



COMMISSION MEETING MINUTES
August 24, 2021

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

Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-29
Rodriguez, Stephen C.	Commission Vice-Chair	1-29
Glenn, Michael E.	Commissioner	1-29
Lakdawala, Vishnu K.	Commissioner	1-29
Levenston, Jr., Willie	Commissioner	1-29
Stern, Nancy J.	Commissioner	1-29
Taraski, Elizabeth	Commissioner	1-29
Ward, Molly Joseph	Commissioner	1-29

1. **Awards And Recognition**

Action: No action required.

Brief:

a. New Commissioner Introduction

Chair Elofson introduced our newest Commissioner Nancy J. Stern of Belle Haven in Accomack County. Ms. Stern served the Eastern Shore Rural Health System, Inc. for over 30 years in various positions, recently retiring as Chief Executive Officer. Her prior roles there include Chief Operating Officer, Director of Human Resources and Director of Health Education. She served on Governor Bob McDonnell's Task Force and ConnectVA Governing Board, and on Governor Tim Kaine's Health Reform Commission. Ms. Stern also served on the board of the Virginia Primary Care/Virginia Community Healthcare Association for 18 years with three of those years as Board President. She earned a Bachelor of Science from West Chester University and earned Certification in Health Care Management/Administration from Old Dominion University. Ms. Stern resides in Belle Haven, Virginia. Ms. Stern succeeds Dr. Maurice Lynch who completed his appointment on June 7.

b. Commissioner Reappointment

We are pleased to announce Governor Ralph Northam has reappointed current commission member Elizabeth Taraski of Suffolk to continue service on the HRSD Commission. This is the first reappointment for Dr. Taraski.

Attachment: None

Public Comment: None



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2. **Consent Agenda**

Action: Approve the items listed in the Consent Agenda.

Moved: Stephen Rodriguez

Seconded: Michael Glenn

Roll call vote:

Ayes: 8

Nays: 0

Brief:

a. Approval of minutes from previous meeting.

b. Contract Awards

1. [Carbon-Based Pilot Testing and Soil Aquifer Treatment Study](#) \$209,758

2. [Biological Nutrient Removal Pilot Facility
The Kinetic Analysis and Acclimation to Low Dissolved Oxygen
Conditions for Biological Nutrient Removal Research Study](#) \$50,000

3. [Biological Nutrient Removal Pilot Facility
Graduate Research Assistant Funding](#) \$53,754

c. Task Orders

1. [Digester Solids Storage Tank Repair at Atlantic Treatment Plant](#) \$600,000

2. [Oracle EBS Upgrades](#) \$257,667

d. Sole Source

1. [Envirosuite Environmental Intelligence Platform
Sole Source and Contract Award](#) \$305,000

2. [Fybroc Centrifugal Pumps and Parts](#)

3. [Steelco USA Lab 640SL Laboratory Glassware Washers](#)

Item(s) Removed for Discussion: None

Discussion Summary:

Attachment: #1

Public Comment: None



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3. **Nutrient Compliance Plan Update**

Action: No action required.

Brief: The 2021 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 schedule to the Department of Environmental Quality each February on behalf of all members of the Exchange. 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 (2026), for nitrogen and phosphorus, to the rolling five-year compliance plan period.

The HRSD Nutrient Compliance Plan for 2026 is significantly different than the 2025 plan year due to the adoption of the Watershed Implementation Plan Phase III "WIP III". In previous years the waste load allocation was calculated based on the design flows of the treatment plants multiplied by a nutrient concentration. Starting in 2026, the waste load allocation becomes a "floating cap"; it will be calculated based on actual treatment plant flows multiplied by a nutrient concentration. The WIP III also reduces the nutrient concentrations used to calculate the cap.

- Lower James River Basin (Army Base, Boat Harbor, James River, Nansemond, VIP and Williamsburg Plants): The projected nutrient loadings from HRSD's James River Treatment Basin facilities are anticipated to meet the nutrient allocations through 2026. Sending the Boat Harbor service area flow to Nansemond is required to comply with the 2026 reductions.
- York River Basin (King William, West Point and York River Plants): Both King William and York River employ nutrient removal. The nutrient reductions at these facilities are sufficient to meet HRSD's nutrient allocations through 2026.
- Rappahannock River Basin (Urbanna Treatment Plant): The plan continues to require HRSD to purchase nutrient credits through the Exchange to meet its allocation until the Urbanna Treatment Plant is closed. In 2020, the expenditure for credits was \$17,659. The cost to upgrade this facility for nutrient removal far exceeds the cost of credit purchase.



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- Eastern Shore: With the addition of Eastern Shore facilities (Nassawadox Riverside and Town of Onancock) in 2021, HRSD incorporated planning information for these facilities into this submission. By 2026, Nassawadox Riverside is anticipated to be closed with flow consolidated with the Town of Onancock facility. Compliance challenges with nutrient wasteload allocations at the Town facility are not anticipated.

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 nutrient allocations in the James and York River basins for 2020 and anticipates continued compliance with the nutrient allocations in these basins through 2026. Sufficient credits are expected to be available in the Rappahannock River Basin to address the nutrient obligations for the Urbanna Treatment Plant. The updated submission for years 2022 – 2026 demonstrates a plan of continued compliance with HRSD James River and York River allocations.

In addition to a discussion on the Exchange submission, a presentation was provided outlining HRSD's historical and projected compliance with each of its permitted nutrient allocations. Future projections will include an evaluation of the HRSD's capacity to assist with locality compliance with Chesapeake Bay Total Maximum Daily Load (TMDL) nutrient and sediment stormwater reduction requirements.

Discussion Summary: The Commission and staff discussed consequences of not meeting target levels and challenges going forward to meet post-2026 requirements.

Attachment: [#2](#)

Public Comment: None



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4. **Engineering the Next Generation of Mainstream Nitrogen Removal Technology at HRSD: Partial Denitrification-Anammox (PdNA) Briefing**

Action: No action required.

Brief: HRSD's development and demonstration of ammonia versus NO_x (AvN) control and partial denitrification-anammox (PdNA) technology has been quite promising as applied in the case of the full-scale and pilot-scale York River Treatment Plant (YRTP) deep-bed denitrification filters and the James River Treatment Plant (JRTP) pilot-scale moving bed biofilm reactors (MBBR) and integrated fixed-film activated sludge (IFAS). In fact, the PdNA occurring in the YRTP deep-bed denitrification filters represents the first purposeful full-scale application of mainstream anammox worldwide, removing a significant amount of influent ammonia under anoxic conditions, achieving very low effluent total nitrogen, and doing so at a substantial operational cost savings (and future capital cost savings when the time comes to increase treatment capacity at YRTP). The next phase of demonstration and research broadly involves transitioning to integrated PdNA such as in second anoxic zones of our existing BNR facilities [Nansemond, Army Base, Virginia Initiative Plant (VIP), Williamsburg, James River]. This is a much larger challenge from a development and control standpoint, but we have initiated an investigation of both moving and fixed media IFAS, including both full-scale demonstrations and continued pilot plant testing, both at JRTP.

Treatment Process Engineers, Stephanie Klaus and Mike Parsons, presented an [overview](#) of AvN/PdNA development at HRSD and plans for continued work in this exciting technology area.

Discussion Summary: Dr. Bott discussed the nutrient upgrades and plant expansions at the James River, Nansemond and York River Treatment Plants. At the YRTP, we have the potential to now avoid a lot of expensive future nutrient and plant capacity upgrades due to PdNA occurring in the filters. The pilot- and full-scale research has provided real results, and we are making tremendous strides in technology. The patent and commercialization structure are set up for others to be able to use the technologies. Staff and Commission discussed the limited opportunity for additional federal research grants.

Attachment: [#3](#)

Public Comment: None



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5. **Subordinate Trust Agreement
Exclusion of Certain Locality Improvements from Calculation of Operating Expenses
Resolution**

Action: Adopt the resolution authorizing the exclusion of Locality Improvements from the calculation of Operating Expenses for purposes of the Subordinate Trust Agreement.

Moved: Stephen Rodriguez

Seconded: Michael Glenn

Roll call vote:

Ayes: 8

Nays: 0

Briefing: When staff prepares the Fiscal Year 2021 (FY-2021) Comprehensive Annual Financial Report (CAFR), there is work being performed on six locality improvement projects with an estimated total project cost of \$41,974,000. A portion of this amount was expended in FY-2021 and needs to be excluded from Operating Expenses as defined in the Subordinate Trust Agreement. The remaining amount is expected to be expended annually up to FY-2026. By excluding these projects from Operating Expenses, staff can calculate the Debt Service Coverage Ratio on an adjusted basis as opposed to GAAP basis to ensure our subordinate debt covenants are met.

These projects improved the integrity of the regional wastewater system by rehabilitating aging infrastructure to reduce inflow and infiltration.

An excerpt from the Subordinate Trust agreement is provided below:

“Operating Expenses shall also exclude expenses for improvements that will not be owned by the District but which will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System.”

The attached [resolution](#) was prepared by bond counsel.

Attachment: [#4](#)

Public Comment: None



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6. **Water Infrastructure and Innovation Act (WIFIA) Tranche 2 Closing Resolution**

Action: Approve the terms and conditions of the resolution authorizing the issuance of a subordinate wastewater bond, not to exceed \$476,581,587 in principal amount (excluding any amount of interest that is capitalized), for the purpose of providing funds, with other available money, to pay the costs of the implementation of Tranche 2 Project as set forth in the WIFIA Master Financing Agreement (MFA), fixing the principal installment maturity dates, the interest rate, the redemption provisions and certain other details of the bond; directing the authentication and delivery of the bond; authorizing the execution of a financing agreement with the Environmental Protection Agency 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: Willie Levenston

Seconded: Stephen Rodriguez

Roll call vote:

Ayes: 8

Nays: 0

Brief: The WIFIA program accelerates investment in our nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. The WIFIA loans allow borrowers to lock-in a rate equivalent to the US Treasury rate at closing. Similar to the Virginia Clean Water Revolving Loans, WIFIA loan requirements may increase total project costs as they require Davis-Bacon wages, American Iron and Steel and involve federal environmental reviews.

The attached [resolution](#) for the second Tranche of SWIFT projects funded through the WIFIA MFA is scheduled to close the week of September 1st. The loan is set at a not-to-exceed amount of \$476,581,587, excluding any amount of interest that is capitalized, which will be the largest loan HRSD has ever closed. The interest rate will be set at closing. We estimate the rate will be around 2.25 percent or less for 38 years. The net present value interest savings compared to HRSD issuing debt in the open market for Tranche 2 is estimated between \$40 million and \$62 million depending on the rate at closing.

A unique characteristic of the Tranche 2 loan agreement, which is not included in Tranche 1, is the option for capitalizing interest. During construction of the projects, the interest can be deferred and added to the principal amount of the loan. Per the attached resolution, the amount of interest that can be deferred and added to the principal amount will be capped at \$52 million, which will be in addition to the not-to-exceed loan amount of \$476,581,587 (i.e., aggregate maximum principal of \$528,581,587). This option will allow HRSD to repay its planned clean water loans more quickly, providing the maximum subsidy amount, which is 1.5% lower than the tax-exempt market rate for a 20-year loan, resulting in lower overall debt service. The amount of net present value debt service savings using this strategy is estimated at \$73 million. Another benefit of this strategy is that it provides us flexibility to



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return to a more rapid repayment if market conditions change, since WIFIA allows us the ability to prepay with no penalty. The WIFIA Tranche 2 loan agreement and term sheet has been modified to allow for the capitalized interest strategy.

Overall, ratepayers are estimated to save between \$414 million and \$487 million using WIFIA and the Virginia Clean Water Revolving Loan funds for the SWIFT program. The savings realized from the capitalized interest strategy would be in addition to the WIFIA and Clean Water savings. This is much higher than the \$300 million in savings staff estimated when closing the Tranche 1 loan in September 2020 as long-term rates have remained surprisingly low.

These documents have been reviewed by HRSD bond and general counsel and EPA counsel. Staff will provide a briefing on the WIFIA program and the Tranche 2 loan agreement.

Attachment: [#5](#)

Public Comment: None



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7. **Fleet Management Fiscal Year (FY) 2022**
Initial Appropriation

Action: Appropriate funding in the amount of \$3,600,000.

Moved: Willie Levenston

Seconded: Michael Glenn

Roll call vote:

Ayes: 8

Nays: 0

CIP Project: GN018100

Project Description: This project will provide for replacement of aging fleet vehicles and the purchase of additional vehicles to meet the needs of the organization for FY-2022.

Funding Description: The initial appropriation for the project is based on cost estimates from vehicle manufacturers and state contracts. Funding for the additional fiscal years in the CIP will be requested each year. The amount provided in the CIP for the following is significantly higher due to vehicles required for the Onancock Treatment Plant and for hauling biosolids and ash removal. Planned replacements for FY-2022 are included in the table below. Actual replacements may change within the total appropriation based on final purchase price, delivery schedule or other emerging needs.

Vehicle No.	Department	Vehicle Description	Vehicle Replacement Cost
14	Small Communities Division	2006 Chevrolet 2500 Crewcab 4X4 Pickup Diesel	\$48,000
350	South Shore Interceptors	2010 International/Vactor Sewer Flusher	\$600,000
82	South Shore Interceptors	1999 Ford F450 Pickup with Utility Body	\$62,000
189	North Shore Engineering	2004 Jeep Grand Cherokee 4x2 SUV	\$28,700
261	North Shore Operations, Electrical and Instrumentation (E&I)	1999 E 350 Cargo Van	\$35,000
307	North Shore Operations, E&I	2003 Chevrolet 2500 Pickup-Utility	\$65,000
319	North Shore Interceptors	2005 Freightliner M2 with Utility Body	\$250,000
383	North Shore Operations, E&I	2011 Ford E350 Cargo Van	\$35,000



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430	Small Communities Division	2014 International Septage Truck	\$250,000
442	South Shore Interceptors	2014 Ford E 250 Cargo Van	\$37,000
455	South Shore Interceptors	2015 GMC 2500 Cargo Van	\$37,000
New	Onancock Treatment Plant	4X4 Extended Cab Pickup with Utility Body and Crane	\$70,000
New	Onancock Treatment Plant	Backhoe with Bucket and Forklift Attachment	\$99,000
New	Hartman Pump Station – Onancock	25kw Generator and Transfer Switch	\$72,090
New	South Street Pump Station – Onancock	16kw Generator and Transfer Switch	\$61,090
New	Treatment Plant	(7) Tandem Axle Road Tractor	\$889,000
New	Treatment Plant	(6) 6500 Gallon Tank Trailer	\$723,000
New	Treatment Plant	(1) Live Bottom Trailer (Ash)	\$95,000
<i>Total Estimated Cost</i>			\$3,456,880

Schedule: Individual purchases will occur throughout the fiscal year.

Attachment: None

Public Comment: None



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8. **Atlantic Treatment Plant Gravity Belt Thickener Expansion
Initial Appropriation and Task Order (>\$200,000)**

Actions:

- a. **Appropriate total project funding in the amount of \$4,389,500.**
- b. **Approve a task order with HDR Engineering, Inc. in the amount of \$571,500.**

Moved: Willie Levenston

Seconded: Elizabeth Taraski

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: AT014900

Contract Status:	Amount
Original Contract with HDR	\$0
Total Value of Previous Task Orders	\$0
Requested Task Order	\$571,500
Revised Contract Value	\$571,500
Engineering Services as % of Construction	9.7%

Project Description: This project will add a fourth gravity belt thickener (GBT) at the Atlantic Treatment Plant (ATP). The installation shall include all associated pumps, piping, platforms, and ancillary equipment. The project shall also include all necessary electrical and instrumentation equipment to operate the GBT's. This project was driven by the anticipated increase in flow at the ATP and the need to maintain solids handling redundancy. It is currently planned for this project to be designed and constructed in coordination with AT015000.

Task Order Description: This task order will provide design and bid phase services for the project.

Analysis of Cost: The cost for this task order is based on a detailed scope of work and hourly rates negotiated in the General Engineering Services annual services contract. The design fee to construction ratio, raw workforce rate, and number of work force hours are on par with HRSD treatment plant construction projects of a similar size. The design hours per plan sheet is less than comparable HRSD projects because the firm will be re-using a 3D model they previously built for a different project.



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Funding Description: The total project cost estimate of \$4,389,500 includes approximately \$571,500 in design phase services, \$3,608,950 in construction phase costs, and a five percent contingency allowance of \$209,050 and is based on a Class 5 CIP-prioritization level cost estimate. The CIP cost estimate was found to be in error and the funding amount requested is needed to deliver the scope of work as defined.

<u>Schedule:</u>	Design	September 2021
	Bid	August 2022
	Construction	November 2022
	Project Completion	November 2023

Attachment: None

Public Comment: None



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9. **Atlantic Treatment Plant Polymer System Replacement
Initial Appropriation and Task Order (>\$200,000)**

Actions:

- a. **Appropriate total project funding in the amount of \$2,033,500.**
- b. **Approve a task order with HDR Engineering, Inc. in the amount of \$260,859.**

Moved: Willie Levenston

Seconded: Michael Glenn

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: AT015000

Contract Status:	Amount
Original Contract with HDR	\$0
Total Value of Previous Task Orders	\$0
Requested Task Order	\$260,859
Revised Contract Value	\$260,859
Engineering Services as % of Construction	9.7%

Project Description: This project will upgrade the substandard polymer systems for thickening and pre-dewatering at the Atlantic Treatment Plant (ATP). The polymer systems at the ATP do not meet expected performance and are often the root-cause of failures in the pre-dewatering system. Upgrading the polymer system will minimize such failures, while upgrades to the thickening facilities will allow for standardization, operating cost minimization, additional automation, and full leveraging of thermally hydrolyzed solids by providing opportunity for drier cake. It is currently planned for this project to be designed and constructed in accordance with CIP Project AT014900.

Task Order Description: This task order will provide design and bid phase services for the project.

Analysis of Cost: The cost for this task order is based on a detailed scope of work and hourly rates negotiated in the General Engineering Services annual services contract. The design fee to construction ratio, raw workforce rate, and number of work force hours are on par with HRSD treatment plant construction projects of a similar size. The design hours per plan sheet is less than comparable HRSD projects because the firm will be reusing a 3D model they previously built for a different project.



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Funding Description: The total project cost estimate of \$2,033,500 includes approximately \$260,859 in design phase services, \$1,675,756 in construction phase costs, and a five percent contingency allowance of \$96,885 and is based on a Class 5 CIP-prioritization level cost estimate. The CIP cost estimate was found to be in error and the funding amount requested is needed to deliver the scope of work as defined.

<u>Schedule:</u>	Design	September 2021
	Bid	August 2022
	Construction	November 2022
	Project Completion	November 2023

Attachment: None

Public Comment: None



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10. **Bethel-Poquoson Force Main Part IV Replacement – Wythe Creek Exposed Crossing Initial Appropriation**

Action: Appropriate total project funding in the amount of \$987,000.

Moved: Vishnu Lakdawala

Seconded: Willie Levenston

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: YR014600

Project Description: This project will replace approximately 1,600 linear feet of 20-inch prestressed concrete cylinder pipe and approximately 1,600 linear feet of 18-inch HDPE pipe running above the marsh adjacent to the Wythe Creek Bridge. The existing cantilever beams supporting the 18-inch HDPE pipe will be removed and the original pile bents supporting the 20-inch prestressed concrete cylinder pipe will be used to support the new 20-inch HDPE pipe. Isolation valves existing on either end of the crossing will negate the need to install a line-stop for this project.

Funding Description: The total cost for this project is estimated at \$987,000 based on a Class 5 cost estimate and a twenty percent contingency included in the requested appropriation. Through the use of HRSD’s existing Professional Services Agreement for Structural Services, engineering services will be provided by Collins Engineers, Inc. to include preliminary engineering, design and construction phase services. This cost for the Preliminary Engineering Report (PER) is below the \$200,000 commission approval threshold.

Schedule:	PER	August 2021
	Design	August 2022
	Bid	February 2023
	Construction	April 2023
	Project Completion	December 2023

Attachment: None

Public Comment: None



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11. **Foxridge, Woodland Road and Fox Hill Road Gravity Sewer Rehabilitation
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$3,962,504.

Moved: Michael Glenn

Seconded: Vishnu Lakdawala

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: YR010300

Project Description: Portions of the Foxridge, Bloxom’s Corner and Woodland/Fox Hill Road gravity sewer collection systems require rehabilitation/replacement. Upon completion of the rehabilitation/replacement, these systems will be transferred to the City of Hampton. Approximately 1,935 linear feet of existing 10-inch Vitrified Clay pipe was replaced along Beach Road with new 10-inch PVC pipe as part of the Prompt Repair program. This portion of new gravity pipe will also be transferred over to the City of Hampton for operation and maintenance. This project is included in the U.S. EPA Consent Decree Rehabilitation Action Plan Phase 2 with a May 2025 regulatory completion date.

Funding Description: The estimated total project cost is \$3,962,504 and is based on a Class 5 CIP prioritization level cost estimate completed by HRSD. The estimated project cost consists of \$2,882,655 for Construction combined with an engineering services estimate of \$359,185 and a 22 percent contingency allowance of \$720,664. Engineering services will be provided by Rummel, Klepper and Kahl, LLP to include preliminary engineering, design and construction phase services through the use of HRSD’s existing Professional Services Agreement for Interceptor Systems Projects.

Schedule:	PER	July 2021
	Design	February 2022
	Bid	October 2022
	Construction	December 2022
	Project Completion	February 2024

Attachment: None

Public Comment: None



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12. **King William Central Crossing Pump Station Rehabilitation
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$1,122,050.

Moved: Willie Levenston

Seconded: Vishnu Lakdawala

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP015300

Project Description: This project consists of rehabilitation of the existing Central Crossing Pump Station to include improvements to the pump system and controls, discharge monitoring, force main upsizing, emergency power supply, and other ancillary improvements. Failures have occurred on the pumping rail and connection system as well as the discharge force main with temporary repairs made to both. Additionally, there is no emergency power supply in cases of outages for the station and the current power rack is of timber construction and is also in need of replacement. Currently, there is no means to isolate the discharge force main from a common pressure pipeline with multiple other pump station connections. There is no emergency bypass connection, and no means of monitoring station flows and pressures. This project will correct these deficiencies and bring this facility to current HRSD standards. King William is also experiencing substantial development growth. This station currently has development projects with master site plans that would exceed the capacity of the station. This project will provide for additional station pumping capacity to allow for future development and growth.

Funding Description: The total cost for this project is \$1,122,050 based on a Class 5 CIP prioritization level cost estimate. The estimate includes \$139,900 for Engineering Services fees, \$835,550 for Construction, and \$146,600 for project contingency. Preliminary Engineering Report (PER) services will be completed by Rummel, Klepper, and Kahl, LLP under the Interceptor Systems Annual Services contract and the fee for this work is below the \$200,000 Commission approval threshold.

Schedule:	PER	September 2021
	Design	March 2022
	Pre-Construction	September 2022
	Construction	December 2022
	Project Completion	August 2023

Attachment: None

Public Comment: None



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13. **King William Treatment Plant Improvements – Phase II
Initial Appropriation and Contract Award (>\$200,000)**

Actions:

- a. **Appropriate total project funding in the amount of \$16,923,311.**
- b. **Award a contract to AH Environmental Consultants, Inc. in the amount of \$277,961.**

Moved: Stephen Rodriguez

Seconded: Willie Levenston

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP013300

Type of Procurement: Competitive Negotiation

Proposers	Technical Points	Recommended Selection Ranking
AH Environmental Consultants, Inc.	74	1
Jacobs Engineering Group, Inc.	69	2

Contract Description: A Public Notice and Request for Proposal was issued on May 9, 2021. Two firms submitted proposals on June 2, 2021 and both firms were determined to be responsive and deemed fully qualified, responsible, and suitable to the requirements in the Request for Proposals. Both firms were short listed, interviewed, and technically ranked. Interviews were held on July 15, 2021. The Selection Committee ranked the firms by technical points and selected the highest qualified firm AH Environmental Consultants, Inc. The Committee recommends award to AH Environmental Consultants, Inc. whose professional qualifications and proposed services best serve the interest of HRSD.

This contract is an agreement for the Preliminary Engineering Report (PER) phase services for the above referenced project. Future phases of the work, including Design, Pre-Construction, and Construction Services, will be negotiated after the PER is completed.

Project Description: This project is intended to increase capacity for the King William Treatment Plant from 100,000 gallons per day (GPD) Average Daily Flow (ADF) to a firm capacity of 200,000 gallons per day (GPD) Average Daily Flow (ADF). The improvements will also be planned to facilitate expansion to 300,000 gallons per day (GPD) Average Daily Flow (ADF) of capacity.



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Analysis of Cost: The estimated total project cost is \$16,923,311 and is based on a Class 5 CIP- prioritization level estimate prepared by HRSD and includes a 17 percent contingency. A meeting was held with AH Environmental Consultants, Inc. to discuss the project and scope of services. A fee of \$277,961 was negotiated for the preparation of a PER. This cost is approximately 2.1 percent of the estimated construction cost and is in agreement with similar work from other firms.

<u>Schedule:</u>	PER	August 2021
	Design	March 2022
	Bid	March 2023
	Construction	May 2023
	Project Completion	May 2025

Attachment: None

Public Comment: None



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14. **Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation
Additional Appropriation**

Action: Appropriate additional funding in the amount of \$226,133.

Moved: Michael Glenn
Seconded: Vishnu Lakdawala

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: WB012600

Budget	\$4,555,185
Previous Expenditures and Encumbrances	<u>(\$4,375,311)</u>
Available Balance	\$179,874
Change Order No. 1 to Basic Construction Company (Basic)	(\$178,007)
Proposed Contingency	(\$228,000)
Project Shortage/Requested Additional Funding	(\$226,133)
Revised Total Project Authorized Funding	<u><u>\$4,781,318</u></u>

Project Description: This project involves the rehabilitation of the Kingsmill Pump Station wet well and will require complete bypass of the pump station during construction. Additionally, yard piping, interior and exterior valves, and a portion of the interceptor force main upstream and downstream of the pump station will be replaced as part of this project.

Funding Description: Following mobilization and preparatory work by Basic, several issues were identified by Anheuser-Busch staff including the need for temporary fencing and lighting in certain areas of the work zone. Colonial Pipeline Company also expressed concerns about the proximity of the temporary bypass piping to a large gas pipeline that runs in parallel to the HRSD force main, requiring a more complex bypass piping route. The implementation of these requests will require additional work by the contractor in the amount of \$178,007. This request for additional appropriation includes a five percent project contingency in the amount of \$228,000 to accommodate any additional unforeseen conditions. The cost of the change order compares well to the independent estimate completed by Rummel, Klepper and Kahl, LLC.

Schedule: Construction October 2020
Project Completion May 2022

Attachment: None

Public Comment: None



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15. **Small Communities Rehabilitation Phase V
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$482,460.

Moved: Willie Levenston

Seconded: Elizabeth Taraski

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP014800

Project Description: The project will consist of raising approximately 60 paved over or buried manholes throughout the Small Communities. Replacement of frame and covers and condition assessment of these structures will occur with the work. The uncovering and raising of the buried and paved over manholes will allow operations to access these structures in order to perform assessment of our infrastructure and to ensure the collection systems are operating as designed.

Funding Description: The total cost for this project is \$482,460 based on a Class 5 CIP prioritization level cost estimate. The estimate includes \$61,710 for Engineering Services fees, \$357,000 for Construction, and \$63,750 for project contingency. Preliminary engineering services will be completed by Rummel, Klepper, and Kahl, LLP under the Interceptor Systems Annual Services contract and the fee for this work is below the \$200,000 Commission approval threshold.

Schedule:	PER	September 2021
	Design	December 2021
	Pre-Construction	June 2022
	Construction	September 2022
	Project Completion	May 2023

Attachment: None

Public Comment: None



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16. **Small Communities Rehabilitation Phase VI
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$1,395,700.

Moved: Vishnu Lakdawala

Seconded: Stephen Rodriguez

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP015500

Project Description: This project will renew approximately 5,600 linear feet of gravity pipe and 12 manholes in the service areas of West Point Pump Stations 5, 8 and 9. These facilities have been identified as large contributors to inflow and infiltration (I&I). Renewal methods include internal point repairs, external point repairs, and trenchless rehabilitation. External point repairs will consist of dig-and-replace in kind with pipe of equal size. Rehabilitation may include one or more trenchless methods to reinforce existing pipelines with an internally installed liner or other seal to prevent I&I intrusion. Manholes will be lined and rehabilitated.

Funding Description: The total cost for this project is \$1,395,700 based on a Class 5 CIP prioritization cost estimate. The estimate includes \$149,500 for Engineering Services, \$1,060,200 for Construction, and \$186,000 for project contingency. Preliminary engineering services will be completed by Rummel, Klepper, and Kahl, LLP under the Interceptor Systems Annual Services contract and the fee for this work is below the \$200,000 Commission approval threshold.

Schedule:	PER	September 2021
	Design	December 2021
	Pre-Construction	June 2022
	Construction	September 2022
	Project Completion	May 2023

Attachment: None

Public Comment: None



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17. **Wards Corner Sanitary Sewer Pumping Station
Initial Appropriation, Ownership Transfer Agreement and Cost Sharing Agreement**

Actions:

- a. **Appropriate total project funding in the amount of \$8,000,000.**
- b. **Accept the transfer of ownership of Wastewater Pump Station No. 27 from the City of Norfolk (City) to HRSD and authorize the General Manager to execute the Transfer Agreement, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.**
- c. **Approve the terms and conditions of the Cost Sharing Agreement with City of Norfolk for the reimbursement of design and construction costs associated with Pump Station No. 27 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: Michael Glenn
Seconded: Willie Levenston
Roll call vote:

Ayes: 8 **Nays:** 0

CIP Project: AB012000

Project Description: This project will build an HRSD wastewater pump station to replace the City of Norfolk Wastewater Pump Station #27 (WPS #27) at the intersection of Granby Street and North Shore Road. The City will be funding the design of this project with their current contract with Michael Baker, Inc. and will be providing \$2 million for design and for a portion of the construction. HRSD will perform gravity sewer installation, which will become a City asset, from the existing WPS #27 to the proposed HRSD Wards Corner Pump Station. The new HRSD pump station will be located in the lot adjacent to the existing WPS #27 and the existing pump station will be demolished when the construction is complete. The existing City force main from the pump station will also be transferred to HRSD.

Funding Description: The total project cost estimate of \$8,000,000 includes \$6,000,000 in construction phase costs and a contingency allowance of \$2,000,000 and is based on a Class 5 CIP-prioritization level cost estimate.

Agreement Description: In accordance with HRSD's [Facility Transfer](#) Commission Adopted Policy, "*in certain circumstances, it may be in the best interest of HRSD, localities, private owners, and the Commonwealth to transfer ownership of sanitary sewer facilities.*" WPS #27 is a terminal pump station and receives sewer flow from half a dozen upstream city pump stations. HRSD operation of this terminal pump station will facilitate flow and



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pressure optimization of the interceptor system. In 2019, during the design of a replacement for WPS #27, the City approached HRSD about the possibility of a facility transfer. HRSD staff evaluated the City's offer and accepted in principle to take over ownership of this critical infrastructure. The City has agreed to administer the design of the improvements in coordination with HRSD to ensure it is in conformance with the HRSD Design & Construction Standards. HRSD has agreed to administer and manage the pre-construction and construction phases of the improvements. The attached [Ownership Transfer Agreement](#) and [Cost Sharing Agreement](#) have been reviewed by HRSD legal counsel.

Attachment: [#6](#)

Public Comment: None



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18. **West Point Treatment Plant Final Effluent Pump Station Improvements
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$764,350.

Moved: Stephen Rodriguez

Seconded: Vishnu Lakdawala

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP015600

Project Description: This project consists of the rehabilitation of the existing West Point Treatment Plant Effluent Pump Station to include improvements to the pumping system and controls, discharge monitoring and access. The project will replace pump rail systems; rehabilitate and replace internal components of valve vault and emergency pump connection; install metering vault and associated components; upgrade alarms, pump controls and power panel and associated utility rack; and provide access to the station for delivering bypass pumps and equipment as necessary. It is currently planned for this project to be designed and constructed in coordination with MP015700.

Funding Description: The total cost for this project is \$764,350 based on a Class 5 CIP prioritization level cost estimate. The estimate includes \$97,600 for Engineering Services, \$567,250 for Construction, and \$99,500 for project contingency. Preliminary engineering services will be completed by HDR Incorporated under the General Engineering Annual Services contract and the fee for this work is below the \$200,000 Commission approval threshold.

Schedule:	PER	September 2021
	Design	March 2021
	Pre-Construction	September 2022
	Construction	December 2022
	Project Completion	August 2023

Attachment: None

Public Comment: None



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19. **West Point Treatment Plant Secondary Clarifier Improvements
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$739,900.

Moved: Willie Levenston

Seconded: Michael Glenn

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: MP015700

Project Description: This project consists of the rehabilitation of the existing Secondary Clarifier System at the West Point Treatment Plant to include improvements to the waste pumping system and controls; raising the wall height on Secondary Clarifier #2; replacement of waste valving on both clarifiers; complete replacement of internal components; and rehabilitation of effluent weirs and skimmer wasting wells. It is currently planned for this project to be designed and constructed in coordination with MP015600.

Funding Description: The total cost for this project is \$739,900 based on a Class 5 prioritization level cost estimate. The estimate includes \$94,700 for Engineering Services, \$548,900 for Construction, and \$96,300 for project contingency. Preliminary engineering services will be completed by HDR Incorporated under the General Engineering Annual Services contract and the fee for this work is below the \$200,000 Commission approval threshold.

Schedule:	PER	September 2021
	Design	March 2021
	Pre-Construction	September 2022
	Construction	December 2022
	Project Completion	August 2023

Attachment: None

Public Comment: None



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20. **Williamsburg Treatment Plant Administration Building Renovation
Additional Appropriation and Contract Award (>\$200,000)**

Actions:

- a. **Appropriate additional funding in the amount of \$2,244,215.**
- b. **Award a contract to E.T. Gresham Company, Inc in the amount of \$2,792,475.**

Moved: Michael Glenn
Seconded: Willie Levenston
Roll call vote:

Ayes: 8 **Nays:** 0

CIP Project: WB012900

Budget	\$1,319,600
Previous Expenditures and Encumbrances	(\$251,650)
Available Balance	\$1,067,950
Proposed Contract Award to Contractor	(\$2,792,475)
Task Order to Guernsey Tingle	\$169,690
Required Office Furnishings	\$210,000
Proposed Contingency	\$140,000
Project Shortage/Requested Additional Funding	(\$2,244,215)
Revised Total Project Authorized Funding	\$3,563,815

Type of Procurement: Competitive Bid

Bidder	Bid Amount
E.T. Gresham Company, Inc	\$2,792,475
MEB General Contractors	\$2,934,170
Patriot Construction	\$2,983,908
Heartland Construction	\$2,999,582

Engineer Estimate: \$2,232,807

Project Description: The project will renovate the existing 1960's era Administration Building at the Williamsburg Treatment Plant. This project will replace the 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



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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.

Funding Description: The original CIP project estimate did not anticipate modifications to project scope that were added after project inception. Two notable changes to the project scope include the addition of office, storage and workshop space for electrical and instrumentation staff currently operating in a separate building on plant site. Also, the existing Distributive Control System (DCS) room in the existing administration building is being converted into a secure space. Additionally, the lowest bid amount of \$2,792,475 exceeds the balance available for the CIP project. Therefore, the project requires \$2,244,215 in additional funding.

Contract Award and Analysis of Cost: In accordance with HRSD’s competitive sealed bidding, the Engineering Department advertised and solicited bids directly from potential bidders. The project was advertised on July 5, 2021, and four bids were received on August 3, 2021. The Engineer’s estimate is lower than the bids received due to market volatility and growing material lead times as well as vendor reluctance to provide final pricing on materials until orders are submitted. Thus, construction costs continue to increase. The design engineer, Guernsey Tingle, evaluated the bids based upon the requirements in the invitation for bid and recommends award to the lowest responsive and responsible bidder, E.T. Gresham Company, Inc, in the amount of \$2,792,475. Through the use of HRSD’s existing Professional Services Agreement for Architectural/Mechanical/ Electrical Projects, engineering services will be provided by Guernsey Tingle for construction phase services. The cost for construction phase services is below the \$200,000 Commission approval threshold. Due to market volatility and growing material lead times, vendors are reluctant to provide final pricing on materials until orders are submitted. Thus, construction costs continue to increase.

<u>Schedule:</u>	PER	Complete
	Design	Complete
	Bid	August 2021
	Construction	September 2021
	Project Completion	December 2022

Attachment: None

Public Comment: None



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21. **Williamsburg Treatment Plant Outfall Flow Control System Repairs
Initial Appropriation**

Action: Appropriate total project funding in the amount of \$1,958,040.

Moved: Elizabeth Taraski

Seconded: Michael Glenn

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: WB013100

Project Description: This project will replace flow control and isolation valves on the outfall flow control system used to maintain water levels in the chlorine contact tanks. To replace these valves, construction will require the isolation of the outfall to prevent river water from entering the flow control vault. This project will ensure proper flow control from the chlorine contact tanks to the outfall and maintain the required water level in the chlorine contact tanks by replacing exhausted flow control valves. The project will also replace leaking isolation valves needed to isolate flow control valves for maintenance and repair.

Funding Description: The total cost for this project is estimated to be \$1,958,040 based on a Class 5 cost estimate. The cost estimate includes \$151,800 for Engineering Services, \$1,505,200 for Construction, and \$301,040 for project contingency. Preliminary engineering services will be completed by HDR Incorporated under the General Engineering Annual Services contract and the fee for this work is below the \$200,00 Commission approval threshold.

Schedule:	PER	September 2021
	Design	December 2021
	Pre-Construction	August 2022
	Construction	October 2022
	Project Completion	April 2023

Attachment: None

Public Comment: None



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22. **Boat Harbor Pump Station Land Acquisition
Initial Appropriation and Acquisition of Real Property for a Public Purpose
520 14th Street, Newport News, Virginia**

Actions:

- a. **Appropriate total project funding in the amount of \$3,600,000.**
- b. **Approve the purchase of commercial property at 520 14th Street (+/- 5 acres), and associated acquisition costs for \$681,200 in accordance with the terms and conditions of the Purchase and Sale Agreement with Laura Leigh Offield, Trustee, owner of subject property in Newport News, Virginia; 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: Vishnu Lakdawala

Seconded: Willie Levenston

Roll call vote: **Ayes:** 8 **Nays:** 0

CIP Project: GN016345

Project Description: HRSD will close its Boat Harbor Treatment Plant in Newport News to further reduce nutrients discharged to the James River Basin, which will support local water quality and Chesapeake Bay restoration. Property near the current Boat Harbor Treatment Plant has been identified upon which the pump station will be constructed. This project will fund the purchase of the land and easements that may be needed for the new pump station and associated facilities.

Final approval of this acquisition is subject to the City of Newport News' 30-day right of first refusal.

The [Purchase and Sale Agreement](#) is attached and was reviewed by HRSD staff and legal counsel. The deed of bargain and sale is forthcoming and will also be reviewed by HRSD staff and legal counsel before execution. A [Facility Orientation Map](#) is provided for clarification purposes.

Funding Description and **Analysis of Cost:** The total cost estimate for this project is \$3,600,000. The estimate was based on land and easements necessary to construct the pump station and associated facilities. The cost of this initial acquisition will total \$681,200. This amount includes the negotiated cost to purchase the property at 520 14th Street for the negotiated price of \$655,000 and relocation and moving costs totaling \$26,200. The cost to purchase the property is based upon comparable sales and current list prices of commercial



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property which range from \$100,000 to \$166,800 per acre. The Owner currently has a tenant on this site and this issue was also considered in the final settlement amount. This site represents most of the area required for construction, though additional land and easement purchases may be required as detailed design is completed.

Attachment: [#7](#)

Public Comment: None



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23. **Larchmont Area Sanitary Sewer Improvements
Acquisition of Real Property for a Public Purpose
1101 Magnolia Avenue, Norfolk, VA**

Action: Approve the purchase of property at 1101 Magnolia Avenue located in Norfolk, VA and associated acquisition costs for \$920,000 and \$10,000 for moving and housing relocation assistance costs for a total price of \$930,000 in accordance with the terms and conditions of the Purchase and Sale Agreement with Jason and Ashley Holloway, owners of subject property; authorize the General Manager to execute same and related acquisition documents in accordance with those terms and conditions substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary and as approved by counsel; and further authorize the General Manager to execute the forthcoming deed of bargain and sale upon approval of legal counsel.

Moved: Michael Glenn
Seconded: Willie Levenston
Roll call vote:

Ayes: 8 **Nays:** 0

CIP Project: VP015320

Budget	\$38,734,000
Previous Expenditures and Encumbrances	(\$6,153,929)
Available Balance	\$32,580,071

Project Description: This project involves design and construction of five new sanitary sewer pump stations, approximately 3,700 linear feet of 6-inch, 8-inch, and 10-inch force mains, and approximately 10,000 linear feet of 8-inch and 10-inch gravity mains and appurtenances. The new infrastructure will replace:

- (a) five existing HRSD pump stations: Monroe Place PS#114, Powhatan Avenue PS#122, Richmond Crescent PS#124, Hanover Avenue PS#141, and Jamestown Crescent PS#142;
- (b) three City of Norfolk pump stations: Larchmont Eleanor Court PS#112; Larchmont Walnut Hill Street PS#113; and Larchmont Westwood Terrace PS#114; and
- (c) install new gravity trunk lines to divert the flow to the new pump station locations. This project is part of the U.S. EPA Consent Decree Rehabilitation Action Plan Phase 2 with a required substantial completion date of May 5, 2025. The City of Norfolk is cost sharing portions of this project managed by HRSD.



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Agreement Description: After preliminary engineering, location and cost evaluations, HRSD staff and engineering consultants selected this adjacent corner lot property as the prime location for the future pump station based on size of the lot, proximity to the existing station, aesthetics and engineering feasibility factors. Inquiry letters were sent out to adjacent property owners and this site was the only site with a willing seller. This adjacent site will facilitate HRSD's desire to minimize impacts to the public, when possible, during and after construction as the alternative sites caused a variety of mixed impacts such as road and lane closures, extensive detours, moving of bus stops, extensive replacement of the gravity sewer within the neighborhood and bypass pumping at the existing site for the length of the project (estimated 19 months). After evaluation of these considerations, 1101 Magnolia Avenue was determined to be the most feasible site upon which to build and with minimal impacts. This is the second and final acquisition of property associated with this project. The [Purchase and Sale Agreement](#) is attached and was reviewed by HRSD staff and legal counsel. The [deed of bargain and sale](#) is forthcoming and will also be reviewed by HRSD staff and legal counsel before execution. A [Location Map](#) is also provided for clarification purposes.

Analysis of Cost: The appraised value purchase price of \$920,000 reflects sales of single-family homes in the area and an increase in current market prices for homes in this highly sought-after neighborhood with very little supply, as well as a negotiated purchase price with the owner for the premium lot and location adjacent to the existing pump station. Even with these market conditions, the purchase price is well above the appraised value, but acquisition of this property from a willing seller is critical to the overall project success. The owner will also receive \$10,000 in moving and housing relocation assistance costs.

Attachment: [#8](#)

Public Comment: None



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

Action: No action required.

Brief: Staff presented the latest data and status of the COVID-19 surveillance work including the daily new clinical cases and viral load in HRSD treatment plants; variants of concern; detections and loadings since late June; updates on collection system study in Chesapeake; and development of Virginia Sentinel Sites.

Discussion Summary: HRSD surveillance remains 10-14 days ahead of clinical case results. Current data shows an uptick in cases in the entire surveillance area. Determining exact location of cases and spatial resolution can only be done if additional samples are collected.

Commissioner Rodriguez commended Mr. Curtis on the recent news story. He thanked him for doing a good job and representing HRSD very well.

Attachment: [#9](#)

Public Comment: None



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25. **Unfinished Business – None**

26.a. **New Business**

New Position in the Central Environmental Laboratory (CEL) Serving Operations and Water Quality Departments

Action: Approve the creation of one new full-time position to support quality assurance needs of the Operations and Water Quality (WQ) Departments.

Moved: Stephen Rodriguez

Seconded: Vishnu Lakdawala

Roll call vote: **Ayes: 8 Nays: 0**

Brief: Until recently quality assurance (QA) support for the Operations and Water Quality Departments has been provided either by staff within those departments or specific positions within the CEL. The positions in the CEL were developed when the state of Virginia required all laboratories providing data in fulfillment of Virginia regulatory requirements to be accredited by the state. These two positions have provided support directly to the CEL and HRSD’s treatment facilities where field analyses are required. However, this is the extent to which WQ was able to provide support to Operations and other divisions in WQ. HRSD recently added a QA manager position to further support these departments in developing QA systems focused on training, operating procedures, data management, audits, and documentation, particularly as they relate to sampling required of HRSD permits issued by the state of Virginia. The intent of this position was to assist these departments in developing QA systems rather than developing the functional parts of the systems. For example, this QA manager would help work centers with standard operating procedure outlines but staff in those work centers would be expected to provide the substance to those procedures. This approach to addressing QA was necessary given the magnitude of effort required across 17 treatment facilities employing over 500 staff. This new QA manager position has been able to investigate and summarize the status of these systems for Operations as well as the Pretreatment and Pollution Prevention and the Technical Services Divisions in the WQ department. This investigation indicates that reasonable further progress in developing these systems will not be realized with this single position. The WQ department, with the addition of an additional technical QA position, can make significant progress in a more timely manner with regards to Clean Water Act and Clean Air Act expectations for all aspects of sampling.

While new positions are typically only added during the annual budget process, the need for this position has only recently been identified by the QA manager’s review as discussed above. Delaying the request for this position until the fiscal year 2023 budget will further delay the standardization of these regulatory required processes.



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Funding: This request is specifically for a new full-time Grade 6 position. This position will be added to the authorized positions as amended for fiscal year 2022. This position will be funded within existing fiscal year 2022 operating fund appropriations but will be included as an addition to the fiscal year 2023 budget at an approximate cost of \$66,000 (fully burdened). Staff will continue to look for opportunities to eliminate a FTE in Water Quality or another department in the current fiscal year to offset this increase in total FTE for HRSD in the fiscal year 2023 budget.

Attachment: None

Public Comment: None



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26.b. **Updated General Manager Position Description**

Action: No action required.

Brief: Mr. Henifin asked the Commission to review the updated General Manager position description and provide any recommended changes to the Executive Search Committee.

Attachment: [#10](#)

Public Comment: None



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- 27. Commissioner Comments – None
- 28. Public Comments Not Related To Agenda – None
- 29. Informational Items

Action: No action required.

Brief: The items listed below were presented for information.

- a. [Management Reports](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Effluent Summary](#)
- d. [Air Summary](#)

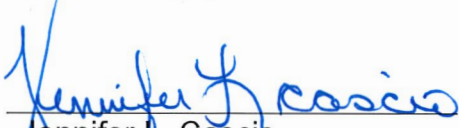
Attachment: [#11](#)

Public Comment: None

Next Commission Meeting Date: September 28, 2021 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455.

Meeting Adjourned: 11:44 a.m.

SUBMITTED:



Jennifer L. Cascio
Secretary

APPROVED:



Frederick N. Elofson, CPA
Chair

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #1

Agenda Item 2. Consent Agenda

AGENDA ITEM 2. – August 24, 2021

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. | Carbon-Based Pilot Testing and Soil Aquifer Treatment Study | \$209,758 |
| 2. | Biological Nutrient Removal Pilot Facility
The Kinetic Analysis and Acclimation to Low Dissolved Oxygen
Conditions for Biological Nutrient Removal Research Study | \$50,000 |
| 3. | Biological Nutrient Removal Pilot Facility
Graduate Research Assistant Funding | \$53,754 |

c. Task Orders

- | | | |
|----|---|-----------|
| 1. | Digester Solids Storage Tank Repair at Atlantic Treatment Plant | \$600,000 |
| 2. | Oracle EBS Upgrades | \$257,667 |

d. Sole Source

- | | | |
|----|--|-----------|
| 1. | Envirosuite Environmental Intelligence Platform
Sole Source and Contract Award | \$305,000 |
| 2. | Fybroc Centrifugal Pumps and Parts | |
| 3. | Steelco USA Lab 640SL Laboratory Glassware Washers | |

CONSENT AGENDA ITEM 2.b.1. – August 24, 2021

Subject: Carbon-Based Pilot Testing and Soil Aquifer Treatment Study
Research Study
Contract Award (>\$200,000)

Recommended Action: Award a contract to Virginia Polytechnic Institute and State University (Virginia Tech) in the estimated amount of \$209,758.

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. 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.

CONSENT AGENDA ITEM 2.b.2. – August 24, 2021

Subject: Biological Nutrient Pilot Facility
The Kinetic Analysis and Acclimation to Low Dissolved Oxygen Conditions for Biological Nutrient Removal Research Study
Contract Award (Potential Study Period >12 months)

Recommended Action: Award a contract to Cornell University in the estimated amount of \$25,000 for year one with one annual renewal options and an estimated cumulative value in the amount of \$50,000.

Contract Description: This contract is an agreement for Cornell University graduate students to assist with efforts at the new Virginia Initiative Plant Biological Nutrient Removal Pilot Facility to initiate a program of treatment process development focused on low dissolved oxygen biological nutrient removal in accordance with the attached [proposal](#).



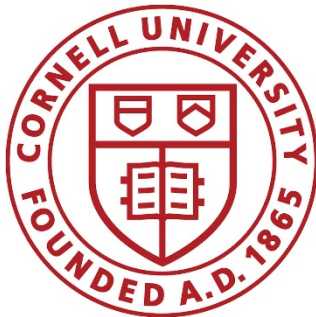
Cornell University
College of Engineering

April Gu
Professor
School of Civil and Environmental Engineering

263 Hollister Hall
Ithaca, NY 14853-3501
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Fax: 607 255-9004
E-mail: azg4@cornell.edu

A RESEARCH PROPOSAL TO HRSD

April Z. GU
Professor
School of Civil and Environmental Engineering
Cornell University
Ithaca, NY.
Email: aprilgu@cornell.edu



OVERALL GOAL

The overall goal of this proposed study is to conduct mechanistic and pilot testing for investigating: “The Kinetic analysis and Acclimation to Low Dissolved Oxygen Conditions For Biological Nutrient Removal.” We will collaborate with HRSD to evaluate how the low-DO operation and control will impact the key design kinetic parameters, and the acclimation of various functionally-relevant populations such as AOB, NOB, PAOs, GAO, et. The outcome will provide a mechanistic understanding of Low DO Operation Develop repeatable kinetic testing techniques to identify parameters for activated sludge model (ASM), help for parameterization of nitrifier (AOB & NOB) populations when acclimated to low DO conditions, and establish best methods for specific parameters. It will provide greater understanding on how AOB and NOB groups acclimate differently using kinetic testing strategies and examine heterotroph adaptation and associated connection to SND rates. In addition, PAO and GAO competition is an important consideration to this work and results will help to bridge gap between existing Low DO and SND research.

SCOPE OF WORK

Dr. Gu (Cornell) will be responsible for supporting the research related to the above objectives, and provide complementary molecular analysis including PHA/Gly analysis, genomic sequencing, metagenomics analysis, single cell Raman-based microbial community phenotyping.

TIMELINE

The proposed project is expected to be carried over a two-year period for the HRSD-specific objectives, depending on the HRSD’s short-term and long-term goals.

Project start date October 1, 2021

Project end date = September 30, 2023

PROPOSED BUDGET

The requested funds from HRSD is \$50k to support a part-time graduate student and related equipment, materials and consumables. Detailed budget is as following:

Description	Year 1	Year 2	Total
Stipend to partially support one part-time graduate student	\$11,590	\$11,938	\$23,527
Student Tuition	\$ 4,426	\$ 4,426	\$8,852

Student Mandated Health Insurance	\$ 1,185	\$ 1,304	\$2,489
Research Supplies, consumables, sequencing fees	\$ 2,799	\$ 2,332	\$5,131
Total Direct Costs	\$20,000	\$20,000	\$40,000
Indirect Costs of 25% as Requested by HRSD (See letter)	\$ 5,000	\$ 5,000	\$10,000
Total Proposed Cost	\$25,000	\$25,000	\$50,000

IDC reduction Request: See attached letter from HRSD for overhead reduction policy and email of Dean's approval for overhead reduction for this project.

September 12, 2012

Subject: HRSD Indirect Cost/Overhead Policy

To Whom It May Concern:

As a political subdivision of the Commonwealth of VA, HRSD must limit the percentage of indirect costs/overhead that will be paid on any proposal for research. Indirect Costs are expenses that are incurred by the University for common or joint objectives and that are not directly attributable to the contract. These costs reimburse the University for laboratory and office space, utilities, and administrative services (e.g., purchasing, accounting, research, personnel, telecommunications, security, custodial services, buildings, grounds and street and parking lot maintenance), capital expenditures, tuition remission, scholarships, fellowships, equipment costing more than \$1,000/item, grants and contracts office expenses, institutional and departmental administrative and information technology expenses, fundraising and marketing expenses, and accounting and legal services. The following types of costs may directly be charged to a contract when they can specifically be identified as necessary to the work performed under the agreement. Examples of direct costs include: salaries, supplies and materials/consumables, travel, postage, subcontracts, and freight and express.

HRSD structures its contracts to include indirect costs of no more than 25% of direct costs. Any travel specific to the contract is reimbursed according to the HRSD travel policy. Specifically, the indirect costs include all the essentials to support sponsored activities that cannot be broken down and directly charged to a specific contract. HRSD reviews each budget individually for the appropriateness of the direct costs being requested.



J.R. Cannon
Chief of Procurement

Dear April,

Congrats on securing another collaborative research with another industry partner! With this email, I am approving the requested reduced F&A rate of 25% for this project with HRSD. I am copying Heather Parente so that she is aware of this approval at the Dean's Office.

Best, - Grace

Huili Grace Xing, She, Her, Hers
<http://jena-xing.engineering.cornell.edu> (with availability calendar)

Associate Dean on Research and Graduate Studies
Executive Assistant: Wendy Bakal, (607)255-0880, wpb48@cornell.edu
William L. Quackenbush Professor of ECE & MSE
Admin: Kim Budd, (607)255-1450, kj37@cornell.edu

CONSENT AGENDA ITEM 2.b.3. – August 24, 2021

Subject: Biological Nutrient Removal Pilot Facility
Graduate Research Assistant Funding
Contract Award (Potential Study Period >12 months)

Recommended Action: Award a contract to Old Dominion University Research Foundation in the estimated amount of \$53,754.

Contract Description: This contract is an agreement for Old Dominion University graduate students to assist with efforts at the new Virginia Initiative Plant Biological Nutrient Removal Pilot Facility to initiate a program of treatment process development focused on low dissolved oxygen biological nutrient removal in accordance with the attached [proposal](#).



Old Dominion University Research Foundation

June 8, 2021

HRSD
ATTN: Dr. Charles Bott
P.O. Box 5913
Virginia Beach, VA 23471-0913

VIA EMAIL: cbott@hrsd.com

RE: Graduate Research Assistant Funding to Support Biological Nutrient Removal Research

Dear Dr. Bott:

Old Dominion University Research Foundation is pleased to submit its proposal titled “Graduate Research Assistant Funding to Support Biological Nutrient Removal Research’ for your review and consideration. The proposal is submitted on behalf of the Principal Investigator Dr. Gary Schafran, Department of Civil and Environmental Engineering, Old Dominion University.

Please note that if an award is made as a result of this proposal, it should be made payable to the Old Dominion University Research Foundation. The Research Foundation is the fiscal and administrative agent for Old Dominion University for sponsored agreements. The Foundation is a not-for-profit corporation, and it is tax exempt under Section 501(c)(3) of the Internal Revenue Code. We reserve the right to negotiate terms and conditions at the time of award. This pricing is valid for 120 days.

Please address any questions of a technical nature to Dr. Schafran at (757) 757683-4673. Contractual questions should be addressed to rfawards@odu.edu.

Sincerely,

Richard
Brammer

Digitally signed by
Richard Brammer
Date: 2021.06.08
14:43:53 -04'00'

Richard Brammer
Director of Sponsored Programs

Enclosure: Original ODU Research Foundation Proposal No. 210748

CC: Dr. Schafran, Dr. Iftekharruddin, Dr. Ishak

Graduate Research Assistant Funding to Support Biological Nutrient Removal Research

Biological nutrient removal research is being conducted by Hampton Roads Sanitation District in a newly constructed facility at the Virginia Initiative Plant (VIP) located adjacent to the Old Dominion University Campus. The research is being conducted to better understand the fundamental mechanisms of biologically-induced transformations of nitrogen and uptake/release of phosphorus and to apply this knowledge to guide future process train designs leading to more efficient and greater removal of these constituents from domestic wastewater.

In support of this effort, an Old Dominion University graduate student in the Master's of Science program in Environmental Engineering will be involved with this research. The student will work 50% (20 hours per week) during the academic year and 100% (40 hours per week) during the summer. The budget needed for this effort totals \$53,754 and includes direct support of the GRA, 18-credit hours of graduate tuition (at in-state rate), fringe benefits, and overhead at 25% of direct costs excluding tuition.

Budget

Description	Amount
GRA Support	\$32,000
Fringe Benefits	\$ 2,300
Tuition	\$10,879
Overhead (25% of DC)	\$ 8,575
Total	\$53,754

Old Dominion University Research Foundation (ODURF)
submitted on behalf of Dr. Gary Schafran

ODURF Proposal No.: 210748

Date: 6/7/2021

Period of Performance: 07/01/2021 to 06/30/2022

Proposal Title: Graduate Research Assistant Funding to Support Biological Nutrient Ren

	<u>Total</u>
Salaries and Wages	
TBD Graduate Student	\$ 32,000.00
Subtotal: Salaries and Wages	\$ 32,000.00
Fringe Benefits	\$ 2,300.00
Tuition	\$ 10,879.00
Total Direct Costs	\$ 45,179.00
Total Indirect Costs @ 25% of MTDC	\$ <u>8,575.00</u>
PROJECT TOTAL	\$ <u><u>53,754.00</u></u>

**Old Dominion University Research Foundation
BUDGET JUSTIFICATION OF COST DETAIL**

SALARIES & WAGES

Graduate Research Assistant

Graduate Research Assistant (GRA) wages are based on a 7.5 month performance period. A GRA may devote up to 50% academic year effort and 100% summer effort to the project each year. Specific wage rates are determined by the academic departments. They are based on the level of the student (masters or doctoral student) and on the number of years of experience the individual has had on research and sponsored projects. The wage rate for the GRA on this project is \$32,000

FRINGE BENEFITS (ONR negotiated rate dated June 30, 2020)

Graduate Research Assistant

FICA (6.2% & 1.45%), unemployment insurance (1% of 1st \$8,000 of calendar year), worker's compensation (0.435%) have been budgeted for the summer salary of the Graduate Research Assistant. Only worker's compensation (0.435%) has been budgeted on academic year salary. Health insurance premiums in the amount of \$500 for the fall academic semester and \$600 for the spring semester are requested.

OTHER DIRECT COSTS

Tuition Remission

It is the policy of Old Dominion University to include graduate research tuition in sponsored programs. Tuition remission of \$10.879 is included in the project budget for year 1, with a 7% increase budgeted for each year. This amount covers 18 credit hours and all semester fees for the GRA (based on in-State credit hour rates). Current tuition rates and fees can be found at <https://www.odu.edu/tuition-aid/costs-tuition/tuition/tuition-rates>.

INDIRECT COSTS

Our ONR negotiated rate dated May 8, 2018 authorizes an on-campus indirect cost rate of 55% of modified total direct costs (MTDC) effective July 1, 2018 through June 30, 2021. Cognizant Contact: Linda B. Shipp, 703-696-8559, linda.shipp@navy.mil.

Per sponsor limitations, the indirect cost rate on this proposal has been capped at 25%.

DIRECT COSTS = \$45,179
MTDC = \$34,300
INDIRECT COSTS = \$8,575
TOTAL COSTS = \$53,754



DEPARTMENT OF THE NAVY
 OFFICE OF NAVAL RESEARCH
 875 NORTH RANDOLPH STREET
 SUITE 1425
 ARLINGTON, VA 22203-1995

IN REPLY REFER TO:

Agreement Date: June 30, 2020

NEGOTIATION AGREEMENT

**INSTITUTION: OLD DOMINION UNIVERSITY
 NORFOLK, VA 23508**

The Fringe Benefits rates contained herein are for use on grants, contracts, and/or other agreements issued or awarded to Old Dominion University (ODU) by all Federal Agencies of the United States of America, in accordance with the provisions and cost principles mandated by 2 CFR Part 200. These rates shall be used for forward pricing and billing purposes for ODU's Fiscal Year 2021. This rate agreement supersedes all previous rate agreements/determinations for Fiscal Year 2021.

SECTION I: RATES – TYPE PROVISIONAL (PROV)

Fringe Benefits Rates:*

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE</u>	<u>BASE</u>	<u>LOCATION</u>	<u>APPLICABLE TO</u>
PROV	7/1/20	6/30/21	40.3%	(a)	All	Full-time Employees
PROV	7/1/20	6/30/21	5.7%	(b)	All	Part-time Employees

* The fringe benefit rates in this section do not apply to employees of Old Dominion University Research Foundation (ODURF). For information on the treatment of fringe benefit costs for employees of ODURF, see section II, paragraph E.2.

DISTRIBUTION BASES

- (a) Full-time employees Salaries and Wages.
- (b) Part-time employees Salaries and Wages.

SECTION II - GENERAL TERMS AND CONDITIONS

A. LIMITATIONS: Use of the rates set forth under Section I is subject to availability of funds and to any other statutory or administrative limitations. The rates are applicable to a given grant, contract or other agreement only to the extent that funds are available and consistent with any and all limitations of cost clauses or provisions, if any, contained therein. Acceptance of any or all of the rates agreed to herein is predicated upon the following conditions: (1) that no costs other than

those incurred by the institution were included in this indirect cost pool as finally accepted and that such costs are legal obligations of the institution and allowable under governing cost principles; (2) that the same costs that have been treated as indirect costs are not claimed as direct costs; (3) that similar types of costs have been accorded consistent accounting treatment; and (4) that the information provided by the institution which was used as a basis for acceptance of the rates agreed to herein, and expressly relied upon by the Government in negotiating and accepting the said rates is not subsequently found to be materially incomplete or inaccurate.

B. ACCOUNTING CHANGES: The rates contained in Section I of this agreement are based on the accounting system in effect at the time the agreement was negotiated. Changes to the method(s) of accounting for costs, which affect the amount of reimbursement resulting from the use of these rates require the prior written approval of the authorized representative of the cognizant agency for indirect costs. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. PROVISIONAL RATES: The provisional rates contained in this agreement are subject to unilateral amendment by the Government or bilateral amendment by the contracting parties at any time.

D. USE BY OTHER FEDERAL AGENCIES: The rates set forth in Section I are negotiated in accordance with and under the authority set forth in 2 CFR Part 200. Accordingly, such rates shall be applied to the extent provided in such regulations to grants, contracts, and other agreements to which 2 CFR Part 200 applies, subject to any limitations in part A of this section. Copies of this document may be provided by either party to other federal agencies to provide such agencies with documentary notice of this agreement and its terms and conditions.

