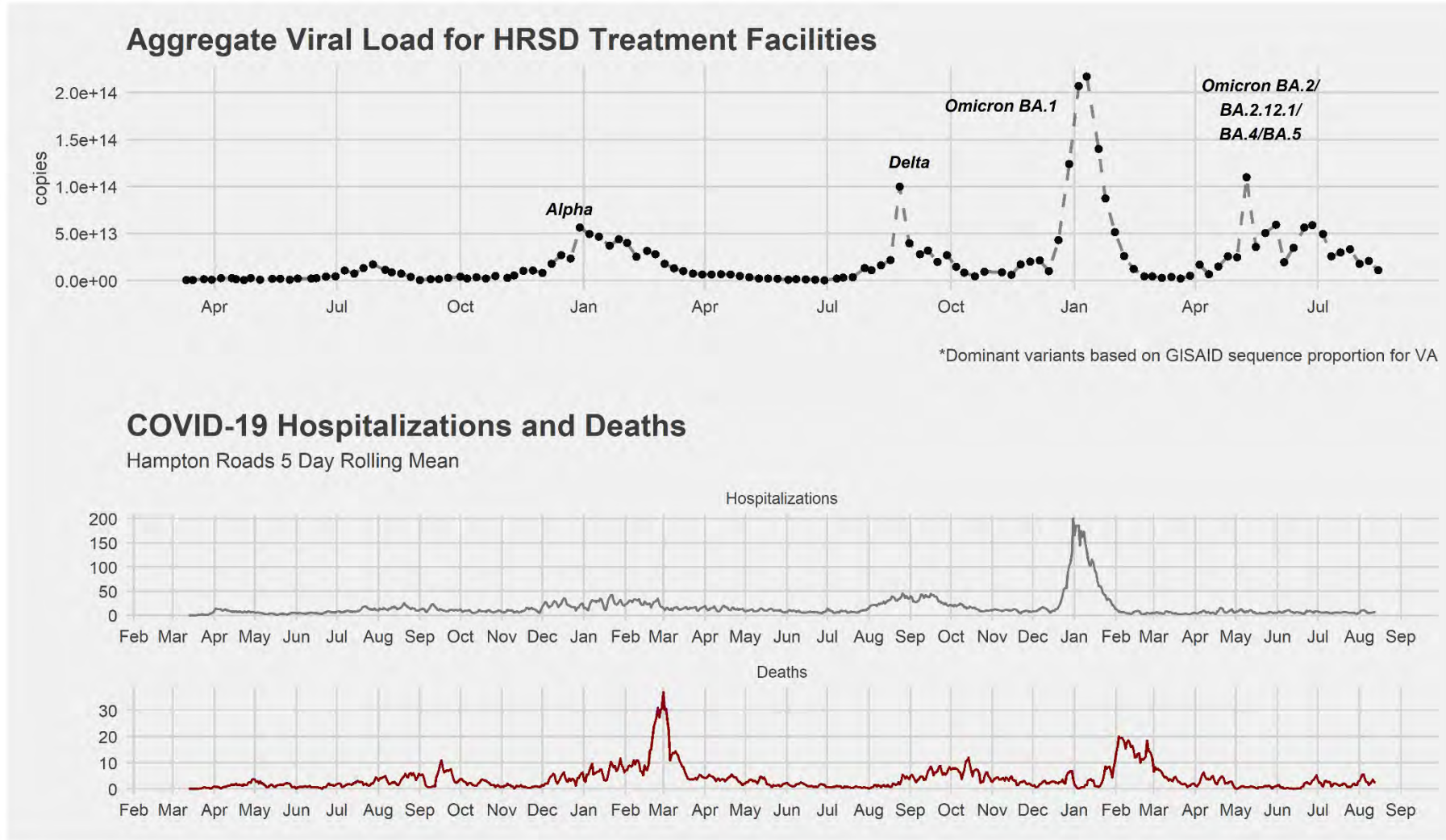
# Most Recent 5 Weeks



\*note the Chesapeake Elizabeth facility has been taken offline as of 12/15/21 and the catchment boundary has been merged with Atlantic



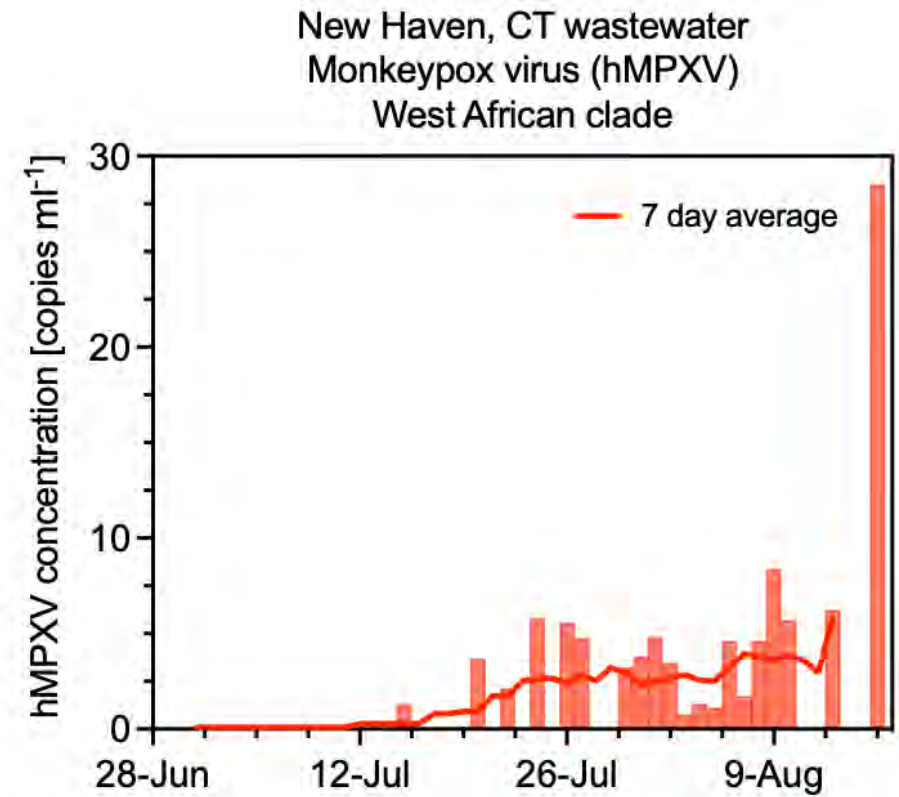
# Regional Viral Load, Hospitalizations, and Deaths





## Monkeypox Surveillance

- HRSD expects to have data next week
- Similar to SARS-CoV-2 surveillance
  - Detected in urine and stool
  - Shows up in wastewater
  - Viral load changes indicate infection rate changes
- Unclear if wastewater trends lead clinical
  - Depends on virus shedding and symptom onset timeline



Peccia Lab Yale University

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #8

13. Remote Participation Policy

# COMMISSION ADOPTED POLICY

## *Remote Participation*



Adopted: July 28, 2015

Revised: August 23, 2022  
Effective: September 1, 2022

Page 1 of 5

### 1.0 Purpose and Need

HRSD as a regional public body desires to adopt a policy as required by VA Code §2.2-3708.3(D), to provide for the use of all-virtual public meetings as permitted pursuant to VA Code §2.2-3708.3(C) and to afford a Commissioner the opportunity to participate remotely in an HRSD Commission, committee, subcommittee or other Commission established public meeting when a Commissioner may be unable to attend a meeting of the Commission or a Committee due to: (1) a physical disability or medical condition of the Commissioner, (2) a medical condition of a family member of the Commissioner for whom the Commissioner is required to provide care, (3) the Commissioner's principal residence is more than sixty (60) miles from the meeting location identified in the required notice for such meeting, or (4) a personal matter, all as permitted pursuant to VA Code §2.2-3708.3(B).

### 2.0 Definitions

***Personal matter*** – Examples include but are not limited to personal, family or business matters that prevent attendance at the meeting location; severe weather conditions or unexpected traffic or travel conditions that prevent travel to the meeting location.

***Physical disability or other medical condition of Commissioner*** – Examples include but are not limited to temporary hospitalization or confinement to home, contagious illness, or any temporary or permanent physical disability that prevents travel to the meeting location by the Commissioner.

***Medical condition of a family member of a Commissioner*** – is limited to those situations in which the family member's medical condition requires the Commissioner to provide care for the family member and thus prevents the Commissioner from physically attending the meeting.

***Quorum*** - Four members of the Commission physically assembled in one location shall constitute a quorum.

### 3.0 Guiding Principles for Commissioners to Participate Remotely in Commission or Committee Meetings

The HRSD Commission practices open and transparent governance in full compliance with the Virginia Freedom of Information Act ("FOIA") and other applicable laws and regulations. Commissioners shall make every effort to physically attend every meeting of the Commission. However, the HRSD Commission desires to adopt this policy to allow for Commissioners to participate

**COMMISSION ADOPTED POLICY**  
***Remote Participation***



**Adopted: July 28, 2015**

**Revised: August 23, 2022**  
**Effective: September 1, 2022**

**Page 2 of 5**

remotely in those circumstances recognized under VA Code §2.2-3708(B) when physical attendance is not reasonably possible. The HRSD Commission further desires to adopt this policy on behalf of its Finance Committee and Operations & Nominations (O&N) Committee as well as any other committee, subcommittee, or other Commission established public meeting, the purpose of which is to perform delegated functions of the HRSD Commission or to advise the HRSD Commission (hereinafter referred to collectively as “the Committees” or individually “Committee”) as allowed pursuant to VA Code §2.2-3708.3(D) to provide Committee members the opportunity to participate remotely in meetings of the Committees in those circumstances recognized under VA Code §2.2-3708(B) when physical attendance is not reasonably possible.

When a Commissioner participates remotely in a meeting of the Commission or Committee, the Commissioner shall avoid using a mobile device while driving.

This policy shall apply to the entire membership of the Commission and without regard to the identity of the Commissioner requesting remote participation or the matters that will be considered or voted on at the meeting of the Commission or the Committees.

**4.0 Procedures for a Commissioner to Participate Remotely in a Meeting of the Commission or the Committees**

In order to permit a Commissioner to participate in a meeting by electronic means, a quorum of the HRSD Commission must be physically assembled at the noticed meeting location. Arrangements also must be made for the voice of the remote participant to be heard by all persons at the noticed meeting location.

In advance of a properly noticed meeting of the Commission or a Committee, a Commissioner who is unable to attend shall notify the Chair of the Commission or the Committee one of the following reasons the Commissioner cannot attend:

- (1) Commissioner has a physical disability or medical condition that prevents the Commissioner from physically attending the meeting;
- (2) a family member of the Commissioner has a /medical condition that requires the Commissioner to provide care for the family member and prevents the Commissioner from attending the meeting;
- (3) the Commissioner’s principal residence is located more than 60 miles from the meeting location identified in the required notice for the meeting and the Commissioner accordingly desires to participate remotely; or
- (4) the Commissioner has a personal matter which prevents the Commissioner from attending the meeting. The Commissioner shall identify with specificity the nature of the personal reason the

**COMMISSION ADOPTED POLICY**  
*Remote Participation*



**Adopted:** July 28, 2015

**Revised:** August 23, 2022  
**Effective:** September 1, 2022

**Page 3 of 5**

Commissioner cannot attend. Remote participation due to a personal matter is limited to three (3) meetings per Commissioner per calendar year out of the twelve (12) required meetings of the Commission held each calendar year. Remote participation in a Committee meeting for personal reasons is limited to two (2) meetings per calendar year.

The specific reason that the Commissioner is unable to attend the meeting and the remote location from which the Commissioner participates will be recorded in the meeting minutes. The remote location does not need to be open to the public and it may be identified in the minutes by a general description.

Individual participation from a remote location must be approved by majority vote of the Commissioners physically assembled at the noticed meeting location. If the HRSD Commission votes to disapprove of a Commissioner's participation from a remote location because such participation would violate this policy, such disapproval will be recorded in the minutes with specificity.

**5.0 Guiding Principles for All-Virtual Commission or Committee Meetings**

The Commission desires that whenever possible all Commission and Committee meetings should be conducted in person in accordance with FOIA and all laws and regulations governing open public meetings. However, the Commission recognizes that certain circumstances may arise where it is in the best interest of the Commission or a Committee that an all-virtual meeting be held. Thus, the HRSD Commission as a regional public body has determined that it would be in the best interest of HRSD to adopt this policy pursuant to VA Code §2.2-3708.3(D) to allow for all-virtual Commission or Committee meetings in accordance with VA Code §2.2-3708.3 (C). In accordance with the procedures delineated in VA Code §2.2-3708.3 (C) and below, all-virtual HRSD Commission meetings are limited to three (3) times per calendar year based on twelve (12) meeting per calendar year, and all-virtual HRSD Committee Meetings are limited to two (2) times per calendar year. Additionally, HRSD Commission or Committee Meetings cannot be held consecutively with another all-virtual public meeting of the HRSD Commission or Committee.

**6.0 Procedures for All-Virtual Commission or Committee Meetings**

In order to hold an all-virtual HRSD Commission or Committee Meeting, the following procedures must be followed:

- (1) The required meeting notice for the Commission or Committee Meeting will indicate that the meeting will be an all-virtual meeting and contain a statement notifying the public that this all-virtual meeting method shall not



**COMMISSION ADOPTED POLICY**  
*Remote Participation*



Adopted: July 28, 2015

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Page 4 of 5

- be changed unless HRSD provides a new meeting notice in accordance with the provisions of § [2.2-3707](#);
- (2) Public access to the all-virtual public meeting is provided via electronic communication means;
  - (3) The electronic communication means used allows the public to hear respectively all Commissioners of HRSD or all HRSD Committee Members participating in the all-virtual public meeting and, when audio-visual technology is available, to see Commissioners or HRSD Committee Members as well;
  - (4) A phone number or other live contact information is provided to alert the HRSD Commission or Committee if the audio or video transmission of the meeting provided by HRSD fails. HRSD must monitor such designated means of communication during the meeting, and the HRSD Commission or Committee, as appropriate, shall take a recess until public access is restored if the transmission fails for the public;
  - (5) A copy of the proposed agenda and all agenda packets and, unless exempt, all materials furnished to the Commissioners or the Committee Members of HRSD for the HRSD Commission or Committee meeting is made available to the public in electronic format at the same time that such materials are provided to members of the public body;
  - (6) The public is afforded the opportunity to comment through electronic means, including by way of written comments, at those public meetings when public comment is customarily received;
  - (7) No more than two members of the HRSD Commission or Committee are together in any one remote location unless that remote location is open to the public to physically access it;
  - (8) If a closed session is held during an all-virtual public HRSD Commission or Committee meeting, transmission of the meeting to the public resumes before the HRSD Commission or Committee votes to certify the closed meeting as required by subsection D of § 2.2-3712;
  - (9) Limitation on virtual HRSD Commission and Committee Meetings.
    - a. **HRSD Commission Meetings.** HRSD shall not convene an all-virtual public Commission meeting (i) more than three (3) times per calendar year or (ii) consecutively with another all-virtual public meeting.
    - b. **HRSD Committee Meetings.** HRSD shall not convene an all-virtual public Committee meeting (i) more than two (2) times per calendar year, or (ii) consecutively with another all-virtual public meeting; and
  - (10) Minutes of all-virtual public Commission or Committee meeting held by electronic communication means are taken as required by § 2.2-3707 and include the fact that the meeting was held by electronic communication means and the type of electronic communication means by which the

**COMMISSION ADOPTED POLICY**  
*Remote Participation*



Adopted: July 28, 2015

Revised: August 23, 2022  
Effective: September 1, 2022

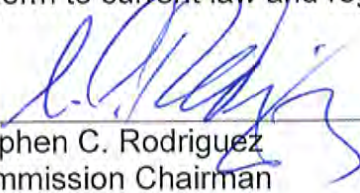
Page 5 of 5

meeting was held. If the participation of an HRSD Commissioner or Committee member from a remote location pursuant to this subsection is disapproved because such participation would violate the policy adopted pursuant to subsection D, such disapproval shall be recorded in the minutes with specificity.

**7.0 Responsibility and Authority**

This policy shall be reviewed annually by the O&N Committee and revised as required to conform to current law and regulations.

Approved:

  
\_\_\_\_\_  
Stephen C. Rodriguez  
Commission Chairman

  
\_\_\_\_\_  
Date

Attest:

  
\_\_\_\_\_  
Jennifer L. Cascio  
Commission Secretary

  
\_\_\_\_\_  
Date

HRSD Commission Meeting Minutes  
August 23, 2022

Attachment #9

19. Informational Items

AGENDA ITEM 19. – August 23, 2022

**Subject:** Informational Items

**Recommended Action:** No action is required.

**Brief:** The following items listed below are presented for information.

- a. Management Reports
  - (1) [General Manager](#)
  - (2) [Communications](#)
  - (3) [Engineering](#)
  - (4) [Finance](#)
  - (5) [Information Technology](#)
  - (6) [Operations](#)
  - (7) [Talent Management](#)
  - (8) [Water Quality](#)
  - (9) [Report of Internal Audit Activities](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Emergency Declarations – Atlantic Treatment Plant Emergency Odor Control Repairs](#)



August 15, 2022

Re: General Manager's Report

Dear Commissioners:

The draft James River SWIFT Underground Injection Control (UIC) permit public comment period ended in July, but the approval will likely be delayed due to additional review required. During the public comment period, the EPA released the Interim Health Advisory Limits (IHALs) for PFOA and PFOS, which are the two most widely used and studied chemicals in the PFAS group. The IHALs are orders of magnitude lower than previous limits and well below currently available technology detection limits. The health advisory is not a regulatory standard but gives us some insight on the upcoming maximum contaminant level (MCL) for drinking water standards expected in 2023.

HRSD is already incorporating one of the best available technologies at our SWIFT plants to remove PFAS, Granular Activated Carbon (GAC). In fact, the large regional water purveyors, Newport News Waterworks and the City of Norfolk are considering GAC to meet the upcoming MCL. They have asked HRSD to consider building a Regional GAC regeneration facility as GAC needs to be regenerated after a certain period of use. Since we were already considering building a regeneration facility but needed more GAC volume to justify the life cycle cost, this could be a win-win for the region. To regenerate GAC, you need an incinerator and there's a possibility we could retrofit one of our existing incinerators for this purpose. We are in the process of engaging a consulting to help us with this effort. The demand for GAC will likely skyrocket if every water purveyor in the country moves to GAC, so this study will help inform future decisions to control costs.

The highlights of July's activities are detailed in the attached monthly reports.

- A. **Treatment Compliance and System Operations:** On July 31<sup>st</sup>, there was a fire at one of the four Odor Control Scrubber trains for the Atlantic Treatment Plant headworks. Although we are still investigating the exact cause, it was likely due to an exhaust fan motor. Thankfully, no one was hurt, and the fire was extinguished quickly. An emergency was declared to expedite the repair.

At the Atlantic plant, staff continue to look for innovative ways to reduce off-site plant odor. In a recent case, staff designed a carbon filter to absorb odors around the annular space of the digester covers using storm drain pipe filled with GAC. Preliminarily, this appears to be working and could save millions of dollars compared to replacing the covers.

---

PO Box 5911, Virginia Beach, VA 23471-0911 • 757.460.7003

At the Williamsburg Treatment Plant, two employees were injured when hoisting a manlift to the second floor. When the slings broke the come-along hit the two employees. Both employees required medical attention.

The Surry County Treatment Plant had a high ammonia sample, which was a weekly exceedance and a monthly permit limit exceedance. Staff are evaluating the potential cause. This plant is scheduled to be taken offline when the Surry to Smithfield transmission force main is completed later this year.

