HRSD Commission Meeting Agenda
9:00 a.m. – February 27, 2024

In-person for Commissioners and essential staff at
1434 Air Rail Avenue, Virginia Beach, VA 23455
Virginia Initiative Conference Room – 1st Floor

Reservations are required for in-person and virtual public observation of all HRSD Commission and Committee meetings; to address the Commission; and to submit written comments to be read into the minutes. Reservations are accepted via the following link and must be completed by noon one business day prior to the meeting: https://www.hrsd.com/contact/commission_meeting.

No.	Topic	Resource
	Call to Order	Commission Chair
1.	Awards and Recognition	Bernas
2.	Public Comments Not Related to the Agenda	Commission Secretary
3.	Consent Agenda	Bernas
4.	Hampton Roads Regional Water Quality Monitoring Program Update	Heisig-Mitchell
5.	Eastern Shore Transmission Force Main Water Quality Improvement Fund Grant Agreement	de Mik
6.	High Priority Inflow and Infiltration Reduction Program Resolution	Husselbee
7.	City Park Pump Station (PS 106) Replacement and Luxembourg Pump Station (PS 113) Replacement and Ashland Sewer Extension Initial Appropriation, Contract Award (>$200,000) and Task Order (>$200,000)	Husselbee
8.	Nansemond Recharge Well Integration New CIP and Initial Appropriation	Husselbee
9.	South Shore Galvanic Cathodic Protection System Rehabilitation Phase I Initial Appropriation – Non-Regulatory	Husselbee
10.	New Business	Bernas
11.	Unfinished Business	Bernas
12.	Commissioner Comments	
13	Informational Items	Bernas

Next Regular Commission Meeting: March 26, 2024

Resource: Jay Bernas

AGENDA ITEM 1. – February 27, 2024

Subject: Awards and Recognition

Recommended Action: No action is required.

Brief: HRSD is pleased to announce the following:

a. Service Awards

Andre Jones marked his 35th year of service with HRSD on February 18, 2024. He was hired as a Sewage Treatment Plant Operator Assistant and was later promoted to Maintenance Operator Assistant before his probationary period was over. He accepted his present position as Maintenance Operator in January 2008, and graduated apprenticeship in 2012. He was 2nd in his class!

Andre continues to be our resident centrifuge expert bringing his years of experience to training our newer staff. He recently has spent time working with our lead operators and Maintenance staff purchasing budget items, as well as day to day parts and tools.

b. New Employee Introduction

Rachel Hook was recently hired the Chief of the Laboratory in the Water Quality Department. Rachel comes to us after serving for more than seven years as Chief of Laboratory Operations for Henrico County's Central Environmental Laboratory, a commercially accredited laboratory under Virginia's Environmental Laboratory Accreditation Program (VELAP), providing analyses in drinking water, non-potable water and solids matrices. Rachel's 15+ year career in lab operations has included positions as a lab analyst and QA Coordinator and, prior to starting at Henrico, she was a lab manager of another VELAP accredited commercial lab. Rachel is a graduate of Longwood University with a bachelor's degree in biology.

c. Promotion Announcement

Kim Fielder was recently promoted to Quality Assurance Manager. Kim was hired in 2018 as a Laboratory Specialist and was promoted to the positions of Quality Assurance Specialist in 2022. Kim graduated from the University of Lynchburg with a bachelor's degree in biology and has more than 10 years of experience in environmental sampling and analysis. As our new QA Manager, Kim will be leading the laboratory's Quality Assurance program and working with staff to ensure the continued maintenance of HRSD's VELAP accreditation.

d. Other Awards

(1) **National Association of Clean Water Agencies (NACWA) Peak Performance Awards**

NACWA's Peak Performance Awards recognize member facilities for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permits. *Silver Awards* recognize facilities that have received no more than five permit violations per calendar year. *Gold* Awards honor those who have achieved perfect permit compliance for an entire calendar year, while *Platinum* Awards recognize 100 percent compliance for at least five consecutive years.

The following treatment plants were recognized for outstanding compliance during calendar year 2022, a remarkable accomplishment:

Award	Plant
Platinum 28	Williamsburg Treatment Plant
Platinum 27	Virginia Initiative Plant
Platinum 21	Boat Harbor Treatment Plant
Platinum 21	Nansemond Treatment Plant
Platinum 15	York River Treatment Plant
Platinum 9	James River Treatment Plant
Platinum 8	Atlantic Treatment Plant
Gold	Army Base Treatment Plant
Gold	Central Middlesex Treatment
Gold	Onancock Treatment Plant
Gold	Urbanna Treatment Plant
Silver	King William Treatment Plant
Silver	Nassawadox Riverside Treatment Plant
Silver	West Point Treatment Plant

(2) NACWA 2024 National Environmental Achievement Award (NEAA)

Each year, NACWA's recognizes individuals and NACWA member agencies that have made outstanding contributions to environmental protection and the clean water community with National Environmental Achievement Awards in categories of Research and Technology, Public Information and Education, and Workforce Development.

HRSD was pleased to receive the 2024 NEAA in the Public Information & Education: Video category for its "*National Infrastructure Week: James River Treatment Plant SWIFT Improvements*" video.

(3) Elizabeth River Project Award

Commissioners Lakdawala and Levenston, along with staff, represented the organization on January 18 when HRSD was recognized by the Elizabeth River Project for Sustained Distinguished Performance as a Model Level River Star Business. HRSD has been a River Star Business since 1998, advanced to the top Model Level in 1999, and has won 16 River Star awards including the coveted Inside Business River Star Hall of Fame in 2016.

Resource: Jay Bernas

AGENDA ITEM 2. – February 27, 2024

Subject: Public Comments Not Related to Agenda

Resource: Jay Bernas

AGENDA ITEM 3. – February 27, 2024

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 (>$200,000)

1.	Heating, Ventilation and Air Condition (HVAC) Maintenance Services for South Shore Operations	$643,885
2.	Nansemond Treatment Plant Interceptors Storage Yard	$937,228
3.	Oracle Enterprise Resource Planning System (ERP) Database and WebLogic Software License Support Services	$698,394
4.	Per- and Polyfluoroalkyl Substances/ Polyfluorinated Alkyl Substances (PFAS) Laboratory Analysis Services	$399,500
5.	Roof Inspection and Preventive Maintenance Services	$200,000

c. Task Orders (>$200,000)

1.	York River Treatment Plant Odor Scrubber Coating	$260,639

d. Non-Regulatory Capital Improvement Project – Additional Appropriation <$1,000,000

1.	Bethel-Poquoson Force Main Part IV Replacement-Wythe Creek Exposed Crossing	$595,981
2.	York River System Isolation Valve Installation and Replacement	$420,244

e. Regulatory Capital Improvement Project – Initial Appropriation <$10,000,000

1.	North Shore Galvanic Cathodic Protection Rehabilitation	
	Initial Appropriation	$2,323,860
	Task Order	$239,985
2.	South Shore Galvanic Cathodic Protection System Rehabilitation (Phase II)	$3,102,235
	Initial Appropriation	$294,158
	Task Order	

Resource: Eddie Abisaab

CONSENT AGENDA ITEM 3.b.1. – February 27, 2024

Subject: Heating, Ventilation and Air Condition (HVAC) Maintenance Services for South Shore Operations
Contract Award (>$200,000)

Recommended Action: Award a contract to Warwick Plumbing and Heating Corporation in the amount of $128,777 for one year with four renewal options and an estimated cumulative value of $643,885.

Regulatory Requirement: None

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Procurement Department advertised and solicited bids directly from potential bidders. The project was advertised on December 27, 2023, and two bids were received on January 17, 2024, as listed below:

Bidder	Bid Amount
Warwick Plumbing and Heating Corporation	$128,777
Colonial Webb Contractors Company	$237,000

HRSD Estimate: $130,891

Contract Description: This contract is for complete HVAC services for multiple buildings located in the HRSD South Shore Operations complex. Services include repairs, replacements, maintenance, and adjustments to all mechanical, heating, ventilating, chillers, RTUs, CRACs, and ancillary equipment.

Analysis of Cost: Costs are determined to be fair and reasonable based on the competitive solicitation results and past contract history for HVAC maintenance services. Warwick Plumbing and Heating Corporation held the previous five-year term and performed satisfactorily under the contract.

This work is in accordance with the Commission Adopted Procurement Policy.

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.b.2. – February 27, 2024

Subject: Nansemond Treatment Plant Interceptors Storage Yard
Contract Award (>$200,000)

Recommended Action: Award a contract to Ferguson Enterprises, LLC in the amount of $937,228.

CIP Project: NP014900

Regulatory Requirement: None

Budget	$2,211,000
Previous Expenditures and Encumbrances	($1,104,024)
Available Balance	$1,106,976

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Procurement Department advertised and solicited bids directly from potential bidders. The project was advertised on December 18, 2023, and two bids were received on January 25, 2024, as listed below:

Bidder	Bid Amount
Ferguson Enterprises, LLC	$937,228
LB Water Service, Inc.	$1,000,000

HRSD Estimate: $768,649

Project Description: This project will construct a new pipe storage yard to service both North Shore and South Shore Interceptors. The new pipe storage yard will be located at the Nansemond Treatment Plant in Suffolk. This project will also provide funding to cover the procurement of the large diameter pipe**.**

Project Justification: North Shore Interceptors will need to relocate pipes, fitting, valves, and pumps from their existing location at 2401 G Avenue to a new location once the HRSD property is sold or leased. A temporary pipe storage area at the James River Treatment Plant also needs to be relocated due to upcoming SWIFT upgrades. By constructing one large pipe storage yard, the assets at both locations can be relocated. South Shore Interceptors is also limited on space for large diameter pipe, fittings, and valves and will use the proposed pipe yard for storage of their larger assets. This combined facility will increase inventory efficiency, decrease/consolidate inventory on-hand and be jointly maintained by Interceptor Operations.

Contract Description: This contract is for the purchase of pipe and fitting materials, including plug valves, ductile iron body sleeves, ductile iron push-on pipes, and prestressed concrete pressure pipe transition adapters. Items are for general inventory purposes and will be stored at the Nansemond Treatment Plant South Shore Interceptors storage yard.

Analysis of Cost: Costs are determined to be fair and reasonable based on the competitive bid results and past purchase history of similar pipe and fitting materials.

This work is in accordance with the Commission Adopted Procurement Policy.

Schedule:

PER	July 2022
Design	July 2022
Bid	November 2022
Construction	March 2023
Project Completion	August 2024

Resource: Don Corrado

CONSENT AGENDA ITEM 3.b.3. – February 27, 2024

Subject: Oracle Enterprise Resource Planning System (ERP) Database and WebLogic Software License Support Services
Contract Award (>$200,000)

Recommended Action: Award a contract to Vaske Computer, Inc. DBA Collier IT in the amount of $126,840 for one year with four renewal options and an estimated cumulative value of $698,394.

Regulatory Requirement: None

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the HRSD Procurement Department advertised and solicited bids directly from potential bidders. The project was advertised on January 11, 2024, and two bids were received on January 29, 2024 as listed below:

Bidder	Bid Amount
Vaske Computer, Inc. DBA Collier IT	$126,840
Mythics, LLC	$126,949

HRSD Estimate: $126,919

Contract Description: This contract is for support services for the ERP Database and WebLogic software licenses, including technical support and software updates. Bidders were required to be authorized Oracle support providers.

Analysis of Cost: The cost is determined to be fair and reasonable based on the competitive solicitation results and comparison of past purchase history for similar support services. Vaske Computer provided fixed annual costs for renewal years based on standard Oracle service contracts and is incorporated in the full cumulative cost.

This work is in accordance with the Commission Adopted Procurement Policy.

CONSENT AGENDA ITEM 3.b.4. – February 27, 2024

Subject: Per- and Polyfluoroalkyl Substances/ Polyfluorinated Alkyl Substances (PFAS) Laboratory Analysis Services
Contract Award (>$200,000)

Recommended Action: Award a contract to SGS North America Inc. in the amount of $79,900 for one year with four renewal options and an estimated cumulative value of $399,500.

Regulatory Requirement: None

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Procurement Department advertised and solicited bids directly from potential bidders. The project was advertised on November 16, 2023, and two bids were received on January 9, 2024, as listed below:

Bidder	Bid Amount
SGS North America Inc.	$79,900
Eurofins Environmental Testing America Holdings Inc, DBA Eurofins Lancaster Laboratories Environmental Testing, LLC	$162,500

HRSD Estimate: $114,000

Contract Description: This contract is an agreement for analytical services for PFAS analysis using Environmental Protection Agency (EPA) Methods 1621 and 1633. This contract will support identification of PFAS sources in wastewater and implement measures where applicable to reduce those source contributions. Implementing source control efforts to reduce PFAS loads into SWIFT facilities can potentially reduce the cost of treatment needed to comply with the proposed PFAS regulatory limits for SWIFT water. Additional source control efforts are also needed to protect the beneficial reuse of biosolids.

During FY25, sampling is anticipated to be required at one or more HRSD wastewater facilities and select industries as part of EPA's Publicly Owned Treatment Works (POTW) influent study. This study will require identified utilities to use EPA Methods 1621 and 1633 to sample the influent, effluent, and biosolids of an HRSD wastewater treatment plant and selected industrial users.

Analysis of Cost: The cost is found to be fair and reasonable based on the results of the competitive solicitation and review of costs for similar sample testing. SGS North America offers an increase cap of five percent for annual contract renewal years.

This work is in accordance with the Commission Adopted Procurement Policy.

Resource: Eddie Abisaab

CONSENT AGENDA ITEM 3.b.5. – February 27, 2024

Subject: Roof Inspection and Preventive Maintenance Services Contract Award (>$200,000)

Recommended Action: Award a contract to International Roofing in the amount of $40,000 for one year with four renewal options and an estimated cumulative value of $200,000.

Regulatory Requirement: None

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Procurement Department advertised and solicited bids directly from potential bidders. The project was advertised on December 18, 2024, and one bid was received on January 12, 2024, as listed below:

Bidder	Bid Amount
International Roofing	$40,000

HRSD Estimate: $61,730

Contract Description: This contract is for all inspection and preventative maintenance services for roofs at all HRSD treatment plants and office complexes. Roof inspections are completed twice a year and any resulting maintenance work required will be proposed, approved and completed on an as needed basis.