E. SPECIAL REMARKS – FRINGE BENEFITS RATES:

1. OLD DOMINION UNIVERSITY:

a. The fringe benefits rates in this agreement apply to faculty and students at Old Dominion University. The Old Dominion University fringe benefits include: FICA, Retirement, Disability Insurance, Life Insurance, Workers' Compensation, Unemployment Insurance and Health Insurance.

b. **TREATMENT OF PAID ABSENCES:** Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims for the cost of these paid absences are not made.

2. OLD DOMINION UNIVERSITY RESEARCH FOUNDATION:

a. Fringe benefits are specifically identified to each employee and are charged individually as direct costs. The Old Dominion University Research Foundation fringe benefits include: FICA, Retirement, Disability Insurance, Life Insurance, Workers' Compensation, Unemployment Insurance and Health Insurance, Annual Leave and Sick Leave.

b. TREATMENT OF PAID ABSENCES: Holidays are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims for the cost of these paid absences are not made.

Accepted:

FOR OLD DOMINION UNIVERSITY/
OLD DOMINION UNIVERSITY
RESEARCH FOUNDATION

Julian F
Facenda:A01098000000
1590366FBBE00002FB7
Digitally signed by Julian F
Facenda:A010980000001590366
FBBE00002FB7
Date: 2020.06.30 18:01:20 -04'00'

Julian F. Facenda
Executive Director
ODU Research Foundation

June 30, 2020

Date

FOR THE U.S. GOVERNMENT:

BRADLEY.ROBERT.B.1230
644620
Digitally signed by
BRADLEY.ROBERT.B.1230644620
Date: 2020.06.30 17:45:26 -04'00'

R. Brian Bradley
Contracting Officer

30 JUN 2020

Date

For information concerning this agreement contact:

Sharon Gales
Office of Naval Research
875 North Randolph Street
Arlington, VA 22203-1995

Phone: (703) 696-8559
E-mail: sharon.gales@navy.mil



DEPARTMENT OF THE NAVY
 OFFICE OF NAVAL RESEARCH
 875 NORTH RANDOLPH STREET
 SUITE 1425
 ARLINGTON, VA 22203-1995

Agreement Date: May 8, 2018

NEGOTIATION AGREEMENT

INSTITUTION: OLD DOMINION UNIVERSITY /
 OLD DOMINION UNIVERSITY RESEARCH FOUNDATION
 NORFOLK, VA 23508

The Facilities and Administrative (F&A) rates contained herein are for use on grants, contracts and/or other agreements issued or awarded to Old Dominion University/Old Dominion University Research Foundation by all Federal Agencies of the United States of America, in accordance with the provisions and cost principles mandated by 2 CFR Part 200. These rates shall be used for forward pricing and billing purposes beginning with Old Dominion University/Old Dominion University Research Foundation's Fiscal Years 2019 through 2021. This agreement supersedes all previous agreements for FYs 2019 through 2021.

SECTION I: RATES - TYPE: PREDETERMINED (PRED)

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE</u>	<u>BASE</u>	<u>APPLICABLE TO</u>	<u>LOCATION</u>
PRED	7/1/18	6/30/21	55.00%	(a)	Organized Research (1)	On Campus
PRED	7/1/18	6/30/21	26.00%	(a)	Organized Research (1)	Off Campus
PRED	7/1/18	6/30/21	65.00%	(a)	Organized Research (2)	On Campus
PRED	7/1/18	6/30/21	36.00%	(a)	Organized Research (2)	Off Campus
PRED	7/1/18	6/30/21	53.00%	(a)	Instruction	On Campus
PRED	7/1/18	6/30/21	26.00%	(a)	Instruction	Off Campus
PRED	7/1/18	6/30/21	32.00%	(a)	Other Sponsored Agreements	On Campus
PRED	7/1/18	6/30/21	26.00%	(a)	Other Sponsored Agreements	Off Campus
PRED	7/1/18	6/30/21	10.00%	(a)	IPA* Agreements	All

*Intergovernmental Personnel Act

DISTRIBUTION BASE

(a) Modified Total Direct Costs (MTDC) consists of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward (regardless of the period of performance of the subawards under the award). MTDC excludes equipment (see Special Remarks, Section II H-2), capital expenditures, charges for

patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of \$25,000.

APPLICABLE TO

- (1) Applies to DOD contracts and subcontracts awarded before November 30, 1993, all Non-DOD instruments, and all DOD grants (See Section II, Part E). (Capped)
- (2) Applies to all DOD contracts awarded on or after November 30, 1993 in accordance with and under the authority of DFARS 231.303(1) (See Section II, Part E). (Uncapped)

SECTION II – GENERAL TERMS AND CONDITIONS

A. LIMITATIONS: Use of the rates set forth under Section I is subject to any statutory or administrative limitations and is applicable to a given grant, contract or other agreement only to the extent that funds are available and consistent with any and all limitations of cost clauses or provisions, if any, contained therein. Acceptance of any or all of the rates agreed to herein is predicated upon all the following conditions: (1) that no costs other than those incurred by the recipient/contractor were included in its indirect cost pool as finally accepted and that all such costs are legal obligations of the recipient/contractor and allowable under governing cost principles; (2) that the same costs that have been treated as indirect costs are not claimed as direct costs; (3) that similar types of costs, in like circumstances, have been accorded consistent accounting treatment; (4) that the information provided by the recipient/contractor, which was used as the basis for the acceptance of the rates agreed to herein and expressly relied upon by the Government in negotiating the said rates, is not subsequently found to be materially incomplete or inaccurate.

B. ACCOUNTING CHANGES: The rates contained in Section I of this agreement are based on the accounting system in effect at the time this agreement was negotiated. Changes to the method(s) of accounting for costs, which affects the amount of reimbursement resulting from the use of these rates, require the written approval of the authorized representative of the cognizant negotiating agency for the Government prior to implementation of any such changes. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. PREDETERMINED RATES: The predetermined rates contained in this agreement are not subject to adjustment in accordance with the provisions of 2 CFR Part 200, subject to the limitations contained in Part A of this section.

D. USE BY OTHER FEDERAL AGENCIES: The rates set forth in Section I hereof were negotiated in accordance with and under the authority set forth in 2 CFR Part 200. Accordingly, such rates shall be applied to the extent provided in such regulations to grants, contracts and other

agreements to which 2 CFR Part 200 is applicable, subject to any limitations in part A of this section. Copies of this document may be provided by either party to other Federal agencies to provide such agencies with documentary notice of this agreement and its terms and conditions.

E. APPLICATION OF INDIRECT COST RATES TO DOD CONTRACTS AND/OR

SUBCONTRACTS: In accordance with DFARS 231.303, no limitation (unless waived by the institution) may be placed on the reimbursement of otherwise allowable indirect costs incurred by an institution of higher education under a DOD contract awarded on or after November 30, 1993, unless the same limitation is applied uniformly to all other organizations performing similar work. It has been determined by the Department of Defense that such limitation is not being uniformly applied. Accordingly, the rates cited (2) of Section I, as explained under the title, "APPLICABLE TO" do not reflect the application of the 26% limitation on administrative indirect costs imposed by 2 CFR Part 200, whereas (1) do so.

F. DFARS WAIVER: Signature of this agreement by the authorized representative of the Old Dominion University/Old Dominion University Research Foundation and the Government acknowledges and affirms the University's request to waive the prohibition contained in DFARS 231.303(1) and the Government's exercise of its discretion contained in DFARS 231.303(2) to waive the prohibition in DFARS 231.303(1) for the Instruction and Other Sponsored Agreements Rates. The waiver request by the Old Dominion University/Old Dominion University Research Foundation is made to simplify the University's overall management of DOD cost reimbursements under DOD contracts.

G. OFF-CAMPUS DEFINITION: For all activities performed in facilities not owned by the institution and to which rent is directly allocated to the project(s), the off-campus rate will apply. Grants or contracts will not be subject to more than one F&A cost rate. If more than 50% of a project is performed off-campus, the off-campus rate will apply to the entire project.

H. SPECIAL REMARKS:

1. In accordance with 2 CFR 200.414(g) the Old Dominion University/Old Dominion University Research Foundation has requested an extension of its Fiscal Year 2018 rates. Therefore, the rates identified in Section I are in extension of the FY 2018 rates.


2. The Government's agreement with the rates set forth in Section I is not an acceptance of the Old Dominion University/Old Dominion University Research Foundation's accounting practices or methodologies. Any reliance by the Government on cost data or methodologies submitted by Old Dominion University/Old Dominion University Research Foundation is on a non-precedence-setting basis and does not imply Government acceptance.

3. Prior to July 1, 2011, equipment is defined as nonexpendable, tangible personal property having a useful life of more than one year and an acquisition cost equal or greater than \$5,000 for Old Dominion University and \$2,000 for Old Dominion University Research Foundation. Effective July 1, 2011, equipment is defined as nonexpendable, tangible personal

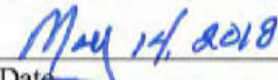
property having a useful life of more than one year and an acquisition cost equal or greater than \$5,000 for both entities.

Accepted:

FOR OLD DOMINION UNIVERSITY/
OLD DOMINION UNIVERSITY
RESEARCH FOUNDATION:



JULIAN FACENDA
Executive Director,
ODU Research Foundation



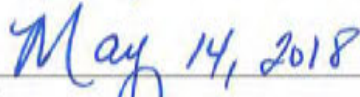
Date

For information concerning this agreement contact:
Betty J. Tingle
Office of Naval Research

FOR THE U.S. GOVERNMENT:



BETTY J. TINGLE
Contracting Officer



Date

Phone: (703) 696-7742
E-mail: betty.tingle@navy.mil

CONSENT AGENDA ITEM 2.c.1. – August 24, 2021

Subject: Digester Solids Storage Tank Repair at Atlantic Treatment Plant
Task Order (>\$200,000)

Recommended Action: Approve a task order with Commonwealth Epoxy Coatings in the amount of \$600,000.

Contract Status:	Amount
Original Contract with Commonwealth Epoxy Coatings	\$0
Total Value of Previous Task Orders	\$5,294,806
Requested Task Order	\$600,000
Total Value of All Task Orders	\$5,894,806
Revised Contract Value	\$5,894,806

Task Order Description: This task order will provide material and labor for the preparation, repairs, and coatings for the Atlantic Treatment Plant's Digester Solids Storage Tank (DSST) to include a new tank interior, ceiling and supports along with concrete repairs.

Analysis of Cost: The cost for this task order is based on negotiated rates and the unit rates provided in the contract with Commonwealth Epoxy Coatings, Inc.

CONSENT AGENDA ITEM 2.c.2. – August 24, 2021

Subject: Oracle E-Business Suite (EBS) Upgrades
Task Order (>\$200,000)

Recommended Action: Approve a task order with Emtec Inc. in the amount of \$257,667.

Contract Status:	Amount
Original Contract with Emtec Inc.	\$806,740
Total Value of Previous Task Orders	\$505,260
Requested Task Order	\$257,667
Total Value of All Task Orders	\$762,927
Revised Contract Value	\$1,569,667

Task Order Description: This project will include three upgrades to the HRSD non-production environments of Oracle E-Business Suite (EBS) and one upgrade of the current production environment for the following modules Human Capital Management, Projects, Financials, as well as Supply Chain Management. Emtec will perform the first two technical upgrades in HRSD EBS Test instances and then handoff the upgrade and provide support as needed through the managed services contract.

Analysis of Cost: The cost for this task order is based on the current contract hourly rates.

CONSENT AGENDA ITEM 2.d.1. – August 24, 2021

Subject: Envirosuite Environmental Intelligence Platform
Sole Source (>\$10,000) and Contract Award (>\$200,000)

Recommended Actions:

- a. Approve the use of Envirosuite Environmental Intelligence Platform software, support, and equipment rental by the EMS Bruel & Kjaer Inc. DBA Envirosuite Corp. for use at the Nansemond Treatment Plant and, if use is successful, other HRSD facilities.
- b. Award a contract for Envirosuite Environmental Intelligence Platform software, support, and equipment rental to EMS Bruel & Kjaer Inc. DBA Envirosuite Corp. in the amount of \$60,000 for year one with four annual renewal options and an estimated cumulative value in the amount of \$305,000.

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: Envirosuite has designed an odor monitoring system which identifies the source of any run-off Hydrogen Sulfide (H₂S) odors around the plant site. The proposal includes the installation of three Ambient Monitors and one Delta Ohm Weather Station around the Nansemond facility. Locations are chosen based on the relative position of suspected odor sources at the treatment plant site and on wind data obtained by the community stations located three miles to the west. The Envirosuite platform uses monitoring applications with unique features to display potential risk forecasting and incident investigation tools which enhance the ability to generate reverse trajectories and automated alerts based on the predicted risk of a nuisance odor. The Envirosuite Real-time analysis can identify the likely source, notify users of issues as they appear, support immediate corrective action, and potentially preclude future incidents. The software platform includes the Environmental Compliance solution, the Envirosuite Incident Intelligence solution, and Impact Modeling.

Contract Description: This contract is an agreement to provide for one-time implementation, annual maintenance, annual software subscription and support. The proposed annual maintenance is required to ensure the sensor and weather station network is properly operating. The annual maintenance includes one site visit, one inspection report, and if required, replacement of the H₂S electrochemical sensor cell. The Software Subscription and Support includes remote support via phone, email, or online ticketing portal.

CONSENT AGENDA ITEM 2.d.2. – August 24, 2021

Subject: Fybroc Centrifugal Pumps and Parts
Sole Source (>\$10,000)

Recommended Actions: Approve the use of Fybroc Centrifugal Pumps by Engineered Systems & Products, Inc. at HRSD.

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 Fybroc centrifugal pumps. These pumps are installed at three odor control stations and the incinerator scrubber system at Williamsburg Treatment Plant and at other treatment plants in various processes. The existing centrifugal pumps were installed during the original construction of the pump stations and incinerators at Williamsburg Treatment Plant. The pumps will act as a direct replacement and allow for the use of existing pipework, pump bases and motors. These pumps also have a chemical compatibility with sodium hypochlorite, sodium hydroxide and muriatic acid used in the treatment process. This will also eliminate the need for staff training on a new system.

CONSENT AGENDA ITEM 2.d.3. – August 24, 2021

Subject: Steelco USA Lab 640SL Laboratory Glassware Washers
Sole Source (>\$10,000)

Recommended Actions: Approve the use of Steelco USA 640SL Laboratory Glassware Washers by Sterilelink Inc. for use in the Water Quality Department.

CIP Project: GN018200

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 and installation of Steelco USA 640SL Laboratory Glassware Washers. Laboratory washers are essential to the laboratory operations as they ensure all glassware used throughout the laboratory are cleaned properly and do not interfere with analysis. The washers aid in properly preparing analytical glassware and other sampling containers used for sampling events to meet regulatory permits and other project requirements. The purchase of the same washer brand and model will allow for the use of existing washing racks and the ability to interchange racks between existing and new washer racks and reduce multiple maintenance contracts.

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #2

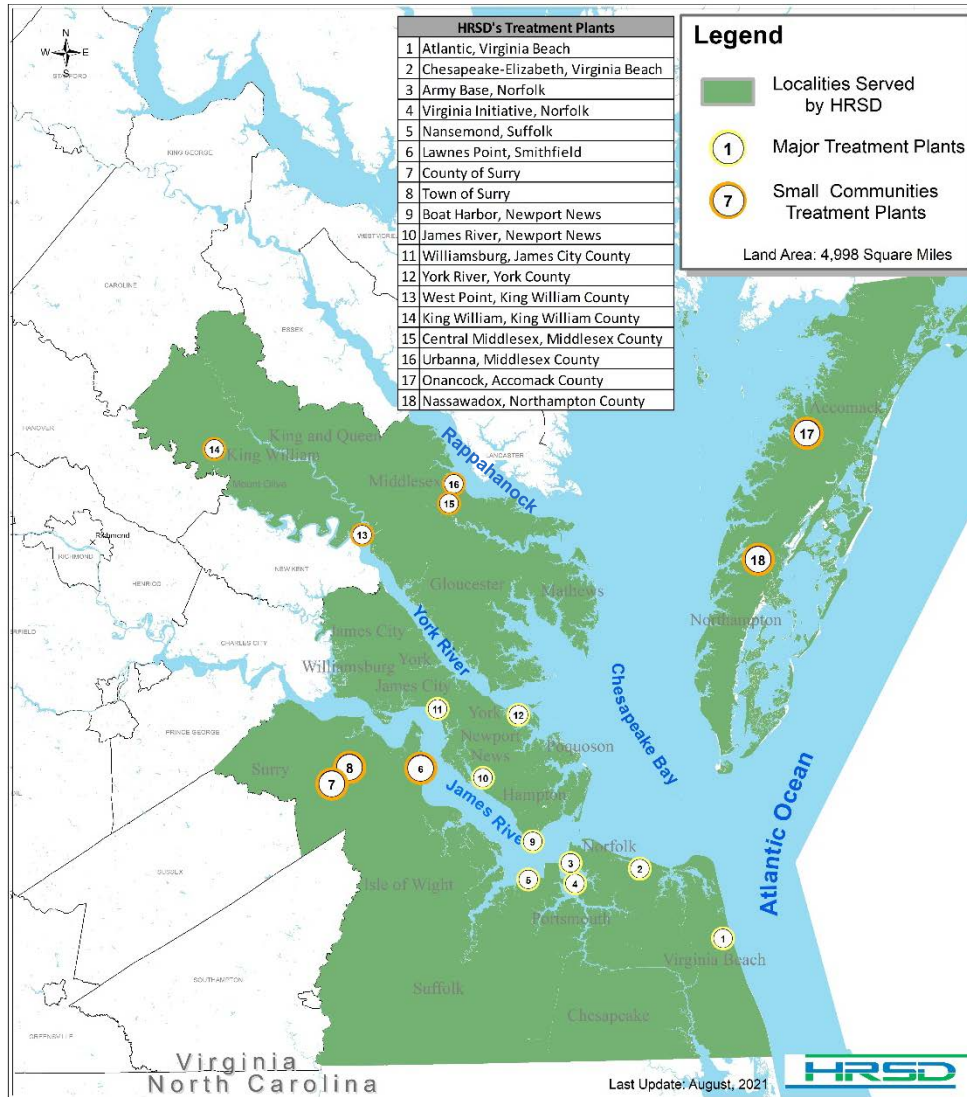
Agenda Item 3. Nutrient Compliance Plan Update



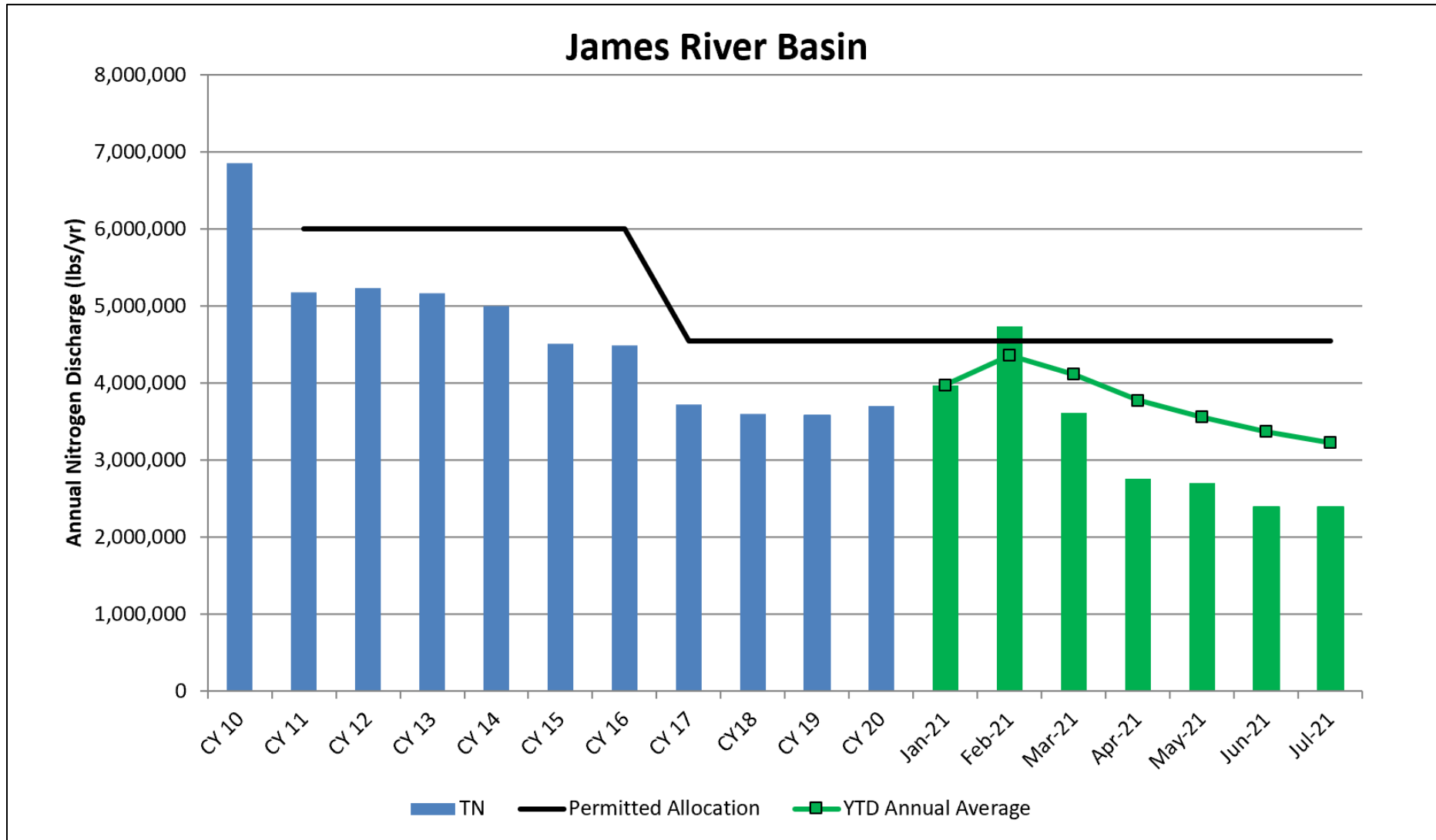
Nutrient Compliance Plan Update Commission Briefing

August 24, 2021

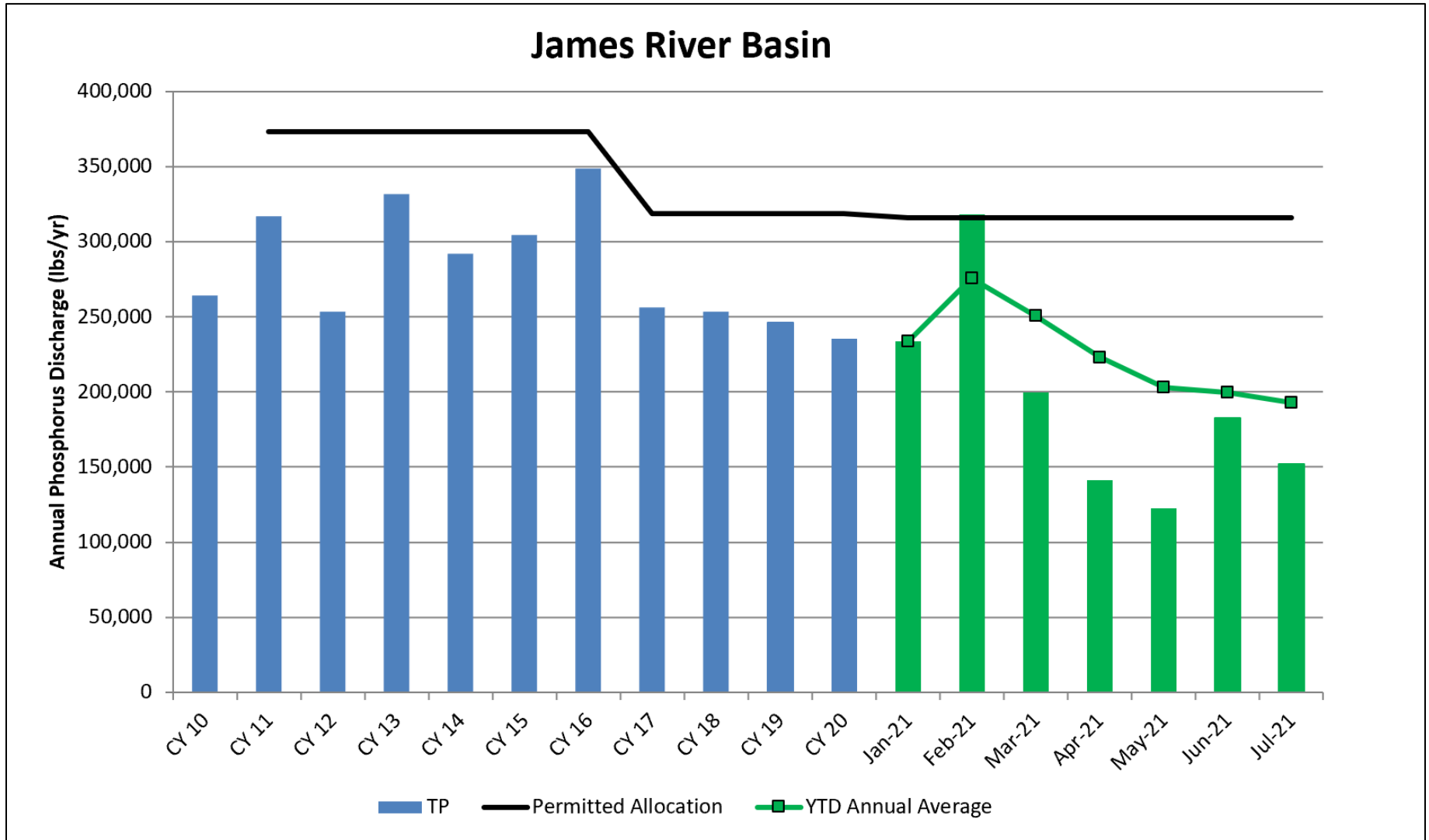
HRSD-River Basin Map



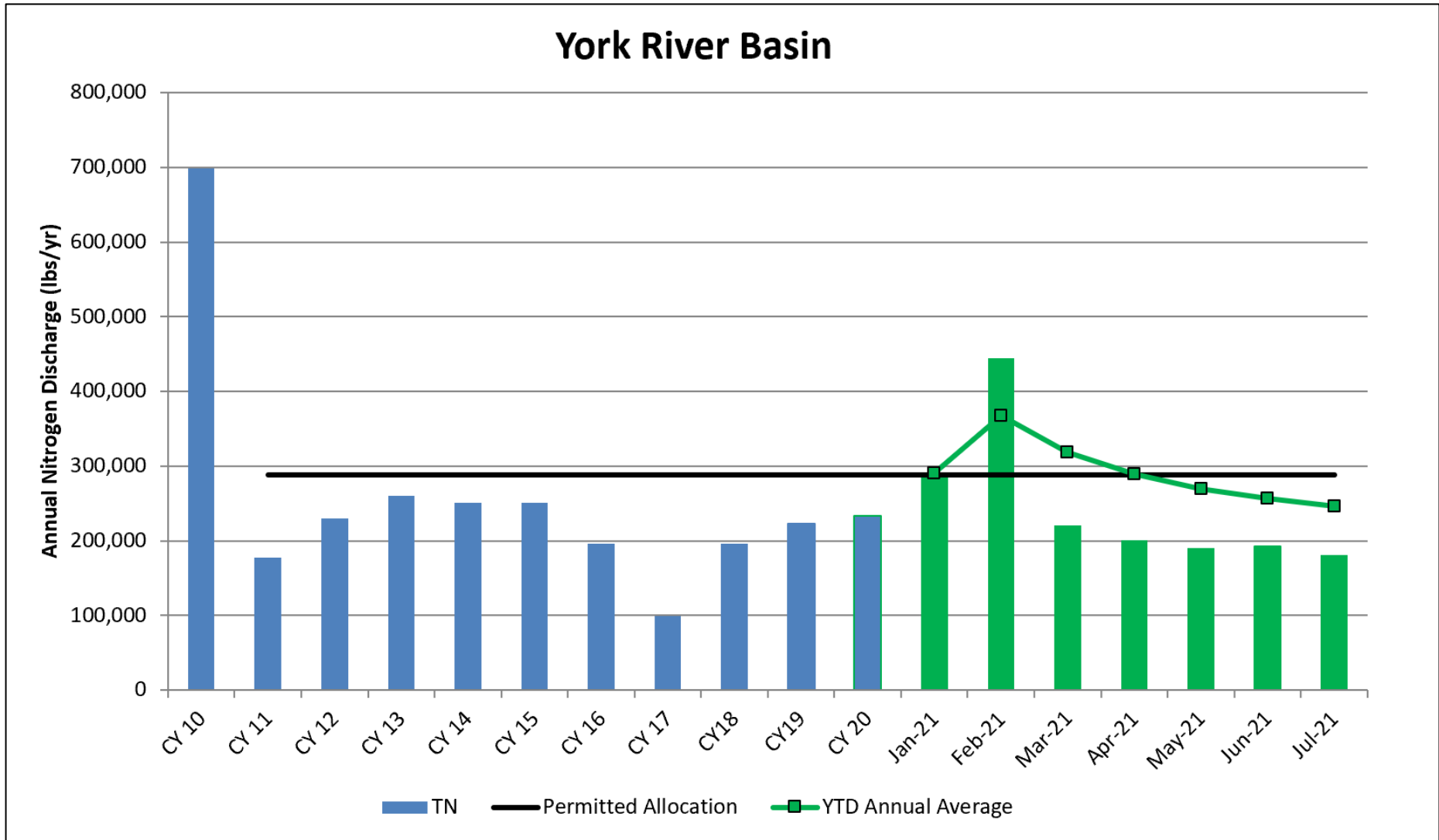
James River Basin: Annual Nitrogen Discharge



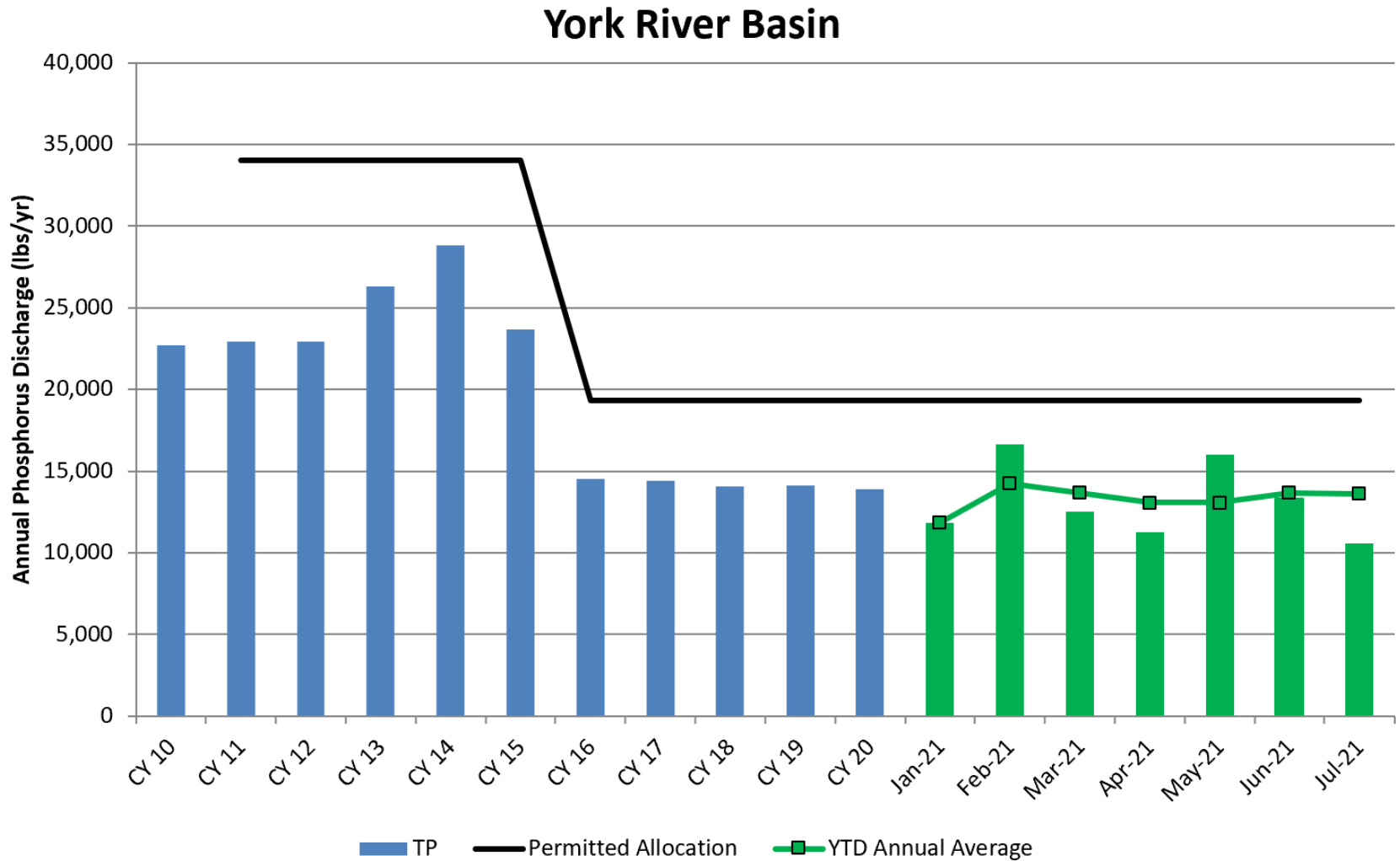
James River Basin: Annual Phosphorus Discharge



York River Basin: Annual Nitrogen Discharge



York River Basin: Annual Phosphorus Discharge



Rappahannock River Basin: 2020 Discharge

- **Total Nitrogen**

2,534 lbs discharged

-1,218 lbs permitted

1,316 lbs credit needed

3,506 lbs credit purchased

\$3.86/lb

\$13,533

- **Total Phosphorus**

740 lbs discharged

-87 lbs permitted

653 lbs credit needed

739 lbs credit purchased

\$5.81/lb

\$4,294

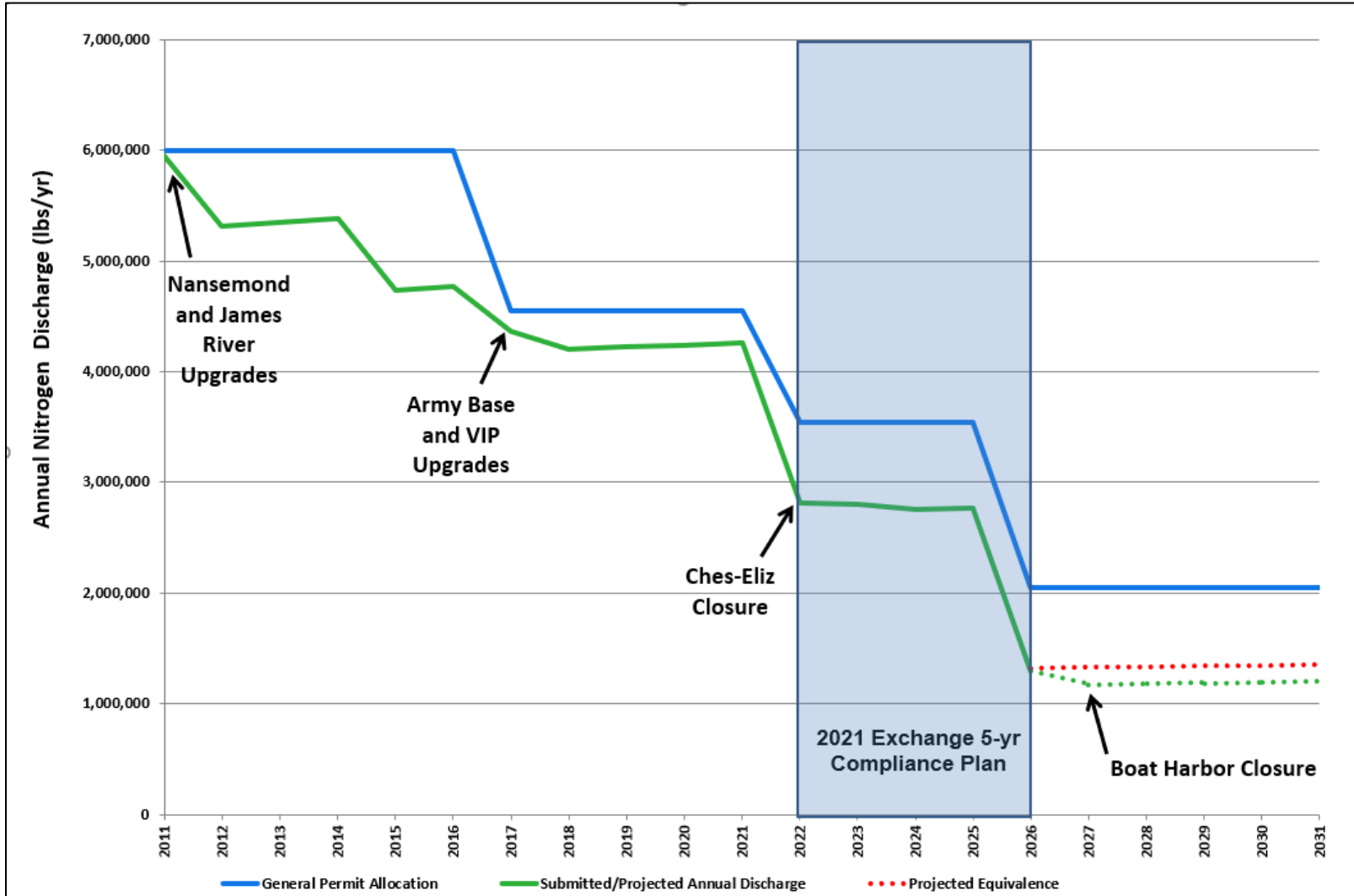
Nitrogen: James River Basin Exchange Submission

	2022	2023	2024	2025	2026
Army Base: Flow (MGD)	10.22 MGD	10.24 MGD	10.39 MGD	10.42 MGD	10.45 MGD
Proj Conc (mg/L)	4.5 mg/L	4.5 mg/L	4.5 mg/L	4.5 mg/L	4.0 mg/L
Proj Mass (lbs/yr)	140,033 lbs/yr	140,274 lbs/yr	142,401 lbs/yr	142,799 lbs/yr	127,303 lbs/yr
Boat Harbor: Flow (MGD)	14.87 MGD	14.78 MGD	14.70 MGD	14.71 MGD	14.72 MGD
Proj Conc (mg/L)	29.0 mg/L	29.0 mg/L	29.0 mg/L	29.0 mg/L	6.7 mg/L
Proj Mass (lbs/yr)	1,313,407 lbs/yr	1,305,253 lbs/yr	1,298,432 lbs/yr	1,299,254 lbs/yr	300,398 lbs/yr
Ches-Eliz: Flow (MGD)	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD
Proj Conc (mg/L)	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L
Proj Mass (lbs/yr)	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr
James River: Flow (MGD)	13.21 MGD	13.19 MGD	13.16 MGD	13.18 MGD	13.20 MGD
Proj Conc (mg/L)	9.0 mg/L	9.0 mg/L	9.0 mg/L	9.0 mg/L	4.0 mg/L
Proj Mass (lbs/yr)	362,100 lbs/yr	361,496 lbs/yr	360,589 lbs/yr	361,251 lbs/yr	160,870 lbs/yr
Lawnes Point: Flow (MGD)	.00 MGD	.00 MGD	.00 MGD	.00 MGD	.00 MGD
Proj Conc (mg/L)	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L
Proj Mass (lbs/yr)	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr
Nansemond: Flow (MGD)	19.37 MGD	19.45 MGD	18.48 MGD	18.68 MGD	18.88 MGD
Proj Conc (mg/L)	5.0 mg/L	5.0 mg/L	5.0 mg/L	5.0 mg/L	4.0 mg/L
Proj Mass (lbs/yr)	294,975 lbs/yr	296,245 lbs/yr	281,389 lbs/yr	284,400 lbs/yr	229,982 lbs/yr
VIP: Flow (MGD)	31.53 MGD	30.80 MGD	29.96 MGD	30.05 MGD	30.14 MGD
Proj Conc (mg/L)	4.5 mg/L	4.5 mg/L	4.5 mg/L	4.5 mg/L	4.0 mg/L
Proj Mass (lbs/yr)	432,080 lbs/yr	422,161 lbs/yr	410,583 lbs/yr	411,843 lbs/yr	367,251 lbs/yr
Williamsburg: Flow (MGD)	9.10 MGD	8.95 MGD	8.79 MGD	8.89 MGD	8.98 MGD
Proj Conc (mg/L)	10.0 mg/L	10.0 mg/L	10.0 mg/L	10.0 mg/L	4.0 mg/L
Proj Mass (lbs/yr)	277,068 lbs/yr	272,659 lbs/yr	267,850 lbs/yr	270,729 lbs/yr	109,469 lbs/yr
Expected Discharge (lbs/yr)	2,819,663 lbs/yr	2,798,088 lbs/yr	2,761,244 lbs/yr	2,770,276 lbs/yr	1,295,272 lbs/yr
General Permit Allocation (lbs/yr)	3,549,300 lbs/yr	3,549,300 lbs/yr	3,549,300 lbs/yr	3,549,300 lbs/yr	2,047,966 lbs/yr
Total Flow (MGD)	98.3 MGD	97.4 MGD	95.5 MGD	95.9 MGD	96.4 MGD

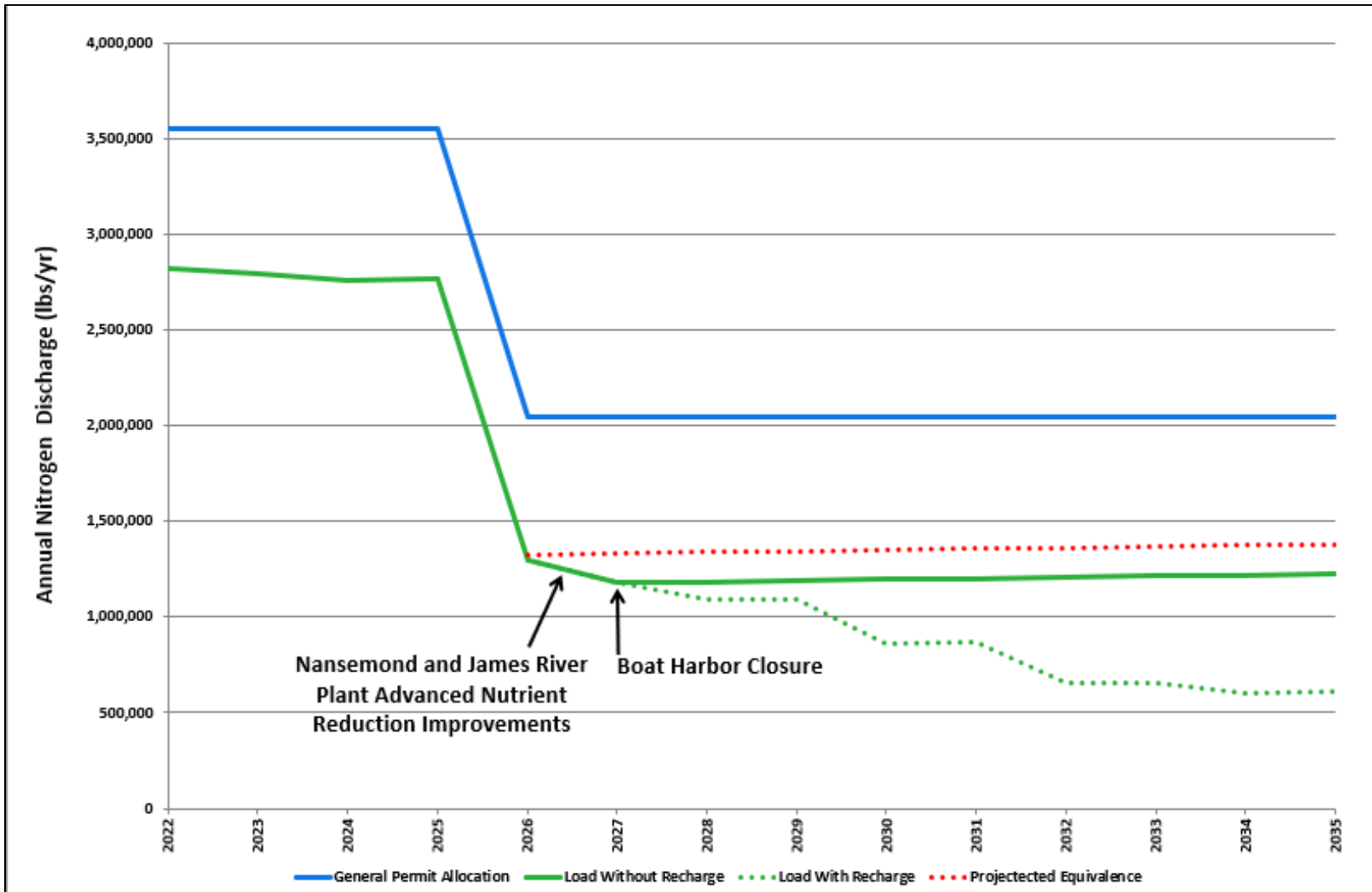
Phosphorus: James River Basin Exchange Submission

	2022	2023	2024	2025	2026
Army Base: Flow (MGD)	10.22 MGD	10.24 MGD	10.39 MGD	10.42 MGD	10.45 MGD
Proj Conc (mg/L)	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	24,895 lbs/yr	24,938 lbs/yr	25,316 lbs/yr	25,386 lbs/yr	25,461 lbs/yr
Boat Harbor: Flow (MGD)	14.87 MGD	14.78 MGD	14.70 MGD	14.71 MGD	14.72 MGD
Proj Conc (mg/L)	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	36,232 lbs/yr	36,007 lbs/yr	35,819 lbs/yr	35,841 lbs/yr	35,868 lbs/yr
Ches-Eliz: Flow (MGD)	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD
Proj Conc (mg/L)	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L
Proj Mass (lbs/yr)	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr
James River: Flow (MGD)	13.21 MGD	13.19 MGD	13.16 MGD	13.18 MGD	13.20 MGD
Proj Conc (mg/L)	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	32,187 lbs/yr	32,133 lbs/yr	32,052 lbs/yr	32,111 lbs/yr	32,174 lbs/yr
Lawnes Point: Flow (MGD)	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD
Proj Conc (mg/L)	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L	0.0 mg/L
Proj Mass (lbs/yr)	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr	0 lbs/yr
Nansemond: Flow (MGD)	19.37 MGD	19.45 MGD	18.48 MGD	18.68 MGD	18.88 MGD
Proj Conc (mg/L)	1.2 mg/L	1.2 mg/L	1.2 mg/L	1.2 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	70,794 lbs/yr	71,099 lbs/yr	67,533 lbs/yr	68,256 lbs/yr	45,996 lbs/yr
VIP: Flow (MGD)	31.53 MGD	30.80 MGD	29.96 MGD	30.05 MGD	30.14 MGD
Proj Conc (mg/L)	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	76,814 lbs/yr	75,051 lbs/yr	72,993 lbs/yr	73,217 lbs/yr	73,450 lbs/yr
Williamsburg: Flow (MGD)	9.10 MGD	8.95 MGD	8.79 MGD	8.89 MGD	8.98 MGD
Proj Conc (mg/L)	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L	0.8 mg/L
Proj Mass (lbs/yr)	22,165 lbs/yr	21,813 lbs/yr	21,428 lbs/yr	21,658 lbs/yr	21,894 lbs/yr
Expected Discharge (lbs/yr)	263,087 lbs/yr	261,040 lbs/yr	255,141 lbs/yr	256,470 lbs/yr	234,843 lbs/yr
General Permit Allocation (lbs/yr)	315,876 lbs/yr	315,876 lbs/yr	315,876 lbs/yr	315,876 lbs/yr	254,248 lbs/yr
Total Flow (MGD)	98.3 MGD	97.4 MGD	95.5 MGD	95.9 MGD	96.4 MGD

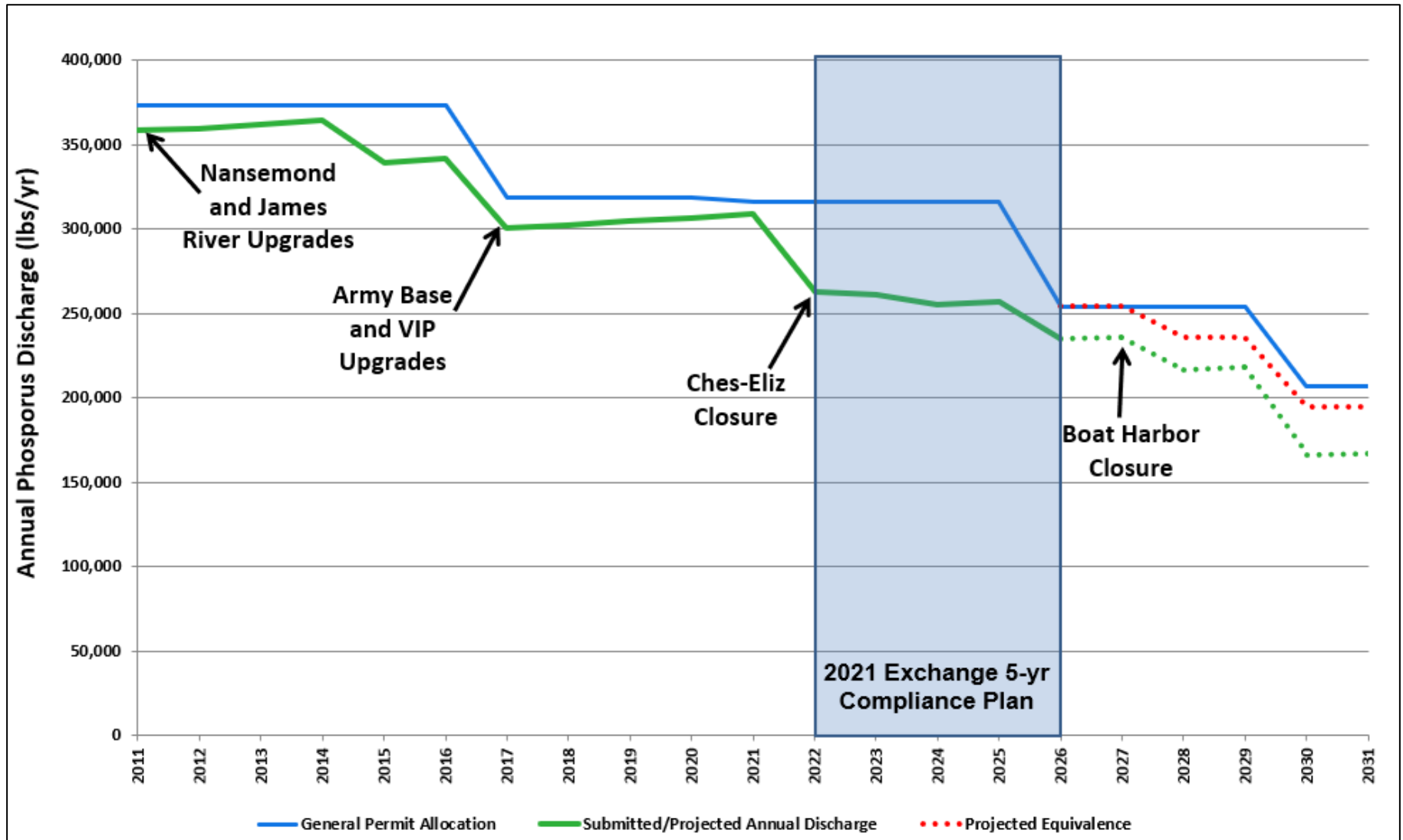
James River Basin Nitrogen Reduction Strategy



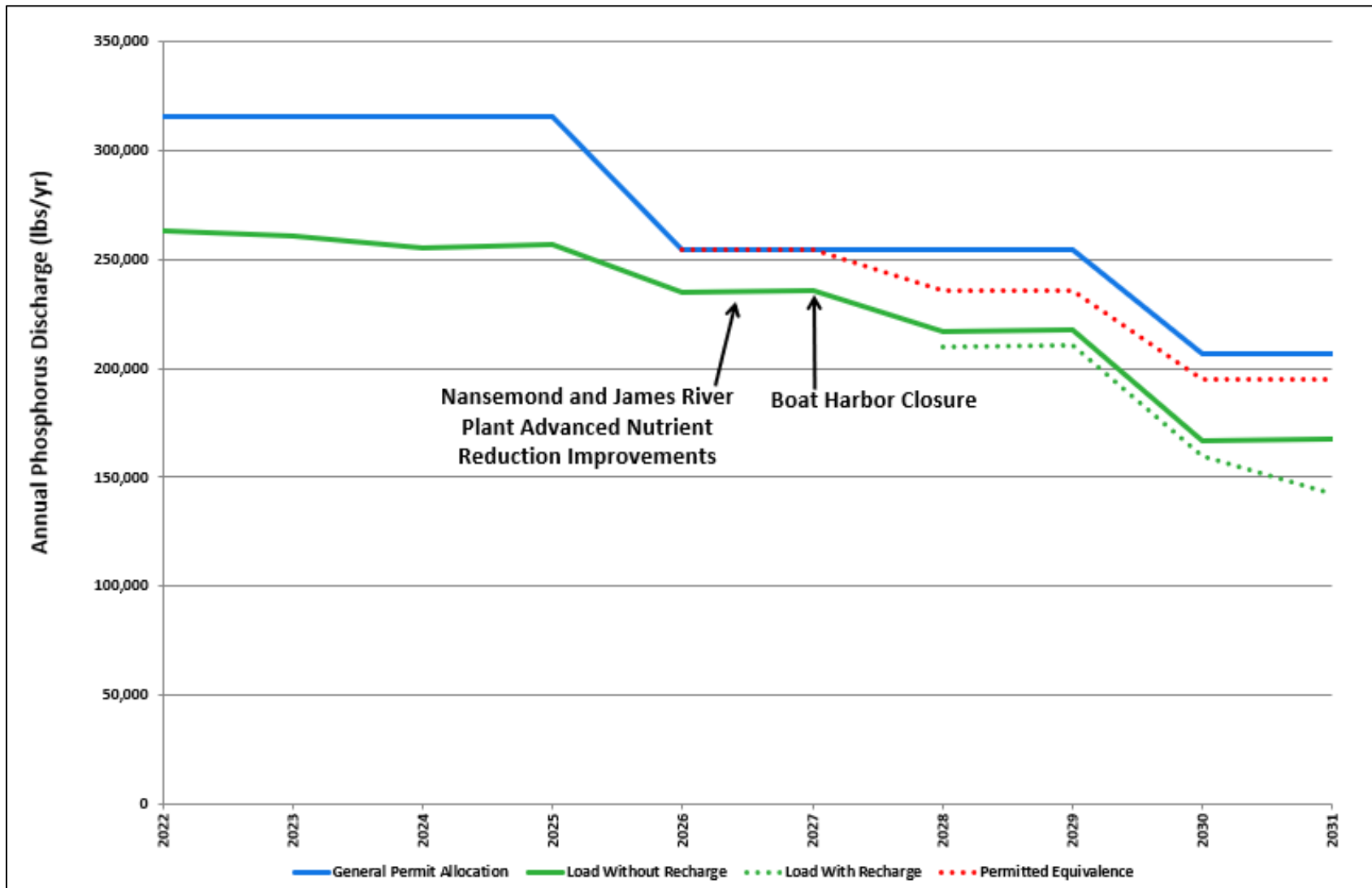
James River Basin WIP III Enhanced Nutrient Certainty Program



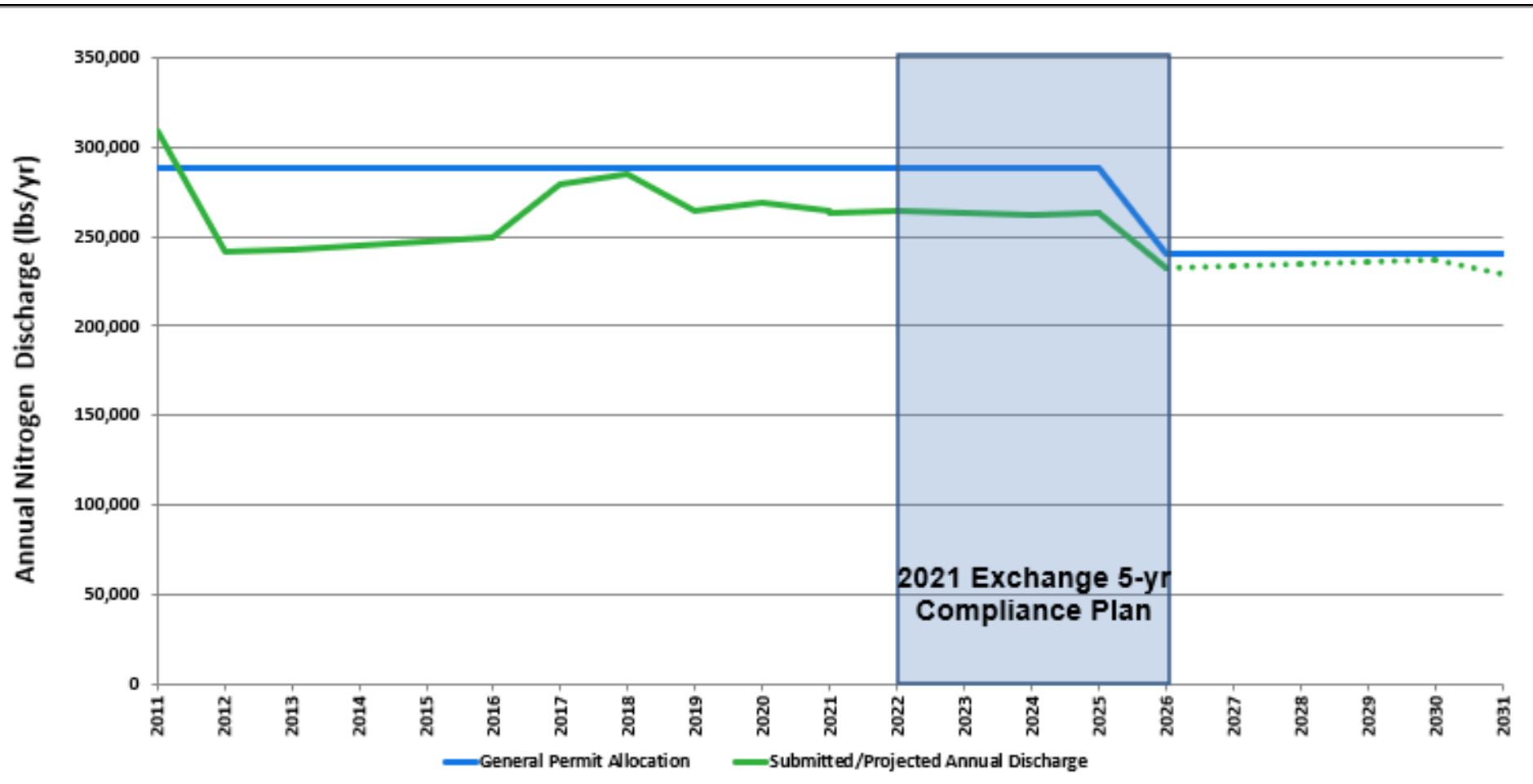
James River Basin Phosphorus Reduction Strategy



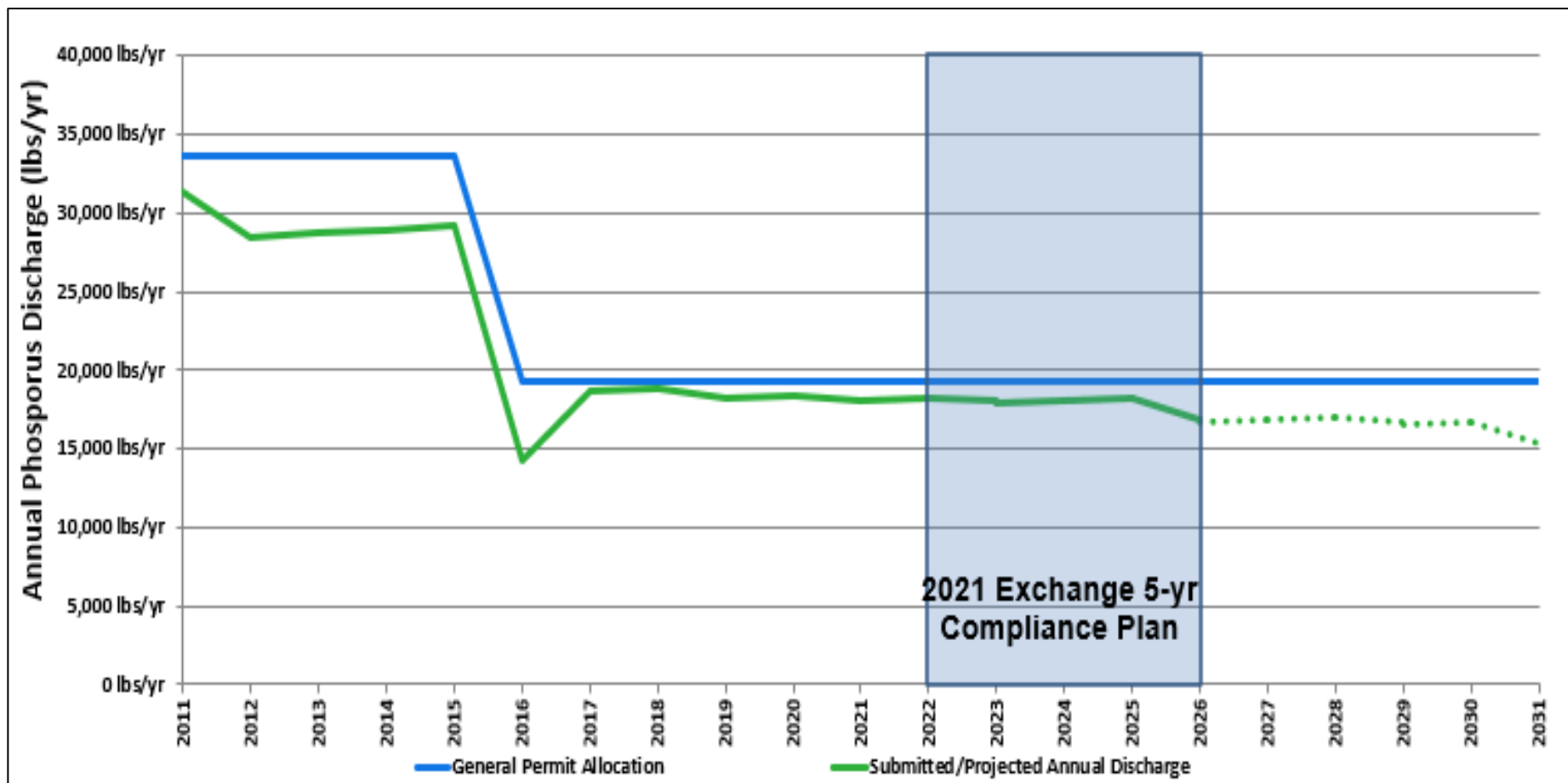
James River Basin WIP 3 Enhanced Nutrient Certainty Program



York River Basin Nitrogen Reduction Strategy



York River Basin Phosphorus Reduction Strategy



Code of Virginia 62.1-44.19:21.2

- *C. Any publicly owned treatment works that is permitted under the Watershed General Virginia Pollutant Discharge Elimination System (VPDES) Permit pursuant to § 62.1-44.19:14 and is constructing or expanding the treatment works, wastewater collection system, or other facility used for public wastewater utility operations may, as an alternative to acquiring and using certain perpetual nutrient credits pursuant to subsection B of § 62.1-44.19:21, permanently retire a portion of its wasteload allocation if (i) notice is given by such applicant to the Department, (ii) a ratio of 10 pounds of nitrogen allocation for each pound of phosphorous allocation retired is also permanently retired and applied toward the land-disturbing project, and (iii) the general permit registration list is modified to reflect the permanent retirement of the wasteload allocation. Except for a water reclamation and reuse project at a treatment works, no more than 10 pounds per year of phosphorous allocation may be applied toward a single project's postconstruction phosphorus control requirement.*

- Questions?