B. **Water Quality:** Two civil penalties were issued in July: One to Bottling Group, LLC, in Newport News related to pH monitoring and exceedances resulting in an \$8,000 civil penalty and an Administrative Order, and the second to Naval Station Norfolk for failing to perform pretreatment device inspections as required by their permit, resulting in a \$1,000 civil penalty assessment, which the Federal Government legally does not have to pay.

C. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:

1. Visited injured Williamsburg employee at the hospital
2. Attended the Central Environmental Lab Workshop
3. Reviewed condemnation procedures with new attorneys
4. Strategic Plan Workshop #1 was held

C. **External Communications:** I participated in the following meetings/activities:

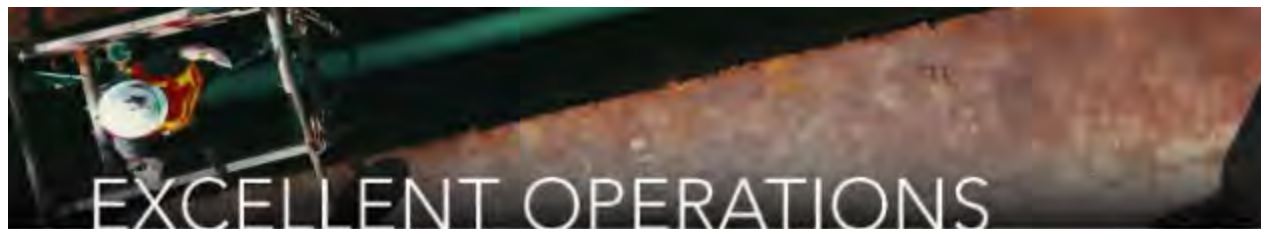
1. Introduced to the Hampton Roads Chief Administrative Officers/City Managers at their monthly meeting
2. Attended the monthly Director of Utilities meeting
3. James River SWIFT groundbreaking was a great success with over 160 people in attendance

**Strategic Plan:** On July 21<sup>st</sup>, the first Strategic Planning workshop was held to discuss Mission, Vision and Values. The next steps are to gather organizational feedback on the proposed changes and to launch the Strategic Plan SharePoint site so that all employees can track the progress for full transparency. The next workshop is scheduled for August 23 and 24.





Below is an example of Goals and Objectives that would come out of the Strategic Planning process:



*Advance resilient infrastructure and efficient processes to deliver clean water, reliably.*

Goal	Objectives
<b>Plan, build, operate and sustain our infrastructure to meet customers' current and long-term water needs, given a warming climate and uncertain future.</b>	<p>Apply scalability to capital and long-range planning to preserve options and maintain flexibility under multiple future scenarios.</p> <p>Anticipate and proactively address infrastructure needs to ensure safety, reliability and resiliency.</p>
<b>Apply new insight and best business practices to drive customer value and continuous improvement in our day-to-day operations.</b>	<p>Use and evolve standard work plans, asset and risk management practices, metrics and operational reporting to drive efficiency.</p> <p>Listen to and incorporate insight from customers, employees and peers to anticipate future needs and drive continuous improvement.</p> <p>Invite new ideas and appropriate technologies for adapting to changing business needs.</p>
<b>Plan and operate our system and facilities to strengthen our resiliency.</b>	<p>Advance environmental stewardship within system operations and capital and long-range planning.</p> <p>Optimize operating efficiency and increase sustainability of all new and existing facilities.</p> <p>Expand our clean energy and green infrastructure portfolio.</p>



Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth, and the environment. **I look forward to seeing you in person in Virginia Beach at 10 am on Tuesday, August 23, 2022.**

Respectfully submitted,

Jay Bernas, P.E.  
General Manager

TO: General Manager  
FROM: Director of Communications  
SUBJECT: Monthly Report for July 2022  
DATE: August 2, 2022

A. Publicity and Promotion

HRSD and/or SWIFT were mentioned or featured in four news stories or media/social media mentions on topics that included:

1. HRSD COVID surveillance in wastewater
2. HRSD expansion of SWIFT with full-scale facility at James River Plant
3. HRSD Atlantic Treatment Plant machinery fire

Analysis of May media coverage:

## Mentions, Reach and Sentiment

Mentions

Compared to last period

81

↑ 131%

Total Potential News Reach

Compared to last period

152M

↑ 124%

Sentiment

Compared to last period

5

↓ 55%

# What is the top performing news content?

Top Article by Reach

**yahoo!**  
Highest reach

Y Yahoo! News • Ian Munro  
US | Jul 30, 2022, 2:12 PM

At Seaview Lofts in Newport News, judge's ruling set off a frantic 48 hours — and an uncertain future

were covered by their rent. Seaview Lofts LLC also owes the **Hampton Roads Sanitation District** over \$106,000

Top Article by Reach and Volume

**yahoo!**  
Most syndicated

Y Yahoo! News • Ian Munro  
US | Jul 30, 2022, 2:12 PM

At Seaview Lofts in Newport News, judge's ruling set off a frantic 48 hours — and an uncertain future

were covered by their rent. Seaview Lofts LLC also owes the **Hampton Roads Sanitation District** over \$106,000

Top Article by Social Echo

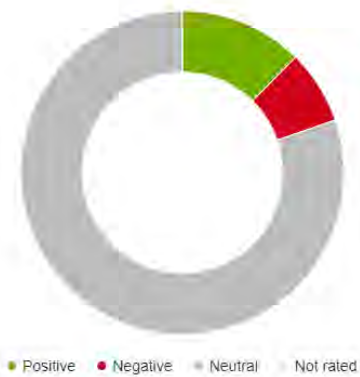
**W** WVEC-TV • Anne Sparaco  
US | Jul 13, 2022, 6:40 PM

Wastewater treatment studies show omicron subvariants on the rise in Hampton Roads

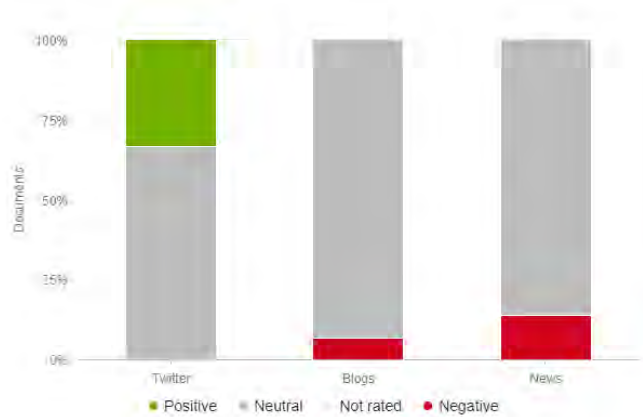
.An environmental scientist, Kyle Curtis, with the **Hampton Roads Sanitation District** studies the variants and subvariants of COVID-19.

# How favorable is the content?

Sentiment Share of Voice

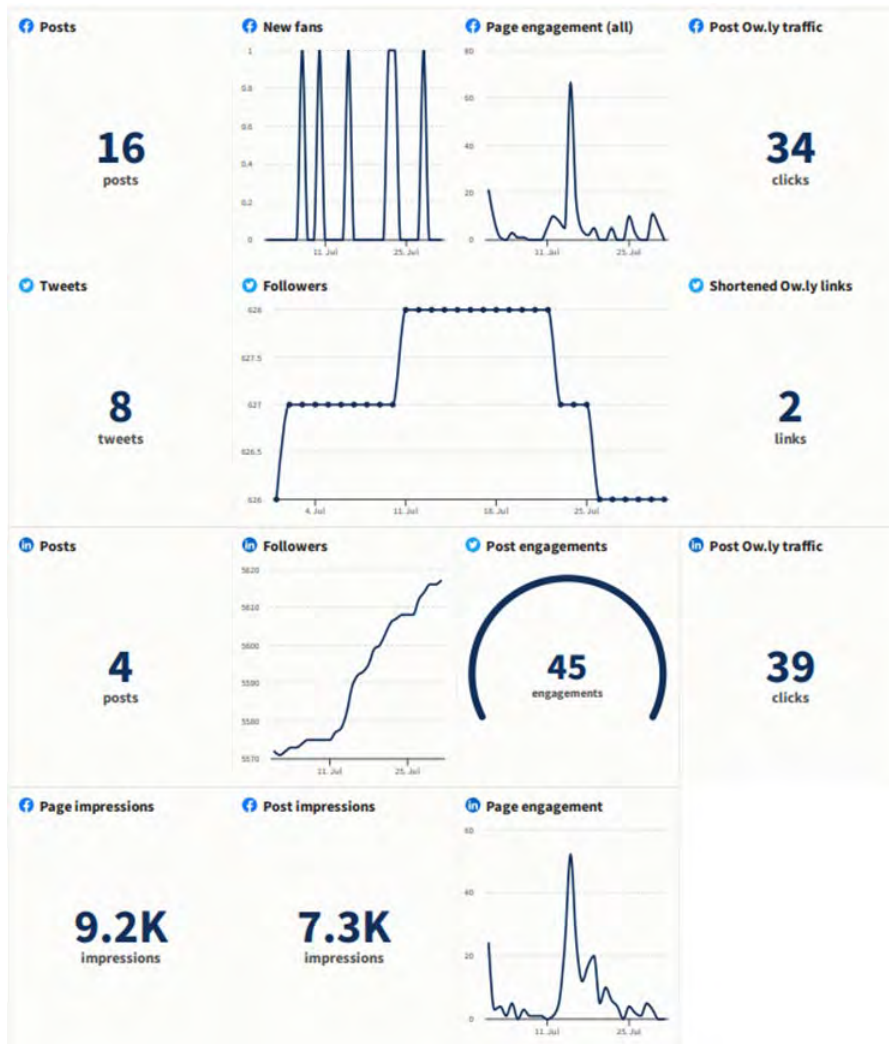


Sentiment by Source Type



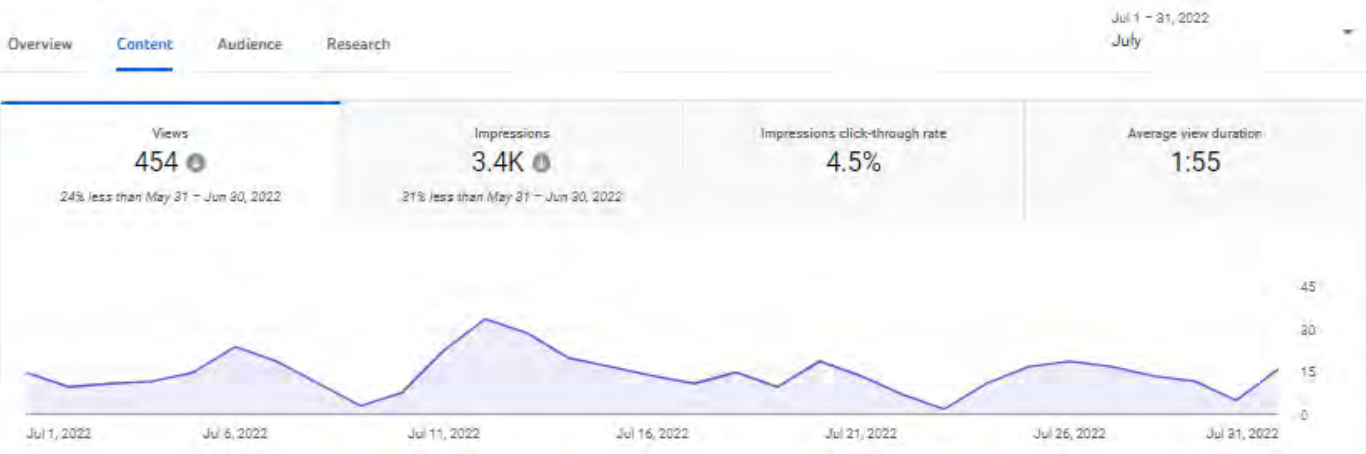
## B. Social Media and Online Engagement

### 1. Metrics – Facebook, Twitter and LinkedIn



## YouTube

### Channel analytics



## Top Facebook Post



## Top Tweet



### c. Top YouTube Videos

- [The Wastewater Treatment Process](#) (182 views)
- [What is Asset Management? HRSD Celebrates Infrastructure Week at HRSD](#) (40 views)
- [HRSD Atlantic Treatment Plant Cambi Tour](#) (32 views)
- [Opening Ceremony of Woodstock Park](#) (28 views)
- [SWIFT Research Center Ribbon Cutting Ceremony](#) (22 views)

### 3. Website and Social Media Impressions and Visits

- a. Facebook: 9,187 page impressions, 7,320 post impressions reaching 6,990 users, and Facebook Engagement of 190 (145 reactions, 23 shares, and 22 comments)
- b. Twitter: 1,565 tweet impressions; 1,339 profile visits and 2 mentions
- c. HRSD.com/SWIFTVA.com: 1,113 page visits
- d. LinkedIn Impressions: 8,857 page impressions and 5,843 post impressions
- e. YouTube: 454 views
- f. Next Door unique impressions: 3,171 post impressions from eight targeted neighborhood posting shared with 48,622 residents
- g. Blog Posts: 0

h. Construction Project Page Visits – 1,291 total visits (not including direct visits from home page, broken down as follows:

- (1) 923 visits to individual pages
- (2) 368 to the status page

C. News Releases, Advisories, Advertisements, Project Notices, Community Meetings and Project Web Postings

- 1. News Releases: 1
- 2. Traffic Advisories: 2
- 3. Construction Notices and or notices to neighbors: 1
- 4. Advertisements: 0
- 5. Project Notices: 2 (via door hanging and mail, reaching 35 residents)
- 6. Project/Community Meetings: 0
- 7. New Project Web Pages: 0
- 8. New Project Videos: 0

D. Special Projects and Highlights

Communications Department staff, supported by James River Treatment Plant staff, planned, coordinated and implemented the James River Full Scale Groundbreaking Ceremony, held on July 21 to mark the milestone achievement in SWIFT development. More than 160 people attended the in-person event which featured guest speakers representing the Governor's office, the Department of Environmental Quality and the HRSD Commission.

E. Internal Communications

- 1. Director participated in the following internal meetings and events:
  - a. Meetings with Chief of Treatment for Atlantic Treatment Plant (ATP) to develop a framework for a community round table group
  - b. Strategic planning workshop
  - c. Architectural review committee meeting
  - d. Weekly meetings with ATP and TSD staff related to recent odor issues at the plant
  - e. Meeting to discuss focus group research planning with the DEI/UNIFIED Council
  - f. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST) and QST meetings
- 2. Director also conducted biweekly communications department status meetings and weekly team and one-on-one check-in meetings.

3. Staff attended project progress and outreach development meetings with various project managers.

F. Metrics

1. Educational and Outreach Activities: 37 virtual, three in-person
  - a. Self-guided SWIFT Virtual Tours – 37 views (analytics specify number of times “Take a Tour” button was selected)
  - b. 07/13/2022 --- Envirobase SWIFT tour and activity | 15 students
  - c. 07/20/2022 – Envirobase SWIFT tour and activity |15 students
  - d. 07/28/2022 – Camp Answer SWIFT Tour | 10 students
2. Number of Community Partners: 1
  - a. City of Portsmouth Public Schools
3. Additional Activities Coordinated by Communications Department: 0
4. Monthly Metrics Summary

Item #	Strategic Planning Measure	Unit	July 2022
M-1.4a	Total Training Hours per Full Time Employee (4) - Current Month	Hours / #FTE	2.56
M-1.4b	Total Training Hours per Full Time Employee (4) - Cumulative Fiscal Year-to-Date	Hours / #FTE	2.56
M-5.2	Educational and Outreach Events	Number	40
M-5.3	Number of Community Partners	Number	1

Respectfully,

Leila Rice, APR  
 Director of Communications



TO: General Manager  
FROM: Director of Engineering  
SUBJECT: Engineering Monthly Report for July 2022  
DATE: August 9, 2022

A. General

1. Capital Improvement Program (CIP) spending for the final month of Fiscal Year (FY) 2022 was below planned spending target. End-of-Year spending was significantly below the targeted amount for FY 2022.

CIP Spending (\$M):

	Current Period	FYTD
Actual	24.23	168.16*
Plan	25.30	290.00

\*Note: This final spend total for FY 2022 is still under audit and will be confirmed in the coming month.

2. Staff retention and recruitment remain a significant focus for the Engineering Department. A total of 15 positions are needed to bring the Engineering Department to a fully staffed level. Three new employees have joined the Engineering Department including:
  - Jeff Scarano – Chief of Design & Construction Special Projects
  - Steven Poe – Hydraulic Analysis Manager
  - Thomas Chappell – Engineering Specialist

We continue to recruit and interview candidates for the many open positions and are working closely with the Talent Management Department to find new ways to reach out to potential recruits.

3. Staff have recently reviewed the procedures we use to notify the public about the potential need for property condemnation. To continue our goal of being as transparent as possible but expedite the process needed to keep critical CIP projects moving forward, we plan to make the following modifications to this procedure:
  - Require a minimum 30-day period for property negotiation before considering condemnation.
  - Eliminate the reference to specific property addresses/parcel numbers in the advertisement, agenda briefing and resolution.
  - Unless there have been specific concerns raised by the public in advance or at the Public Hearing, allow for the Commission to proceed with a resolution approving the public use immediately following the Public Hearing.

This should allow for a more expeditious process but still assure needed public input prior to moving forward with potential condemnation efforts.

These revisions have been reviewed by HRSD legal counsel for conformance with state law.

B. Asset Management Division

1. The Asset Management Plan for HRSD's treatment plants has been integrated into PowerBI. The tool has been developed to calculate remaining useful life, year of theoretical replacement and replacement cost of each asset. An overview of the plan was presented virtually to all Operations Department staff. This overview included a demonstration of how to use the program, special features and how the information can be used to improve future decision making.
2. An initial desktop analysis has been completed to prioritize the condition of buried treatment plant yard piping. This analysis includes the assessment of approximately 1,000 linear feet of pipe at each treatment plant. This effort will determine a risk score for each segment of pipe and recommend future assessment activities. This work will be the first step in the creation of a Treatment Plant Yard Piping Replacement Program.

C. North Shore, South Shore, Special Projects and SWIFT Design & Construction Divisions

1. Construction has begun for the Nansemond Treatment Plant Struvite Recovery and Digester Capacity Upgrade project. The notice to proceed was issued on July 8 and the contractor plans to mobilize in October. An initial Partnering Meeting is being planned for August. The Partnering Meeting will allow for initial communications between team members, discussion of project challenges, recommendation of a Partnering Charter and discussion of a conflict resolution procedure. The goal of this meeting is to address issues of concern before they become significant project problems.
2. Preliminary design efforts were recently completed for the Central Environmental Laboratory Expansion project. Due to potential scope, schedule, and cost increases, it was determined that a briefing would be given to the Commission in September. This briefing would describe options moving forward including doing nothing, limited improvements, and full expansion of the existing facilities. The design effort will be delayed until a decision is made on a path forward.
3. The newly formed Special Projects Division has been tasked with addressing a recent emergency situation at the Atlantic Treatment Plant. On July 31<sup>st</sup>, an odor control scrubber failed due to fire. The fire destroyed the entire odor scrubber unit. An effort to replace the existing odor scrubber will move forward using a consultant and contractor that recently worked at this treatment plant. Creative ways will be considered to expedite the replacement of the odor scrubber to limit potential odor issues at this location.
4. The conceptual design has begun for the full-scale Nansemond Treatment Plant SWIFT facilities. The kick-off meeting for the Basis of Design Report (BODR) was held in July. Design review meetings will be held over the next two months. This report will be used as part of the request for proposals and procurement effort with future Design-Build Teams. The current schedule for the BODR indicates this effort will be completed later this year and the procurement for the Design-Build work will begin in January 2023.