Analysis of Cost: Costs are determined to be fair and reasonable based past contract history for roof inspection and maintenance services. International Roofing held the previous five year term and performed satisfactory under the contract.

This work is in accordance with the Commission Adopted Procurement Policy.

Resource: Eddie Abisaab

CONSENT AGENDA ITEM 3.c.1. – February 27, 2024

Subject: York River Treatment Plant Odor Scrubber Coating
Task Order (>$200,000)

Recommended Action: Approve a task order with Commonwealth Epoxy Coatings, LLC in the amount of $260,639.

Regulatory Requirement: None

Contract Status with Task Orders:	**Amount**
Original Contract with Commonwealth Epoxy Coatings, LLC	$0
Total Value of Previous Task Orders	$14,183,156
Requested Task Order	$260,639
Total Value of All Task Orders	$ 14,443,795
Revised Contract Value	$ 14,443,795

Task Order Description: This task order will provide coating services on the odor scrubber, including the stack and ductwork at the York River Treatment Plant. Services include surface preparation, cleaning, priming, and the application of base coat and finishing coats.

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

This work is in accordance with the Commission Adopted Procurement Policy.

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.d.1. – February 27, 2024

Subject: Bethel-Poquoson Force Main Part IV Replacement-Wythe Creek Exposed Crossing Additional Appropriation - Non-Regulatory Capital Improvement Project (<$1,000,000)

Recommended Action: Appropriate additional funding in the amount of $595,981.

CIP Project: YR014600

Regulatory Requirement: None

Budget	$3,472,223
Previous Expenditures and Encumbrances	($3,433,119)
Available Balance	$39,104
Proposed Change Order No. 3 to Bridgeman Civil, Inc. (BCI)	($135,085)
Proposed Contingency	($500,000)
Project Shortage/Requested Additional Funding	($595,981)
Revised Total Project Authorized Funding	$4,068,204

Contract Status with Change Orders:	Amount	Cumulative % of Contract
Original Contract with Contractor	$2,978,796	
Total Value of Previous Change Orders	$260,897	8.8%
Requested Change Order	$135,085	
Total Value of All Change Orders	$395,982	13.3%
Revised Contract Value	$3,374,778	

Time (Additional Calendar Days)		30

Project Description: This project will replace approximately 1,600 linear feet (LF) of 20-inch prestressed concrete cylinder pipe (PCCP) and approximately 1,600 LF of 18-inch high-density polyethylene (HDPE) pipe running above the marsh adjacent to the Wythe Creek Bridge. The existing cantilever beams will be removed, and the original pile bents will be replaced for the new 20-inch HDPE pipe. A new stringer support system will be added in between the existing bents to support the new 20-inch HDPE pipe.

The attached map depicts the project location.

Project Justification: In 2007, a temporary 18-inch HDPE force main was installed along the existing aerial crossing of New Market Creek on Wythe Creek Road in Hampton. This pipe was installed due to the failure of the adjacent 20-inch PCCP that was installed in the 1970s. At that time, the new HDPE pipe was installed on the original aerial support system. This aerial support was utilized by extending wooden cantilever beams from the existing pile bents adjacent to the 20-inch PCCP. In December 2019, Collins Engineers, Inc. performed an inspection of the aerial crossing supports and found deterioration and defects along several pile supports and bents. The cantilevers have had numerous repairs over the last decade and need repair again. The existing 18-inch HDPE pipe also requires the counterbalance weight of the PCCP pipeline to support the cantilever, thus requiring the old 20-inch PCCP to remain in place as long as this cantilever system exists. This project will remove the 20-inch PCCP along with the 18-inch HDPE pipelines, make repairs to the aerial crossing supports, and install a new 20-inch HDPE pipeline across Wythe Creek.

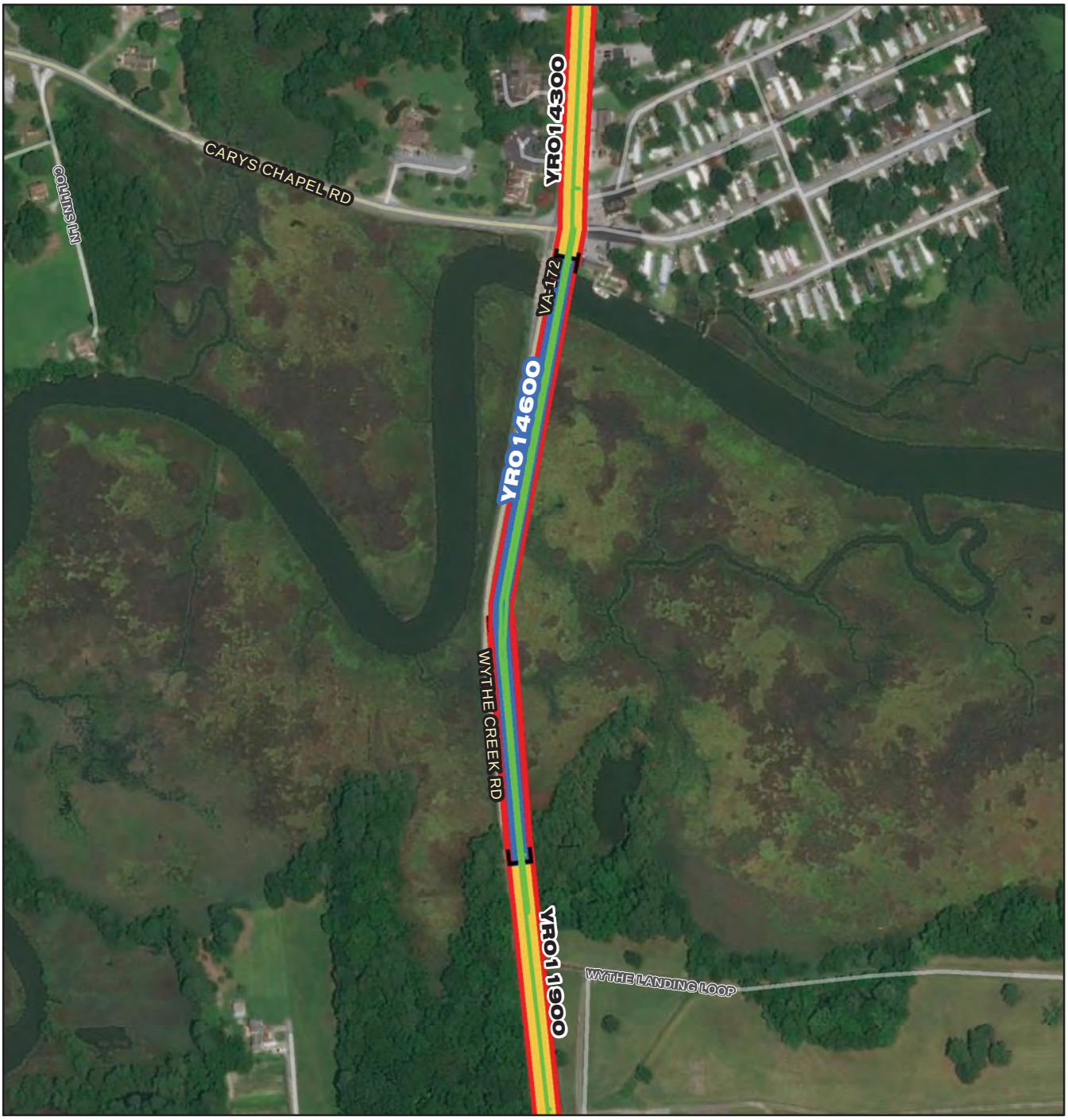
Bethel-Poquoson Force Main Phase II (Wythe Creek Road) Replacement (YR014300) and Bethel-Poquoson Force Main Part III Replacement (YR011900) CIP projects will be replacing the existing 20-inch force main to the North and South of this section of pipe. YR011900 is being performed as part of the VDOT roadway widening project.

Change Order Description: This change order includes replacing all bents to be of a longer uniform length wide enough to fit the wider stringer and the associated hardware. During the construction efforts, additional wooden pile bents were determined in need of replacement. This field change caused the need for the additional funds.

Analysis of Cost: The total value of all change orders is $395,982 (13% of original contract value), which is below the Commission approval threshold. The value of Change Order No. 3 is $135,085. It has been reviewed by Collins Engineers, Inc. and determined to be reasonable for the additional construction activities related to the bent replacements.

Funding Description: The project will be funded by revenue bonds. Since the project is only approximately 35% to 40% complete at this time, a $500,000 contingency is being requested to accommodate unforeseen conditions for the remainder of the construction effort.

Schedule: Project Completion August 2024



YRO14600

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

Legend

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

0 120 240 480 720 960 Feet

N W E S

CIP Location

YRO14600

Bethel-Poquoson Force Main Part IV Replacement-Wythe Creek Exposed Crossing

HRSD

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.d.2. – February 27, 2024

Subject: York River System Isolation Valve Installation and Replacement
Non-Regulatory Capital Improvement Project Additional Appropriation (<$1,000,000)

Recommended Action: Appropriate additional funding in the amount of $420,244.

CIP Project: YR013900

Regulatory Requirement: None

Budget	$8,378,582
Previous Expenditures and Encumbrances	($8,362,402)
Available Balance	$16,180
Proposed Change Order No. 3 to Contractor	($261,424)
Proposed Contingency	($175,000)
Project Shortage/Requested Additional Funding	($420,244)
Revised Total Project Authorized Funding	$8,798,826

Contract Status with Change Orders:	Amount	Cumulative % of Contract
Original Contract with Contractor	$6,874,630	
Total Value of Previous Change Orders	$332,948	4.8%
Requested Change Order	$261,424	
Total Value of All Change Orders	$594,372	8.6%
Revised Contract Value	$7,469,002	

Time (Additional Calendar Days)		4

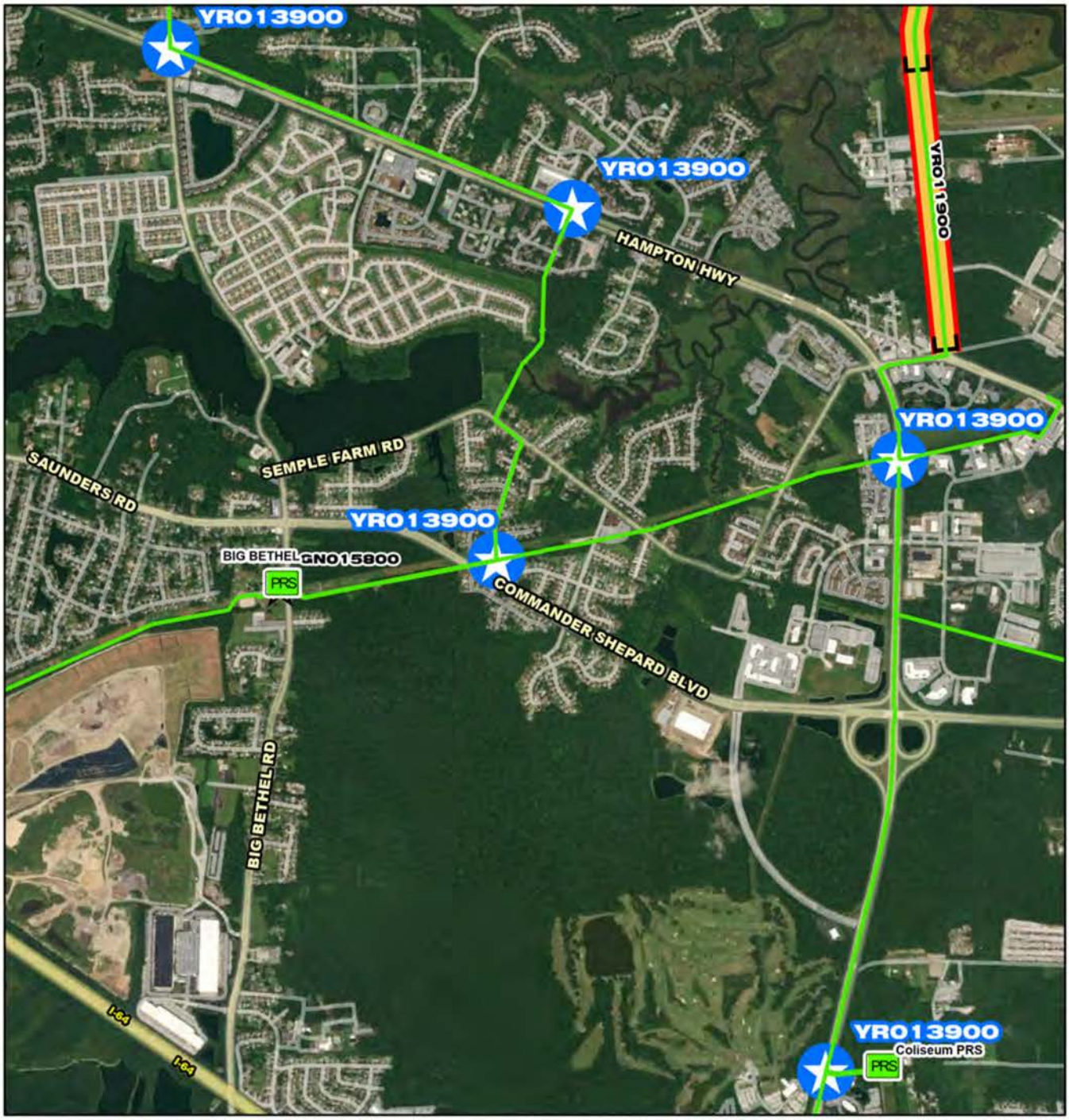
Project Description: This project will install eight new valves and replace three existing valves. These valves are main line and branch isolation valves within the force main system from Coliseum Pressure Reducing Station (PRS) to the proposed Tabb PRS and will provide operational flexibility for isolation and flow diversion. The attached map depicts the project location.