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #3

Agenda Item 4. Engineering the Next Generation of Mainstream Nitrogen Removal Technology at HRSD: Partial Denitrification-Anammox (PdNA)



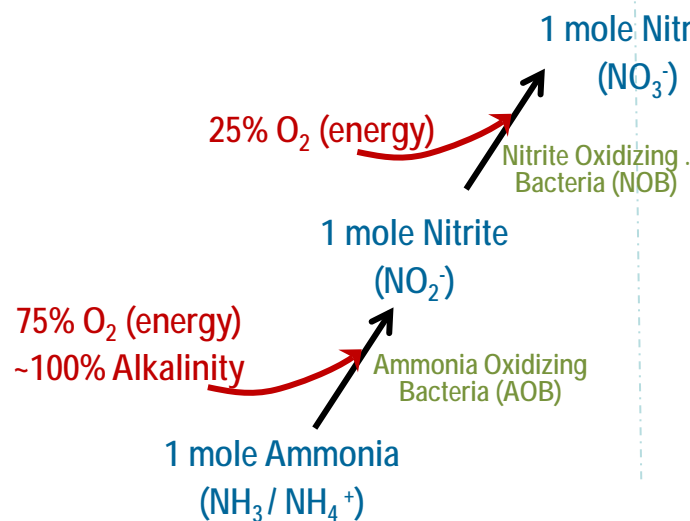
Engineering the Next Generation of Mainstream Nitrogen Removal Technology at HRSD: Partial Denitrification-Anammox (PdNA)

Mike Parsons and Stephanie Klaus
8/24/2021

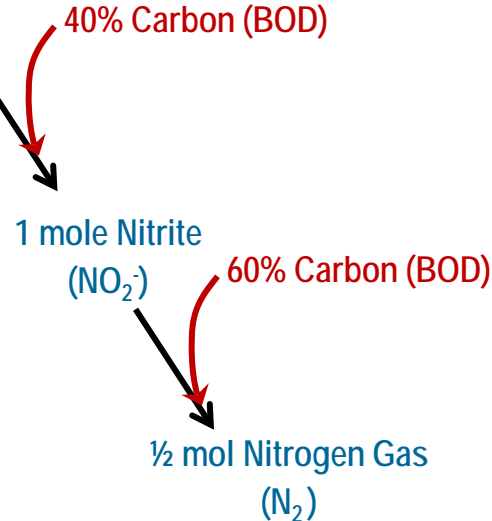


Conventional Nitrification-Denitrification

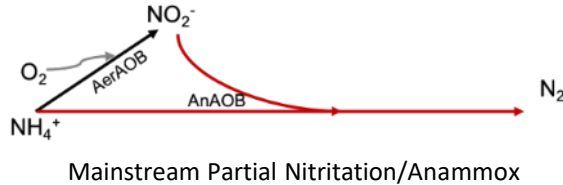
Autotrophic Bacteria
Aerobic Environment



Heterotrophic Bacteria
Anoxic Environment

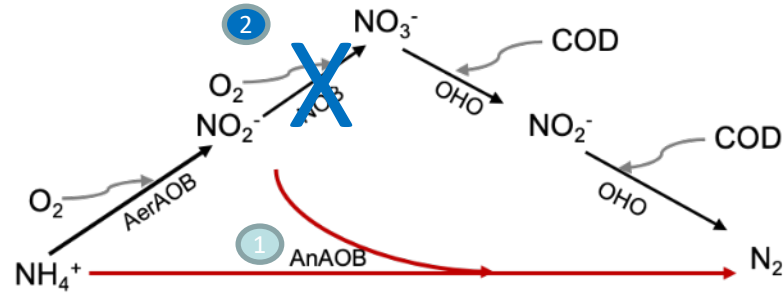


Deammonification through Partial Nitritation-Anammox (PNA)



Operational cost savings:

- 60% aeration
- 100% external carbon

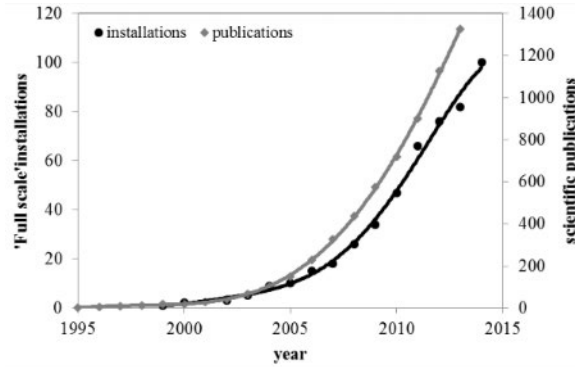


Main challenges:

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

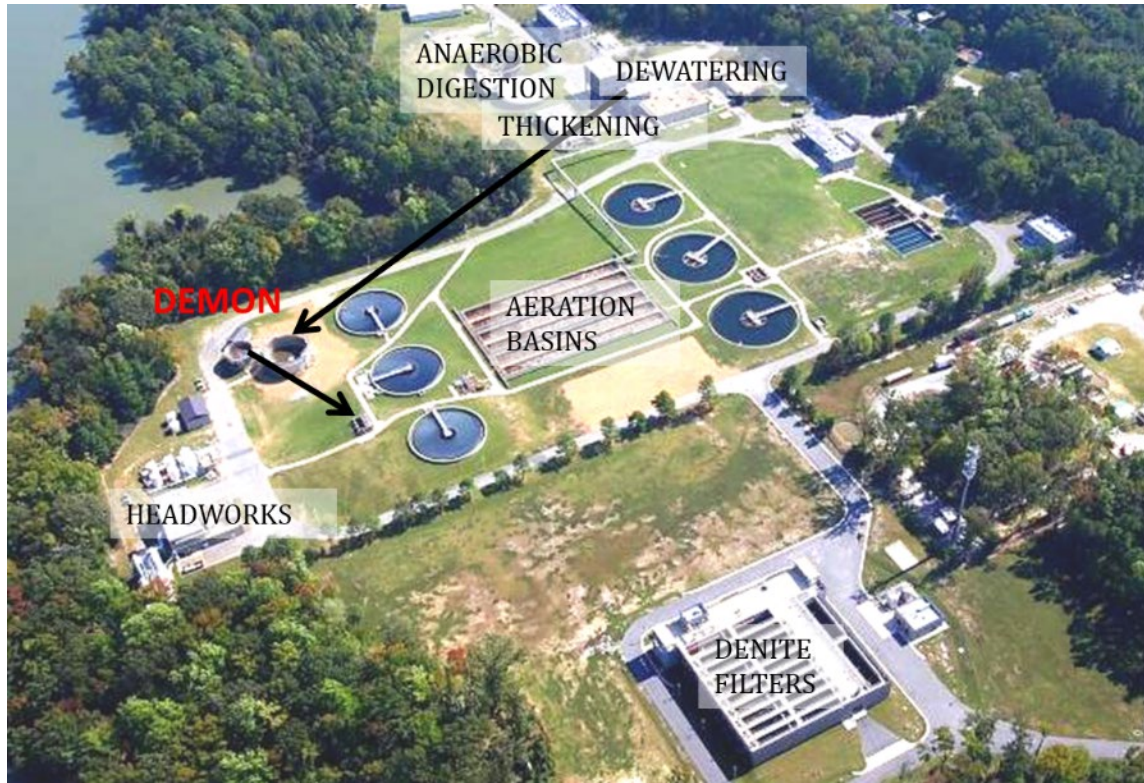
Anammox = AnAOB

Sidestream vs. Mainstream PNA

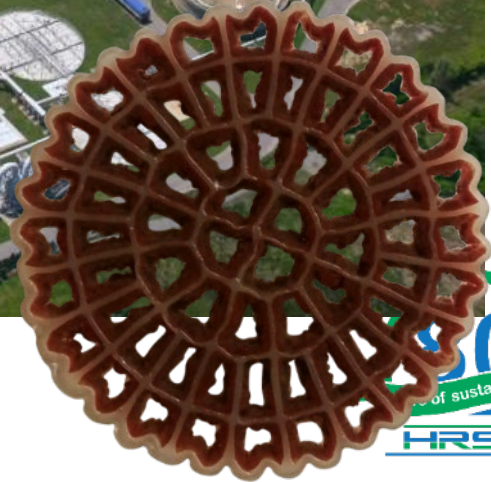
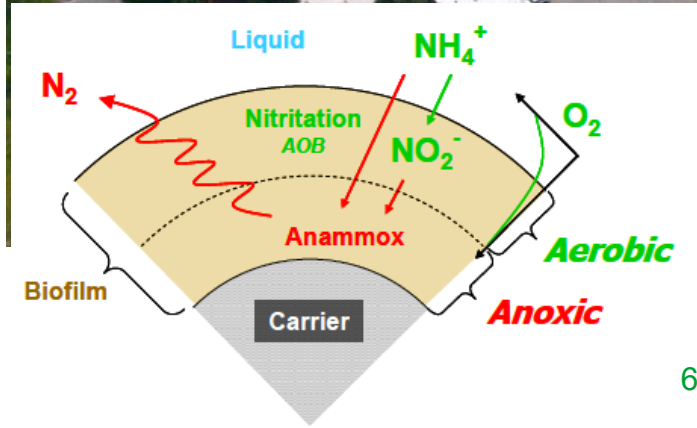
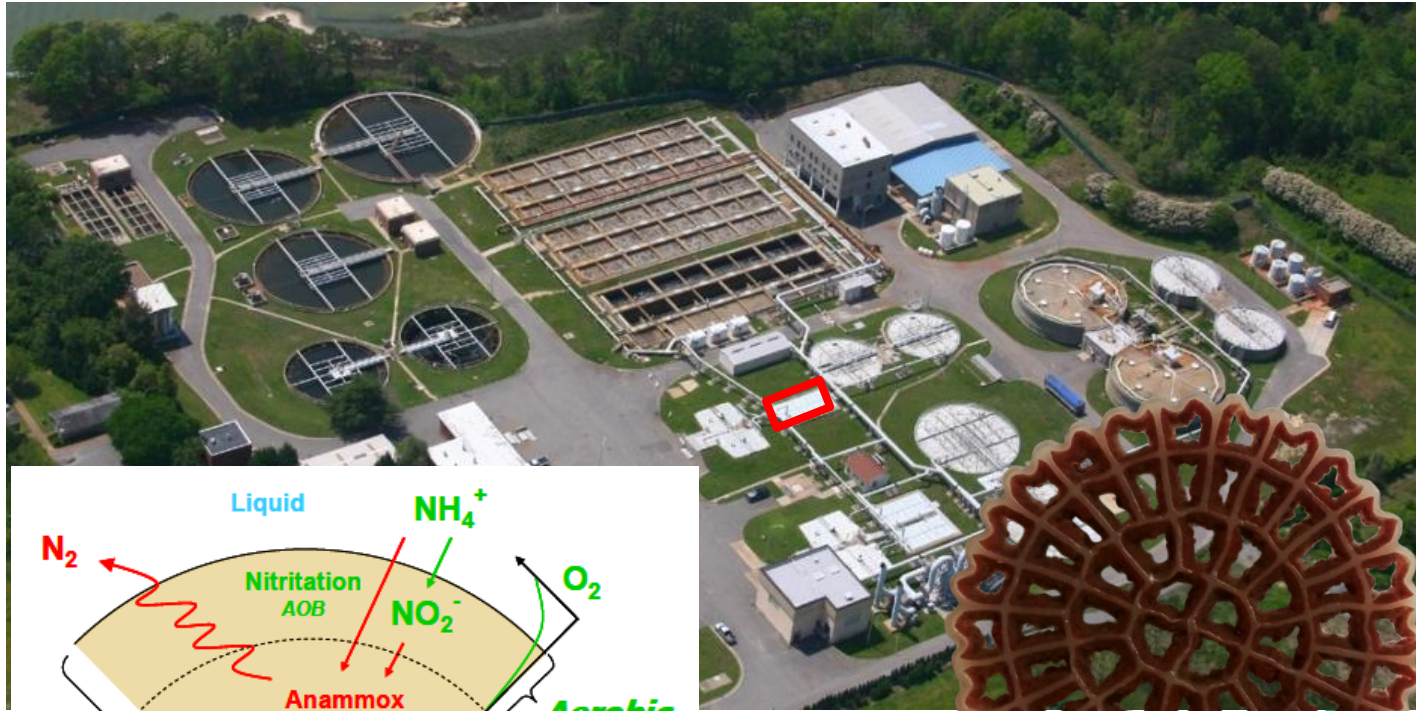


Lackner et al., 2014, WR

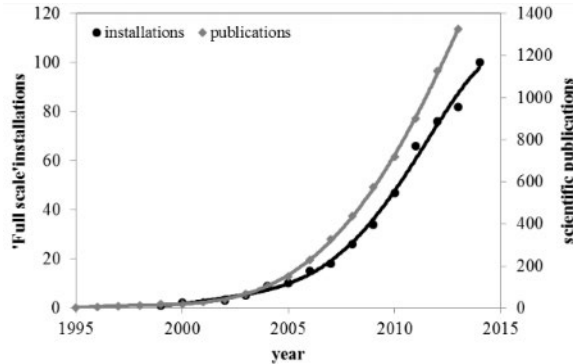
DEMON[®] at HRSD York River (15 MGD) - 2012



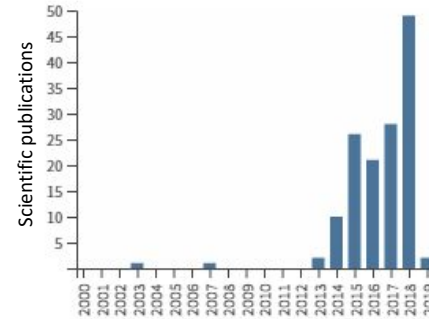
AnitaMox[®] at HRSD James River (20 MGD) 2013



Sidestream vs. Mainstream PNA



Lackner et al., 2014, WR

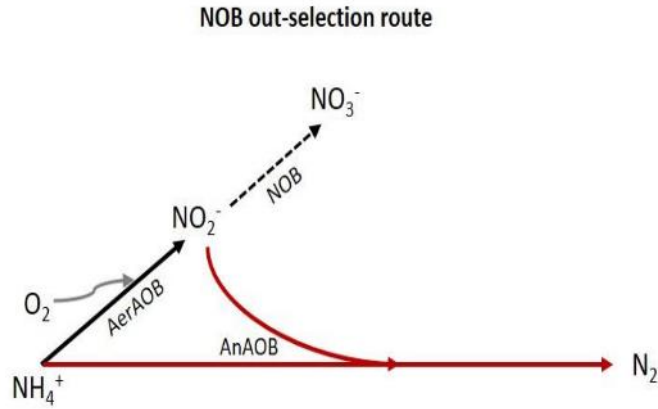


Limited full-scale reports of mainstream anammox:

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

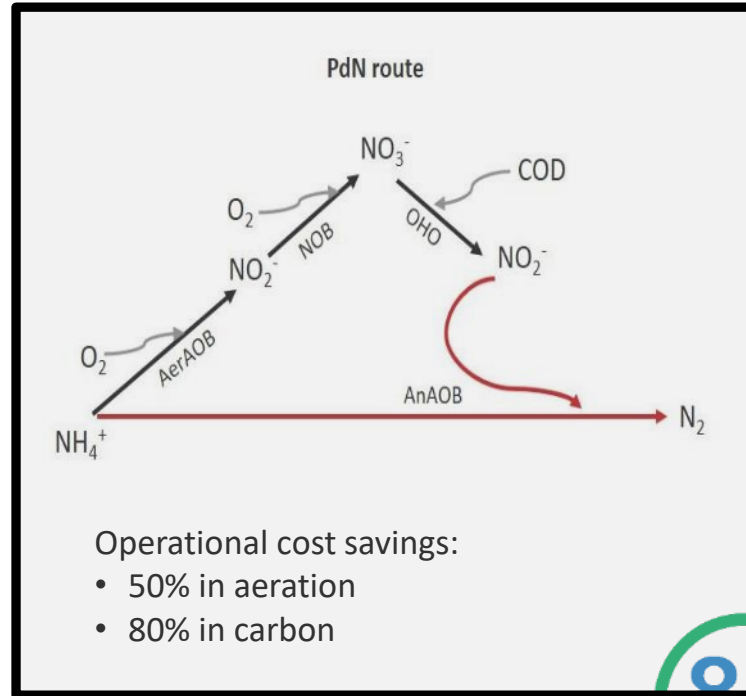
The complexity of NOB out-selection limits full scale implementation of mainstream deammonification

Taking a detour to achieve mainstream deammonification – Partial Denitrification Anammox (PdNA)



Operational cost savings:

- 60% in aeration
- 100% in carbon

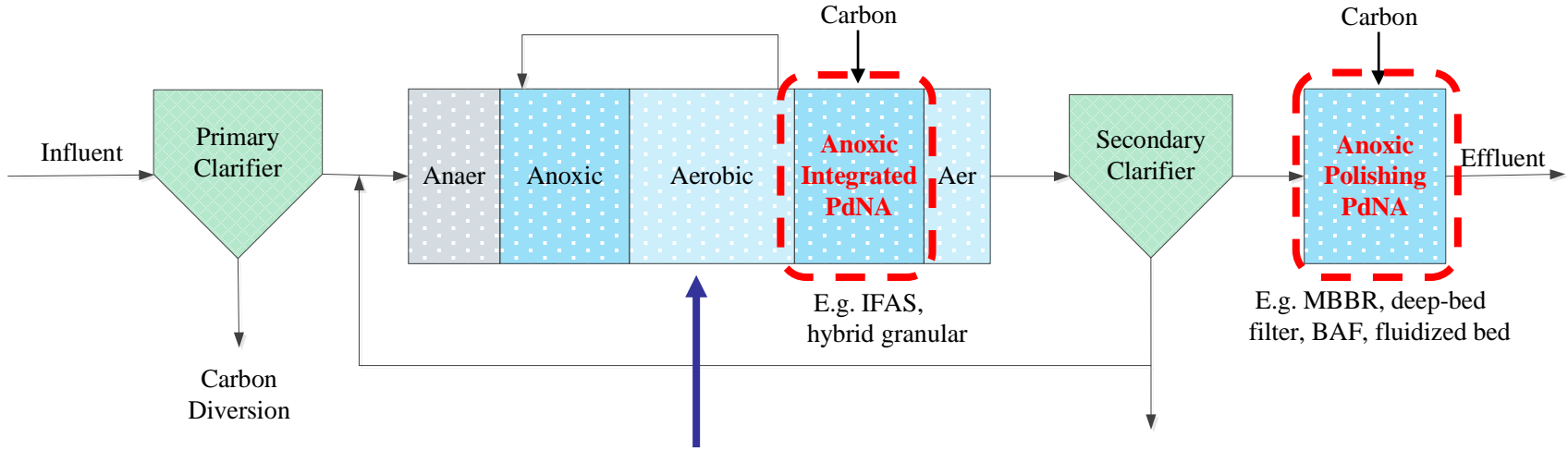


Operational cost savings:

- 50% in aeration
- 80% in carbon

Increases Plant Capacity!

PdNA Implementation



Ammonia vs NOx (AvN) aeration control

HRSD Mainstream Anammox Timeline (PdNA)



Recent Federal Grants: PdNA and Related Work

- **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
- **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
- **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

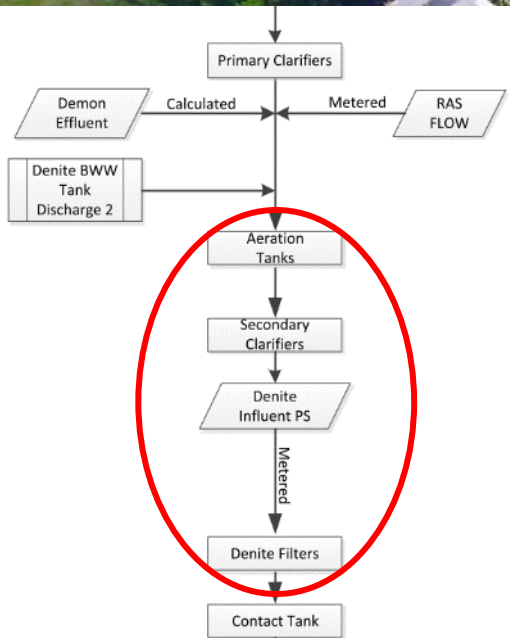
1. York River Full-Scale Filter
2. York River Filter Pilot
3. James River Pilot MBBR and IFAS
4. James River Full-Scale Demonstration and Future Design

York River Treatment Plant



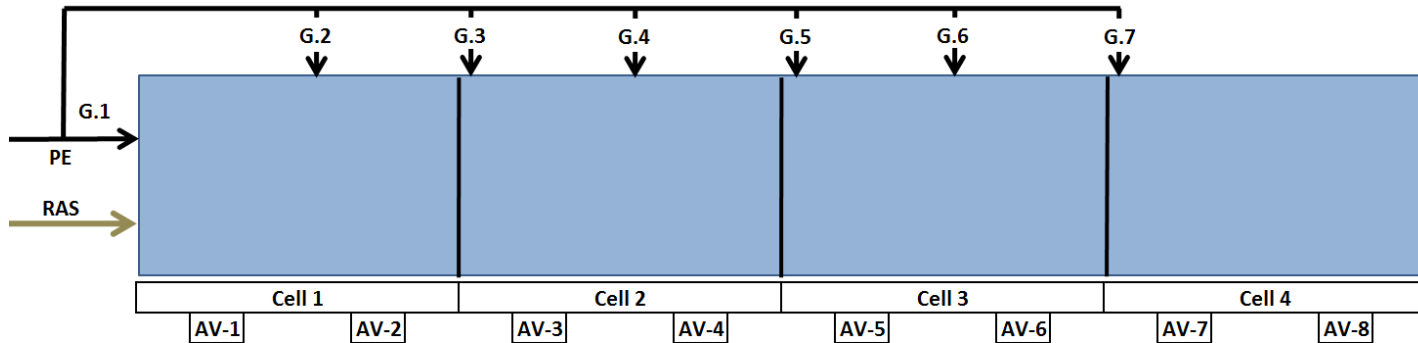
DENITE FILTERS

AERATION BASINS



Aeration Tanks – Original Setup (1983 - July 2018)

- Historic operation
 - Fully aerobic
 - Usually step fed primary effluent to slip ammonia (snail control and chlorination)
 - Large chemical demand (caustic and ferric)
 - Aeration effluent quality
 - Variable ammonia
 - High nitrate (big demand for methanol & bleeds nitrite)
 - YR was our last remaining plant with no automated aeration or DO control



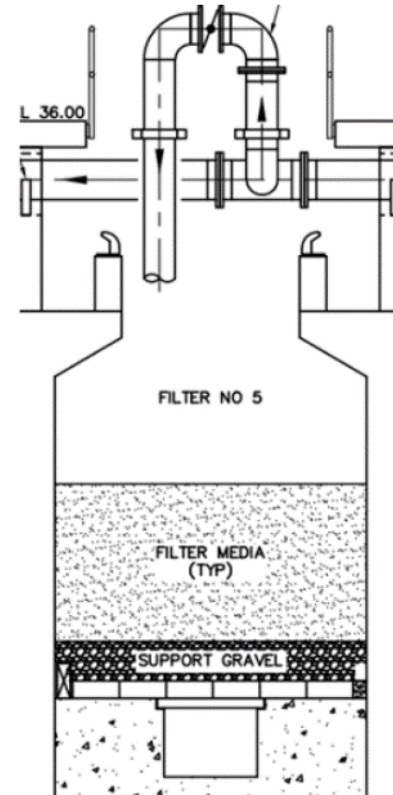
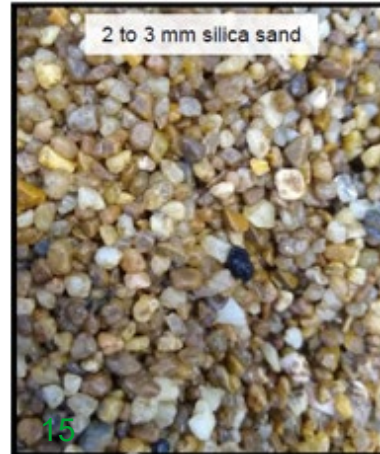
Air Valve = AV

Step feed gate = G



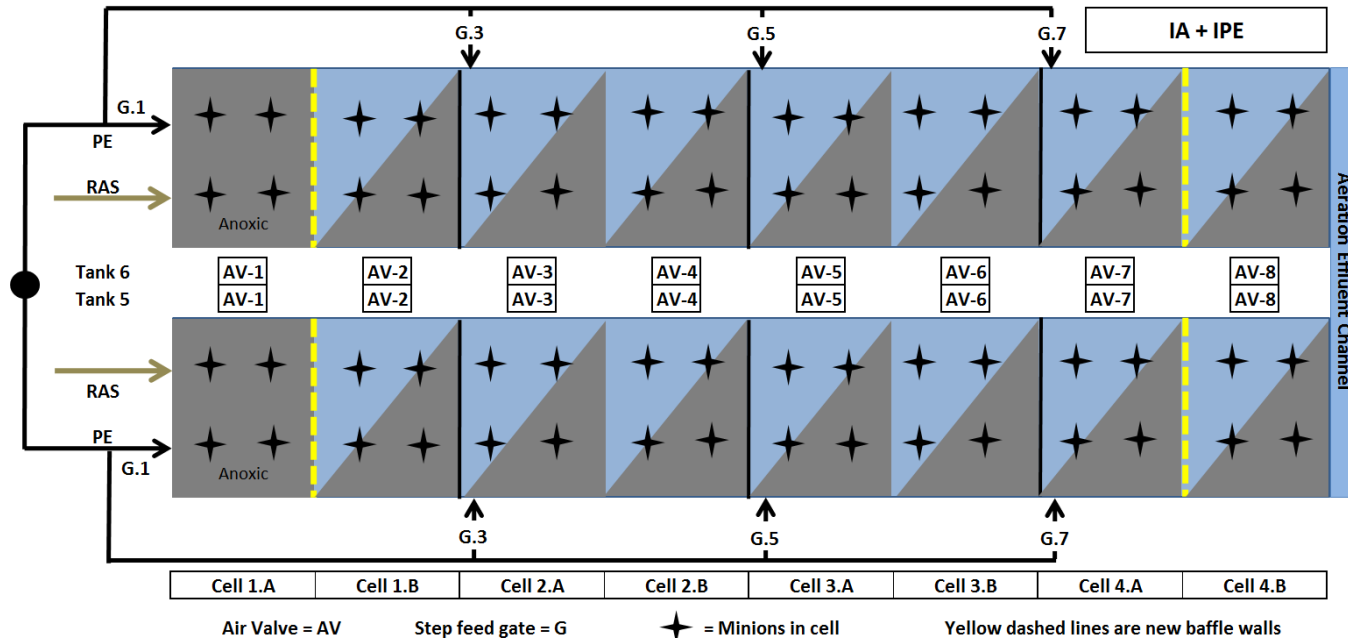
Transition Denitrification Filters to PdNA

1. Tight methanol dosing control (+)
(provide stable NO₃ residual)
2. Rough AvN control upstream
3. Minimize backwash and air scour
4. Wait patiently



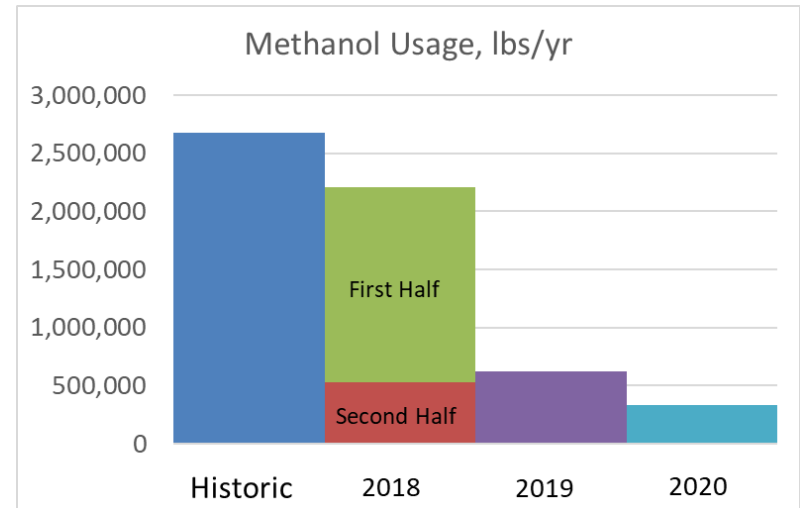
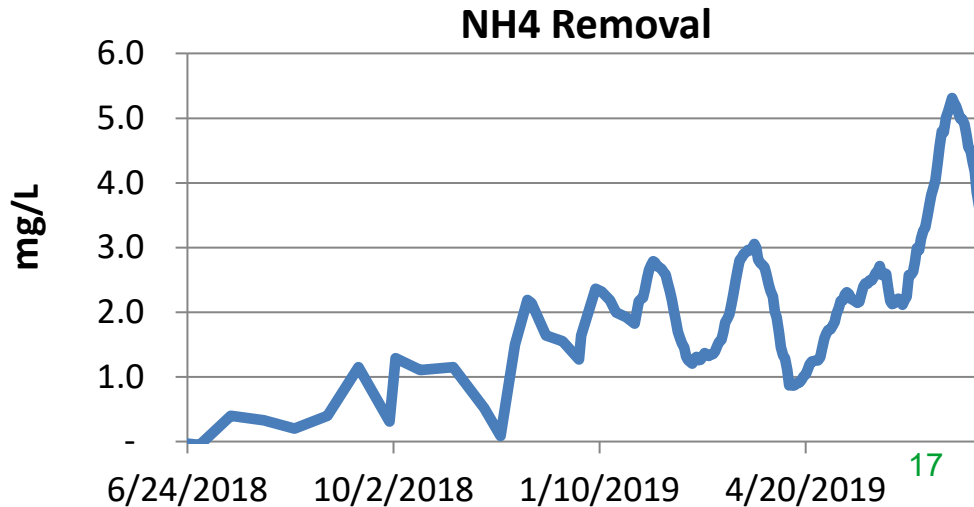
Aeration Tanks – Where are we now

- Intermittent aeration and intermittent step feed
 - Both the aeration and PCE feed are intermittent
 - Efficiently utilize influent carbon
 - Tanks are controlled to maintain AVN ratio
 - Save alkalinity and maintain ratio for downstream anammox



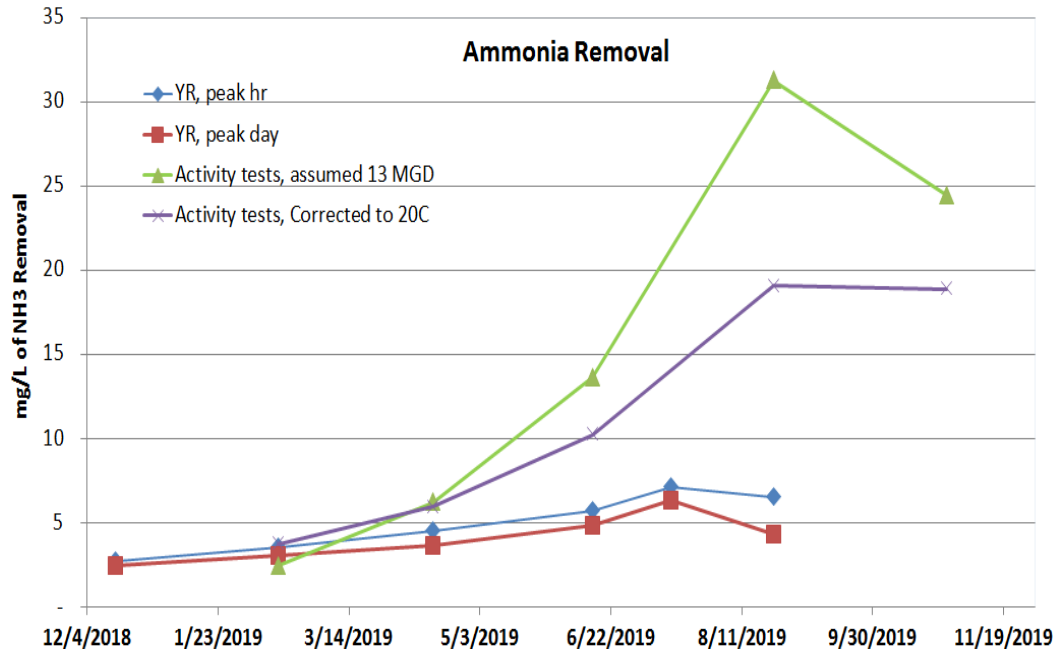
Denitrification Filter – Methanol Usage

- Methanol usage
 - Historic avg = \$425,000 per year (\$35,000 per month)
 - 2020 total methanol used was \$30,000
- Savings from aeration tank upgrade and PdNA in filters
 - PdNA activity first observed in November 2018



Confirming Anammox: Maximum Activity Tests and Molecular Measurements

Equates to 20 mg/L of ammonia removal capacity at full-scale



Genus	Relative Abundance
Rhodocyclaceae_uncultured	14.65%
Hyphomicrobium	9.84%
Candidatus Brocadia	5.55%
Anaerolineaceae_UTCFX1	3.38%
Methylophilaceae_uncultured	2.47%
Denitratisoma	1.94%
Methyloversatilis	1.91%
Anaerolineaceae_uncultured	1.85%
Burkholderiaceae_uncultured	1.39%
Caldilineaceae_uncultured	1.33%
Methylotenera	1.28%
Others	54.42%

YR BNR Improvements Summary

- Provided:
 - Large chemical savings: Methanol, caustic, ferric, hypo
 - Blower energy savings
 - Increased plant capacity and better use of influent COD
- In preparation for SWIFT:
 - Optimize control on aeration tanks
 - Continue to optimize filter performance
 - DEMON improvements to stabilize sidestream treatment



York River Filter Pilot

Compare Methanol vs. Glycerol as carbon source at various loadings



Objective 1: Determine design criteria and process capacity for PdNA filter

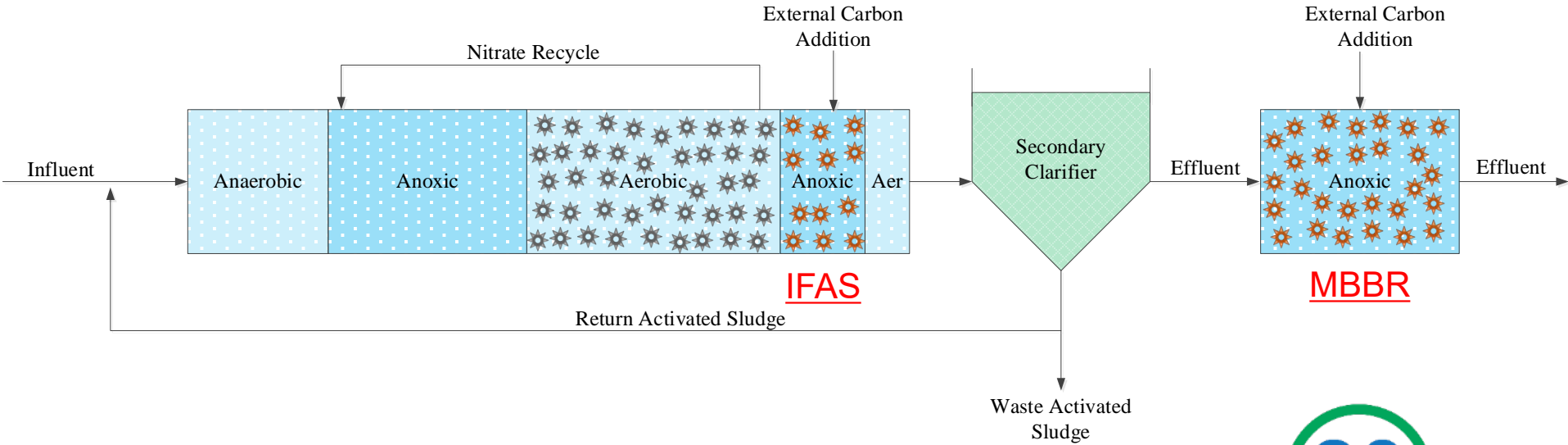
Conclusions:

- Somewhat higher PdNA rates and PdNA contribution to overall TIN removal in the glycerol filter (59% vs 50%)
- Maximum anammox activity: 1.5-3X higher than needed
- Good upstream AvN control is required to achieve low effluent TN
- **Anammox cannot be easily washed out of the filter**

Objective 2: Develop startup strategies for polishing filter technologies

- Started on 6/16/21, in progress

PdNA Plans for the James River Upgrade



MBBR Startup with glycerol

Virgin Media

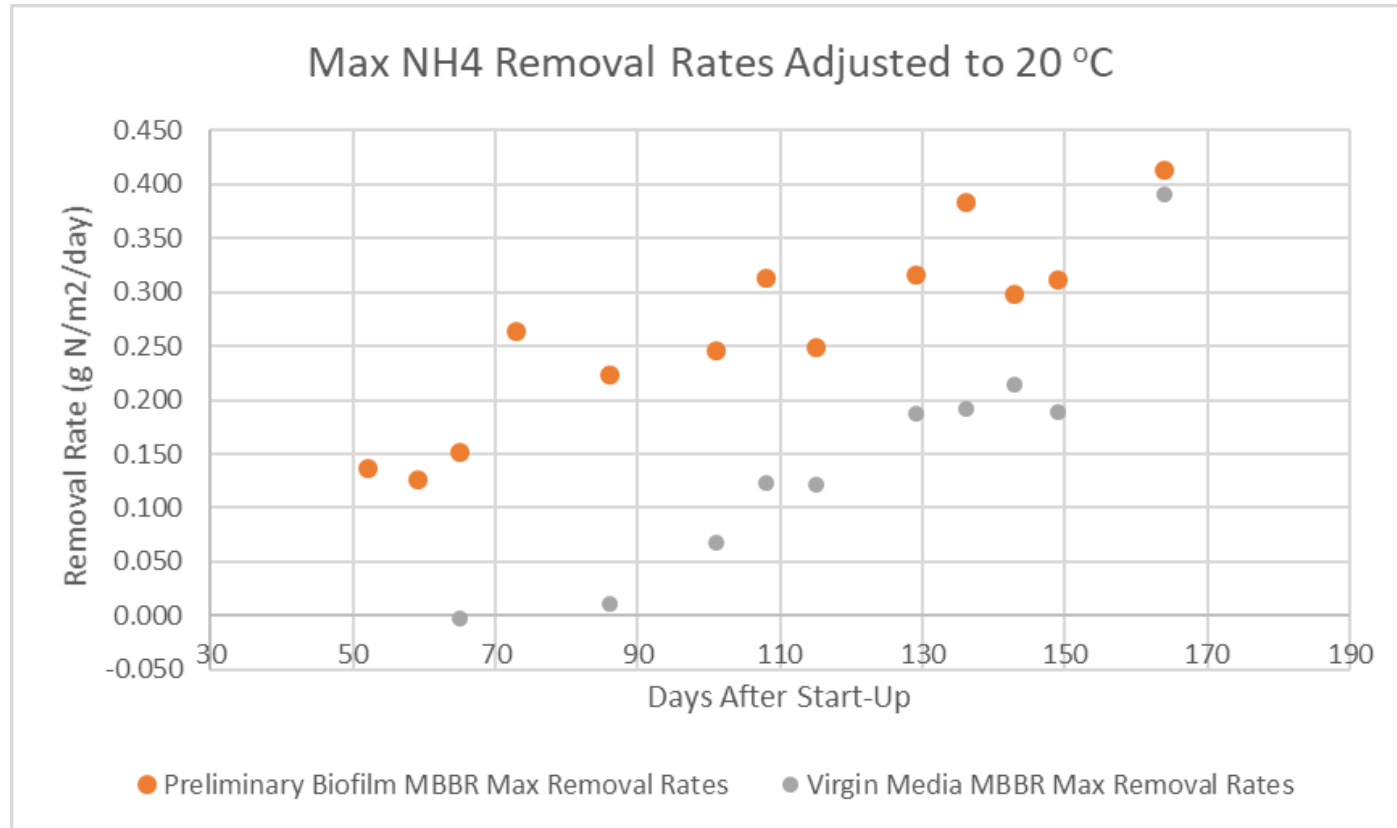
Preliminary Biofilm Media



Justin Macmanus



Anammox were established in both MBBRs much faster than expected!



IFAS Startup

Methanol

Glycerol



Megan Bachmann

IFAS and MBBR Design Considerations

IFAS



MBBR

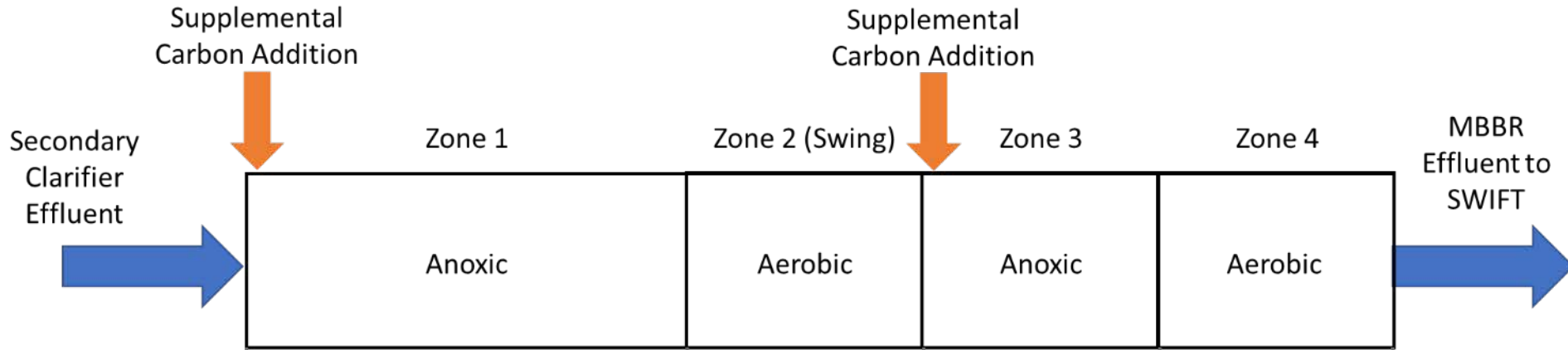


Justin Macmanus

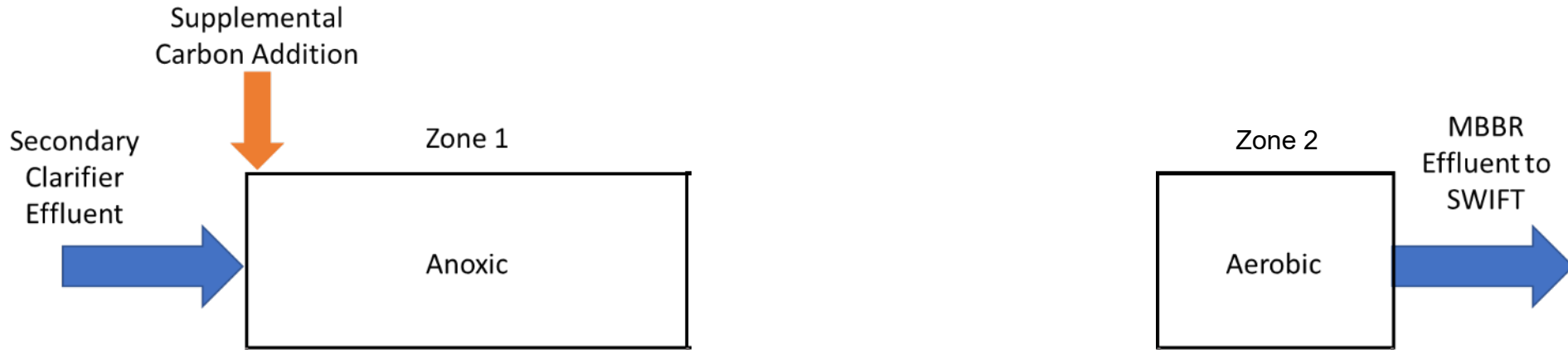
IFAS and MBBR Design Considerations

- IFAS reactor was able to achieve higher TIN removal rates than the MBBR
- Both reactors where able to reach low TIN limits as long as the upstream AVN was properly controlled
- PdNA IFAS in a second anoxic zone appears to be a viable treatment process for mainstream anammox
 - This applies to any plant with a second anoxic zone (potentially 5 more in HRSD)

Polishing PdNA MBBR Configuration – Preliminary Design



Polishing PdNA MBBR Configuration – Proposed Design

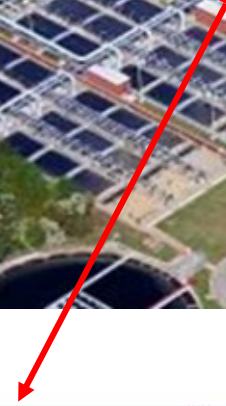


James River Full Scale PdNA IFAS Demonstration



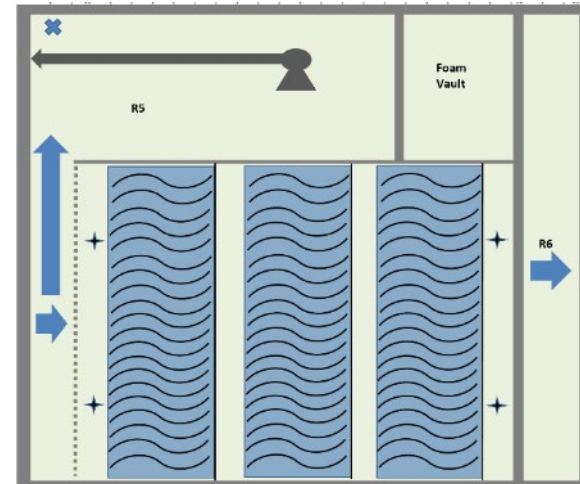
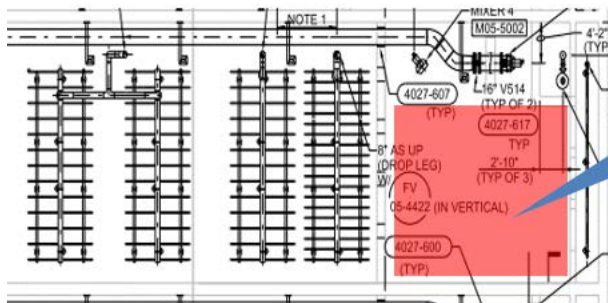
IFAS Aeration Tanks – Second Anoxic Zone

- Total volume with 9 tanks = 0.32 MG
- HRT is roughly 20 minutes



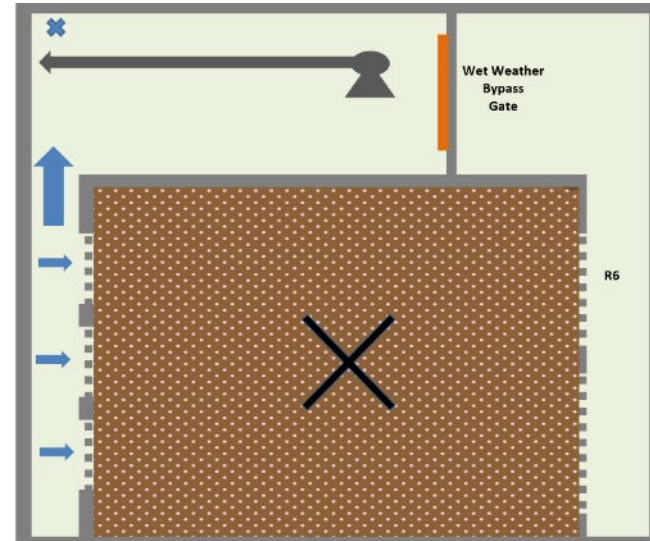
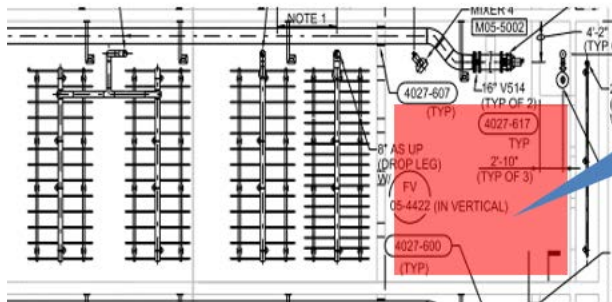
Fixed Media IFAS (FIFAS) - Second Anoxic Zone

- Wet weather management
- Construction
- Media type and surface area
 - Limited options and data
- Provide effective mixing
- Provide effective biofilm control

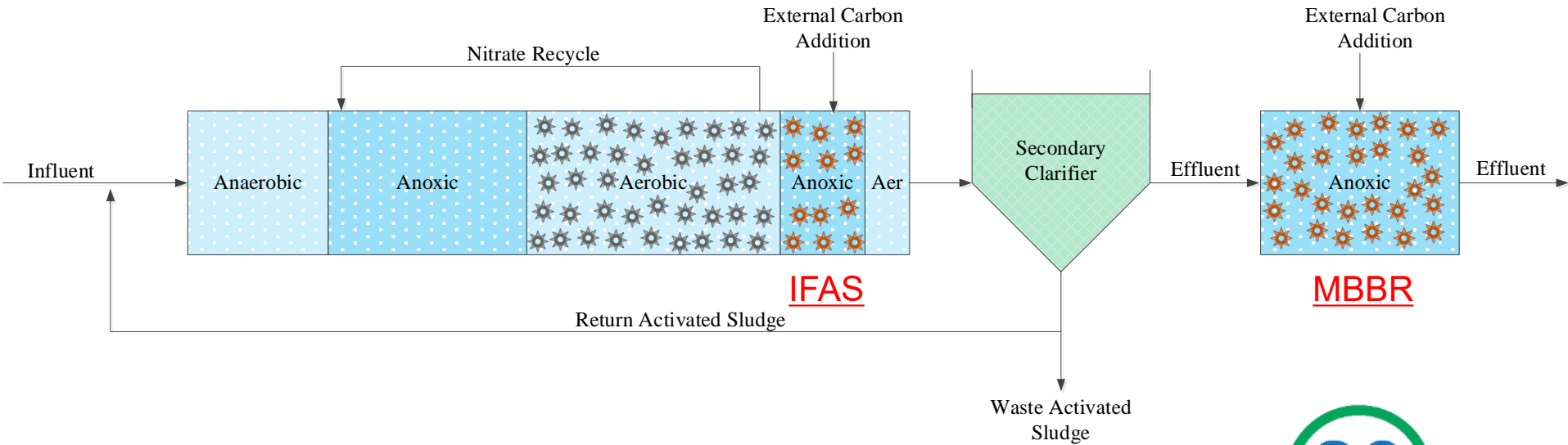


Moving Media IFAS (MIFAS) - Second Anoxic Zone

- Wet weather management
- Construction
 - Baffle walls
 - Screens
 - Mixer
- Media type and surface area
 - Lots of good choices

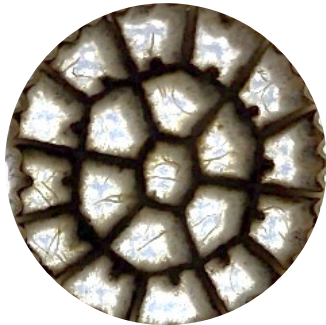


PdNA Plans for the James River Upgrade



Anammox Activity Discovered in Aerobic IFAS = Mainstream PNA

- Effluent TIN as low as 2 mg/L on certain days, and we frequently see TN less than 5 mg/L
- TIN loss across aerobic zone ~ 3 mg/L
- Anammox activity test as high as 0.6 g/m²/day

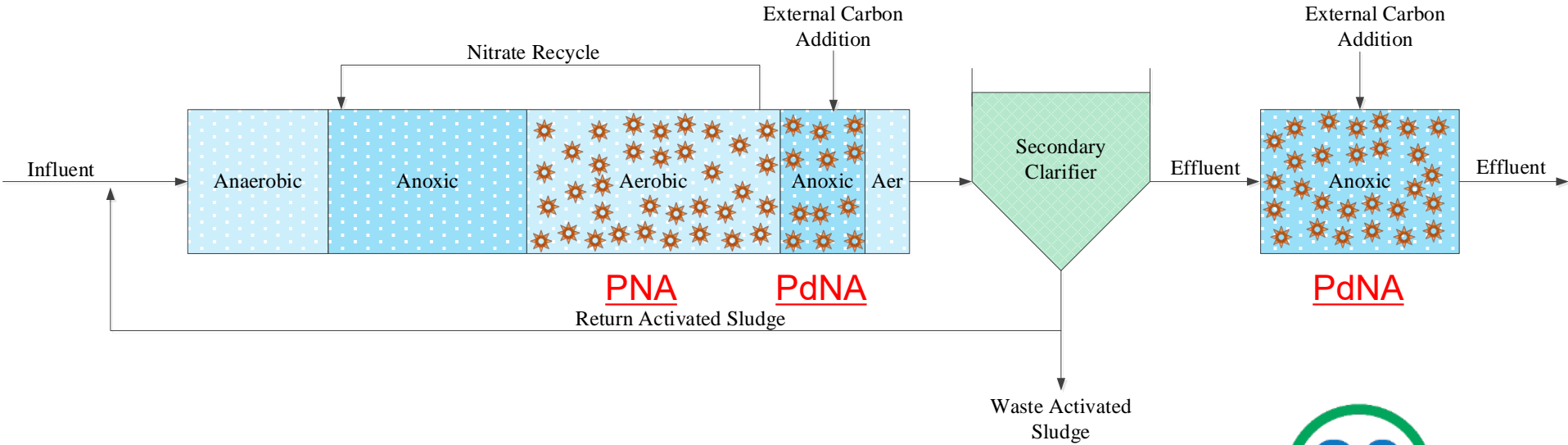


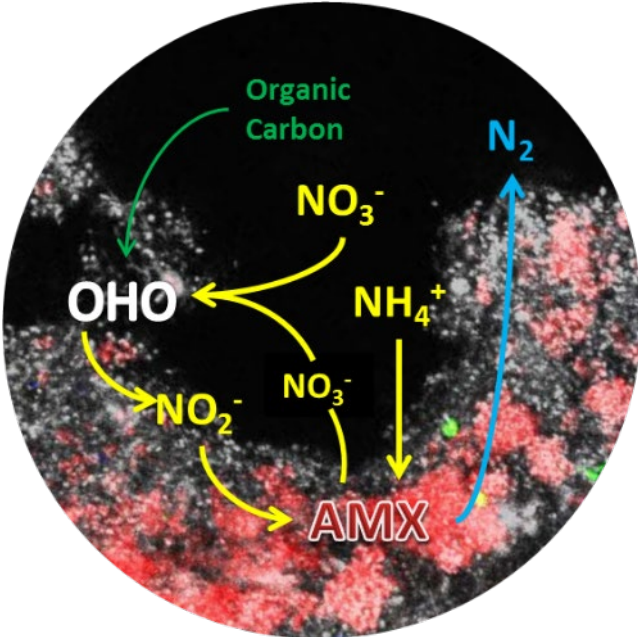
Potentially due to:

- Low DO driven by AvN
- Ammonia residual
- Optimized aeration control



The future!





HRSD Commission Meeting Minutes
August 24, 2021

Attachment #4

Agenda Item 5. Subordinate Trust Agreement Exclusion of Certain Locality Improvements from Calculation of Operating Expenses Resolution

Hampton Roads Sanitation District
Resolution of
August 24, 2021

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION
EXCLUDING CERTAIN LOCALITY IMPROVEMENTS FROM CALCULATION OF
OPERATING EXPENSES FOR PURPOSES OF THE SUBORDINATE TRUST
AGREEMENT

Adopted August 24, 2021

RESOLUTION

RESOLUTION EXCLUDING CERTAIN LOCALITY IMPROVEMENTS FROM CALCULATION OF OPERATING EXPENSES FOR PURPOSES OF THE DISTRICT'S SUBORDINATE TRUST AGREEMENT

WHEREAS, the Hampton Roads Sanitation District (the "District") was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the "Commission"), created by said Chapter 407, is the governing body of the District; and

WHEREAS, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the "Act"), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District;

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Act and pledged for their payment, for the purpose of paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and

WHEREAS, as provided by the Act, the District is constituted a political subdivision of the Commonwealth of Virginia and established as a governmental instrumentality to provide for the public health and welfare; and

WHEREAS, the Commission has previously authorized the execution and delivery of a Trust Agreement, dated as of March 1, 2008 (as the same may be supplemented and further supplemented and amended from time to time, the "Senior Trust Agreement"), between the District and The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor in interest to The Bank of New York, the "Senior Trustee"), to secure the payment of Senior Obligations (as defined in the Senior Trust Agreement) of the District, such Senior Obligations being payable from the Net Revenues (as defined in the Senior Trust Agreement) of the District; and

WHEREAS, the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement), the payment on which will be, in all cases, subordinate and junior in right of payment to the prior payment in full of the Senior Obligations; and

WHEREAS, to secure the payment of and provide for the issuance of such Subordinated Indebtedness, the Commission authorized the execution and delivery of a Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016 (as so amended and restated, the "Trust Agreement"), between the District and The Bank of New York Mellon, as Trustee (in such capacity, the "Trustee"), to provide for the issuance of Subordinate Indebtedness (as defined in the Trust Agreement);

WHEREAS, the Commission has previously issued several series of Subordinated Indebtedness in accordance with the Trust Agreement;

WHEREAS, in connection with certain covenants and agreements of the Commission contained in the Trust Agreement, the term "Operating Expenses" excludes for the purpose of such term, "expenses for improvements that will not be owned by the District but which will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System;"

WHEREAS, attached as Exhibit A to this Resolution is a list of certain improvements to assets not owned by the District but instead by localities in the District's service area (the "Locality Improvements"); and

WHEREAS, information has been presented to the Commission at this meeting to the effect that notwithstanding that such Locality Improvements will not be owned by the District, each such Locality Improvement will maintain or improve the integrity of the Wastewater System;

Now, Therefore, the HAMPTON ROADS SANITATION DISTRICT COMMISSION DOES HEREBY RESOLVE, as follows:

Section 1. Definitions. Capitalized words and terms used in this Resolution and not defined herein shall have the same meanings in this Resolution as such words and terms are given in the Trust Agreement.

Section 2. Exclusion of Locality Improvements from Calculation of Operating Expenses for Purposes of Trust Agreement. Based on the information presented to the Commission at this meeting, the Commission hereby determines that each of the Locality Improvements described in Exhibit A to this Resolution will maintain or improve the integrity of the Wastewater System and shall, accordingly, be excluded from the calculation of "Operating Expenses" for the purposes of the Trust Agreement.

Section 3. No Effect on Calculation of Operating Expenses for Other Purposes. Notwithstanding the Commission's determination to exclude the Locality Improvements from the calculation of "Operating Expenses" for purposes of the Trust Agreement, this Resolution shall not, in and of itself, affect the calculation of operating expenses by the District for any other purpose, including, but not limited to, the calculation of "Operating Expenses" for purposes of the Senior Trust Agreement or the presentation of financial information in the District's audited financial statements.

Section 4. Further Actions. The Chairman of the Commission, Vice Chairman of the Commission, the General Manager of the District and the Director of Finance of the District (each,

a “Delegate”), any of whom may act, are each authorized and directed (without limitation except as may be expressly set forth herein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effectuate the actions contemplated by this Resolution.

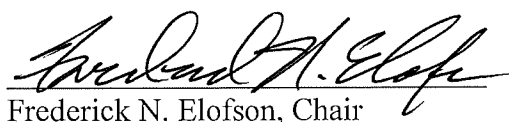
Section 5. Delegates’ Certificate. Each Delegate may execute a Certificate or Certificates evidencing the determinations made or other actions carried out pursuant to the authority granted in this Resolution, and any such Certificate shall be conclusive evidence of the actions or determinations as stated therein.

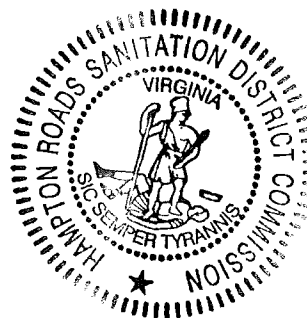
Section 6. Cumulative Effect. This Resolution shall not be interpreted to rescind or effect any prior resolution of the Commission with respect to locality improvements identified in such prior resolution; and all such prior resolutions and this Resolution shall be deemed to be cumulative in effect.

Section 7. Effective Date. This Resolution shall take effect immediately upon its passage, but with effect relating back to the date of the incurrence of any expense relating to the Locality Improvements.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on August 24, 2021.


Frederick N. Elofson, Chair



LOCALITY IMPROVEMENTS

AT014302: Atlantic Service Area I-I Reduction Phase II (CHES)

Project Description: CHES-032 General I/I Reduction Plan; CHES-047 Data-Driven I/I Reduction Plan; CHES-111 General I/I Reduction Plan.

Project Justification: As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this \$200+ million investment will significantly reduce sanitary sewer overflows (SSO) volume at the 5-year level of service by 47 percent.

Approximate Project Cost: \$12,171,000

CE011830: Little Creek Pump Station Modifications

Project Description: There are five pumping stations associated with Little Creek Amphibious Base. HRSD will be responsible for upgrading one station to meet future system pressures. Two other stations are being upgraded by the Navy to meet the future system pressures and the remaining two stations were determined to be adequate for the future conditions.

Project Justification: The project is needed to ensure that Little Creek's sewer pumping stations can meet HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth plant closure.

Approximate Project Cost: \$381,000

CE011835: Virginia Beach City Pump Station Upgrades, Phase V

Project Description: This project is to complete upgrades on City of Virginia Beach Pump Stations that cannot meet the new pressure policy post-2021. Pump Stations 309 (Lake Front Village) and 310 (Lake Shores West) are included in this effort. This project must be substantially complete by June 2021. The City of Virginia Beach will administer design and construction with reimbursement from HRSD for the required upgrades. All betterments to the stations will be paid for by the City.

Project Justification: The project is needed to ensure that the Virginia Beach pump stations can meet HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth plant closure.

Approximate Project Cost: \$1,433,000

CE011836: Norfolk City Pump Station Upgrades

Project Description: This project is to complete upgrades on the City of Norfolk Pump Station 124 (Airport PS) that cannot meet the new pressure policy post-2021. HRSD completed a Preliminary Engineering Study in 2018. The City of Norfolk will administer design and construction with reimbursement from HRSD for the required upgrades. All betterments to the station will be paid for by the City.