D. Planning & Analysis Division

1. Staff have begun an effort to draft a policy related to the acceptance of existing sewer conveyance or treatment systems from the small communities that we serve. This has been a challenging issue due to the potential cost and future maintenance difficulties with existing systems that are often not in good condition or meet HRSD's standards. This policy will be drafted and presented to the Commission in the coming months.
2. Staff have begun the effort to prepare for the upcoming hurricane season. Testing has begun using a mobile application developed for the Operations Department staff to capture damage information. This application includes a GIS feature to aid in pinpointing damaged infrastructure and document exiting conditions. This information can be shared with others to facilitate planning after a storm event and to gather the documentation needed for insurance or FEMA related reimbursements. Training materials have been updated and shared with staff in the past month.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Number of Community Partners: 0
3. Number of Research Partners: 0
4. Monthly Metrics Summary:

Item #	Strategic Planning Measure	Unit	July 2022
M-1.4a	Total Training Hours per Full Time Employee (53) - Current Month	Hours / #FTE	1.80
M-1.4b	Total Training Hours per Full Time Employee (53) - Cumulative Fiscal Year-to-Date	Hours / #FTE	1.80
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
M-5.4	Number of Research Partners	Number	0

*Bruce W. Husselbee*

Bruce W. Husselbee, PhD, P.E., DBIA

TO: General Manager  
FROM: Director of Finance  
SUBJECT: Monthly Report for July 2022  
DATE: August 10, 2022

A. General

1. **Accounting and Financial Reporting**

The accompanying Interim Financial Report indicates that most revenues are in line with the adopted budget. Billed revenues are generally in line with the previous year and the current year budget. Despite vacancies in many departments, personnel costs appear high because of three payroll periods paid in July. All other expenses are generally in line with budget expectations.

The Retiree Health Plan Trust, like most investment portfolios, had a poor quarter with a negative 11.06 percent return decreasing assets in the trust by approximately \$7.7 million. This negative return was, however, better than the Blended Benchmark which had a negative return of 11.36 percent for the same period. Investor concerns about inflation, continued hostilities in Eastern Europe, global supply chain disruptions, and interest rate adjustments by the Federal Reserve all contributed to the market difficulties.

2. **Customer Care Center**

**Past Due Account Trends:**

Account arrearages in the greater than 90-days and 31 to 60-day ranges increased in July.

**Field Activities:**

Field staff delivered 2,316 warning door tags and disconnected water service to 1,164 accounts during July. This was about 800 field activities more than the previous month. 360 pay plans were created through the online self-service portal and through call center interactions. Pay plans help customers avoid service interruptions and/or the initiation of the severance process.

**Calls to Call Center:**

Customer calls increased primarily because of the increase in field activity. Staff in the Call Center were challenged to meet caller demand as they continue working through staffing shortages created by employee planned and unexpected leave, technical issues and vacancies that are longer than normal due a very tight and competitive labor market. These challenges are resulting in longer call wait times and higher levels of abandoned calls.

**Delayed Bills:**

Pending bills requiring manual review increased this month. Our partner localities are also struggling with employee vacancies, causing a shortage in meter reading staff across Hampton Roads. Delayed meter reading activities often results in bill estimates and manual adjustments.

3. The Quarterly investment summary for [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#) is attached.

B. Interim Financial Report

1. Operating Budget for the Period Ended July 31, 2022

	Adopted Budget	Current YTD	Current YTD as % of Budget (8% Budget to Date)	Prior YTD as % of Prior Year Budget
<b>Operating Revenues</b>				
Wastewater	\$ 366,882,000	\$ 31,125,535	8%	9%
Surcharge	1,755,000	126,826	7%	7%
Indirect Discharge	3,200,000	328,866	10%	9%
Fees	2,910,000	246,199	8%	0%
Municipal Assistance	800,000	105,875	13%	13%
Miscellaneous	1,254,000	101,505	8%	3%
<b>Total Operating Revenue</b>	<b>376,801,000</b>	<b>32,034,806</b>	<b>9%</b>	<b>9%</b>
<b>Non Operating Revenues</b>				
Facility Charge	7,150,000	486,515	7%	6%
Interest Income	1,570,000	414,447	26%	10%
Build America Bond Subsidy	2,026,000	-	0%	0%
Other	302,000	94,944	31%	55%
<b>Total Non Operating Revenue</b>	<b>11,048,000</b>	<b>995,906</b>	<b>9%</b>	<b>8%</b>
<b>Total Revenues</b>	<b>387,849,000</b>	<b>33,030,712</b>	<b>9%</b>	<b>9%</b>
Transfers from Reserves	-	-	0%	0%
<b>Total Revenues and Transfers</b>	<b>\$ 387,849,000</b>	<b>\$ 33,030,712</b>	<b>9%</b>	<b>9%</b>
<b>Operating Expenses</b>				
Personal Services	\$ 63,288,297	\$ 7,105,176	11%	11%
Fringe Benefits	26,513,570	2,034,281	8%	9%
Materials & Supplies	12,309,985	341,050	3%	3%
Transportation	1,790,611	60,911	3%	5%
Utilities	14,948,819	759,280	5%	4%
Chemical Purchases	12,472,034	556,272	4%	7%
Contractual Services	44,910,988	2,970,347	7%	8%
Major Repairs	8,497,970	510,208	6%	1%
Capital Assets	447,684	-	0%	0%
Miscellaneous Expense	3,463,076	123,655	4%	5%
<b>Total Operating Expenses</b>	<b>188,643,034</b>	<b>14,461,180</b>	<b>8%</b>	<b>8%</b>
<b>Debt Service and Transfers</b>				
Debt Service	69,533,000	13,167,166	19%	15%
Transfer to CIP	129,412,966	10,784,414	8%	13%
Transfer to Risk management	260,000	21,667	8%	8%
<b>Total Debt Service and Transfers</b>	<b>199,205,966</b>	<b>23,973,247</b>	<b>12%</b>	<b>13%</b>
<b>Total Expenses and Transfers</b>	<b>\$ 387,849,000</b>	<b>\$ 38,434,427</b>	<b>10%</b>	<b>11%</b>

2. Notes to Interim Financial Report

The Interim Financial Report summarizes the results of HRSD’s operations on a basis of accounting that differs from generally accepted accounting principles. **Revenues are recorded on an accrual basis, whereby they are recognized when billed**, and expenses are generally recorded on a cash basis. No provision is made for non-cash items such as depreciation and bad debt expense.

This interim report does not reflect financial activity for capital projects contained in HRSD’s Capital Improvement Program (CIP).

Transfers represent certain budgetary policy designations as follows:

- a. Transfer to CIP: represents current period’s cash and investments that are designated to partially fund HRSD’s capital improvement program.
- b. Transfers to Reserves: represents the current period’s cash and investments that have been set aside to meet HRSD’s cash and investments policy objectives.

3. Reserves and Capital Resources (Cash and Investments Activity) for the Period Ended July 31, 2022

HRSD - RESERVE AND CAPITAL ACTIVITY							July 31, 2022
	General Reserve			Risk Mgmt Reserve	Capital		
	General	CARES - ARPA	Debt Service		Paygo	Debt Proceeds	
	Unrestricted	Restricted	Restricted	Unrestricted	Unrestricted	Restricted	
<b>Beginning - July 1, 2021</b>	\$ 191,848,249	\$ 420	\$ 30,454,700	\$ 4,279,547	\$ 32,535,033	-	
<b>Current Year Sources of Funds</b>							
Current Receipts	29,988,839						
Line of Credit							
VRA Draws					3,163,906		
CARES Transfer In	730,692						
Days Cash on Hand Transfer In							
Transfers In	-			21,667	10,784,414		
<b>Sources of Funds</b>	30,719,531	-	-	21,667	13,948,320	-	
<b>Total Funds Available</b>	\$ 222,567,780	\$ 420	\$ 30,454,700	\$ 4,301,214	\$ 46,483,353	\$ -	
<b>Current Year Uses of Funds</b>							
Cash Disbursements	33,276,544				31,365,464		
CARES Transfer Out							
Days Cash on Hand Transfer Out							
Transfers Out	10,806,081						
<b>Uses of Funds</b>	44,082,625	-	-	-	31,365,464	-	
<b>End of Period - July 31, 2022</b>	\$ 178,485,155	\$ 420	\$ 30,454,700	\$ 4,301,214	\$ 15,117,889	\$ -	
Unrestricted Funds	\$ 197,904,258						



4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended July 31, 2022

HRSD - PROJECT ANALYSIS							July 31, 2022
Classification/ Treatment Service Area	Appropriated Funds	Expenditures prior to 7/1/2022	Expenditures Year to Date FY2023	Total Project Expenditures	Encumbrances	Available Funds	
Administration	73,738,240	24,017,666	686,197	24,703,863	1,854,813	47,179,564	
Army Base	163,448,800	124,990,776	87,581	125,078,357	644,170	37,726,273	
Atlantic	222,983,198	79,968,839	540,809	80,509,648	2,584,473	139,889,077	
Boat Harbor	385,426,520	56,493,327	1,675,152	58,168,479	198,772,016	128,486,025	
Ches-Eliz	183,285,621	118,083,285	121,175	118,204,460	5,919,205	59,161,956	
Eastern Shore	28,167,651	3,409,844	2,889,391	6,299,235	17,487,931	4,380,485	
James River	335,749,024	41,947,605	4,369,927	46,317,532	250,224,826	39,206,666	
Middle Peninsula	101,335,187	20,701,425	703,925	21,405,350	10,143,091	69,786,746	
Nansemond	465,790,657	42,047,584	1,752,351	43,799,935	324,405,934	97,584,788	
Surry	57,612,528	38,362,111	865,562	39,227,673	4,733,312	13,651,543	
VIP	165,959,940	17,792,976	857,009	18,649,985	31,497,879	115,812,076	
Williamsburg	28,243,555	20,951,191	734,056	21,685,247	3,780,992	2,777,316	
York River	71,119,281	13,910,493	147,839	14,058,332	9,974,980	47,085,969	
General	1,196,473,695	212,260,993	8,290,444	220,551,437	359,736,573	616,185,685	
	\$ 3,479,333,897	\$ 814,938,117	\$ 23,721,418	\$ 838,659,533	\$ 1,221,760,193	\$ 1,418,914,169	

5. Debt Management Overview

HRSD - Debt Outstanding (\$000's)						July 31, 2022
	Principal June 2022	Principal Payments	Principal Draws	Principal July 2022	Interest Payments	
<b>Fixed Rate</b>						
Senior	183,899	(11,825)	-	172,074	(1,260)	
Subordinate	618,031	(47)	3,164	621,148	(16)	
<b>Variable Rate</b>						
Subordinate	50,000	-	-	50,000	(19)	
<b>Line of Credit</b>	33,721			33,721	(49)	
<b>Total</b>	\$ 885,651	\$ (11,872)	\$ 3,164	\$ 876,943	\$ (1,344)	

HRSD- Series 2016VR Bond Analysis				July 29, 2022
	SIFMA Index	HRSD	Spread to SIFMA	
Maximum	4.71%	4.95%	0.24%	
Average	0.36%	0.49%	0.13%	
Minimum	0.01%	0.01%	0.00%	
As of 07/29/22	1.33%	1.44%	0.11%	

\* Since October 20, 2011 HRSD has averaged 49 basis points on Variable Rate Debt

## 6. Financial Performance Metrics for the Period Ended July 31, 2022

### HRSD - UNRESTRICTED CASH

July 31, 2022

Can be used for any purpose since it is not earmarked for a specific use and is extremely liquid

		Days Cash on Hand	Adjusted Days Cash on Hand
Total Unrestricted Cash	\$ 197,904,258		383
Risk Management Reserve	\$ (4,301,214)	(8)	375
Capital (PAYGO only)	\$ (15,117,889)	(30)	345
<b>Adjusted Days Cash on Hand</b>	<b>\$ 178,485,155</b>		<b>345</b>

Risk Management Reserve as a % of Projected Claims Cost is 25% YTD compared to 25% Policy Minimum  
Adjusted Days Cash on Hand Policy Minimum is 270-365 days.

### HRSD - SOURCES OF FUNDS

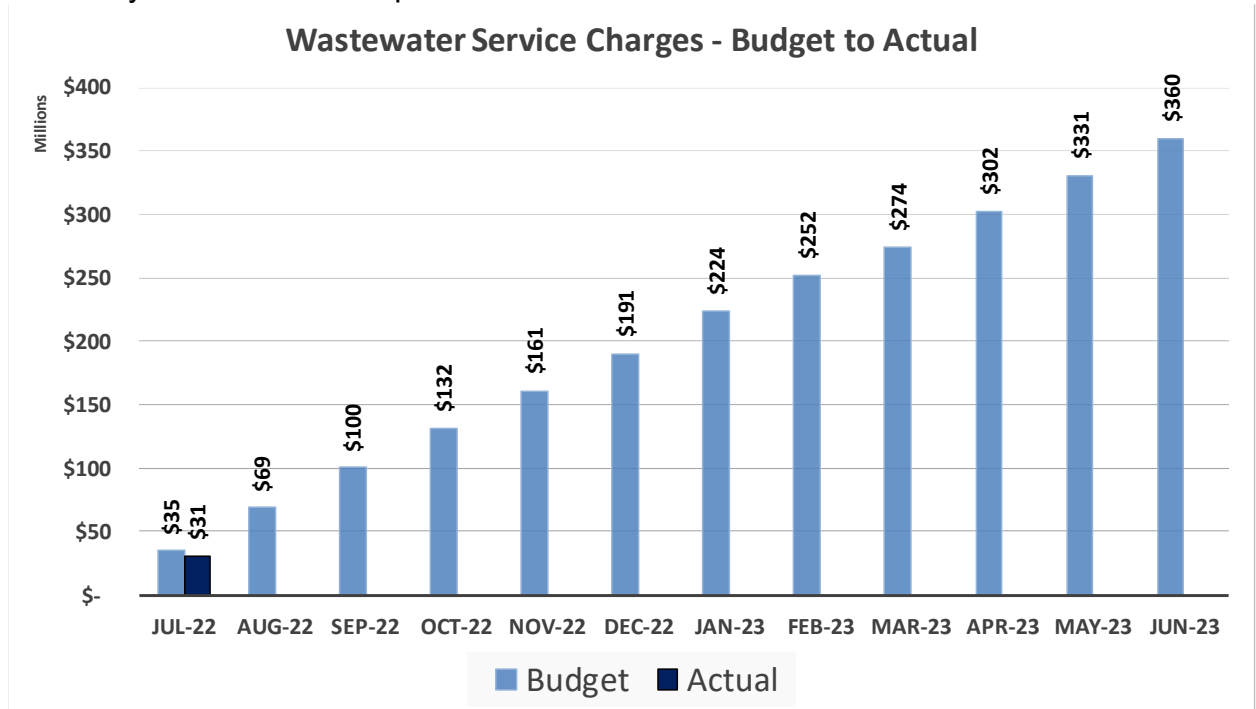
July 31, 2022

Primary Source	Beginning Market Value	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value	Allocation of Funds	Credit Quality	Current Mo Avg Yield
	July 1, 2022				July 31, 2022			
BAML Corp Disbursement Account	25,498,734	45,671,155	55,068,328	2,393	16,103,954	10.7%	N/A	0.55%
VIP Stable NAV Liquidity Pool	144,268,153	-	10,000,000	198,977	134,467,130	89.3%	AAAm	1.64%
<b>Total Primary Source</b>	<b>\$ 169,766,887</b>	<b>\$ 45,671,155</b>	<b>\$ 65,068,328</b>	<b>\$ 201,370</b>	<b>\$ 150,571,084</b>	<b>100.0%</b>		

Secondary Source	Beginning Market Value	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value	Ending Cost	LTD Mkt Adj	Yield to Maturity at Market
	July 1, 2022				July 31, 2022			
VIP 1-3 Year High Quality Bond Fund	62,932,017	-	1,034	52,400	63,140,273	63,795,382	(655,108)	
<b>Total Secondary Source</b>	<b>\$ 62,932,017</b>	<b>\$ -</b>	<b>\$ 1,034</b>	<b>\$ 52,400</b>	<b>\$ 63,140,273</b>	<b>\$ 63,795,382</b>	<b>\$ (655,108)</b>	

	Total	Fund Alloc
Total Primary Source	\$ 150,571,084	70.5%
Total Secondary Source	\$ 63,140,273	29.5%
<b>TOTAL SOURCES</b>	<b>\$ 213,711,357</b>	<b>100.0%</b>