Project Justification: On December 20th, 2018, North Shore Operations responded to a failure along NF-047 in the vicinity of Semple Farm Road. Efforts to minimize the effects of environmental and physical damage were extensive. Round the clock operation was necessary to divert flows, minimize spills and restore service. A temporary repair was made to contain lost sewage and pump it back into the force main system. Final repair consisted of an engineer designed replacement of approximately 300 linear feet (LF) of force main utilizing linestops. The existing force main system from Coliseum PRS to Tabb PRS consists of approximately 38,000 LF of force main with very few locations for potential isolation. The force main system was primarily installed in the late 1960's and early 1970's and consists of Prestressed Concrete Cylinder Pipe (PCCP), Ductile Iron (DI) and Cast Iron (CI) pipe. The lack of isolation valves significantly reduces the ability for isolating and diverting flows during emergencies, as seen during the failure at Semple Farm.

Analysis of Cost: The contractor requires more time to install and operate the by-pass pumping system. This increase in time has resulted in certain changes in the scope of work. The cost for this change order includes the addition of two (2) 24-inch bypass saddles and valves, one (1) 12-inch tapping saddle and valve, and the maintenance of flow for NASA Langley during Phase 3 construction.

Funding Description: This request includes a 2.5% contingency based on the original contract price with the Contractor.

Schedule: Project Completion May 2024



YRO13900

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

Legend

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

0 500 1,000 2,000 3,000 4,000 Feet

N
W E
S

CIP Location

YRO13900

York River System Isolation Valve Installation and Replacement

HRSD

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.e.1. – February 27, 2024

Subject: North Shore Galvanic Cathodic Protection Rehabilitation
Initial Appropriation - Regulatory Required Capital Improvement Project (<$10,000,000) and Task Order (>$200,000)

Recommended Actions:

a. Appropriate total project funding in the amount of $2,323,860.

b. Approve a task order with Hazen and Sawyer in the amount of $239,985.

CIP Project: GN018600

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

Project Description: This project will renew the cathodic protection system currently providing inadequate protection on 11 interceptor force main systems. The interceptor force mains with cathodic protection systems requiring renewal consists of NF-015, NF-170, NF-172, NF-197, NF-204, NF-205, NF-215, NF-216, NF-217, NF-223, NF-961.

The attached map depicts the project location.

Project Justification: HRSD Management, Operation, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and repaired to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during biennial evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While cathodic protection systems are maintained, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY 21 evaluation results.

Task Order Description: This task order will provide design and preconstruction phase services for the renewal of cathodic protection systems on 11 North Shore interceptor force mains.

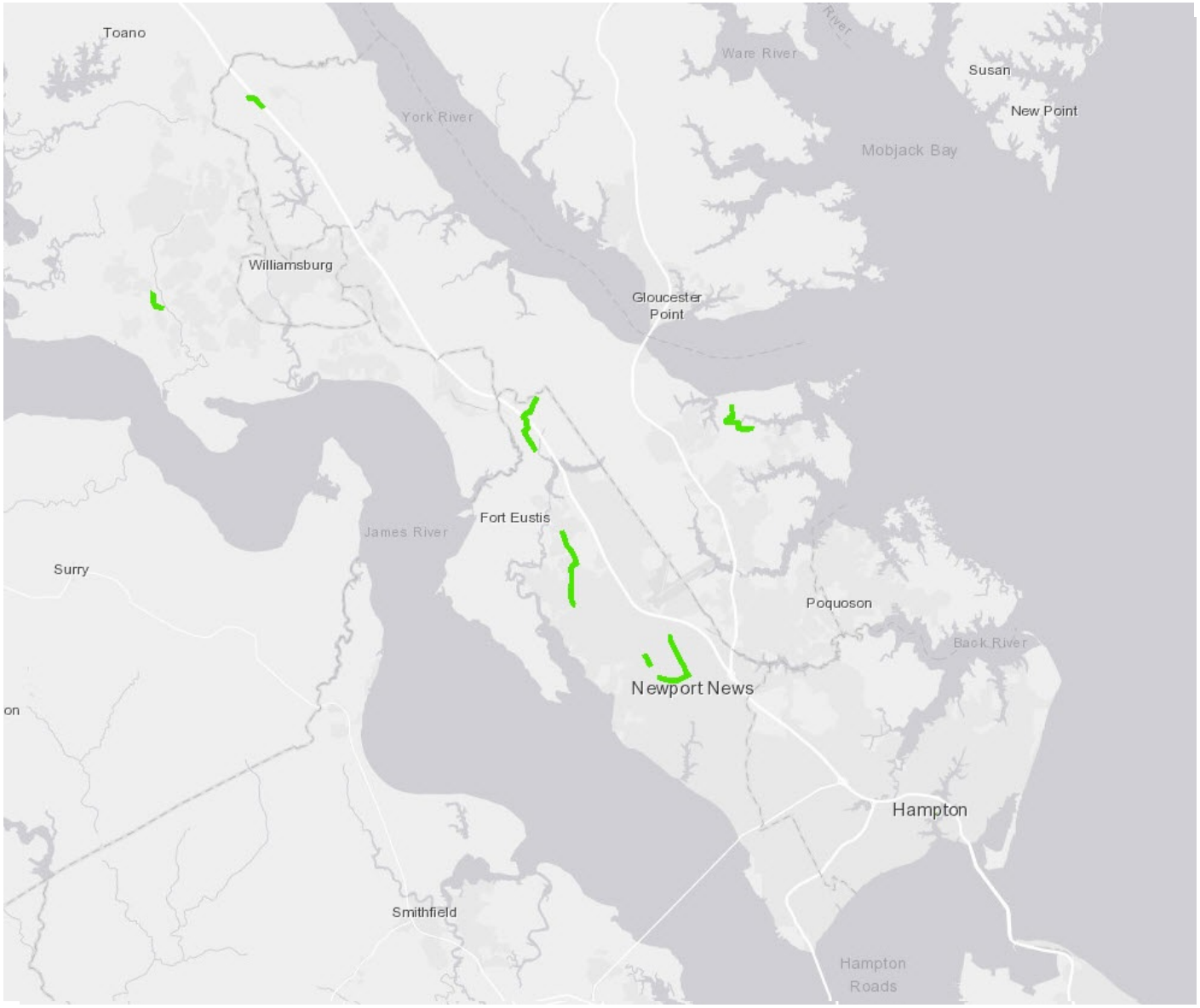
Analysis of Cost: The cost for this task order is based on the number of hours anticipated to complete this effort and the hourly rates agreed upon in the General Engineering Services annual services contract. The task order amount is reasonable for the level of effort and complexity anticipated.

Funding Description: The project will be funded by revenue bonds.

Schedule:

Design	March 2024
Bid	November 2024
Construction	March 2025
Project Completion	September 2025

GN018600 North Shore Galvanic Cathodic Protection System Rehabilitation



CONSENT AGENDA ITEM 3.e.2. – February 27, 2024

Subject: South Shore Galvanic Cathodic Protection System Rehabilitation (Phase II)
Initial Appropriation - Regulatory Required Capital Improvement Project (<$10,000,000) and Task Order (>$200,000)

Recommended Actions:

a. Appropriate total project funding in the amount of $3,102,235.

b. Approve a task order with Hazen and Sawyer in the amount of $294,158.

CIP Project: GN018800

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

Project Description: This project will renew the cathodic protection system currently providing inadequate protection on 11 interceptor force main systems. The interceptor force mains with cathodic protection systems requiring renewal consists of SF-216, SF-223, SF-235, SF-261, SF-262, SF-263, SF-265, SF 270, SF-274, SF-275, and SF-284.

The attached map depicts the project location.

Project Justification: HRSD Management, Operation, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and repaired to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during biennial evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While cathodic protection systems are maintained, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY 21 evaluation results.

Task Order Description: This task order will provide design and preconstruction phase services for the renewal of cathodic protection systems on 11 South Shore interceptor force mains.

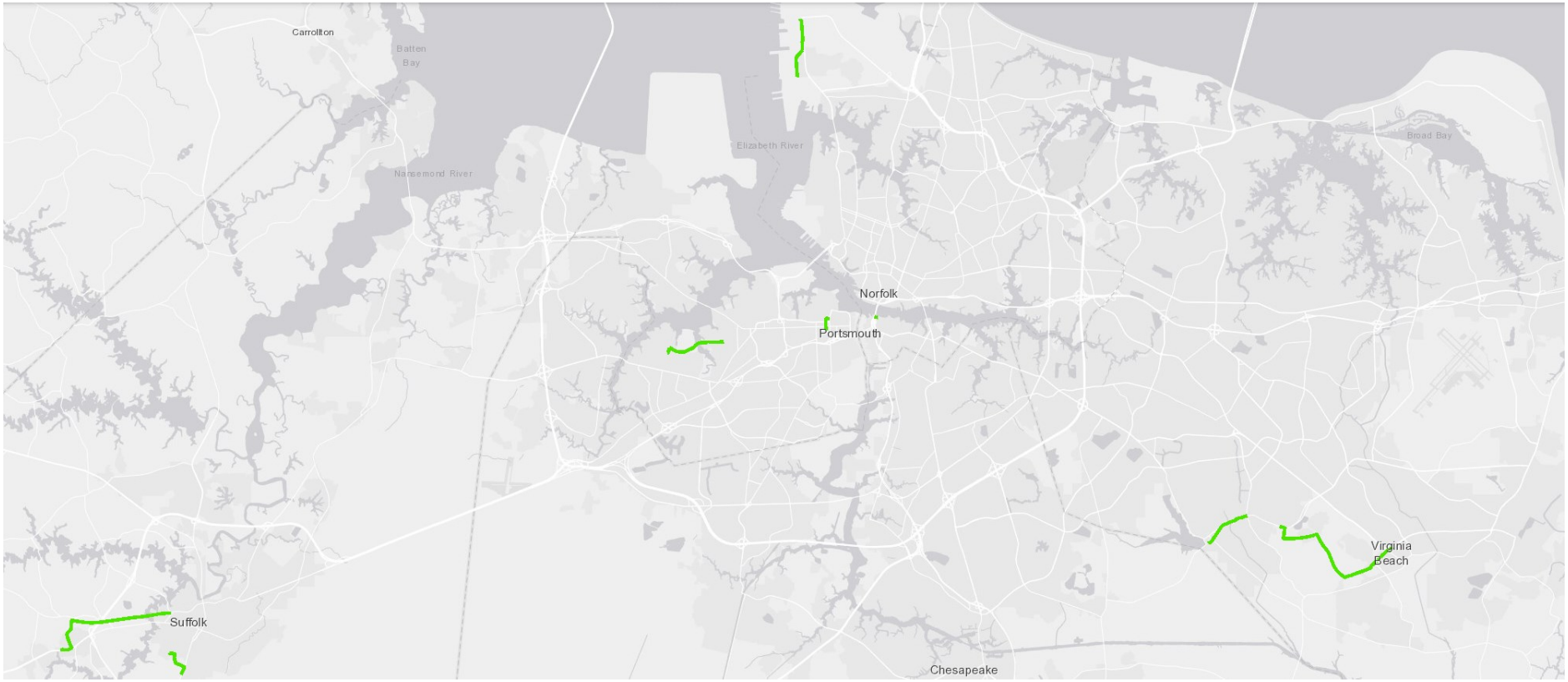
Analysis of Cost: The cost for this task order is based on the number of hours anticipated to complete this effort and the hourly rates agreed upon in the General Engineering Services annual services contract. The task order amount is reasonable for the level of effort and complexity anticipated. The initial appropriation is based on a revised Class 4 estimate provided by Hazen and Sawyer in January 2024.

Funding Description: The project will be funded by revenue bonds.

Schedule:

Design	March 2024
Bid	November 2024
Construction	March 2025
Project Completion	September 2025

GN018800 South Shore Galvanic Cathodic Protection System Rehabilitation Phase II



Resource: Jamie Heisig-Mitchell

AGENDA ITEM 4. – February 27, 2024

Subject: Hampton Roads Regional Water Quality Monitoring Program Update

Recommended Action: No action is required.

Project Description: The Hampton Roads Planning District Commission (HRPDC), representing the Phase I Municipal Separate Storm Sewer System (MS4) permittees, and the United States Geological Survey (USGS) requested stormwater sampling and analysis services from HRSD to support the Regional Water Quality (RWQ) Monitoring Program. HRSD is fully reimbursed for its services through the Municipal Assistance Program.

This partnership was initiated in 2014 with an initial 5-year agreement which was renewed for a second 5-year period in 2019. This program was initiated to fill the gaps in knowledge around urban stormwater suspended solids and nutrient loading rates within the Coastal Plain and with varying land use types. This lack of data limits the accuracy of the Chesapeake Bay Watershed Model in assigning loads and, subsequently, impacts the localities' ability to make data driven decisions in the implementation of best management practices and compliance with assigned nutrient and suspended solids reduction targets from the Chesapeake Bay Total Maximum Daily Load. In recent years, USGS has engaged with the Chesapeake Bay watershed modeling team to integrate measured loading rates into the next version of the Watershed Model (Phase 7).

The current agreement expires in June 2024. The continuation of this work allows USGS to establish the necessary long-term monitoring data set for integrating into the Watershed Model. The attached letter from the HRPDC outlines the agreement.

HAMPTON ROADS PDC
Douglas G. Pons, Chair | Shannon E. Glover, Vice-Chair
Robert A. Crum, Jr., Executive Director

February 6, 2024

Mr. Jay Bernas
General Manager
HRSD
PO Box 5911
Virginia Beach, VA 23471-0911

Re: Hampton Roads Regional Water Quality Monitoring Program

Dear Mr. Bernas:

The Hampton Roads Planning District Commission (HRPDC) hereby agrees to administer funds to the Hampton Roads Sanitation District (HRSD) for the continuation of the Hampton Roads Regional Water Quality Monitoring Program ("the Program"). The HRPDC will reimburse HRSD for costs associated with the Regional Monitoring Program from July 1, 2024 through June 30, 2029. The attached plan outlines the objectives and deliverables of the continuation and additional services of the Program.