Project Justification: This project is needed to ensure that the City of Norfolk Pump Station 124 can meet HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth Treatment Plant closure.

Approximate Project Cost: \$1,200,000

VP018301: VIP Service Area I-I Reduction Phase I (PORTS)

Project Description: PORT-01 Comprehensive I/I Reduction Plan; PORT-02 General I/I Reduction Plan.

Project Justification: As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this \$200+ million investment will significantly reduce sanitary sewer overflow (SSO) volume at the 5-year level of service by 47 percent.

Approximate Project Cost: \$15,583,000

VP018303: VIP Service Area I-I Reduction Phase III (PORTS)

Project Description: PORT-04 General I/I Reduction Plan; PORT-04-LOP65-1 Data-Driven I/I Reduction Plan; PORT-04-LOP65-2 Data-Driven I/I Reduction Plan; PORT-04-LOP65-3 Data-Driven I/I Reduction Plan.

Project Justification: As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this \$200+ million investment will significantly reduce sanitary sewer overflow (SSO) volume at the 5-year level of service by 47 percent.

Approximate Project Cost: \$11,206,000

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #5

Agenda Item 6. Water Infrastructure and Innovation Act (WIFIA) Tranche 2 Closing Resolution and Presentation

**Hampton Roads Sanitation District
Resolution of
August 24, 2021**

HAMPTON ROADS SANITATION DISTRICT COMMISSION

**RESOLUTION
AUTHORIZING THE ISSUANCE AND AWARD OF
A HAMPTON ROADS SANITATION DISTRICT
SUBORDINATE WASTEWATER REVENUE BOND**

Adopted August 24, 2021

Resolution

**RESOLUTION AUTHORIZING THE ISSUANCE AND
AWARD OF A HAMPTON ROADS SANITATION DISTRICT
SUBORDINATE WASTEWATER REVENUE BOND.**

WHEREAS, the Hampton Roads Sanitation District (the “District”) was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the “Commission”), created by said Chapter 407, is the governing body of the District; and

WHEREAS, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Act”), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District,

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Act and pledged for their payment, for the purpose of paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and

WHEREAS, as provided by the Act, the District is constituted a political subdivision of the Commonwealth of Virginia and established as a governmental instrumentality to provide for the public health and welfare; and

WHEREAS, the Commission has previously authorized the execution and delivery of a Master Trust Indenture dated as of December 1, 1993, as amended and restated March 1, 2008 (as supplemented and as further amended and supplemented from time to time, the “Senior Trust Agreement”), between the District and The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor in interest to The Bank of New York, the “Senior Trustee”), to secure the payment of Senior Obligations (as defined in the Senior Trust Agreement) of the District, such Senior Obligations being payable from the Net Revenues (as defined in the Senior Trust Agreement) of the District; and

WHEREAS, pursuant to an Amendment dated as of October 1, 2019 (effective as of November 20, 2019) to the Trust Agreement (the “Amendment”), between the District and the Senior Trustee, the District agreed that, after the execution and delivery of the Amendment, it would not issue, incur or assume any Senior Obligations, except in connection with the exchange of Senior Obligations or the replacement of mutilated, destroyed, stolen or lost Senior Obligations; and

WHEREAS, the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement), the payment on which will be, in all cases, subordinate and junior in right of payment to the prior payment in full of the Senior Obligations; and

WHEREAS, to secure the payment of and provide for the issuance of such Subordinated Indebtedness, the Commission authorized the execution and delivery of a Trust Agreement dated as of October 1, 2011 (the “Original Trust Agreement”), as amended and restated as of March 1, 2016 (the “Amended and Restated Trust Agreement”, and the Amended and Restated Trust Agreement, as further supplemented and amended from time to time, the “Trust Agreement”), each by and between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the “Trustee”), to provide for the issuance of Parity Obligations (as defined in the Trust Agreement); and

WHEREAS, the Congress of the United States of America enacted the Water Infrastructure Finance and Innovation Act, as amended by Section 1445 of the Fixing America’s Surface Transportation Act of 2015, as further amended by Section 5008 of the Water Infrastructure Improvements For the Nation Act of 2016 and by Section 4201 of America’s Water Infrastructure Act of 2018 (collectively, as the same may be amended from time to time, the “WIFIA Act”), which is codified as 33 U.S.C. §§ 3901-3914; and

WHEREAS, the WIFIA Act authorizes the United States Environmental Protection Agency, an agency of the United States of America, acting by and through the Administrator of the Environmental Protection Agency (the “WIFIA Lender”) to enter into agreements to provide financial assistance with one or more eligible entities to make secured loans with appropriate security features to finance a portion of the eligible costs of projects eligible for assistance; and

WHEREAS, the District has determined to undertake its Sustainable Water Initiative for Tomorrow (SWIFT) Program (the “SWIFT Program”) at an estimated total cost of \$2,139,829,508 and has requested an estimated \$1,048,516,458 in total financial assistance from the WIFIA Lender to pay a portion of the eligible costs of the projects under the SWIFT Program, which assistance is expected to be allocated across multiple loan tranches; and

WHEREAS, on September 28, 2020, the District, acting by and through the Commission, and the WIFIA Lender, entered into that certain WIFIA Master Agreement (the “WIFIA Master Agreement”), pursuant to which the WIFIA Lender agreed to make funding available to the District for a portion of the eligible project costs of the projects under the SWIFT Program; and

WHEREAS, the District, acting by and through the Commission, and the WIFIA Lender desire to (a) execute that certain WIFIA Loan Term Sheet dated the date of execution and delivery thereof (the “WIFIA Tranche 2 Term Sheet”), and (b) enter into that certain WIFIA Loan Agreement, dated the date of execution and delivery thereof (the “WIFIA Tranche 2 Loan Agreement”), both addressing the terms by which the WIFIA Lender will make a loan to the District in an aggregate amount equal to the principal advances thereunder up to \$476,581,587 (excluding any amount of interest that is capitalized), to pay a portion of the eligible costs related to the Sustainable Water Initiative for Tomorrow (SWIFT) – Tranche 2 Project (the “Tranche 2 Project”); and

WHEREAS, the Commission has determined to provide for the issuance under the Trust Agreement at this time of a revenue bond of the District (the “Tranche 2 Bond”) in the form of a draw-down bond, in an amount equal to the aggregate amount of principal advances made thereunder up to \$476,581,587, plus the accumulated amount of any interest that is capitalized, to evidence the District’s payment obligation to the WIFIA Lender, in its capacity as the Holder, for amounts drawn, from time to time, under the WIFIA Tranche 2 Loan Agreement; and

WHEREAS, there have been presented at this meeting draft copies of the following documents relating to the issuance and sale of the Tranche 2 Bond and the financing of the Tranche 2 Project:

- (a) a Ninth Supplemental Trust Agreement (the “Supplemental Agreement”), by and between the District and the Trustee, supplementing the Trust Agreement and relating to the Tranche 2 Bond;
- (b) the WIFIA Tranche 2 Term Sheet; and
- (c) the WIFIA Tranche 2 Loan Agreement, which is subject to the terms of the WIFIA Master Agreement; and

Now, Therefore, the HAMPTON ROADS SANITATION DISTRICT COMMISSION DOES HEREBY RESOLVE, as follows:

Section 1. Definitions. Capitalized words and terms used in this Resolution and not defined herein shall have the same meanings in this Resolution as such words and terms are given in the Supplemental Agreement (or, if not defined therein, in the Trust Agreement).

Section 2. Authorization of Bond. In order to provide funds required to finance a portion of the eligible costs of the Tranche 2 Project and pay certain expenses incurred in connection with the Tranche 2 Bond by the District and pursuant to the authority granted to it by the Act, the Commission hereby authorizes the issuance of a Hampton Roads Sanitation District Subordinate Wastewater Revenue Bond (Federally Taxable), in a principal amount equal to the aggregate amount of principal advances made thereunder up to Four Hundred Seventy-Six Million Five Hundred Eighty-One Thousand Five Hundred Eighty-Seven Dollars (\$476,581,587), subject to adjustment as described below, dated as of such date, designated with such an appropriate series designation for the calendar year in which issued, payable in installments in such amounts and on such dates in such years not later than forty (40) years from the date of its issuance, and bearing interest at such rate set forth on such Tranche 2 Bond, on a federally taxable basis, all as determined by the District Representatives (hereinafter defined), any of whom may act, and in accordance with the Supplemental Agreement.

The Commission finds and determines that it is in the best interest of the District to authorize a portion of interest accruing prior to and during construction of the Tranche 2 Project, and for a reasonable time thereafter up to one year following substantial completion of the respective integrated components of the Tranche 2 Project, to be capitalized and otherwise to authorize additional working capital and interest reserves. The Commission hereby authorizes the amount of principal of the Tranche 2 Bond referenced above to be increased by a maximum amount of \$52,000,000 to provide for such capitalized interest, working capital and interest reserves,

resulting in a maximum principal maturity amount (or maximum accreted amount) of the Tranche 2 Bond of Five Hundred Twenty-Eight Million Five Hundred Eighty-One Thousand Five Hundred Eighty-Seven Dollars (\$528,581,587), all as determined by the District Representatives, any of whom may act, and in accordance with the Supplemental Agreement.

The Commission hereby determines that the issuance of the Tranche 2 Bond in accordance with the terms authorized above will be in the best interests of the District.

The Tranche 2 Bond shall be issued as a single, registered bond, in an initial denomination of \$476,581,587 and shall be numbered R-1. Payments of principal of and interest on the Tranche 2 Bond shall be made by the District or the Trustee to the registered owner of the Tranche 2 Bond in such manner as is set forth in the Trust Agreement and Section 8(c) of the WIFIA Master Agreement.

Section 3. Method of Sale. The Tranche 2 Bond shall be issued, sold and awarded to the WIFIA Lender pursuant to the terms of this resolution, the WIFIA Tranche 2 Loan Agreement and the Supplemental Agreement.

Section 4. Redemption. The Tranche 2 Bond shall be subject to optional redemption prior to maturity as set forth in the Supplemental Agreement.

Section 5. Application of Bond Proceeds. The proceeds of the Tranche 2 Bond shall be applied as provided in Article III of the Supplemental Agreement.

Section 6. Authorization of Basic Documents. The forms, terms and provisions of each of the Supplemental Agreement, the WIFIA Tranche 2 Term Sheet and the WIFIA Tranche 2 Loan Agreement (together, the "Basic Documents") are hereby approved in all respects, and the District Representatives are hereby authorized and directed to execute and deliver the Basic Documents in substantially the forms presented to this meeting, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery shall be conclusive evidence of the approval and authorization thereof by the District.

Section 7. Execution of Bond. The form of the Tranche 2 Bond set forth in the Supplemental Agreement is hereby approved in all respects, and the Chairman or Vice Chairman and the Secretary or any Assistant Secretary of the Commission are hereby authorized and directed to execute, by manual or facsimile signature, as provided in such form of the Tranche 2 Bond, and to deliver to the Bond Registrar for authentication on behalf of the District, the Tranche 2 Bond in definitive form, with such changes, modifications and deletions as they, with the advice of counsel, may deem necessary, appropriate and consistent with the Amended and Restated Trust Agreement and the Supplemental Agreement; such execution and delivery shall be conclusive evidence of the approval and authorization thereof by the District.

Section 8. Authorization and Delivery of the Tranche 2 Bond. Upon its execution in the form and manner set forth in the Trust Agreement, the Tranche 2 Bond shall be deposited with the Bond Registrar for authentication, and the Bond Registrar is hereby authorized and directed to authenticate such Tranche 2 Bond and, upon the due and valid execution of the Basic Documents, the Trustee shall cause the Bond Registrar to deliver the Tranche 2 Bond to the WIFIA

Lender, in accordance with and subject to the provisions of Section 209 of the Trust Agreement and Section 2.1 of the Supplemental Agreement.

Section 9. District Representatives. Each of the Chairman of the Commission, Vice Chairman of the Commission, General Manager and Director of Finance are hereby appointed a “District Representative” within the meaning of such term under the Trust Agreement, with full power to carry out the duties set forth therein. Any one or more of the District Representatives may act for and on behalf of the District.

Section 10. Further Actions. The District Representatives are each authorized and directed (without limitation except as may be expressly set forth herein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effectuate the transactions contemplated by the Basic Documents and the Trust Agreement.

Section 11. Officer’s Certificate. Each District Representative may execute an Officer’s Certificate or Officer’s Certificates evidencing the determinations made or other actions carried out pursuant to the authority granted in this Resolution, and any such Officer’s Certificate shall be conclusive evidence of the actions or determinations as stated therein.

Section 12. Ratification of Prior Acts. The actions heretofore taken by the District Representatives in connection with the proposed issuance of the Tranche 2 Bond are hereby ratified.

Section 13. Sunset Provision. The Tranche 2 Bond may not be issued pursuant to the authority provided by this Resolution after June 30, 2022.

Section 14. Rate Schedule. In compliance with Section 22 of the Act, incorporated herein the same as if set forth verbatim herein, is the current “Rate Schedule For all Wastewater and Associated Charges effective July 1, 2021” for the use of, and for the services and facilities furnished or to be furnished by, the wastewater disposal system or systems and the wastewater improvements, for which the Tranche 2 Bond is to be issued. Such schedule appears in full on the District’s website, www.hrsd.com/finance.

Section 15. Effective Date. This Resolution shall take effect immediately upon its passage.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on August 24, 2021.


Frederick N. Elofson, Chair



**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY**

WIFIA LOAN AGREEMENT

for up to \$476,581,587

with

HAMPTON ROADS SANITATION DISTRICT

for the

**SUSTAINABLE WATER INITIATIVE FOR TOMORROW
(SWIFT) – TRANCHE 2 PROJECT
(WIFIA – N19152VA)**

Dated as of [●], 2021

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SCHEDULES

SCHEDULE I – Project Budget

SCHEDULE II – Construction Schedule

SCHEDULE III – Project

SCHEDULE 12(n) – Construction Contracts

EXHIBITS

EXHIBIT A – Anticipated WIFIA Loan Disbursement Schedule

EXHIBIT B – WIFIA Debt Service

WIFIA LOAN AGREEMENT

THIS WIFIA LOAN AGREEMENT (this “**Agreement**”), dated as of [●], 2021, is by and between **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia, with an address at 1434 Air Rail Avenue, Virginia Beach, VA 23455 (the “**Borrower**”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “**Commission**”), and the **UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**, an agency of the United States of America, acting by and through the Administrator of the Environmental Protection Agency, with an address at 1200 Pennsylvania Avenue NW, Washington, DC 20460 (the “**WIFIA Lender**”).

RECITALS:

WHEREAS, the Congress of the United States of America enacted the Water Infrastructure Finance and Innovation Act, as amended by Section 1445 of the Fixing America’s Surface Transportation Act of 2015, as further amended by Section 5008 of the Water Infrastructure Improvements For the Nation Act of 2016 and by Section 4201 of America’s Water Infrastructure Act of 2018, which is codified as 33 U.S.C. §§ 3901-3914;

WHEREAS, the Act authorizes the WIFIA Lender to enter into agreements to provide financial assistance with one or more eligible entities to make secured loans with appropriate security features to finance a portion of the eligible costs of projects eligible for assistance;

WHEREAS, the Borrower submitted an application for WIFIA financial assistance on March 27, 2020, and the Borrower and the WIFIA Lender entered into that certain WIFIA Master Agreement, dated as of September 28, 2020 (the “**WIFIA Master Agreement**”), pursuant to which the parties thereto have set forth certain common terms and conditions applicable to each WIFIA loan and project under the Master Program;

WHEREAS, the Borrower has submitted a WIFIA Loan Request, received April 19, 2021 (the “**Project WIFIA Loan Request**”), to the WIFIA Lender pursuant to the WIFIA Master Agreement and thereby requested that the WIFIA Lender make the WIFIA Loan (as defined below) in a principal amount not to exceed \$476,581,587 to be used to pay a portion of the Eligible Project Costs related to the Project (as defined below);

WHEREAS, as of the date hereof, the Administrator has approved WIFIA financial assistance for the Project to be provided in the form of the WIFIA Loan, subject to the terms and conditions contained herein and in the WIFIA Master Agreement;

WHEREAS, based on the Project WIFIA Loan Request, the Application, the WIFIA Master Agreement and the representations, warranties and covenants set forth herein and therein, the WIFIA Lender proposes to make funding available to the Borrower through the purchase of the WIFIA Bond (as defined below) to be issued by the Borrower, upon the terms and conditions set forth herein and in the WIFIA Master Agreement;

WHEREAS, the Borrower agrees to repay any amount due pursuant to this Agreement and the WIFIA Bond in accordance with the terms and provisions of this Agreement, the WIFIA Master Agreement, the WIFIA Bond and the Subordinate Trust Agreement; and

WHEREAS, the WIFIA Lender has entered into this Agreement in reliance upon, among other things, the information and representations of the Borrower set forth in the Project WIFIA Loan Request, the Application, the WIFIA Master Agreement, and the supporting information provided by the Borrower.

NOW, THEREFORE, the premises being as stated above, and for good and valuable consideration, the receipt and sufficiency of which are acknowledged to be adequate, and intending to be legally bound hereby, it is hereby mutually agreed by and between the Borrower and the WIFIA Lender as follows:

ARTICLE I DEFINITIONS AND INTERPRETATION

Section 1. Definitions. Each capitalized term used in this Agreement (including in the recitals hereto) and not otherwise defined herein shall have the meaning assigned to such term in the WIFIA Master Agreement. Any term used in this Agreement (including in the recitals hereto) that is defined by reference to any other agreement shall continue to have the meaning specified in such agreement, whether or not such agreement remains in effect. In addition, as used in this Agreement (including in the recitals hereto), the following terms have the following meanings:

“**Agreement**” has the meaning provided in the preamble hereto.

“**Anticipated WIFIA Loan Disbursement Schedule**” means the schedule set forth in Exhibit A (*Anticipated WIFIA Loan Disbursement Schedule*), reflecting the anticipated disbursement of proceeds of the WIFIA Loan, as such schedule may be amended from time to time pursuant to Section 4 (*Disbursement Conditions*).

“**Construction Schedule**” means (a) the initial schedule or schedules on which the construction timetables for the Project are set forth, attached as Schedule II (*Construction Schedule*), and (b) any updates thereto included in the periodic reports submitted to the WIFIA Lender pursuant to Section 16(d) (*Reporting Requirements – Construction Reporting*) of the WIFIA Master Agreement most recently approved by the WIFIA Lender.

“**Final Maturity Date**” means the earlier of (a) June 1, 2060 (or such earlier date as is set forth in an updated Exhibit B (*WIFIA Debt Service*) pursuant to Section 8(d) (*Payment of Principal and Interest – Adjustments to Loan Amortization Schedule*) of the WIFIA Master Agreement); and (b) the Principal Payment Date immediately preceding the date that is thirty-five (35) years following the Substantial Completion Date.

“**First Payment Date**” means the earlier to occur of (a) June 1, 2022 and (b) the Payment Date on or immediately preceding the fifth (5th) anniversary of the Substantial Completion Date.

“**Interest Payment Date**” means each June 1 and December 1.

“**Loan Amortization Schedule**” means the loan amortization schedule reflected in the applicable column of Exhibit B (*WIFIA Debt Service*), as amended from time to time in accordance with Section 8(d) (*Payment of Principal and Interest – Adjustments to Loan Amortization Schedule*) of the WIFIA Master Agreement.

“**Principal Payment Date**” means each June 1 and December 1, beginning on December 1, 2033.

“**Project**” means the Borrower’s Sustainable Water Initiative for Tomorrow (SWIFT) – Tranche 2 Project, located at various locations within the Borrower’s service area, as described in further detail in Schedule III (Project).

“**Project Budget**” means the budget for the Project attached to this Agreement as Schedule I (Project Budget) showing a summary of Total Project Costs with a breakdown of all Eligible Project Costs and the estimated sources and uses of funds for the Project.

“**Project WIFIA Loan Request**” has the meaning provided in the recitals hereto.

“**Projected Substantial Completion Date**” means April 1, 2029, as such date may be adjusted in accordance with Section 16(d) (Reporting Requirements – Construction Reporting) of the WIFIA Master Agreement.

“**WIFIA Bond**” means the Bond issued and delivered by the Borrower in substantially the form of Exhibit A (Form of WIFIA Bond) to the WIFIA Master Agreement.

“**WIFIA Loan**” means the secured loan made by the WIFIA Lender to the Borrower on the terms and conditions set forth herein, in the WIFIA Master Agreement and in the WIFIA Bond, pursuant to the Act, in a principal amount not to exceed \$476,581,587, to be used in respect of Eligible Project Costs with respect to the Project.

“**WIFIA Loan Agreement Effective Date**” means the date of this Agreement.

“**WIFIA Master Agreement**” has the meaning provided in the recitals hereto.

“**WIFIA Resolution**” means that certain Resolution Authorizing the Issuance and Award of a Hampton Roads Sanitation District Subordinate Wastewater Revenue Bond, adopted by the Commission on [August 24], 2021, authorizing the execution and delivery of this Agreement and the WIFIA Bond and certain related actions by the Borrower in connection with the issuance of the WIFIA Loan.

“**WIFIA Series Agreement**” means that certain [Ninth] Supplemental Trust Agreement, dated as of [●], 2021, by and between the Borrower and the Trustee.

Section 2. Interpretation.

(a) Except as otherwise expressly provided herein, the rules of interpretation set forth in Section 2 of the WIFIA Master Agreement shall apply herein, *mutatis mutandis*, as if set out in this Agreement in full (and as if each reference therein to “this Agreement” were a reference to this Agreement, and each reference to any “WIFIA Loan” or any “WIFIA Bond” were a reference, respectively, to the WIFIA Loan or the WIFIA Bond as such terms are defined in this Agreement).

(b) This Agreement is one of the WIFIA Loan Agreements referenced in the WIFIA Master Agreement.

ARTICLE II THE WIFIA LOAN

Section 3. WIFIA Loan Amount. The principal amount of the WIFIA Loan shall not exceed \$476,581,587. WIFIA Loan proceeds available to be drawn shall be disbursed from time to time in accordance with Section 4 (*Disbursement Conditions*) hereof and Section 11(c) (*Conditions Precedent – Conditions Precedent to Disbursements*) of the WIFIA Master Agreement.

Section 4. Disbursement Conditions. The WIFIA Loan shall be disbursed in accordance with Section 4 (*Disbursement Conditions*) of the WIFIA Master Agreement.

Section 5. [Reserved].

Section 6. Interest Rate. The interest rate with respect to the Outstanding WIFIA Loan Balance for the WIFIA Loan shall be [●] and [●] hundredths percent ([●]%) per annum. Interest will accrue and be computed on the Outstanding WIFIA Loan Balance from time to time pursuant to, and otherwise in accordance with, with Section 6 (*Interest Rate*) of the WIFIA Master Agreement.

Section 7. [Reserved].

Section 8. Payment of Principal and Interest.

(a) Payment of WIFIA Debt Service. Payments of WIFIA Debt Service shall be made by the Borrower on each Payment Date occurring on or after the First Payment Date as provided in Section 8(a) (*Payment of Principal and Interest – Payment of WIFIA Debt Service*) of the WIFIA Master Agreement.

(b) WIFIA Bond. As evidence of the Borrower's obligation to repay the WIFIA Loan, the Borrower shall issue and deliver to the WIFIA Lender, on or prior to the WIFIA Loan Agreement Effective Date, the WIFIA Bond substantially in the form of Exhibit A (*Form of WIFIA Bond*) to the Master Agreement, having a maximum principal amount of \$476,581,587.

Section 9. Prepayment. The WIFIA Bond shall be prepaid in accordance with Section 9(a) (*Prepayment – Mandatory Prepayment*) of the WIFIA Master Agreement. The Borrower may prepay the WIFIA Loan in accordance with Section 9(b) (*Prepayment – Optional Prepayments*) of the WIFIA Master Agreement.

Section 10. Fees and Expenses. The Borrower shall pay to the WIFIA Lender, in each case pursuant to and in accordance with Section 10 (*Fees and Expenses*) of the WIFIA Master Agreement:

(a) a one-time Servicing Set-Up Fee equal to \$[26,610];

(b) an annual Construction Period Servicing Fee equal to \$[26,610] per annum; provided that the initial Construction Period Servicing Fee shall be in a pro-rated amount equal to \$[4,430] in accordance with Section 10(a)(ii) (*Fees and Expenses*) of the WIFIA Master Agreement; and

(c) an Operating Period Servicing Fee equal to \$[7,990] per annum; and

(d) any other applicable fees, costs, charges and expenses pursuant to, and otherwise in accordance with, Section 10 (*Fees and Expenses*) of the WIFIA Master Agreement.

ARTICLE III CONDITIONS PRECEDENT

Section 11. Conditions Precedent.

(a) Conditions Precedent to Effectiveness. The effectiveness of this Agreement is subject to the satisfaction, or the WIFIA Lender's written waiver, as determined by the WIFIA Lender in its sole discretion, of each of the conditions precedent to the effectiveness of this Agreement set forth in Section 11(b) (*Conditions Precedent – Conditions Precedent to Effectiveness of Each WIFIA Loan Agreement*) of the WIFIA Master Agreement (each of which is incorporated by reference herein, *mutatis mutandis*, as if set out in this Agreement in full and as if each reference therein to any "Project," any "WIFIA Loan," any "WIFIA Bond," or any "WIFIA Loan Agreement" were a reference, respectively, to the Project, the WIFIA Loan, the WIFIA Bond, or this Agreement (as such terms are defined in this Agreement)).

(b) Conditions Precedent to Disbursements. Notwithstanding anything in this Agreement to the contrary, the WIFIA Lender's obligation to make any disbursement of the WIFIA Loan to the Borrower (including the initial disbursement hereunder) is subject to the satisfaction or the WIFIA Lender's written waiver, as determined by the WIFIA Lender in its sole discretion, of (i) each of the conditions precedent to disbursements set forth in Section 11(c) (*Conditions Precedent – Conditions Precedent to Disbursements*) of the WIFIA Master Agreement (each of which is incorporated by reference herein, *mutatis mutandis*, as if set out in this Agreement in full and as if each reference therein to any "WIFIA Loan" or any "WIFIA Loan Agreement" were a reference, respectively, to the WIFIA Loan or this Agreement (as such terms are defined in this Agreement)), and (ii) with respect to the initial disbursement hereunder the proceeds of which are or will be applied at any time to fund or reimburse Eligible Project Costs in respect of the Boat Harbor Treatment Plant Pump Station Conversion and Transmission Force Main Sections 1 and 2 components or the Boat Harbor Transmission Force Main Land Acquisition component of the Project, demonstration by the Borrower that all Governmental Approvals necessary as of the time of such disbursement for the development, construction, operation and maintenance of such components have been issued and are in full force and effect (and are not subject to any notice of violation, breach or revocation), including that the Borrower is prepared to implement or has implemented the Essential Fish Habitat conservation recommendations that EPA has adopted under the Magnuson-Stevens Fishery Conservation and Management Act.

ARTICLE IV REPRESENTATIONS AND WARRANTIES

Section 12. Representations and Warranties of Borrower. The representations and warranties set out in Section 12 (*Representations and Warranties of Borrower*) of the WIFIA Master Agreement shall be made on the WIFIA Loan Agreement Effective Date and as of each date on which any disbursement of the WIFIA Loan is requested or made, except as otherwise expressly provided in Section 12 of the WIFIA Master Agreement. Each such representation and warranty is incorporated by reference herein, *mutatis mutandis*, for the benefit of the WIFIA Lender as if set out in this Agreement in full (and as if each reference therein to “this Agreement” were a reference to this Agreement and as if each reference therein to (a) any “Project” or the “Master Program”, (b) any “WIFIA Loan” or (c) any “WIFIA Bond” were a reference, respectively, to (i) the Project, (ii) the WIFIA Loan or (iii) the WIFIA Bond (as such terms are defined in this Agreement)). The Borrower acknowledges that it makes such representations and warranties with the intention of inducing the WIFIA Lender to enter into this Agreement and the other WIFIA Loan Documents and to advance the WIFIA Loan to the Borrower, and that the WIFIA Lender has entered into this Agreement and the other WIFIA Loan Documents on the basis of, and in full reliance on, each such representation and warranty.

Section 13. Representations and Warranties of WIFIA Lender. The representations and warranties set out in Section 13 (*Representations and Warranties of WIFIA Lender*) of the WIFIA Master Agreement shall be made on the WIFIA Loan Agreement Effective Date, *mutatis mutandis*, for the benefit of the Borrower as if set out in this Agreement in full (and as if each reference therein to any “WIFIA Loan” were a reference to the WIFIA Loan (as such term is defined in this Agreement)).

ARTICLE V COVENANTS

Section 14. Covenants. The Borrower covenants and agrees, until the date the WIFIA Loan and all of the obligations of the Borrower under the WIFIA Loan Documents with respect to the WIFIA Loan or the Project (other than contingent indemnity obligations) have been irrevocably paid in full in immediately available funds and the WIFIA Lender no longer has any commitment to make disbursements under this Agreement to the Borrower, unless the WIFIA Lender waives compliance in writing, to comply with each of the covenants set forth in the WIFIA Master Agreement, including Section 14 (*Affirmative Covenants*), Section 15 (*Negative Covenants*) and Section 16 (*Reporting Requirements*) of the WIFIA Master Agreement, which covenants are incorporated by reference herein *mutatis mutandis* as if fully set forth herein (and as if each reference therein to “this Agreement” were a reference to this Agreement and as if each reference therein to (a) any “Project” or the “Master Program,” (b) any “WIFIA Loan” or (c) any “WIFIA Bond” were a reference, respectively, to (i) the Project, (ii) the WIFIA Loan or (iii) the WIFIA Bond (as such terms are defined in this Agreement)).

Section 15. [Reserved].

Section 16. [Reserved].

ARTICLE VI EVENTS OF DEFAULT

Section 17. Events of Default and Remedies.

(a) Each Event of Default set out in Section 17 (Events of Default and Remedies) of the WIFIA Master Agreement shall constitute an Event of Default under this Agreement, except as otherwise expressly provided in Section 17 (Events of Default and Remedies) of the WIFIA Master Agreement.

(b) Upon the occurrence and during the continuation of any Event of Default hereunder, the WIFIA Lender shall have each of the rights and remedies to which it is entitled as provided in and with the same effect as described in Section 17 (Events of Default and Remedies) of the WIFIA Master Agreement.

**ARTICLE VII
MISCELLANEOUS**

Section 18. Governing Law. This Agreement shall be governed by the federal laws of the United States of America, if and to the extent such federal laws are applicable, and the internal laws of the Commonwealth, if and to the extent such federal laws are not applicable.

Section 19. Effectiveness. This Agreement shall be effective on the WIFIA Loan Agreement Effective Date.

Section 20. Termination. This Agreement shall terminate upon the irrevocable payment in full in immediately available funds by the Borrower of the Outstanding WIFIA Loan Balance, together with all accrued interest, fees and expenses with respect thereto; provided that the indemnification requirements of Section 32 (Indemnification) of the Master WIFIA Agreement, as incorporated herein, the reporting and record keeping requirements of Section 14(p) (Affirmative Covenants – Access; Records) of the WIFIA Master Agreement, as incorporated herein, and the payment requirements of Section 10 (Fees and Expenses) shall survive the termination of this Agreement as provided in such sections.

Section 21. Miscellaneous. Article VII (Miscellaneous) of the WIFIA Master Agreement (other than Sections 25 (Governing Law), 34 (Effectiveness) and 35 (Termination) of the WIFIA Master Agreement) shall be incorporated in this Agreement, *mutatis mutandis*, as if set out in this Agreement in full (and as if each reference therein to “this Agreement” were a reference to this Agreement and as if each reference therein to (a) any “Project” or the “Master Program”, (b) any “WIFIA Loan” or (c) any “WIFIA Bond” were a reference, respectively, to (i) the Project, (ii) the WIFIA Loan or (iii) the WIFIA Bond (as such terms are defined in this Agreement)).

[The remainder of this page intentionally left blank; signature pages immediately follow.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first written above.

HAMPTON ROADS SANITATION DISTRICT,
by its authorized representative

By: _____
Name:
Title:

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**, acting by and through
the Administrator of the Environmental Protection
Agency

By: _____
Name: Michael S. Regan
Title: Administrator

SCHEDULE I
PROJECT BUDGET

USES OF FUNDS					
Project Element	Planning	Design	Construction	Other	Total
BH015700 Boat Harbor Treatment Plant Pump Station Conversion	\$1,279,295	\$5,367,000	\$59,710,300	\$13,271,406	\$79,628,000
BH015710 Boat Harbor Treatment Plant Transmission Force Main Section 1	\$1,789,000	\$5,859,000	\$58,648,000	\$13,259,200	\$79,555,200
BH015720 Boat Harbor Treatment Plant Transmission Force Main Section 2	\$400,000	\$1,600,000	\$20,020,000	\$4,404,000	\$26,424,000
GN016362 James River Recharge Wells	\$0	\$0	\$35,960,000	\$3,596,000	\$39,556,000
JR013400 James River Advanced Nutrient Reduction Improvements	\$1,237,935	\$5,783,862	\$85,911,025	\$4,413,662	\$97,346,484
NP013810 Nansemond Advanced Nutrient Reduction Improvements Phase I	\$1,000,000	\$0	\$0	\$500,000	\$1,500,000
NP013820 Nansemond Advanced Nutrient Reduction Improvements Phase II	\$3,324,000	\$6,238,000	\$209,082,000	\$43,942,400	\$262,586,400
GN016380 Nansemond SWIFT Facility	\$4,941,000	\$8,752,200	\$293,320,200	\$58,476,000	\$365,489,400
GN016343 James River SWIFT Land Acquisition	\$0	\$12,530,000	\$0	\$0	\$12,530,000
GN016345 Boat Harbor Treatment Plant Pump Station Conversion Land Acquisition	\$0	\$5,000,000	\$0	\$0	\$5,000,000
GN016346 Boat Harbor Transmission Force Main Land Acquisition	\$0	\$2,500,000	\$0	\$500,000	\$3,000,000
Total Project Costs	\$13,971,229	\$53,630,062	\$762,651,524	\$142,362,668	\$972,615,484
Total Eligible Projects	\$13,971,229	\$53,630,062	\$762,651,524	\$142,362,668	\$972,615,484

SOURCES OF FUNDS		
WIFIA Loan	\$476,581,587	49%
Clean Water SRF	\$300,000,000	31%
Cash	\$196,033,897	20%
Total Sources	\$972,615,484	100%

SCHEDULE II**CONSTRUCTION SCHEDULE**

Project Component Name	Start Date	Begin Design	Begin Construction	Substantial Completion
Boat Harbor Treatment Plant Pump Station Conversion	7/01/2021	9/01/2021	7/01/2022	1/01/2025
Boat Harbor Treatment Plant Transmission Force Main Section 1	2/01/2020	6/01/2020	4/01/2021	6/01/2023
Boat Harbor Treatment Plant Transmission Force Main Section 2	2/01/2020	6/01/2020	4/01/2021	6/01/2023
James River Recharge Wells	12/01/2020	6/01/2021	4/01/2022	1/01/2026
James River Advanced Nutrient Reduction Improvements	8/01/2019	10/01/2019	1/01/2021	9/01/2025
Nansemond Advanced Nutrient Reduction Improvements Phase I	4/01/2020	8/01/2020	8/01/2020	8/01/2020
Nansemond Advanced Nutrient Reduction Improvements Phase II	1/01/2020	9/01/2021	9/01/2021	11/01/2025
Nansemond SWIFT Facility	4/01/2021	5/01/2023	8/01/2024	4/01/2029
James River SWIFT Land Acquisition	8/01/2020	N/A	N/A	8/01/2020
Boat Harbor Treatment Plant Pump Station Conversion Land Acquisition	7/01/2021	8/01/2021	8/01/2021	8/01/2021
Boat Harbor Transmission Force Main Land Acquisition	9/01/2021	6/01/2022	6/01/2022	6/01/2022

SCHEDULE III

PROJECT

The Project, the Borrower's Sustainable Water Initiative for Tomorrow (SWIFT) – Tranche 2 Project, consists of the design and construction of new facilities and other improvements to improve the water quality of the Chesapeake Bay. The Project includes the following components:

- (1) Boat Harbor Treatment Plant Pump Station Conversion and Transmission Force Main Sections 1 and 2, which includes the conversion of the Boat Harbor Treatment Plant (“BHTP”) into a pumping station (including equalization and headworks facilities), the subaqueous crossing of the James River to convey flow to the Nansemond Treatment Plant (“NTP”), and the on-land connection of Section 1 to the NTP;
- (2) James River Advanced Nutrient Reduction Improvements, which includes the design, supply, construction, and commissioning of improvements (including nutrient reduction measures) to the secondary treatment process at the James River Treatment Plant (“JRTP”), in order to provide stable source water quality that meets the influent requirements of the full scale SWIFT facility at the JRTP;
- (3) SWIFT Recharge Well, which includes the construction and development of one recharge well and services for the development, logging, testing and conditioning of the well associated with SWIFT at the JRTP site;
- (4) Nansemond SWIFT Facility, which includes the design and construction of advanced water treatment facilities needed to produce SWIFT water at the NTP;
- (5) Nansemond Advanced Nutrient Reduction Improvements Phases 1 and 2, which includes the planning, design and construction of improvements to the NTP to support reliable treatment of raw, screened wastewater from the BHTP service area and raw influent from the NTP service area; and
- (6) Land Acquisition, which includes the purchase and acquisition of land (a) from the City of Newport News to accommodate the construction of infrastructure for the James River SWIFT project, (b) for the BHTP pump station conversion, and (c) to accommodate the Boat Harbor transmission force main of seven recharge wells and one monitoring well.

SCHEDULE 12(n)

CONSTRUCTION CONTRACTS

A. Existing Construction Contracts

None.

B. Additional Construction Contracts

Contract Name / Number	Estimated Scope of Work	Estimated Bid Date
BH015700 Boat Harbor Treatment Plant Pump Station Conversion	The Boat Harbor Treatment Plant will be converted to a pumping station, including equalization and headworks facilities while remaining in operation for wastewater treatment during conversion. The new infrastructure will be designed to meet HRSD's resiliency standards and consider remote operation and access in future conditions including sea level rise.	Nov-22
BH015710 Boat Harbor Treatment Plant Transmission Force Main Section 1	The project consists of the subaqueous crossing of the James River to convey flow to the Nansemond Treatment Plant. This project is anticipated to be delivered by the design-build procurement method due to the unique construction techniques required and coordination of construction schedule and permit requirements.	Sep-22
BH015720 Boat Harbor Treatment Plant Transmission Force Main Section 2	The project consists of the on-land connection of Section 1 to the Nansemond Treatment Plant. This project is generally a standard Interceptor Force Main (IFM) utilizing open cut and a Horizontal Direction Drill (HDD) crossing of I-664. This project is anticipated to be delivered by the design-bid-build procurement method due to the standard construction methods required. HRSD desires to construct this section of the IFM soon to accommodate development of the Tidewater Community College (TCC) property.	Aug-22
GN016362 James River Recharge Wells (off-site)	This project includes the construction of seven off site recharge wells and associated monitoring wells; services for the development, logging, testing, and conditioning of the wells associated with SWIFT at the James River Treatment Plant. The scope does not include the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.	Jun-21
JR013400 James River Advanced Nutrient	James River Treatment Plant Advanced Nutrient Reduction Improvements (JR013400) project includes the design, construction, and commissioning of improvements to the secondary treatment process at the JRTP. These advanced secondary treatment improvements, including nutrient	Nov-21

<p>Reduction Improvements†</p>	<p>reduction measures, will be required to provide stable source water quality that meets the influent requirements of the Full Scale SWIFT Facility at the JRTP. This project includes the design, supply, construction, and commissioning of the following major new elements:</p> <ul style="list-style-type: none"> a. Administration Building b. Maintenance Building c. Electrical Building d. Main Power Distribution Equipment and Facilities e. Generator and Fuel Storage Facilities f. Wastewater Chemical Storage and Feed Equipment Facilities g. Integrated Fixed Film Activated Sludge (IFAS) Effluent Channel h. Secondary Clarifier Equipment and Facilities i. Moving Bed Bioreactor Equipment and Facilities j. Equalization of Well Backflush Water k. Hydraulic Connection to Existing Chlorine Contact Facilities l. Main DCS Programming and Equipment m. Mechanical, Electrical, and Plumbing n. Site Work including Stormwater Management o. The project may include demolition of the following existing facilities as needed to complete the Work: <ul style="list-style-type: none"> 1) Main Administration Building including Incoming Power Distribution 2) Bisulfite Storage Building 3) Warehouse Building 4) Portions of Secondary Clarifier Facilities 	
<p>NP013810 Nansemond Advanced Nutrient Reduction Improvements Phase I</p>	<p>This project will involve the preliminary engineering necessary to begin design and construction of improvements to Nansemond Treatment Plant to support reliable treatment of raw, screened wastewater from the Boat Harbor Treatment Plant service area and raw influent from the Nansemond Treatment Plant service area. A Capacity Study determined that nutrient removal and hydraulic upgrades would be required to treat both flows and loads to meet the targeted effluent concentrations.</p> <p>The scope includes preliminary engineering for equalization of primary effluent and upgrades to preliminary and secondary treatment, solids handling including the Struvite Recovery Facility (SRF), disinfection facilities, odor control system, effluent pump station and drain pump station. Preliminary engineering will include planning which will</p>	<p>Aug-20</p>

	determine the appropriate design conditions for the upgraded and new facilities and ensure optimal and efficient treatment performance will be maintained.	
NP013820 Nansemond Advanced Nutrient Reduction Improvements Phase II	This project is for the design and construction of improvements to Nansemond Treatment Plant to support reliable treatment of raw, screened wastewater from the Boat Harbor Treatment Plant service area and raw influent from the Nansemond Treatment Plant service area. A Capacity Study determined that nutrient removal and hydraulic upgrades would be required to treat both flows and loads to meet the targeted effluent concentrations. The scope includes equalization of primary effluent and upgrades to preliminary and secondary treatment, solids handling including the Struvite Recovery Facility (SRF), disinfection facilities, odor control system, effluent pump station and drain pump station. This effort will include all associated pumping, piping, tankage, mechanical, and electrical equipment. This estimate assumes all necessary ancillary facilities will be upgraded as required.	Sep-22
GN016380 Nansemond SWIFT Facility	Nansemond SWIFT will include advanced water treatment facilities needed to produce SWIFT water at the Nansemond Treatment Plant. The scope includes advanced water treatment facilities, conveyance of SWIFT water to the recharge wells, and modifications to the non-potable water system. The scope does not include land acquisition, modifications to the existing outfall system, or improvements to the existing wastewater treatment process to improve the quality of the secondary effluent to meet the influent requirements of the SWIFT treatment facilities. The scope does not include drilling of the recharge and monitoring wells.	Mar-24
GN016343 James River SWIFT Land Acquisition	The James River Land Acquisition Project will provide for the purchase of land from the City of Newport News (City) to accommodate the construction of infrastructure. This land acquisition includes approximately 10 acres of property adjacent to the James River Treatment Plant for plant expansion.	Jun-21
GN016345 Boat Harbor Treatment Plant Pump Station Conversion Land Acquisition	This project will fund the purchase of land that is needed for the pump station.	Aug-21
GN016346 Boat Harbor	Seven recharge wells and one monitoring well are planned to be located on the west side of I-664 across from Nansemond	Jun-22

Transmission Force Main Land Acquisition	TP. This project will fund the purchase of land that is needed for these eight well sites.	
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EXHIBIT A

ANTICIPATED WIFIA LOAN DISBURSEMENT SCHEDULE

<u>Federal Fiscal Year</u>	<u>Amount</u>
2022	\$50,078,048
2023	\$98,305,519
2024	\$249,694,006
2025	\$78,504,014
Total	\$476,581,587

EXHIBIT B
WIFIA DEBT SERVICE¹

[See attached]

¹ **NTD:** WIFIA Lender to provide on the WIFIA Loan Agreement Effective Date.

NINTH SUPPLEMENTAL TRUST AGREEMENT

by and between

HAMPTON ROADS SANITATION DISTRICT

and

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee**

Dated as of [September____], 2021

Relating to

**Subordinate Wastewater Revenue Bond
Series 2021
(Federally Taxable)**

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EXHIBIT A – FORM OF 2021 BOND

THIS NINTH SUPPLEMENTAL TRUST AGREEMENT, dated for convenience of reference as of [September____], 2021 (“**Supplemental Trust Agreement**”), by and between

HAMPTON ROADS SANITATION DISTRICT,

a political subdivision of the Commonwealth of Virginia, by Hampton Roads Sanitation District Commission, the governing body of said District, and

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,

a national banking association duly incorporated and validly existing under the laws of the United States of America and having a corporate trust office in Pittsburgh, Pennsylvania, which is authorized under such laws to exercise trust powers and is subject to examination by federal authority (said banking corporation and any bank or trust company becoming successor Trustee under this Supplemental Trust Agreement being hereinafter sometimes called the “**Trustee**”), supplements the Trust Agreement, dated as of October 1, 2011 (the “**Original Trust Agreement**”), as amended and restated as of March 1, 2016 (the “**Amended and Restated Trust Agreement**”), between the District and The Bank of New York Mellon Trust Company, N.A. (the Amended and Restated Trust Agreement, as amended and supplemented heretofore, by this Supplemental Trust Agreement and from time to time hereafter, the “**Trust Agreement**”),

WITNESSETH:

WHEREAS, the Hampton Roads Sanitation District (the “**District**”) was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the “**Commission**”), created by said Chapter 407, is the governing body of the District; and

WHEREAS, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (said Chapter 66 as so amended being hereinafter sometimes called the “**Enabling Act**”), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District,

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Enabling Act and pledged for their payment, for the purpose of refunding the outstanding bonds, including the payment of any redemption premium thereon, paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and

WHEREAS, the Commission has previously executed and delivered a Master Trust Indenture, dated as of December 1, 1993, as amended and restated March 1, 2008 (as supplemented and as further amended and supplemented from time to time, the “**Senior Trust Agreement**”), between the District and The Bank of New York Mellon Trust Company, N.A., as successor Trustee (in such capacity, the “**Senior Trustee**”), pursuant to which the District may provide for the issuance and incurrence of Senior Obligations (as defined in the Senior Trust Agreement); and

WHEREAS, pursuant to an Amendment dated as of October 1, 2019 (effective as of November 20, 2019) to the Trust Agreement (the “**Amendment**”), between the District and the Senior Trustee, the District agreed that, after the execution and delivery of the Amendment, it would not issue, incur or assume any Senior Obligations, except in connection with the exchange of Senior Obligations or the replacement of mutilated, destroyed, stolen or lost Senior Obligations; and

WHEREAS, Section 705 of the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement) subject to the conditions recited therein; and

WHEREAS, on October 20, 2011, the Commission executed and delivered the Original Trust Agreement to provide for the issuance of Parity Obligations payable solely from the Net Revenues Available for Debt Service derived by the District from its Wastewater System and the money attributable to proceeds of the Bonds and the income from the investment thereof and, coincident with the delivery of the Trust Agreement, determined to execute and deliver a First Supplemental Trust Agreement, dated as of October 1, 2011, to authorize and secure under the Trust Agreement revenue bonds of the District in the aggregate principal amount of Twenty-five Million Dollars (\$25,000,000) (the “**2011 Bonds**”) for the purpose of providing funds, together with other available funds, to (i) provide funds required to finance a portion of the costs of its 2011-2020 Capital Improvement Program and (ii) pay certain expenses incurred in connection with the issuance of the 2011 Bonds by the District; and

WHEREAS, the District has applied for financial assistance from the United States Environmental Protection Agency, an agency of the United States of America, acting by and through the Administrator of the Environmental Protection Agency (the “**WIFIA Lender**”) in order to finance eligible projects which qualify for financing under the Water Infrastructure Finance and Innovation Act, as amended by Section 1445 of the Fixing America’s Surface Transportation Act of 2015, as further amended by Section 5008 of the Water Infrastructure Improvements for the Nation Act of 2016 and by Section 4201 of America’s Water Infrastructure Act of 2018; and

WHEREAS, the District, acting by and through the Commission, and the WIFIA Lender entered into that certain WIFIA Master Agreement, dated as of September 28, 2020 (the “**WIFIA Master Agreement**”), pursuant to which the District may request certain loans for eligible projects under a master program; and

WHEREAS, the District, acting by and through the Commission, and the WIFIA Lender desire to enter into that certain WIFIA Loan Agreement, dated as of the date of execution and delivery thereof (the “**WIFIA 2021 Loan Agreement**”), pursuant to which the WIFIA Lender will

make a loan to the District in the form of principal advances in an aggregate amount up to \$476,581,587.00 (excluding any accumulated amount of interest that is capitalized) (the “**WIFIA Loan**”) to pay a portion of the eligible costs related to the Sustainable Water Initiative for Tomorrow (SWIFT) – Tranche 2 Project (as further described in the WIFIA 2021 Loan Agreement, the “**Project**”); and

WHEREAS, the Commission has determined to provide for the issuance under the Trust Agreement at this time of a revenue bond of the District (the “**2021 Bond**”) in the form of a draw-down bond, with an initial principal amount equal to the aggregate amount of draws thereunder up to \$476,581,587.00, plus any accumulated amount of interest that is capitalized up to \$[52,000,000.00], resulting in a maximum accreted amount of \$[528,581,587.00], to evidence the District’s payment obligation to the WIFIA Lender, in its capacity as the Holder of the 2021 Bond, for amounts drawn, from time to time, under the WIFIA 2021 Loan Agreement; and

WHEREAS, the District is entering into this Supplemental Trust Agreement for the purpose of fixing the details of the 2021 Bond; and

WHEREAS, the Trustee has accepted the trusts created by this Supplemental Trust Agreement and in evidence thereof has joined in the execution hereof;

NOW, THEREFORE, THIS SUPPLEMENTAL TRUST AGREEMENT WITNESSETH: that in consideration of the premises, of the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of the 2021 Bond by the Holder thereof, and also for and in consideration of the sum of One Dollar in hand paid by the Trustee at or before the execution and delivery of this Supplemental Trust Agreement, and for other good and valuable consideration, the receipt whereof is hereby acknowledged, and for the purpose of fixing and declaring the terms and conditions upon which the 2021 Bond is to be issued, authenticated, delivered, secured and accepted by all persons who shall from time to time be or become the Holder thereof, and to secure the payment of the 2021 Bond under this Supplemental Trust Agreement and the interest thereon according to its tenor, purport and effect, and to secure the performance and observance of all the covenants, agreements and conditions, express or implied, therein and herein contained, the Commission has executed and delivered this Supplemental Trust Agreement in the name of and on behalf of the District, and has agreed and covenanted, and does hereby agree and covenant, with the Trustee and with the Holder, from time to time, of the 2021 Bond, or any part thereof, as follows:

(end of Preamble)

ARTICLE I

DEFINITIONS

Section 1.1 Meaning of Words and Terms. In addition to words and terms defined in the Amended and Restated Trust Agreement, which words and terms are used herein as therein defined, or elsewhere in this Supplemental Trust Agreement, the following words and terms as used in this Supplemental Trust Agreement shall have the following meanings, unless some other meaning is plainly intended.

“**2011 Bonds**” has the meaning ascribed to such term in the recitals hereto.

“**2021 Bond**” has the meaning ascribed to such term in the recitals hereto.

“**Amended and Restated Trust Agreement**” has the meaning ascribed to such term in the preamble hereto.

“**Accreted Amount**” means, with respect to the 2021 Bond, an amount equal to (a) the aggregate amount of principal advances made thereunder, *plus* (b) the accumulated amount of accrued and unpaid interest during the Capitalized Interest Period, which shall be equal to the amount shown as the required “Principal Repayment” on the loan amortization table attached as Exhibit B to the WIFIA 2021 Loan Agreement and Schedule A attached to the 2021 Bond, as such table may be revised from time to time in accordance with Section 8(d) of the WIFIA Master Agreement.

“**Amendment**” has the meaning ascribed to such term in the recitals hereto.

“**Capitalized Interest Period**” means the period commencing with the Initial Disbursement Date and ending on (but not including) the earlier of (i) the Interest Payment Date immediately following the date on which the District provides an Early Interest Payment Notice pursuant to the provisions of Section 2.1(f) hereof and (ii) [December 1, 2028]; provided, however, that the Capitalized Interest Period shall terminate immediately upon notification to the District by the WIFIA Lender of an Event of Default in accordance with Section 2.1(g) hereof.

“**Commission**” has the meaning ascribed to such term in the recitals hereto.

“**Default Rate**” means an interest rate equal to the sum of (a) the applicable interest rate on the 2021 Bond *plus* (b) two hundred (200) basis points, but in no event greater than the maximum interest rate permitted by law.

“**District**” has the meaning ascribed to such term in the recitals hereto.

“**Early Interest Payment Notice**” shall mean the written notice provided by the District to the WIFIA Lender indicating that the Capitalized Interest Period will end as of a particular Interest Payment Date sooner than December 1, 2028.

“**Electronic Means**” means, e-mail, facsimile transmission, secure electronic transmission containing applicable authorization codes, passwords and/or authentication keys issued by the

Trustee, or another method or system specified by the Trustee as available for use in connection with its services under this Supplemental Trust Agreement.

“**Enabling Act**” has the meaning ascribed to such term in the recitals hereto.

“**First Payment Date**” means (a) with respect to the first Interest Payment Date, the June 1 or December 1 immediately following the Initial Disbursement Date with respect to the WIFIA Loan, and (b) with respect to the first Principal Payment Date, December 1, 2033.

“**Instructions**” has the meaning ascribed to such term in Section 6.1.

“**Interest Payment Date**” means each June 1 and December 1, commencing on the June 1 or December 1 immediately following the Initial Disbursement Date with respect to the WIFIA Loan.

[“**James River Plant Project Component**” means the particular component of the Project consisting of _____, as described in Schedule III to the WIFIA 2021 Loan Agreement, or such other project component(s) that the District may substitute in accordance with the provisions of the WIFIA Loan Agreement.]

[“**Nansemond/Boat Harbor Project Component**” means the particular components of the Project consisting of _____, as described in Schedule III to the WIFIA 2021 Loan Agreement, or such other project component(s) that the District may substitute in accordance with the provisions of the WIFIA Loan Agreement.]

“**Original Trust Agreement**” has the meaning ascribed to such term in the preamble hereto.

“**Outstanding WIFIA Loan Balance**” means the sum of (a) the aggregate principal amount of the WIFIA Loan drawn by the District, *plus* (b) capitalized interest added to the principal balance of the WIFIA Loan, and *minus* (c) the aggregate principal amount of the WIFIA Loan repaid by the District, as determined in accordance with Section 8(d) of the WIFIA Master Agreement.

“**Payment Date**” means each Interest Payment Date and each Principal Payment Date.

“**Principal Payment Date**” means each June 1 and December 1, commencing December 1, 2033.

“**Project**” has the meaning ascribed to such term in the recitals hereto.

“**Senior Trust Agreement**” has the meaning ascribed to such term in the recitals hereto.

“**Senior Trustee**” has the meaning ascribed to such term in the recitals hereto.

“**Substantial Completion**” means the stage at which the Project is able to perform the functions for which it was designed.

“Substantial Completion Date” means the date on which the District certifies to the WIFIA Lender, with evidence satisfactory to the WIFIA Lender, that Substantial Completion for the entire Project has occurred.

“Trust Agreement” has the meaning ascribed to such term in the preamble hereto.

“Trustee” has the meaning ascribed to such term in the preamble hereto.

“WIFIA 2021 Loan Agreement” has the meaning ascribed to such term in the recitals hereto.

“WIFIA Lender” has the meaning ascribed to such term in the recitals hereto.

“WIFIA Loan” has the meaning ascribed to such term in the recitals hereto.

“WIFIA Master Agreement” has the meaning ascribed to such term in the recitals hereto.

Section 1.2 Rules of Construction. This Supplemental Trust Agreement shall have the same rules of construction as are provided for the Trust Agreement in its Section 102. Any provision of this Supplemental Trust Agreement referring to actions to be taken by the District shall be deemed to refer to the Commission to the extent that the Enabling Act authorizes the Commission to take such action instead of the District.

(end of Article I)

ARTICLE II

DETAILS OF THE 2021 BOND

Section 2.1 Details of 2021 Bond.

(a) The 2021 Bond shall be issued in accordance with and secured by the Trust Agreement, including in particular the provisions of Section 209 of the Trust Agreement, for the purposes set forth in Section 209 of the Trust Agreement and the Preamble of this Supplemental Trust Agreement. The 2021 Bond shall be issued in an initial principal amount equal to the aggregate amount of principal advances thereunder up to \$476,581,587, plus any accumulated amount of interest that is capitalized in accordance with the terms hereof up to \$52,000,000. The Accreted Amount of the 2021 Bond shall not exceed \$528,581,587. The portion of the 2021 Bond for which interest shall be capitalized shall be treated as a Capital Appreciation Bond for purposes of the Trust Agreement, and the portion of the 2021 Bond for which interest shall be paid currently shall be treated as a Current Interest Bond for purposes of the Trust Agreement. The 2021 Bond shall be issued as a single, registered bond, shall be dated its date of delivery, shall be designated the “Hampton Roads Sanitation District (Virginia) Subordinate Wastewater Revenue Bond, Series 2021 (Federally Taxable),” shall be numbered R-1, and shall be issued in substantially the form set forth in Exhibit A hereto.

(b) Upon the written request of the District, the Bond Registrar shall authenticate and deliver the 2021 Bond as a draw-down bond to the WIFIA Lender with an initial principal amount up to \$476,581,587 (excluding any accumulated amount of interest that is capitalized, as provided in Section 2.1(e) below).

(c) Interest on the 2021 Bond shall accrue and be computed on the Outstanding WIFIA Loan Balance from time to time at the rate set forth in the 2021 Bond on the basis of a three hundred sixty (360) day year comprised of twelve (12) thirty (30) day months; provided that upon the occurrence of an event of default under Section 17(a) of the WIFIA Master Agreement, interest on the 2021 Bond shall be computed on the Outstanding WIFIA Loan Balance at the Default Rate in accordance with the provisions of Section 6 of the WIFIA Master Agreement.

(d) On each Payment Date occurring on or after the applicable First Payment Date, payments due the 2021 Bond shall be made as follows: (i) semi-annual payments of interest on each Interest Payment Date, (ii) semi-annual payments of principal (or accreted value) on each Principal Payment Date, and (iii) any other amounts on each other date on which payment thereof is required to be made under the WIFIA Master Agreement or under the WIFIA 2021 Loan Agreement.

(e) Subject to the provisions of Sections 2.1(f) and (g) below, during the Capitalized Interest Period the District is required to make the minimum payments of interest set forth on the schedule attached as Exhibit B to the WIFIA 2021 Loan Agreement and Schedule A attached to the 2021 Bond. On each Interest Payment Date occurring during the Capitalized Interest Period, the portion of any interest accrued on the 2021 Bond (and the WIFIA Loan) in the six (6) month period ending immediately prior to such date and not paid in full as of such Interest Payment Date shall be deemed capitalized and shall be added to the principal balance of the 2021 Bond (and the

Outstanding WIFIA Loan Balance). Interest on amounts capitalized pursuant to this Section shall commence on the date such interest is added to the principal balance of the 2021 Bond (and the WIFIA Loan). Within thirty (30) days after the end of the Capitalized Interest Period, the WIFIA Lender shall give written notice to the District and the Trustee stating the Outstanding WIFIA Loan Balance as of the close of business on the last day of the Capitalized Interest Period, which statement thereof shall be deemed conclusive absent manifest error; provided, however, that no failure to give or delay in giving such notice shall affect any of the obligations of the District hereunder or under any of the other WIFIA Loan Documents. Upon the termination of the Capitalized Interest Period, payments of interest shall be currently due and payable in accordance with the terms hereof and interest shall no longer be capitalized.

(f) Notwithstanding the provisions of Section 2.1(e) above, should completion of construction of either (i) [the James River Plant Project Component] or (ii) [the Nansemond/Boat Harbor Project Component] occur prior to December 1, 2028, the District shall, subject to the requirements set forth in the immediately following sentence, submit an Early Interest Payment Notice to the WIFIA Lender in accordance with Section 8(a) of the WIFIA 2021 Loan Agreement stating that the District elects to terminate the Capitalized Interest Period as of the next Interest Payment Date that occurs within the 12 months following the date of such completion. Such Early Interest Payment Notice shall be (1) delivered not less than thirty (30) days prior to the proposed termination date of the Capitalized Interest Period, (2) made only once and (3) irrevocable once delivered. Upon receipt by the WIFIA Lender of the Early Interest Payment Notice, the Capitalized Interest Period will terminate as of the proposed Interest Payment Date and no further action shall be required by the WIFIA Lender in respect thereof.

(g) Notwithstanding the provisions of Section 2.1(e) above, the Capitalized Interest Period shall end immediately upon written notification to the District by the WIFIA Lender that an Event of Default has occurred.

(h) Any payment in respect of the 2021 Bond shall be treated as a payment in respect of the WIFIA Loan, and any prepayment of principal in respect of the WIFIA Loan shall be treated as a redemption in respect of the 2021 Bond.

(i) Any adjustments or revisions to the loan amortization schedule set forth in Exhibit B to the WIFIA 2021 Loan Agreement shall be deemed to update the amortization schedule attached as Schedule A to the 2021 Bond *mutatis mutandis*.

(j) The provisions for the manner and place of payment of the 2021 Bond shall be in accordance with Section 8(c) of the WIFIA Master Agreement, including the wire instructions set forth in Schedule IV thereof, as the same may be modified in writing from time to time by the WIFIA Lender.

(k) In accordance with the provisions of Section 502 of the Trust Agreement, the District shall make payments directly to the Trustee for deposit to the 2011 Trust Agreement Bond Fund in amounts sufficient to pay, when due, the principal of and interest on the 2021 Bond.

(1) In accordance with the provisions of Section 503 and, if applicable, Section 504 of the Trust Agreement, the Trustee shall make payments, when due, of principal of and interest on the 2021 Bond from the funds on deposit in the 2011 Trust Agreement Bond Fund.

Section 2.2 Optional Prepayment. From any available moneys, the District may, at its option, prepay the 2021 Bond, in whole or in part (and, if in part, the amounts thereof to be prepaid shall be determined by the District; provided that such prepayments shall be in principal amounts of at least \$1,000,000 or any integral multiple of \$1.00 in excess thereof), without penalty or premium, in accordance with Section 9 of the WIFIA Master Agreement and Section 9 of the WIFIA 2021 Loan Agreement.

Section 2.3 Prepayment Notice. The District shall send notice of any prepayment of the 2021 Bond to the WIFIA Lender not less than ten (10) days or more than thirty (30) days prior to the date set for prepayment, unless otherwise agreed by the WIFIA Lender. Such notice shall identify the principal amount to be prepaid and the date for such prepayment. At any time between delivery of such written notice and the applicable optional prepayment, the District may, without penalty or premium, rescind the announced optional prepayment by further written notice to the WIFIA Lender. The failure by the District to make any optional prepayment shall not constitute a breach or default under the Trust Agreement, the WIFIA Master Agreement or the WIFIA 2021 Loan Agreement. Upon making any prepayment, the District shall promptly give notice of the same to the Trustee.

Section 2.4 Cancellation. Upon the payment or prepayment of the 2021 Bond in full in immediately available funds, the WIFIA Lender shall surrender the 2021 Bond to the Trustee, and the Trustee shall cancel the 2021 Bond upon surrender thereof.