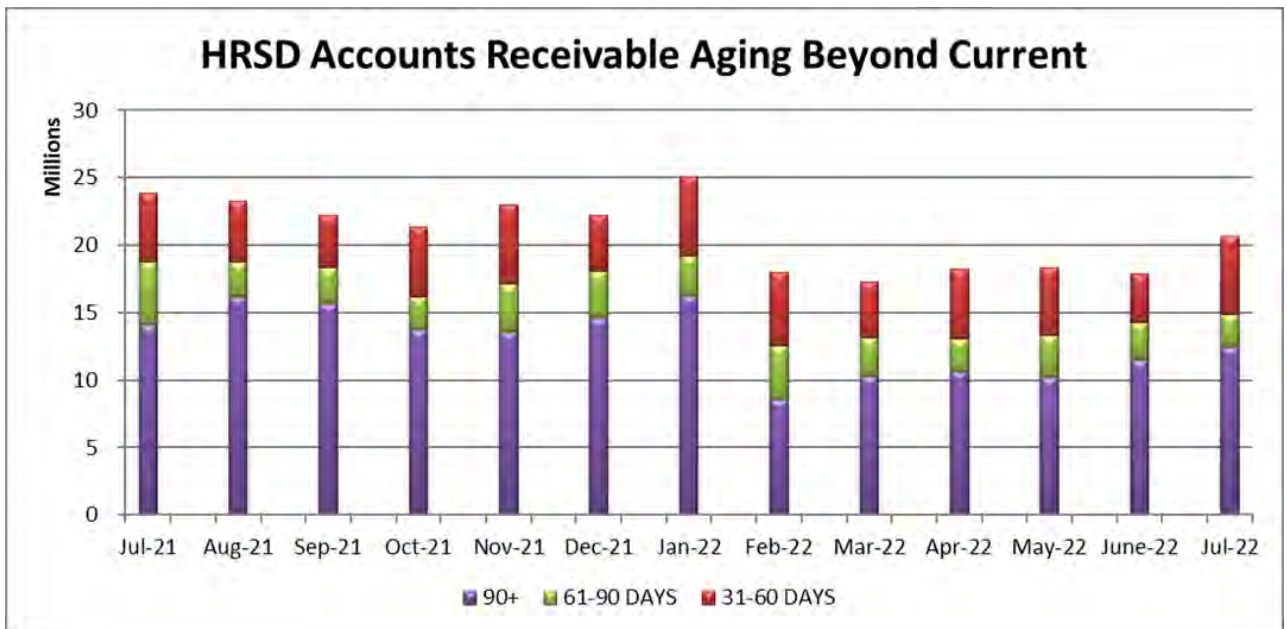
## 7. Summary of Billed Consumption

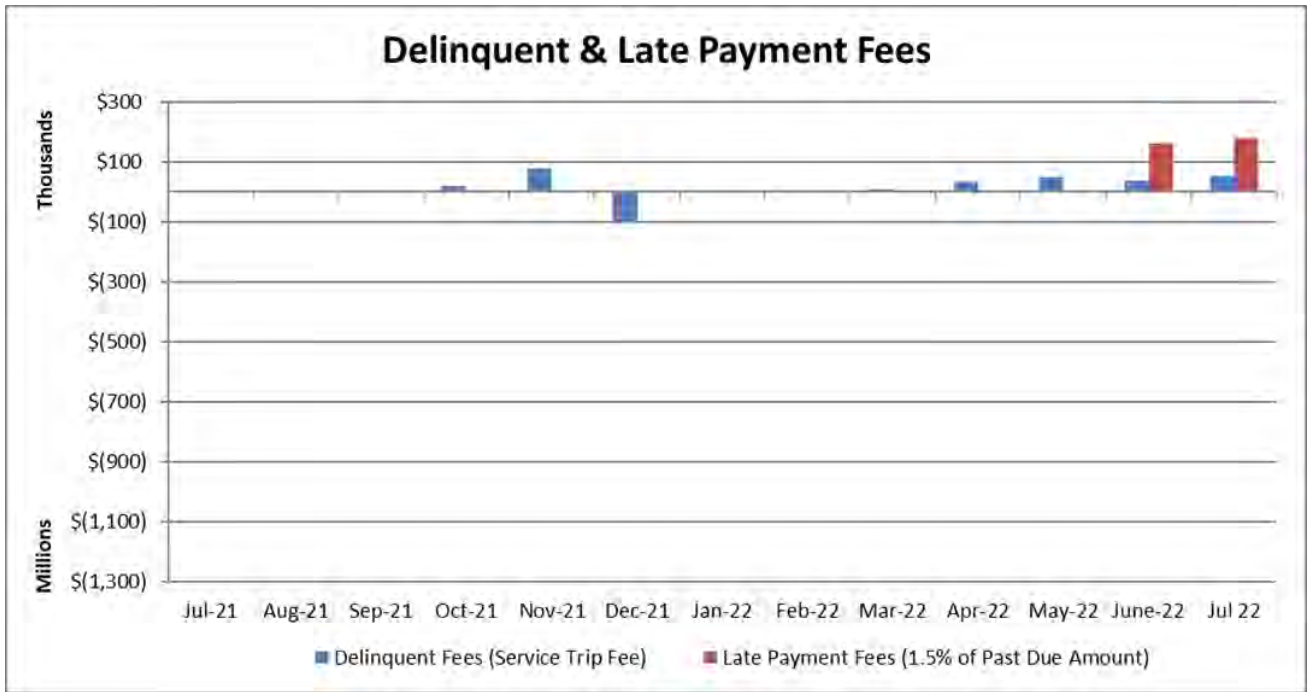


Summary of Billed Consumption (,000s ccf)							
Month	FY2023 Cumulative Budget Estimate	FY2023 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2022 Actual	From FY2022	Cumulative 3 Year Average	From 3 Year Average
July	5,015	4,682	-6.6%	4,976	-5.9%	4,947	-5.4%
Aug	9,883	-	N/A	9,518	N/A	9,641	N/A
Sept	14,413	-	N/A	14,347	N/A	14,345	N/A
Oct	18,892	-	N/A	19,048	N/A	18,955	N/A
Nov	23,125	-	N/A	22,953	N/A	22,412	N/A
Dec	27,336	-	N/A	27,541	N/A	27,558	N/A
Jan	32,088	-	N/A	31,865	N/A	32,148	N/A
Feb	36,182	-	N/A	36,188	N/A	36,087	N/A
March	39,309	-	N/A	40,229	N/A	40,452	N/A
Apr	43,360	-	N/A	44,569	N/A	44,644	N/A
May	47,508	-	N/A	48,315	N/A	48,656	N/A
June	51,620	-	N/A	53,243	N/A	53,324	N/A

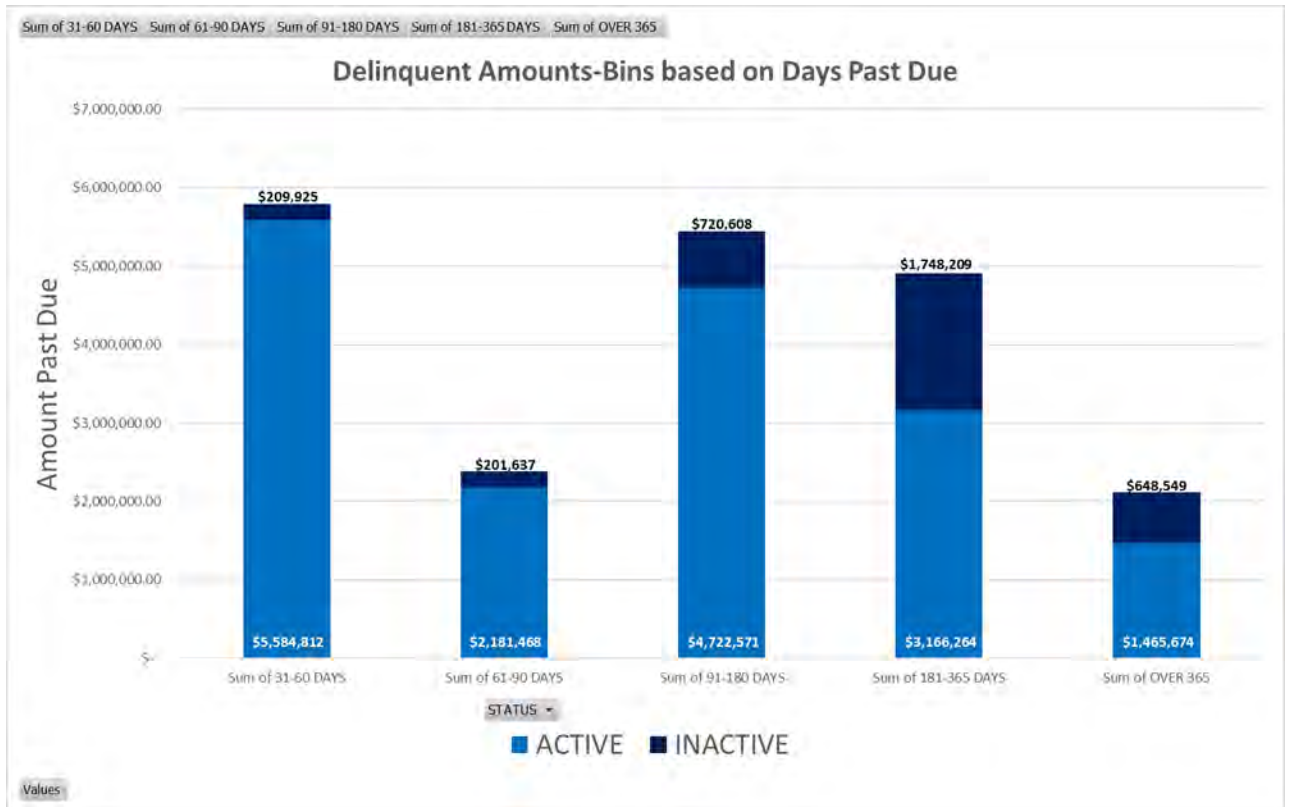
C. Customer Care Center

1. Accounts Receivable Overview

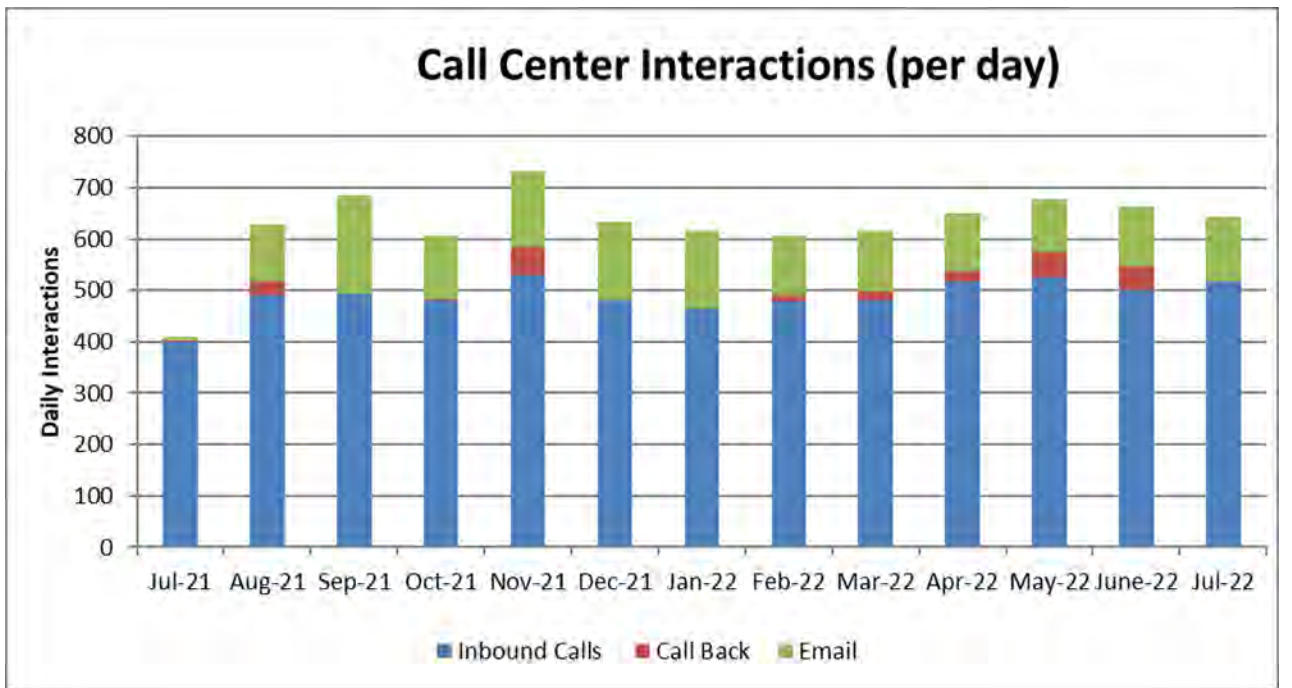
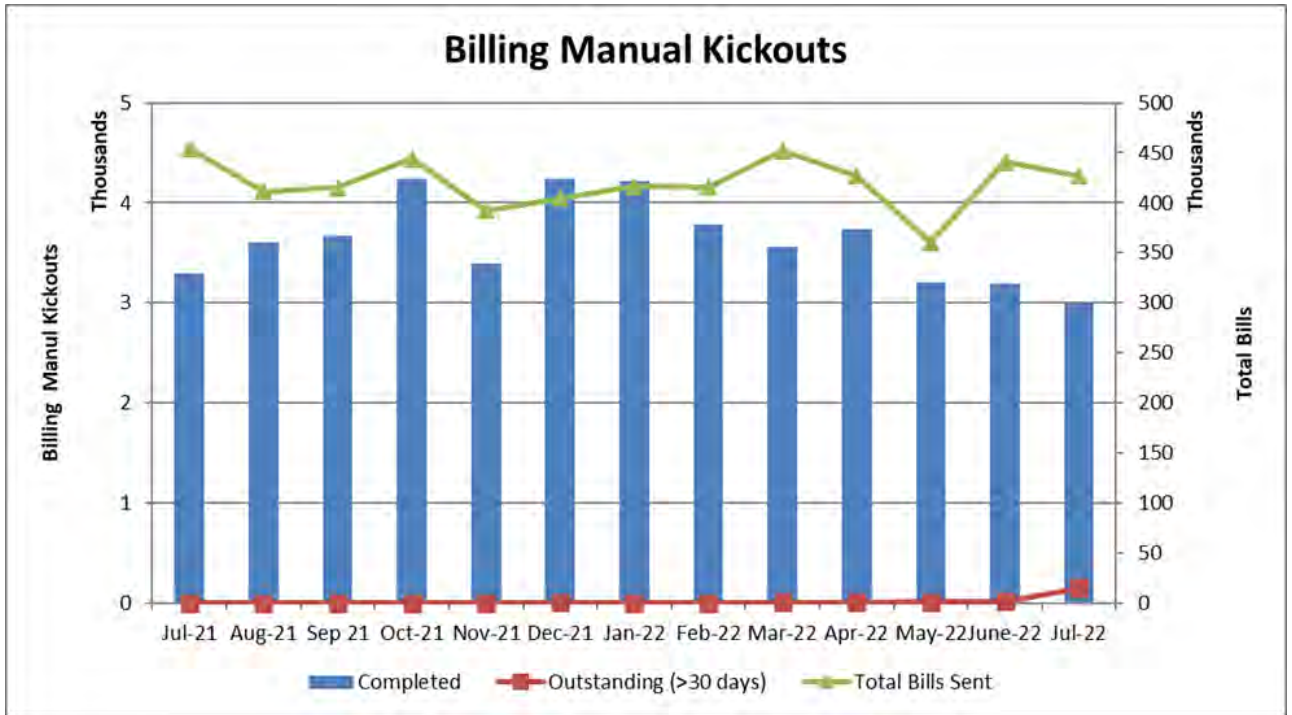


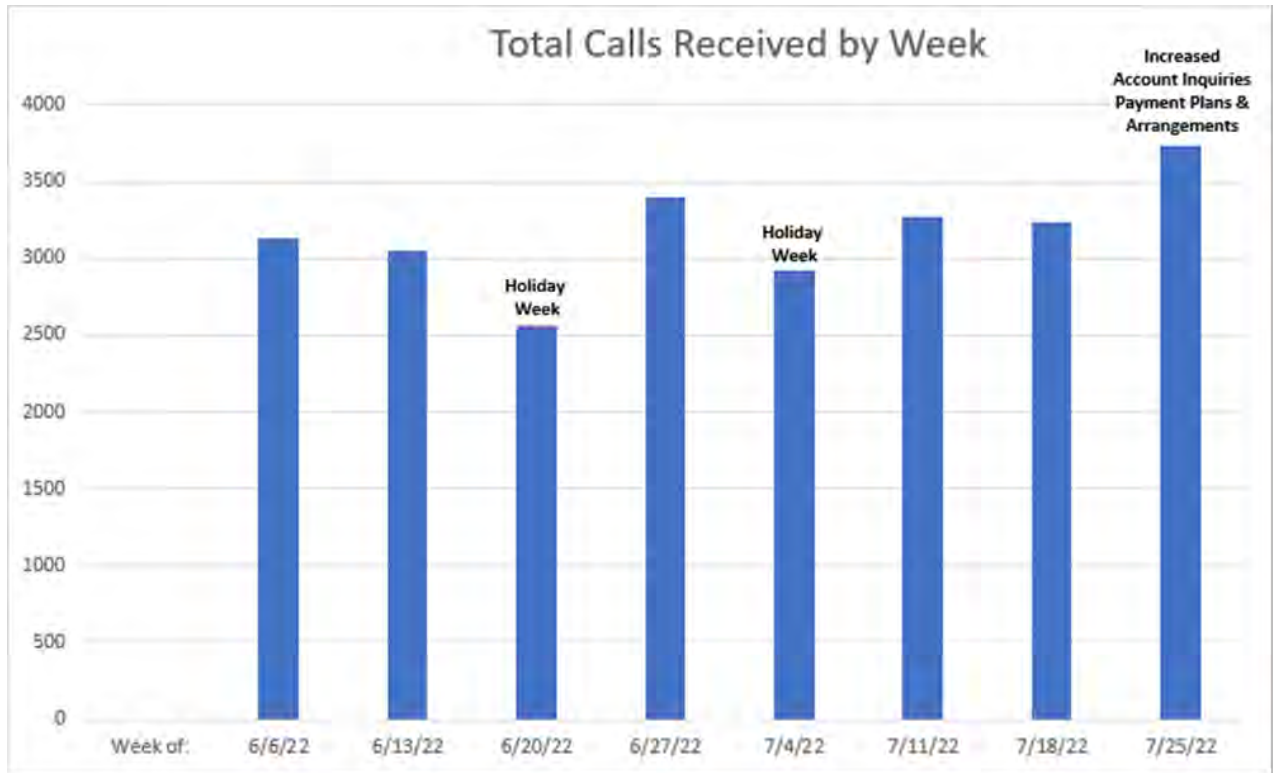


Apr 20-Feb 22 Field Activity was suspended late March 2020 in response to COVID-19.



## 2. Customer Care Center Statistics





Customer Interaction Statistics	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul
Calls Answered within 3 minutes	65%	91%	93%	50%	67%	84%	88%	86%	83%	68%	57%	29%
Average Wait Time (seconds)	433	57	38	379	193	89	75	81	101	203	291	587
Calls Abandoned	23%	6%	4%	22%	15%	9%	6%	7%	7%	12%	15%	25%

D. Procurement Statistics

ProCard Fraud	External Fraud Transactions *	Comments
July	0	
<b>Total</b>	<b>0</b>	

\***External Fraud:** Fraud from outside HRSD (i.e.: a lost or stolen card, phishing, or identity theft)



E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Community Partners: 0
3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2022
M-1.4a	Training During Work Hours Per Full Time Employee (103) – Current Month	Hours / #FTE	0.66
M-1.4b	Total Training During Work Hours Per Full Time Employee (103) – Cumulative Fiscal Year-to-Date	Hours / #FTE	0.66
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	100%
	General Reserves	Percentage of Operating Budget less Depreciation	111%
	Liquidity	Days Cash on Hand	383 Days
	Accounts Receivable (HRSD)	Dollars	\$41,723,530
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	30%



#### 4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2022
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	*
M-4.3	Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow	*
M-4.4	Affordability	6.5 CCF Monthly Charge/Median Household Income <sup>[1]</sup>	*
M-4.5	Operating Cost/MGD	Total Operating Expense /365/5-Year Average Daily Flow	*
	Billed Flow	Percentage of Total Treated	*
	Senior Debt Coverage	Cash Reserves/ Senior Annual Debt Service	*
	Total Debt Coverage		*

\* These metrics will be reported upon completion of the annual financial statements.