HRSD hereby agrees to purchase any additional equipment necessary to continue the monitoring study (less the equipment that will be purchased by USGS), maintain all monitoring equipment in a functioning state, collect water quality samples from the monitoring stations, and analyze samples in the HRSD laboratory. HRSD will retain ownership of the equipment unless a separate agreement is entered into with a locality directly.

The HRPDC will collect the funds for the Program from its member localities and remit them to HRSD. The HRPDC maintains a Memorandum of Agreement (MOA) with each member locality. The timeline for the next five years of the Program are outlined in the second amendment of the MOA. HRSD will invoice the HRPDC quarterly for lump sum costs related to the program. HRPDC will remit payment to HRSD within 30 days of receipt of the invoice.

If the HRPDC ends the Regional Monitoring Program prior to June 30, 2029, then it will be responsible for reimbursing HRSD for any outstanding costs including but not limited to supplies and monitoring equipment. The budget for this project may be amended during the agreement period. Budget amendments must go through HRPDC and localities' approval process.

Your signature on this letter indicates your concurrence with the terms of the Agreement. This Letter Agreement shall be effective upon execution by HRSD. Please retain a copy for your records and return one to the HRPDC.

Sincerely,

Robert A. Crum, Jr.
Executive Director

Attachments

KCF

_____

Jay Bernas
General Manager
HRSD

Continuation of the Hampton Roads Regional Water-Quality Monitoring Program

Virginia and West Virginia Water Science Center

Introduction and Study Rationale

In 2014, the Hampton Roads Planning District Commission (HRPDC) partnered with the US Geological Survey (USGS) and the Hampton Roads Sanitation District (HRSD) to initiate a regional water-quality monitoring program. The monitoring program was renewed for a second 5-year period in 2019. This program was initiated because detailed information regarding urban stormwater suspended solids and nutrient loading rates within the Coastal Plain were lacking and a basic understanding of how these loads vary by land-use type had yet to be developed. The lack of locally relevant land-use specific loading rates for urban areas in the Virginia Coastal Plain represented a limitation for the calibration of the Chesapeake Bay Watershed Model in these areas. The development of locally accurate loading rates and basic watershed characterization in the Coastal Plain, specifically the urbanized Hampton Roads region, is essential to informed decision making regarding stormwater management, implementation of best management practices and compliance with assigned nutrient and suspended solids reduction targets from the Chesapeake Bay Total Maximum Daily Load. In recent years, USGS has engaged with the Chesapeake Bay watershed modeling team to integrate measured loading rates into the next version of the Watershed Model (Phase 7).

Under the current program, HRPDC has brought together six localities that include Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach to participate in a long-term, 12-station, water-quality and -quantity monitoring effort. This monitoring program was funded through a 5-year Joint Funding Agreement (JFA) between HRPDC and USGS, and through a letter of agreement between HRPDC and HRSD. Those agreements are set to expire on June 30, 2024. It is proposed that a new 5-year JFA and letter of agreement be established to continue funding the operation of this 12-station monitoring network.

At present, The Hampton Roads Regional Water Quality Monitoring Program (HRRWQMP) is designed to address the following objectives:

1. Operate and maintain a stormwater monitoring network to characterize suspended solids and nutrient loadings from the major types of urban land-uses in the Hampton Roads region.
2. Use these measured suspended solids and nutrient loads to compare to loads generated by the Chesapeake Bay Watershed Model to assess model predictions for the Hampton Roads/Coastal Plain region.

To manage stormwater quality more effectively in these and other watersheds, additional objectives will be added to analyze changes over time (trends) and determine the predominant sources of nutrients and sediment. Analysis of trends in concentration and load will be useful to better understand how water quality is being affected by local, regional, and global changes and how those changes vary regionally. Likewise, identification of the predominant sources of nutrients and sediment is critical to siting, designing, and implementing stormwater control measures.

The objectives of this program expansion are to:

1. Generate long term water-quality monitoring data representative of the Coastal Plain to describe trends in nutrient and suspended solids concentrations and loads over a minimum 10-year period at the existing 12 study watersheds; and

2. Generate water-quality monitoring data to identify predominant sources of nutrients and suspended solids in the current 12 study watersheds to facilitate the determination of sources and identification of contaminant transport pathways.

Methods and Approach

In 2014, a collection of representative stormwater systems were identified for intensive water-quality monitoring and load computation within the study area defined by the 6 partnering jurisdictions (Figure 1). The selection of these representative systems was determined using a statistically-based approach to provide a range of urban land-use types and watershed scales throughout the region. A 12-station network was implemented for the characterization of the following three urban land-use types:

- Single-family residential
- High-density residential
- Commercial and light industrial

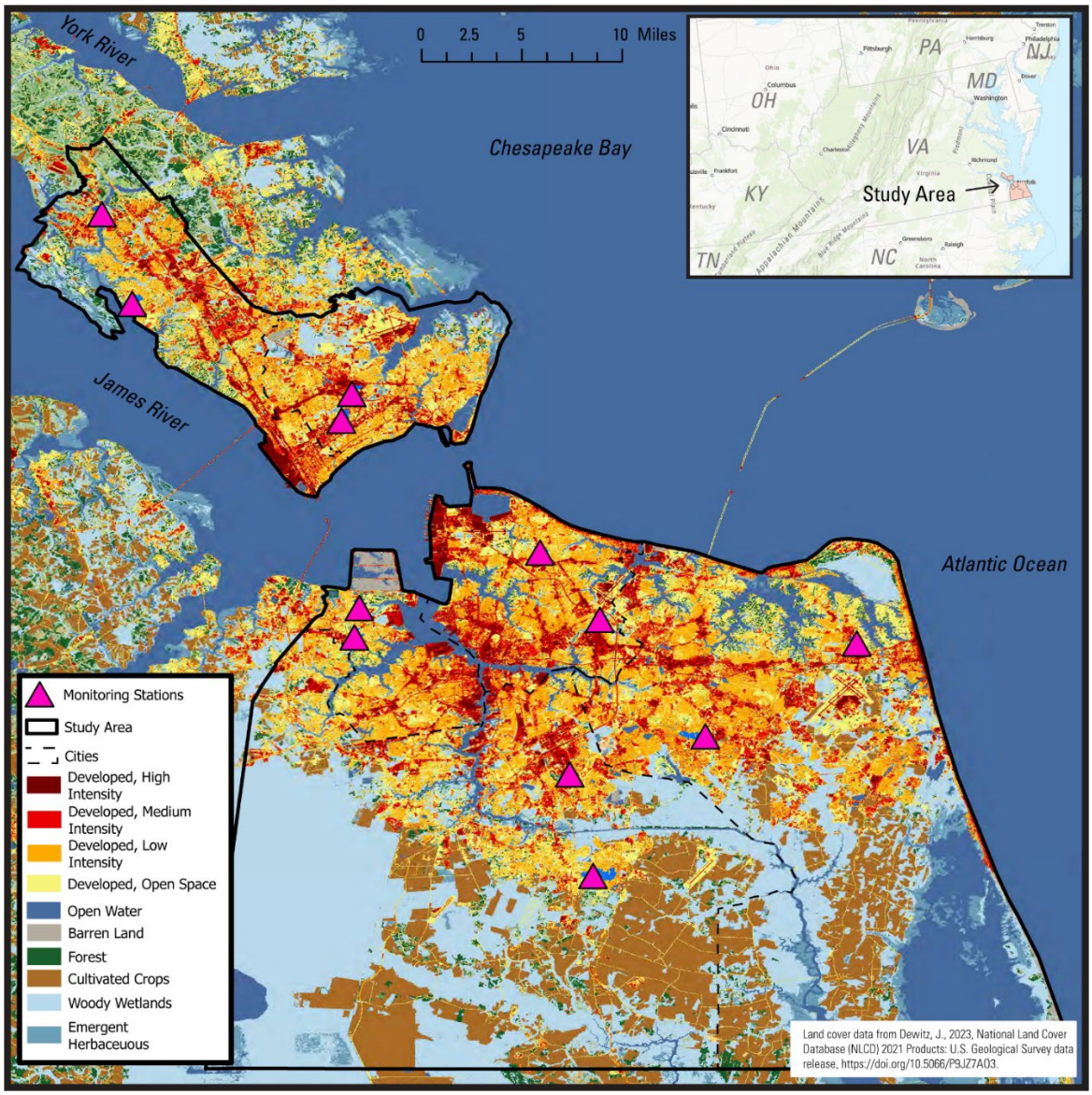


Figure 1. *The study area for the stormwater monitoring network.*

Watersheds were selected such that the monitoring network would provide a minimum of three study watersheds per land-use type to sufficiently characterize the range in loadings that are typical of each. By characterizing the range in loadings that are typical of a given land-use type, we can develop meaningful comparisons of within-type variability to the overall between-type variability, which should significantly enhance our understanding of how management activities can be directed efficiently. For example, if commercial watersheds are contributing disproportionately to the suspended solids loadings, management actions in those areas would provide more "bang for the buck" than they would dispersed generally across all land-use types. Conversely, if the loading rates from all land uses are roughly equal, management actions can be directed in a more spatially dispersed manner.

Load-monitoring stations are designed to remain operational under all flow conditions – including extended droughts and extreme floods (including hurricanes). Remaining operational during extreme floods is critical because these are the primary loading periods – a single large flood can potentially move years to decades worth of material. The primary approach of the load-monitoring stations remains unchanged and each includes:

Continuous-record streamgage

A USGS streamgage is operated at each monitoring station for the collection of stage (water level above a referenced datum) and velocity at 5-minute intervals. Both stage and velocity data are served to the USGS database approximately 1 hour after those data are collected. These data are then used to compute streamflow, which is immediately available on the publicly accessible USGS National Water Information Service Website (NWISWeb) https://waterdata.usgs.gov/va/nwis/rt). The traditional USGS streamgage approach consists of a sensor that continually measures stage. These data are then related to manual discharge measurements made by field staff. The relation between stage and discharge forms the basis of a model, called a stage-discharge rating, that is applied to the continuous timeseries of stage; values that are based on direct in-situ measurement. The output from this model is a continuous timeseries of discharge. While this approach is currently being employed at some of the monitoring stations, local conditions such as tides, backwater, and the unique hydrologic characteristics of engineered storm conveyances require additional approaches. Each station is equipped with a velocity meter optimized for conditions unique to the monitoring location. Velocity and stage data are continuously collected for the development and maintenance of index-velocity rating curves. These models relate stage to cross-sectional area, which is then multiplied by measured velocity to compute a timeseries of discharge. Depending on site conditions, index-velocity ratings either replace the traditional stage-discharge rating approach, or are used in conjunction with the traditional approach. These methods require both high accuracy and high precision measurements of stage and water velocity; therefore, a significant effort is required to collect and quality-assure data over both time and the range of hydrologic conditions.

Continuous-record water-quality monitor

A water-quality monitor is deployed to measure turbidity, water temperature, and specific conductance at 5-minute intervals. These data are also served to NWISWeb approximately one hour after collection. These data are critical for the development of surrogate regression models used to compute annual loads of nutrients and suspended solids. Engineered urban stormwater conveyance systems are designed to rapidly export stormwater from the land surface to a receiving water body resulting in highly dynamic water-quality conditions during stormflow events. It is therefore critical to collect high frequency data that, when coupled with surrogate regression approaches, allow the computation of a continuous record of nutrient and suspended solids concentrations and loads. This method can capture conditions that would be missed by traditional approaches that rely solely on manual sample collection.

Water-quality sample collection

Each monitoring station is equipped with a refrigerated automatic stream sampler for the collection of water-quality samples. In small urban watersheds, precipitation events characteristically cause a rapid rise

and subsequent fall in the hydrograph (commonly referred to as "flashy"). Automated sampling, rather than traditional human-collected sampling, is critical to collecting stormflow samples during these short-duration, high-volume hydrologic events. At each monitoring station, approximately 10 storm events are targeted for sampling each year (1-3 samples collected during each event). Emphasis is placed on the collection of a variety of samples that represent a range of seasons and flow conditions. These automated storm samples are analyzed for both nutrients and total suspended solids. Additionally, each month manual samples are collected during periods of baseflow on dry weather days to quantify groundwater contributions. A maximum of 30 samples will be collected from each monitoring location annually. The suspended solids and nutrient constituents selected for analysis represent a compromise between the desire to generate as much information as possible, while keeping costs reasonable, and meeting the fundamental objectives of the study. The following analytes will continue to be analyzed by HRSD on all water-quality samples that are submitted to the laboratory:

- Total Nitrogen
- Nitrate + Nitrite
- Ammonia + Ammonium
- Total Kjeldahl Nitrogen
- Total Phosphorus
- Orthophosphate
- Total Suspended Solids (TSS)

Additional analytes needed for the complete speciation of nitrogen, phosphorus, and suspended solids are described in detail under "Approach for expansion objectives."

Other major components

Each station is equipped with an internal data-logger for recording and storing all measured values. Measured values are then transmitted hourly through a satellite telemetry unit (GOES System). The transmitted data will be checked for quality using automated subroutines and made publicly available via the USGS NWISWeb, approximately 20 minutes after they are transmitted from the monitoring station. If a transmission is unsuccessful, the internal data logger serves as a backup source for those data. Each monitoring station is hardwired to local AC power; however, to ensure that stations remain operational during all conditions, backup power is supplied from a 12-Volt DC battery charged by a 30-watt solar panel. All the above equipment is safely housed in a ruggedized aluminum shelter; protected from the elements, vandals, and extreme weather. Equipment enclosures were custom designed to meet data collection requirements while simultaneously blending in with the surrounding environment.

Methods for the operation and quality assurance of the various monitoring elements will continue to be coordinated between USGS and HRSD to ensure that the network is operated efficiently, while still maintaining national USGS methods to ensure consistency and comparability with other USGS monitoring stations. This methodological consistency is critical for the use of the USGS data-telemetry system and database, and for use of these data by the Chesapeake Bay Program. Methodologies for the consistent operation of continuous monitors (Wagner and others, 2006; U.S. Geological Survey, 2006), streamgages (Rantz, 1982; Sauer and Turnipseed, 2010; U.S. Geological Survey, 2014), and automated samplers (in preparation) are available to document these methods, and USGS works with HRSD to resolve any methodological/operational issues that develop. A breakdown of partner responsibilities is listed under the "Partnership" heading.