Section 2.5 Mandatory Prepayment. The 2021 Bond is subject to acceleration and mandatory prepayment on the terms and conditions set forth in Section 803 of the Trust Agreement and Section 9(a) of the WIFIA Master Agreement, respectively.

Section 2.6 WIFIA Lender Consent Required for Defeasance. Notwithstanding the provisions of Section 1201 of the Trust Agreement, the 2021 Bond may not be defeased before its maturity or redemption date without the prior written consent of the WIFIA Lender.

(end of Article II)

ARTICLE III

APPLICATION OF THE PROCEEDS OF THE 2021 BOND

Section 3.1 Application of the Proceeds of the 2021 Bond.

(a) The proceeds of all principal advances under the 2021 Bond shall be requisitioned as and when needed from the WIFIA Lender in accordance with Section 4 of the WIFIA Master Agreement and Section 4 of the WIFIA 2021 Loan Agreement. Such proceeds shall be used to pay, or reimburse the District for, Eligible Project Costs (as defined in the WIFIA Master Agreement); provided that such costs shall also constitute, for purposes of the Trust Agreement, Issuance Costs of the 2021 Bond or Capital Improvement Program Costs related to the Project. Such proceeds, as and when requisitioned, shall be disbursed directly by the WIFIA Lender to the District, and no deposit shall be required to the 2011 Trust Agreement Issuance Fund or the 2011 Trust Agreement Construction Fund established under the Trust Agreement.

(b) No proceeds of the 2021 Bond or other funds of the District shall be deposited in the 2011 Trust Agreement Debt Service Reserve Fund upon delivery of the 2021 Bond. If the District shall hereafter elect to fund the 2011 Trust Agreement Debt Service Reserve Fund, the provisions of Section 504 of the Trust Agreement shall control.

(end of Article III)

ARTICLE IV

RELEASE

Section 4.1 Release of this Supplemental Trust Agreement. When (a) the 2021 Bond secured hereby shall have become due and payable in accordance with its terms or otherwise as provided in this Supplemental Trust Agreement and the whole amount of the principal and the interest (including any accumulated capitalized interest) so due and payable upon the 2021 Bond shall have been paid in full in immediately available funds, and (b) sufficient funds shall also have been provided or provision made for paying all other obligations payable hereunder by the District, then and in that case the right, title and interest of the Trustee in the funds and accounts mentioned in this Supplemental Trust Agreement shall thereupon cease, determine and become void and, on demand of the District and upon being furnished with an opinion, in form and substance satisfactory to the Trustee, of counsel approved by the Trustee, to the effect that all conditions precedent to the release of this Supplemental Trust Agreement and the payment of the 2021 Bond have been satisfied, the Trustee shall release this Supplemental Trust Agreement and shall execute such documents to evidence such release as may reasonably be required by the District and, subject to the provisions of the Trust Agreement, shall turn over to the District any surplus in, and all balances remaining in, all funds and accounts created under this Supplemental Trust Agreement.

(end of Article IV)

ARTICLE V

ADDITIONAL COVENANTS RELATED TO WIFIA LENDER

Section 5.1 Application of Proceeds Received from the VRA. Any proceeds received by the Trustee from the VRA pursuant to the terms of that certain Intercreditor Agreement, dated as of September 28, 2020, by and among the District, the Trustee and the VRA, shall be applied by the Trustee promptly, on a *pro rata* basis among all of the Bonds in accordance with the provisions of Section 805(a) of the Trust Agreement.

Section 5.2 Additional Restriction on the Incurrence of Additional Indebtedness. The District covenants that, for purposes of demonstrating compliance with Section 704 of the Trust Agreement (Limitations on Indebtedness), clause (iv) of Section 704(a) of the Trust Agreement shall be deemed not to apply during the Master Availability Period (as defined in the WIFIA Master Agreement) or while there are Outstanding any Bonds (including the 2021 Bond) held by the WIFIA Lender.

Section 5.3 Modifications to this Article V. Notwithstanding anything to the contrary in Section 1102 of the Trust Agreement or any other provision of the Trust Agreement or this Supplemental Trust Agreement, neither Section 5.1 above nor Section 5.2 above shall be modified without the prior written consent of the WIFIA Lender.

(end of Article V)

ARTICLE VI

MISCELLANEOUS

Section 6.1 Manner of Giving Notice. All notices, demands and requests to be given to or made hereunder by the District or the Trustee shall be given or made in writing and shall be deemed to be properly given or made if sent by United States registered mail, return receipt requested, postage prepaid, addressed as follows:

- (a) As to the District—

Hampton Roads Sanitation District
1434 Air Rail Avenue
Virginia Beach, Virginia 23455
Attention: General Manager
Email: ehenifin@hrsd.com
Telephone: (757) 460-2261
Telecopier: (757) 460-2372

- (b) As to the Trustee—

The Bank of New York Mellon Trust Company, N.A.
4965 U.S. Highway 42, Suite 1000
Louisville, Kentucky 40222
Attention: Bart Trindeitmar
Email: bart.trindeitmar@bnymellon.com
Telephone: (502) 566-6903
Telecopier: (502) 425-3813

- (c) As to the Bond Registrar—

The Bank of New York Mellon Trust Company, N.A.
4965 U.S. Highway 42, Suite 1000
Louisville, Kentucky 40222
Attention: Bart Trindeitmar
Email: bart.trindeitmar@bnymellon.com
Telephone: (502) 566-6903
Telecopier: (502) 425-3813

Any such notice, demand or request may also be transmitted to the appropriate above-mentioned party by telegram, telecopy or telephone and shall be deemed to be properly given or made at the time of such transmission if, and only if, such transmission of notice shall be confirmed in writing and sent as specified above.

The Trustee agrees to accept and act upon instructions or directions, including funds transfer instructions (“**Instructions**”), pursuant to the Trust Agreement or any other document reasonably relating to the 2021 Bond sent by the District by Electronic Means, provided, however, that the District shall provide to the Trustee an incumbency certificate listing designated persons

with the authority to provide such Instructions and containing specimen signatures of such designated persons, which incumbency certificate shall be amended whenever a person is to be added or deleted from the listing. If the District elects to give the Trustee Instructions by Electronic Means and the Trustee, in its discretion, elects to act upon such Instructions, the Trustee's understanding of such Instructions shall be deemed controlling. The District understands and agrees that the Trustee cannot determine the identity of the actual sender of such Instructions and that the Trustee shall conclusively presume that directions that purport to have been sent by a designated person listed on the incumbency certificate provided to the Trustee have been sent by such designated person. The District shall be responsible for ensuring that only designated persons transmit such Instructions to the Trustee and that the District and all designated persons are solely responsible to safeguard the use and confidentiality of applicable user and authorization codes, passwords or authentication keys upon receipt by the District. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such Instructions notwithstanding such Instructions conflict or are inconsistent with a subsequent written Instruction. The District agrees (i) to assume all risks arising out of the use of such Electronic Means to submit Instructions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized Instructions, and the risk of interception and misuse by third parties; (ii) that it is fully informed of the protections and risks associated with the various methods of transmitting Instructions to the Trustee and that there may be more secure methods of transmitting Instructions than the method(s) selected by the District; (iii) that the security procedures (if any) to be followed in connection with its transmission of Instructions provide to it a commercially reasonable degree of protection in light of its particular needs and circumstances; and (iv) to notify the Trustee immediately upon learning of any compromise or unauthorized use of the security procedures.

Any of such addresses may be changed at any time upon written notice of such change sent by United States registered mail, postage prepaid, to the other parties by the party effecting the change.

All documents received by the Trustee under the provisions of this Supplemental Trust Agreement, or photographic copies thereof, shall be retained in its possession until this Supplemental Trust Agreement shall be released under the provisions of Section 4.1 of this Supplemental Trust Agreement, subject at all reasonable times to the inspection of the District and any Holder and the agents and representatives thereof.

Section 6.2 Substitute Mailing. If, because of the temporary or permanent suspension of postal service, the District or the Trustee shall be unable to mail any notice required to be given by the provisions of this Supplemental Trust Agreement, the District or the Trustee shall give notice in such other manner as in the judgment of the District or the Trustee shall most effectively approximate mailing (but, if by unsecured facsimile or electronic transmission, then in compliance with and subject to the provisions of Section 6.1 above) and the giving of notice in such manner shall for all purposes of this Supplemental Trust Agreement be deemed to be in compliance with the requirement for the mailing thereof.

Section 6.3 Parties, Bond Registrar and the Holder of 2021 Bond Alone Have Rights under Trust Agreement. Except as herein otherwise expressly provided, nothing in this Supplemental Trust Agreement, express or implied, is intended or shall be construed to confer

upon any person, firm or corporation, other than the Trustee, the Bond Registrar, the District and the Holder of the 2021 Bond, any right, remedy or claim, legal or equitable, under or by reason of this Supplemental Trust Agreement or any provision being intended to be and being for the sole and exclusive benefit of the Trustee, the District, the Bond Registrar and the Holder of the 2021 Bond.

Section 6.4 Effect of Partial Invalidity. In case any one or more of the provisions of this Supplemental Trust Agreement or the 2021 Bond shall for any reason be held to be illegal or invalid, such illegality or invalidity shall not affect any other provisions of this Supplemental Trust Agreement or the 2021 Bond, but this Supplemental Trust Agreement and the 2021 Bond shall be construed and enforced as if such illegal or invalid provisions had not been contained therein. In case any covenant, stipulation, obligation or agreement contained in the 2021 Bond or this Supplemental Trust Agreement shall for any reason be held to be in violation of law, then such covenant, stipulation, obligation or agreement shall be deemed to be the covenant, stipulation, obligation or agreement of the Commission or the District to the full extent permitted by law.

Section 6.5 Effect of Covenants; Governing Law. All covenants, stipulations, obligations and agreements of the District contained in this Supplemental Trust Agreement shall be deemed to be covenants, stipulations, obligations and agreements of the District to the full extent permitted by the Constitution and laws of the Commonwealth of Virginia. This Supplemental Trust Agreement shall be governed by the laws of the Commonwealth of Virginia without regard to choice of law principles.

Section 6.6 No Recourse Against Members, Officers or Employees of Commission or District. No recourse under, or upon, any statement, obligation, covenant, or agreement contained in this Supplemental Trust Agreement, or in the 2021 Bond hereby secured, or in any document or certification whatsoever, or under any judgment obtained against the Commission or the District or by the enforcement of any assessment or by any legal or equitable proceeding by virtue of any constitution or statute or otherwise or under any circumstances, shall be had against any member, officer or employee, as such, of the Commission or the District, either directly or through the Commission or the District, respectively, or otherwise, for the payment for or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may be due and unpaid upon the 2021 Bond. Any and all personal liability of every nature, whether at common law or in equity or by statute or by constitution or otherwise, of any such member, officer or employee, as such, to respond by reason of any act or omission on his or her part or otherwise, for the payment for, or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may remain due and unpaid upon the 2021 Bond hereby secured, is hereby expressly waived and released as an express condition of, and in consideration for, the execution of this Supplemental Trust Agreement and the issuance of the 2021 Bond.

Section 6.7 Legal Holidays. In any case where a Payment Date is not a Business Day, then payment of such principal and interest need not be made on such date but may be made on the next succeeding Business Day with the same force and effect as if made on such Payment Date, and in the case of such payment, no interest shall accrue for the period from and after such date.

Section 6.8 Multiple Counterparts. This Supplemental Trust Agreement may be executed in multiple counterparts, each of which shall be regarded for all purposes as an original, and such counterparts shall constitute but one and the same instrument.

Section 6.9 Headings. Any heading preceding the text of the several articles hereof, and any table of contents or marginal notes appended to copies hereof, shall be solely for convenience of reference and shall not constitute a part of this Supplemental Trust Agreement, nor shall they affect its meaning, construction or effect.

Section 6.10 Further Authority. The officers of the Commission or the District, attorneys, engineers and other agents or employees of the Commission or the District are hereby authorized to do all acts and things required of them by this Supplemental Trust Agreement and the Trust Agreement for the full, punctual and complete performance of all of the terms, covenants and agreements contained in the 2021 Bond and this Supplemental Trust Agreement.

(end of Article VI)

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused these presents to be signed in its name and on its behalf and attested by its duly authorized officers and to evidence its acceptance of the trusts hereby created, the Trustee has caused these presents to be signed in its name and on behalf by its duly authorized officer, all as of the [_____] day of [September], 2021.

**HAMPTON ROADS SANITATION
DISTRICT**

(Seal)

By: _____
Director of Finance
Hampton Roads Sanitation District Commission

Attest:

By: _____
Secretary
Hampton Roads Sanitation District Commission

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A., as Trustee**

By: _____
Authorized Officer

FORM OF 2021 Bond

Interest on this bond is not excludable from the gross income of the registered owner hereof for federal income tax purposes.

No. R-1

HAMPTON ROADS SANITATION DISTRICT (VIRGINIA)

SUBORDINATE WASTEWATER REVENUE BOND, SERIES 2021 (FEDERALLY TAXABLE)

Table with 4 columns: Maturity Date, Interest Rate, Dated, CUSIP. Values: June 1, 2060, [blank], [September ____], 2021, 409327 LS0

Registered Owner: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Maximum Principal Amount: FOUR HUNDRED SEVENTY-SIX MILLION FIVE HUNDRED EIGHTY-ONE THOUSAND FIVE HUNDRED EIGHTY-SEVEN AND 00/100 DOLLARS (\$476,581,587.00)

Maximum Accreted Amount: _____ (\$_____)

Hampton Roads Sanitation District (the "District"), a political subdivision of the Commonwealth of Virginia, by the Hampton Roads Sanitation District Commission (the "Commission"), the Commission of the District, for value received, promises to pay, but solely from the sources and in the manner hereinafter provided, to the registered owner named above, acting by and through the Administrator of the Environmental Protection Agency or its assigns (the "WIFIA Lender"), the lesser of (x) the Maximum Principal Amount set forth above and (y) the aggregate unpaid principal amount of all disbursements (the "Disbursements") made by the WIFIA Lender (such lesser amount, together with any accumulated amount of interest that is capitalized and added to principal in accordance with the terms of the Ninth Supplemental Agreement (as defined below) being hereinafter referred to as the "Outstanding Principal Sum"), together with accrued and unpaid interest (including, if applicable, interest at the Default Rate in accordance with that certain WIFIA Loan Agreement, dated [September ____], 2021, by and between the WIFIA Lender and the District (the "WIFIA 2021 Loan Agreement")), on the Outstanding Principal Sum and all fees, costs and other amounts payable in connection therewith, all as more fully described in the WIFIA 2021 Loan Agreement. The Outstanding Principal Sum shall not exceed the Maximum Accreted Amount set forth above. The principal hereof shall be

payable in the manner and at the place provided in the WIFIA 2021 Loan Agreement in accordance with Exhibit B (WIFIA Debt Service) to the WIFIA 2021 Loan Agreement, as revised from time to time in accordance with the WIFIA 2021 Loan Agreement and that certain WIFIA Master Agreement, dated September 28, 2020, by and between the WIFIA Lender and the District (the “WIFIA Master Agreement”), until paid in full (which Exhibit B, as modified from time to time in accordance with the terms of the WIFIA 2021 Loan Agreement and the WIFIA Master Agreement, is incorporated in and is a part of this Bond). The WIFIA Lender is hereby authorized to modify the loan amortization schedule included in Exhibit B to the WIFIA 2021 Loan Agreement from time to time in accordance with the terms of the WIFIA Master Agreement and the WIFIA 2021 Loan Agreement to reflect the amount of each disbursement made thereunder and the date and amount of principal or interest paid by the District thereunder. Any adjustments or revisions to the loan amortization schedule included in Exhibit B to the WIFIA 2021 Loan Agreement shall be deemed to update the amortization schedule attached as Schedule A hereto *mutatis mutandis*. Absent manifest error, the WIFIA Lender’s determination of such matters as set forth on Exhibit B to the WIFIA 2021 Loan Agreement shall be conclusive evidence thereof; provided, however, that neither the failure to make any such recordation nor any error in such recordation shall affect in any manner the District’s obligations hereunder or under any other WIFIA Loan Document (as defined in the WIFIA Master Agreement).

Payments on this Bond are to be made in accordance with Section 8(c) (Payment of Principal and Interest – Manner of Payment) and Section 31 (Notices) of the WIFIA Master Agreement as the same become due. Principal of and interest on this Bond shall be paid in funds available on or before the due date and in any lawful coin or currency of the United States of America that at the date of payment is legal tender for the payment of public and private debts. If the Substantial Completion Date occurs on any date prior to June 1, 2025, the due date of this Bond shall be deemed to be amended to the Principal Payment Date immediately preceding the date that is thirty-five (35) years following such Substantial Completion Date without any further action required on the part of the District or the WIFIA Lender and such amendment shall in no way amend, modify or affect the other provisions of this Bond without the prior written agreement of the WIFIA Lender. Any such amendment shall be reflected in a revised Exhibit B to the WIFIA 2021 Loan Agreement.

Interest on this Bond shall accrue or accrete (as applicable), and be computed on the Outstanding WIFIA Loan Balance from time to time at the interest rate stated above, on the basis of a three hundred sixty (360) day year comprised of twelve (12) thirty (30) day months; provided that upon the occurrence of any event of default under Section 17(a) of the WIFIA Master Agreement, interest on this Bond shall be computed on the Outstanding WIFIA Loan Balance at the Default Rate in accordance with the provisions of Section 6 of the WIFIA Master Agreement.

This Bond is issued under a trust agreement, dated as of October 1, 2011, between the District and The Bank of New York Mellon Trust Company, N.A., Pittsburgh, Pennsylvania, as Trustee (said banking corporation and any bank or successor trustee under the Trust Agreement being hereinafter referred to as the “Trustee”), as amended and restated as of March 1, 2016, and as the same may be amended and supplemented from time to time (the “Trust Agreement”), including pursuant to the Ninth Supplemental Trust Agreement dated as of [September___], 2021 (the “Ninth Supplemental Agreement”). The Bond is being issued for the purpose of providing funds, together with other available funds, (i) to finance a portion of the eligible costs of the Project

and (ii) to pay a portion of the expenses incurred in connection with the issuance of this Bond by the District. Reference is made to the WIFIA Master Agreement and the WIFIA 2021 Loan Agreement for further terms and conditions relating to the obligations of the District hereunder and thereunder, which terms and conditions shall for all purposes have the same effect as if fully set forth herein. All capitalized terms used in this Bond and not defined herein shall have the meanings set forth in the Ninth Supplemental Agreement, or if not defined therein, in the Trust Agreement.

This Bond may be prepaid at the option of the District in whole or in part (and, if in part, the principal installments and amounts thereof to be prepaid are to be determined in accordance with the WIFIA 2021 Loan Agreement; provided that such prepayments shall be in principal amounts of at least \$1,000,000 or any integral multiple of \$1 in excess thereof), from time to time, but not more than once in any Fiscal Year, without penalty or premium, by paying to the WIFIA Lender all or part of the principal amount of this Bond in accordance with the WIFIA 2021 Loan Agreement.

This Bond shall be subject to mandatory prepayment on the terms and conditions set forth in the WIFIA Master Agreement, the WIFIA 2021 Loan Agreement and the Trust Agreement.

This Bond is issued and the Trust Agreement was made and entered into under and pursuant to the Constitution and laws of the Commonwealth of Virginia, and particularly in conformity with the provisions, restrictions and limitations of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended.

Indebtedness secured by the Trust Agreement is in all respects subordinate and inferior to the lien thereon of indebtedness (“Senior Obligations”) secured by that certain trust agreement, dated as of March 1, 2008 (as the same may be amended and supplemented from time to time, the “Senior Trust Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the “Senior Trustee”), outstanding under the Senior Trust Agreement.

The District has agreed to perform, observe and comply with certain covenants, conditions and agreements set forth in the Trust Agreement. The District may incur additional indebtedness, including notes, guaranties and other indebtedness secured by the Trust Agreement on a pari passu basis (collectively, “Parity Obligations”) for the purposes, under the terms and conditions and to the extent described therein and in the WIFIA Master Agreement.

This Bond is a special obligation of the District and is payable solely from Net Revenues Available for Debt Service derived by the District from its Wastewater System and the money attributable to proceeds of the Bond and the income from the investment thereof and not from any other fund or source. This Bond shall not be deemed to constitute a debt, or a pledge of the faith and credit, of the Commonwealth of Virginia or of any county, city, town or political subdivision thereof. The issuance of this Bond shall not directly or indirectly or contingently obligate the Commonwealth of Virginia or any county, city, town or political subdivision thereof to levy or to pledge any form of taxation whatever therefor.

This Bond is issued as a fully registered Bond. The transfer of this Bond is registrable by the registered owner hereof in person or by his attorney or legal representative at the corporate trust office of the Bond Registrar for the delivery of the Bond, but only in the manner and subject to the limitations and conditions provided in the Trust Agreement and upon surrender and cancellation of this Bond. Upon any such registration of transfer, the District shall execute and the Bond Registrar shall authenticate and deliver in exchange for this Bond a new Bond, registered in the name of the transferee, in a principal amount equal to the then outstanding principal amount of this Bond, of the same series and maturity and bearing interest at the same rate.

The Holder of this Bond shall have no right to enforce the provisions of the Trust Agreement or to institute action to enforce the covenants therein, or to take any action with respect to any event of default under the Trust Agreement, or to institute, appear in or defend any suit or other proceeding with respect thereto, except as provided in the Trust Agreement and except that the Holder of this Bond may institute action to enforce the payment of the principal of or the interest on this Bond. Any delay on the part of the Holder of this Bond in exercising any right hereunder shall not operate as a waiver of any such right, and any waiver granted with respect to one default shall not operate as a waiver in the event of any subsequent default.

Upon the occurrence of certain events, and on the conditions, in the manner and with the effect set forth in the Trust Agreement, the Outstanding principal amount of this Bond may become or may be declared due and payable before the stated maturity thereof, together with the interest accrued thereon.

Modifications or alterations of the Trust Agreement or any trust agreement supplemental thereto may be made only to the extent and in the circumstances permitted by the Trust Agreement.

This Bond shall be governed by the laws of the Commonwealth of Virginia without regard to choice of law principles.

All acts, conditions and things required to happen, exist and be performed precedent to and in the issuance of this Bond have happened, exist and have been performed as so required.

Neither the members, officers or employees of the Commission or the District, nor any person executing this Bond, is liable personally hereon or subject to any personal liability or accountability by reason of issuance hereof.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any benefit or security under the Trust Agreement until it shall have been authenticated by the execution by the Bond Registrar of the certificate of authentication endorsed hereon.

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused this Bond to be executed in its name and on its behalf with the [facsimile] signatures of the Chair and the Secretary of the Hampton Roads Sanitation District Commission and [a facsimile of] the official seal of said Commission to be impressed hereon and this Bond to be dated the Dated Date.

HAMPTON ROADS SANITATION DISTRICT

By _____
Chair
Hampton Roads Sanitation District Commission

By _____
Secretary
Hampton Roads Sanitation District Commission

[Seal]

CERTIFICATE OF AUTHENTICATION

Date of authentication: _____

This Bond is a Bond issued under the provisions of the within-mentioned Trust Agreement.

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A.,**
as Bond Registrar

By _____
Authorized Signatory

[FORM OF ASSIGNMENT]

FOR VALUE RECEIVED the undersigned hereby sells, assigns and transfers unto

[Please Print or Typewrite Name and Address of Transferee]

the within Bond and all rights thereunder, and hereby irrevocably constitutes and appoints _____ attorney to register the transfer of the within Bond on the books kept for registration thereof, with full power of substitution in the premises.

Date: _____

Signature Guaranteed:

NOTICE: Signature(s) must be guaranteed by an institution which is a participant in the Securities Transfer Agent Medallion Program (STAMP) or similar program.

NOTICE: The signature to this assignment must correspond with the name as it appears upon the face of the within Bond in every particular, without alteration or enlargement or any change whatever.

Amortization Schedule
[To be attached]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

[●], 2021

Hampton Roads Sanitation District
1434 Air Rail Avenue
Virginia Beach, VA 23455

RE: WIFIA Loan Term Sheet for the Sustainable Water Initiative for Tomorrow (SWIFT) –
Tranche 2 Project with Hampton Roads Sanitation District (WIFIA Project No.
19152VA)

Ladies and Gentlemen:

This WIFIA Loan Term Sheet (this “**Term Sheet**”) constitutes the agreement of the United States Environmental Protection Agency, acting by and through the Administrator of the Environmental Protection Agency (hereinafter, the “**USEPA**”) to provide financing for the above-referenced project (as further described below, the “**Project**”) in the form of a secured loan (the “**WIFIA Loan**”), pursuant to the Water Infrastructure Finance and Innovation Act (“**WIFIA**”), § 5021 *et seq.* of Public Law 113-121 (as amended by Public Law 114-94, Public Law 114-322 and Public Law 115-270) (the “**Act**”), codified as 33 U.S.C. §§ 3901-3914, subject in all respects to (i) the terms and conditions contained herein, (ii) the terms and conditions contained in that certain WIFIA Master Agreement, dated as of September 28, 2020, by and between the WIFIA Lender (as defined below) and the Borrower (as defined below) (the “**WIFIA Master Agreement**”), and (iii) the execution and delivery of the WIFIA loan agreement with respect to the Project to be entered into on or after the date hereof (the “**WIFIA Loan Agreement**”) on terms and conditions acceptable to USEPA contained therein. Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to such terms in the WIFIA Loan Agreement or, if not defined therein, the WIFIA Master Agreement.

USEPA’s agreement to provide WIFIA credit assistance to the Project is based upon the application for credit assistance of the Borrower submitted on March 27, 2020 and the supplemental information and documents, including the base case financial model, provided to USEPA. This Term Sheet is an agreement of USEPA only to the terms specified herein, which may be modified or supplemented by USEPA in its discretion at any time and from time to time during the course of its due diligence and credit approval process.

By executing this Term Sheet, the Borrower confirms its agreement to reimburse USEPA for any and all fees and expenses that USEPA incurs for legal counsel, financial advice, and other consultants in connection with the evaluation of the Project and the negotiation and preparation of the WIFIA Loan Agreement and related documents (whether or not any such agreement is ultimately executed).

This Term Sheet shall be governed by the federal laws of the United States of America if and to the extent such federal laws are applicable, and the internal laws of the Commonwealth of Virginia, if and to the extent such federal laws are not applicable.

INDICATIVE TERMS OF THE WIFIA LOAN

WIFIA LENDER	United States Environmental Protection Agency, an agency of the United States of America, acting by and through the Administrator of the Environmental Protection Agency (the “ WIFIA Lender ”).
BORROWER	Hampton Roads Sanitation District, a political subdivision of the Commonwealth of Virginia (the “ Borrower ”).
PROJECT	The “ Project ” means the Borrower’s Sustainable Water Initiative for Tomorrow (SWIFT) – Tranche 2 Project, located at various locations within the Borrower’s service area, as further described in Schedule III (<i>Project</i>) to the WIFIA Loan Agreement.
WIFIA LOAN AMOUNT	A maximum principal amount (sum of disbursements) not to exceed \$476,581,587; <u>provided</u> that (a) the maximum principal amount of the WIFIA Loan, together with the amount of any other credit assistance provided under the Act, shall not exceed forty-nine percent (49%) of reasonably anticipated Eligible Project Costs for the Project and (b) the total federal assistance for the Project, including but not limited to the maximum principal amount of the WIFIA Loan and all federal grants, shall not exceed eighty percent (80%) of Total Project Costs for the Project.
INTEREST RATE	<p>The WIFIA Loan shall bear interest at a fixed rate, calculated by adding one basis point (0.01%) to the rate of securities of a similar maturity (based on the weighted-average life of the WIFIA Loan) as published, on the execution date of the WIFIA Loan Agreement, in the United States Treasury Bureau of Public Debt’s daily rate table for State and Local Government Series (SLGS) securities, currently located on the Internet at https://www.treasurydirect.gov/GA-SL/SLGS/selectSLGSDate.htm.</p> <p>Interest shall accrue and be computed on the Outstanding WIFIA Loan Balance on the basis of a 360-day year of twelve (12) thirty (30) day months.</p> <p>The WIFIA Loan shall also bear default interest at a rate of two hundred (200) basis points above the otherwise applicable interest rate, at such times and upon such terms as provided in the WIFIA Master Agreement.</p>
PAYMENT DATES	<p>Principal of the WIFIA Loan shall be repaid in semi-annual installments on June 1 and December 1 of each year, beginning on December 1, 2033.</p> <p>Interest on the WIFIA Loan shall be paid in arrears on June 1 and December 1 of each year, beginning on the June 1 or December 1</p>

	<p>immediately following the Initial Disbursement Date with respect to the WIFIA Loan.</p> <p>The debt service payment commencement date shall in no event be later than five (5) years after the Substantial Completion Date of the Project.</p>
FINAL MATURITY DATE	The earlier of (a) June 1, 2060 and (b) the Principal Payment Date immediately preceding the date that is thirty-five (35) years following the Substantial Completion Date.
PROJECTED SUBSTANTIAL COMPLETION DATE	April 1, 2029.
DEDICATED SOURCE OF REPAYMENT	<p>The dedicated source of repayment for the WIFIA Loan shall be Net Revenues Available for Debt Service (as defined below) in accordance with the terms of the Subordinate Trust Agreement and the WIFIA Master Agreement.</p> <p>“Net Revenues Available for Debt Service” means all Net Revenues less debt service on the Senior Obligations.</p> <p>“Net Revenues” means all revenues received by the Borrower from its Wastewater System less Operating Expenses, <u>provided</u> that Net Revenues shall not include any Transition Charge.</p> <p>“Operating Expenses” means those current expenses paid by the Borrower that may be required to pay the cost of maintaining, repairing and operating the Wastewater System, including reasonable and necessary usual expenses of administration, operation, maintenance and repair, costs for billing and collecting the rates, fees and other charges for the use of or the services furnished by the Wastewater System, insurance premiums, credit enhancement and liquidity support fees, legal, engineering, auditing and financial advisory expenses, expenses and compensation of the Trustee, and deposits into a self-insurance program. Operating Expenses shall exclude allowance for depreciation and amortization and expenditures for extraordinary maintenance or repair or improvements. Operating Expenses shall also exclude expenses for improvements that will not be owned by the Borrower but which will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System.</p>
SECURITY AND LIEN PRIORITY	The Borrower’s obligation to repay the WIFIA Loan shall be evidenced by the WIFIA Bond, which shall constitute a “Bond” issued under and as defined in the Subordinate Trust Agreement.

	<p>The WIFIA Bond shall constitute a special obligation of the Borrower payable solely from the Net Revenues Available for Debt Service and other funds pledged to secure Bonds issued under the Subordinate Trust Agreement. Such other funds shall consist of all money and securities held by the Trustee in the 2011 Trust Agreement Bond Fund and in the 2011 Trust Agreement Debt Service Reserve Fund (if and to the extent funded) and, if applicable to the WIFIA Loan until applied in payment of any item of the 2011 Trust Agreement Issuance Costs or Capital Improvement Program Costs in accordance with Section 403 (<i>Requisitions from 2011 Trust Agreement Issuance Fund and 2011 Trust Agreement Construction Fund</i>) of the Subordinate Trust Agreement, all money and securities in the 2011 Trust Agreement Issuance Fund and the 2011 Trust Agreement Construction Fund. Pursuant to the Subordinate Trust Agreement, prompt payment of the principal of and interest on the Parity Obligations (including the WIFIA Bond) is secured by a lien on the Net Revenues Available for Debt Service and such other funds.</p> <p>The lien on revenues and funds securing Bonds issued under the Subordinate Trust Agreement (including the WIFIA Bond) shall be (a) subordinate in right of payment and right of security to the lien in favor of the Senior Obligations, (b) <i>pari passu</i> in right of payment and right of security to the lien in favor of the Parity Obligations and (c) senior in right of payment and right of security to the lien in favor of the Junior Obligations.</p>
FLOW OF FUNDS	<p>For purposes of Bonds issued under the Subordinate Trust Agreement (including the WIFIA Bond), the Trustee shall apply the amounts received as Net Revenues Available for Debt Service in accordance with the requirements specified in Section 502 (<i>Payments and Funds Received</i>) of the Subordinate Trust Agreement (the “Flow of Funds”).</p> <p>As of the WIFIA Loan Agreement Effective Date, the Flow of Funds provides, <i>inter alia</i>, that payments shall be due and payable as follows:</p> <ul style="list-style-type: none"> (a) to the credit of the 2011 Trust Agreement Bond Fund, on the Business Day next preceding each Interest Payment Date, an amount equal to the interest payable on the Bonds on such Interest Payment Date; (b) to the credit of the 2011 Trust Agreement Bond Fund, on the Business Day next preceding each Principal Payment Date, an amount equal to the principal of the Bonds due on such Principal Payment Date; and

	<p>(c) any amount that may from time to time be required to enable the Borrower to pay the principal of and interest due on Bonds upon acceleration.</p> <p>Each payment shall be equal to the sum of the amounts specified above in paragraphs (a) to (c), inclusive, <u>provided</u> that such payments shall be made only in the event and to the extent that, as of the date of such payment, the Borrower shall have paid to the Senior Trustee (as defined in the Subordinate Trust Agreement) for the account of the Senior Bond Fund (as defined in the Subordinate Trust Agreement) all amounts attributable to the principal of and interest on any outstanding Senior Obligations due and owing thereon, plus any amounts required to be deposited to the credit of the Senior Debt Service Reserve Fund (as defined in the Subordinate Trust Agreement) in accordance with the terms of the Senior Trust Agreement, as of such date.</p>
PREPAYMENT	<p>Any proceeds received by the Trustee from the VRA pursuant to the terms of the VRA Intercreditor Agreement shall be applied, on a <i>pro rata</i> basis with any other Bonds (based on the then outstanding principal balance thereof), to the payment or prepayment of such Bonds (including the WIFIA Bond) in immediately available funds. The proceeds of any such partial prepayment of the WIFIA Bond shall be applied in accordance with the WIFIA Master Agreement.</p> <p>The Borrower may optionally prepay the WIFIA Loan in whole or in part, from time to time, but not more than once during any Borrower Fiscal Year, without penalty or premium; <u>provided</u> that any such prepayment shall be made on a Payment Date unless otherwise agreed by the WIFIA Lender and in a minimum principal amount of \$1,000,000 or any integral multiple of \$1.00 in excess thereof, and otherwise in accordance with the WIFIA Loan Agreement; <u>provided further</u> that the WIFIA Loan may be prepaid in full at any time without penalty.</p>
RATE COVENANT	<p>The Borrower shall comply with the requirements specified in Section 705 (<i>Rate Covenant</i>) of the Subordinate Trust Agreement (such requirements, the “Rate Covenant”).</p> <p>As of the WIFIA Loan Agreement Effective Date, the Rate Covenant provides, <i>inter alia</i>, that the Borrower shall fix and collect rates, fees and other charges for the use of and for services furnished or to be furnished by the Wastewater System, and will from time to time revise such rates, fees and other charges so that in each Borrower Fiscal Year the Net Revenues will equal at least one hundred twenty percent (120%) of the sum of (a) Principal and Interest Requirements (as defined in the Senior Trust Agreement) on Senior Obligations and (b) Principal and Interest</p>

	<p>Requirements (as defined in the Subordinate Trust Agreement). If, for any reason, the Net Revenues are insufficient to satisfy the foregoing covenant, the Borrower shall within one hundred twenty (120) days adjust and increase its rates, fees and other charges (to the extent permitted by, and following the procedure required by, the Enabling Act (as defined in the Subordinate Trust Agreement)), or reduce its operating and maintenance expenses so as to provide sufficient Net Revenues to satisfy such requirement.</p>
<p>ADDITIONAL INDEBTEDNESS</p>	<p>The Borrower shall not create, incur or suffer to exist (a) any Senior Project Obligations, (b) any Indebtedness, other than the Existing Senior Obligations, the payments of which are senior or prior in right to the payment by the Borrower of any Bond outstanding under the Subordinate Trust Agreement (including the WIFIA Bond) or (c) any Indebtedness with respect to the Master Program that is secured by a dedicated revenue source other than Net Revenues Available for Debt Service, unless such Indebtedness constitutes a Junior Obligation secured by Net Revenues Available for Debt Service on a subordinate basis to Parity Obligations.</p> <p>The Borrower shall not issue or incur any Additional Parity Obligations (including the Obligations under each WIFIA loan agreement under the Master Program) except in accordance with all applicable requirements and conditions set forth in Section 704 (<i>Limitations on Indebtedness</i>) of the Subordinate Trust Agreement; <u>provided</u> that clause (iv) of Section 704(a) of the Subordinate Trust Agreement shall be deemed not to apply during the Master Availability Period or while there are Outstanding any Bonds (including the WIFIA Bond) held by the WIFIA Lender.</p>
<p>RESTRICTED PAYMENTS AND TRANSFERS</p>	<p>The Borrower shall not permit Net Revenues Available for Debt Service, or any funds in any of the Funds and Accounts, to be paid or transferred or otherwise applied for purposes that would violate the terms of the Subordinate Trust Agreement or the Enabling Act.</p>
<p>WIFIA LOAN DOCUMENTATION</p>	<p>The WIFIA Loan shall be subject to the preparation, execution and delivery of the WIFIA Loan Agreement, the WIFIA Bond and any other loan documentation required by the WIFIA Lender in connection therewith, in each case acceptable to the WIFIA Lender and the Borrower, which will contain certain conditions precedent, representations and warranties, affirmative and negative covenants, events of default, and other provisions as agreed between the WIFIA Lender and the Borrower, in each case in accordance with the terms of the WIFIA Master Agreement.</p>

GOVERNING LAW	Federal laws of the United States of America, if and to the extent such federal laws are applicable, and the internal laws of the Commonwealth of Virginia, if and to the extent such federal laws are not applicable.
COUNTERPARTS	This Term Sheet, and any amendments, waivers, consents or supplements hereto may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument. Signature pages may be detached from multiple separate counterparts and attached to a single counterpart so that all signature pages are physically attached to the same document. Electronic delivery of an executed counterpart of a signature page shall be effective as delivery of an original executed counterpart.

[Signature pages follow]

If the foregoing terms are acceptable, please countersign this letter in the space indicated below.

Sincerely,

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**, acting by and
through the Administrator of the United States
Environmental Protection Agency

By: _____
Name: Michael S. Regan
Title: Administrator

ACKNOWLEDGED AND AGREED:

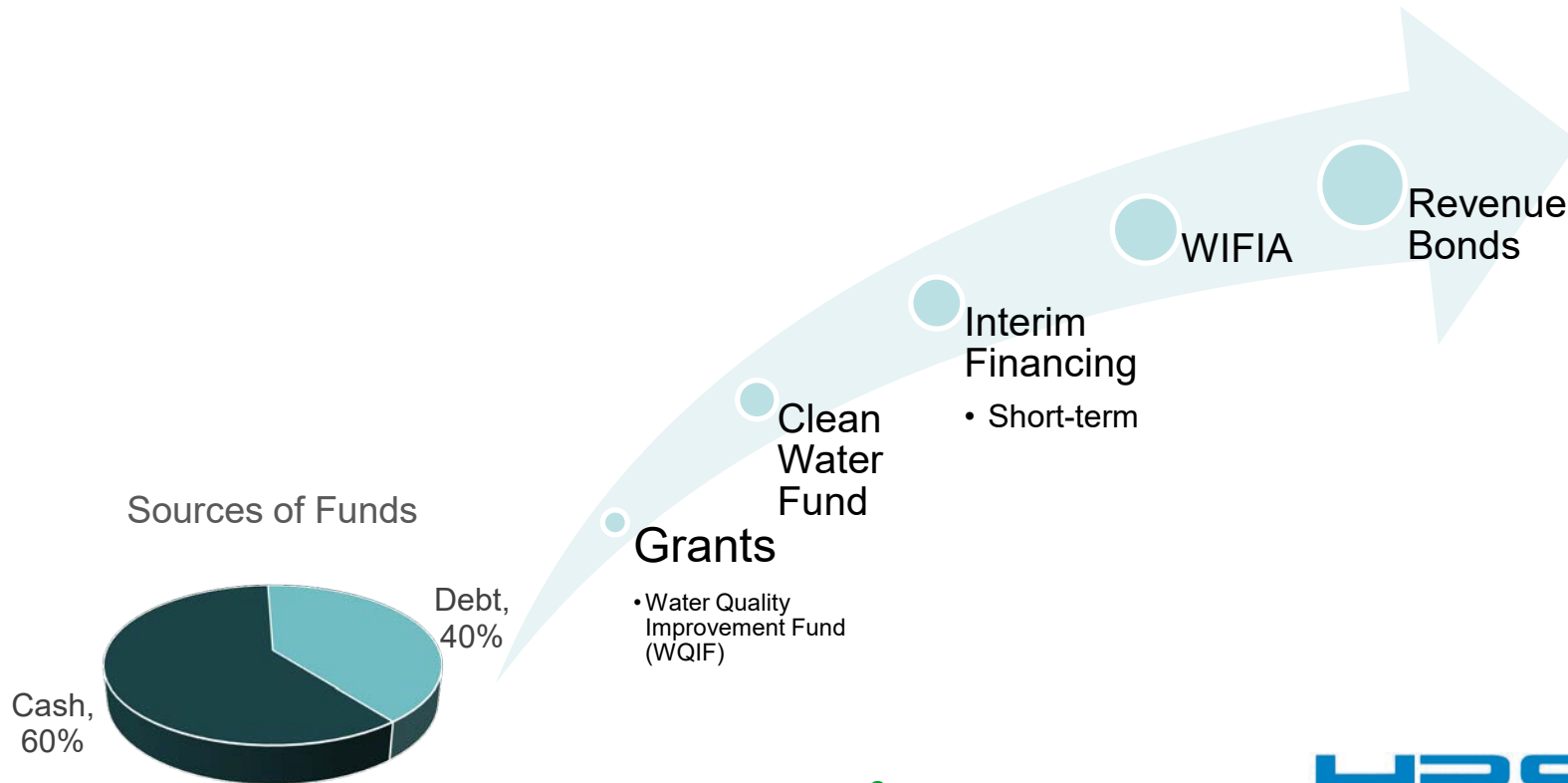
HAMPTON ROADS SANITATION DISTRICT,
by its authorized representative

By: _____
Name:
Title:



Water Infrastructure Finance and
Innovation Act (WIFIA)– Program
Briefing
August 24, 2021

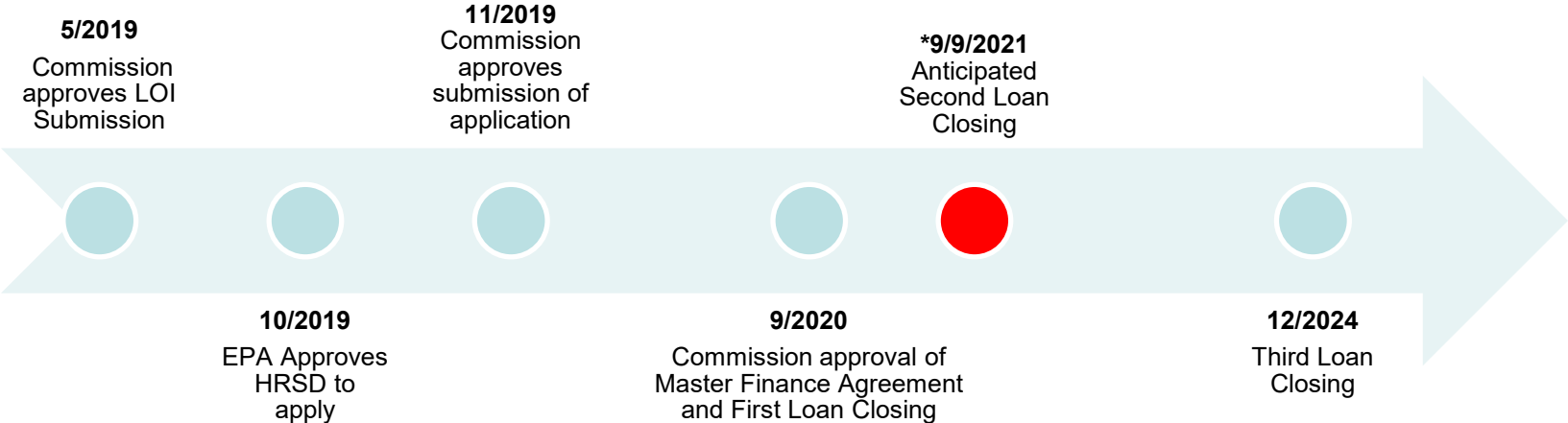
\$3.0 Billion Capital Program Financing – Cost of Capital (Debt)



Water Infrastructure Finance and Innovation Act (WIFIA)

- Federally subsidized loans to accelerate investment in nationally significant water infrastructure projects
- Interest rate based on 30-year US Treasury - Borrower's **get the same rate as the US government**
- Long-term customizable repayment schedule
- Can be combined with other funding sources – ex. Clean Water Fund, WQIF Grants

WIFIA Timeline



Master Finance Agreement (MFA)

- WIFIA requires substantial completion of projects within seven years of loan issuance and all environmental reviews completed prior to close
- Due to the length of the SWIFT program, a Master Finance Agreement (MFA) was established to set the conditions of the WIFIA financing without the need to recompete at each closing
- The program will be split into three loan closings, or tranches, which will close between 2020 and 2024
- The interest rate of each tranche will be set at the time of closing

- Total WIFIA funding allocation for program not to exceed **\$1.048 billion** (49% of total project costs)
 - Includes financing costs and contingency
 - Program cannot exceed 80% federal funding from all sources
 - VRA to certify their source of funding
 - EPA will allow adjustments of funding among tranches as long as total in MFA is not exceeded

Tranche 2 – Option For Capitalized Interest

- Capitalized interest is the act of financing interest during construction of a project
- The accrued interest is added to the principal amount of the loan
 - This option will provide flexibility to have a shorter amortization period for clean water loans which will maximize the subsidy
 - This option will also result in a lower debt service and increased pay-go capacity
- The financial model indicates a **\$73M** reduction in debt service
- Capitalized interest requires the resolution state a loan amount and a maximum principal amount
 - Not necessarily a new concept as a draw down loan can have a variable principal amount already
- The WIFIA MFA allows for a prepayment with no penalty if capitalizing interest is not advantageous

Program Summary

Tranche #	Project Description	WIFIA Loan Amount*	Estimated Loan Closing*
1	James River Treatment Plant (JRTP) & related projects	225,865,648	September 23, 2020
2	Completion of JRTP, divert flows from Boat Harbor Treatment Plant to the Nansemond Treatment Plant (NTP)	476,581,587	September 09, 2021
3	Completion of NTP, York River Treatment Plant, VIP Treatment Plant & Williamsburg Treatment Plant; divert flows from the Army Base Treatment Plant	346,069,223	December 2024
Total	-	1,048,516,458	-

- Upon closing of Tranche 2:
 - **67%** (\$702M) of WIFIA program will be locked in
 - Average weighted interest rate of **1.74-1.98%**

WIFIA Ratepayer Savings

- At Tranche 1 closing, savings estimated at \$300 million
- Current savings range: \$440 - \$487 million
 - With Capitalized Interest: \$513 - \$560 million

Tranche	WIFIA Loan	Bond Rate	WIFIA / CWRLF Rate	PV Savings
Tranche 1	225,865,648	2.89%	1.42%	45,312,415
Tranche 2	476,581,587	2.83%	2.25%	39,195,423
Tranche 3	346,069,223	5.00%	3.25%	75,034,010
Total WIFIA Savings				159,541,848
CWRLF \$100M	100,000,000	2.35%	1.15%	17,780,987
Remaining CWRLF	400,000,000	5.00%	3.50%	103,960,239
Totals:	1,548,516,458			440,824,921

Questions?

SWIFT Program and Advanced Nutrient Reduction Improvements

Tranche	Project Name	Total Project Cost w/ Contingency	Percentage (%) Program Amount
1	Program Management of SWIFT	\$ 90,314,092	4.24%
1	James River SWIFT Facility	\$ 193,431,358	9.07%
1	James River Recharge Wells	\$ 10,200,000	0.48%
1	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 134,417,622	6.31%
	Subtotal Tranche 1	\$ 428,363,072	20.10%
2	James River Recharge Wells	\$ 39,556,000	1.86%
2	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 97,346,484	4.57%
2	Boat Harbor Treatment Plant Pump Station Conversion	\$ 79,628,000	3.74%
2	Boat Harbor Treatment Plant Transmission Force Main Section 2 (Land)	\$ 26,424,000	1.24%
2	James River SWIFT Land Acquisition	\$ 12,530,000	0.59%
2	Boat Harbor Pump Station Land Acquisition	\$ 5,000,000	0.23%
2	Boat Harbor Transmission Force Main Land Acquisition	\$ 3,000,000	0.14%
2	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph I	\$ 1,500,000	0.07%
2	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph II	\$ 262,586,400	12.32%
2	Nansemond SWIFT Facility	\$ 365,489,400	17.15%
2	BH015710 Boat Harbor Treatment Plant Transmission Force Main Section 1	\$ 79,555,200	3.73%
	Subtotal Tranche 2	\$ 972,615,484	45.63%
3	VIP SWIFT Land Acquisition	\$ 30,619,407	1.44%
3	Army Base to VIP Transmission Force Main	\$ 59,729,500	2.80%
3	Nansemond Recharge Wells	\$ 56,277,000	2.64%
3	VIP SWIFT Facility	\$ 403,837,400	18.94%
3	VIP SWIFT Site Work	\$ 47,144,000	2.21%
	Subtotal Tranche 3	\$ 597,607,307	28.03%
1,2, & 3	Issuance Costs	\$ 660,000	0.03%
1,2, & 3	Financing Costs During Construction	\$ 132,433,499	6.21%
Total		\$ 2,131,679,362	100.00%

WIFIA Savings - Max

Tranche	WIFIA Loan	Bond Rate	WIFIA / CWRLF Rate	PV Savings
Tranche 1	225,865,648	2.89%	1.42%	45,312,415
Tranche 2	476,581,587	2.83%	1.90%	61,999,373
Tranche 3	346,069,223	5.00%	3.25%	75,034,010
Total WIFIA Savings				182,345,798
CWRLF \$100M	100,000,000	2.35%	1.15%	17,780,987
Remaining CWRLF	400,000,000	5.00%	3.50%	103,960,239
Totals:	1,548,516,458			486,432,821

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #6

Agenda Item 17. Wards Corner Sanitary Sewer Pumping Station

- [Facility Transfer Policy](#)
- [Ownership Transfer Agreement](#)
- [Cost Sharing Agreement](#)

1.0 Purpose and Need

This policy establishes the requirements for transfer of sanitary sewer facilities. In certain circumstances, it may be in the best interest of HRSD, localities, private owners, and the Commonwealth to transfer ownership of sanitary sewer facilities.

2.0 Definitions

Collection System. A network of pipes, manholes, and pumping stations to convey sewage from individual properties to the regional interceptor system. Sewer service laterals on private property are not included.

Facility. One or more sanitary sewer assets but not a complete system.

Facility Transfer Agreement. Contract signed by HRSD and entity that describes the terms and conditions of the facility transfer.

HRSD Service Area. The area of sewer service that is defined through coordination with the localities that HRSD serves. The existing Service Area boundaries can be found on the HRSD website.

HRSD Territory. All territory lying within the boundaries of the counties and cities included in the District, including all territory lying within the boundaries of any town in a county unless otherwise specified.

Localities. Cities, Counties, and Towns located with the HRSD Service Area.

Regional Interceptor System. A network of gravity and/or force main pipes owned and operated by HRSD which convey sanitary sewer flow received from locality or HRSD pump stations to the HRSD treatment works.

Sanitary Sewer Asset. Any individual element of the sanitary sewer or treatment system. Sewer service laterals on private property are not considered to be a sanitary sewer asset.

Sanitary Sewer System. The collection system, the regional interceptor system, and the associated treatment works. Sewer service laterals on private property are not included.

Sewer Service Agreement. Contract signed by HRSD and entity that describes the terms and conditions required for HRSD to own and operate a sanitary sewer system.

Terminal Pump Station. Any pump station that connects to; (1) the regional interceptor system or; (2) to a collection system force main that ties into the regional interceptor system.

3.0 Guiding Principles

HRSD is responsible for ensuring adequate sewage treatment and conveyance capacity exists to meet the current and future sanitary sewer needs within the HRSD service area, and for operating and maintaining the sanitary sewer system, to protect public health and the environment.

To ensure protection of public health and the environment, it may be in the best interest of HRSD, localities, private owners, and the Commonwealth for HRSD to accept transfer of ownership and operation of government or private entity owned sanitary sewer facilities.

Likewise, on occasion it may be in the best interest of HRSD, localities, private owners, and the Commonwealth for HRSD to transfer ownership and operation of HRSD owned sanitary sewer facilities.

Generally, transfer of sanitary sewer facilities will be at the request of the owner of the facilities.

Ownership of sanitary sewer facilities entails assuming the long term liability of operating, maintaining, upgrading, and replacing the facilities. As such, HRSD shall not provide compensation to facility owners upon facility transfer.

4.0 Procedures

4.1 Transfer of Facilities to HRSD

Owners of sanitary sewer facilities desiring to transfer ownership of facilities to HRSD shall submit a request in writing signed by an authorized official.

4.1.1 Requirements

- A. Comply with the criteria described herein.
- B. Execute Sewer Service Agreement or Facility Transfer Agreement.

4.1.2 General Criteria

Facilities to be transferred to HRSD must meet the following criteria:

- A. Any piping, manholes, and associated sanitary sewer appurtenances shall be within a transferrable easement or within the public right of way.
- B. Pump stations, treatment works and other structures associated with the sanitary sewer system shall be on a dedicated parcel deeded to HRSD without lien or any other legal or physical encumbrances. All parcels shall be contiguous with an improved public right of way or with a dedicated ingress/egress easement. Where possible, additional land for buffer and future expansion shall be transferred to HRSD with the facility.

4.1.3 Real Property and Easement Criteria

Transfer of facilities will include the conveyance of all the real property associated with the facilities. The transfer will be by a general warranty fee simple deed in a format acceptable to HRSD's attorney.

Title to facilities shall be marketable and free and clear of any lien or encumbrance which, in the judgment of HRSD, has a materially adverse effect upon the right of HRSD to use such lands or property in the performance of the functions of HRSD or would preclude HRSD from obtaining owners title insurance on the facilities at market rates.

Conveyance of pipeline or similar infrastructure shall include assignment or grant of a perpetual easement to HRSD with defined rights for the maintenance and replacement of the infrastructure.

4.1.4 Transfer of Entire Sanitary Sewer Systems

- A. Government owned, existing systems: Existing sanitary sewer systems owned by a locality within the HRSD service area may be conveyed on a case-by-case basis with an approved Sewer Service Agreement. Facilities may be transferred "as-is." Facilities must be debt free. HRSD shall not compensate a locality for facilities transferred. All facilities shall meet the criteria herein prior to transfer of operational responsibilities.
- B. Privately owned, existing systems: Existing sewer systems owned by a private entity within the HRSD service area may be conveyed on a case-by-case basis with an approved Sewer Service Agreement. Facilities must be debt free. HRSD shall not compensate a private entity for facilities

transferred. All facilities shall meet the criteria herein prior to transfer of operational responsibilities.

4.1.5 Transfer of New Facilities

In addition to meeting the criteria herein, all new sanitary sewer system assets constructed on behalf of a public or private entity to be transferred to HRSD shall also meet the following criteria:

- A. The facilities shall be constructed according to HRSD's Design and Construction Standards and HRSD Sanitary Sewer Guidelines.
- B. All new facilities shall be warranted for one year from the date of transfer.

4.1.6 Transfer of Portions of Existing Sanitary Sewer Systems

In addition to meeting the criteria herein, public or private entities may request that HRSD assume ownership of portions of existing sanitary sewer facilities when the following criteria are met.

- A. Requests will be reviewed on a case by case basis by HRSD for operation and ownership transfer.
- B. Facilities will be transferred at no cost to HRSD with an approved Facility Transfer Agreement.
- C. Facilities proposed to be transferred to HRSD shall undergo a condition assessment review process by HRSD that may include record review and physical inspection. Facilities to be transferred to HRSD must be in good condition and have received adequate maintenance and repair. In cases where facilities are in need of repair or replacement, a cost sharing agreement will be negotiated and executed before HRSD assumes ownership.
- D. Pump station transfers shall include the first gravity manhole upstream of the station and the connecting gravity pipe.
- E. Pump station transfers shall include the force main, and all appurtenances from the station to the HRSD point of connection to the HRSD interceptor.

COMMISSION ADOPTED POLICY
Facility Transfer



Adopted: September 30, 2019

Revised: N/A

Page 5 of 5

4.1.7 Collection Rates

HRSD will charge all connected users for services rendered in accordance with current rates and policies.

- A. Entire Collection System – HRSD will charge customers served by the transferred facilities the rates published in the HRSD Rate Schedule.
- B. Partial Collection System – HRSD will work with the public or private entity to recover costs for the operation and maintenance of the transferred facilities.

4.2 Transfer of HRSD Facilities

In certain circumstances, it may be in the best interest of HRSD, localities, private owners, and the Commonwealth for HRSD to transfer ownership of HRSD owned sanitary sewer facilities. These instances will be evaluated and negotiated on a case by case basis.

5.0 Responsibility and Authority

The Planning and Analysis Division of the Engineering Department and the Operations Department shall review and approve all facility transfers prior to recommending Commission consideration. All facility transfers must be presented to the Commission for approval.

The Planning and Analysis Division of the Engineering Department shall be responsible for regular reviews and updates to this policy.

This policy supersedes any previous policy or portion of policy related to transfer of facilities.

Approved:  _____ 9/30/19
Frederick N. Eloffson, CPA Date
Commission Chair

Attest:  _____ 9/30/19
Jennifer L. Cascio Date
Commission Secretary

**HAMPTON ROADS SANITATION DISTRICT AND CITY OF NORFOLK
TRANSFER AGREEMENT FOR WASTEWATER PUMP STATION No. 27 FACILITY**

THIS AGREEMENT ("Agreement"), between the CITY OF NORFOLK ("CITY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), entered this 31st day of May, 2022, collectively referred to as the "Parties".

WHEREAS, it is the desire for the CITY and HRSD to regionalize certain wastewater conveyance systems in an effort to create savings for the CITY's and HRSD's mutual ratepayers and also to create additional benefits to both the CITY and HRSD by the division of certain roles and responsibilities with regard to operation of systems and the transfer of ownership of certain assets; and

WHEREAS, CITY currently owns certain real property located at 101 North Shore Road, (legal description: GPIN 1439396461, **Parcel 1**, Pinehurst Subdivision) Norfolk, VA;

WHEREAS, the CITY also owns certain other real property located at 107 North Shore Road (legal description: GPIN 1439395461, **Parcel 2**, Pinehurst Subdivision) Norfolk, VA;

WHEREAS, both parcels together are hereafter referred to as the PROPERTY and as shown in **Exhibit A**;

WHEREAS, the CITY owns, operates and maintains a terminal pump station and appurtenances known as Wastewater Pump Station No. 27 Facility ("WPS #27") on Parcel 1, and as shown in **Exhibit B**;

WHEREAS, the CITY owns, operates and maintains approximately 4,200 LF of 20-inch DI force main which conveys wastewater from WPS #27 to HRSD's regional interceptor system located at the intersection of Newport Avenue and Bradford Avenue, and as shown in **Exhibit B**;

WHEREAS, all existing CITY wastewater infrastructure described herein and in Exhibit B are hereafter referred to in this agreement as FACILITIES;

WHEREAS, CITY and HRSD have determined that a transfer of ownership of the PROPERTY and FACILITIES from CITY to HRSD will serve the needs of the service area most efficiently;

WHEREAS, CITY is agreeable to convey, and HRSD is agreeable to acquire, the PROPERTY and FACILITIES;

WHEREAS, this Agreement is contingent upon CITY and HRSD executing a separate Agreement entitled "Cost Share Agreement between the City of Norfolk and

the Hampton Roads Sanitation District for Wastewater Pump Station No. 27 and related infrastructure” which confirms the Parties’ commitment to perform all necessary wastewater improvements to replace the existing WPS #27 and appurtenances.

NOW, THEREFORE, it is mutually agreed between the parties as follows:

I. OWNERSHIP TRANSFER DESCRIPTION

A. CITY agrees to the following:

1. CITY will convey the PROPERTY and FACILITIES described herein and in Exhibits A and B to HRSD in fee simple by Special Warranty Deed in “as is” condition and assign all its rights, title and interest in their entirety in accordance with the terms and conditions of this Agreement.
2. CITY agrees that on the date of conveyance, the title shall be marketable and free and clear of all liens and encumbrances that would have a materially adverse effect. However, the real estate property may be subject to easements and restrictions then of record which do not materially affect the use of the PROPERTY;

B. HRSD agrees to the following:

1. HRSD acknowledges that the CITY has made no representations or warranties whatsoever regarding the PROPERTY, except for Special Warranty of Title;
2. HRSD agrees that it has inspected and is thoroughly familiar with the PROPERTY and is acquiring the PROPERTY and FACILITIES in its “as is” condition;
3. HRSD understands and agrees that the CITY has not made and makes no representations or warranties of any kind with respect to the condition of the PROPERTY and FACILITIES, or its fitness, suitability or acceptability for any particular use or purpose, and the CITY shall not be liable for any latent or patent defects therein;
4. HRSD will offer to convey back to CITY, at no cost to CITY, the PROPERTY and the FACILITIES “as is”, if HRSD determines in its sole discretion that any portion of the PROPERTY and FACILITIES conveyed by this Agreement are no longer useful in the performance by HRSD of its functions;

II. ROLES AND RESPONSIBILITIES

A. CITY agrees to the following:

CITY will provide HRSD gross asset and accumulated depreciation values for PROPERTY and FACILITIES.

B. HRSD agrees to the following:

1. HRSD will perform a title examination to ascertain the condition of the title of the PROPERTY being conveyed and obtain owner's title insurance on the property to be effective on the date of conveyance;
2. HRSD will pay all costs of ownership of the FACILITIES, accept operational responsibilities and pay the costs of operation of the FACILITIES at the date of conveyance;
3. HRSD will replace the existing sign on the existing WPS #27 structure with a new sign to indicate ownership by HRSD and an emergency contact telephone number within five business days after the date of conveyance;

C. Both CITY and HRSD agree to the following provisions:

1. It shall be a condition precedent to HRSD's acceptance of the FACILITIES and PROPERTY, that HRSD is able to obtain owner's title insurance on the FACILITIES and PROPERTY through a company authorized to do business in the Commonwealth of Virginia at normal and typical rates.
2. Possession of the PROPERTY and FACILITIES will be given to HRSD at closing.
3. CITY agrees to pay the expenses of preparing the deed. HRSD will pay all other fees and costs charged in connection with the transfer of the PROPERTY and FACILITIES and the recordation of the deed.
4. CITY and HRSD agree that the attorney or title insurance company ("Title Company") selected by HRSD shall act as the settlement agent ("Settlement Agent") at HRSD's expense. The Settlement Agent shall prepare the settlement statement, update, and record the deed, collect and disburse settlement funds in accordance with this Agreement and the settlement statement, and file any required state and federal tax forms or other certifications.
5. FEASIBILITY PERIOD: HRSD shall have ninety (90) days from the date this Agreement is executed by all parties in which to complete their assessment

of the PROPERTY and FACILITIES, including title examination and environmental assessment.