Respectfully,

*Steven G. de Mik*

Steven G. de Mik, CPA

Deputy General Manager/CFO

Attachments: [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#)

<sup>[1]</sup> Median Household Income is based on the American Community Survey (US Census) for Hampton Roads

	Total Portfolio Value	
	June 30, 2022	March 31, 2022
Investment Assets	\$ 62,091,120	\$ 69,818,589
<b>Combined Assets</b>	<b>\$ 62,136,524</b>	<b>\$ 69,863,934</b>

## Portfolio Recap & Strategy

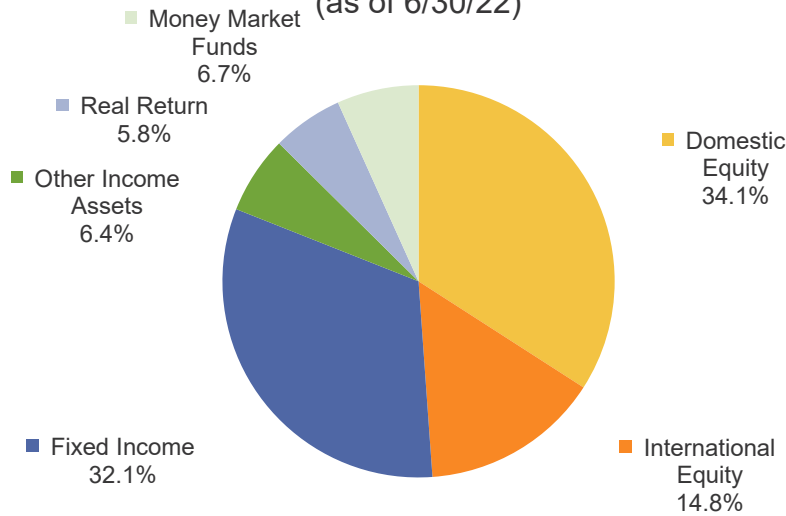
- The Retiree Health Plan Trust portfolio returned -11.06% (investment assets) for the quarter ended June 30, 2022, above the -11.36% return of the Blended Benchmark.\* Over the quarter, the Multi-Asset Class Investment Committee (“the Committee”) sought to add value to the portfolio by increasing allocations to Real Return and Money Market Funds, while decreasing allocations to Domestic Equity and International Equity. The Committee added the iShares MBS ETF during the quarter.
- Inflation remained elevated, reflecting higher energy prices, supply chain disruptions lingering from the pandemic, and continuing strong consumer demand. But, outside of oil, many commodities have returned to price levels prior to the Russian invasion of Ukraine. The U.S. Consumer Price Index (CPI) increased 9.1% year-over-year through June, exceeding expectations and reaching a new four-decade high. Gasoline prices led the rise, surging 60% over the past year. Other large contributors included shelter (+5.6%), food (+10.4%), new vehicles (+11.4%), transportation (+8.8%) and Medical care (+4.8%). After peaking at over \$5 per gallon in June, gasoline prices were down about 50 cents by early July.
- Concerns over a possible recession continued to weigh on investor sentiment in recent weeks. As the Fed is “strongly committed” to curbing inflation, investors are increasingly concerned that aggressive monetary tightening will tip the U.S. economy into a recession. The Federal Open Market Committee (FOMC) raised the federal funds rate by 75 basis points (bps) in June – the biggest increase since 1994 – to a new target range of 1.5%-1.75%. In their latest iteration of economic projections, the Federal Reserve (Fed) increased its expectation for inflation in 2022, lowered its forecast for real gross domestic product (GDP) and increased its projection for the year-end fed funds rate from 1.5% to 3.4%. The Fed arguably remains behind the curve when it comes to taming inflation. The FOMC will also continue reducing its holdings of Treasury securities, agency debt, and agency mortgage-backed securities, as described in the plan issued in May.
- Domestic equity markets, as represented by the S&P 500 Index (S&P), returned -8.26% in June. Within the S&P, all of the 11 sectors posted negative returns. The Consumer Staples sector was the best performer of the month, returning -2.50%. Healthcare was second best, posting a return of -2.66%. Energy was the worst-performing sector, posting a negative return of -16.91%. By market capitalization, small-caps (Russell 2000) returned -8.23%, large-caps (Russell 1000 Index), returned -8.38%, and mid-caps (Russell Mid Cap Index) returned -9.98%. Though all had negative returns, growth stocks significantly outperformed value stocks across all capitalizations.
- The Federal Reserve’s (Fed) decision to raise the fed funds rate 75 basis points (bps) in June led to flattening in the Treasury curve with 2-year rates only 6 bps below the 10-year. The 10-year saw an increase of 17 bps and the 30-year saw a gain of 14 bps, while the 2-year and 5-year rates saw gains of 40 and 22 bps, respectively, leading to the broad treasury index returning -0.7%. The Bloomberg Barclays U.S. Aggregate Index (Aggregate) lost -1.57% in June. Within the investment-grade (IG) credit spectrum, AAA-rated bonds returned -1.03%, AA-rated bonds returned -1.84%, A-rated bonds returned -2.42%, and BBB-rated bonds returned -3.18%. High yield corporates also saw a loss of -6.73% during the month. Yields saw larger gains on the short end of the spectrum of the U.S. Treasury yield curve during the month of June.
- Real estate investment trusts (REITs) represented by the FTSE NAREIT Index returned -7.41%. Performance was negative for all of the nine real estate sectors. Self-Storage did the best, returning -4.24%. The worst performing sector of the month was Lodging and Resorts, returning -19.65%. The active contract for West Texas Intermediate (WTI) crude fell to \$105.76/barrel in June down from \$114.67/barrel at the end of May, and up \$32.29/barrel year over year.

\*Performance is unreconciled and does not include funds from Boyd Watterson. See page 3 for detailed information about the Blended Benchmark.

Security Type	June 30, 2022	% of Portfolio	March 31, 2022	% of Portfolio	Permitted by Policy
Domestic Equity	\$ 21,186,356	34.1%	\$ 27,196,189	38.9%	19% - 59%
International Equity	\$ 9,179,191	14.8%	\$ 13,591,862	19.5%	1% - 41%
Fixed Income	\$ 19,964,879	32.1%	\$ 22,098,333	31.6%	20% - 60%
Other Income Assets	\$ 3,983,880	6.4%	\$ 4,073,126	5.8%	0% - 10%
Real Return	\$ 3,633,396	5.8%	\$ 2,730,542	3.9%	0% - 10%
Money Market Funds	\$ 4,188,822	6.7%	\$ 173,881	0.2%	0% - 20%
<b>Totals</b>	<b>\$ 62,136,524</b>	<b>100.0%</b>	<b>\$ 69,863,934</b>	<b>100.0%</b>	

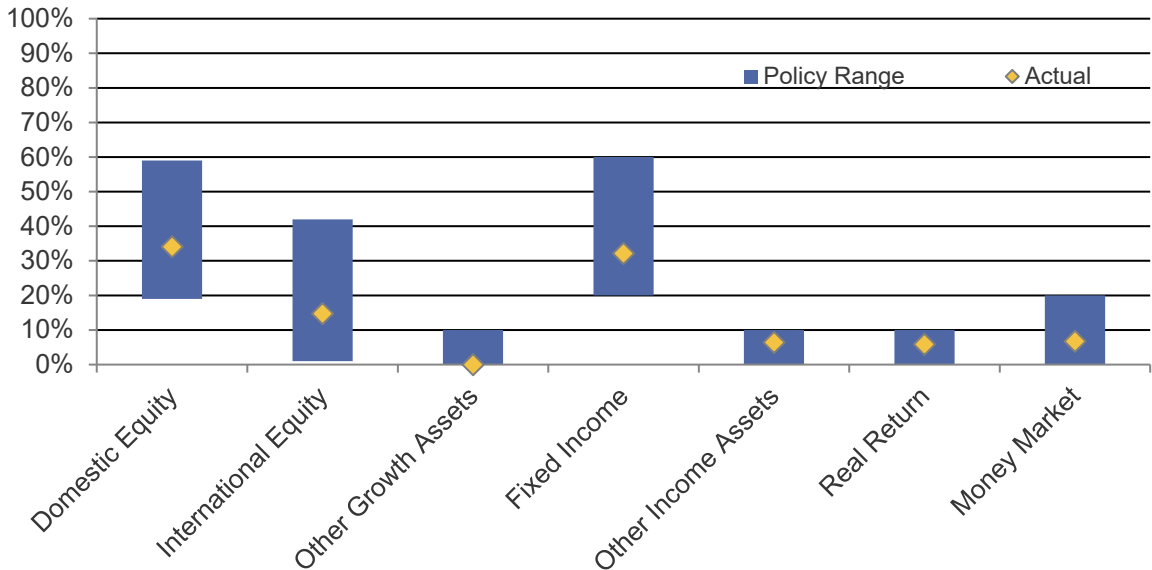
### Portfolio Composition

(as of 6/30/22)



### Asset Allocation

(as of 6/30/22)

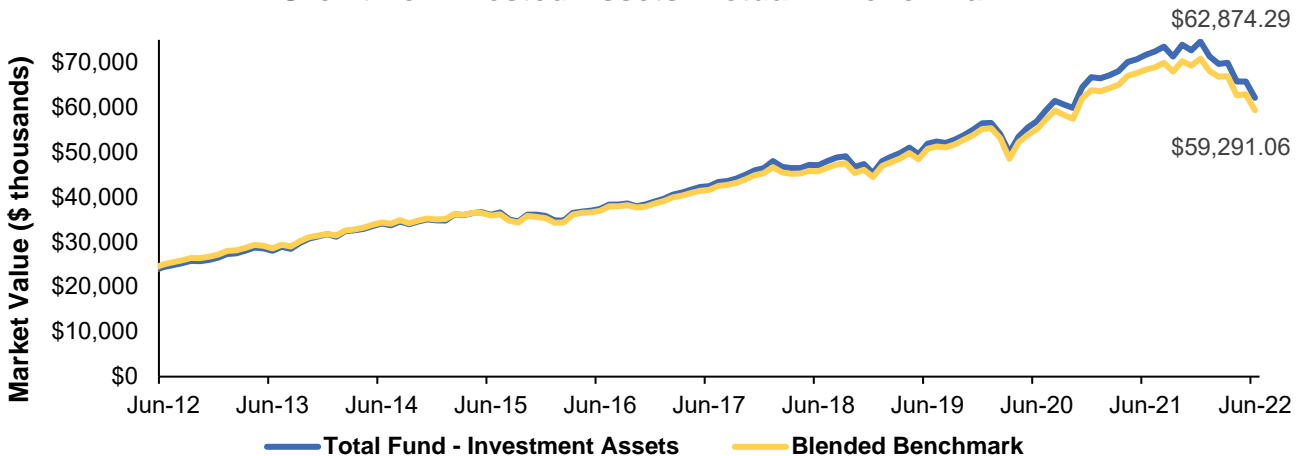


Index	Market Values	%	1 Quarter	Year to Date	Trailing 1 Year	Trailing 3 Years	Trailing 5 Years	Apr-2013 To Jun-2022*	Since Inception	Inception Date
<b>Domestic Equity</b>	<b>\$ 21,186,356</b>	<b>34.12</b>								
Vanguard Total Stock Market ETF	\$ 13,839,238	22.29	-16.85%	-21.38%	-14.24%	9.62%	10.52%	11.56%	20.14%	4/1/2020
Russell 3000 Index			-16.70%	-21.10%	-13.87%	9.77%	10.60%	11.61%	20.29%	4/1/2020
Invesco S&P 500 Equal Weight ETF	\$ 2,126,203	3.42	-14.39%	-16.75%	-9.55%	9.56%	9.67%	10.98%	-12.20%	3/1/2020
S&P 500 Equal Weighted			-14.36%	-16.68%	-9.38%	9.73%	9.87%	11.29%	-12.15%	3/1/2022
Jensen Quality Growth Fund	\$ 2,231,902	3.59	-12.44%	-19.05%	-4.86%	11.30%	12.76%	13.15%	11.25%	4/1/2019
S&P 500			-16.10%	-19.96%	-10.62%	10.60%	11.31%	12.14%	11.18%	4/1/2019
iShares Core S&P Mid-Cap ETF	\$ 1,488,367	2.40	-15.42%	-19.56%	-14.70%	6.81%	6.97%	9.20%	-13.14%	10/1/2021
S&P MidCap 400			-15.42%	-19.54%	-14.64%	6.87%	7.02%	9.27%	-13.11%	10/1/2021
iShares Core S&P Small-Cap ETF	\$ 1,500,646	2.42	-14.13%	-18.98%	-16.90%	7.24%	7.17%	9.96%	-12.62%	2/1/2022
S&P SmallCap 600			-14.11%	-18.94%	-16.81%	7.30%	7.20%	9.99%	-12.59%	2/1/2022
<b>International Equity</b>	<b>\$ 9,179,191</b>	<b>14.78</b>								
Vanguard Total International Stock ETF	\$ 4,168,127	6.71	-12.87%	-18.15%	-18.89%	2.05%	2.75%	3.80%	12.68%	4/1/2020
MSCI AC World ex USA (Net)			-13.73%	-18.42%	-19.42%	1.35%	2.50%	3.44%	11.20%	4/1/2020
J. O. Hambro International Select	\$ 1,588,824	2.56	-20.53%	-31.89%	-28.55%	-0.11%	3.00%	5.86%	4.87%	1/1/2016
MSCI AC World ex USA (Net)			-13.73%	-18.42%	-19.42%	1.35%	2.50%	3.44%	4.71%	1/1/2016
Harding Loevner International Equity	\$ 1,608,250	2.59	-14.83%	-24.18%	-22.60%	2.07%	3.39%	5.05%	1.88%	7/1/2020
MSCI AC World ex USA (Net)			-13.73%	-18.42%	-19.42%	1.35%	2.50%	3.44%	4.58%	7/1/2020
Vanguard FTSE Developed Markets ETF	\$ 861,737	1.39	-14.08%	-19.26%	-18.11%	2.12%	2.70%	4.32%	-13.78%	3/1/2022
MSCI EAFE (net)			-14.51%	-19.57%	-17.77%	1.07%	2.20%	3.80%	-13.96%	3/1/2022
Hartford Schroders Emerging Markets Equity	\$ 952,255	1.53	-12.13%	-19.87%	-28.56%	0.56%	2.52%	2.53%	-1.40%	3/1/2018
MSCI EM (net)			-11.45%	-17.63%	-25.28%	0.57%	2.18%	2.07%	-1.66%	3/1/2018
<b>Fixed Income</b>	<b>\$ 19,964,879</b>	<b>32.15</b>								
Baird Core Plus	\$ 4,406,456	7.10	-5.22%	-11.04%	-11.03%	-0.49%	1.29%	2.06%	2.14%	5/1/2014
Blimb, U.S. Aggregate			-4.69%	-10.35%	-10.29%	-0.94%	0.88%	1.49%	1.59%	5/1/2014
DoubleLine Core Fixed Income	\$ 3,188,070	5.13	-5.50%	-10.11%	-10.18%	-1.24%	0.74%	1.78%	0.46%	9/1/2017
PGIM Total Return Bond	\$ 4,398,787	7.08	-6.71%	-12.78%	-12.53%	-1.34%	1.08%	2.16%	0.76%	9/1/2017
Blimb, U.S. Aggregate			-4.69%	-10.35%	-10.29%	-0.94%	0.88%	1.49%	0.63%	9/1/2017
Voya Intermediate Bond	\$ 3,200,754	5.15	-5.69%	-11.61%	-11.54%	-0.86%	1.11%	N/A	-2.15%	1/1/2020
Blimb, U.S. Aggregate			-4.69%	-10.35%	-10.29%	-0.94%	0.88%	1.49%	-2.08%	1/1/2020
iShares MBS ETF	\$ 1,898,813	3.06	-3.92%	-8.73%	-9.07%	-1.48%	0.29%	1.01%	N/A	7/1/2022
Blimb, U.S. Mortgage Backed Securities			-4.01%	-8.78%	-9.03%	-1.44%	0.36%	1.18%	N/A	7/1/2022
iShares Intermediate-Term Corporate Bond ETF	\$ 695,897	1.12	-6.29%	-12.86%	-13.29%	-0.81%	1.54%	1.87%	-1.79%	10/1/2019
ICE BofAML U.S. Corporate 5-10 Year Index			-6.15%	-12.94%	-13.33%	-0.66%	1.58%	2.52%	-1.63%	10/1/2019
MFS Emerging Markets Debt	\$ 1,889	0.00	-11.55%	-18.57%	-19.80%	-3.89%	-0.66%	1.20%	-18.57%	1/1/2022
JPM EMBI Global Diversified			-11.43%	-20.31%	-21.22%	-5.22%	-1.19%	1.63%	-20.31%	1/1/2022
Pacific Funds Floating Rate Income	\$ 1,679,068	2.70	-4.82%	-4.80%	-3.20%	1.28%	2.39%	2.94%	-5.19%	2/1/2022
Credit Suisse Leveraged Loan Index			-4.35%	-4.45%	-2.68%	2.03%	2.97%	3.44%	-4.79%	2/1/2022
MainStay MacKay High Yield Corp Bond Fund	\$ 495,145	0.80	-7.93%	-10.88%	-9.73%	0.98%	2.57%	N/A	-8.05%	6/1/2021
ICE BofAML High Yield Master II			-9.99%	-14.05%	-12.69%	-0.05%	1.95%	3.58%	-10.66%	6/1/2021
<b>Other Income</b>	<b>\$ 3,983,880</b>	<b>6.42</b>								
Boyd Watterson GSA Fund	\$ 2,742,594	4.42	0.00%	1.65%	4.20%	6.53%	N/A	N/A	6.53%	7/1/2019
NCREIF Property Income			N/A	N/A	N/A	N/A	N/A	N/A	N/A	7/1/2019
iShares Preferred Income Securities ETF	\$ 1,241,286	2.00	-8.75%	-15.08%	-12.81%	1.06%	1.67%	3.37%	-13.48%	9/1/2021
ICE BofAML Preferred Stock, Hybrid Securities			-8.03%	-15.30%	-14.65%	-1.30%	0.95%	3.58%	-14.73%	9/1/2021
<b>Real Return</b>	<b>\$ 3,633,396</b>	<b>5.85</b>								
Invesco Opt Yield Diversified Commodity	\$ 1,822,401	2.94	2.19%	28.48%	38.32%	19.65%	13.40%	N/A	2.19%	4/1/2022
Bloomberg Commodity Index Total Return			-5.66%	18.44%	24.27%	14.34%	8.39%	-1.05%	-5.66%	4/1/2022
PIMCO Commodity Real Return Strategy	\$ 1,810,996	2.92	-7.56%	14.95%	22.96%	16.88%	10.25%	-0.91%	22.79%	6/1/2021
Bloomberg Commodity Index Total Return			-5.66%	18.44%	24.27%	14.34%	8.39%	-1.05%	24.30%	6/1/2021
<b>Cash Equivalent</b>										
First American Government Obligation	\$ 4,143,418	6.67	0.14%	0.15%	0.16%	0.49%	0.95%	0.57%	1.19%	1/1/2004
Retiree Health Plan Trust	\$ 62,091,120	100.00	-11.06%	-16.71%	-13.47%	4.92%	5.89%	6.45%	7.37%	9/1/2009
<b>Blended Benchmark*</b>			<b>-11.36%</b>	<b>-16.26%</b>	<b>-13.45%</b>	<b>4.03%</b>	<b>5.29%</b>	<b>5.65%</b>	<b>6.96%</b>	<b>9/1/2009</b>

Data as of June 30, 2022.

\*\* refers to performance that is not applicable.

### Growth of Invested Assets: Actual v. Benchmark



\*Active Strategy implemented April 1, 2013. Since inception to June 30, 2017, the Blended Benchmark was 33% Russell 3000 / 21% MSCI ACWI ex USA net) / 3% FTSE NAREIT Equity REITs / 3% Bloomberg Commodity TR / 40% Bloomberg Barclays Aggregate. From July 1, 2017 to present, the Blended Benchmark was 39% Russell 3000 / 21% MSCI ACWI ex USA net) / 40% Bloomberg Barclays Aggregate.

**Hampton Roads Sanitation District  
Qtrly Performance Report  
For the Quarter Ending June 30, 2022**

## Total Portfolio Summary

Operating Strategies	June 30, 2022	March 31, 2022
Primary Source	\$ 169,766,887	\$ 172,020,946
Secondary Source	62,932,017	63,234,406
	<b>\$ 232,698,905</b>	<b>\$ 235,255,353</b>

### Primary Source Summary

The Primary Source Portfolio consists of BAML Corp Disbursement Account \$25.5m and VaCo/VML VIP Stable NAV Liquidity Pool \$144.3m. BAML Corp Disbursement Account returned 0.55% for the quarter ending June 30, 2022. VIP LIQ Pool Fund 30 Day Avg Net Yield was 1.13% as of June 30, 2022. VIP Stable NAV Liquidity Pool performed 0.02% below Va Local Government Investment Pool (the market benchmark) in the month of June 2022. VaCo/VML VIP Stable NAV Liquidity Pool's weighted average credit rating was A-1 for the quarter.

### Secondary Source Summary

The Secondary Source Portfolio consists of VaCo/VML VIP 1-3 Year High Quality Bond Fund. The VIP 1-3 Yield to Maturity at Market was 2.93% as of June 30, 2022, which performed 0.04% below ICE BofA ML 1-3 Yr AAA-AA Corp/Gov Index, (the market benchmark). The weighted average credit rating for VaCo/VML VIP 1-3 Year High Quality Bond Fund's portfolio was AA for the quarter.