Approach for expansion objectives

The addition of trend analysis and determination of source are separate objectives that require unique approaches. The analysis of trend in concentration and load will require the continued collection of samples that represent the full range of the hydrograph, collected continually over many years and across all seasons. Different statistical

approaches will be used for trends in concentration and load. Samples collected on a predetermined monthly interval will be used to calculate trends in concentration while controlling for variability introduced by changes in streamflow and season. Surrogate regression model output, used to compute constituent loads, will be leveraged to calculate flow-adjusted trends in load. Trends in flow-adjusted load are directly comparable to data currently used in the calibration of the Chesapeake Bay Watershed Model. The current 12 study watersheds were selected, in part, due to the limited presence of BMP's and targeted nutrient and sediment reduction goals. As such, this analysis will provide a baseline for trends in water quality in the urbanized Hampton Roads region.

A multi-tiered approach will be applied to source determination. The source of a contaminant may be defined in terms of where the contaminant originates on the landscape (eg. lawn, field, street, etc.) and from what it is derived (eg. fertilizer, manure, etc.). Determination of source also requires developing an understanding of the transport pathways (eg. runoff, groundwater, etc.) through which the contaminant enters the waterway of interest. For example, urban stormwater nutrient sources may be a combination of atmospheric deposition, human waste, fertilizer, animal waste, organic matter deposition and subsequent leaching, or other sources. Many of these sources require vastly different management strategies; thus, understanding source is critical to effective and efficient stormwater management. The three approaches described below will provide a weight of evidence to identify the source and transport pathway of inputs contributing to loads at the current intensive monitoring stations.

Nutrient and Sediment Speciation

To better inform the source and transport pathways of contaminants complete speciation of nutrient and sediment is needed. To fill the gaps required for complete nitrogen, phosphorus, and suspended solids speciation samples also will be analyzed for dissolved ammonia and dissolved total Kjeldahl nitrogen to compute dissolved organic nitrogen (DON), total dissolved phosphorus to compute dissolved organic phosphorus (DOP), and volatile suspended solids (VSS) to separate the mineral and organic fractions of TSS. The addition of these analytes to the laboratory schedule will only increase the laboratory analytical work – no additional sample collection is needed.

Nitrate Isotopes

To establish a second line of evidence for the derivation source and transport pathways of nitrogen it is proposed that a subset (12 per monitoring station over the course of a year) of samples be collected, preserved, and analyzed to determine the isotopic signature of nitrate. A portion of samples will be collected in replicate to provide quality assurance data. Results will be analyzed and interpreted for HRPDC and participating stormwater managers after the first year. As currently proposed, this analysis will only occur for one year; however, a data driven framework will dictate recommendations for both sample frequency and hydrologic or seasonally targeted collection in subsequent year(s).

Mass Input Analysis

The current approach to monitoring provides the quantification of annual loads transported from each study watershed; however, the inputs comprising these loads are less understood. To fill this knowledge gap, USGS requests that each locality provides all available local GIS data. Data layers need not be restricted to the study watersheds; data representing all portions of the jurisdictions are requested and may be used to fill gaps in data at the watershed scale. Combined with regional and national datasets, USGS will locate and aggregate all relevant data contained within these GIS files, synthesize these data to estimate constituent input sources, and report out these findings to program partners. The anticipated products from this analysis are the total input of nitrogen and phosphorus, as well as the proportion of nitrogen and phosphorus input from pet waste, atmospheric deposition, point sources, geological weathering, fertilizer, and leaking wastewater. Nutrient inputs derived from this analysis can be used to quantify nitrogen and phosphorus retention rates, calculated as the difference between the estimated input and calculated load.

Data Analysis

All laboratory data are thoroughly reviewed for accuracy upon transfer from the HRSD laboratory to USGS prior to being made publicly available. Additionally, all continuously collected data, which includes both water-quality and -quantity parameters, undergo a series of rigorous quality assurance protocols by USGS staff prior to receiving an "approved" qualifier. Prior to approval, continuous data are publicly available on NWISWeb, though marked as "provisional and subject to change".

Annually, discrete water-quality samples, continuous water-quality data, and continuous streamflow data are analyzed to compute annual nutrient and total suspended solids loads. Station-specific surrogate regression models have been developed for each constituent. These models were published in Porter (2022) "Stormwater Quantity and Quality in Selected Urban Watersheds in Hampton Roads, Virginia, 2016-2020." Models and computed loads have been made available for use by Chesapeake Bay watershed modelers and will be continually updated as new data are collected and models refined.

The computed nutrient and suspended solids loads will be used to inform future versions of the Chesapeake Bay Watershed Model in one of two ways, as determined through ongoing consultation with the Chesapeake Bay watershed modeling team.

- Directly – as calibration stations. In aggregate, the 12 monitoring stations may be used in the calibration process of the watershed model. The calibration process ensures that the watershed model output matches monitoring data to the extent possible. Currently, model calibration is performed with data from Chesapeake Bay Non-tidal Network (NTN) stations. The NTN is mostly made up of monitoring stations located at the outlet of much larger mixed-use watersheds. The Hampton Roads stations are characterized by small, highly developed watersheds in the Coastal Plain, a size, land use type, and geography which are underrepresented in the NTN. Additionally, during both the model development and application phase model outputs can be compared to measured trends in flow-normalized load. Comparison of these trends helps improve the modelers understanding of how different model versions improve predictions of change and whether reported implementation is having the predicted effect on water quality across the Bay watershed. In summary, both loads and trends in load computed at the 12 monitoring stations would be used in model calibration and application processes.
- Indirectly – as sources of generalizable knowledge. Generalizable knowledge, in the context of the Phase 7 watershed model, is information relevant to model structure or parameters that can be used directly in CalCAST. CalCAST is a Bayesian spatial statistical model relating watershed inputs, natural processes, and anthropogenic properties to annual load (Berger and others, 2024). Examples of generalizable knowledge include, but are not limited to, identification of new source types and predictors of load. Given that the urbanized Coastal Plain is underrepresented by current inputs, incorporation of the knowledge gained from the local monitoring network may improve model output.

To ensure basic comparability between the monitored nutrient and suspended solids loads and modeled loads, we will estimate the relative contributions of groundwater to streamflow and constituent loads within these systems, because these groundwater contributions are separately considered within the Watershed Model. Monthly dry-weather sampling will continue to be used to properly characterize groundwater inputs. These data will be used in combination with baseflow-stormflow separation models to quantify the relative contributions of both precipitation-driven surface runoff and groundwater infiltration on total flow, and consequently, constituent loads.

Ultimately, monitored nutrient and suspended solids loads will be used to better inform future phases of the Watershed Model to reflect the contributions more accurately from urban land uses specific to the Virginia Coastal

Plain. Through this collaboration, the USGS will continue to maintain a detailed understanding of how urban land use is represented in the current and future versions of the model and can ensure that the value of this monitoring effort is maximized.

Partnership

All work will be conducted in partnership between HRPDC (and the six participating localities), USGS, and HRSD. A detailed description of partner responsibilities for the collection and processing of continuous data is presented in appendix figure 1.1, and for the collection and processing of discrete data in appendix figure 1.2. Ownership and responsibility for repair and replacement of each major equipment item is presented in appendix table 1.1.

USGS will retain overall project leadership and will be responsible for project oversight, coordination of all data collection activities, including those conducted by HRSD, quality assurance of all laboratory data, desktop evaluation and quality assurance of all continuously collected water-quantity and -quality data, as well as dataflow and management using USGS data telemetry network, database, and online webhosting. Furthermore, USGS will be responsible for all data analysis activities, which include 1) land use-land cover characterization, 2) analysis of spatial and temporal variability of watershed hydrology, basic water-quality parameters, and nutrient and total suspended solids concentrations, 3) examination of relations between surrogates (continuously collected data) and nutrient and total suspended solids concentrations (discretely collected data) for the development and calibration of regression models, 4) the computation of watershed-specific annual nutrient and suspended solids loads, 5) the computation of trends in concentration and load, 6) mass input analysis, and 7) analysis of nitrate isotopic data. USGS also will continue to maintain and update the program webpage.

HRSD will continue to be an integral partner responsible for providing USGS-quality data by conducting field visits to service water-quality monitors every six to eight weeks in accordance with published USGS guidance for the maintenance and operation of continuous water-quality monitors. Additional field visits will be made as needed to clean debris from equipment and perform other tasks necessary to maintain high-quality data representative of true environmental conditions, providing general station maintenance to ensure data are continually logged and transmitted to the USGS NWISWeb, collecting all discrete water-quality samples and delivering to the HRSD laboratory, as well as performing all laboratory analytical services. All field staff will participate in the annual National Field Quality Assurance program. The laboratory will continue to participate in the semiannual USGS Standard Reference Sample quality assurance and quality control program, which is administered through the USGS Quality Systems Branch.

Monitoring Program Products

To date, this monitoring program has been primarily focused on generating regionally representative water-quality and -quantity data in support of the principal goal of computing locally-accurate nutrient and total suspended solids loadings rates. These data can ultimately be used to inform the Chesapeake Bay Watershed Model for both the Virginia Coastal Plain and urban land-uses. This effort has resulted in the collection of over 3,500 discrete water-quality samples, 34,000,000 measurements of continuously collected water-quality parameters, and over 12,600,000 measurements of streamflow.

> ***Cooperator Meetings –*** Annual meetings have been held with the HRPDC and all participating locality stormwater managers since 2015 to provide updates on the status of the monitoring program and findings from data analysis. These meetings will continue to be held annually. As part of the annual project meeting, any revisions and enhancements to the sampling plan will be discussed.

Program Website – A new project website https://www.usgs.gov/centers/virginia-and-west-virginia-water-science-center/science/hampton-roads-regional-water) was developed in 2023 to communicate the study design and objectives, program partnerships, multimedia, monitoring data, results, publications, and other communication products. This website offers direct access to all data for local stormwater managers, other city/county staff, and the general public, and it serves to promote the program as a model regional cooperative success story. The website will be maintained for the proposed duration of this agreement.

Additional Benefits **-** The monitoring program serves a dual purpose by being written into the Municipal Separate Storm Sewer System (MS4) permit for each of the six participating localities. While permit writing is outside of the scope of this agreement, HRPDC may use program data to satisfy local permitting requirements.

Products currently available

STAC Workshop Publication — Chesapeake Bay Science and Technical Advisory Committee **"**Using Local Monitoring Results to Inform the Chesapeake Bay Program's Watershed Model**",** published 2024 and available at https://www.chesapeake.org/stac/document-library/22313/

USGS Geonarrative "Storymap" Collection — A collection of visual and interactive narratives designed for a wide range of scientific expertise published in 2023 and available at https://storymaps.arcgis.com/collections/0f8106473e084d87a6a9ade93bad7c95.

USGS Report — USGS Scientific Investigations Report (SIR) entitled "Stormwater Quantity and Quality in Selected Urban Watersheds in Hampton Roads, Virginia, 2016-2020" published in 2022 and available at https://doi.org/10.3133/sir20225111).

USGS Data Release — "Inputs and selected outputs used to assess stormwater quality and quantity in twelve urban watersheds in Hampton Roads, Virginia, 2016-2020," published in 2022 and available at https://doi.org/10.5066/P9XMPEND

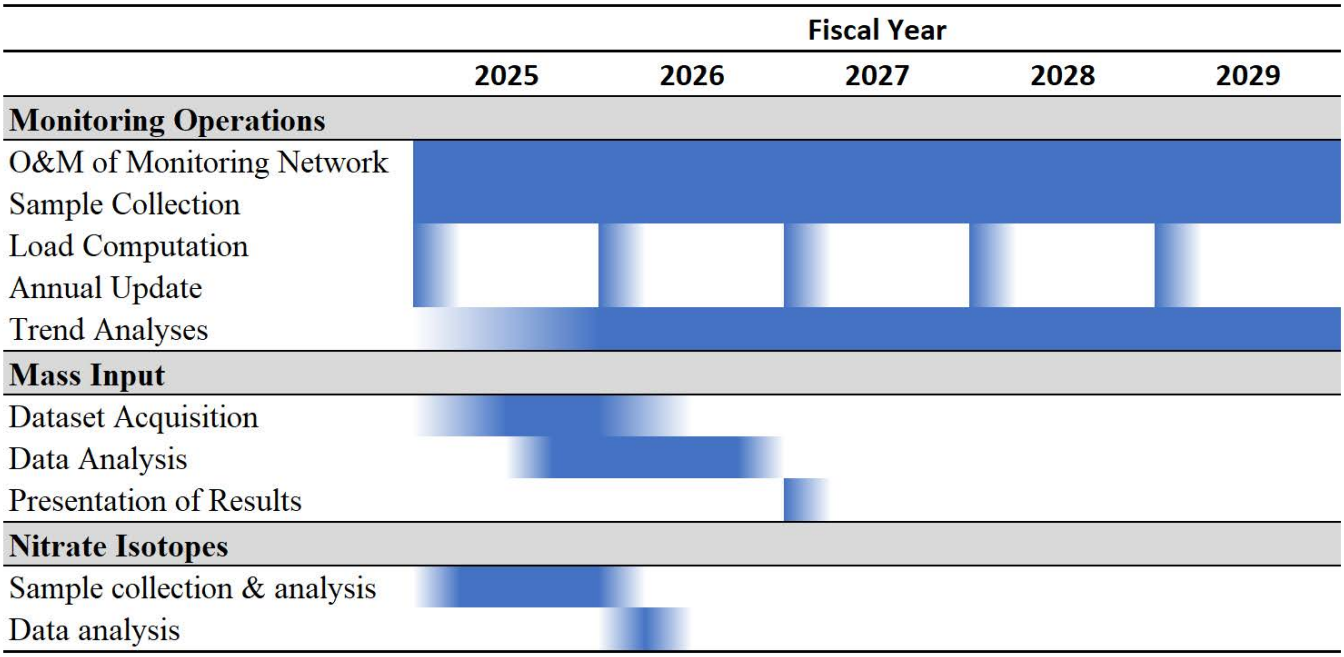
USGS Fact Sheet — A USGS Fact Sheet entitled "Hampton Roads Regional Water-Quality Monitoring Program", published in 2016 and available at https://pubs.er.usgs.gov/publication/fs20163095).