6. **CONDITIONS:** HRSD's obligations are expressly conditioned upon receipt of a satisfactory title commitment during Feasibility Period. It being understood that the CITY is under no obligation whatsoever to expend any funds to satisfy this condition. If this condition cannot be met during the Feasibility Period, HRSD may unilaterally terminate this Agreement.
7. **CLOSING:** The Closing will be made at the offices of the Settlement Agent or such other location as the parties may agree, within thirty (30) days after expiration of the Feasibility Period, or as soon thereafter as settlement documents can be prepared and any title issues can be resolved. If, for any reason, HRSD fails to effectuate settlement and Closing on the Property before the expiration of one (1) year from the date this Agreement is fully executed, this Agreement shall immediately terminate unless extended at the sole discretion of the CITY.
8. CITY and HRSD agree to execute all documentation and take all necessary actions to effectuate this Agreement. Upon execution of this Agreement, HRSD and its agents, employees, engineers, and surveyors shall have access to the facility in accordance with Section III of this Agreement.
9. The intention is to transact the conveyance of PROPERTY and FACILITIES, as shown in Exhibits A & B of this Agreement as soon as possible and before construction of any improvements. The exact date of conveyance is to be mutually agreeable to both parties.
10. **BROKERAGE OR AGENT'S FEES:** Neither the CITY nor HRSD are represented by a real estate broker, agent or finder in this transaction. No fees or commissions are or will be due from or payable by the CITY as a result of this transaction. CITY shall have no obligation whatsoever to pay any brokerage or agent's fees or commissions, nor shall the CITY have any obligation whatsoever to see that any such fees or commissions are paid. HRSD and CITY agree to indemnify and hold each other harmless from and against any claim for broker, agent or finder fees or commissions.

III. GENERAL PROVISIONS

- A. Right of Entry: HRSD shall have the right to enter onto the WPS #27 facility and Property, and all infrastructure therein for the purpose of making surveys, obtaining data, measurements and design data to ascertain such engineering data as may be necessary for the purposes of design, perform environmental tests, and soil tests provided such testing does not materially interfere with CITY's use of the facility and property and further provided that said tests shall not be so exercised as to cause material damage to said facility and property.

All such testing is to be at the risk and expense of HRSD. In connection with this right to enter upon the facility and property, HRSD agrees (i) to restore the facility and property to its prior condition after the performance of any such survey or other investigation and (ii) to indemnify, defend and hold CITY harmless from and against all costs, losses, damages, and expenses, including reasonable attorneys' fees, arising out of the activities of HRSD and/or its employees, agents and representatives on the facility and property. CITY has the right to be present during any entry upon the facility and property by HRSD.

- B. Notices: All notices required pursuant to the terms of this Agreement shall be deemed effective when delivered by certified mail, return receipt requested, postage prepaid, to CITY and to HRSD at the respective addresses herein shown, unless this Agreement is modified in writing to reflect other addresses:

CITY of Norfolk	HRSD
c/o Director, Department of Utilities	c/o General Manager
401 Monticello Avenue	PO Box 5911
Norfolk, VA 23510	Virginia Beach, VA 23471

With Copies to:

HRSD Counsel:
 Janice Anderson
 Kellam, Pickrell, Cox & Anderson PC
 403 Boush Street, Suite 300
 Norfolk, VA 23510

And

Office of the Norfolk CITY Attorney
 810 Union Street, Suite 900
 Norfolk, VA 23510

- C. Entire Agreement: This Agreement, and any exhibits or attachments made hereto, represent the full agreement and understanding of the parties hereto, there being no additional agreements written, oral or otherwise. This Agreement may be amended only by a writing signed by both parties.
- D. Authority: CITY and HRSD both warrant that they have permission and authority derived under their respective corporate Charters and Enabling Acts to execute and undertake this Agreement and that all necessary actions of the Norfolk CITY Council to allow execution of this Agreement have been completed, and that all necessary Resolutions and actions of the Commission of HRSD to allow execution of this Agreement have been completed. This Agreement shall apply to, and be binding upon both Parties, their elected officials, officers, agents, employees, successors, and assigns.

- E. Compliance with Law: Each party warrants that it has complied with all aspects of applicable federal, state, and local law in entering this Agreement and further warrants that it shall comply with all applicable federal, state, and local laws in the performance of this Agreement.
- F. No Violation: The execution of this Agreement by the parties will not violate any covenant, condition, or contract to which the parties hereto are subject at the time of execution.
- G. Post-Execution Impact on Title: Upon execution of this Agreement, CITY shall not take any action with respect to the facility, property or both that would impact or affect the quality of title that will be conveyed to HRSD in accordance with Section I of this Agreement, with the exception of exercise of the CITY's powers of eminent domain.
- H. Governing Law; Venue: 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 such laws. 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 courts of the City of Norfolk.
- I. Enforcement: The failure of either party to enforce the terms of this Agreement shall not be considered a waiver as to the enforceability of such terms. If any provision of this Agreement is found to be unenforceable, the remainder of this Agreement shall remain in full force and effect.
- J. Survival: This Agreement shall survive settlement and conveyance of title and shall terminate only upon the written agreement of both Parties.
- K. Force Majeure: No Party shall be responsible for its failure to fulfill an obligation pursuant to this Agreement to the extent that such failure is due to acts of God; labor strikes; war or terrorism; epidemics/pandemics; the actions of a third party; the actions of another Party; lockouts; or other events not reasonably within the control of the Party claiming force majeure. A Party experiencing a force majeure event that prevents fulfillment of a material obligation hereunder shall (a) give the other Party prompt written notice describing the particulars of the event; (b) suspend performance only to the extent and for the duration that is reasonably required by the force majeure event; (c) use reasonable efforts to overcome or mitigate the effects of such

occurrence; and (d) promptly resume performance of the affected obligation if and when such Party is able to do so.

- L. Counterparts: This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original as against any Party whose signature appears thereon, and all of which shall together constitute one and the same instrument.
- M. Binding Effect: This Agreement shall inure to the benefit of the Parties and shall, to the maximum extent permitted by law, be binding on the Parties and their successors and assigns.
- N. Reservation: Except as expressly provided herein, nothing in this Agreement shall be construed to limit or otherwise affect the authority, rights, or responsibilities of the Parties.

(SIGNATURE PAGES TO FOLLOW)

IN WITNESS WHEREOF, the CITY of Norfolk has caused this AGREEMENT to be signed by the CITY Manager pursuant to the Resolution adopted by the CITY Council on March 22, 2022

CITY OF NORFOLK

By: [Signature]

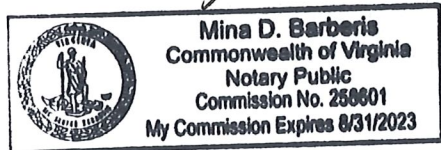
Attest: [Signature]
City Clerk

COMMONWEALTH OF VIRGINIA
CITY OF NORFOLK, to-wit:

The foregoing instrument was acknowledged before me this 31st day of May, 2022, by Larry H. Fiker II, CITY Manager of the CITY of Norfolk and Richard A. Bull, who is CITY Clerk of the CITY of Norfolk.

[Signature]
Notary Public

Notary#: 258601
My Commission expires: 08/31/2023



APPROVED AS TO CONTENT:

[Signature]
ASST. Director, Department of Utilities

APPROVED AS TO FORM AND CORRECTNESS:

[Signature]
CITY Attorney's Office

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 24, 2021.

HAMPTON ROADS SANITATION DISTRICT

By: *EGH*
Edward G. Henifin, P.E., General Manager

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

The foregoing instrument was acknowledged before me this 27th day of January, 2022, by Edward G. Henifin, P.E., General Manager of Hampton Roads Sanitation District. He is personally known to me or provided _____ as identification. yc

Jennifer Lynn Cascio
Notary Public

Notary#: 361710

My Commission expires: 8/31/2022

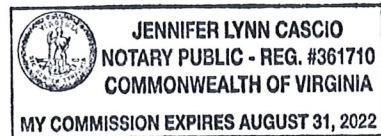


Exhibit A: PROPERTY

Descriptions:

101 North Shore Road, (legal description: GPIN 1439396461, **Parcel 1**, Pinehurst Subdivision) Norfolk, VA;

107 North Shore Road (legal description: GPIN 1439395461, **Parcel 2**, Pinehurst Subdivision) Norfolk, VA;

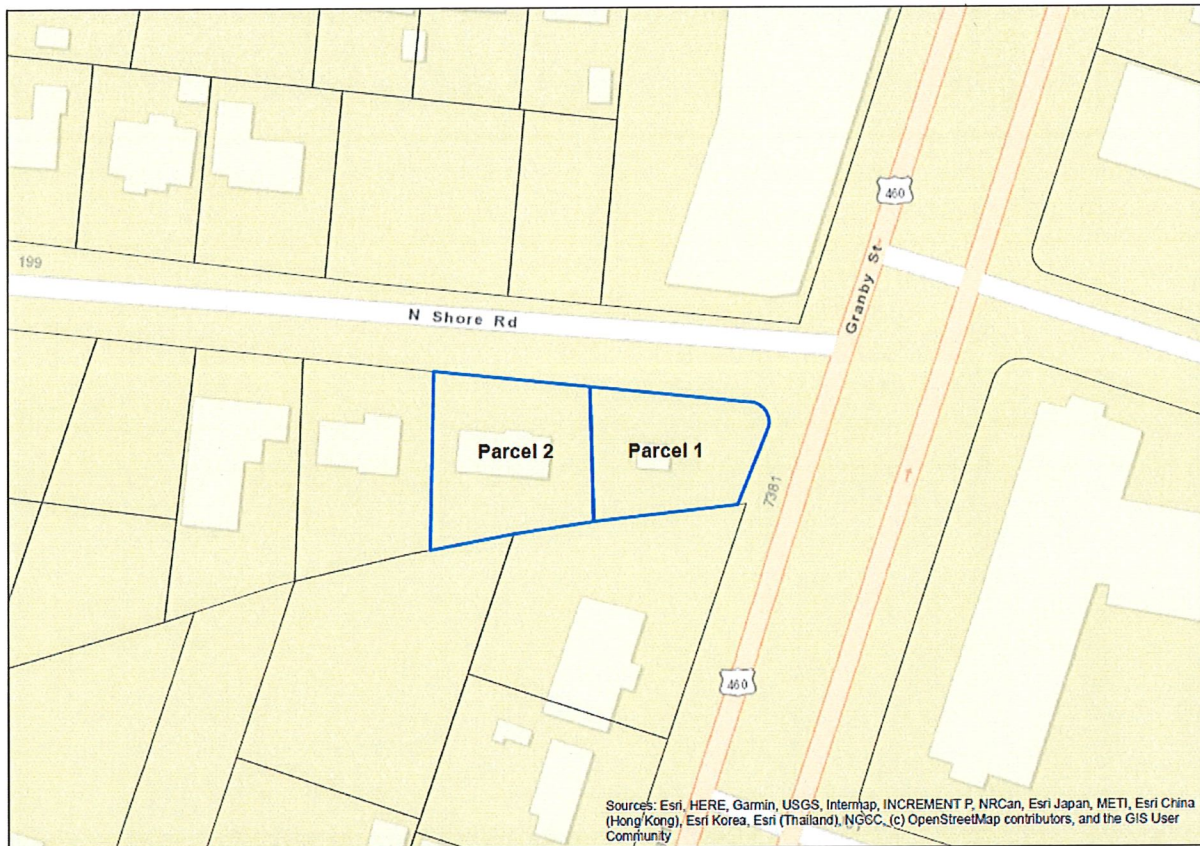


Exhibit B: FACILITIES

Description:

Wastewater Pump Station No. 27 Facility ("WPS #27") on Parcel 1 and 4200 LF of 20-inch DI Force Main.



**COST SHARING AGREEMENT
BETWEEN
THE CITY OF NORFOLK AND
THE HAMPTON ROADS SANITATION DISTRICT
FOR
WASTEWATER PUMP STATION NO. 27 AND RELATED INFRASTRUCTURE**

THIS COST SHARING AGREEMENT (“Agreement”), between the CITY OF NORFOLK (“CITY”) and the HAMPTON ROADS SANITATION DISTRICT (“HRSD”) is entered into this ____ day of _____, 2021 (“Effective Date”).

RECITALS

- R:1. The City of Norfolk currently owns, operates and maintains the existing Wards Corner Area Wastewater Pump Station No. 27 (WPS #27).
- R:2. CITY has an existing contract, dated June 27, 2009, with Michael Baker International (Engineer), to provide engineering services that includes, among other things, designing improvements and preparing construction documents for the then previously planned new City WPS #27 (the “Contract”). In accordance with said Contract, along with its subsequent seven (7) amendments, City is to pay Engineer a total sum not to exceed amount of **\$1,669,552.56** (“Fees”).
- R:3. City and HRSD (together the “Parties”) have recently determined that the existing WPS # 27 needs to be replaced, that a new HRSD Wastewater Pump Station (HRSD-WPS) needs to be designed and constructed to serve the area, which will include the connection of new gravity sewers and force main facilities, identified herein as “**Improvements**” and as illustrated in Exhibits 1 and 2 of this Agreement, and that the existing WPS #27 will be transferred to HRSD (under a separate agreement).
- R:4. Exhibit 1 of this Agreement depicts the proposed new connecting infrastructure (**CITY FACILITIES**) which will be owned by CITY upon project substantial completion per R:3.
- R:5. Exhibit 2 of this Agreement depicts the proposed new connecting infrastructure (**HRSD FACILITIES**) which will be owned by HRSD upon project substantial completion.
- R:6. The Parties have also determined and agreed that their interests are best served by sharing the costs of the needed replacement of WPS #27 and the design and construction of HRSD-WPS and by having the Improvements designed and constructed as one project.
- R:7. CITY has appropriated \$2,000,000 from its approved FY21 budget for its Capital Improvement Program Project - “Improve Wastewater Collection System” (“Appropriation”).

- R:8 The City is agreeable to using its existing contract with Engineer, as will be amended and increased to pay Engineer's costs for design and construction phase services for the replacement of WPS # 27 with HRSD-WPS.
- R:9 The City is also agreeable that in the event that the total costs paid by City for the Engineering services, over and above the Fees (which as of the date of this agreement has a remaining balance amount of \$106,795.30), is less than the \$2,000,000.00 Appropriation, then City will pay to HRSD any remaining unspent funds from the Appropriation.

NOW THEREFORE,

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 to the following terms:

TERMS

I. DESIGN, PRECONSTRUCTION, AND CONSTRUCTION ADMINISTRATION OF IMPROVEMENTS

A. Administration

1. CITY will provide design administration of the Improvements, in coordination with HRSD, under the CITY's engineering contract with Engineer, as amended, in accordance with the terms and conditions of this Agreement.
2. CITY will provide administration of the Engineer's duties during preconstruction phase of the Improvements and in coordination with HRSD.
3. CITY will amend current engineering contract with Engineer to provide additional services on as needed basis to design Improvements in coordination with and approval of HRSD Project Manager.
4. HRSD will administer all aspects of the preconstruction and construction phases of the Improvements.
5. Engineer will prepare construction documents for the Improvements. Engineer will also provide construction-related administration and inspection services at HRSD's request and in coordination with HRSD's Inspector.
6. Engineer will meet with CITY and HRSD staff on as needed basis to

coordinate, review, and solicit approval of all aspects of the design and construction of the Improvements and in accordance to Section I.A.4 of this Agreement.

7. One or more construction contracts may be entered into by HRSD to efficiently complete the Improvements.
8. All design work, specifications, and construction contract documents shall comply with:
 - a. HRSD's *Design and Construction Standards*, latest edition, for HRSD FACILITIES, and
 - b. CITY's Department of Utilities' *Design and Construction Standards*, latest edition, for CITY FACILITIES.

B. Approval of Construction Contract Documents

1. Before any construction work is to begin under this Agreement, HRSD and CITY will jointly review and approve the Construction Contract Documents. This approval shall be in writing.
2. HRSD will review and approve shop drawings and submittals related to HRSD Facilities.
3. CITY will review and approve shop drawings and submittals related to CITY FACILITIES and as part of the Improvements.

C. PAYMENT OF THE DESIGN AND CONSTRUCTION COSTS

1. CITY will pay Engineer for all engineering design costs, construction administration and inspection service costs, and any other additional costs associated with subsequent contract amendments as agreed between the Parties, up to an amount that shall not to exceed Two Million Dollars (\$2,000,000.00).
2. CITY will provide HRSD with Engineer's invoices, along with adequate supporting documentation, and updates as to the balance of the remaining funds available from the Appropriation, as requested by the HRSD Project Manager.

3. In the event that the total Engineer services costs paid by the City from the Appropriation (as evidenced by the paid Engineer invoices), over and above the payment of the Fees (which as of the date of this agreement has a remaining balance amount of \$106,795.30), is less than \$2,000,000.00, then City agrees to pay to HRSD the remaining unspent balance of funds from said Appropriation.

II. CONSTRUCTION OF IMPROVEMENTS

A. Administration:

1. HRSD shall provide construction inspection and administration of the contractor's contract for construction of the Improvements as well as construction related administration for HRSD and in coordination with HRSD's Inspector.
2. CITY shall have a City inspector on site during CITY FACILITIES construction work. All field changes or concerns noted by the City Inspector during construction shall be reviewed and approved by HRSD.
3. CITY shall provide construction administration services for CITY FACILITIES.

B. Payment of Cost of Improvements

1. HRSD shall be responsible to pay in full the cost of the construction of the Improvements and construction administration services provided for HRSD FACILITIES under its CIP Project identified as "Wards Corner Sanitary Sewer Pumping Station (CIPAB01200)".
2. Upon substantial completion of construction of the Improvements, and upon the City's receipt and payment of the Engineer's final invoice, the CITY will pay to HRSD the unused balance of Appropriations per Sections I.C.3 of this Agreement in a lump sum payment.

C. City Facilities Ownership Transfer

Upon substantial completion of Improvements, HRSD shall transfer ownership of CITY FACILITIES as depicted in Exhibit 1 of this Agreement and identified in the "As-Built" plans to City, with clear title, free and clear of any liens or encumbrances.

III. 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 such laws. 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 courts of the City of Norfolk.

IV. TERMINATION

Anything to the contrary notwithstanding, this Agreement and the obligations of the parties hereunder may be terminated by City or HRSD in the event that the other party breaches or violates any material provision of this Agreement or fails to perform any material covenant or agreement to be performed by either party under the terms of this Agreement and such breach, violation or failure 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.

V. 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 (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:
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:

Janice P. Anderson
Kellam, Pickrell, Cox & Anderson PC
403 Boush Street, Suite 300
Norfolk, VA 23510

To City of Norfolk

Director
City of Norfolk Department of Utilities
401 Monticello Avenue
Norfolk, VA. 23510

With copy to:
City Attorney
9th Floor – City Hall
810 Union Street
Norfolk, VA 23510

VI. ASSIGNMENT

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

VIII. AMENDMENT

This Agreement may be amended only by a written instrument duly executed by the parties.

IX. 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.

X. 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.

XI. 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, 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.

XII. 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.

XIII. 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 24, 2021.

HAMPTON ROADS SANITATION DISTRICT

By _____
Edward G. Henifin, P.E., General Manager

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

The foregoing Agreement was acknowledged before me this ___ day of _____, 2021, by Edward G. Henifin, HRSD General Manager.

Notary Public

My commission expires:

Registration No.:

IN WITNESS WHEREOF, the City of Norfolk has caused this Agreement to be signed by the City Manager on its behalf pursuant to Ordinance Number _____ adopted by the City Council on _____, 2021,

CITY OF NORFOLK

Dr. Larry H. Filer II, City Manager

ATTEST:

City Clerk

STATE OF VIRGINIA
CITY OF NORFOLK, to-wit:

I, _____, a Notary Public in and for the City of Norfolk, in the State of Virginia, whose term of office expires on the _____ day of _____, 2021, do hereby certify that Dr. Larry H. Filer II, City Manager and R. Allan Bull, City Clerk, respectively, of the City of Norfolk, whose names as such are signed to the foregoing deed dated the _____ day of _____, 2021, have acknowledged the same before me in my City and State aforesaid.

Given under my hand this ____ day of _____, 2021.

Notary Public [SEAL]

Approved as to Content:

Director of Utilities

Approved as to Form and Correctness:

Deputy City Attorney

CERTIFICATE OF FUNDING

I hereby certify that the money required for this Agreement is in the City Treasury to the credit of the fund from which it is to be drawn and not appropriated for any other purpose.

ACCOUNT: _____

AMOUNT: _____

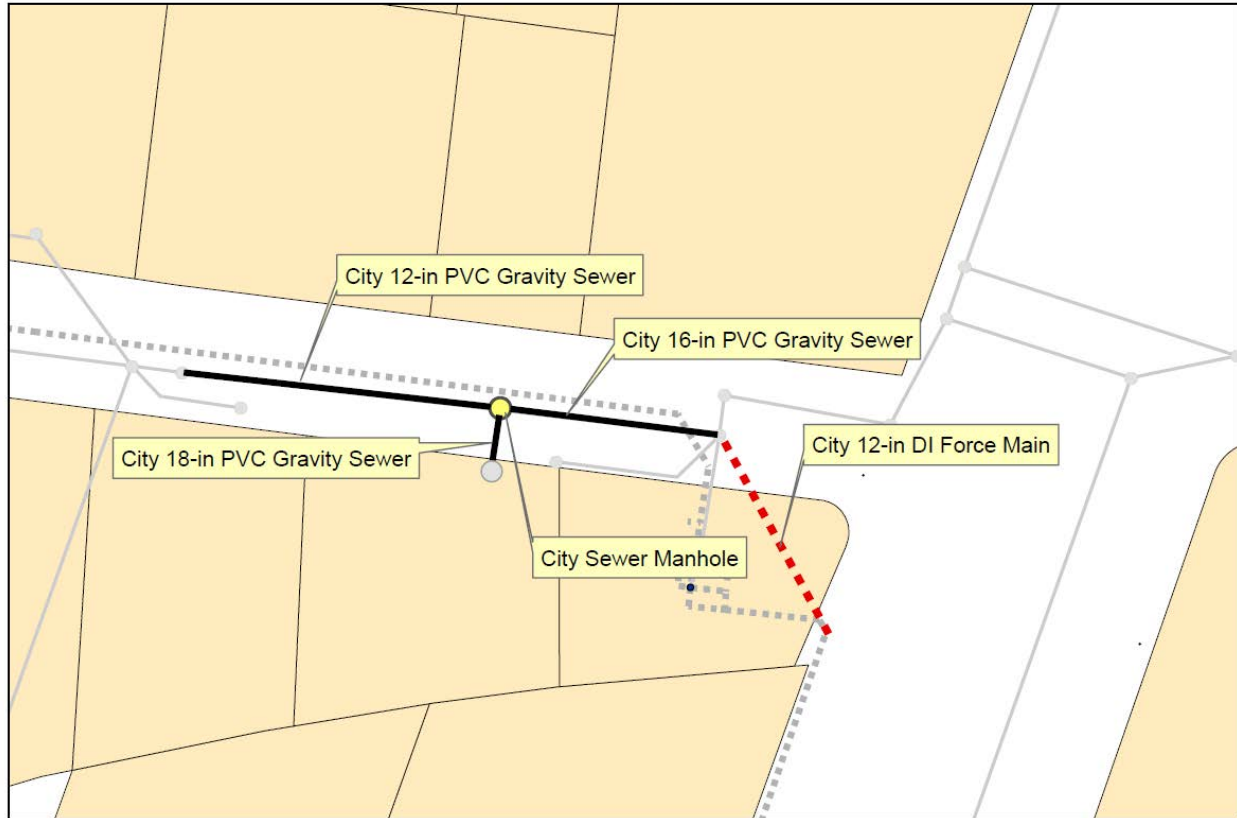
VENDOR CODE: _____

CONTRACT NO.: _____

Director of Finance

Date

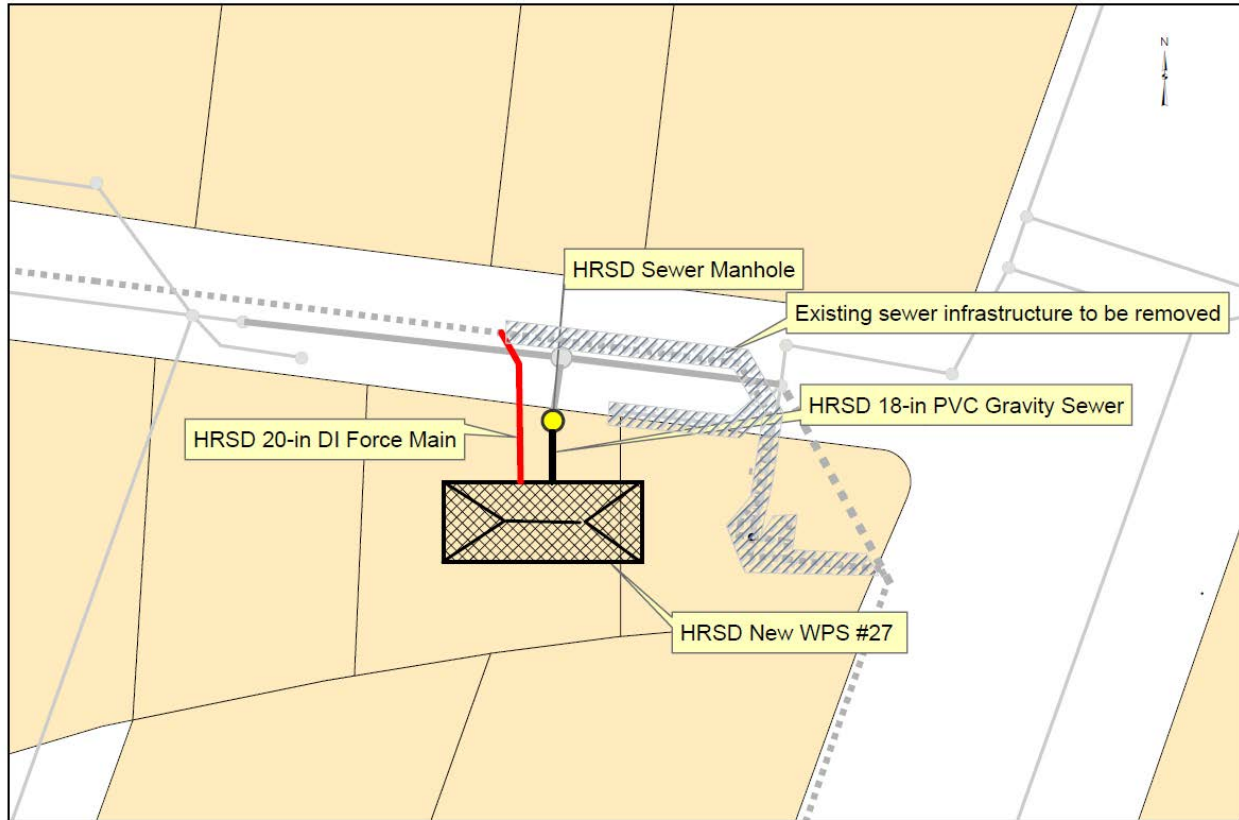
Exhibit 1: Improvements – City Facilities



NOTE:

Actual City Facilities will be noted on the approved “As-Built” plans of the Improvements (ref. CIP AB01200 - Wards Corner Sanitary Sewer Pumping Station)

Exhibit 2: Improvements - HRSD Facilities



NOTE:

Actual HRSD Facilities will be noted on the approved "As-Built" plans of the Improvements (ref. CIP AB01200 - Wards Corner Sanitary Sewer Pumping Station)

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #7

Agenda Item 22. Boat Harbor Pump Station Land Acquisition
520 14th Street Newport News

- [Purchase and Sale Agreement](#)
- [Deed of Bargain and Sale \(Forthcoming\)](#)
- [Facility Orientation Map](#)

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (this "Agreement") made this ____ day of _____, 2021, by **LAURA LEIGH OFFIELD, Trustee of the Laura Leigh Offield Trust**, hereinafter referred to as "Seller", and **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia ("HRSD"), Purchaser.

RECITALS

- A. Seller is the owner in fee simple absolute of a certain parcel of property approximately 5.1 acres in area (more or less), located at 520 14th Street, in the City of Newport News, Virginia, (Parcel ID: 316000155), such property being more particularly described in Exhibit A which is attached to and made a part of this Agreement (the "Property").
- B. HRSD desires to purchase the Property from the Seller for the purpose of expanding and improving HRSD wastewater infrastructure for the region.
- C. Seller is willing to sell the Property to HRSD subject to the terms and conditions set forth in this Agreement.
- D. These recitals are incorporated by this reference into this Agreement.

NOW, THEREFORE, in consideration of the purchase price and the mutual promises contained in this Agreement, the parties agree as follows:

1. **SALE**. Seller agrees to sell and HRSD agrees to purchase the Property, together with all rights and appurtenances thereto, including all right, title and interest of Seller in and to any land lying in the bed of any highway, street, road, or avenue, open or proposed, in front of or abutting, or adjoining such tract or piece of land and any riparian rights, if any, and any rights, easements, and appurtenances pertaining thereto, and any building and other property situated thereon, (excluding personal property except to the extent that Seller chooses to leave on premises upon vacation) attached or appurtenant to, located in or on, or used in connection with the real property, if any. The real property and the personal property are called "the Property".
2. **PURCHASE PRICE**. The purchase price ("Purchase Price") for the Property is **SIX HUNDRED, FIFTY-FIVE THOUSAND and 00/100 DOLLARS (\$655,000.00)**; and shall be paid by HRSD to the Seller at Settlement by cash or certified funds.

3. CONVEYANCE.

- a. At the Closing, Seller shall convey title to the Property in fee simple, by Special Warranty deed, free and clear of any and all liens, mortgages, deeds of trust, security interests, leases, covenants, conditions, restrictions, easements, rights-of-way, licenses, encroachments, judgments or encumbrances of any kind, except for the following permitted exceptions: (a) the lien of real estate taxes not yet due and payable; (b) zoning and building restrictions and other laws, ordinances, and regulations of governmental bodies having jurisdiction over the Property; and (c) matters of record affecting title to the property, as reviewed and approved (or deemed approved) by HRSD in accordance with this Agreement. Except as expressly stated in this Agreement, the Property shall be conveyed in "AS IS" condition, and with all defects.

- b. Title to the Property shall be good and marketable and, if HRSD chooses to obtain title insurance, insurable by a nationally recognized ALTA title insurance company of HRSD's choice at or below normal rates. In the event that a title examination discloses defects of title or other matters unsatisfactory to HRSD, HRSD shall notify Seller in writing (an "Objection Notice"), within 15 days of the Effective Date, of such title defects or other matters to which HRSD objects. Seller covenants that it shall cure all monetary encumbrances and all title objections which may be cured by execution of a document requiring the signature of no party other than Seller (including any affidavits which may reasonably be required by the title insurer). Seller may notify HRSD in writing (an "Objection Response"), within ten (10) business days after receiving an Objection Notice if it believes that the Objection Notice makes reference to any title defect or other matter that Seller cannot or elects not to cure. Upon receipt of an Objection Response from Seller, HRSD shall have the option either to (i) terminate this Agreement by notice to Seller given within ten (10) business days of the Objection Response or (ii) accept the defects, exceptions or other matters referenced in such Objection Response and proceed to Closing hereunder with no reduction of the Purchase Price. Seller shall have the period until the Closing date within which to correct all defects, exceptions or other matters that it is required or elects to cure. Seller shall provide such documents (including evidence of authority), affidavits, and other instruments

that may be reasonably required for the issuance of a title insurance policy to HRSD.

- c. Possession of the Property will be given to HRSD at Closing, per attached Possession Agreement (attached as Exhibit B) except that HRSD will have access to the Property for the purposes specified herein.
- d. Seller agrees to pay proration of real estate taxes and storm water fees and agrees to deliver possession of the Property to HRSD at settlement, or as per Exhibit B. HRSD will pay all other fees charged in connection with preparation and recordation of the deed, including grantor's tax and other applicable closing costs.
- e. Seller and HRSD agree that the attorney selected by HRSD shall act as the Settlement Agent at HRSD's expense. The Settlement Agent shall prepare the settlement statement, update and record the deed, collect and disburse settlement funds in accordance with this Agreement and the settlement statement, and file any required state and federal tax forms or other certifications.
- f. As part of Seller's Relocation Assistance, HRSD will pay Seller Replacement Housing Assistance in the amount of \$26,200 for moving advisory and related expenses.
** Note: Per 49 CFR § 24.209, of the Uniform Relocation and Assistance Act, Relocation Assistance payments for displaced persons are not considered as income.*

4. RIGHT OF ENTRY. HRSD and HRSD's authorized representatives may at any reasonable time and after giving reasonable notice to Seller, enter upon the Property for the purpose of making inspections, appraisals, surveys, including the cutting of survey lines and putting up markers and driving stubs and stakes, site analysis, engineering studies, core sampling for engineering reports, and locating existing rights of way, easements, and utilities. HRSD will exercise this right of entry in such a way so as to not cause unreasonable damage to the Property. HRSD agrees to indemnify and save harmless the Seller from all claims of liability for any personal injury or property damage or otherwise to any person or property caused by any action or omission of HRSD or its agents on the Property before or after Closing.

5. CONDITIONS PRECEDENT.

a. Seller hereby acknowledges that Buyer is acquiring the property for the purpose of operating twenty-four hours a day a pump station for use and the infrastructure of the HRSD sewage treatment facilities, in accordance with the ordinances of the City of Newport News, and the parties agree that all Conditions Precedent that are relevant to the Buyer must be satisfied within 180 days of the effective date of this Agreement.

b. (ii) all permits, licenses, and approvals with conditions acceptable to Buyer required for the construction or installation of Buyer's pump station in accordance with its intended use of the property having been obtained at the expense of Buyer, including without limitation, approvals required under all applicable zoning, environmental, wetlands, subdivision control, sanitary, health, safety and land-use law and regulations of the City of Newport News; (iii) all other operational licenses City and Governmental approvals and conditions acceptable to Buyer required for the completion of construction and operation of the pump station anticipated in accordance with Buyer's intended use; (iv) environmental testing to include wetlands delineation, which reports are satisfactory, in Buyer's sole discretion, to the completion of Buyer's intended use of the property.

c. In the event these initial Conditions Precedent have not been satisfied or waived by Buyer on or before the conclusion of the 180th day from the effective date of this Agreement, this Agreement may be terminated in its entirety by Buyer sending written notice to Seller of the same in accordance with the Notices paragraph in this Agreement (Paragraph 7).

d. This Agreement is contingent on the review and approval of the Hampton Roads Sanitation District Commission and upon such Commission granting authorization to the General Manager to proceed under the terms of this Agreement. This Agreement may also be contingent upon the City of Newport News' option to exercise its 30-day right of refusal from the date of full execution of said Agreement.

6. REPRESENTATIONS AND WARRANTIES BY SELLER. Seller represents and warrants as of the date of this Agreement and as of the date of Closing that: Seller has the right, title, and authority to enter into this Agreement and to perform its obligations hereunder.

Seller further represents and warrants and shall deliver to HRSD at or prior to the Settlement, an Owner's Affidavit (prepared by HRSD) and all other documents required by the title company to issue an owner's policy evidencing the following facts:

- (i) Other than this Agreement, there are no other contracts for sale or options involving the Property now in effect; however, both parties acknowledge that sale may be subject to a 30 day right of refusal by the City of Newport News (upon full execution of Purchase and Sale Agreement).
- (ii) To the best of Seller's knowledge, no other party has any right, title or interest in the Property; other than deeds of trust or other documents of record.
- (iii) There are no unrecorded leases, options, licenses or easements existing in connection with the property to which the Seller has knowledge;
- (iv) There are no adverse government notifications or proceedings and there is no pending or threatened litigation or any other potentially adverse claims affecting the property to which the Seller has knowledge.
- (v) Foreign Status. Seller is not a foreign corporation, person or entity and is a "United States Corporations, Person or Entity" as such terms is defined in Section 1445 and in Section 7701 (a)(30) of the Internal Revenue Code of 1986, as amended (the "Code") and shall deliver to HRSD at or prior to the Settlement an Affidavit prepared by HRSD evidencing such fact and such other documents as may be required under the Code.
- (vi) From and after the date of this Agreement, Seller shall not transfer any interest in, or grant any easements or enter into any contractual agreement or understanding, written or oral, with respect to the Property or any portion thereof or make any changes at all that require recordation and therefore modifications to title, without the prior written consent of HRSD.

7. NOTICES. All notices to the parties hereto will be delivered by hand, via certified mail return receipt requested, or via facsimile and all be deemed effective upon delivery if by hand and upon confirmation of receipt if by other means, to the following address until the address is changed by notice in writing to the other party:

HRSD: Ayanna R. Williams, R.E. Manager
1434 Air Rail Avenue
Virginia Beach, Virginia 23471-0911

Copy to: Conway Sheild, III, Esq.
Jones, Blechman, Woltz & Kelly, P.C.
701 Town Center Drive, Suite 800
Newport News, Virginia 23606

Seller: Laura Leigh Offield, Trustee of the Laura Leigh Offield
Trust
1044 Cherry Point Drive
White Stone, VA 22578

8. CLOSING. Unless this Agreement is terminated pursuant to its terms or by mutual agreement of the parties, Closing will be made at the offices of the Settlement Agent on or about September 23, 2021.
9. SURVIVAL. The provisions contained in this Agreement will be true as of the date of this Agreement and as of the date of Closing.
10. PRORATIONS. All rents, interest, taxes, insurance premiums, utility bills, and fuel oil, if any, will be prorated as of the date of Closing.
11. RISK OF LOSS. All risk of loss or damage to the Property by fire, windstorm, casualty, or other cause is assumed by Seller until Closing. In the event of substantial loss or damage to the Property before Closing, HRSD will have the option of either:
 - a. Terminating this Agreement, or
 - b. Affirming this Agreement and proceeding to Closing.
12. CONDEMNATION. Seller covenants and warrants that Seller has not heretofore received any notice of any condemnation proceeding or other proceeding in the nature of eminent domain in connection with the Property. If prior to Settlement any such proceeding is commenced or any change is made, or proposed to be made, to the current means of ingress and egress to the Property or to the roads or driveways adjoining the Property, or to change such ingress or egress or to change the grade thereof, Seller agrees immediately to notify HRSD thereof. HRSD then shall have the right, at HRSD's option, to terminate this Agreement by giving written notice to Seller within thirty (30) days after receipt of such notice.

13. DEFAULT AND REMEDIES.
- a. If the sale and purchase contemplated by this Agreement is not consummated because of Seller's or HRSD's default, the non-defaulting party may elect to:
 - i Terminate this Agreement;
 - ii Seek and obtain specific performance of this Agreement; or
 - iii Pursue all other rights or remedies available at law or in equity, including an action for damages.
 - b. If either Seller or HRSD defaults under this Agreement, the defaulting party will be liable for any expenses incurred by the non-defaulting party in connection with the enforcement of its rights under this Agreement.
 - c. These remedies are cumulative and non-exclusive and may be pursued at the option of the non-defaulting party without a requirement of election of remedies.
14. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties and will supersede the terms and conditions of all prior written and oral agreements, if any, concerning the matters it covers. The parties acknowledge there are no oral agreements, understandings, representations, or warranties that supplement or explain the terms and conditions contained in this Agreement. This Agreement may not be modified except by an agreement in writing signed by the parties.
15. WAIVER. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of the term, covenant, or condition, nor will any waiver or relinquishment of any right or power at any one time or more times be deemed a waiver or relinquishment of the right or power at any other time or times.
16. SEVERABILITY. This Agreement will be construed in its entirety and will not be divisible, except that the invalidity or unenforceability of any provision hereof will in no way affect the validity or enforceability of any other provision.
17. CAPTIONS. Captions are used in this Agreement for convenience only and will not be used to interpret this Agreement or any part of it.
18. GOVERNING LAW. This Agreement is to be construed in accordance with the laws of the Commonwealth of Virginia.

19. CHOICE OF FORUM/JURISDICTION. The parties hereby consent to the jurisdiction and venue of the courts of the Commonwealth of Virginia, specifically to the courts of the City of Newport News, Virginia, and to the jurisdiction and venue of the United States District Court for the Eastern District of Virginia in connection with any action, suit, or proceeding arising out of or relating to this Agreement and further waive and agree not to assert in any action, suit, or proceeding brought in the City of Hampton, Virginia, or the Eastern District of Virginia that the parties are not personally subject to the jurisdiction of these courts, that the action, suit, or proceeding is brought in an inconvenient forum or that venue is improper.

20. WAIVER OF TRIAL BY JURY. THE PARTIES WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING, OR COUNTERCLAIM BROUGHT BY EITHER PARTY AGAINST THE OTHER ON ANY MATTER WHATSOEVER ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ANY RELATED AGREEMENTS OR INSTRUMENTS AND THE ENFORCEMENT THEREOF, INCLUDING ANY CLAIM OF INJURY OR DAMAGE TO ANY PARTY OR THE PROPERTY OF ANY PARTY.

21. SUCCESSOR/ASSIGNMENT. This Agreement will be binding upon and the obligations and benefits hereof will accrue to the parties hereto, their heirs, personal representatives, successors, and assigns. This Agreement is assignable by HRSD only upon written consent of the Seller, which consent will not be unreasonably withheld. If this Agreement is assigned by HRSD with Seller's consent, HRSD will nevertheless remain fully liable for its performance.

22. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each will be considered an original, and together they will constitute one Agreement.

23. FACSIMILE SIGNATURES. Facsimile signatures will be considered original signatures for the purpose of execution and enforcement of the rights delineated in this Agreement.

[SIGNATURE PAGES TO FOLLOW]

SELLER: Linda Leigh Offield Trust

Laura L. Offield

Laura Leigh Offield, Trustee

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF Lancaster, to-wit:

I, Elizabeth J. Childs, do hereby certify that Laura Leigh Offield,
Trustee of the Laura Leigh Offield Trust, Seller herein, whose name is signed to the
foregoing Purchase and Sale Agreement, has acknowledged the same before me in my
City and State aforesaid.

Given under my hand this 12th day of August, 2021.

Elizabeth J. Childs

Notary Public

My Commission Expires: May 31, 2023
Registration Number: 157280



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 24, 2021. This Agreement is expressly subject to approval by the HRSD Commission.

HAMPTON ROADS SANITATION DISTRICT

By: 
Edward G. Henifin, P.E.
General Manager

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

The foregoing Purchase and Sale Agreement was acknowledged before me this 24th day of August, 2021, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.


Notary Public

My Commission Expires: _____
Registration No.: _____

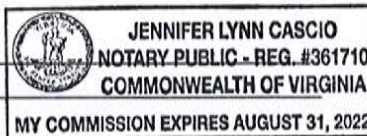


Exhibit "A"
Legal Property Description

All that certain lot, piece or parcel of land, situate, lying and being in the City of Newport News, Virginia, containing according to survey 4.962 acres as shown on the plat of survey entitled "Plat of: The Property of 4.962 Acres City of Newport News, Virginia", made by the City of Newport News Dept. of Engineering, a copy of the plat of survey being duly recorded in the Clerk's Office of the Circuit Court of the City of Newport News, Virginia in Deed Book 1075 at Page 2230. Such plat of survey is incorporated herein by this reference. Reference is hereby expressly made to such plat of survey for a description of the property conveyed, and is more particularly described as follows:

Beginning at a concrete monument, at the south east quadrant of Jefferson Avenue, and 12th Street, and from this point thus established, running S 63° 37' 00" W along the existing southerly right-of-way line of 12th Street for a distance of 720.20 feet to a point; thence, running N 34° 26' 54" W along the proposed westerly right-of-way line of 1-664 for a distance of 325.69 feet to a point of curvature; thence, running along a curve to the right, having an arc length of 138.48 feet and a radius of 2848.12 feet, to a point; thence, running N 63° 37' 00" E along the existing northerly right-of-way line of 14th Street for a distance of 281.98 feet to a point; thence, running S 26° 23' 00" E for a distance of 260.00 feet to a point; thence, running N 63° 37' 00" E along the existing northerly right-of-way line of 13th Street for a distance of 500.00 feet to a point; thence, running S 26° 23' 00" E along the existing easterly right-of-way line of Jefferson Avenue for a distance of 200.00 feet to the point of beginning.

Together with all and singular the buildings and improvements thereon, the rights and privileges, tenements, hereditaments, easements and appurtenances unto the said land belonging or in anywise appertaining.

Being the identical property which was conveyed unto Paul's Auto Parts, Inc. by certain deed dated April 5, 1984, made by the City of Newport News, and duly recorded in the Clerk's Office aforesaid in Deed Book 1075 at page 2226.

This conveyance is made expressly subject to all easements, conditions, covenants and restrictions of record to the extent they may lawfully affect the property.

Reference is hereby made to the foregoing deed, plat and other instruments of record in the chain of title for the property herein conveyed for a more particular description thereof.

Exhibit "B"
Post-Closing Agreement

POST-CLOSING POSSESSION AGREEMENT

PURCHASER: HAMPTON ROADS SANITATION DISTRICT (HRSD), a political subdivision of the Commonwealth of Virginia

SELLER: LAURA LEIGH OFFIELD, TRUSTEE
LAURA LEIGH OFFIELD TRUST

PROPERTY: 520 14th Street, Newport News, Virginia

DATES OF

POSSESSION: September 23rd, 2021 to January 15th, 2022

WHEREAS, the Seller has entered into a Contract for the purchase of the above captioned property from the Purchaser, which contract is dated _____; and

WHEREAS, the Seller wishes to possess and occupy the property after the closing date; September 23rd, 2021.

NOW, THEREFORE, in consideration of mutual promises, the parties agree as follows:

1. During the Dates of Possession, September 23rd, 2021 to January 15th, 2022, Seller may occupy the property at the rate of \$ 0.00 per day.
2. The Seller agrees to procure and maintain in effect, prior to entering into possession, a policy or policies of insurance adequately covering the subject property satisfactory to Purchaser and insuring against fire and any casualty and/or public liability which may arise out of or by virtue of the use and occupancy of the subject property by the Seller.
3. The Seller hereby agrees to indemnify and hold the Purchaser harmless from any and all claims, demands, action, causes of action, damages, expenses, losses, attorney's fees or liabilities arising in any way from or out of this occupancy, use or enjoyment of the subject property after closing.
4. The Seller accepts the subject property "as is" as of the Date of Possession, and will take no action to damage the property during Seller's tenancy. If damage occurs to the property, or any deterioration which is beyond reasonable wear and tear, the Seller shall remediate the property immediately, at his expense.
5. Should Seller maintain possession, or not turn possession over to Purchaser on or before January 31, 2022, Seller owes Purchaser \$100.00 per day for rent. Further should Seller not vacate the premises by January 31, 2022, Seller agrees to be responsible for the expenses of Purchaser in any legal

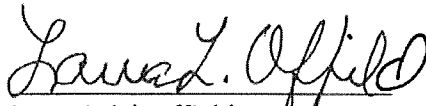
proceedings to evict Seller from premises, to include attorney's fees and costs.

6. The Seller agrees to pay all expenses in connection with his occupancy of the subject property, including, but not limited to, utilities and fuel during possession.
7. This agreement may be executed in counterparts.

IN WITNESS WHEREOF, the parties have caused their hands and seals to be affixed this _____ day of _____, 2021.

Purchaser: **HAMPTON ROADS SANITATION
DISTRICT**

By: _____
Ayanna R. Williams, SR/WA
Real Estate Manager, HRSD

Seller: 
Laura Leigh Offield, Trustee
Laura Leigh Offield Trust



Proposed acquisition
(520 14th Street)

Boat Harbor Site

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #8

Agenda Item 23. Larchmont Area Sanitary Sewer Improvements Acquisition
1101 Magnolia Avenue, Norfolk

- [Purchase and Sale Agreement](#)
- [Deed of Bargain and Sale](#)
- [Facility Orientation Map](#)

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (this "Agreement") made this 23RD day of JULY, 2021, by and between **Jason L. Holloway and Ashley T. Holloway**, (husband and wife), hereinafter referred to as Seller, and **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia ("HRSD"), Purchaser.

RECITALS

- A. Seller is the owner in fee simple absolute of a certain parcel of property described as Lots 31, 32, and 33, Block 28 Larchmont, Account# 2141-4700, located at 1101 Magnolia Avenue in the City of Norfolk, Virginia such property being more particularly described in Exhibit A and shown on Exhibit B, both of which are attached to and made a part of this Agreement (the "Property").
- B. HRSD desires to purchase the Property from the Seller for the purpose of the Larchmont Area Sanitary Sewer Improvements – Monroe Place Pump Station Replacement CIP# VP015320.
- C. Seller is willing to sell the Property to HRSD subject to the terms and conditions set forth in this Agreement.
- D. These recitals are incorporated by this reference into this Agreement.

NOW, THEREFORE, in consideration of the purchase price and the mutual promises contained in this Agreement, the parties agree as follows:

- 1. SALE. Seller agrees to sell and HRSD agrees to purchase the Property, together with all rights and appurtenances thereto, including all right, title and interest of Seller in and to any land lying in the bed of any highway, street, road, or avenue, open or proposed, in front of or abutting, or adjoining such tract or piece of land and any riparian rights, if any, and any rights, easements, and appurtenances pertaining thereto, and any building and other property situated thereon, including all personal property, attached or appurtenant to, located in or on, or used in connection with the real property, if any. The real property and the personal property are called "the Property".
- 2. PURCHASE PRICE. The purchase price (the Purchase Price) for the Property is NINE HUNDRED, TWENTY THOUSAND AND 00/100 DOLLARS (\$920,000), and the Purchase Price shall be paid to the Seller by certified check or wired funds at closing.

3. CONVEYANCE.

- a. At the Closing, Seller shall convey title to the Property in fee simple, by general warranty deed, free and clear of any and all liens, mortgages, deeds of trust, security interests, leases, covenants, conditions, restrictions, easements, rights-of-way, licenses, encroachments, judgments or encumbrances of any kind, except for the following permitted exceptions: (a) the lien of real estate taxes not yet due and payable; (b) zoning and building restrictions and other laws, ordinances, and regulations of governmental bodies having jurisdiction over the Property; and (c) matters of record affecting title to the property, as reviewed and approved (or deemed approved) by HRSD in accordance with this Agreement. Except as expressly stated in this Agreement, the Property shall be conveyed in "AS IS" condition.

- b. Title to the Property shall be good and marketable and, if HRSD chooses to obtain title insurance, insurable by a nationally recognized ALTA title insurance company of HRSD's choice at or below normal rates. In the event that a title examination discloses defects of title or other matters unsatisfactory to HRSD at HRSD's sole determination, HRSD shall notify Seller in writing (an "Objection Notice"), within 90 days of the Effective Date, of such title defects or other matters to which HRSD objects. Seller covenants that it shall cure all monetary encumbrances and all title objections which may be cured by execution of a document requiring the signature of no party other than Seller (including any affidavits which may reasonably be required by the title insurer). Seller may notify HRSD in writing (an "Objection Response"), within ten (10) business days after receiving an Objection Notice if it believes that the Objection Notice makes reference to any title defect or other matter that Seller cannot or elects not to cure. Upon receipt of an Objection Response from Seller, HRSD shall have the option either to (i) terminate this Agreement by notice to Seller given within ten (10) business days of the Objection Response or (ii) accept the defects, exceptions or other matters referenced in such Objection Response and proceed to Closing hereunder with no reduction of the Purchase Price. Seller shall have the period until the Closing date within which to correct all defects, exceptions or other matters that it is required or elects to cure. Seller shall provide such documents (including evidence of authority), affidavits, and other instruments that may be reasonably required for the issuance of a title insurance policy to HRSD.

- c. Possession of the Property will be given to HRSD at Closing, except that HRSD will have access to the Property for the purposes specified herein.
 - d. Seller agrees to pay proration of real estate taxes and storm water fees and agrees to deliver possession of the Property to HRSD at settlement. HRSD will pay all other fees charged in connection with preparation and recordation of the deed, including grantor's tax.
 - e. Seller and HRSD agree that the attorney selected by HRSD shall act as the Settlement Agent at HRSD's expense. The Settlement Agent shall prepare the settlement statement, update and record the deed, collect and disburse settlement funds in accordance with this Agreement and the settlement statement, and file any required state and federal tax forms or other certifications.
 - f. As part of Seller's Relocation Assistance, HRSD agrees to pay Seller \$10,000.00 (ten thousand dollars and 00/100 cents) to assist with for moving and relocation expenses. The parties acknowledge that this is a one-time lump sum payment associated with the purchase of 1101 Magnolia Avenue, Norfolk, Virginia but is not part of the purchase price. If closing does not occur due to Seller's fault or breach, Seller hereby agrees to refund and return to HRSD the Relocation Assistance paid by HRSD. Upon closing, in accordance with this Agreement, Buyer shall be entitled to retain all funds received as relocation assistance.
**Note: Per 49 CFR § 24.209, of the Uniform Relocation and Assistance Act, Relocation Assistance payments for displaced persons are not considered as income.*
 - g. Seller may remove items from the property to include but not limited to; all appliances, all fixtures, lighting, fans, cabinets, and countertops. Items that may not be removed from the home are the exterior doors, locks and windows allowing buyer to keep the property secure.
4. RIGHT OF ENTRY. HRSD and HRSD's authorized representatives may at any reasonable time and after giving reasonable notice to Seller, enter upon the Property for the purpose of making inspections, appraisals, surveys, including but not limited to the cutting of survey lines and putting up markers and driving stubs and stakes, site analysis, engineering studies, core sampling for engineering reports, and locating existing rights

of way, easements, and utilities. HRSD will exercise this right of entry in such a way so as to not cause unreasonable damage to the Property. HRSD agrees to indemnify and save harmless the Seller from all claims of liability for any personal injury or property damage or otherwise to any person or property caused by any action or omission of HRSD or its agents on the Property before or after Closing.

5. CONDITIONS AND CONTINGENCIES.

- a. HRSD's obligations are expressly conditioned upon the waiver or satisfaction of each of the following conditions in the sole determination of HRSD. If any one of the following conditions cannot be met within 90 days after the Effective Date (the Effective Date being defined as the date the contract is endorsed by both HRSD and Seller), HRSD may unilaterally terminate this Agreement:
 - i. Receipt of a satisfactory title commitment with all unacceptable title exceptions, encumbrances, and conditions as deemed by HRSD removed or cured at Seller's cost; however, if Seller chooses not to remove or cure any such title exception, HRSD's sole remedy shall be to terminate this Agreement;
 - ii. Receipt of a Phase I Environmental Assessment and Report (Phase I Report) conducted and prepared by an environmental engineering and inspection company selected by HRSD at HRSD's expense and such other testing and reports as may be reasonably required by HRSD or recommended in the Phase I Report;
 - iii. Seller's compliance of all of its obligations under this Agreement.
- b. This Agreement is expressly conditioned upon the completion of all title and environmental "due diligence" by HRSD and notification to the Seller in writing of any conditions that are unsatisfactory to HRSD within the 90 day period. In the event HRSD fails to notify the Seller in writing within such 90 day period, any objection to such conditions shall be deemed waived by HRSD and the parties shall proceed to closing; provided, however, in no event shall any mortgage, deed of trust, security agreement or monetary lien against the Property be deemed waived objections and the Seller

agrees that the same shall be removed and released as liens on the Property on or before Closing.

- c. 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.

6. ENVIRONMENTAL AND RELATED MATTERS.

- a. As a condition precedent to HRSD's obligation to purchase, HRSD, at HRSD's expense, may have a Phase I Environmental Assessment of the Property performed by a qualified environmental consultant (the Consultant) selected by HRSD and reasonably acceptable to Seller, conducted in accordance with standard commercial practice at the time of the assessment. A copy of the Phase I Environmental Assessment will be made available to Seller, together with copies of any supplemental reports or assessments.
- b. If the Consultant recommends soil, water, or structural remediation or further assessment activity after or as a result of performing a Phase I Environmental Assessment or if HRSD otherwise determines, in its reasonable judgment, that further assessment activity (including, but not limited to, a Phase II Environmental Assessment) is desirable, HRSD may at its option:
 - (i) Terminate this Agreement; or
 - (ii) Extend the time for closing for an additional period of sixty (60) days in order to perform any such additional assessment at HRSD's expense; or
 - (iii) Waive the environmental defect and proceed to Closing.

In the event HRSD chooses to perform any additional assessment, such as a Phase II, and determines that the results of such assessment are not satisfactory, HRSD may at its option:

- (i) Terminate this Agreement; or
- (ii) Waive the environmental defect and proceed to Closing.

7. REPRESENTATIONS AND WARRANTIES BY SELLER. Seller represents and warrants as of the date of this Agreement and as of the

date of Closing that: Seller has the right, title, and authority to enter into this Agreement and to perform its obligations hereunder.

Seller further represents and warrants and shall deliver to HRSD at or prior to the Settlement, an Affidavit prepared by HRSD evidencing the following facts:

(i) Other than this Agreement, there are no other contracts for sale or options involving the Property now in effect;

(ii) To the best of Seller's knowledge, no other party has any right, title or interest in the Property;

(iii) There are no unrecorded leases, options, licenses or easements existing in connection with the property to which the Seller has knowledge;

(iv) There are no adverse government notifications or proceedings and there is no pending or threatened litigation or any other potentially adverse claims affecting the property to which the Seller has knowledge.

(v) Foreign Status. Seller is not a foreign corporation, person or entity and is a "United States Corporations, Person or Entity" as such terms is defined in Section 1445 and in Section 7701 (a)(30) of the Internal Revenue Code of 1986, as amended (the "Code") and shall deliver to HRSD at or prior to the Settlement an Affidavit prepared by HRSD evidencing such fact and such other documents as may be required under the Code.

(vi) From and after the date of this Agreement, Seller shall not transfer any interest in, or grant any easements or enter into any contractual agreement or understanding, written or oral, with respect to the Property or any portion thereof or make any changes at all that require recordation and therefore modifications to title, without the prior written consent of HRSD.

(vii) The Seller warrants that to the best of his knowledge there are no wetlands or hazardous wastes, which would prevent HRSD's intended use of the land. To

the best of the Seller's knowledge: (i) none of the Property has been excavated (except for standard grading related to site development); (ii) no hazardous materials, toxic chemicals, or similar substances, as defined by 42 U.S.C. §1251, et seq. or 42 U.S.C. §6901, et seq. or 42 U.S.C. §9601, et seq., or 33 U.S.C. §1317(1), or 15 U.S.C. §2606(f), or 49 U.S.C. §1801, et seq., or regulations adopted pursuant thereto, or any similar provision of any applicable state, Federal, or local law (collectively "Hazardous Materials"), are or were stored or used on or under or otherwise were or are in existence or were in any way dealt with on or under the Property; and (iii) no owner or occupant of the Property has received any notice from any governmental agency with regard to such Hazardous Materials.

8. NOTICES. All notices to the parties hereto will be delivered by hand, via certified mail return receipt requested, or via facsimile and all be deemed effective upon delivery if by hand and upon confirmation of receipt if by other means, to the following address until the address is changed by notice in writing to the other party:

HRSD: Edward G. Henifin, P.E.
General Manager
P.O. Box 5911
Virginia Beach, Virginia 23471-0911

Copy to: Janice Pickrell Anderson, Esq.
Kellam, Pickrell, Cox & Anderson, PC
403 Boush Street, Suite 300
Norfolk, VA 23510

Seller: Jason and Ashley Holloway
1101 Magnolia Avenue
Norfolk, VA 23508

9. CLOSING. Unless this Agreement is terminated pursuant to its terms or by mutual agreement of the parties, Closing will be made at the offices of the Settlement Agent on or about August 30, 2021.

10. POST-CLOSING POSSESSION. Seller shall comply with all terms and conditions of the Post-Closing Possession Agreement attached hereto as Exhibit "C" and made part of this Agreement.
11. SURVIVAL. The provisions contained in this Agreement will be true as of the date of this Agreement and as of the date of Closing. The terms of the Post-Closing Agreement shall survive the closing.
12. PRORATIONS. All rents, interest, taxes, insurance premiums, utility bills, and fuel oil, if any, will be prorated as of the date of Closing.
13. RISK OF LOSS. All risk of loss or damage to the Property by fire, windstorm, casualty, or other cause is assumed by Seller until Closing. In the event of substantial loss or damage to the Property before Closing, HRSD will have the option of either:
 - a. Terminating this Agreement, or
 - b. Affirming this Agreement and proceeding to Closing.
14. FUTURE SALE BY HRSD. In the event that HRSD shall determine to sell all or a portion of the property for private development within two (2) years of the Settlement Date, it agrees to notify Seller and give Seller first opportunity to purchase the property on such terms as the parties shall mutually agree. Such notice shall be writing addressed in accordance with the provisions of Section 8 herein or such other address provided to HRSD by the Seller and shall provide Seller with at least thirty (30) calendar days to present HRSD with an offer to purchase the property.
15. BROKERS. Seller and HRSD both represent and warrant to the other that it has not hired, engaged, or consulted with any broker or agent in regard to this transaction. Each party agrees to indemnify and hold harmless the other from any and all costs, expenses, or damages resulting from any claim for brokerage fees or other similar forms of compensation made by any real estate broker or other person or entity with whom a party has dealt, and who is not expressly named herein.
16. CONDEMNATION. Seller covenants and warrants that Seller has not heretofore received any notice of any condemnation proceeding or other proceeding in the nature of eminent domain in connection with the Property. If prior to Settlement any such proceeding is commenced or any change is made, or proposed to be made, to the current means of ingress and egress to the Property or to the roads or driveways adjoining the Property, or to

change such ingress or egress or to change the grade thereof, Seller agrees immediately to notify HRSD thereof. HRSD then shall have the right, at HRSD's option, to terminate this Agreement by giving written notice to Seller within thirty (30) days after receipt of such notice.

17. DEFAULT AND REMEDIES.

- a. If the sale and purchase contemplated by this Agreement is not consummated because of Seller's or HRSD's default, the non-defaulting party may elect to:
 - i Terminate this Agreement;
 - ii Seek and obtain specific performance of this Agreement; or
 - iii Pursue all other rights or remedies available at law or in equity, including an action for damages.
- b. If either Seller or HRSD defaults under this Agreement, the defaulting party will be liable for any expenses incurred by the non-defaulting party in connection with the enforcement of its rights under this Agreement.
- c. These remedies are cumulative and non-exclusive and may be pursued at the option of the non-defaulting party without a requirement of election of remedies.

18. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties and will supersede the terms and conditions of all prior written and oral agreements, if any, concerning the matters it covers. The parties acknowledge there are no oral agreements, understandings, representations, or warranties that supplement or explain the terms and conditions contained in this Agreement. This Agreement may not be modified except by an agreement in writing signed by the parties.

19. WAIVER. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of the term, covenant, or condition, nor will any waiver or relinquishment of any right or power at any one time or more times be deemed a waiver or relinquishment of the right or power at any other time or times.