Retirement Health Plan Trust	June 30, 2022	March 31, 2022
Investment Assets	62,091,120	69,818,589
Liquidity Assets	45,404	45,345
Combined Assets	<b>\$ 62,136,524</b>	<b>\$ 69,863,934</b>

### Retiree Health Plan Trust Summary

The Retiree Health Plan Trust portfolio returned -11.06% (investment assets) for the quarter ended June 30, 2022, above the -11.36% return of the Blended Benchmark.\* Over the quarter, the Multi-Asset Class Investment Committee ("the Committee") sought to add value to the portfolio by increasing allocations to Real Return and Money Market Funds, while decreasing allocations to Domestic Equity and International Equity. The Committee added the iShares MBS ETF during the quarter.

\*Performance is unreconciled and does not include funds from Boyd Watterson.

TO: General Manager  
FROM: Director of Information Technology  
SUBJECT: Information Technology Department Report for July 2022  
DATE: August 14, 2022

A. General

1. The technology refresh hardware for the customer billing system, and the Enterprise Resource Planning (ERP) system, arrived a couple of months ahead of schedule. Accordingly, staff has accelerated its preparation efforts to configure the necessary rack space and resources within the data center to accommodate the installation, configuration, and burn-in of the new hardware.
2. Staff are preparing for the installation of a new cloud-capable backup system to replace the aging backup system currently in use. Current efforts include reconfiguration and updating of peripheral equipment and software required by the new system to maximize system performance and security.
3. The IT Help Desk processed 427 work orders in July, ensuring availability of computing resources to those working locally and remotely.
4. Systems engineers are installing and configuring several new enhancements intended to further secure remote site connectivity between and across systems, both on premise and in the cloud.
5. Staff have been working with members of the Customer Care division to install, configure, test, and secure, a self-service payment kiosk in the payment office located on Air Rail Avenue. The kiosk provides an additional method of making a payment without having to stand in line to complete a cashier facilitated transaction.

B. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Number of Community Partners: 0

C. Metrics Summary

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>July 2022</b>
M-1.4a	Training During Work Hours Per Full-Time Employee (54) – Current Month	Total Training Hours / # FTE	3.40
M-1.4b	Total Training During Work Hours Per Full-Time Employee (54) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	3.40
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,  
*Don Corrado*



TO: General Manager  
FROM: Director of Operations  
SUBJECT: Operations Report for July 2022  
DATE: August 16, 2022

A. Interceptor Systems

1. North Shore (NS) Interceptors

- a. Operationally, NS Operations duties were relatively quiet with a few alarms and issues. Surry County Treatment Plant had an exceedingly high ammonia sample on July 7 and exceeded the weekly and monthly permit limit. The SCADA project remained highly active with several cutovers, factory acceptance tests, and global changes completed.
- b. Staffing continues to be an area of concern with seven vacant positions.

2. South Shore (SS) Interceptor Systems

- a. One odor complaint was reported this month. On July 18, a City of Suffolk Public Works employee informed staff an odor had been regularly encountered along the Suffolk Interceptor Force Main near the intersection of I-664 and the Western Freeway (VA-164). Technical Services Division (TSD) investigated and confirmed the presence of odors near an air vent that had auto bleed installed. The auto bleed was temporarily removed. It will be reinstalled later, along with a carbon unit. In the meantime, staff will manually vent air at this location. Staff will use the vent stacks and a portable carbon unit to minimize the odors if needed.
- b. Seven interceptor complaints were reported this month. Three issues were with the City of Virginia Beach Public Utilities Department, two were with the City of Norfolk Department of Utilities, and one was with the City of Suffolk Department of Public Utilities. On July 27, the City of Chesapeake Public Utilities Department reported a missing valve casting lid near the intersection of Battlefield Boulevard N and Tilden Avenue. Staff found the road surface around the air vent riser had settled. Staff trimmed the riser, reinstalled the valve casting flush with the road surface, and applied cold patch asphalt. A permanent asphalt patch will be installed later.
- c. Staffing remains an area of concern with 16 vacant positions.

## B. Major Treatment Plant Operations

### 1. Army Base Treatment Plant (ABTP)

- a. Staff are experiencing increased salinity in the influent flow and higher chemical usage but are still maintaining stable operations. Pretreatment and Pollution Prevention (P3) are notified when the plant influent salinity significantly increases. P3 then reaches out to the Naval Facilities (NAVFAC) to inspect their temporary repairs for any failures. NAVFAC has given no timetable for permanent repairs to be made.
- b. Army Base provided staff to Virginia Initiative Plant (VIP) to assist in maintenance operations due to staff shortages.
- c. Staff replaced the gearbox and pillow block bearing on the ash outlet bucket elevator.
- d. Plant and Electrical and Instrumentation (E&I) staff completed installation of a second plant drain pump.
- e. E&I staff replaced a failed main entrance gate reader.

### 2. Atlantic Treatment Plant (ATP)

- a. Plant staff and TSD continue to work to minimize off site odors. The number of complaints is trending down over the last few months.
- b. On July 31 at approximately 18:00, a fire occurred at Odor Control System (OCS), Train #1. The fire was believed to have started at the exhaust fan motor. Plant staff noticed smoke coming from the odor scrubber and investigated it. Once the operators saw the scrubber was on fire, 911 was notified. The A side operator secured the power to the train while the other operator opened the front gate and waited for the fire department to arrive. The firefighters quickly extinguished the fire. The exhaust stack, fan and motor were a complete loss, but no injuries were sustained. An insurance claim has been submitted for the loss of the #1 train. Plant staff were able to get two trains back online within a few hours to resume odor control. An emergency declaration was issued to expedite the repair of the #1 scrubber train
- c. There was one Regulatory Reporting Form (RRF) filled out in July. On July 31, the Virginia Beach Fire Department used Non-Potable Water (NPW) and a biodegradable foam to extinguish the fire at OCS Train #1. Approximately 300 gallons of foam and NPW were unrecoverable and soaked into the ground. The Permits Manager was notified.
- d. Carlton Scale had to replace the "Vlinx", a device that interfaces with the printer and card reader, and a card reader had to be replaced. The scale was inoperable for almost two months pending repair. The scale was repaired and placed back online.

- e. The Fats, Oil, and Grease (FOG) facility failed on July 28 due to an equipment malfunction. This was causing the FOG tanks to remain filled with no room for additional deliveries. E&I and Industrial Automation Programmers (IAPs) are looking into a resolution.
- f. TSD is working to install the carbon filters around the annular space on digester #1. The hope is that the carbon filter will help reduce odors coming from the annular spaces. The plan is to install these filters on all in-service digesters with floating covers.
- g. Plant staff along with TSD began a biosolids curing study on the south pad. The study will monitor and compare odors from two separate piles of biosolids. One pile will remain untouched while the other will be turned off, to give time to help cure the solids. The odor readings will be collected and compared.
- h. A representative from Varec Biogas came to the plant on July 27 to look at the entire digester gas system and offer suggestions to help minimize digester gas leaks and recommend equipment upgrades. This should help the plant better control and use digester gas and reduce offsite odors.
- i. Staff installed a pump to catch condensation from our D-gas system. This pumps the condensate to a plant drain versus draining this condensate outside onto the ground, to further reduce potential off-site odor.

## 2. Boat Harbor Treatment Plant (BHTP)

The Total Hydrocarbon (THC) monitoring system caused three reportable events in July. The THC monitor lost power and the backup battery failed, causing the system to miss two readings an hour on two separate occasions.

## 3. James River Treatment Plant (JRTP)

- a. Maintenance staff began making modifications to the #4 primary clarifier scum trough which will allow for continuous removal of scum to the wet well scum pumps.
- b. Staff assisted with the Advance Nutrient Removal Improvements (ANRI)/ Sustainable Water Initiative For Tomorrow (SWIFT) Ground-Breaking Event held on July 21.
- c. Coating of fiberglass, odor duct from the grit tanks and primary clarifiers to the odor scrubbers is being performed by a contractor.
- d. The contractor continues work in the #5 reactor of the Integrated Fixed Film Activated Solids (IFAS) tanks for improved nutrient removal. IFAS tank #6, #7, & #9 are also complete.
- e. The ANRI/SWIFT contractor continued with staging, installed sediment control, marked out the new roadway for accessing the City of Newport News' gymnastics facility, and started removal of the earth berm to the east of the gymnastics facility.

4. Nansemond Treatment Plant (NTP)

- a. There were two reportable events this month:
- (1) On July 2, a SWIFT drain pump station overflowed when a level transmitter failed. This failure caused drain pumps to be shut off while the floc-sed to ozone flow was being re-established and flow sent to the drain pump station. When a SWIFT Lead Operator (LO) found the overflow, the pumps were turned on in manual and the level was pumped down. Approximately 300 gallons of floc-sed effluent were released onto the pavement/ground.
  - (2) On July 26, the manual bar screen channel drain to sanitary wet well was opened by plant staff to allow a contractor to clean the channel. The wet well drain pumps were secured due to level sensor concerns. The pumps were not turned back on in auto mode after the channel cleaning was completed, resulting in the release of approximately 250 gallons of Raw Influent (RWI) from two utility access holes on plant site that was not recoverable due to a heavy rain event.
- b. On July 18, contractors removed the underground fuel storage tank at the solids handling building. The fuel tank was used for vehicle diesel and had to be removed for upcoming construction in that area. A 500-gallon temporary tank has been placed in that area. A long-term solution for a new permanent tank is being developed.
- c. On July 26, contractors began the process of replacing the B side transformer for the solids handling building. Completion is expected in August 2022.
- d. Sustainable Water Initiative For Tomorrow (SWIFT) Research Center (RC)
- (1) The total volume of SWIFT recharge into the Potomac aquifer for the month of July was 15.6 million gallons (MG) (70% Recharge Time based on 500gpm).
  - (2) Staff made modifications on both floc-sed trains to be able to recycle solids from the sedimentation basin to rapid mix to save on coagulant usage (which is one of the most expensive chemicals at SWIFT). The idea is to potentially recycle available coagulant that hasn't been completely used. Additionally, a higher concentration of solids could help with the settling process. One train is currently being tested and preliminary results look promising.
  - (3) On July 11, the Granular Activated Carbon (GAC) vessels were adjusted to target a Total Organic Carbon (TOC) of 3 mg/L. GAC is known to be an effective barrier of control for PFOA and PFOS. Operation of GAC at the SWIFT Research Center is being adjusted to achieve better removal of PFOA and to collect more data.

5. Virginia Initiative Plant (VIP)

- a. There was one Maximum Achievable Control Technology (MACT) 129 deviation for use of the bypass stack, one reportable odor control event and no odor complaints.
- b. There were two reportable air permit events in July. There was a utility undervoltage event on July 15 that caused the induced draft fan to shut down, opening the bypass damper for seven minutes. There were four consecutive exhaust H<sub>2</sub>S exceptions at the headworks bio-scrubber on July 20, due to high influent sulfide loading at the headworks system, requiring the bypass of some odorous air to the main odor control system.
- c. E&I staff worked with a contractor to install automatic transfer switches at the Preliminary Treatment Facility Motor Control Center (MCC) to provide continuous service for the screening equipment. Contractors continue relocating the local control stations for the screenings compactors to allow easier removal of the compactors for maintenance.
- d. Maintenance staff worked with an outside contractor to install vibration monitors on various equipment for continuous monitoring through a web portal. VIP is a pilot location for this program and initial reports have been helpful in determining potential problems with rotating equipment.

6. Williamsburg Treatment Plant (WBTP)

- a. There were no reportable wastewater events, three reportable incinerator air events, five incinerator air deviations, and one odor scrubber deviation. The incinerator air events were use of the emergency by-pass stack. Two were due to a blockage of the exhaust scrubber and one was due to a power blip tripping the induced draft fan. Three incinerator air deviations where from a failure to monitor the zero-hearth afterburner temperature, caused by equipment not reading temperatures on incinerator startup or due to poor feed cake conditions. The other deviations were a failure of the total hydrocarbon monitor to record two valid readings per hour due to a malfunction of the equipment or due to poor feed cake conditions. There was one odor scrubber deviation due to a first stage scrubber pH probe error.
- b. Maintenance staff along with E&I staff replaced a failed back drive motor on the #3 centrifuge.
- c. While hoisting a manlift from the dewatering building ground floor to the second floor to perform odor duct repairs, one of two slings used to lift the manlift failed. The transfer of all the manlift weight to one sling resulted in failure of the second sling. Failure of the lifting system caused a come along (which was being used to move the manlift from the lifting well onto the second floor) to strike and injure two employees. Both employees sustained injuries requiring medical attention.

7. York River Treatment Plant (YRTP)

- a. Maintenance staff completed replacement of air diffusers in aeration tank #2. Aeration tanks #5 and #6 were also taken out of service and drained in preparation for a contractor to remove settled grit from the tanks.
- b. Staff started up the Demmonification (DEMON) system (used for centrifuge centrate nitrogen removal) after cleaning and maintenance of the system was complete. Both tanks were cleaned of settled solids.

8. Incinerator Operations Events Summary

- a. Total Hydrocarbon (THC) monthly averages (not to exceed 100 parts per million) were met by all four treatment plants with incinerators with a THC continuous emissions monitoring valid data captured of greater than 97 percent.
- b. There were three deviations from the minimum operating parameters and four minor bypass events (<60 minute).

C. Small Communities (SC)

1. Middle Peninsula

a. Urbanna Treatment Plant (UBTP)

The Fixed Film Activated Solids (IFAS) system installed on Train 2 continues to produce fantastic results. Mixed liquor concentrations have now reached the lowest levels encountered by the plant creating excellent settleability results.

b. West Point Treatment Plant (WPTP) and Collections

- (1) Operations staff continue to work on cleaning the offline pond; samples were taken to produce free liquid and Toxicity Characteristic Leaching Protocol (TCLP) testing results to obtain a temporary manifest from Waste Management.
- (2) WP PS #3 experienced a pump failure; this issue is under investigation.

2. Surry Systems

On July 7, an ammonia sample was taken at the Surry County Treatment Plant and the reported value was 7.65mg/L, well above the 0.77mg/L permit limit. Due to this high value, a weekly exceedance occurred during the week of July 3. The remaining weekly ammonia samples collected were within normal range; however, due to the one high sample value on July 7, the monthly permit limit was also exceeded. A source of the high ammonia could not be identified. Sussex Service Authority (SSA) seeded the digesters to improve treatment performance and cleaned both the post EQ tank and the effluent channel. This treatment plant is currently scheduled for decommissioning when the Surry to Smithfield Force Main project is completed

### 3. Eastern Shore (ES)

#### a. Onancock Treatment Plant (ONTP)

- (1) A contract was awarded to Synagro for the dewatering and disposal of excess solids at the plant. The plant's solids loading is currently within the plant's design range. The company utilized a mobile dewatering unit to dewater the solids.
- (2) The consultant met with staff regarding the Solids Handling Project upgrade. Their site visit helped provide a better understanding of the existing facility. Their team consisted of civil, mechanical, electrical and instrumentation experts. The new dewatering facility and electrical system were discussed with the staff.
- (3) A new SCADA system was installed because the existing system did not work. As of now, it provides staff monitoring and will ultimately provide staff with monitoring and control capabilities after some minor fine tuning. This work is planned for completion by the middle of August. Staff repurposed the CE SCADA system.

#### b. Onancock Collection System

- (1) The emergency generator at the South Street pump station is in poor condition. Staff have been working with E&I and Facility Support to upgrade the emergency generator system. A repurposed emergency generator was installed with a new electric transfer switch and new pump control panel.
- (2) Staff installed several sewer lateral clean-outs at residences to allow access to sewer mains.

### D. Electrical & Instrumentation (E&I)

1. Information Technology (IT) and IAPs requested E&I staff to install 15 network drops for plant staff at Onancock Treatment Plant (ONTP). The drops consisted of 13 drops for HRSD business network and two drops for the SCADA system.
2. Staff worked with CEC, the system integrator, and the interceptor's division to complete Global Program Changes to the new SCADA Remote Terminal Unit (RTU) controls at Terminal Boulevard and Dovercourt PSs. Pre-cutover walk throughs were conducted at Norview and Providence PSs.
3. Staff worked with Cummins, the generator manufacturer, to relocate, reconfigure for three phase voltage, and install an existing generator from the SS Operations (Ops) Center to South Street PS on Eastern Shore (ES).
4. The IAPs participated in the successful completion of cutover testing for the new Ovation SCADA System at Kingsmill, Rolling Hills and Dovercourt PSs, and Terminal PRS.



The final site testing was completed by SEI staff, CEC staff, Emerson staff, SS and NS Interceptors, IAPs, and E&I staff. These sites are now active on the new Ovation SCADA systems.

5. The Electrical Manager worked with ChargePoint, Inc, the Electric Vehicle (EV) charging station manufacturer and Saunders Contracting, the electrical contractor, to obtain quotes for the purchase and installation of an EV charging station at the NS Complex. In addition, the electrical manager applied to receive a rebate from DE upon completion of the project.
6. Staffing continues to be an area of concern with 12 vacant positions.

E. Support Systems (SS)

1. The Facilities Maintenance (FM) staff continues to work on repairs to the ABTP incinerator building elevator. Renovation of the electrical shop at ATP continues with the new tile floor installation and metal stud wall framing in the office and locker room areas.
2. The machine shop completed nine projects with six of the projects being total pump rebuilds for NS and SS Interceptors. Staff remanufactured a universal valve operator nut using stainless steel. This will help interceptor operations operate a variety of valve nuts that may be rounded off and/or deep in the ground. A similar device costing around \$400, is made from steel, and doesn't fit our standard valve keys. The in-house version will adapt to the valve keys, is a stronger material, and only costs a fraction of the manufactured device.

F. Resource Recovery (RR)

SS Interceptors and Water Quality (WQ) staff were engaged to work on ways to reduce HRSD's carbon footprint. The thought is to reduce the carbon footprint within the interceptor system before it gets to the plant. This is a new venture for HRSD, but a very economical method to treat gases prior to entering the plant.

G. Water Technology and Research

HRSD has become reliant on advanced aeration controls for chemical and energy savings, including Ammonia-Based Aeration Control (ABAC) and Ammonia Versus Nitrate/Nitrite (AvN) aeration control. As we move toward implementing AvN with partial denitrification-anammox (PdNA), the performance of these controls must be improved to meet more stringent nitrogen removal requirements. Our work on this involves adding feedforward components to our existing feedback-only ABAC and AvN systems to stabilize these controllers and account for influent dynamics. This initiative is part of a US Department of Energy (DOE) grant to HRSD and a group of other partners with the Water Research Foundation (WRF) serving the lead role. There are three collaborative projects ongoing to add feedforward controllers:

- a. James River Treatment Plant: A simple but effective feedforward AvN controller has been implemented that empirically accounts for changes in plant flow rate to make predictions of what the Dissolved Oxygen (DO) should be.

- b. Virginia Initiative Plant: A mechanistic model-based feedforward controller has been implemented using correlations obtained from a calibrated plant process model with no addition of upstream sensors. This controller has performed quite well and continues to be tested and optimized.
  
- c. Nansemond Treatment Plant: A hybrid feedforward controller has been designed that incorporates a real-time mechanistic model operating on live data coming from the plant Distributed Control System (DCS), a machine-learning data-driven model that is used to correct the mechanistic model, and the addition of upstream ammonia sensors, all used together to predict in a feedforward manner the DO setpoint that should be applied. This system is being built with initial testing expected in the next six months.