No formal publications are proposed during the duration of this agreement. Loads and trends will be communicated to program partners as provisional and preliminary results. Publication of these results will require funding in a subsequent agreement.

Timeline

A timeline of program activities is proposed in figure 2 for the period beginning July 1, 2024 and ending June 30, 2029. Continuous and discrete water-quality and -quantity monitoring will be ongoing. Preliminary suspended solids and nutrient loads will be computed and reported to all partners annually.

Figure 2. *Anticipated time of tasks to be completed, by State fiscal year.*



Funding

The overall monitoring effort was funded at a rate of $561,000 per year from 2019 to 2024. To continue operation of the monitoring network, as it has been operated in the first ten years of the effort and include additional trend and source identification objectives it is proposed that the total annual funding be increased to $670,000 per year. The proposed total annual funding is a 19 percent increase over the previous funding amount; 14 percent of this is needed to fund the expansion of program objectives, the details of which are presented in Table 1. The remaining 5 percent increase is needed to support continued operation of the existing program. This rate of increase is below the historically high year-over-year rate of inflation since 2021. To achieve these cost savings, the total number of samples collected at each monitoring station will be reduced from 40 to 30 per year. Program costs will be divided equally between the localities over a five-year term, detailed in a memorandum of agreement between the localities and HRPDC. The annual costs to each locality for the term of this agreement is $111,700. Actual annual costs vary year-to-year but will be averaged over the 5-year period to allow for equal annual payments. The allocation of annual funding detailed in Table 2 will serve as the annual funding to be paid out by HRPDC to USGS and HRSD to support completion of the proposed scope of work over the proposed 5-year agreement period. The allocation of these funds between USGS and HRSD is specified in appendix table 1.2. It should be noted that these costs are fixed at the beginning of this agreement period and will not change to account for additional needs of the program, such as the cost of repairing or replacing instrumentation.

Over the term of the previous agreement a significant amount of instrumentation was repaired or replaced due to normal wear and tear. Most water quality meters and all USGS owned velocity meters required repair. Additionally, data loggers, satellite transmitters, cellular modems, and water quality probes were replaced at all 12 monitoring stations. The total cost for these repairs and replacements was $225,000 and was funded in total by USGS as a matching funds contribution. As of 2024, all 15 water quality meters (YSI 600-OMS sondes) purchased by USGS in 2014 reached end-of-life and require replacement. USGS will contribute the funds needed to replace this equipment with modern technology (YSI EXO3), and all associated probes and accessories, at a total cost of $250,000. USGS also will contribute $25,000 per year in additional funding for repairs and replacement of other agency owned equipment. The cost of any equipment originally purchased by the agency will be borne by USGS and will not be passed along to the partnership. These costs savings are represented by the “USGS Contribution” in Table 2.

Table 1. Itemized costs for program objectives. Note that nutrient and sediment speciation costs reflect the collection of 30 samples per site each year.

	Year						
	2025	**2026**	**2027**	**2028**	**2029**	**Average**	**Average/ Locality**
Itemized Costs							
Existing Monitoring Program	$566,000	$578,800	$592,800	$607,300	$622,100	594,000	$99,000
Trend Analysis	$12,000	$12,200	$12,400	$12,600	$12,900	12,500	$2,100
Mass Input Analysis	$28,000	$28,000	$0	$0	$0	11,200	$1,900
Nutrient/Sediment Speciation	$40,000	$40,700	$41,400	$42,100	$42,800	41,400	$6,900
Nitrate Isotopes	$55,000	$0	$0	$0	$0	11,000	$1,900
Grand Total							
Annual Total	$701,000	$659,700	$646,600	$662,000	$677,800	670,000	$111,700

Table 2. Funding for the operation of the monitoring network.

	Annual Total	**5-Year Total**
Grand Total	$745,000	$3,725,000
USGS Contribution	$75,000	$375,000
HRPDC Contribution	$670,000	$3,350,000
Contribution Per Locality	$111,700	$558,500

Contact Information

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Appendix

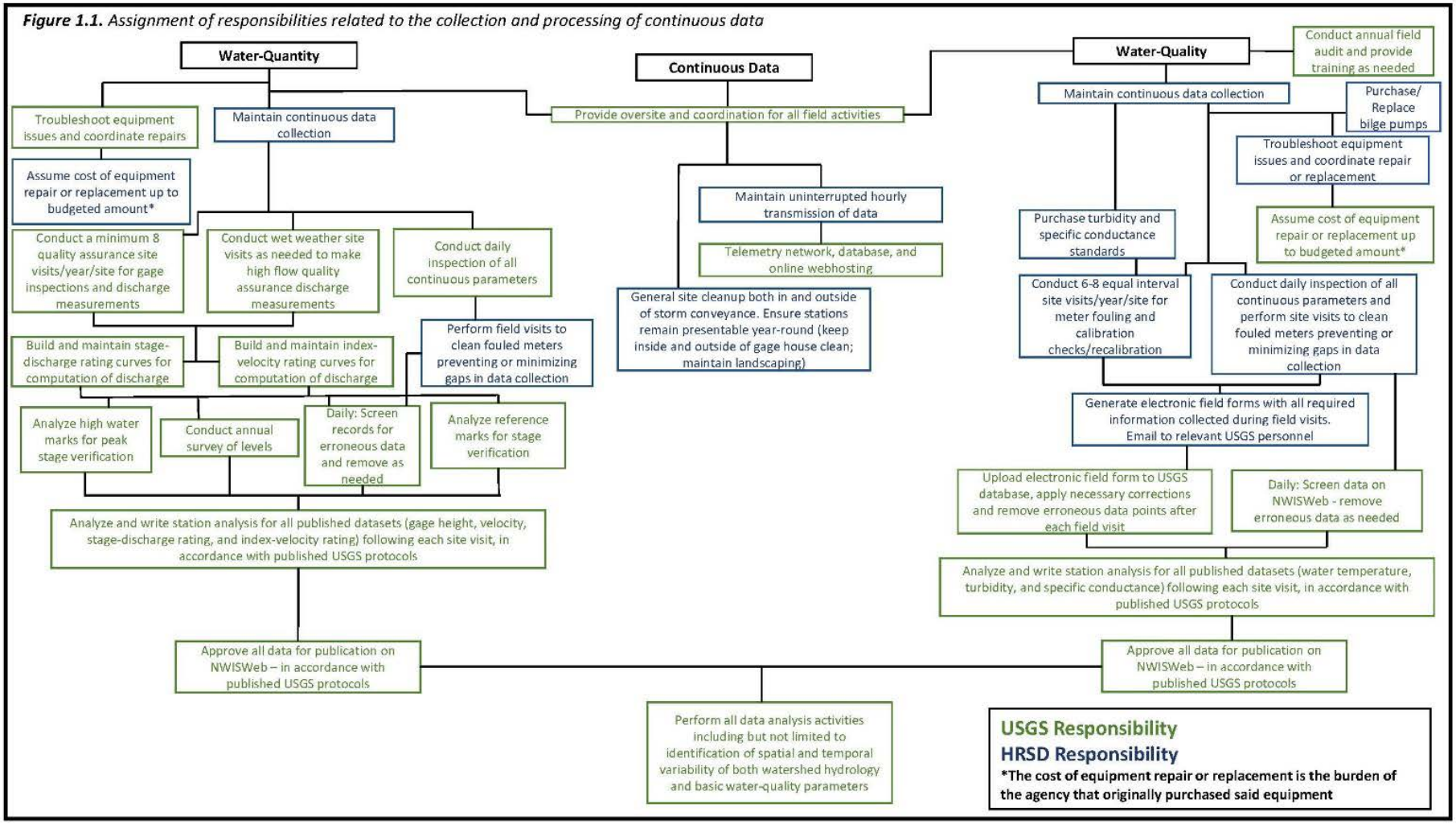


Figure 1.1. Assignment of responsibilities related to the collection and processing of continuous data
Water-Quantity
Troubleshoot equipment issues and coordinate repairs
Maintain continuous data collection
Assume cost of equipment repair or replacement up to budgeted amount*
Conduct a minimum 8 quality assurance site visits/year/site for gage inspections and discharge measurements
Conduct wet weather site visits as needed to make high flow quality assurance discharge measurements
Conduct daily inspection of all continuous parameters
Build and maintain stage-discharge rating curves for computation of discharge
Build and maintain index-velocity rating curves for computation of discharge
Perform field visits to clean fouled meters preventing or minimizing gaps in data collection
Analyze high water marks for peak stage verification
Conduct annual survey of levels
Daily: Screen records for erroneous data and remove as needed
Analyze reference marks for stage verification
Analyze and write station analysis for all published datasets (gage height, velocity, stage-discharge rating, and index-velocity rating) following each site visit, in accordance with published USGS protocols
Approve all data for publication on NWISWeb – in accordance with published USGS protocols
Continuous Data
Provide oversite and coordination for all field activities
Maintain uninterrupted hourly transmission of data
Telemetry network, database, and online webhosting
General site cleanup both in and outside of storm conveyance. Ensure stations remain presentable year-round (keep inside and outside of gage house clean; maintain landscaping)
Perform all data analysis activities including but not limited to identification of spatial and temporal variability of both watershed hydrology and basic water-quality parameters
Water-Quality
Conduct annual field audit and provide training as needed
Maintain continuous data collection
Purchase/ Replace bilge pumps
Troubleshoot equipment issues and coordinate repair or replacement
Assume cost of equipment repair or replacement up to budgeted amount*
Purchase turbidity and specific conductance standards
Conduct 6-8 equal interval site visits/year/site for meter fouling and calibration checks/recalibration
Conduct daily inspection of all continuous parameters and perform site visits to clean fouled meters preventing or minimizing gaps in data collection
Generate electronic field forms with all required information collected during field visits. Email to relevant USGS personnel
Upload electronic field form to USGS database, apply necessary corrections and remove erroneous data points after each field visit
Daily: Screen data on NWISWeb - remove erroneous data as needed
Analyze and write station analysis for all published datasets (water temperature, turbidity, and specific conductance) following each site visit, in accordance with published USGS protocols
Approve all data for publication on NWISWeb – in accordance with published USGS protocols
USGS Responsibility
HRSD Responsibility
*The cost of equipment repair or replacement is the burden of the agency that originally purchased said equipment

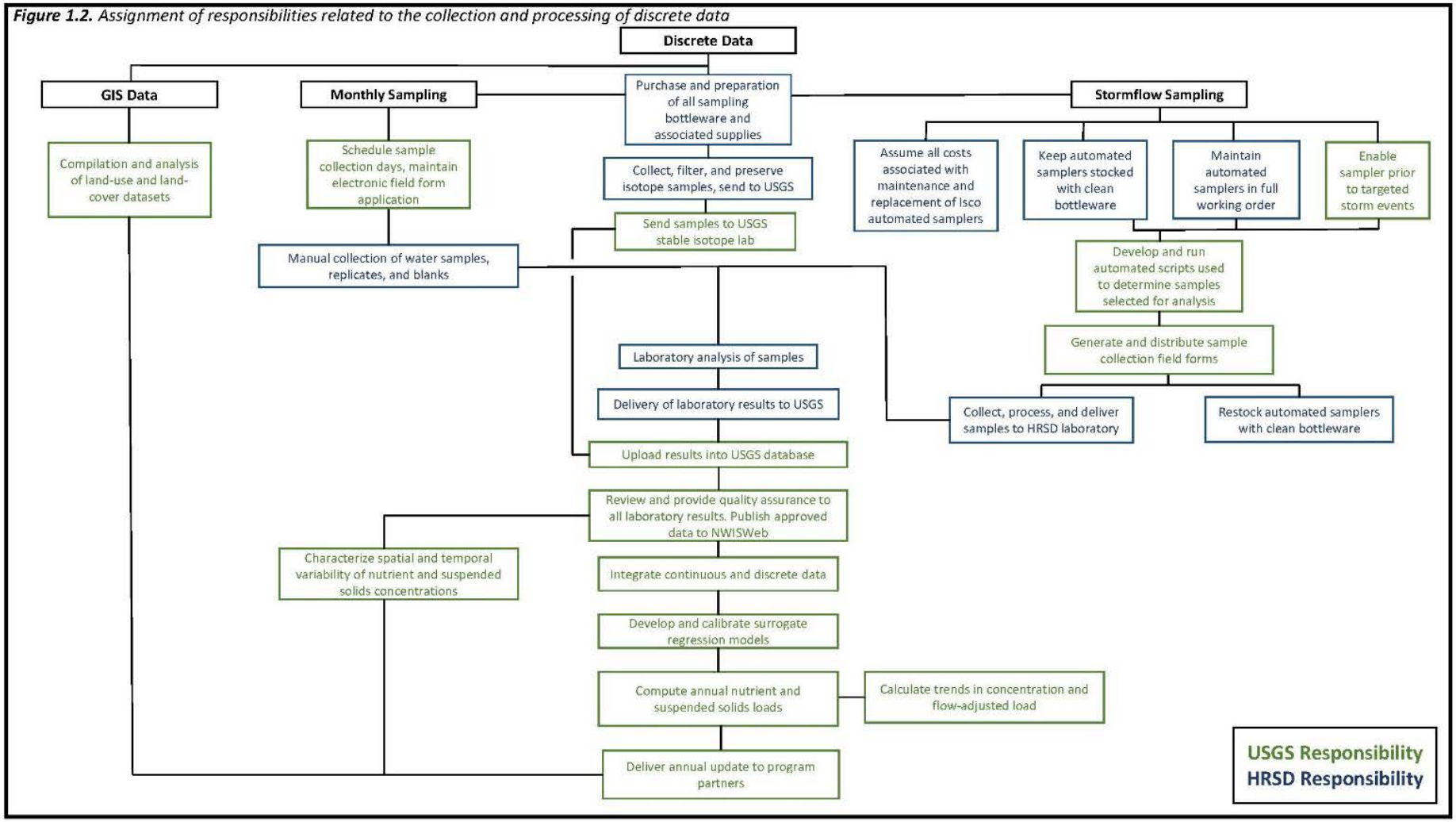


Figure 1.2. Assignment of responsibilities related to the collection and processing of discrete data
Discrete Data
GIS Data
Monthly Sampling
Purchase and preparation of all sampling bottleware and associated supplies
Stormflow Sampling
Compilation and analysis of land-use and land-cover datasets
Schedule sample collection days, maintain electronic field form application
Collect, filter, and preserve isotope samples, send to USGS
Assume all costs associated with maintenance and replacement of Isco automated samplers
Keep automated samplers stocked with clean bottleware
Maintain automated samplers in full working order
Enable sampler prior to targeted storm events
Send samples to USGS stable isotope lab
Manual collection of water samples, replicates, and blanks
Develop and run automated scripts used to determine samples selected for analysis
Generate and distribute sample collection field forms
Laboratory analysis of samples
Delivery of laboratory results to USGS
Collect, process, and deliver samples to HRSD laboratory
Restock automated samplers with clean bottleware
Upload results into USGS database
Review and provide quality assurance to all laboratory results. Publish approved data to NWISWeb
Characterize spatial and temporal variability of nutrient and suspended solids concentrations
Integrate continuous and discrete data
Develop and calibrate surrogate regression models
Compute annual nutrient and suspended solids loads
Calculate trends in concentration and flow-adjusted load
Deliver annual update to program partners
USGS Responsibility
HRSD Responsibility

Table 1.1. Division of equipment ownership and responsibility for repairs and replacement.