20. SEVERABILITY. This Agreement will be construed in its entirety and will not be divisible, except that the invalidity or unenforceability of any provision hereof will in no way affect the validity or enforceability of any other provision.
21. CAPTIONS. Captions are used in this Agreement for convenience only and will not be used to interpret this Agreement or any part of it.
22. GOVERNING LAW. This Agreement is to be construed in accordance with the laws of the Commonwealth of Virginia.
23. CHOICE OF FORUM/JURISDICTION. The parties hereby consent to the jurisdiction and venue of the courts of the Commonwealth of Virginia, specifically to the courts of the City of Norfolk, Virginia, and to the jurisdiction and venue of the United States District Court for the Eastern District of Virginia in connection with any action, suit, or proceeding arising out of or relating to this Agreement and further waive and agree not to assert in any action, suit, or proceeding brought in the City of Norfolk, Virginia, or the Eastern District of Virginia that the parties are not personally subject to the jurisdiction of these courts, that the action, suit, or proceeding is brought in an inconvenient forum or that venue is improper.
24. WAIVER OF TRIAL BY JURY. THE PARTIES WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING, OR COUNTERCLAIM BROUGHT BY EITHER PARTY AGAINST THE OTHER ON ANY MATTER WHATSOEVER ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ANY RELATED AGREEMENTS OR INSTRUMENTS AND THE ENFORCEMENT THEREOF, INCLUDING ANY CLAIM OF INJURY OR DAMAGE TO ANY PARTY OR THE PROPERTY OF ANY PARTY.
25. SUCCESSOR/ASSIGNMENT. This Agreement will be binding upon and the obligations and benefits hereof will accrue to the parties hereto, their heirs, personal representatives, successors, and assigns. This Agreement is assignable by HRSD only upon written consent of the Seller, which consent will not be unreasonably withheld. If this Agreement is assigned by HRSD with Seller's consent, HRSD will nevertheless remain fully liable for its performance.
26. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each will be considered an original, and together they will constitute one Agreement.

27. FACSIMILE SIGNATURES. Facsimile signatures will be considered original signatures for the purpose of execution and enforcement of the rights delineated in this Agreement.

28. ETHICS IN PUBLIC CONTRACTING. By executing this Agreement, the undersigned Seller 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.

(Remainder of page intentionally left blank – Signature Pages follow)

SELLER: Jason L. Holloway
Name: Jason L. Holloway

SELLER: Ashley T. Holloway
Name: Ashley T. Holloway

COMMONWEALTH OF VIRGINIA
CITY OF Norfolk, to-wit:

I, Karen C. Russo-Scarano, a Notary Public in and for the City of Norfolk, in the Commonwealth of Virginia, whose term of office expires on _____, do hereby certify that Jason L. Holloway and Ashley T. Holloway, Seller herein, whose name is signed to the foregoing Purchase and Sale Agreement, has acknowledged the same before me in my City and State aforesaid.

Given under my hand this 23 day of July, 2021.

Karen C. Russo-Scarano
Notary Public

My Commission Expires: April 30, 2023
Registration Number: 7837081

KAREN CHRISTINE RUSSO-SCARANO
NOTARY PUBLIC - REG. #7837081
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: APRIL 30, 2023

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 Aug. 24th, 2021. This Agreement is expressly subject to approval by the HRSD Commission


HAMPTON ROADS SANITATION DISTRICT

By: 
Edward G. Henifin, P.E.
General Manager

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

The foregoing Purchase and Sale Agreement was acknowledged before me this 25th day of August, 2021, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.

KAREN CHRISTINE RUSSO-SCARANO
NOTARY PUBLIC - REG. #7837081
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: APRIL 30, 2023


Notary Public

My Commission Expires: April 30, 2023

Registration No.: 7837081

EXHIBIT "A"

Legal Description

All THOSE certain lots, pieces or parcels of land, located in the City of Norfolk, Virginia being known, numbered and designated as Lots 31,32 and 33, in Block 28, as shown on the Amended Plat of Larchmont, made by Benson& Drummond, Consulting Engineers, June 15, 1909, and duly of record in the Clerk's Office of the Circuit Court of the City of Chesapeake (formerly Norfolk County) in Map Bool 9 at Page 1, said lots taken as a whole being bounded and described as follows: and as shown on physical survey attached hereto; NOTE: No physical survey attached recorded in Deed Book 1978, Page 726.

BEGINNING at the southwestern intersection of Monroe Place and Magnolia Avenue and running thence in a southwesterly direction along the western line of Monroe Place 107.9 feet, more or less, to the dividing line of said block; thence in a westerly direction along said dividing line of said block 45.50 feet, more or less, to the eastern line of Lot 30 in said Block; thence in a northerly direction along said eastern line of Lot 30, 100 feet to the southern line of Magnolia Avenue; and thence in an easterly direction along said southern line of Magnolia Avenue 86.4 feet, more or less, to the point of beginning.

IT BEING the same property conveyed to Jason Holloway and Ashley T. Holloway by Deed of Gift from Jason Holloway dated, October 31, 2016 and recorded in aforesaid clerks office on November 4, 2016 as Instrument Number 160024018.

EXHIBIT B

PHYSICAL SURVEY
of 1101 Magnolia Avenue, Norfolk, Virginia
Lots 31, 32, & 33, Block 28
Southeast Section Amended Plat of Larchmont
M.B. 9, P. 1 Date: December 9, 1986

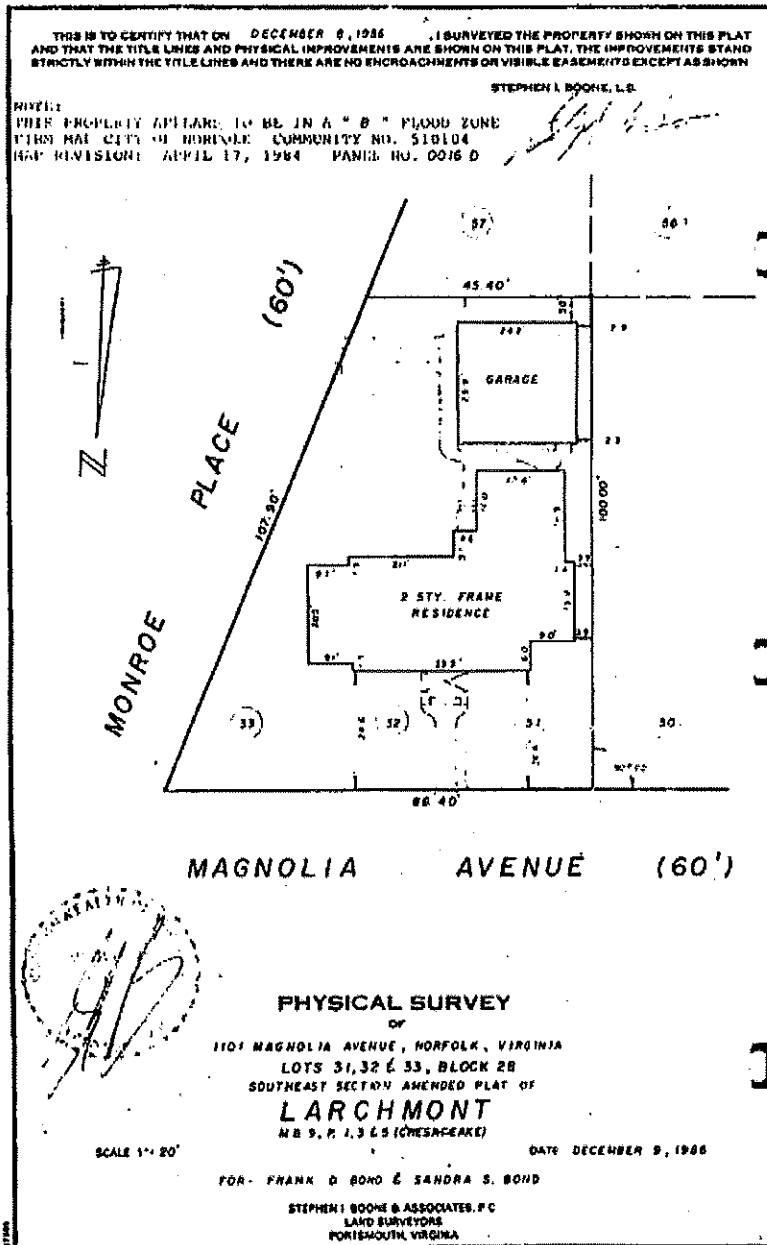


EXHIBIT C

POST-CLOSING POSSESSION AGREEMENT

PURCHASER: HAMPTON ROADS SANITATION DISTRICT (HRSD), a political subdivision of the Commonwealth of Virginia

SELLER: Jason L. Holloway and Ashley T. Holloway

PROPERTY: 1101 Magnolia Avenue, Norfolk, VA 23508
Tax Parcel Identification: 1429-62-0856

DATES OF POSSESSION: ^{26th KR} August 30, 2021 to April 30, 2022

WHEREAS, the Seller has entered into a Contract for the purchase of the above captioned property from the Purchaser, which contract is dated July 23, 2021; and

WHEREAS, the Seller wishes to possess and occupy the property after the closing date; August 30, 2021.

NOW, THEREFORE, in consideration of mutual promises, the parties agree as follows:

1. During the Dates of Possession, ^{26th KR} August 30, 2021 to April 30, 2022, Seller may occupy the property at the rate of \$ 0.00 per month.
2. The Seller agrees to procure and maintain in effect, prior to entering into possession, a policy or policies of insurance adequately covering the subject property satisfactory to Purchaser and insuring against fire and any casualty and/or public liability which may arise out of or by virtue of the use and occupancy of the subject property by the Seller.
3. The Seller hereby agrees to indemnify and hold the Purchaser harmless from any and all claims, demands, action, causes of action, damages, expenses, losses, attorney's fees or liabilities arising in any way from or out of this occupancy, use or enjoyment of the subject property after closing.
4. The Seller accepts the subject property "as is" as of the Date of Possession, and will take no action to damage the property during Seller's tenancy. If damage occurs to the property, or any deterioration which is beyond reasonable wear and tear, the Seller shall remediate the property immediately, at his expense.
5. Should Seller maintain possession, or not turn possession over to Purchaser on or before April 30, 2022, Seller owes Purchaser \$50.00 per day for rent. Further should Seller not vacate the premises by April 30, 2022, Seller agrees

- to be responsible for the expenses of Purchaser in any legal proceedings to evict Seller from premises, to include attorney's fees and costs.
6. The Seller agrees to pay all expenses in connection with his occupancy of the subject property, including, but not limited to, utilities and fuel during possession.
 7. Seller agrees to maintain the property in good condition keeping it free and clear of any City or State code ordinance violations, which shall include but not limited to yard maintenance and cutting the grass.
 8. This agreement may be executed in counterparts.

IN WITNESS WHEREOF, the parties have caused their hands and seals to be affixed this 23 day of July, 2021.

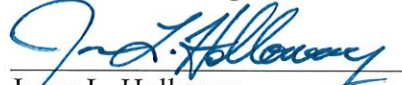
Purchaser: HAMPTON ROADS SANITATION
DISTRICT

By:



Karen Russo-Scarano, RWP
Real Estate Manager, HRSD

Seller:



Jason L. Holloway

Seller:



Ashley T. Holloway

EXEMPT from State and Local Grantee
taxes pursuant to Section 58.1-811(A)(3)
Code of Virginia, 1950, as amended

JASON HOLLOWAY and
ASHLEY T. HOLLOWAY

to

DEED OF BARGAIN AND SALE

HAMPTON ROADS SANITATION DISTRICT,
a political subdivision of the
Commonwealth of Virginia

THIS DEED, made this 24th day of August, 2021, by and between, JASON HOLLOWAY
and ASHLEY T. HOLLOWAY, GRANTORS, and HAMPTON ROADS SANITATION DISTRICT, a
political subdivision of the Commonwealth of Virginia, GRANTEE, whose mailing address is:
Post Office Box 5911, Virginia Beach, VA 23471-0911.

WITNESSETH:

That for and in consideration of the sum of ten (\$10.00) dollars, and other good and
valuable consideration, the receipt of which is hereby acknowledged, the said Grantors do
grant, bargain, sell, assign and convey, with GENERAL WARRANTY and with ENGLISH
COVENANTS OF TITLE unto the said HAMPTON ROADS SANITATION DISTRICT, a political
subdivision of the Commonwealth of Virginia, Grantee, the following described property, to-
wit:

Prepared by and Return to:
Janice Pickrell Anderson VA State Bar #36930
KELLAM, PICKRELL, COX & ANDERSON, P.C.
Consideration: \$920,000.00; Assessment: \$416,200.00
Tax Acct No.: 2141-4700
Title Insurance: Fidelity National Title Insurance Company

KELLAM, PICKRELL,
COX & ANDERSON
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW

ALL THOSE certain lots, pieces or parcels of land, located in the City of Norfolk, Virginia being known, numbered and designated as Lots 31, 32 and 33, in Block 28, as shown on the Amended Plat of Larchmont, made by Benson Drummond, Consulting Engineers, June 15, 1909, and duly of record in the Clerk's Office of the Circuit Court of the City of Chesapeake (formerly Norfolk County) in Map Book 9 at Page 1, said lots taken as a whole being bounded and described as follows: and as shown on physical survey attached hereto; NOTE: No physical survey attached recorded in Deed Book 1978, Page 726.

BEGINNING at the southwestern intersection of Monroe Place and Magnolia Avenue and running thence in a southwesterly direction along the western line of Monroe Place 107.9 feet, more or less, to the dividing line of said block; thence in a westerly direction along said diving line of said block 45.50 feet, more or less, to the eastern line of Lot 30 in said Block; thence in a northerly direction along said eastern line of Lot 30, 100 feet to the southern line of Magnolia Avenue; and thence in an easterly direction along said southern line of Magnolia Avenue 86.4 feet, more or less, to the point of beginning.

The above property is conveyed subject to the conditions, restrictions, reservations covenants and easements of record in the chain of title, if any, constituting constructive notice.

WITNESS the following signatures and seals:

Jason Holloway by Ashley T. Holloway,
his attorney in fact (SEAL)
JASON HOLLOWAY by Ashley T. Holloway
his attorney-in-fact under Power of Attorney
dated August 14, 2021

Ashley T. Holloway (SEAL)
ASHLEY T. HOLLOWAY

COMMONWEALTH OF VIRGINIA
CITY OF NORFOLK, to-wit:

I, the undersigned, a Notary Public in and for the City and State aforesaid, do hereby certify that JASON HOLLOWAY, by Ashley T. Holloway, his attorney-in-fact under Power of

Attorney dated August 14, 2021, and ASHLEY T. HOLLOWAY, whose names are signed to the foregoing instrument, have each acknowledged the same before me in my City and State aforesaid this 20th day of August, 2021.



Janice Pickrell Anderson
Notary Public
Reg. No. 230948
My Commission expires: May 31, 2024

INSTRUMENT 210026978
RECORDED IN THE CLERK'S OFFICE OF
NORFOLK CIRCUIT COURT ON
AUGUST 27, 2021 AT 03:37 PM
\$920.00 GRANTOR TAX WAS PAID AS
REQUIRED BY SEC 58.1-202 OF THE VA. CODE
STATE: \$460.00 LOCAL: \$460.00
GEORGE E. SCHAEFER, CLERK
RECORDED BY: MXH

Location Map



Existing Pump Station – Street View



Future Pump Station Site

Street View - Front



Street View – from Pump Station



HRSD Commission Meeting Minutes
August 24, 2021

Attachment #9

Agenda Item 24. COVID-19 Wastewater Surveillance Study Presentation

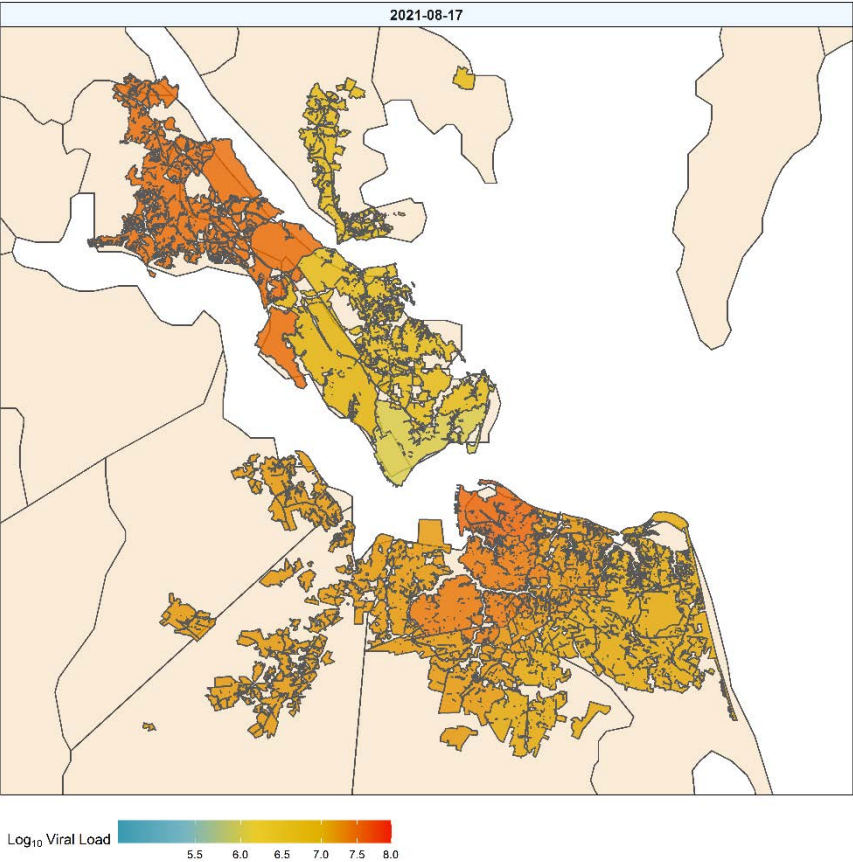
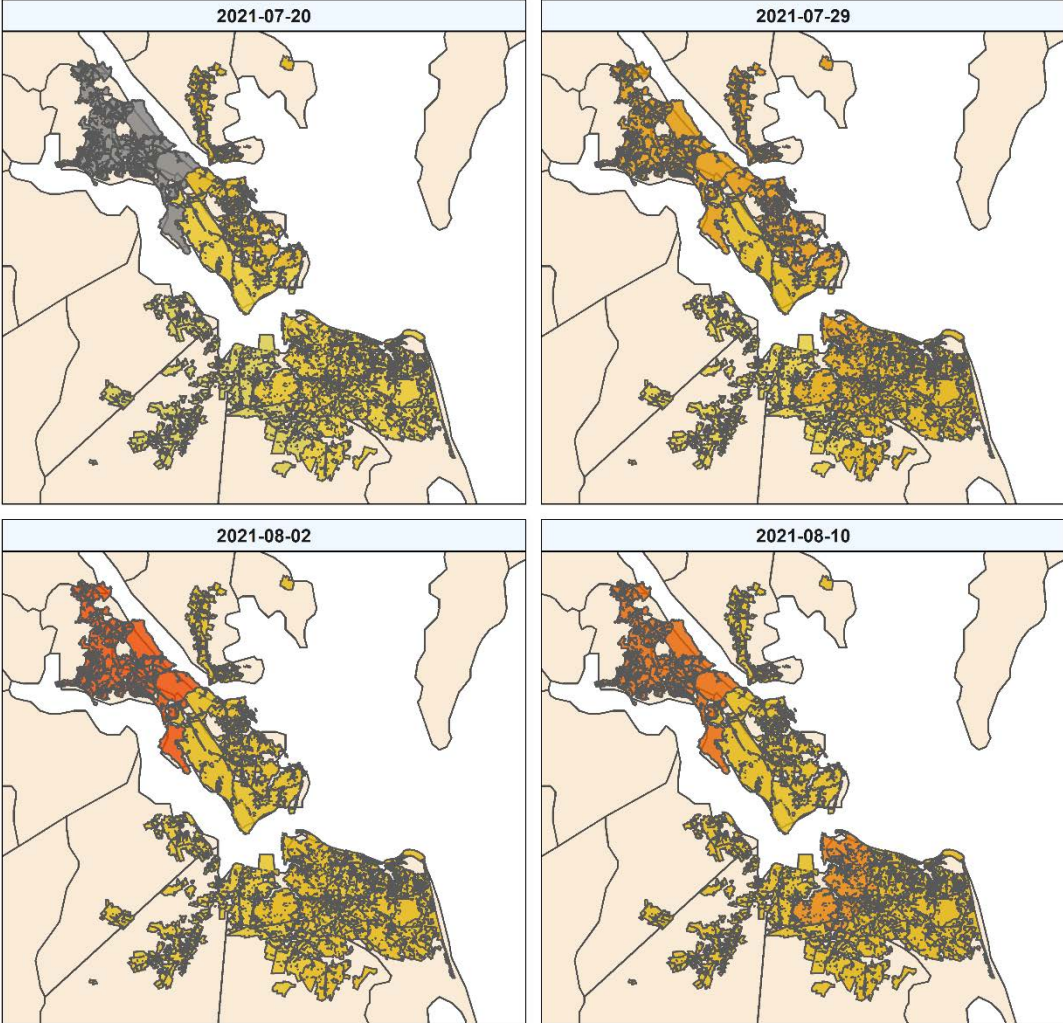


COVID-19 Surveillance Commission Update

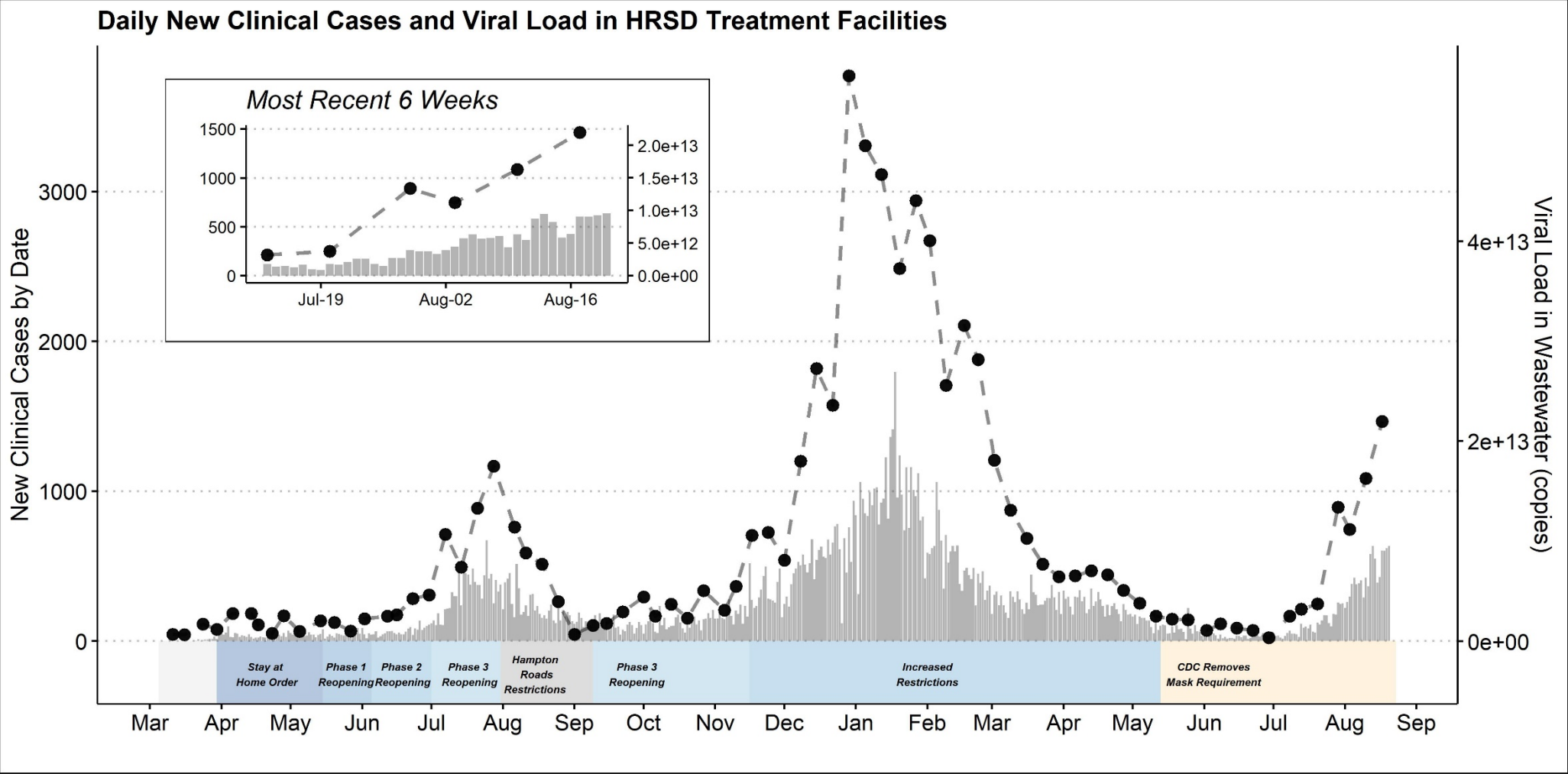
August 24, 2021

- Weekly sampling of the 9 major facilities
 - Data through 8/17 presented
- General notes;
 - Detections and loading up since late June
- Collaboration with City of Chesapeake and VDH
- VA Sentinel Sites

Most Recent 5 Weeks



*grey catchments indicate samples below limit of detection

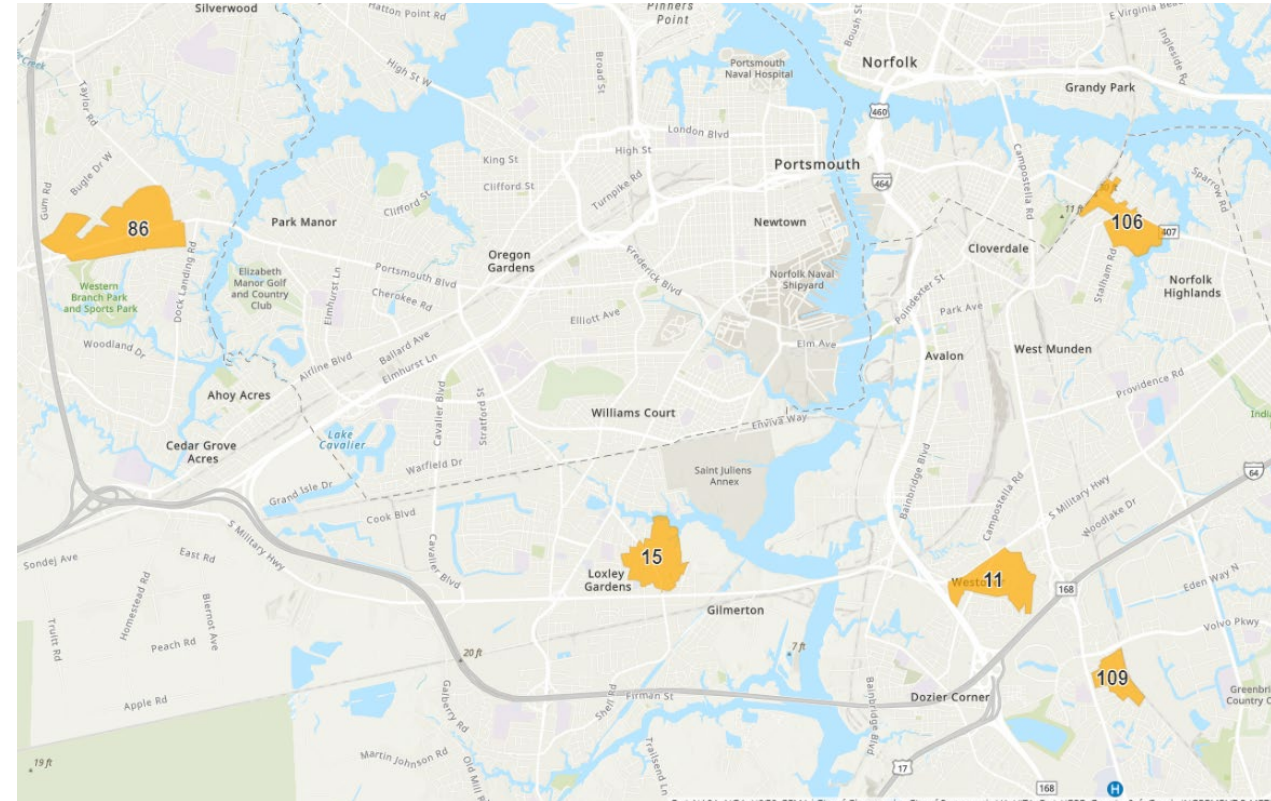


-Bars indicate clinical cases
-Points and line indicate SARS-CoV-2 RNA copies in wastewater



Collection System Study with Chesapeake

- Chesapeake + VDH + HRSD collaboration
 - Weekly samples at 5 pumpstations
 - Pumpstation scale trends
- Using data to mobilize testing, vaccination clinics, and outreach to catchments
- VDH will fund surveillance of 5 sites for 12 more weeks



- VDH establishing network of 25 treatment facilities across VA
- Regular monitoring of SARS-CoV-2 in wastewater
- HRSD facilities included;
 - Atlantic / Nansemond / VIP / Williamsburg / Onancock
- HRSD assist with analyzing these samples as DCLS capability comes online
- Targeted start data – 9/13

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #10

Agenda item 26.b. – New Business – Updated General Manager Position Description

HRSD

Position Description: General Manager

Section I. Position Reference Information

a.	Department	General Management
b.	Position Title	General Manager
c.	Immediate Supervisor	Governor-appointed HRSD Commission
d.	Work Center	General Management
e.	Grade	Not classified

Section II. Position Summary

Under broad guidance, performs the duties of the Chief Executive Officer for HRSD:

- a. Leading HRSD efforts to protect human health and the environment
- b. Developing and recommending policy and strategic direction to the HRSD Commission; considering future industry trends, legal and regulatory issues at the local, state, and national levels
- c. Ensuring the HRSD Commission is well informed and prepared to set policy, establish rates, and respond to emerging issues related to HRSD's mission with a clear focus on ensuring future generations inherit clean waterways and are able to keep them clean.
- d. Building external support for HRSD through educating and communicating with elected and appointed leaders at the local, state, and national level
- e. Building strong partnerships with all stakeholders including ratepayers, environmental non-governmental organizations, regulators, academia, other utilities.
- f. Setting broad standards and priorities in the areas of finance, customer satisfaction, leadership, employee development, infrastructure investment, operational excellence, regulatory responsiveness, innovation, risk management, diversity, equity and inclusion
- g. Focusing investments to achieve the greatest environmental benefits at the lowest cost
- h. Shaping and supporting HRSD culture by nurturing shared values of education, innovation, ethics, performance, accountability, empowerment, inclusion, belonging, and continuous improvement
- i. Supporting a greater understanding of the value of water through cooperative work within the water sector

Section III. Examples of Position Duties

- a. Communicates HRSD's value to the Hampton Roads region
- b. Demonstrates consistent, transparent, and inclusive leadership
- c. Influences the development of regulations, rules, and laws by supporting regional, state and national organizations in alignment with HRSD's mission
- d. Leads HRSD's cross departmental leadership team (QST)
- e. Builds relationships with local, state, and national NGOs
- f. Leverages HRSD investments in wastewater infrastructure to achieve broader community benefits
- g. Communicates regularly with the Commission, the HRSD organization, regional partners, state agencies, and other stakeholders
- h. Ensures compliance with Commission adopted policies, financing agreements, trust obligations, applicable laws and regulations

- i. Develops a balanced annual budget for Commission consideration in alignment with the long-range financial planning model
- j. Assembles the right talent with a strong Senior Leadership team in an atmosphere which attracts and retains top quality talent
- k. Positions HRSD as a leading agency in the water sector at the state, national and international level
- l. Directs expansion of services into new communities and new lines of service within the authority of the HRSD Enabling legislation
- m. Leads negotiations on regulatory, legislative, and enforcement issues
- n. Directs HRSD preparation, response, and recovery for natural and /or manmade disasters or other catastrophic events (physical, reputational, operational)
- o. Guides development of HRSD strategic plan for Commission consideration and implementation upon adoption
- p. Continues to build own technical and leadership skills

Section IV. Position Contacts

a. **Internal Contacts**

<i>Contact</i>	<i>Purpose</i>	<i>Frequency</i>
Commission Secretary	Supervision	Daily
Department Directors	Supervision, Planning, Strategic Decision-Making	Regularly
Division Chiefs	Guidance, Direction, Ideation, Planning, Strategic Decision-Making	As required
All Employees	Communicating vision, direction, strategy, goals, successes, challenges, policies	Regularly

b. **External Contacts**

<i>Contact</i>	<i>Purpose</i>	<i>Frequency</i>
HRSD Commissioners	Establish meeting agendas, updates on operational issues, strategic direction, finances	Monthly
Potomac Aquifer Recharge Oversight Committee (PAROC)	Facilitate meetings, provide operational updates, coordinate HRSD staff engagement	Quarterly
Regional Utility Directors	Coordination, relationship building, connecting	Monthly
Regional City Managers/County Administrators	Coordination, cooperative agreements, regional initiatives	As required
Regional DEQ Director	Regulatory matters, funding opportunities	As required

State agency heads	Regulatory matters, legislation, problem solving	As required
Governor's staff, Secretary of Natural Resources	Coordination, communication, relationship building	As required
State and Federal elected officials	Legislation, financing, relationship building	As required
Environmental NGOs	Education, building support, connections, relationships	Regularly

Section V. Position Accountabilities and Expectations

- a. Compliance – Protect human and health and the environment through compliance with permits with appropriate balance of risk management and financial investment
- b. Operations – All functions are accomplished as required, regularly reviewed for efficiency, cost effectiveness, and continued relevance
- c. Financial Management – Annual budget is balanced and executed as approved. Full compliance with all trust and loan agreements and financial policies. Rates recover full cost of service with appropriate reinvestment to ensure undue financial burden is not passed on to next generation. Affordability is addressed through low-income assistance programs.
- d. Innovation – New ways to accomplish all functions are continuously explored and adopted quickly when possible. Failure is an expected occasional outcome but used to learn and inform future innovation.
- e. Talent Management – Motivated and skilled talent is attracted and retained throughout the organization. Decisions are made at appropriate level. Employees are empowered to perform their jobs with high degree of autonomy. Employees recognize HRSD as the best place they ever worked.
- f. Customer Satisfaction – HRSD is responsive to all customer requests, focused on easy access, and clear communications. HRSD is a good neighbor at all facilities focused on blending with local architecture and minimizing noise, lighting, and odor impacts

Section VI. Working Conditions

Typically in conditioned office environment during working hours but must be available 24/7 to respond and direct response to emergencies. Occasionally outdoors in harsh weather or dangerous industrial environments.

Section VII. Physical Requirements

Must have the physical dexterity to accomplish the duties defined herein

Section VIII. Other

- a. Medical certification of physical requirements may be required
- b. Must be currently authorized to work for any U.S. employer

Section IX. Qualification Standards

- a. Education
 - 1. Required
Bachelor's Degree
 - 2. Desired

- Master's Degree (MBA, MPA, or similar management focused field of study)
- b. Experience
 - 1. Required
 - a) Minimum of fifteen years experience in a related field
 - b) Minimum of five years in senior management capacity (division level equivalent or above)
 - 2. Desired
 - a) Management experiences in a multi-level, large workforce of 200+ people
 - b) Senior leadership experience in a public agency with direct interaction with elected and/or appointed officials
 - c) Budget and rate setting experience
 - d) Retail billing and collection experience
 - e) Experience with legislative process – ideally in Virginia
 - f) Experience with regulatory process – ideally in Virginia
 - c. Job-specific Technical Competencies
 - 1. Required
 - a) Proven skill in leading organizations or large segments of organizations
 - b) Ability to develop highly effective working relationships with policymakers, regulators, association leadership, civic groups, elected officials, etc.
 - 2. Desired
 - a) Personal connections with regional leaders
 - b) Strong written and verbal communication skills
 - c) Effective use of social media
 - d. Special Licenses
 - 1. Required
 - a) Valid Driver's License
 - 2. Desired
 - a) Registration in chosen profession (PE, CPA, etc.)

HRSD Commission Meeting Minutes
August 24, 2021

Attachment #11

Agenda Item 29. Informational Items

- 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. [Effluent Summary](#)
- d. [Air Summary](#)



August 16, 2021

Re: General Manager's Report

Dear Commissioners:

After some challenging months, the offsite odor issues associated with the new Thermal Hydrolysis Process (THP) process at the Atlantic Treatment Plant have largely been resolved. Staff from Operations and Water Quality worked to systematically identify sources and eliminate them. As of early July, the chronic offsite odors had been resolved. Additionally, the biosolids from the THP continue to improve reaching 30 percent solids (low odor, very dry, and much easier to work with) by the end of July. Bruce Husselbee commented a few months ago that if we were not pursuing SWIFT, the THP project at Atlantic would be all we were talking about. The THP process is still rare in North America and has been a significant challenge to construct and commission. Once again our staff, particularly the staff at the Atlantic Treatment Plant supplemented with some brilliant young minds from the Water Technology and Research Division, have done some amazing work with little fanfare. We are so fortunate to have such a talented and dedicated staff.

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

- A. **Treatment Compliance and System Operations:** All plants met permit. There was one pipe leak discovered and corrected in the Interceptor System.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
 - 1. A meeting to review James River Treatment Plant (JRTP) site plan issues
 - 2. Two new employee orientation sessions
 - 3. A meeting to review small community billing issues
 - 4. A meeting to review strategy for Larchmont land acquisition
 - 5. The monthly meeting of the internal Eastern Shore Program Team
 - 6. A planning meeting for the Water Quality Services Building open house
 - 7. A meeting to discuss the Park Avenue subdivision plat
 - 8. A meeting to discuss staffing in the Customer Care Center
 - 9. A meeting to discuss the Promise Pay roll out plan
 - 10. Completed Reasonable Suspicion Training required by new changes to HRSD's substance abuse policy



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

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

1. The first meeting of the Secretary of Natural Resources Wastewater Working Group
2. Multiple discussions with the Town Manager of Onancock regarding transfer of the treatment plant
3. The monthly meeting of the SWIFT Community Commitment Steering Committee
4. Presented SWIFT to staff working on the Youngkin campaign
5. Made a presentation to the York County Kiwanis Club
6. A meeting of the steering committee for the update to the Virginia Forever strategic plan
7. An Eastern Shore update with community leaders
8. The media day for the Woodstock Park project
9. The dedication ceremony for the Woodstock Park Skate Park
10. Participated on the Sea Level Rise subcommittee for the Elizabeth River Project's masterplan update
11. A meeting of the Utility of the Future Today joint association recognition panel steering committee
12. Received an update on HRSD's climate adaptation planning effort
13. on a panel convened by the Water Tower and Resilience Hub (Gwinnett, GA)
14. The Newport News City Council meeting where they considered the HRSD Conditional Use Permit application for JRTP
15. Participated in a meeting as a member of the Eastern Virginia Groundwater Management Committee
16. The quarterly meeting of the Potomac Aquifer Recharge Oversight Committee
17. The US Water Alliance's Rising Professionals program as a mentor
18. One meeting of the Water Agency Leaders Alliance
19. A meeting to discuss impact of a USDA Grant on the Onancock Treatment Plant ownership transfer
20. An update from Xylem on recent "smart" sewer initiatives and new capabilities
21. The monthly meeting of the Hampton Roads Planning District Commission (HRPDC) Directors of Utilities Committee
22. The National Association of Clean Water Agencies (NACWA) virtual summer meeting and annual business meeting
23. A meeting with staff from Virginia Marine Resources Commission (VMRC) to discuss oyster fishery compensation
24. A meeting with the Director of Newport News Waterworks to discuss regional initiatives

D. **Consent Decree Update:**

- Nearly one year to the day from when we signed off on the Fifth Amendment, we received a revised Fifth Amendment from the Department of Justice (DOJ). There were no substantive changes, just some rewording of whereas clauses and no explanation as to why it has taken a full year to make these changes. We requested a minor change to

one clause that was accepted by DOJ. I signed the modified Fifth Amendment and it now requires signatures from the Commonwealth, US Environmental Protection Agency (EPA), and DOJ before it can be lodged with the Norfolk District Court. At this pace we will be 2-years into the first 10-year compliance period before we get approval, effectively reducing our compliance period to 8 years.

- HRSD's response to the stipulated penalty demand related to the January spill in the James River was not accepted and we are now in informal dispute resolution over our differences with the plaintiffs. HRSD contends that failure of a force main due to internal corrosion (that cannot be seen through inspection or predicted through modeling) is beyond our control and should not be subject to stipulated penalties.

I hope you enjoyed the Water Quality Services Building open house last month. I was extremely impressed with the Water Quality Department staff that provided such engaging information about their work and how the new spaces will be used. The energy, excitement, and knowledge were evident in every area. They all are so grateful for the opportunity to move into purpose-built space with everything they need to perform their work and continue to lead the water sector in advancing water quality science that is foundational to discovering affordable solutions to tomorrow's water quality challenges.

Congratulations are in order for Commissioner Elizabeth Taraski who was reappointed to another four-year term on the HRSD Commission. We also will welcome our newest Commissioner, Nancy Stern, who was appointed to fill the seat vacated by Mo Lynch.

As COVID is again surging in our region, we unfortunately have not received relief from the FOIA requirements to meet in person. We will be meeting as we did last month, in the VIP Conference Room at 1434 Air Rail Avenue in Virginia Beach. Each Commissioner will have their individual device connected to Zoom (muted) and a centralized microphone and speaker for audio on Zoom. Zoom will be displayed on the screens in the meeting as well. This will allow the continued remote attendance of the public and staff, minimizing the number of people in the conference room.

The leadership and support you provide are the keys to our success as an organization. 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 on Tuesday, August 24, 2021.**

Respectfully submitted,

Ted Henifin, P.E.
General Manager

TO: General Manager
 FROM: Director of Communications
 SUBJECT: Monthly Report for July 2021
 DATE: August 12, 2021





A. Publicity and Promotion

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

1. HRSD in the Eastern Shore
2. Urbanna Pump Station
3. Letter to Editor urging use of federal funds for Chesapeake Bay clean up
4. COVID-19 tracking through wastewater

B. Social Media and Online Engagement

1. Metrics

Social Media Metrics July 2021				
METRIC	 FACEBOOK	 LINKEDIN	 TWITTER	 YOUTUBE
Number of Posts *number of published posts	12 -5	0 -2	12 -3	1:33 average view duration
Number of Followers/Likes *total number of fans	1,603 -3	5,295 +6	563 +4	232 +4
Engagement *sum of reactions comments and shares	234 -144	7 -50	12 -17	642 unique viewers -9%
Traffic *total clicks on links posted	103 +25	18 -59	101 +25	3.7% click-through +5%

2. Top posts on Facebook, Twitter, and YouTube

a. Top Facebook post

Post Details

HRSD
July 12 · 🌐

Infrastructure Matters! Check out this GIS activity of our invisible infrastructure. <http://ow.ly/c7Zc50EPvL2>

468 People Reached

37 Engagements

[Boost Post](#)

Performance for Your Post

468 People Reached

10 Likes, Comments & Shares ?

9 Likes	8 On Post	1 On Shares
0 Comments	0 On Post	0 On Shares
1 Shares	1 On Post	0 On Shares

27 Post Clicks

5 Photo Views	17 Link Clicks <small>?</small>	5 Other Clicks <small>?</small>
---------------	---------------------------------	---------------------------------

NEGATIVE FEEDBACK

0 Hide Post	1 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

b. Top Tweet

HRSD @HRSDVA
HRSD is making waves through innovation and research to ensure future generations will inherit clean waterways and be able to keep them clean. Our blog is written by HRSD employees to provide information and inspiration about all things environmental!
<http://ow.ly/RLyM50EPwW3>
pic.twitter.com/nRzniPYMAS

Impressions 1,014

Total engagements 9

Detail expands	4
Link clicks	2
Retweets	1
Media engagements	1
Likes	1

c. Top YouTube Videos

- (1) [The Wastewater Treatment Process](#)
- (2) [What is Asset Management? HRSD Celebrates Infrastructure Week | United for Infrastructure](#)
- (3) [South Norfolk Pump Stations and Sanitary Sewer Replacement Project Virtual Presentation](#)

(4) [SWIFT Research Center: What is the Potomac Aquifer?](#)

(5) [RSD Atlantic Treatment Plant Cambi Tour](#)

3. Impressions and Visits

- a. Facebook: 6,826 page impressions, 3,404 post impressions reaching 3,244 users and Facebook engagement of 234 (200 reactions 14 shares and 20 comments) and 103 link clicks
- b. Twitter: 7,981 tweet impressions; 707 profile visits and 4 mentions, 12 engagements
- c. HRSD.com/SWIFTVA.com: 954 page visits
- d. LinkedIn Impressions: 924 page impressions and 0 post impressions
- e. YouTube: 849 views
- f. Next Door unique impressions: 2,167 post views from seven targeted neighborhood postings
- g. Blog Posts: 0
- h. Construction Project Page Visits – 1018 total visits (not including direct visits from home page, broken down as follows:
 - (1) 690 visits to individual pages
 - (2) 328 to the status page

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

1. News Releases: 0
2. Traffic Advisories: 1
3. Construction Notices and or notices to neighbors: 4
4. Advertisements: 0
5. Project Notices: 6 (via door hangings and/or mailing reaching approximately 170 residents)
6. Project/Community Meetings: 0
7. New Project Web Pages: 4
8. New Project Videos: 0

Special Projects and Highlights

1. Director and staff worked with Water Quality Department to host the ribbon cutting and open house event for the new Water Quality Services Building.
2. Director participated in the Water Research Foundation Steering Committee meeting.
3. Director and staff participated in the second session of the Larchmont Area Sanitary Sewer Improvement project partnering session with city stakeholders and consultants and contractors.
4. Director attended the quarterly Hampton Roads Planning District Commission Public Information Officer subcommittee meeting.

D. Internal Communications

1. Director participated in the following internal meetings and events:
 - a. DEI council strategy meeting
 - b. Apprenticeship graduation meeting
 - c. Planning meetings with operations staff for Chesapeake-Elizabeth Treatment Plant decommissioning event
 - d. Weekly Leadership and COVID-19 meetings
 - e. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST) and QST meetings
 - f. Potomac Aquifer Recharge Oversight Committee meeting
2. Director conducted biweekly communications department status meetings and weekly one-on-one and team check-in meetings.
3. Staff attended project progress meetings and presentation and outreach development meetings with various project managers.

E. Metrics

1. Educational and Outreach Activities (all virtual unless otherwise noted):
 - a. Self-guided SWIFT Virtual Tours – 38 views (analytics specify number of times the “Take a Tour” button was selected)
2. Number of Community Partners: 0
3. Additional Activities Coordinated by Communications Department: 2

4. Monthly Metrics Summary

Item #	Strategic Planning Measure	Unit	July 2021
M-1.4a	Total Training Hours per Full Time Employee (3) - Current Month	Hours / #FTE	3
M-1.4b	Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date	Hours / #FTE	3
M-5.2	Educational and Outreach Events	Number	38
M-5.3	Number of Community Partners	Number	0

Respectfully,

Leila Rice, APR
Director of Communications

TO: General Manager
FROM: Director of Engineering
SUBJECT: Engineering Monthly Report for July 2021
DATE: August 12, 2021

A. General

1. Capital Improvement Program (CIP) spending for the final month of Fiscal Year (FY) 2021 was above planned spending target. End-of-Year spending was slightly below the targeted amount for FY 2021.

CIP Spending (\$M):

	Current Period	FYTD
Actual	20.34	211.46*
Plan	16.50	235.00

*Note: This final spend total for FY 2021 is still under audit and will be confirmed in the coming month.

2. The Engineering Department continues to work through challenges related to the COVID-19 pandemic. Staff members continue to work primarily from home, with limited administrative support. Coordination meetings are conducted using virtual meeting platforms such as Skype, Zoom and MS Teams. Project-related matters are addressed at the project job sites or remotely. Consultants have been able to proceed with both design and contract administrative support efforts with limited impacts. Contractors have seen a few delays related to equipment delivery and a few of their staff members have tested positive for COVID-19. Our CIP projects continue to garner strong interest from both the design professionals and the construction contractors in our region. We continue to adjust to the changing conditions and plan to have Engineering Department staff work from home or return to work in limited circumstances for the foreseeable future.

B. Asset Management Division

1. Work continues toward completing open tasks associated with the Force Main Condition Assessment Program. In FY21, five assessments were completed. These efforts typically involve the research, prioritization, planning, and field efforts necessary to assess the physical condition of certain force main pipe segments. The outcomes of these assessments can result in immediate action, CIP project forecasting or “no action” required. Two assessments are underway and include work in Norfolk (Military Highway) and Newport News (Lucas Creek). Depending on the location of the assessment, the planning and approvals necessary to excavate the pipe segment can be very involved and time consuming. The outcome of this program provides valuable information as we plan future assessments and plan for replacement of aging infrastructure.

2. Staff is preparing to begin the process to populate Eastern Shore Sewer System information into an Asset Management Plan. The effort will begin with populating the CMMS with Onancock Treatment Plant asset information, creation of maintenance schedules and the training of plant staff on the use of asset management procedures. This is the first step of a long-term initiative to implement asset management at all Small Community sites on the Eastern Shore.

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

1. The design efforts for the Lucas Creek Pump Station Replacement project continue. An important milestone was met in July with the City of Newport News approving a variance to the requirements, allowing for the pump station to be designed and constructed as planned. The final design efforts can now continue, and the project design should be completed in the next six months. This is one of many projects that must be completed by May 2025 to meet the US EPA Rehabilitation Action Plan Phase 2 regulatory deadline.
2. The design efforts are underway for the Private Pump Station Improvements project. This effort is needed to verify hydraulic compatibility with the new pressure requirements in the interceptor system resulting from the closure of the Chesapeake-Elizabeth Treatment Plant (CETP). There are approximately 80 privately-owned pump stations under review. The effort began with a review of the HRSD Hydraulic Model to help in prioritizing the pump stations of highest risk. Notifications were sent to pump station owners in June and site visits have begun. This effort is an important step as part of the CETP closure initiative.
3. The procurement effort for the Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Phase 2 project is underway. This procurement will select a Design-Build Team to deliver this important project. The request for qualifications was advertised on June 13th with the pre-qualification conference held on July 1st. Statements of qualifications were received on July 14th. The short-list effort will be completed in August. The next stage in the procurement process will involve the request for proposals phase. Due to the size and complexity of this selection effort, the procurement will extend through the end of the calendar year. This project will allow for the closure of the Boat Harbor Treatment Plant and provide for a reliable influent to the future SWIFT Facility at the Nansemond Treatment Plant.

D. Planning & Analysis Division

1. Staff are preparing a new policy to address low pressure sewers and grinder pumps. This policy will address the planning, design, cost and long-term maintenance of these systems. In addition to a policy to address these systems, design criteria and construction requirements will also be prepared. This effort is important for the small communities served by HRSD as they expand and provide service to new development.
2. Staff have begun a process to consider sewer needs to serve Northern Accomack County on the Eastern Shore. There are several small sewer facilities in this area which could be better served. An outreach effort is needed to engage the various stakeholders in this region. Several options are possible and will be considered as part of this study.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 3
 - a. 07/08/2021 – Participated as a panelist for the Design-Build Institute of America (DBIA) National Awards Jury.
 - b. 07/13/2021 – Provided a Guided Virtual Tour of HRSD’s SWIFT Research Center to a Student Group as Part of the City of Portsmouth’s StarBase Victory Summer Program.
 - c. 07/20/2021 – Provided a Guided Virtual Tour of HRSD’s SWIFT Research Center to a Student Group as Part of the City of Portsmouth’s StarBase Victory Summer Program.
2. Number of Community Partners: 2
 - a. City of Portsmouth Public Schools
 - b. DBIA
3. Number of Research Partners: 0
4. Monthly Metrics Summary:

Item #	Strategic Planning Measure	Unit	July 2021
M-1.4a	Total Training Hours per Full Time Employee (45) - Current Month	Hours / #FTE	2.80
M-1.4b	Total Training Hours per Full Time Employee (45) - Cumulative Fiscal Year-to-Date	Hours / #FTE	2.80
M-5.2	Educational and Outreach Events	Number	3
M-5.3	Number of Community Partners	Number	2
M-5.4	Number of Research Partners	Number	0

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for July 2021
DATE: August 11, 2021

A. General

1. Billed revenues are in-line with the previous year and slightly higher than budget. Facility Charges are surprisingly lower than expected as the Hampton Roads Planning District Commission's economists suggest that this could be due to labor and material shortages. A damaged pump settlement received in July resulted in \$300,000 in Other Non-Operating revenue. Personal Services is starting off higher than budget as July had three payroll periods. All other expenses are at or below budget, typical for July and generally consistent with the prior year since many purchases are using funds encumbered in Fiscal Year 2021. Total Expenses exceeded Total Revenues due to a July debt service payment and an acceleration of Transfer to CIP (PAYGO) as CIP expenses exceeded expectations with the James River SWIFT getting underway. This is more of a working capital situation as there is a one-month delay in receiving reimbursement from the Virginia Clean Water Revolving Loan Fund. This should be resolved in the coming month.
2. Accounts Receivable Aging greater than 60 days continues to trend upward. With PromisePay flexible payment plans and the remainder of our Municipal Utility Relief funds set to roll out in August, we are hopeful that this trend will change. In the Governor's budget bill for federal American Rescue Plan Act (ARPA) spending, \$120 million is allocated for Utility Assistance with no attestations required and \$9.9 million is budgeted for the Low-Income Household Water Assistance Program. The Commonwealth's disconnection moratorium will not be extended, so HRSD's plans to resume collections this fall will stay on track. The City of Virginia Beach is planning to resume service disconnections on August 30th. With the new funding available and changes to our Enabling Act, Customer Care renamed our Delinquent Accounts section to Debt Solutions to focus on finding creative solutions to help customers struggling to pay their HRSD bills.
3. The Retiree Health Trust had an excellent fiscal year as it returned 25.2 percent compared to 23.2 percent for its benchmark. Assets increased from \$56.9 million to \$71.7 million in the past year and has doubled in value since Fiscal Year 2015. As a reminder, the Retiree Health Trust funds a defined health and dental benefit plan for eligible retirees and conservatively assumes a six percent long-run rate of return.
4. The Quarterly investment summary for [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#) are attached.

B. Interim Financial Report

1. Operating Budget for the Period Ended July 31, 2021

	Adopted Budget	Current YTD	Current YTD as % of Budget (8% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	\$ 336,455,000	\$ 30,408,157	9%	9%
Surcharge	1,600,000	116,983	7%	10%
Indirect Discharge	3,200,000	283,925	9%	8%
Fees	3,020,000	10,520	0%	5%
Municipal Assistance	700,000	91,339	13%	16%
Miscellaneous	1,285,000	38,646	3%	2%
Total Operating Revenue	346,260,000	30,949,570	9%	9%
Non Operating Revenues				
Facility Charge	7,320,000	450,180	6%	13%
Interest Income	1,210,000	118,632	10%	8%
Build America Bond Subsidy	2,095,000	-	0%	0%
Other	610,000	332,555	55%	6%
Total Non Operating Revenue	11,235,000	901,367	8%	9%
Total Revenues	357,495,000	31,850,937	9%	9%
Transfers from Reserves			0%	100%
Total Revenues and Transfers	\$ 357,495,000	\$ 31,850,937	9%	13%
Operating Expenses				
Personal Services	\$ 62,776,055	\$ 6,987,763	11%	11%
Fringe Benefits	25,156,745	2,217,260	9%	9%
Materials & Supplies	8,756,429	233,161	3%	4%
Transportation	1,498,806	80,412	5%	3%
Utilities	12,289,261	510,730	4%	5%
Chemical Purchases	8,651,935	638,238	7%	5%
Contractual Services	44,503,594	3,393,647	8%	6%
Major Repairs	11,349,820	148,789	1%	3%
Capital Assets	470,000	-	0%	2%
Miscellaneous Expense	3,010,225	164,090	5%	5%
Total Operating Expenses	178,462,870	14,374,090	8%	8%
Debt Service and Transfers				
Debt Service	64,308,209	9,584,041	15%	13%
Transfer to CIP	114,463,921	14,538,660	13%	20%
Transfer to Risk management	260,000	21,667	8%	8%
Total Debt Service and Transfers	179,032,130	24,144,368	13%	18%
Total Expenses and Transfers	\$ 357,495,000	\$ 38,518,458	11%	13%

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, 2021

HRSD - RESERVE AND CAPITAL ACTIVITY								July 31, 2021	
	General Reserve					Capital			
	General	CARES - HRSD	CARES - JCSA	Debt Service	Risk Mgmt Reserve	Paygo	Debt Proceeds		
	Unrestricted	Restricted	Restricted	Restricted	Unrestricted	Unrestricted	Restricted		
Beginning - July 1, 2021	\$ 182,380,923	\$ 1,373,428	\$ 168,124	\$ 30,454,700	\$ 4,019,543	\$ 6,033,913	\$ -		
Current Year Sources of Funds									
Current Receipts	29,421,903	49,659							
Line of Credit								18,422,172	
VRA Draws							3,448,162		
CARES Transfer In									
Days Cash on Hand Transfer In									
Transfers In	-					21,667	14,538,660		
Sources of Funds	29,421,903	49,659	-	-	21,667	17,986,822	18,422,172		
Total Funds Available	\$ 211,802,826	\$ 1,423,087	\$ 168,124	\$ 30,454,700	\$ 4,041,210	\$ 24,020,735	\$ 18,422,172		
Current Year Uses of Funds									
Cash Disbursements	30,937,537						23,997,438	18,422,172	
CARES Transfer Out									
Days Cash on Hand Transfer Out	-								
Transfers Out	14,560,327								
Uses of Funds	45,497,864	-	-	-	-	23,997,438	18,422,172		
End of Period - July 31, 2021	\$ 166,304,962	\$ 1,423,087	\$ 168,124	\$ 30,454,700	\$ 4,041,210	\$ 23,297	\$ -		
Unrestricted Funds	\$ 170,369,469								

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended July 31, 2021

HRSD - PROJECT ANALYSIS

July 31, 2021

Classification/ Treatment Service Area	Appropriated Funds	Expenditures		Total		Available Funds
		prior to 7/1/2021	Year to Date FY2022	Project Expenditures	Encumbrance	
Administration	47,227,240	27,658,581	654,880	28,313,461	1,256,366	17,657,413
Army Base	155,448,800	123,537,916	205,949	123,743,865	1,631,244	30,073,691
Atlantic	136,159,683	82,877,498	235,111	83,112,609	5,072,854	47,974,220
Boat Harbor	288,504,388	52,827,281	1,010,230	53,837,511	8,667,048	225,999,829
Ches-Eliz	166,407,309	105,212,456	4,199,114	109,411,570	17,098,761	39,896,978
Eastern Shore	17,643,040	68,570	9,427	77,997	224,336	17,340,707
James River	312,952,591	49,601,157	3,529,803	53,130,960	211,681,202	48,140,429
Middle Peninsula	70,401,456	13,511,974	1,207,911	14,719,885	6,353,203	49,328,368
Nansemond	355,543,533	41,212,618	1,282,785	42,495,403	7,852,460	305,195,670
Surry	55,505,027	26,875,712	2,115,535	28,991,247	12,777,635	13,736,145
VIP	304,952,874	183,421,754	640,703	184,062,457	6,811,069	114,079,348
Williamsburg	34,622,622	27,900,712	90,415	27,991,127	4,776,347	1,855,148
York River	76,450,343	30,364,487	858,598	31,223,085	2,704,479	42,522,779
General	784,058,315	213,776,988	6,506,892	220,283,880	277,307,929	286,466,506
	<u>\$ 2,805,877,221</u>	<u>\$ 978,847,704</u>	<u>\$ 22,547,353</u>	<u>\$ 1,001,395,057</u>	<u>\$ 564,214,933</u>	<u>\$ 1,240,267,231</u>

5. Debt Management Overview

HRSD - Debt Outstanding (\$000's)

July 31, 2021

	Principal			Principal July 2021	Interest Payments
	June 2021	Principal Payments	Principal Draws		
Fixed Rate					
Senior	198,670	(8,070)	-	190,600	(1,461)
Subordinate	566,533	(45)	3,448	569,936	(7)
Variable Rate					
Subordinate	50,000	-	-	50,000	(1)
Line of Credit	15,299	-	18,422	33,721	(6)
Total	<u>\$ 830,502</u>	<u>\$ (8,115)</u>	<u>\$ 21,870</u>	<u>\$ 844,257</u>	<u>\$ (1,475)</u>

HRSD- Series 2016VR Bond Analysis

July 30, 2021

	SIFMA Index	HRSD	Spread to
			SIFMA
Maximum	4.71%	4.95%	0.24%
Average	0.38%	0.51%	0.13%
Minimum	0.01%	0.01%	0.00%
As of 07/30/21	0.02%	0.01%	-0.01%

* Since October 20, 2011 HRSD has averaged 51 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended July 31, 2021

HRSD - UNRESTRICTED CASH

July 31, 2021

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	\$ 170,369,469		348
Risk Management Reserve	\$ (4,041,210)	(8)	340
Capital (PAYGO only)	\$ (23,297)	-	340
Adjusted Days Cash on Hand	\$ 166,304,962		340

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, 2021

Primary Source	Beginning Market Value July 1, 2021	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value July 31, 2021	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BAML Corp Disbursement Account	30,017,420	65,205,026	69,800,015	3,059	25,425,490	21.3%	N/A	0.55%
VIP Stable NAV Liquidity Pool	108,890,465	-	15,000,000	6,070	93,896,535	78.7%	AAAm	0.07%
Total Primary Source	\$ 138,907,885	\$ 65,205,026	\$ 84,800,015	\$ 9,129	\$ 119,322,025	100.0%		

VIP Stable NAV Liquidity Pool out performed Va Local Government Investment Pool (the market benchmark) by 0.01% in the month of July 2021.

Secondary Source	Beginning Market Value July 1, 2021	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value July 31, 2021	Ending Cost	LTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	65,054,203	-	1,071	27,832	65,162,634	63,426,304	1,736,330	0.16%
Total Secondary Source	\$ 65,054,203	\$ -	\$ 1,071	\$ 27,832	\$ 65,162,634	\$ 63,426,304	\$ 1,736,330	

VIP 1-3 Year High Quality Bond Fund under performed by 0.03% compared to ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) in July 2021.