I. Strategic Measurement Data

1. Education and Outreach Events: 10

- a. 07/06/2022 – Arlington Re-Gen Atlantic Plant Tour – Dana Gonzalez, Jeff Nicholson, Dave Ewing, and Jeff Powell
- b. 07/07/2022 – SWIFT RC tour for McCarthy Building Company – Germano Salazar-Benites
- c. 07/08/2022 – IDEAS Center (R&D Division of Suez) Tour - SWIFT Staff
- d. 07/09/2022 – Atlantic Plant Outreach Tour – Christel Dyer, Dana Gonzalez, Dave Ewing, Jeff Power, and TSD
- e. 07/13/2022 – City of Chattanooga THP Tour – Dana Gonzalez, Jeff Nicholson, and Chris Wilson
- f. 07/16/2022 – ATP Tour with Charlotte Water – Dana Gonzalez, Jeff Nicholson, Dave Ewing, and Jeff Powell
- g. 07/18/2022 – SWIFT RC Tour for Stantec – Germano Salazar-Benites
- h. 07/18/2022 – Jefferson Lab Tour of SWIFT RC – Samantha Hogard and Dana Gonzalez
- i. 07/29/2022 – Virtual Discussion with Orange County Water District (OCWD) – SWIFT RC Staff

2. Community Partners: 6

- a. Chesapeake Bay Foundation-Oyster Cage Maintenance at BHTP for Oyster Garden Project
- b. DOE Jefferson Lab
- c. Old Dominion University (ODU)
- d. City of Chattanooga
- e. Charlotte Water
- f. Orange County Water District (OCWD)

3. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>July 2022</b>
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (524) – Current Month	Hours / FTE	1.38
M-1.4b	Total Training During Work Hours per FTE (524) – Cumulative Year-to-Date	Hours / FTE	1.38
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	23,536.05
M-2.3b	Planned Maintenance – Preventive and Condition Based	percent of Total Maintenance Hours	66.14%
M-2.3c	Planned Maintenance - Corrective Maintenance	percent of Total Maintenance Hours	13.27%
M-2.3d	Planned Maintenance - Projects	percent of Total Maintenance Hours	20.59%
M- 4.1a	Energy Use: Treatment	kWh/MG	2,754
M-4.1b	Energy Use: Pump Stations	kWh/MG	244
M-4.1c	Energy Use: Office Building	kWh/MG	125
M-5.2	Educational and Outreach Events	Number	10
M-5.3	Number of Community Partners	Number	6

4. Annual Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>FY-2022</b>
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours(average)	28,030
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours (average)	61%
M-2.3c	Planned Maintenance-Corrective Maintenance	% of Total Maintenance Hours (average)	15%
M-2.3d	Planned Maintenance-Projects	% of Total Maintenance Hours (average)	24%
M-3.6	Alternate Energy	Total kWh	*
M- 4.1a	Energy Use: Treatment	kWh/MG	*
M-4.1b	Energy Use: Pump Stations	kWh/MG	*
M-4.1c	Energy Use: Office Building	kWh/MG	*

\* To be provided once data is reported

Respectfully submitted,  
Eddie M. Abisaab, PE  
 Director of Operations

TO: General Manager  
FROM: Director of Talent Management (TM)  
SUBJECT: Monthly Report for July 2022  
DATE: August 10, 2022

A. Talent Management Executive Summary

1. Recruitment Summary

New Recruitment Campaigns	7
Job Offers Accepted – Internal Selections	2
Job Offers Accepted – External Selections	7
Internal Applications	56
External Applications	88
Average Days to Fill Position	83

2. Employee Separation Summary

	July 2022	Total (April 2022- July 2022)
Career/Better Opportunity	0	2
Content of work	1	2
Family circumstances	0	1
Dismissal	1	4
Going to school	0	1
Lack of Opportunity for Advancement	0	1
Moving from the area	0	1
Salary	0	4
Retirement	4	6
End of Assignment (PT)	0	4
Unknown	0	1



3. Continued addressing and monitoring suspected COVID-19 cases and potential exposures based on Virginia Department of Health (VDH) guidelines:

Description	July 2022	Total (March 2020 – July 2022)
Quarantines due to illness or direct exposure (household or external)	8	447
Work Related Quarantines	16	106
Personal Travel Quarantines	2	61
Confirmed Employee COVID-19 Cases	28	268
Work Related Confirmed COVID-19 Cases	0	13
Contractor COVID-19 Cases on HRSD Sites	0	12
*Work Related exposures no quarantine	13	63
Vaccine Acknowledgements	10	873
Booster Acknowledgements	18	405
HRSD Vaccination Rate	95.5%	
*HRSD Boosted Rate	47.1%	

\*Added May 2022

4. Human Resources continued work with the consultant on system changes to benefit interfaces and benefit plan changes.
5. Benefits and Compensation
- a. The Compensation and Classification (C&C) team evaluated one new position.
  - b. The new benefit plan year began on July 1. We have begun receiving documents for the Medicare and Prescription drug open enrollment that will be in November with the effective date of January 1, 2023.
6. Wellness Program
- a. Participation

Year Ten Participation Activities	Unit	July 2022	Year to Date (March 2022– February 2023)
Biometric Screenings	Number	4	60
Preventive Health Exams	Number	4	55
Preventive Health Assessments	Number	6	55
Online Health Improvement Programs	Number	9	35
Web-MD Online Health Tracking	Number	147	621
New Challenges “ <i>Team to Team</i> ”	Number	0	30
Fit-Bit Promotion	Number	5	34

- b. Wellness created 4 Clinical Corner articles for Wellness Wednesday emails.
  - c. Summer work center visits continued at six locations (YRTP done virtually) with 65 employees attending. The presentation was *Fitting in Daily Exercise without Exercising*.
  - d. The Omada Diabetes Prevention program was promoted.
  - e. The current wellness specialists began transition to our new vendor WellSpark.
7. Continued working with the organizational development consultant Hicks Carter Hicks (HCH) on the following initiatives:
- a. Diversity, Equity, and Inclusion (DE&I) initiatives.
  - b. Leadership Ethical Accountability Program (LEAP) supervisor training program. The topic was Creating Trust and Fostering Motivation.
8. Other Organizational Development Engagements:
- a. Continued working on the LAMA Cohort 2022- 2023 program. The topic was MBTI.
  - b. Facilitated the Full-Day Your Role In workshop.
  - c. Continued work with the Customer Care Division to curate online learning paths and integration of available Corporate Training courses.
  - d. Continued work with the Water Quality Department to increase quality assurance training courses.
  - e. Continued work with Boat Harbor Treatment plant leadership to conduct a StrengthsFinder workshop for their team.
  - f. Continued work on the Corporate Training software. We successfully created badges for courses.
  - g. Coordinated a cross-departmental team to advance the functionality of Canvas.
  - h. Continued to work with the Employee Association Committee, EAC.
9. Apprenticeship Program
- a. Continued working on the *Youth Summer Intensive (YSI) Program* with high school administrators, apprenticeship instructors and work center staff to develop and prepare for the summer internship.
  - b. Continued developing the new math instructor, Gina Foote.
  - c. Continued developing the Apprenticeship Mentoring Program

- d. Developed a Request for Proposals for a Student Information System and Attendance and Assessment applications
  - e. Developed Standard Operating Procedures for ODT responsibilities
  - f. Made trade curricula revisions and course development to update and enhance course offerings
  - g. Apprenticeship graduations scheduled for September 10.
10. Mishaps and Work-Related Injuries Status to Date (OSHA Recordable)

	<u>2021</u>	<u>2022</u>
<b>Mishaps</b>	33	22
<b>Lost Time Mishaps</b>	12	3
<i>Numbers subject to change pending HR review of each case.</i>		

11. Safety Division Monthly Activities

Safety Training Classes	17
Work Center Safety Inspections	11
Reported Accident Investigations	6
Construction Site Safety Evaluations	7
Contractor Safety Briefings	4
Hot Work Permits Issued	1
Confined Space Permits Issued/Reviewed	110
Industrial Hygiene Monitoring Events	1

B. Monthly Strategic Planning Metrics Summary

- 1. Education and Outreach Events: (1)
  - 07/28/2022 Covey Certification Vendor
- 2. Community Partners: (4)
  - a. VWEA Leadership Academy
  - b. WEF Workforce Subcommittee
  - c. Hampton Roads Workforce Council
  - d. VWEA Continuing Education Committee

3. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>July 2022</b>
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.77
M-1.1b	Employee Turnover - Service Retirements	Percentage	66.7%
M-1.4a	Total Training Hours Per Full Time Employee (16)	Total Training Hours/ FTE	1.6
M-1.4b	Total Training During Work Hours Per Full Time Employee (16) – Cumulative Fiscal Year-to-Date	Hours / FTE	1.6
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Community Partners	Number	4

Respectfully submitted,

**Dorissa Pitts-Paige**

Director of Talent Management

TO: General Manager  
FROM: Director of Water Quality (DWQ)  
SUBJECT: Monthly Report for July 2022  
DATE: August 10, 2022

A. General

1. The Pretreatment and Pollution (P3) Division issued two civil penalties.
  - a. Bottling Group, LLC - Newport News

An Enforcement Order was issued to Bottling Group, LLC, a soft drink manufacturing facility in Newport News, on June 16, 2022, for technical and administrative violations. The Enforcement Order included an \$8,000 civil penalty invoice. The permittee received an administrative violation for failing to maintain pH monitoring records for a period of three years. Technical violations were issued for failing to follow permit special conditions, permit limit pH exceedances, and failing to provide 24-hour notification of a self-monitoring violation. Permit limit exceedances for pH in April 2022 resulted in a chronic violation. A Show Cause meeting was held on May 23<sup>rd</sup> and the permittee requested to go under an Administrative Order to implement long-term corrective actions regarding their pH neutralization system. The Administrative Order became effective May 27 and the Enforcement Order was accepted and paid in full on July 15, 2022.
  - b. Naval Station Norfolk

An Enforcement Order was issued to Naval Station Norfolk on July 13, 2022, for an administrative violation. The permittee received a technical violation for failing to perform pretreatment device inspections during the first Quarter of 2022 as required by the Special Conditions in the Direct Wastewater Discharge Permit. Naval Station Norfolk is currently securing contracts and redistributing inspections to ensure permit requirements are met. The Enforcement Order included a \$1,000 civil penalty assessment, but due to the Supreme Court decision, *Ohio v. Department of Energy*, US, 112 SCT 1627, 118 Led2d 255 (1992), an invoice was not generated, and the civil penalty could not be collected.
2. HRSD submitted comments on EPA's draft James River SWIFT Underground Injection Control (UIC) Permit. Comments focused on the proposed regulatory limits for per- and polyfluoroalkyl substances (PFAS), Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS). The permit included a reopener clause to update limits based on any revised Health Advisory Levels (HAL) or Primary Maximum Contaminant Levels (PMCL). During the public comment period, EPA released Interim HALs (IHAL) for PFOA and PFOS. EPA has made commendable progress on advancing efforts to understand and eventually comprehensively regulate PFAS. HRSD supports EPA establishing

scientifically sound and risk-based thresholds for these compounds. However, the IHALs are several orders of magnitude below the Minimum Reporting Level of the regulatorily approved analytical methods, therefore, it would be impossible to quantify PFOA and PFOS at these low levels and demonstrate compliance. EPA noted in the release of the IHALs that these values are intended as guidance, are not enforceable regulatory limits and will be adjusted in the next several months with draft PMCLs anticipated by the end of the calendar year. PMCLs, as opposed to IHALS, are enforceable values and consider, among other things, available and approved analytical technologies. Given that the IHALs are intended as non-regulatory values, HRSD proposed including PFOA and PFOS (along with other PFAS of interest in Virginia) as a monitoring requirement with the Minimum Reporting Level of 4 ng/L (parts per trillion) as the screening threshold. When PMCLs are adopted, these regulatory values will become enforceable requirements of the permit. Given the available technology, HRSD staff does not anticipate PMCLs to be less than 4 ng/L.

HRSD's SWIFT program employs several strategies to control PFAS, including a robust industrial source control program implemented by P3 and multiple barriers of control through the wastewater and SWIFT Advanced Water Treatment Processes, ultimately leading to treatment through Granular Activated Carbon (GAC). EPA acknowledges GAC as an effective treatment technology for PFOA and PFOS. Based on data obtained from the groundwater monitoring wells located approximately 400 ft. from the recharge well, PFOA and PFOS appear to be further removed through soil aquifer treatment. HRSD SWIFT facilities can be operated to control PFOA and PFOS in SWIFT Water to less than 4 ng/L.

3. WQ continued work with the General Manager, Operations, and Communications staff to address ongoing odor issues at Atlantic Treatment Plant (ATP).
  - (1) Technical Services Division (TSD) maintained increased odor surveillance and work with ATP staff to identify and mitigate odor sources and immediate response to odor complaints.
  - (2) Participated in bi-weekly status and mitigation meetings.
  - (3) Atlantic Plant Reliability Odor Control Improvements (ROCI): after the installation and operation of the thermal hydrolysis process (THP), the floating roof digester covers were identified as a source of offsite odors and odor complaints from the Ocean Lakes community. The Commission approved Atlantic Plant ROCI which includes a long-term solution to cover and scrub the odors from the annular spaces. This project will take at least two years to complete. In the interim, the TSD Air Team developed and installed an odor control concept using storm drain filter piping and carbon media mesh pads. The carbon pads were wrapped around the storm drain filter piping and secured, creating rolled carbon piping (RCP) that was placed over top of the annular spaces of the floating roof digesters. The RCP provides both the suppression of odors while acting as a loose cover and removes some odor as the escaping gases from the annular space pass through and around the carbon media. The installed cost of 750 feet of RCP was \$33,000. A reduction in odors from this source was immediately evident and TSD continues to perform odor monitoring, to

quantify the presence of any continued off-site odors originating from the annular spaces.

4. HRSD received approval from Virginia Department of Environmental Quality for closure of the Surry County Wastewater Treatment Facility scheduled to be decommissioned upon completion of the Surry to Smithfield Force Main project.
5. The WQ QST met to discuss and evaluate each Division's Business Impact Analysis workflows to provide input for HRSD's Business Continuity planning.
6. Advocacy and External Activities:
  - a. Central Environmental Laboratory (CEL) staff attended the Virginia Water Environmental Association/Virginia American Water Works Association Good Laboratory Practices Conference. CEL staff presentations included a Data Integrity and Ethics Workshop, a keynote session on changes to laboratory accreditation standards, technical sessions on COVID-19 analysis and combustion methodologies and a panel discussion on Biochemical Oxygen Demand. Moderator and conference leadership support was also provided.
  - b. To ensure adequate source control issues are addressed, the Chief of P3 participated in a workgroup commissioned by the Virginia Board of Funeral Directors and Embalmers pertaining to legalizing, implementing and regulating alkaline hydrolysis as a method of body disposition in the Commonwealth.
  - c. The Chief of TSD and DWQ attended National Association of Clean Water Agencies Utility Leadership Conference and 52nd Annual Meeting, *The Clean Water Act at 50, Embracing a Bold Vision for the Future*
7. DWQ participated in the following HRSD Activities:
  - a. James River SWIFT Groundbreaking Ceremony
  - b. HRSD Strategic Planning Meeting

## B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy (SEA) Group performed the following:
  - a. Conducted a survey of HRSD employees to gauge interest in carpooling and ride share programs. The results are being processed and will be presented to the General Manager along with program recommendations.
  - b. Compiled the Sustainable Spotlight newsletter and distributed to HRSD employees, highlighting SEA team events and educational information.
2. The WQ Communication team finalized a survey to assess ways to facilitate communication and collaboration.

C. Municipal Assistance Program (MAP)

HRSD provided sampling and analytical services to Western Virginia Water Authority, Northumberland County, Westmoreland County, the City of Chesapeake, and the Town of Lawrenceville to support monitoring required for their respective VPDES permits.

D. Microbial Source Tracking (MST)

Hampton Roads Projects - HRSD provided sampling and analytical services to City of Norfolk (Mason Creek), City of Virginia Beach (Thalia Creek), City of Chesapeake (Southern Branch), City of Hampton (New Market Creek), City of Suffolk (downtown), City of Newport News (Lucas Creek/Southeast Newport News), and James City County.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

- a. 07/05/2022 – The CEL provided a tour to 13 Public Works Academy Summer Interns.

2. Community Partners: 6

- a. American Red Cross Blood Drive
- b. Hampton Roads Planning District Commission
- c. City of Virginia Beach
- d. City of Chesapeake, Chesapeake Local Health District
- e. Virginia Department of Health
- f. Lynnhaven Now Citizen Monitoring project

3. Odor Complaints:

See attached [Effluent and Air Emissions Summary](#)



4. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>July 2022</b>
M-1.4a	Training During Work Hours Per Full Time Employee (120) (Current Month)	Total Hours / # FTE	5.88
M-1.4b	Total Training During Work Hours Per Full Time Employee (120) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	5.88
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	2:5,353
M-3.2	Odor Complaints	#	8
M-3.4	Pollutant Removal (Cumulative Fiscal Year-to-Date)	Total Pounds Removed	16,626,599
M-3.5	Pollutant Discharge (Cumulative Fiscal Year-to-Date)	% Pounds Discharged/ Pounds Permitted	14%
M-5.2	Educational and Outreach Events	#	1
M-5.3	Community Partners	#	6
	Average Daily Flow	Total MGD for all Treatment Plants	132.26
	Pretreatment Related System Issues	#	0

5. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2022
M-3.3	Carbon Footprint	Tons per MG	*
M-4.2	R & D Budget	Percentage of Total Revenue	*%
M-5.4	Value of Research	Number	*
M-5.5	Number of Research Partners	Number	*
	Rolling 5 Year Average Daily Flow	MGD	145.75
	Rainfall reported at Norfolk International Airport	Inches	38.18"

\*These metrics will be reported upon closeout of fiscal year financials.

Respectfully submitted,

*Paula A Hogg*

Director of Water Quality

**EFFLUENT SUMMARY FOR JULY 2022**

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBI	ENTERO #/UBI	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	CONTACT TANK EX
ARMY BASE	8.01	44%	1	1.1	1	2	0.48	0.57	3.7	4.4	1
ATLANTIC	46.32	86%	11	11	1	6	NA	NA	NA	NA	19
BOAT HARBOR	10.10	40%	7	5.8	14	4	0.80	0.65	30	24	1
CENT. MIDDLESEX	0.011	45%	<2	1.2	1	2	NA	NA	NA	NA	NA
JAMES RIVER	11.97	60%	5	4.3	2	2	0.43	0.72	8.4	9.7	4
KING WILLIAM	0.071	71%	<2	<1.0	NA	1	0.21	0.20	2.1	2.6	NA
NANSEMOND	14.64	49%	3	3.8	10	5	0.78	0.64	3.7	3.9	2
NASSAWADOX	0.016	16%	<2	8.7	<1	<1	0.96	0.76	17	15	NA
ONANCOCK	0.174	23%	<2	<1.0	1	2	0.67	0.28	1.9	1.6	0
SURRY, COUNTY	0.039	60%	5	1.9	NA	2	NA	NA	NA	NA	0
SURRY, TOWN	0.041	68%	3	13	NA	24	NA	NA	NA	NA	NA
URBANNA	0.075	75%	3	7.0	2	3	6.1	1.7	9.6	11	NA
VIP	20.27	51%	4	1.8	2	2	0.50	0.39	5.1	3.4	7
WEST POINT	0.297	49%	21	8.5	1	2	2.1	2.7	16	17	0
WILLIAMSBURG	9.36	42%	7	3.7	13	8	0.98	0.84	2.6	3.0	13
YORK RIVER	10.87	72%	2	1.5	1	6	0.29	0.30	6.9	5.1	1
	<u>132.26</u>										

	<b>Tributary Summary</b>						
	%	<u>Annual Total Nitrogen</u>			<u>Annual Total Phosphorus</u>		
		Capacity	Discharged	Operational		Discharged	Operational
			YTD	Projection	CY22	YTD	Projection
<b>Tributaries</b>		%	Lbs	%	%	Lbs	%
James River		31%	2,250,317	63%	28%	202,996	64%
York River		44%	236,673	82%	45%	15,612	81%
Rappahannock		32%	NA	NA	22%	NA	NA

	% of
	Capacity
North Shore	51%
South Shore	54%
Small Communities*	39%

Permit Exceedances: Total Possible Exceedances, FY23 to Date: 2:5,353  
Pounds of Pollutants Removed in FY23 to Date: 16,626,599  
Pollutant Lbs Discharged/Permitted Discharge FY23 to Date: 14%

	<b>Rainfall (inch)</b>		
	<u>North Shore (PHF)</u>	<u>South Shore (ORF)</u>	<u>Small Communities (FYJ)</u>
Month	5.70"	5.18"	5.29"
Normal for Month	5.93"	5.97"	5.50"
Year to Date Total	30.73"	26.05"	25.48"
Normal for YTD	29.11"	27.51"	28.69"

\*Small Communities includes Eastern Shore

**AIR EMISSIONS SUMMARY FOR JULY 2022**

MHI PLANT	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	Temp	Venturi(s) PD	Precooler Flow	Spray Flow	Venturi Flow	Tray/PBs Flow	Scrubber	Any	THC	THC	BZ Temp
	12 hr ave (F)	12 hr ave (in. WC)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	pH 3 hr ave	Bypass Stack Use	Mo. Ave (PPM)	DC (%)	Daily Ave Days >Max
ARMY BASE	0	0	0	0	0	0	0	0	57	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	0	15	98	0
VIP	0	0	0	n/a	0	0	0	1	37	97	0
WILLIAMSBURG	3	0	0	n/a	0	0	0	3	30	98	0

**ALL OPERATIONS**

DEQ Reportable Air Incidents:	0
DEQ Request for Corrective Action:	0
DEQ Warning Letter:	0
DEQ Notice of Violation:	0
Other Air Permit Deviations:	0
Odor Complaints Received:	8
HRSD Odor Scrubber H2S Exceptions:	6

## Items of Interest – July 2022

### **MULTIPLE HEARTH INCINERATION (MHI)**

Total Hydrocarbon (THC) monthly averages (not to exceed 100 ppm) were met by all four MHI plants (Army Base, Boat Harbor, Virginia Initiative, and Williamsburg) with a THC continuous emissions monitoring (CEM) valid data captured of greater than 97%.