Equipment	Responsible Party
YSI Sondes	USGS
YSI Probes	USGS
YSI Accessories	USGS
Sutron 9210	USGS
Sutron XMTR	USGS
Satellite Antenna	USGS
GPS Antenna	USGS
Sontek IQ	USGS
Cellular Modem	USGS
ISCO Signature Flowmeter	HRSD
ISCO LaserFlow	HRSD
ISCO 350 Area-Velocity Mete	HRSD
ISCO Tubing	HRSD
ISCO Intake	HRSD
Sonde Bracket	HRSD
Bilge Pump	HRSD
Equipment Enclosure	HRSD
Sampling Bottleware	HRSD

Table 1.2. Itemized annual funding to be paid to USGS and HRSD. The bold text located in the "Average" column represents the amount to be paid by HRPDC to each agency annually to support completion of the proposed scope of work.

	Year					
	2025	**2026**	**2027**	**2028**	**2029**	**Average**
Existing Monitoring Program						
USGS	$ 359,000	$ 364,600	$371,100	$ 377,800	$ 384,600	$ 372,000
HRSD	$ 207,000	$ 214,200	$221,700	$ 229,500	$ 237,500	$ 222,000
Annual Total	$ 566,000	$ 578,800	$592,800	$ 607,300	$ 622,100	$ 594,000
Trend Analysis						
USGS	$ 12,000	$ 12,200	$ 12,400	$ 12,600	$ 12,900	$ 12,500
HRSD	$ -	$ -	$ -	$ -	$ -	$ -
Annual Total	$ 12,000	$ 12,200	$ 12,400	$ 12,600	$ 12,900	$ 12,500
Mass Input Analysis						
USGS	$ 28,000	$ 28,000	$ -	$ -	$ -	$ 11,200
HRSD	$ -	$ -	$ -	$ -	$ -	$ -
Annual Total	$ 28,000	$ 28,000	$ -	$ -	$ -	$ 11,200
Nutrient and Sediment Speciation						
USGS	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
HRSD	$ 35,000	$ 35,700	$ 36,400	$ 37,100	$ 37,800	$ 36,400
Annual Total	$ 40,000	$ 40,700	$ 41,400	$ 42,100	$ 42,800	$ 41,400
Nitrate Isotopes						
USGS	$ 45,000	$ -	$ -	$ -	$ -	$ 9,000
HRSD	$ 10,000	$ -	$ -	$ -	$ -	$ 2,000
Annual Total	$ 55,000	$ -	$ -	$ -	$ -	$ 11,000
Total by Agency						
USGS	$ 449,000	$ 409,800	$388,500	$ 395,400	$ 402,500	**$ 410,000**
HRSD	$ 252,000	$ 249,900	$258,100	$ 266,600	$ 275,300	**$ 261,000**
Grand Total						
Annual Total	$ 701,000	$ 659,700	$646,600	$ 662,000	$ 677,800	$ 670,000

Resource: Steve de Mik

AGENDA ITEM 5. – February 27, 2024

Subject: Eastern Shore Transmission Force Main Water Quality Improvement Fund Grant Agreement

Recommended Action: Approve the terms and conditions of the Water Quality Improvement Fund Point Source Grant and Operation and Maintenance Agreement with the Virginia Department of Environmental Quality for the Eastern Shore Transmission Force Main 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 or desirable.

CIP Project: ES010100

Agreement Description: This agreement between the Virginia Department of Environmental Quality and HRSD is for costs associated with conveying flow from the Nassawadox Treatment Plant to the Onancock Treatment Plant. This work is being completed in the Eastern Shore Transmission Main Phase 1 CIP project. This Grant will be the first conveyance-type WQIF grant HRSD has received. The Grant agreement requires HRSD to continue to operate the Onancock Treatment Plant for twenty (20) years and meet annual average effluent discharge limits for Total Nitrogen (4.0 mg/L) and Phosphorus (0.3 mg/L). If these nutrient limits are not met, HRSD will be responsible for repaying an unamortized portion of the grant.

The total value of this project (as of the time of grant submittal) is $30,433,667. The amount of the project that is eligible for grant reimbursement is the lesser of the cost to repair the current treatment facility and the cost to convey the flow to another plant. In this case, the cost to upgrade the Nassawadox Plant was determined to be $6,582,051, of which HRSD is to receive 75% reimbursement. The total grant award for this project is $4,936,538.

Interim financing for the project was provided with a portion of the proceeds of a loan (the “Loan”) from the Virginia Water Facilities Revolving Fund, administered by the Virginia Resources Authority. HRSD expects to use all or a portion of the grant award to repay a portion of the Loan.

The attached draft Grant Agreement was reviewed by staff and HRSD legal counsel.

VIRGINIA WATER QUALITY IMPROVEMENT FUND
POINT SOURCE GRANT AND
OPERATION AND MAINTENANCE AGREEMENT
Contract #440-S-22-02

THIS AGREEMENT is made as of this ___ day of _____, 2024, by and between the Director of the Virginia Department of Environmental Quality in his official capacity, or his designee (the "Director"), and the Hampton Roads Sanitation District (the "Grantee").

Pursuant to the Virginia Water Quality Improvement Act of 1997, Chapter 21.1, Title 10.1 of the Code of Virginia (1950), as amended (the "Act"), the General Assembly created the Virginia Water Quality Improvement Fund (the "Fund"). The Director, in coordination with the Director of the Department of Conservation and Recreation, is authorized by the Act to make Water Quality Improvement grants related to point source pollution control, in accordance with guidelines established pursuant to Section 10.1-2129 of the Code, and enter into agreements with grantees under the Act which shall, in accordance with Sections 10.1-2130 and 10.1-2131, provide for the payment of the total amount of the grant and require proper long-term operation, monitoring and maintenance of funded projects.

The Grantee has been approved by the Director to receive a Grant from the Fund subject to the terms and conditions herein to finance seventy-five percent (75%) of the cost of the Eligible Project, which consists of the design and installation of wastewater conveyance infrastructure as described herein. The Grantee will use the Grant to finance that portion of the Eligible Project Costs not being paid for from other sources as set forth in the Total Project Budget in Exhibit B to this Agreement. Such other sources may include, but are not limited to, the Virginia Water Facilities Revolving Fund, Chapter 22, Title 62.1 of the Code of Virginia (1950), as amended.

As required by the Act, this Agreement provides for payment of the Grant, design and construction of the Project, and proper long-term operation, monitoring, and maintenance of the Project. This Agreement is supplemental to the State Water Control Law, Chapter 3.1, Title 62.1 of the Code of Virginia (1950), as amended, and it does not limit in any way the other water quality restoration, protection and enhancement, or enforcement authority of the Director, the State Water Control Board (the "Board") or the Department of Environmental Quality (the "Department").

ARTICLE I
DEFINITIONS

1. The capitalized terms contained in this Agreement shall have the meanings set forth below unless the context requires otherwise and any capitalized terms not otherwise defined herein shall have the meaning assigned to such terms in the Act:

(a) "Agreement" means this Virginia Water Quality Improvement Fund Point Source Grant and Operation and Maintenance Agreement between the Director and the Grantee, together with any amendments or supplements hereto.

(b) "Authorized Representative" means any member, official or employee of the Grantee authorized by resolution, ordinance or other official act of the governing body of the Grantee to perform the act or sign the document in question.

(c) "Eligible Project" means the particular wastewater conveyance infrastructure project described in Exhibit A to this Agreement to be designed and constructed by the Grantee with,

among other monies, the Grant, with such changes thereto as may be approved in writing by the Director and the Grantee.

(d) "Eligible Project Costs" means costs of the individual items comprising the Eligible Project as permitted by the Act with such changes thereto as may be approved in writing by the Director and the Grantee.

(e) "Extraordinary Conditions" means unforeseeable or exceptional conditions resulting from causes beyond the reasonable control of the Grantee such as, but not limited to fires, strikes, acts of God, and acts of third parties that singly or in combination cause material breach of this Agreement.

(f) "Facility" means all plants, systems, unit processes, equipment or property related to the Project, and owned, operated, or maintained by the Grantee and used in connection with the treatment of wastewater.

(g) "Grant" means the particular grant described in Section 4.0 of this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(h) "Monetary Assessment" means a contractual or stipulated penalty as described in Section 10.1-2130 of the Code.

(i) "Preliminary Engineering Proposal" means the engineering report and preliminary plans for the Project as described in 9 VAC 25-790-110, as modified by the final engineering design approved by the Department.

(j) "Total Eligible Project Budget" means the sum of the Eligible Project Costs as set forth in Exhibit B to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(k) "Total Project Budget" means the sum of the Eligible Project Costs and any ineligible costs that are solely the responsibility of the Grantee, as set forth in Exhibit B to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(l) "Project Engineer" means the Grantee's engineer who must be a licensed professional engineer registered to do business in Virginia and designated by the Grantee as the Grantee's engineer for the Project in a written notice to the Department.

(m) "Project Schedule" means the schedule for the Project as set forth in Exhibit C to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

ARTICLE II
SCOPE OF PROJECT

2. The Grantee will cause the Project to be designed, constructed and placed in operation as described in Exhibit A to this Agreement and ensure the Project results in a net reduction in total phosphorus, total nitrogen, or nitrogen-containing ammonia discharges.

ARTICLE III
SCHEDULE

3. The Grantee will cause the Eligible Project to be designed, constructed and placed in operation in accordance with the Project Schedule in Exhibit C to this Agreement.

ARTICLE IV
COMPENSATION

4.0. Grant Amount. The total grant award from the Fund under this Agreement is **$4,936,538.00** and represents the Commonwealth's seventy-five (75%) share of the Total Eligible Project Budget. Any material changes made to the Eligible Project after execution of this Agreement, which alters the Total Eligible Project Budget, will be submitted to the Department for review of grant eligibility. The amount of the grant award set forth herein may be modified from time to time by agreement of the parties to reflect changes to the Eligible Project or the Total Eligible Project Budget.

4.1. Payment of Grant. Payment of the Grant is subject to the availability of monies in the Fund allocated to point source pollution control and Section 4.4 herein. Disbursement of the Grant will be in accordance with the payment provisions set forth in Section 4.2 herein and the eligibility determinations made in the Total Project Budget (Exhibit B).

4.2. Disbursement of Grant Funds. The Department will disburse the Grant to the Grantee not more frequently than once each calendar month upon receipt by the Department of the following:

(a) A requisition for approval by the Department, signed by the Authorized Representative and containing all receipts, vouchers, statements, invoices or other evidence that costs in the Total Project Budget, including the applicable local share for the portion of the project covered by such requisition, have been incurred or expended and all other information called for by, and otherwise being in the form of, Exhibit D to this Agreement.

(b) If any requisition includes an item for payment for labor, contractors, builders or material men, a certificate must be signed by the Project Engineer stating that such work was actually performed or that such materials, supplies or equipment were actually furnished or installed in or about the construction of the Eligible Project.

Upon receipt of each such requisition and its accompanying certificate(s) and schedule(s), the Director shall request the Comptroller to issue a warrant directing the State Treasurer to disburse the Grant to the Grantee in accordance with such requisition to the extent approved by the Department.

Except as may otherwise be approved by the Department, disbursements shall be held at ninety-five percent (95%) of the total grant amount to ensure satisfactory completion of the Eligible Project. Upon receipt from the Grantee of the certificate specified in Section 4.5, and a final requisition detailing all retainage to which the Grantee is then entitled, the Director, subject to the provisions of this section and Section 4.3 herein, shall request the Comptroller to issue a warrant directing the State Treasurer to disburse to the Grantee the final payment from the Grant.

4.3 Application of Grant Funds. The Grantee agrees to apply the Grant solely and exclusively to the reimbursement of Eligible Project Costs.