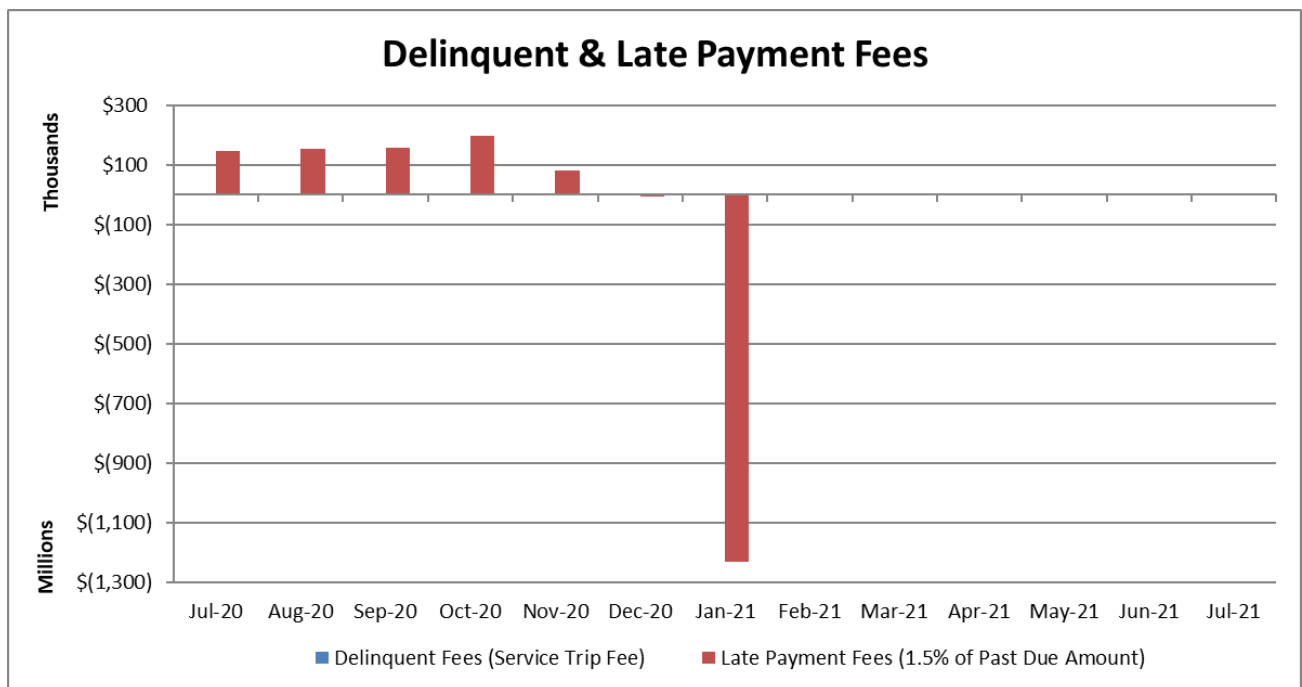
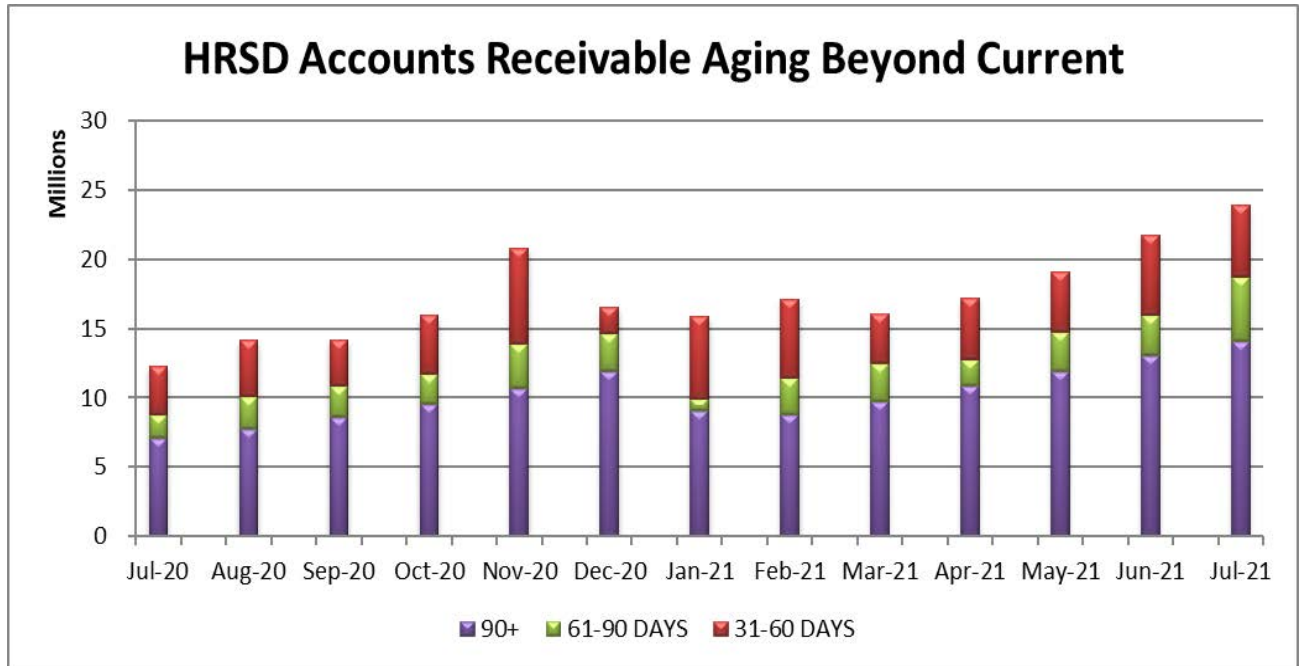
	Total	Fund Alloc
Total Primary Source	\$ 119,322,025	64.7%
Total Secondary Source	\$ 65,162,634	35.3%
TOTAL SOURCES	\$ 184,484,659	100.0%

7. Summary of Billed Consumption

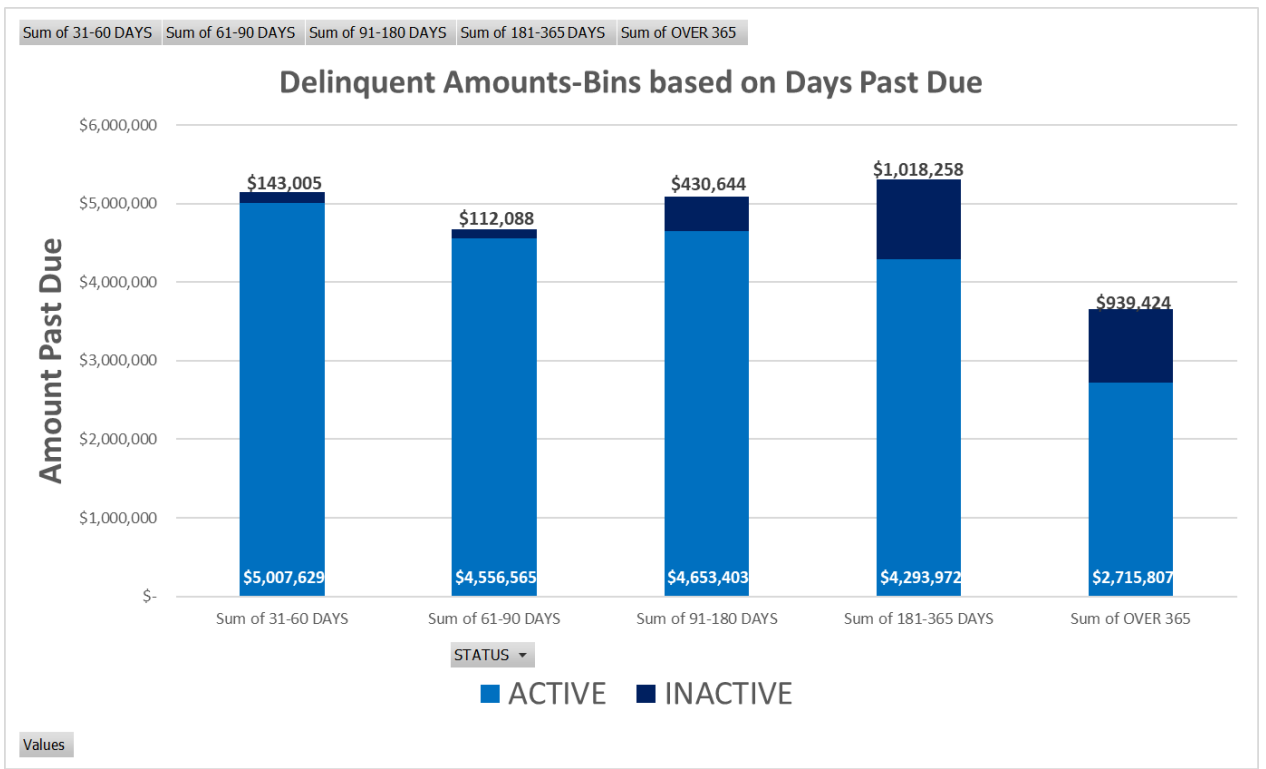
Summary of Billed Consumption (,000s ccf)							
Month	FY2022 Cumulative Budget Estimate	FY2022 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2021 Actual	From FY2021	Cumulative 3 Year Average	From 3 Year Average
July	5,015	4,976	-0.8%	4,751	4.7%	5,006	-0.6%
Aug	9,883	-	N/A	9,459	N/A	9,866	N/A
Sept	14,413	-	N/A	14,335	N/A	14,303	N/A
Oct	18,892	-	N/A	18,863	N/A	18,931	N/A
Nov	23,125	-	N/A	21,192	N/A	22,474	N/A
Dec	27,336	-	N/A	27,614	N/A	27,458	N/A
Jan	32,088	-	N/A	32,478	N/A	32,116	N/A
Feb	36,182	-	N/A	36,068	N/A	36,110	N/A
March	39,309	-	N/A	41,018	N/A	40,340	N/A
Apr	43,360	-	N/A	45,116	N/A	44,540	N/A
May	47,508	-	N/A	49,256	N/A	48,716	N/A
June	51,620	-	N/A	54,195	N/A	53,202	N/A

C. Customer Care Center

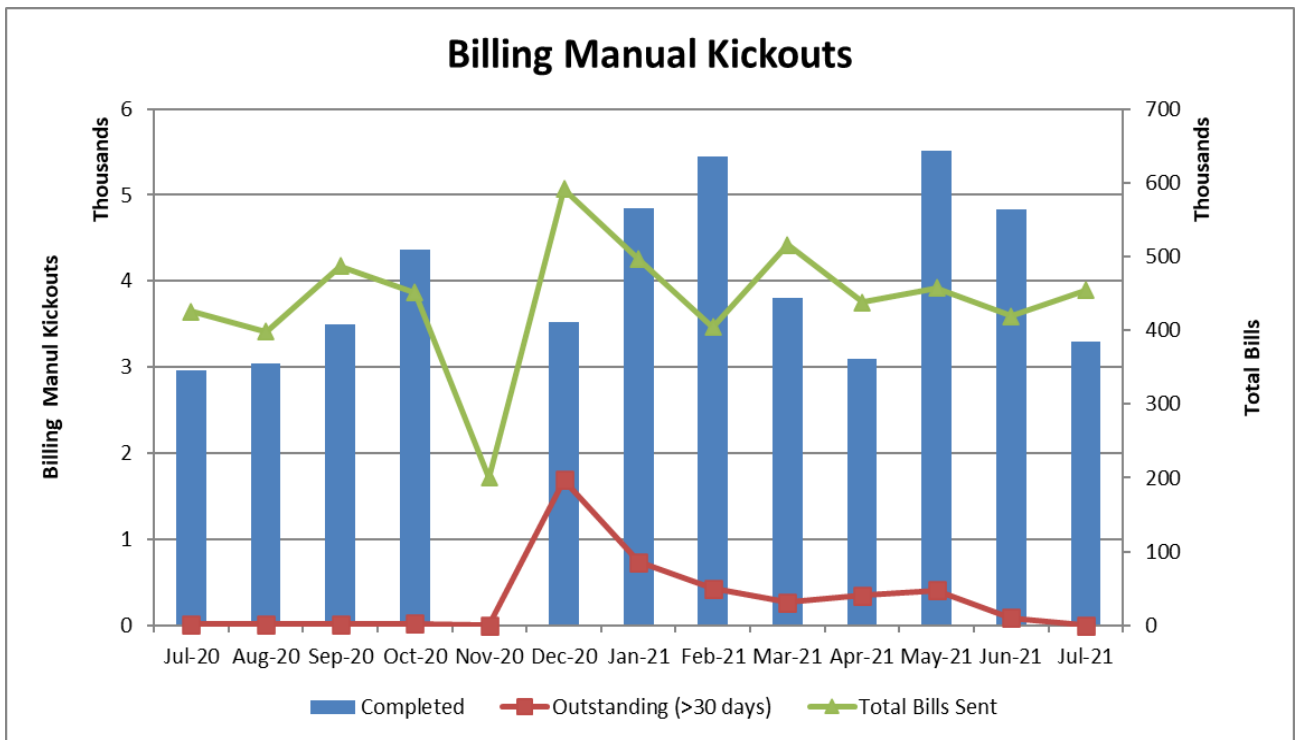
1. Accounts Receivable Overview



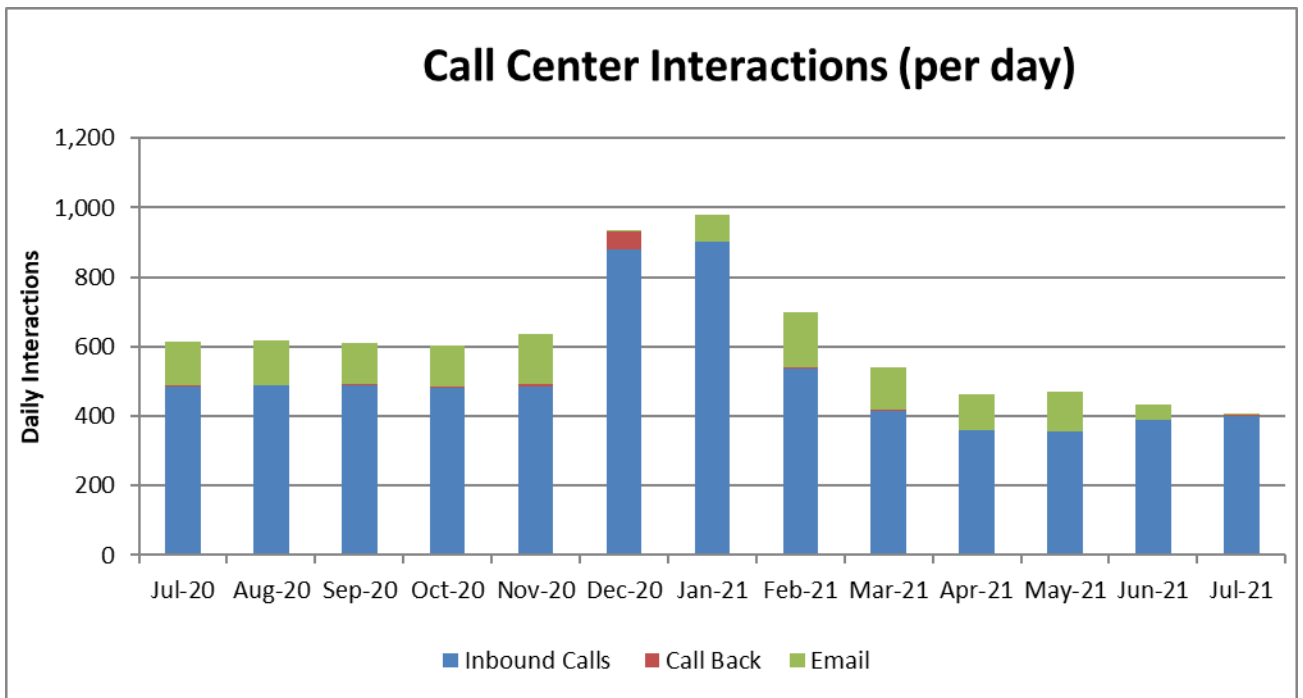
Apr 20-Jul 21 Field Activity was suspended late March 2020 in response to COVID-19.



2. Customer Care Center Statistics



November data not available due to Ransomware attack



Customer Interaction Statistics	Feb	Mar	Apr	May	Jun	Jul
Calls Answered within 3 minutes	90%	97%	98%	98%	98%	96%
Average Wait Time (seconds)	48	26	20	16	16	30
Calls Abandoned	7%	3%	3%	2%	3%	4%

D. Procurement Statistics

ProCard Fraud	External Fraud Transactions *	Comments
July	0	
Total	0	

***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 2021
M-1.4a	Training During Work Hours Per Full Time Employee (102) – Current Month	Hours / #FTE	1.92
M-1.4b	Total Training During Work Hours Per Full Time Employee (102) – Cumulative Fiscal Year-to-Date	Hours / #FTE	1.92
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	113%
	General Reserves	Percentage of Operating Budget less Depreciation	110%
	Liquidity	Days Cash on Hand	348 Days
	Accounts Receivable (HRSD)	Dollars	\$43,776,044
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	32%

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2021
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 ¹	*
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,
Jay A. Bernas
 Jay A. Bernas, P.E.
 Director of Finance

Attachments: [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#)

¹ Median Household Income is based on the American Community Survey (US Census) for Hampton Roads

**Hampton Roads Sanitation District
Quarterly Performance Report
For the Quarter Ending June 30, 2021**

Total Portfolio Summary

Operating Strategies

	June 30, 2021	March 31, 2021
Primary Source	\$ 138,907,884	\$ 130,050,229
Secondary Source	65,054,203	65,080,006
	\$ 203,962,086	\$ 195,130,235

Primary Source Summary

The Primary Source Portfolio consists of BAML Corp Disbursement Account \$30.02m and VaCo/VML VIP Stable NAV Liquidity Pool \$108.89m. BAML Corp Disbursement Account returned 0.55% for the quarter ending June 30, 2021. VIP LIQ Pool Fund 30 Day Avg Net Yield was 0.06% as of June 30, 2021. VIP Stable NAV Liquidity Pool out performed Va Local Government Investment Pool (the market benchmark) by 0.01% in the month of June. 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 0.26% as of June 30, 2021, which out performed the benchmark, ICE BofA ML 1-3 Yr AAA-AA Corp/Gov Index, by 0.01%. 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, 2021	March 31, 2021
Investment Assets	71,657,067	68,006,818
Liquidity Assets	8,717	89,314
Combined Assets	\$ 71,665,784	\$ 68,096,132

Retiree Health Plan Trust Summary

The Retiree Health Plan Trust portfolio returned 5.21% (investment assets) and out performed the Blended Benchmark by 0.12% for the quarter ended June 30, 2021.* The one-year trailing return for the Retiree Health Plan Trust portfolio was 25.21% compared to the Blended Benchmark return of 23.22%. As of June 30, 2021, the weighted average credit quality of fixed income holdings for the Retiree Health Plan Trust portfolio was A.

*Performance is unreconciled and does not include funds from Boyd Watterson.

Total Portfolio Value		
	June 30, 2021	March 31, 2021
Investment Assets	\$ 71,657,066	\$ 68,006,818
Combined Assets	\$ 71,665,784	\$ 68,096,132

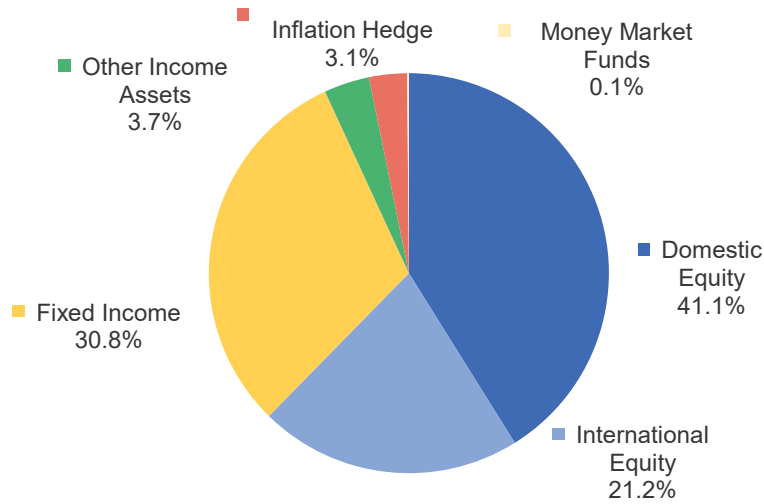
Portfolio Recap & Strategy

- The Retiree Health Plan Trust portfolio returned 5.21% (investment assets) for the quarter ended June 30, 2021, above the 5.09% return of the Blended Benchmark.* As of June 30, 2021, the weighted average credit quality of fixed income holdings for the Retiree Health Plan Trust portfolio was A. Over the quarter, the Multi-Asset Class Investment Committee (“the Committee”) retained a cautious approach that sought to add value to the portfolio, while adding an inflation hedge. On a relative basis, the Committee remains constructive on equity markets over fixed-income. Over the quarter, the Committee added the Invesco commodity exchange traded fund (ETF) and PIMCO Commodity Real Return Strategy. The funding for the ETF came primarily from fixed income.
- Following a 4.3% expansion in Q4 2020, U.S. GDP increased 6.4% in Q1. The consumer continues to be the driving force behind recent GDP growth as consumer spending rose by 11.4% in Q2, the second-fastest pace since the 1960s. Goods and services that benefit the most from the reopening of the economy, such as auto sales, food services and travel accommodations, are the main contributors to the growth in spending. The U.S. labor market recovery is accelerating after a spring lull. Following a disappointing April jobs report, employers added over 580,000 and 850,000 jobs in May and June, respectively. The service sector led the job recovery in the first half of 2021 as leisure and hospitality accounted for 1.6 million jobs created, or almost half of the year’s payroll gains.
- The June Federal Open Market Committee (FOMC) tapped the brakes on the reflation trade as the dot plot unveiled two unexpected rate hike projections in 2023, along with increased inflation and economic projections for 2021. Chairman Jerome Powell attempted to dampen the committee’s hawkish forecasts by noting the recovery needs substantial future progress while stressing any future changes to the asset purchase program will be “orderly, methodical and transparent.”
- Domestic equity markets ended the second quarter in positive territory, as the U.S. continued to ease COVID-related mobility restrictions and activity levels picked up. Economic data over the last three months has generally been very strong, especially in the U.S. The S&P 500 Index posted a return of 8.5%, with 10 out of 11 sectors producing positive returns. Real Estate (+13.1%), Information Technology (+11.6%), and Energy (+11.3%) lead the way, with Utilities (-0.4%) as the worst-performing sector during the quarter. Markets outside of the United States, as measured by the MSCI ACWI ex-U.S. Index, underperformed their U.S. counterparts, returning 5.4% for the quarter.
- The U.S. bond market represented by the Bloomberg Barclays U.S. Aggregate (Aggregate) Index gained 1.8% in the second quarter. Corporate credit outperformed Treasuries and agencies, led by longer maturities. High yield bonds, as represented by the Bloomberg Barclays U.S. Corporate High Yield (HY) Index, posted a return of 2.7%. Finally, emerging market sovereign debt, represented by the JP Morgan EMBI Global Diversified Index, gained 4.0%.
- Commodity futures, represented by the Bloomberg Commodity Total Return Index, returned 13.3% in the second quarter of 2021. REITs, as measured by the FTSE NAREIT Equity REITs Index, returned 12.02% in the second quarter of 2021, compared to an 8.9% return in the prior quarter.

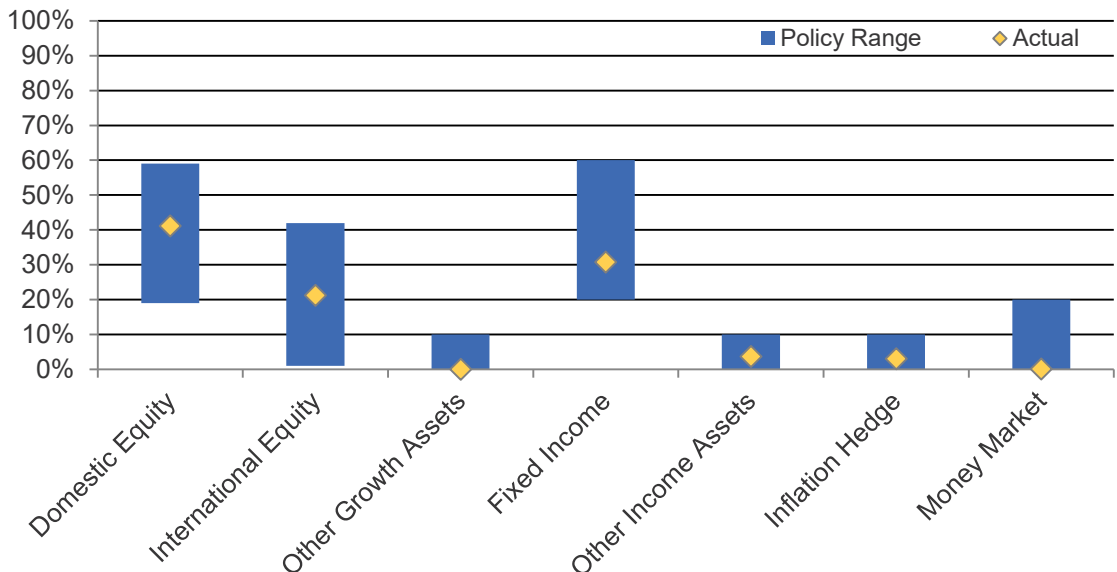
*Performance is unreconciled and does not include funds from Boyd Watterson. See page 3 for detailed information about the Blended Benchmark.

Security Type	June 30, 2021	% of Portfolio	March 31, 2021	% of Portfolio	Permitted by Policy
Domestic Equity	\$ 29,467,267	41.1%	\$ 28,284,038	41.5%	19% - 59%
International Equity	\$ 15,207,938	21.2%	\$ 14,409,770	21.2%	1% - 41%
Fixed Income	\$ 22,058,133	30.8%	\$ 22,638,295	33.2%	20% - 60%
Other Income Assets	\$ 2,632,037	3.7%	\$ 2,573,644	3.8%	0% - 10%
Inflation Hedge	\$ 2,203,156	3.1%	\$ -	0.0%	0% - 10%
Money Market Funds	\$ 97,253	0.1%	\$ 190,385	0.3%	0% - 20%
Totals	\$ 71,665,784	100.0%	\$ 68,096,132	100.0%	

Portfolio Composition
(as of 6/30/21)



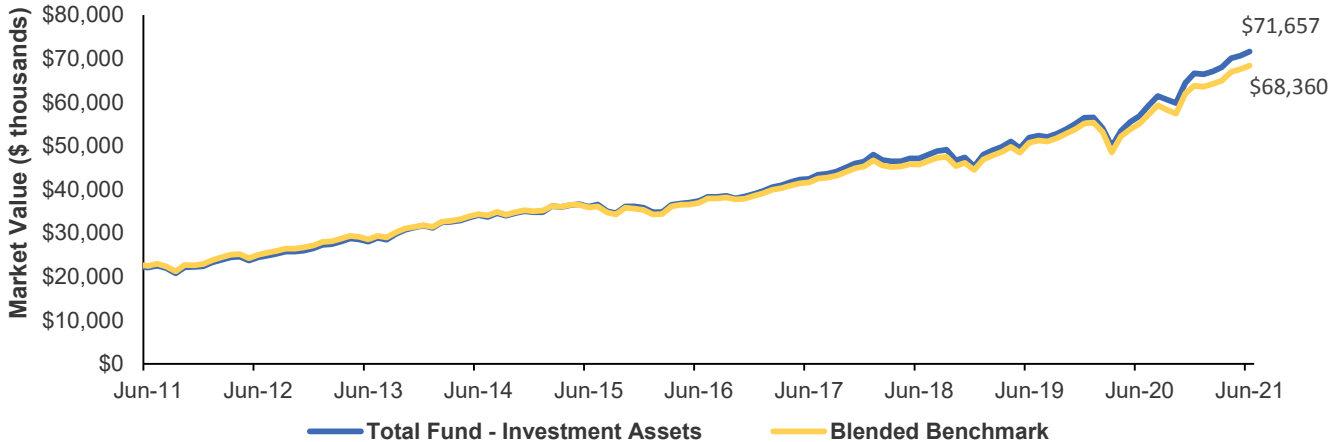
Asset Allocation
(as of 6/30/21)



Index	Market Values	%	1 Quarter	Year to Date	Trailing 1 Year	Trailing 3 Years	Trailing 5 Years	Apr-2013 To Mar-2021	Since Inception	Inception Date
Domestic Equity	\$ 29,467,267	41.12								
Vanguard Total Stock Market ETF	\$ 23,343,960	32.58	8.28%	15.25%	44.32%	18.75%	17.90%	15.18%	57.33%	4/1/2020
Russell 3000 Index			8.24%	15.11%	44.16%	18.73%	17.89%	15.18%	57.13%	4/1/2020
Jensen Quality Growth Fund	\$ 2,941,988	4.11	7.86%	10.89%	35.42%	18.49%	17.49%	15.55%	19.26%	4/1/2019
S&P 500			8.55%	15.25%	40.79%	18.67%	17.65%	15.26%	22.50%	4/1/2019
Touchstone Mid Cap Fund	\$ 1,179,878	1.65	3.11%	9.21%	34.58%	15.68%	16.14%	12.91%	34.58%	7/1/2020
Russell Midcap Index			7.50%	16.25%	49.80%	16.45%	15.62%	13.64%	49.80%	7/1/2020
iShares Core S&P Small-Cap ETF	\$ 2,001,441	2.79	4.49%	23.51%	67.23%	12.19%	15.80%	13.76%	23.51%	1/1/2021
S&P SmallCap 600			4.51%	23.56%	67.40%	12.20%	15.82%	13.78%	23.56%	1/1/2021
International Equity	\$ 15,207,938	21.22								
Vanguard Total International Stock ETF	\$ 4,594,250	6.41	5.55%	9.72%	36.59%	9.66%	11.14%	6.96%	46.62%	4/1/2020
MSCI AC World ex USA (Net)			5.48%	9.16%	35.72%	9.38%	11.08%	6.61%	43.89%	4/1/2020
J. O. Hambro International Select	\$ 3,483,247	4.86	3.82%	4.10%	29.37%	12.07%	12.78%	11.02%	12.44%	1/1/2016
MSCI AC World ex USA (Net)			5.48%	9.16%	35.72%	9.38%	11.08%	6.61%	9.82%	1/1/2016
Harding Loevner International Equity	\$ 3,460,783	4.83	5.41%	6.30%	34.10%	11.43%	12.71%	9.02%	34.10%	7/1/2020
MSCI AC World ex USA (Net)			5.48%	9.16%	35.72%	9.38%	11.08%	6.61%	35.72%	7/1/2020
Artisan International Small-Mid	\$ 798,431	1.11	7.40%	5.94%	41.50%	17.19%	15.44%	-	5.94%	1/1/2021
MSCI AC World ex USA Smid Cap Index (Net)			6.05%	10.52%	41.80%	8.97%	11.21%	7.75%	10.52%	1/1/2021
Virtus KAR International Small-Cap	\$ 1,103,820	1.54	7.10%	7.60%	45.87%	13.90%	18.53%	-	7.60%	1/1/2021
MSCI AC World ex USA Small Cap (Net)			6.35%	12.24%	47.04%	9.78%	11.97%	8.39%	12.24%	1/1/2021
Hartford Schroders Emerging Markets Equity	\$ 1,767,406	2.47	2.80%	6.44%	43.55%	13.07%	14.88%	7.12%	8.60%	3/1/2018
MSCI EM (net)			5.05%	7.45%	40.90%	11.27%	13.03%	6.00%	6.78%	3/1/2018
Fixed Income	\$ 22,058,133	30.78								
Baird Core Plus	\$ 5,820,790	8.12	2.13%	-1.03%	1.78%	6.28%	4.03%	3.77%	4.13%	5/1/2014
Bloomberg Barclays U.S. Aggregate			1.83%	-1.61%	-0.34%	5.34%	3.03%	3.01%	3.37%	5/1/2014
DoubleLine Core Fixed Income	\$ 2,691,444	3.76	1.86%	-0.25%	3.33%	4.70%	3.29%	3.33%	3.44%	9/1/2017
PGIM Total Return Bond Fund	\$ 7,103,024	9.91	3.14%	-1.44%	2.70%	6.24%	4.31%	4.10%	4.54%	9/1/2017
Bloomberg Barclays U.S. Aggregate			1.83%	-1.61%	-0.34%	5.34%	3.03%	3.01%	3.69%	9/1/2017
Voya Intermediate Bond	\$ 3,798,171	5.30	2.07%	-1.07%	2.48%	6.14%	4.00%	-	4.65%	1/1/2020
Bloomberg Barclays U.S. Aggregate			1.83%	-1.61%	-0.34%	5.34%	3.03%	3.01%	3.82%	1/1/2020
iShares Intermediate-Term Corporate Bond ETF	\$ 1,431,298	2.00	2.80%	-1.16%	3.10%	7.78%	4.72%	3.88%	5.46%	10/1/2019
ICE BofAML U.S. Corporate 5-10 Year Index			2.95%	-0.97%	3.50%	8.05%	4.96%	4.63%	5.75%	10/1/2019
iShares JP Morgan USD Emerging Markets Bond ETF	\$ 664,864	0.93	4.43%	-1.22%	7.19%	6.61%	4.33%	4.16%	7.19%	7/1/2020
JPM EMBI Global Diversified			4.06%	-0.66%	7.53%	6.71%	4.86%	4.81%	7.53%	7/1/2020
Mainstay Mackay Hght Yield Corp	\$ 548,543	0.77	2.80%	4.01%	14.29%	6.82%	6.91%	-	1.16%	7/1/2020
ICE BofAML High Yield Master II			2.77%	3.70%	15.62%	7.15%	7.30%	5.75%	1.37%	7/1/2020
Other Income	\$ 2,632,037	3.67								
Boyd Watterson GSA Fund	\$ 2,632,037	3.67	2.27%	5.39%	9.11%	-	-	-	7.71%	7/1/2019
NCREIF Property Income			1.06%	2.11%	4.19%	4.37%	4.49%	4.78%	4.29%	7/1/2019
Inflation Hedge	\$ 2,203,156	3.07								
Invesco Opt Yield Diversified Commodity	\$ 1,122,689	1.57	16.70%	31.81%	55.44%	3.61%	5.08%	-	4.02%	7/1/2019
PIMCO Commodity Real Return Strategy	\$ 1,080,467	1.51	14.87%	24.78%	56.86%	6.69%	4.39%	-3.47%	1.58%	7/1/2019
Bloomberg Commodity Index Total Return			13.30%	21.15%	45.61%	3.90%	2.40%	-3.75%	1.85%	7/1/2019
Cash Equivalent										
First American Government Obligation	\$ 88,536	0.12	0.01%	0.01%	0.03%	1.15%	1.01%	0.62%	1.25%	1/1/2004
Retiree Health Plan Trust	\$ 71,657,066	100.00	5.21%	7.34%	25.23%	12.49%	11.24%	9.16%	9.34%	9/1/2009
Blended Benchmark*			5.09%	6.99%	23.22%	11.77%	10.40%	8.23%	8.89%	9/1/2009

Data as of June 30, 2021.
** 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.

TO: General Manager
 FROM: Director of Information Technology
 SUBJECT: Information Technology Department Report for July 2021
 DATE: August 11, 2021

A. General

1. As part of HRSD's cybersecurity strategy, staff continues to rollout multi-factor network authentication across the organization.
2. ITD has successfully installed, configured, and tested, network equipment and connectivity within the new Water Quality building.
3. In July, the IT Help Desk processed 380 work orders, ensuring availability of computing resources to those working locally and remotely.
4. Over ninety percent of HRSD computer users are now connected to Microsoft OneDrive. The remainder will be migrated by the end of August. Once connected, users are able to leverage the many collaborative features and functions of Office 365, Microsoft Teams, and Sharepoint.
5. Staff is currently evaluating future data storage needs, and the most efficient and cost effective ways to meet those needs, while maximizing data security, availability, and integrity.

B. Strategic Planning Metrics Summary

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

Item #	Strategic Planning Measure	Unit	July 2021
M-1.4a	Training During Work Hours Per Full-Time Employee (51) – Current Month	Total Training Hours / # FTE	2.53
M-1.4b	Total Training During Work Hours Per Full-Time Employee (51) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	2.53
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 2021
DATE: August 12, 2021

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

Staff and contractors continued to transfer new sites to the new SCADA system. A significant amount of time was spent on transferring many of the South Shore stations in July.

2. South Shore (SS) Interceptor Systems

On July 8, staff conducting water quality monitoring in stormwater outfall of the lake at Lakeside Park near Bainbridge Boulevard in Chesapeake found human pathogens markers. Staff dye tested nearby gravity sewer lines, but the results were inconclusive. On July 28, staff inspected a portion of the gravity sewer line that passed through a storm culvert near the stormwater outfall and discovered a hole in the bottom of the 24-inch ductile iron pipe. Staff patched the hole, and a contractor lined the section of pipe. The quantity of sewage spilled was unknown due to tidal influence and location of the hole.

B. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

On July 31, there were more than three consecutive chlorine residuals (TRC) below 0.50 mg/L when the sodium hypochlorite feed pumps experienced vapor lock and struggled to move the necessary amount of chemical to maintain the TRC limit. Staff utilized a drip feed system to supplement the chemical demand. The problem persisted for several hours before being resolved.

2. Atlantic Treatment Plant (ATP)

a. Staff continued work on reducing off-site odors. Staff purchased mineral oil to put in the annular space around the in-service digester covers. The theory was that the oil may create a seal to help keep odors from being released. After testing it, staff determined that no noticeable change was observed. Staff is returning the unused mineral oil to the supplier. Staff did discover that the newly installed Pressure, Relief and Vacuum (PRV) openings on top of the digester were leaking intermittently, releasing odors to the atmosphere. The PRV's were adjusted eliminating most of the offsite odors.

- b. Staff worked with field technicians to perform a complete assessment of the digester gas system. This was done to help identify and correct digester gas leaks in the entire system.
- c. Staff added carbon media in Odor Control Station C. Although, there were no hydrogen sulfides (H₂S) levels detected in the exhaust, there was a faint organic smell coming from the station's exhaust. Even though the odor was not leaving the plant site, adding carbon was a proactive approach to help mitigate any odors coming from the unit.

3. Boat Harbor Treatment Plant (BHTP)

- a. The Total Hydrocarbon (THC) cabinet air conditioning unit and data logger was repaired. As a result, the THC data capture for the month of July was at 100 percent.
- b. The tank mixer which helps maintain proper dissolved oxygen levels on an aeration tank failed this month. Staff drained the tank and discovered that the mixer's upper blades were unbolted from their designated position on the mixer shaft causing the entire upper blade to drop down the shaft, damaging the lower blades. Staff is working with contractors to remove and repair the mixer shaft, gearbox, and mixer blades.

4. Chesapeake-Elizabeth Treatment Plant (CETP)

Staff repaired a hypochlorite pump, a leaking piping system on a hypochlorite tank and a stormwater pond pump to inhibit algae growth.

5. James River Treatment Plant (JRTP)

- a. There was one odor scrubber deviation caused by a hydrogen sulfide loading which was too high for the operational set points on the first stage scrubber.
- b. Staff continued constructing a centrifuge centrate foam control system in the thickening building. The new system will include a contained storage area for defoamer totes and defoamer feed pumps. Defoamer chemicals will be fed just upstream of the main grinders serving the centrifuge feed pumps.
- c. Staff completed building the new materials storage yard near the administration building and began moving equipment and materials from the existing storage yard. The new storage yard will temporarily replace the existing yard that must be moved for SWIFT construction.

6. Nansemond Treatment Plant (NTP)

- a. On July 21 a chemical delivery driver ran over a non-potable water (NPW) fire hydrant, located well off the roadway; staff responded immediately and secured an in-ground cut off valve. This resulted in a spill of about 8,400 gallons of NPW onto the ground, with none recovered. The next day, a contractor dropped a piece of concrete on an NPW line while excavating the broken fire hydrant.

Staff responded immediately and were able to secure an in-ground cut off valve further up line. This resulted in a spill of about 3,480 gallons of NPW on the ground, with none recovered.

- b. Staff installed an actuator in blower #3, giving the plant two operational blowers. Staff continue looking into ways to address blower reliability before the blowers are replaced as a part of the upcoming wastewater capital improvement project.
- c. Contractors began installing the aeration tank big bubble mixers on July 16. This is the second of four tanks to have mixers installed which, when complete, will permit a lower dissolved oxygen setpoint while still maintaining adequate mixing, which should increase efficiency of nutrient removal as well as provide a reduction in chemical and energy costs.
- d. Centrifuges #2 and #3 are out of service. Centrifuge #2 is out due to excessive vibration, and centrifuge #3 is out for a failed main drive motor.
- e. 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 13.12 million gallons (49.4 percent recharge time based on 600 gallons per minute (gpm)).
 - (2) The recharge flow rate setpoint was decreased from 600 gpm to 550 gpm to extend recharge operations. This change was made based on a recharge water level threshold of -12 feet within the well. On July 28th, the recharge water level was reading -9 feet after 12 hours of operation before a backflush, meaning that a change was needed to be able to continue with recharge operations.
 - (3) On July 26, staff replaced the recharge well level transducer after the probe started drifting and providing inaccurate readings. The level readings are now within the acceptable range when compared with the handheld meter.
 - (4) Staff continued testing the effect of recirculating the solids waste coming from the sedimentation tank back to the first flocculation basin. Once enough data is collected, a summary will be shared with the design team to inform if this feature will be needed for future full-scale SWIFT plants. If successful, this should reduce chemical operating costs for a full-scale SWIFT operation.

7. Virginia Initiative Plant (VIP)

- a. While staff were performing routine preventative maintenance activities on the raw influent pump discharge valves, one of the valves would not reopen. The valve actuator was damaged while attempting to open the valve and will be repaired by a contractor.

- b. The incinerator was taken out of service when a combustion air fan impeller slid forward on the rotating shaft, causing major damage to the fiberglass fan housing. The fan was repaired with parts from a standby fan.

8. Williamsburg Treatment Plant (WBTP)

- a. The discharge of fats, oils, and grease (FOG) by haulers remained suspended while contractors performed repairs to the FOG system. Coating and steel repairs to the FOG water tank are complete. A new rake arm is being fabricated for the FOG thickened tank.
- b. The contractor replaced cable feeding power to the non-potable water building, odor control station B, and the chemical building on the Switchgear project. These cables were found to be in poor condition during installation of main power cables as part of the Switchgear project. A decision was made to replace these cables while the contractor and power generating equipment needed for temporary power to areas impacted by repairs were on plant site.

9. York River Treatment Plant (YRTP)

- a. Staff continued cleaning the #1 and #2 aeration tanks in preparation for starting air control improvements on the tanks.
- b. Staff began repairs on the main drive bearing for the #2 secondary clarifier.

10. Incinerator Operations Events Summary

- a. Total Hydrocarbon (THC) monthly averages (not to exceed 100 parts per million) were met by all five treatment plants with incinerators with a THC continuous emissions monitoring (CEM) valid data captured of greater than 96%.
- b. There were no deviations from the required 129 SSI rule minimum operating parameters and four minor bypass events (<60 minute).

C. Small Communities (SC)

1. Middle Peninsula Communities Treatment and Collections

a. Urbanna Treatment Plant (UBTP) and Collections

The digester wasting valve from train #2 was inadvertently left open causing the digester to fill and begin to overflow. The digester overflowed for an estimated period of approximately 8 hours at a rate of 20 gpm before it was discovered and shut off, releasing approximately 9,400 gallons of unrecovered activated sludge. Staff corrected an improperly installed high-level alarm float which would have notified staff of the problem earlier had it been properly installed.

b. Matthews Collection System

An air release valve located in a grass median on the discharge force main of the County Line Pump station appeared to be damaged by a vehicle or lawn equipment, causing a release of sewage into the median along a highway. Staff shut down the County Line PS, made repairs and cleaned the area. Approximately 650 gallons were discharged with 200 gallons recovered.

c. Small Communities – Middlesex Systems

The Rappahannock PS SCADA is now complete. This is the first remotely monitored/controlled station in the Small Communities – Middle Peninsula Division.

2. Small Communities – Surry Systems

The three copper permit exceedances during the month of June at the Surry County Treatment Plant remain under investigation by Sussex Service Authority. High copper readings were found at the school complex pump station. Staff is investigating the school's cooling system and chemical usage.

3. Eastern Shore

a. Onancock Treatment Plant (OTP)

Transfer of the plant and its employees to HRSD was initiated on July 2 with the preliminary plan to bring the plant's staff on as HRSD employees by August 23.

b. Riverside Treatment Plant (RTP)

Equipment has been provided for key areas such as: influent and intermediate pumping, surface mixers and post aeration blowers.

4. Lawnes Point

Staff met with geologists from Virginia Tech about installing a seismograph at the plant for research associated with the JRTP SWIFT construction project. Installation should occur in November.

E. Electrical & Instrumentation (E&I)

1. Staff installed a natural gas flow meter to record the steam boiler's natural gas usage on the Distributive Control System (DCS) at ATP.
2. Staff installed mass flow meters on Aeration Tanks 2, 3, 4 & 5 as designed by the Treatment Process Engineers at ATP.
3. Staff worked with contractors to install conduit for the Induced Draft (ID) fan monitoring equipment at VIP. This will allow the operators to view any vibration issues remotely at the operator workstation.

4. Staff completed installation of the excess air valve actuator system for the Advanced Nutrient Reduction Improvements Phase 1 Project at YRTP.
5. Staff responded to a communications failure at the King William (KW) Water Tower. They found the antenna on the ground in several pieces. They also identified a shorted lightning arrestor which indicated the equipment was struck by lightning. They replaced the antenna and lightning arrestor, which restored site communications.

F. Water Technology and Research

The new VIP biological nutrient removal pilot facility is entering the final phase of construction with startup expected within a few months. The last remaining equipment is being piped and configured, the influent pump station is being installed, and final electrical and instrumentation work is being completed. The facility will be started with a project targeted at better understanding the acclimation of nitrifying and phosphorus accumulating bacteria to low dissolved oxygen conditions, such as in the case of ammonia versus NO_x (AVN) or ammonia-based aeration control. This first phase of work is supported by a federal grant from the Department of Energy, with Carollo and the Water Research Foundation as partners.

H. Strategic Measurement Data

1. Education and Outreach Events: 5

- a. 07/06/2021 - Masters Thesis Defense: Startup and Pilot Testing of MBBR and IFAS Partial Denitrification/Anammox Processes – Justin Macmanus
- b. 07/06/2021 - Masters Thesis Defense: Characterizing the Drivers of Carbon Use in Post-Anoxic Denitrification - Kayla Bauhs
- c. 07/07/2021 - Invited Webinar Presentation Water Research Foundation: Meeting Stringent TN Requirements with Partial Denitrification Anammox (PdNA) – Charles Bott
- d. 07/13/2021 – Plant tour for President of Ocean Lakes Civic Organization – Dave Ewing
- e. 07/22/2021 - Staff met with City of Virginia Beach Public Utilities Operations staff to collaborate and discuss locality issues – Quarterly Meeting.

2. Community Partners: 4

- a. Chesapeake Bay Foundation-Oyster Cage Maintenance at BHTP for Oyster Garden Project
- b. DOE Jefferson Lab
- c. Old Dominion University (ODU)
- d. United Way Williamsburg House

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2021
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (533) – Current Month	Hours / FTE	2.33
M-1.4b	Total Training During Work Hours per FTE (533) – Cumulative Fiscal Year-to-Date	Hours / FTE	2.33
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	26,957
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	64.46%
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	13.56%
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	21.98%
M- 4.1a	Energy Use: Treatment *reported for July 2021	kWh/MG	2,679
M-4.1b	Energy Use: Pump Stations *reported for July 2021	kWh/MG	64
M-4.1c	Energy Use: Office Building *reported for July 2021	kWh/MG	31
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	4

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager
 FROM: Director of Talent Management (TM)
 SUBJECT: Monthly Report for July 2021
 DATE: August 11, 2021

A. Talent Management Executive Summary

1. Recruitment Summary

New Recruitment Campaigns	16
Job Offers Accepted – Internal Selections	5
Job Offers Accepted – External Selections	7
Average Days to Fill Position	74

2. The following were performed in response to the COVID-19 pandemic:

- a. Continued addressing and monitoring suspected COVID-19 cases and potential exposures based on Virginia Department of Health (VDH) guidelines:

Description	July 2021	Total (March 2020 – July 2021)
Quarantines due to illness or direct exposure (household or external)	1	333
Work Related Quarantines	16	50
Personal Travel Quarantines	0	53
Confirmed Employee COVID-19 Cases	5	72
Work Related COVID-19 Cases	1	2
Contractor COVID-19 Cases on HRSD Work Sites*	0	11
Vaccine Acknowledgements	11	660

*No direct exposure to HRSD employees

- b. *COVID-19 Guidelines for HRSD Suppliers and Contractors* were updated.
- c. Staff began review of amendments to the Virginia Occupational Safety and Health Administration (VOSHA) Final Permanent Standard for COVID-19 to incorporate applicable changes into *HRSD's Infectious Disease Preparedness and Response Plan*.
- d. One on-site COVID-19 Vaccine Clinic was held with five employees and one retiree receiving a second dose vaccine.
- e. The impact of waiving the deductible for COVID-19 vaccine medical claims was evaluated. The review concluded that the change may negatively impact HRSD's High Deductible Health Plan status.

3. Benefits and Compensation
 - a. Salary information was provided for a Denver Metro Water Reclamation District Water/Wastewater Compensation study.
 - b. ERP Pay Table adjustments were finalized to implement the \$15 hourly minimum wage.
 - c. The Employee Assistance Program (EAP) hosted a webinar, *Why Every Captain Needs a Crew in Caregiving*
4. HR staff continued to review and revise the following HR Policies:
 - a. Continued work with Accounting staff to review overtime pay policies and payroll set up based on the Virginia Overtime Wage Act.
 - b. Substance Abuse policy changes were completed, effective July 1st. Online employee *Substance Abuse Policy* training was developed and distributed. Three virtual *EAP Reasonable Suspicion Training for Supervisors* sessions were held.
 - c. HRSD's drug and alcohol testing program was updated, and Federal Motor Carrier Safety Administration (FMCSA) Commercial Driver's License Drug and Alcohol Clearinghouse requirements were fully implemented.
 - d. A HR Business Partner conducted an additional review of the Substance Abuse Policy and a Question-and-Answer session for a South Shore Interceptor Systems (SSIS) Safety Briefing.
5. The HR Business Analyst continued generating weekly Employee Vaccine Acknowledgement reports for Data Analysts to update the Vaccine Status Dashboard.
6. Wellness Program
 - a. Participation

Year Nine Participation Activities	Unit	July 2021	Year to Date (March 2021–February 2022)
Biometric Screenings	Number	6	193
Preventive Health Exams	Number	7	171
Preventive Health Assessments	Number	6	66
Online Health Improvement Programs	Number	5	64
Web-MD Online Health Tracking	Number	47	164
Challenges: <i>Clear the Clutter</i>	Number	93	249
Fit-Bit Promotion	Number	2	17

- b. The Wellness Specialist presented *The Power of Nutrition* to James River and Williamsburg Treatment Plant (TP) employees.
 - c. Coordination of on-site flu clinics began. Proposed schedules were sent to work centers and Optima Health for staff scheduling.
 - d. TM and Optima Health staff collaborated to re-structure roles to accommodate job sharing and remote work for the Wellness Specialist position.
7. HR and Safety staff continued Occupational Health Medical Provider proposals.
8. Work Continued with OD&T consultant, Hicks Carter Hicks in the following areas:
- a. The six-month *Supervisory Knowledge and Information Program (SKIP)* continues. The evaluations and participant engagements have been outstanding.
 - b. Development of a virtual coaching program.
 - c. Work with HRSD Leadership on several Diversity Equity & Inclusion (DE&I) actions and strategies, including recruitment of DE&I Council members and communication to the organization.
 - d. Worked with the Customer Care Division to curate online learning paths for staff members.
 - e. Worked with E&I staff on a team-building initiative.
9. The Facilitator team conducted the seventh Leadership and Management Academy (LAMA) workshop, *HRSD Motivation and Change*. Next month, participants will attend the *Strengths-finder* workshop.
10. *Canvas Learning Management System* training for Apprenticeship Instructors began.
11. Mishaps and Work-Related Injuries Status to Date (OSHA Recordable)

	<u>2020</u>	<u>2021</u>
Mishaps	32	18
Lost Time Mishaps	8	5
<i>Numbers subject to change pending HR review of each case.</i>		

12. Twenty-nine work centers received full or partial recognition for no or reduced OSHA recordable or lost time injuries and preventable auto or property damage accidents.
13. The revised Safety Standard Operating Procedure containing all HRSD safety procedures, safety programs and safety notices was finalized and posted.

14. Safety Division Monthly Activities

Safety Training Classes	20
Work Center Safety Inspections	9
Reported Accident Investigations	4
Construction Site Safety Evaluations	12
Contractor Safety Briefings	8
Hot Work Permits Issued	8
Confined Space Permits Issued/Reviewed	200
Industrial Hygiene Monitoring Events	2

15. Staff participated in the following external activities:

- a. Water Environment Federation/ American Water Works Association (AWWA) Utility Management Conference workshop planning
- b. Virginia Water Environment Association (VWEA)/ Virginia AWWA Diversity Equity and Inclusion (DE&I) Task Force Monthly Meeting
- c. Hampton Roads Society of Human Resources Management (HR-SHRM) Board of Directors meeting
- d. Facilitated *Real Colors* for the VWEA Leadership Academy.
- e. A virtual City of Suffolk Local Emergency Planning Commission meeting.

B. Monthly Strategic Planning Metrics Summary

- 1. Education and Outreach Events: (0)
- 2. Community Partners: (0)
- 3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2021
M-1.1a	Employee Turnover Rate (Total)	Percentage	1.35%
M-1.1b	Employee Turnover - Service Retirements	Percentage	0.18%
M-1.4a	Total Training Hours Per Full Time Employee (17)	Total Training Hours/ FTE	4.41
M-1.4b	Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date	Hours / FTE	4.41
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Community Partners	Number	0

Respectfully submitted,
Paula A. Hogg
 Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for July 2021
DATE: August 13, 2021

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed one civil penalty this month.

Divers Processing Company, Incorporated – Portsmouth

An Enforcement Order was issued to Divers Processing Company, Incorporated in June 2021 for a series of technical violations. The Enforcement Order contained an invoice for a \$6,000 Civil Penalty. The permittee exceeded the daily maximum permit limit for acrolein in December 2020, February 2021, and March 2021, resulting in a chronic occurrence along with a daily maximum chloromethane (methyl chloride) violation in January 2021. A Show Cause meeting was held in April and the permittee explained the causes of the technical violations and what steps were being taken to prevent the recurrence of acrolein and chloromethane exceedances. The Civil Penalty was accepted and was paid in full in July 2021.

2. The Water Quality Department's Pretreatment Pollution & Prevention (P3) Division and Technical Services Division (TSD) hosted an open house event to celebrate completion of the newly constructed Water Quality Services Building. HRSD Commissioners and approximately 200 employees were provided lunch and tours of the new building. Staff are expected to start moving into the building in the coming weeks.

B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy (SEA) Group reported no activities for the month of July.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to Northumberland County, Westmoreland County, and the Town of Lawrenceville to support monitoring required for their respective Virginia Pollution Discharge Elimination System (VPDES) permits.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

07/17/2021 - P3 staff from the Boater Education Program provided information during the Old Dominion University (ODU) Fishing Classic.

2. Community Partners: 2

- a. American Red Cross
- b. Hampton Roads Planning District Commission

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2021
M-1.4a	Training During Work Hours Per Full Time Employee (119) (Current Month)	Total Hours / # FTE	2.81
M-1.4b	Total Training During Work Hours Per Full Time Employee (119) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	2.81
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	0:5,073
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	17,456,687
M-3.5	Pollutant Discharge	% Pounds Discharged/ Pounds Permitted	12%
M-5.2	Educational and Outreach Events	#	1
M-5.3	Community Partners	#	2
	Average Daily Flow	Total MGD for all Treatment Plants	133.88
	Pretreatment Related System Issues	#	0

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2021
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	149.72
	Rainfall reported at Norfolk International Airport	Inches	54.04"

*These metrics will be reported upon closeout of fiscal year financials.

Respectfully submitted,
James Platt, PhD
 Director of Water Quality



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 (MAP) monitoring.

I. Projects in Process

WIFIA Compliance

- **Tasks Completed (July 2021)**
 - Conducted deliverable meeting with Management
 - Confirm/finalize next steps
 - Began drafting summary memo
- **Upcoming Tasks (August 2021)**
 - Conduct follow-up meetings as necessary
 - Refine/finalize deliverables based on Management feedback
 - Present summary memo to Management for content/structure approval

Emergency Repairs

- **Tasks Completed (July 2021)**
 - On-hold for documentation requests
- **Upcoming Tasks (August 2021)**
 - Received and began reviewing initial documentation requests
 - Begin Fieldwork Procedures
 - Draft front half of internal audit report

Model 3 Billing

- **Tasks Completed (July 2021)**
 - Finalized scope and approach with HRSD Leadership
 - Drafted engagement letter
- **Upcoming Tasks (August 2021)**
 - Schedule and conduct entrance meeting
 - Begin planning phase procedures

Unifer/ERP

- **Tasks Completed (July 2021)**
 - Met with HRSD Management to conduct a preliminary planning discussion
- **Upcoming Tasks (August 2021)**
 - Schedule and conduct entrance meeting
 - Begin planning phase procedures

Business Continuity and Disaster Recovery

- SC&H is working with HRSD management to finalize the audit report, incorporating management action plans.

II. Management Action Plan (MAP) Monitoring

SC&H is performing on-going 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
D&C: CIP Project Management	5/11/16	Closed	13	0	13
Biosolids Recycling	10/8/16	Pending Permit	7	1	8
HR Benefits	11/22/16	Closed	15	0	15
Inventory	4/20/17	Closed	5	0	5
Procurement/ ProCard	8/23/17	In process*	8	3	11
Engineering Procurement	4/20/18	Closed	8	0	8
Corporate Governance: Ethics Function	3/21/18	Closed	5	0	5
Treatment Plant Operations	10/15/18	July 2021	5	4	9
Customer Care Division	7/26/19	December 2022	2	2	4
Safety Division	9/12/19	February 2022	0	3	3
Permitting	2/4/20	Closed	2	0	2
Payroll	3/27/20	Closed	3	0	3
Pollution Source Control	6/2/20	January 2022	3	5	8
SWIFT Program	2/24/2021	February 2022	0	12	12
Fleet Services	2/24/2021	February 2022	0	17	17
Totals			76	47	123

*Indicates follow-up is ongoing and have been sent to Management for comment.

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
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%
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%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	70%	71%	64%	69%	68%	85%	85%	63%	78%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67	67	66	60	95
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
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
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
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
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%	160%	170%	170%	123%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%	167%	159%	159%	155%
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	27,654
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%	44%	59%	59%	62%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%	24%	18%	19%	16%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%	27%	27%	25%	22%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	5%	5%	4	5%	*
M-3.1	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.45	1.58	1.66	1.58	1.7	*
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	*
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	*
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173	170	181	174	*
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104	104	95	102	*
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%	*
M-4.3	Total Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year 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	*
M-4.4	Affordability	8 CCF Monthly Charge/ Median Household Income	< 0.5%		0.48%	0.48%	0.41%	0.43%	0.53%	0.55%	0.59%	0.60%	0.64%	0.71%	*
M-4.5	Total Operating Cost/MGD	Total Operating Expense/ 365/5-Year Average Daily Flow		\$2,741	\$2,970	\$3,262	\$3,316	\$3,305	\$3,526	\$3,434	\$3,592	\$3,959	\$3,823	\$4,048	*
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
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%	114%	117%	143%	*
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15	20	26	32	*
	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
	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
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	73%	76%	72%	78%	*
	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%	*
	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%	*

*to be reported

Monthly Updated Metrics															FY-21	FY-22	
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	Jun-21	Jul-22
	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	139.1	133.9
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	4	7	1	2	0	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	104%	104%	106%	102%	113%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	117%	119%	108%	111%	110%
	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	\$40,032,946	\$43,776,044
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	17%	18%	29%	33%	32%
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
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	23:60879	0:5073
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	6	9	15	31	4	0
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	183,123,855	17,456,687
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	17%	17%	18%	20%	12%	12%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	432	367	256	145	43	47
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	381	293	230	128	13	8

EFFLUENT SUMMARY FOR JULY 2021

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	TKN mg/l	NH3 mg/l	CONTACT TANK EX
ARMY BASE	9.06	50%	4	9.4	3	1	0.79	0.57	3.3	4.2	NA	NA	18
ATLANTIC	29.08	54%	8	5.7	3	2	NA	NA	NA	NA	NA	NA	6
BOAT HARBOR	10.62	42%	4	4.0	1	1	0.25	0.40	10	18	NA	NA	15
CENT. MIDDLESEX	0.010	38%	<2	1.2	<1	<1	NA	NA	NA	NA	0.60	0.03	NA
CHES-ELIZ	12.93	54%	13	9.3	19	4	0.56	0.95	27	29	NA	NA	15
JAMES RIVER	12.34	62%	2	1.8	<1	<1	0.26	0.33	4.8	6.2	NA	NA	4
KING WILLIAM	0.069	69%	<2	0.22	NA	1	0.037	0.036	1.1	2.1	<0.50	NA	NA
NANSEMOND	16.49	55%	3	2.2	3	1	0.55	0.70	3.1	4.4	NA	NA	0
NASSAWADOX	0.015	15%	<2	6.2	1	1	0.72	NA	17	NA	NA	<0.10	NA
SURRY, COUNTY	0.046	71%	4	2.6	NA	NA	NA	NA	NA	NA	<0.50	<0.10	0
SURRY, TOWN	0.047	78%	5	14	NA	13	NA	NA	NA	NA	1.6	0.16	NA
URBANNA	0.064	64%	2	6.1	6	3	1.5	1.1	6.6	10	NA	0.13	NA
VIP	23.04	58%	1	1.3	6	1	0.63	0.44	3.6	3.3	NA	NA	3
WEST POINT	0.469	78%	17	5.7	<1	2	3.4	2.7	15	15	NA	NA	0
WILLIAMSBURG	9.00	40%	3	3.1	12	3	0.69	0.62	1.8	3.9	NA	NA	5
YORK RIVER	10.61	71%	1	1.2	1	1	0.18	0.22	4.9	5.2	NA	NA	6
	<u>133.88</u>												

	% of Capacity
North Shore	52%
South Shore	55%
Small Communities*	39%

Tributaries	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection	CY21	YTD	Projection	CY21
	%	Lbs	%	%	Lbs	%
James River	40%	3,344,122	74%	36%	230,224	73%
York River	49%	247,867	86%	39%	14,731	76%
Rappahannock	35%	NA	NA	13%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY22 to Date: 0:5,073
Pounds of Pollutants Removed in FY22 to Date: 17,456,687
Pollutant Lbs Discharged/Permitted Discharge FY22 to Date: 12%

*Small Communities includes Eastern Shore

	Rainfall (inch)		
	<u>North Shore (PHF)</u>	<u>South Shore (ORF)</u>	<u>Small Communities (FYJ)</u>
Month	8.19"	2.63"	6.84"
Normal for Month	5.94"	6.01"	5.51"
Year to Date Total	32.89"	24.24"	32.26"
Normal for YTD	29.01"	27.59"	28.85"

AIR EMISSIONS SUMMARY FOR JULY 2021

MHI PLANT	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	Temp 12 hr ave (F)	Venturi(s) PD 12 hr ave (in. WC)	Precooler Flow 12 hr ave (GPM)	Spray Flow 12 hr ave (GPM)	Venturi Flow 12 hr ave (GPM)	Tray/PBs Flow 12 hr ave (GPM)	Scrubber pH 3 hr ave	Any Bypass Stack Use	THC Mo. Ave (PPM)	THC DC (%)	BZ Temp Daily Ave Days >Max
ARMY BASE	0	0	0	0	0	0	0	1	57	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	20	100	0
CHES-ELIZ	0	0	0	0	0	0	0	0	13	99	0
VIP	0	0	0	n/a	0	0	0	0	19	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	2	40	96	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:	0
HRSD Odor Scrubber H2S Exceptions:	4