The MHIs had three deviations from the required 129 SSI rule minimum operating parameters and four minor bypass events (<60 minute).

Submitted the Army Base MHI quarterly HCl corrective action plan report to DEQ July 7.

The semi-annual 129 MHI deviation reports were submitted to DEQ July 29 for all four of HRSD's incineration facilities.

### **AIR PERMITS and ODOR CONTROL**

Atlantic Plant received seven odor complaints during July. Two complaints on July 5, one July 27, and one on July 29 that were all source ID'd as the digester's thermal hydrolyzed solids odor. Two complaints on July 15 associated with the THP emergency shutdown. One complaint on July 19 was received on plant voicemail with the odor source unidentified.

South Shore Operations received a complaint/inquiry about odors from the City of Suffolk. A force main auto-bleed near the intersection of Bridge Road and HWY 664 was identified as the odor source. A Wager carbon media odor control unit is being evaluated for controlling this source and to maintain the auto-bleed at this location.

Seven odor control scrubber hydrogen sulfide exceptions were measured in July.

### **TREATMENT**

DEQ was notified of the following reportable events:

#### Atlantic

On July 31<sup>st</sup>, Train 1 fan motor caught fire in Odor Control Station D. The fire department was called, the scrubber train was secured, and fire was extinguished. Approximately 300 gallons of Non-Potable Water (NPW) containing a biodegradable firefighting foam were discharged to a concrete pad / soaked into the ground and not recovered.

#### Boat Harbor

On July 15<sup>th</sup>, it was discovered the operator did not analyze a FNE grab sample for TRC or pH on Wednesday July 13<sup>th</sup>. The operator is currently training on sewage treatment and was working alone this day and did not know to do this analysis. Corrective action has been completed regarding sample training and steps will be taken to prevent future occurrences.

### Nansemond

On July 2<sup>nd</sup>, a SWIFT drain pump station overflowed when a level transmitter failed. This failure caused drain pumps to be off while the floc-sed to ozone flow was being re-established and flow was being sent to the drain pump station. When a SWIFT Lead Operator found the overflow, the pumps were turned on in manual and the level was pumped down. Approximately 300 gallons of floc-sed effluent were released onto the pavement/ground.

On July 26<sup>th</sup>, the manual bar screen channel drain was opened by plant staff to allow a contractor to clean the channel. The sanitary wet well drain pumps had been secured due to level sensor concerns. Once the channel cleaning was complete, the drain was not secured, and the pumps were not turned back on in auto. This caused the sanitary wet well to overflow. Upon discovery, the sanitary well pumps were started. Approximately 250 gallons of raw influent (RWI) from two manholes on plant site were released to the ground and not recoverable due to a heavy rain event.

### **SMALL COMMUNITIES/SURRY/EASTERN SHORE**

#### Matthews Collection System

On July 1<sup>st</sup>, a contractor installing a communications line bored through a sewer force main pipe near 4842 Buckley Hall Road, Cobbs Creek, VA. Operators shut down the upstream pump station, closed the isolation valves on the force main, and a vacuum truck was used to recover spilled sewage and evacuate the sewage in the piping to make the repair. Once the damaged section of the pipe was repaired, the area was cleaned and neutralized with pelletized lime. Approximately 1,800 gallons were released, with 300 gallons recovered; the remaining 1,500 gallons of RWI entered a drainage ditch to the Piankatank River.

#### Surry County

On July 7<sup>th</sup>, an ammonia sample was taken at the Surry County Treatment Plant and the reported value was 7.65 mg/L, well above the 0.77mg/L permit limit. Due to this high value, a weekly exceedance occurred the week of July 3<sup>rd</sup> (7.65mg/L ammonia) and a monthly exceedance (1.95 mg/L ammonia) for July was reported. The remaining weekly ammonia samples collected were within normal range: July 12<sup>th</sup> - <0.10 mg/L (QL); July 19<sup>th</sup> - 0.14 mg/L, and July 26<sup>th</sup> - <0.10 mg/L (QL). The cause of nitrification inhibition could not be determined. Sussex Service Authority (SSA) seeded the sequencing batch reactor to improve nitrification and cleaned both the post EQ tank and the effluent channel. This Treatment Plant is currently scheduled to be decommissioned when the Surry to Smithfield Force Main project is completed.

HRSD received a warning letter dated August 5 for the failure to collect ammonia and copper permit exceedance reported in June 2022.

## 2022 Metals, Ammonia, and TKN

		Limit	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Central Middlesex	Ammonia	0.56	0.03	NA	NA	0.23	NA	NA	0.19					
	TKN	3.0	<0.50	NA	NA	<0.50	NA	NA	0.52					
King William	Zinc	*	75	NA	NA	18	NA	NA	NA					
	TKN	3.0	1.3	2.6^	0.44	0.40	0.26	0.27	0.24					
Nassawadox Riverside	Cadmium	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50					
	Copper	23	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0					
	Nickel	38	17	23	14	15	<10	<10	<10					
	Zinc	150	<50	<50	<50	<50	<50	<50	<50					
	Ammonia	1.7	2.2^	0.09	0.07	0.09	0.07	0.08	0.06					
Onancock	Copper	12	2.0	NA	NA	1.3	NA	NA	2.7					
	Ammonia	0.90, 2.0	0.29	0.16	0.02	0.04	0.10	0.18	0.49					
Surry County	Copper	5.9	3.0	2.0	1.0	4.0	4.0	5.5^	3.0					
	Zinc	56	24	33	11	31	28	37	16					
	Ammonia	0.77	NA	NA	NA	NA	NA	**	1.9^				NA	NA
	TKN	3.0	0.55	NA	0.57	NA	2.7	NA	<0.50					
Town of Surry	Copper	12	2.0	6.0	3.0	5.0	4.0	2.0	3.0					
	Zinc	39	14	12	12	14	11	10	11					
	Ammonia	4.5	0.11	0.10	0.11	0.11	<0.10	<0.10	<0.10					
	TKN	6.7	2.0	1.9	1.8	1.3	0.57	1.2	1.6					
Urbanna	Ammonia	3.83, 9.08	7.76	0.05	1.26	0.08	0.41	0.14	<0.02					

\*No limit. Treatment objective 53 ug/L

Units: TKN, Ammonia: mg/L. Metals: ug/L

^ NR monthly average 2.2, weekly Jan 23 3.4

^ KW monthly average 2.6, weekly Feb 6 9.95

^ CSY monthly average 5.5, weekly June 5 7.0

\*\* CSY weekly ammonia samples not collected during the month of June

^ CSY monthly average 1.9, weekly July 3 7.7

**2022 MONTHLY FLOW AVERAGES**

	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	YR AVG	FY AVG
Army Base	8.38	8.29	9.12	8.56	8.56	8.05	8.01						8.42	8.01
Atlantic	42.47	42.46	42.81	40.26	42.88	43.58	46.32						42.97	46.32
Boat Harbor	15.64	13.78	13.31	12.04	11.66	10.17	10.10						12.38	10.10
C.Middlesex	0.005	0.006	0.006	0.010	0.011	0.011	0.011						0.008	0.011
Ches-Eliz	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00
James River	14.47	13.70	14.65	13.10	12.12	11.39	11.97						13.06	11.97
King William	0.064	0.050	0.066	0.070	0.069	0.073	0.071						0.066	0.071
Lawnes Point	0.000	0.000	0.000	0.000	0.000	0.000	0.000						0.000	0.000
Nansemond	16.32	15.78	16.16	15.46	15.54	14.53	14.64						15.49	14.64
Nassawadox	0.020	0.013	0.022	0.023	0.017	0.016	0.016						0.018	0.016
Onancock	0.177	0.160	0.208	0.174	0.171	0.175	0.174						0.18	0.174
Surry, County	0.047	0.043	0.057	0.046	0.040	0.036	0.039						0.044	0.039
Surry, Town	0.043	0.044	0.057	0.047	0.039	0.032	0.041						0.043	0.041
Urbanna	0.041	0.034	0.038	0.059	0.068	0.074	0.075						0.056	0.075
VIP	25.64	26.17	27.83	23.85	23.53	20.25	20.27						23.93	20.27
West Point	0.433	0.385	0.429	0.415	0.345	0.312	0.297						0.374	0.297
Williamsburg	8.25	7.59	8.41	8.51	8.64	8.49	9.36						8.46	9.36
York River	14.08	12.97	13.66	12.81	12.35	11.02	10.87						12.54	10.87
North Shore	52.45	48.03	50.03	46.45	44.76	41.07	42.30						46.44	42.30
South Shore	92.81	92.70	95.92	88.13	90.52	86.40	89.24						90.82	89.24
Small Communities	0.83	0.73	0.88	0.84	0.76	0.73	0.72						0.79	0.72
<b>TOTAL</b>	<b>146.09</b>	<b>141.47</b>	<b>146.84</b>	<b>135.42</b>	<b>136.04</b>	<b>128.20</b>	<b>132.26</b>						<b>138.04</b>	<b>132.26</b>

*Bold values indicate monthly plant flow average >95% of permitted design flow*





The following Internal Audit Status document has been prepared by SC&H for the HRSD Commission. Below is a summary of projects in process, upcoming audits, and the status of current management action plan monitoring.

## ***I. Projects in Process***

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### **Family Medical Leave Act (FMLA)**

- **Task Completed (July 2022)**
  - Finalized planning procedures
  - Finalized audit program for fieldwork/test procedures
- **Upcoming Tasks (August 2022)**
  - Continue fieldwork procedures

### **Freedom of Information Act (FOIA)**

- **Task Completed (July 2022)**
  - Finalized planning procedures
  - Finalized audit program for fieldwork/test procedures
  - Commenced fieldwork
- **Upcoming Tasks (August 2022)**
  - Continue review of federal, state, and regional compliance and regulations
  - Continue benchmarking research
  - Summarize results and analysis
  - Develop draft report

### **Grants Management**

- **Task Completed (July 2022)**
  - Met with main POC to discuss audit objectives, timing, and planning procedures
- **Upcoming Tasks (August 2022)**
  - Commence planning



**II. Management Action Plan Monitoring**

SC&H is performing on-going management action plan (MAP) monitoring for internal audits previously conducted for HRSD. SC&H begins MAP follow-up approximately one year following the completion of each audit and will assess bi-annually.

For each recommendation noted in an audit report, SC&H gains an understanding of the steps performed to address the action plan and obtains evidence to confirm implementation, when available.

The following describes the current project monitoring status. This listing does not include audits which were determined by HRSD Management and the Commission to include confidential or sensitive information.

Audit	Report Date	Next Follow-up	Recommendations		
			Closed	Open	Total
Biosolids Recycling	10/8/16	August 2022	7	1	8
Treatment Plant Operations	10/15/18	August 2022	8	1	9
Safety Division	9/12/19	September 2022	2	1	3
SWIFT Program	2/24/2021	April 2022	9	3	12
Succession Planning	6/4/2021	August 2022	0	4	4
Emergency Repairs	1/18/2022	February 2023	0	3	3
Unifier/ERP Integration	6/27/2022	June 2023	0	4	4
D&C: CIP Project Management	5/11/16	Closed	13	0	13
HR Benefits	11/22/16	Closed	15	0	15
Inventory	4/20/17	Closed	5	0	5
Procurement/ProCard	8/23/17	Closed	11	0	11
Engineering Procurement	4/20/18	Closed	8	0	8
Corporate Governance: Ethics Function	3/21/18	Closed	5	0	5
Permitting	2/4/20	Closed	2	0	2
Payroll	3/27/20	Closed	3	0	3
Customer Care Division	7/26/19	Closed	4	0	4
Pollution Source Control	6/2/20	Closed	8	0	8
Fleet Services	2/24/2021	Closed	17	0	17
<b>Totals</b>			<b>117</b>	<b>17</b>	<b>134</b>

Annual Metrics																
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%	6.66%	9.99%	6.63%	6.78%	6.31%	16.04%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%	1.01%	2.10%	3.08%	5.44%	1.64%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	70%	71%	64%	69%	68%	85%	63%	78%	78%	65%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67	67	66	60	95	74.52
M-1.4	Training Hours per Employee - cumulative fiscal year-to-date	Hours	> 40		30.0	43.8	37.5	35.9	42.8	49.0	48.4	41.1	40.9	39.3	28.2	32.3
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	< 3.5	6.57	6.15	5.8	11.2	5.07	3.87	7	5.5	5.7	4.1	4.8	4.1	4.53
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	< 1.1	0.74	1.13	1.33	0.96	1.4	0.82	1.9	1	1.1	0.8	1.34	1.3	1.09
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	< 0.8	3.72	4.27	2.55	4.5	2	1.76	3.6	2.8	2.8	1.8	1.6	4.1	3.43
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%	160%	170%	170%	123%	120%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%	167%	159%	159%	155%	152%
M-2.3a	Total Maintenance Hours	Total Available Mtc Labor Hours Monthly Avg			16,495	22,347	27,615	30,863	35,431	34,168	28,786	28,372	31,887	29,596	28,722	28,030
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%	44%	59%	59%	62%	61%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%	24%	18%	19%	16%	15%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%	32%	27%	25%	22%	24%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	5%	5%	4	5%	7%	*
M-3.3	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.44	1.58	1.66	1.58	1.7	1.75	*
M-3.6	Alternate Energy (Incl. Green Energy as of FY19)	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142	5,862,256	47,375,940	56,473,800	58,044,110	*
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205	2,294	2,395	2,277	2,408	2,459	*
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173	170	181	174	170	*
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104	104	95	102	82	*
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%	1.3%	1.4%	1.8%	1.3%	1.4%	*
M-4.3	Total Labor Cost/MGD	Average Daily Flow		\$1,028	\$1,095	\$1,174	\$1,232	\$1,249	\$1,279	\$1,246	\$1,285	\$1,423	\$1,348	\$1,487	\$1,545	*
M-4.4	Affordability	Median Household Income	< 0.5%		0.48%	0.41%	0.43%	0.53%	0.55%	0.59%	0.60%	0.64%	0.71%	0.67%		*
M-4.5	Total Operating Cost/MGD	365/5-Year Average Daily Flow		\$2,741	\$2,970	\$3,262	\$3,316	\$3,305	\$3,526	\$3,434	\$3,592	\$3,823	\$3,823	\$4,048	\$4,311	*
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A	53%	N/A	53%	N/A	N/A
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%	114%	117%	143%	138%	*
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15	20	26	32	27	*
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24	152.8	152.23	149.84	149.72	145.75
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66	49.24	53.1	48.49	54.04	38.18
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	73%	76%	72%	78%	72%	*
	Senior Debt Coverage	Net Revenue/Senior Annual Debt Service	> 1.5	2.51%	2.30%	2.07%	1.88%	1.72%	1.90%	2.56%	3.10%	3.59%	4.84%	5.80%	6.03%	*
	Total Debt Coverage	Net Revenue/Total Annual Debt	>1.4	1.67%	1.67%	1.46%	1.45%	1.32%	1.46%	1.77%	1.93%	2.03%	2.62%	2.81%	2.66%	*

\*to be reported

Monthly Updated Metrics																	FY-22	FY-23
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	Jun-22	Jul-23
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	145.8	152.7	141.5	155.3	131.3	128.2	132.3
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	4	7	1	2	4	1	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	104%	106%	106%	103%	103%	100%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	117%	119%	108%	106%	114%	111%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$17,013,784	\$17,359,488	\$18,795,475	\$20,524,316	\$20,758,439	\$22,444,273	\$22,572,788	\$22,243,447	\$23,900,803	\$27,335,100	\$34,060,154	\$39,539,639	\$38,496,476	\$41,723,530
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	17%	18%	29%	33%	30%	30%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	10	5	2	25	0	0	0
M-3.1	Permit Compliance	# of Exceedances to # of Permitted Parameters	0		12:55,045	1:51995	2:52491	1:52491	2:52491	2:52,491	9:53236	9:58338	2:60879	9:60879	23:60879	9:60879	9:60879	2:5353
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	6	9	15	31	51	5	8
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	190,536,910	187,612,572	182,759,003	183,123,855	177,322,331	177,322,331	16,626,599
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	17%	17%	17%	18%	14%	15%	14%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	432	367	256	145	687	59	52
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	381	293	230	128	125	8	17

AGENDA ITEM 19.c. – August 23, 2022

**Subject:** Atlantic Treatment Plant Emergency Odor Control Repairs  
Emergency Declaration

**Recommended Action:** No action is required. Information Only

**CIP Project:** AT016200

**Regulatory Requirement:** None

**Brief:** On July 31, 2022, at approximately 6 p.m. a fire started in Train 1 of the Odor Control System (OCS) D at the Atlantic Treatment Plant. This fire, which likely was due to the fan motor or belt, destroyed the fan and motor, as well as the surrounding fiberglass ductwork, electrical wiring, sensors and also possibly impacted the second stage scrubber packing and mist eliminator. Although the plant OCS D has four trains, three are required for proper air flows and odor management for the front half of the treatment plant. The result of this fire is to leave zero redundancy in equipment. Due to long leads time on equipment and fiberglass reinforced pipe (FRP) components, and recent odor challenges at this treatment facility, time is of the essence for getting the odor control system repaired and operational. Portable odor control systems may be needed if this system cannot be reactivated quickly.

An emergency declaration was authorized on August 1, 2022.

Staff will utilize HDR Engineering, Inc. with support from Crowder Construction to perform all necessary evaluation, design, equipment procurement and installation and temporary repairs to the damaged OCS.

**Analysis of Cost:** The estimated cost of this work is \$1,500,000 and will be funded from the CIP AT016200 appropriation.

<b><u>Schedule:</u></b>	Emergency Declaration	August 2022
	Construction	August-September 2022
	Project Completion	May 2023