4.4. Availability of Funds. The Director and Grantee recognize that the availability of monies in the Fund allocated to point source pollution control is subject to appropriation by the General

Assembly and allocations made by the Secretary of Natural and Historic Resources, and that at times there may not be sufficient monies in the Fund to permit prompt disbursement of grant funds due and owing the Grantee pursuant to this Agreement. To minimize the potential for such disruption in disbursements of grant funds and in satisfaction of its obligations under the Act, the Department covenants and agrees to (1) manage the allocation of grants from the Fund to ensure full funding of executed grant agreements, (2) forecast the estimated disbursements from the Fund in satisfaction of approved grants and make this forecast publicly available each year for use in the Commonwealth's budgetary process, and (3) promptly disburse to the Grantee any grant funds due and owing the Grantee pursuant to this Agreement when sufficient monies are available in the Fund to make such disbursements. The Department may determine that monies are not sufficient to promptly disburse grant funds when there are competing grant requests. To assist the Department in forecasting estimated disbursements, prior to September 30 of each year the Grantee will provide the Department with a written estimate of its projected expenditures on the Project during the next fiscal year using the same line item cost categories in the Project Budget.

4.5. Agreement to Complete Project. The Grantee agrees to cause the Project to be designed and constructed, as described in Exhibit A to this Agreement, and in accordance with (i) the schedule in Exhibit C to this Agreement and (ii) plans and specifications prepared by the Project Engineer and approved by the Department.

4.6 Notice of Substantial Completion. When the Project has been completed, the Grantee shall promptly deliver to the Department a certificate signed by the Authorized Representative and by the Project Engineer stating (i) that the Project has been completed substantially in accordance with the approved plans and specifications and addenda thereto, and in substantial compliance with all material applicable laws, ordinances, rules, and regulations; (ii) the date of such completion; (iii) that all certificates of occupancy and operation necessary for start-up for the Project have been issued or obtained; and (iv) the amount, if any, to be released for payment of the final Project Costs.

ARTICLE V
PERFORMANCE

5.0 The Grantee shall ensure that once completed the Project results in a net reduction in total phosphorous, total nitrogen, or nitrogen-containing ammonia discharges.

ARTICLE VI
OPERATION AND MAINTENANCE

6.0 No later than ninety (90) days after issuance of a Certificate to Operate for the Project, the Grantee shall submit to the Department, for review and approval, an operation and maintenance manual for the Project. As required by the Grantee's VPDES permit, the Facility shall be operated and maintained in a manner consistent with the operation and maintenance manual as approved by the Department.

ARTICLE VII
MONITORING AND REPORTING

7.0. Reporting. Beginning with the Project's first full calendar year of operation and each year thereafter, the Grantee will submit to the Department a certificate documenting that the Project remains in operation and that the Project maintains a net reduction in total phosphorus, total nitrogen or nitrogen containing ammonia discharges on or before February 1 of each year.

ARTICLE VI
MATERIAL BREACH

8.0. Material Breach. Any failure or omission by the Grantee to perform its obligations under this Agreement, unless excused by the Department, is a material breach.

8.1. Notice of Material Breach. If at any time the Grantee determines that it is unable to perform its obligations under this Agreement, the Grantee shall promptly provide written notification to the Department. This notification shall include a statement of the reasons it is unable to perform, any actions to be taken to secure future performance and an estimate of the time necessary to do so.

8.2. Monetary Assessments for Breach. In no event shall total Monetary Assessments pursuant to this Agreement exceed (i) $395,910 annually or (ii) $7,918,200 during the life of this Agreement. Monetary Assessments will be paid into the State Treasury and credited to the Fund. The Director's right to collect Monetary Assessments does not affect in any way the Director's right to secure specific performance of this Agreement using such other legal remedies as may otherwise be available. Within 90 days of receipt of written demand from the Director, the Grantee shall pay the following Monetary Assessments for the corresponding material breaches of this Agreement unless the Grantee asserts a defense pursuant to the requirements of Section 8.3 herein.

(a) For noncompliance with the obligation to ensure that the Project results in a net reduction in total phosphorous, total nitrogen, or nitrogen-containing ammonia discharges, an assessment in the amount of $395,910 for each year of noncompliance.

(b) For noncompliance with any deadline in Exhibit C to this Agreement, Article VII of this Agreement, or the failure to submit the operations and maintenance manual in accordance with Article VI of this Agreement, an assessment in the amount of $500 per day for the first 10 days of noncompliance, and $1,000 for each day of noncompliance thereafter. Noncompliance with interim deadlines shall be excused where the Grantee complies with the final deadline in Exhibit C to this Agreement.

(c) For noncompliance with the obligation to operate and maintain the Project in a manner consistent with the manual pursuant to Article VI of this Agreement, an assessment in the amount of $1,000 for each day of noncompliance.

8.3 Extraordinary Conditions.

(a) The Grantee may assert and it shall be a defense to any action by the Director to collect a Monetary Assessment or otherwise secure performance of this Agreement that the alleged non-performance was due to Extraordinary Conditions, provided that the Grantee:

(1) takes reasonable measures to effect a cure or to minimize any non-performance with the Agreement, and

(2) provides written notification to the Department of the occurrence of Extraordinary Conditions, together with an explanation of the events or circumstances contributing to such Extraordinary Conditions, no later than 5 days after the discovery of the Extraordinary Conditions and the resulting impacts on performance.

(b) If the Department disagrees that the events or circumstances described by the Grantee constitute Extraordinary Conditions, the Department must provide the Grantee with a written

objection within sixty (60) days of Grantee's notice under paragraph 8.3(a)(2), together with an explanation of the basis for its objection.

8.4 Resolution and Remedy. If no resolution is reached by the parties, the Director or Department may immediately pursue any remedy available at law or equity. In any such action, the Grantee shall have the burden of proving that the alleged noncompliance was due to Extraordinary Conditions. In addition to any other remedy that may be available to the Director or the Department, the Director or Department may bring an action in the Circuit Court of the City of Richmond to enforce this Agreement by injunction or mandamus or stipulated penalties or to recover part or all of the grant funds. No such remedy of the Director or Department shall be deemed to be exclusive or to stop any other such remedy or the bringing of an action to enforce this Agreement. The Grantee agrees to venue to any such action in the Circuit Court of the City of Richmond The Grantee further agrees that, in light of the public purpose of this Project, any failure of the Grantee to perform its duties under this Agreement and any failure of the Project to meet the requirements of this Agreement or the requirements of any permit that may be issued by the Board regarding the Project constitutes irreparable harm to the Commonwealth for which the Director or Department lacks an adequate remedy at law.

ARTICLE IX
GENERAL PROVISIONS

9.0. Effect of the Agreement on Virginia Pollutant Discharge Elimination System (VPDES) Permit. This Agreement shall not be deemed to relieve the Grantee of its obligations to comply with the terms of its VPDES permit issued by the Board or Department.

9.1. Disclaimer. Nothing in this Agreement shall be construed as authority for either party to make commitments which will bind the other party beyond the covenants contained herein.

9.2. Non-Waiver. No waiver by the Director of any one or more defaults by the Grantee in the performance of any provision of this Agreement shall operate or be construed as a waiver of any future default or defaults of whatever character.

9.3. Integration and Modification. This Agreement constitutes the entire Agreement between the Grantee and the Director. No alteration, amendment or modification of the provisions of this Agreement shall be effective unless reduced to writing, signed by both the parties and attached hereto. The Department and the Grantee shall confer within six months after each reissuance of the Grantee's VPDES permit for the purpose of determining whether this Agreement should be modified or terminated. This Agreement may be modified by agreement of the parties for any purpose, provided that any significant modification to this Agreement must be preceded by public notice of such modification.

9.4. Collateral Agreements. Where there exists any inconsistency between this Agreement and other provisions of collateral contractual agreements which are made a part of this Agreement by reference, the provisions of this Agreement shall control.

9.5. Non-Discrimination. In the performance of this Agreement, the Grantee warrants that it will not discriminate against any employee, or other person, on account of race, color, sex, religious creed, ancestry, age, national origin or other non-job related factors. The Grantee agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

9.6. Conflict of Interest. The Grantee warrants that it has fully complied with the Virginia Conflict of Interest Act as it may apply to this Agreement.

9.7. Applicable Laws. This Agreement shall be governed in all respects whether as to validity, construction, capacity, performance or otherwise, by the laws of the Commonwealth of Virginia. The Grantee further agrees to comply with all laws and regulations applicable to the Grantee's performance of its obligations pursuant to this Agreement.

9.8. Records Availability. The Grantee agrees to maintain complete and accurate books and records of the Project Costs, and further, to retain all books, records, and other documents relative to this Agreement for three (3) years after final payment. The Department, its authorized agents, and/or State auditors will have full access to and the right to examine any of said materials during said period. Additionally, the Department and/or its representatives will have the right to access work sites during normal business hours, after reasonable notice to the Grantee, for the purpose of ensuring that the provisions of this Agreement are properly carried out.

9.9. Severability. Each paragraph and provision of this Agreement is severable from the entire Agreement; and if any provision is declared invalid, the remaining provisions shall nevertheless remain in effect.

9.10. Eligible Project to be Technically Sound. The Grantee agrees that all projects will be undertaken and completed in a manner that is technically sound, meaning that they must meet design and construction methods and use materials that are approved, codified, recognized, fall under standard or acceptable levels of practice, or otherwise are determined to be generally acceptable by the design and construction industry.

9. 11. Notices. All notices given hereunder shall be in writing and shall be sent by United States certified mail, return receipt requested, postage prepaid, and shall be deemed to have been received at the earliest of: (a) the date of actual receipt of such notice by the addressee, (b) the date of the actual delivery of the notice to the address of the addressee set forth below, or (c) five (5) days after the sender deposits it in the mail properly addressed. All notices required or permitted to be served upon either party hereunder shall be directed to:

Department: Virginia Department of Environmental Quality
CWFAP
P.O. Box 1105
Richmond, VA 23218
Attn: WQIF Program Manager

Grantee: Hampton Roads Sanitation District
1434 Air Rail Avenue
Virginia Beach, VA 23455
Attn: Jay Bernas, P.E.

9. 12. Successors and Assigns Bound. This Agreement shall extend to and be binding upon the parties hereto, and their respective legal representatives, successors, and assigns.

9. 13. Exhibits. All exhibits to this Agreement are incorporated herein by reference.

9. 14. Termination. This Agreement shall terminate 20 years after the Agreement is executed by both parties or by an earlier date by agreement of the parties; provided, however, that except for termination for cause due to Material Breach, the Director's obligation under Section 4.1 herein to pay the Grant amount shall survive termination if such amount has not been paid in full as of the termination date.

ARTICLE X
COUNTERPARTS

10.1. This Agreement may be executed in any number of Counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

WITNESS the following signatures, all duly authorized.

DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

By: _____
Michael S. Rolband, PE, PWD, PWS Emeritus, Director

Date: _____

GRANTEE'S AUTHORIZED REPRESENTATIVE

By: _____
Jay A. Bernas, PE, HRSD General Manager

Date: _____

EXHIBIT A
PROJECT DESCRIPTION

Grantee: Hampton Roads Sanitation District
Grant: #440-S-22-02

Sewer Mains – The project includes the installation of approximately 27,165 linear feet (LF) of 4-inch force main (corresponding to the Nassawadox Pump Station), 13,400 LF of 6-inch force main, 41,000 LF of 10-inch force main, 26,100 LF of 12-inch force main, and 2,030 LF of 8-inch force main (corresponding to the Hartman Avenue Pump Station) and the repair of approximately 8,000 LF of 12-inch gravity sewer.

Pump Stations – The project includes installation of pump stations at Nassawadox (approximately 77 gpm peak flow), Exmore (approximately 326 gpm peak flow) and Hartman Ave (approximately 900 gpm peak flow). Integration with the HRSD SCADA system will be made. Each pump station installation includes the following: wet well, piping, valves, valve vault, emergency pumping connection, electrical system, instrumentation and controls, emergency generator system, testing, start up and commissioning, site and civil improvements, site lighting, and fencing.

EXHIBIT B
TOTAL PROJECT BUDGET

Grantee: Hampton Roads Sanitation District
Grant: #440-S-22-02

The following budget reflects the "as-bid" costs associated with eligible project components.

HDR	VCWRLF		CASH		
Owner's Consultant Services	$ 633,938.00		$ 32,914.00		
Total	**$ 633,938**		**$ 32,914**		**$ 666,852**

GARNEY	VCWRLF	ARPA	CASH	WQIF	
Design Services	$ 2,707,180	$ 977,046	$ 265,240		
Engineering Services	$ 700,974	$ 99,881	$ 133,000		
Construction Services	$ 15,124,983	$ 3,056,574	$ 1,725,401	$ 4,936,538	
Total	**$ 18,533,136**	**$ 4,133,500**	**$ 2,123,641**	**$ 4,936,538**	**$ 29,726,815**
Meter Replacement		$ 50,000			**$ 50,000**

	VCWRLF	ARPA	CASH	WQIF	
Total	**$ 19,167,074**	**$ 4,183,500**	**$ 2,156,555**	**$ 4,936,538**	**$ 30,443,667**

EXHIBIT C
PROJECT SCHEDULE

Grantee: Hampton Roads Sanitation District
Grant: #440-S-22-02

The Grantee has proposed the following schedule of key activities/milestones as a planning tool which may be subject to change. In particular, the Grantee acknowledges that the appropriate approval (Certificate to Construct) must be issued by the Department prior to proceeding with construction. Unless authorized by a grant modification, it is the responsibility of the Grantee to adhere to the anticipated schedule for the project as follows:

Activity	Date/Duration
a. Construction Completion	December 2023
b. Certificate to Operate	December 2023

EXHIBIT D
REQUISITION FOR REIMBURSEMENT
(To be on Grantee's Letterhead)

Department of Environmental Quality
Clean Water Financing and Assistance Program
P.O. Box 1105
Richmond, VA 23218
Attn.: WQIF Program Manager

RE: **Virginia Water Quality Improvement Fund Grant**
WQIF Contract #440-S-22-02

Dear Program Manager:

This requisition, Number ____, is submitted in connection with the referenced Grant Agreement between the Director of the Virginia Department of Environmental Quality and the [insert name of the Grantee]. The effective date of the grant agreement is [insert date of grant agreement].

Unless otherwise defined in this requisition, all capitalized terms used herein shall have the meaning set forth in Article I of the Grant Agreement. The undersigned Authorized Representative of the Grantee hereby requests disbursement of grant proceeds under the Grant Agreement in the amount of $_____ for the purposes of payment of the Eligible Project Costs as set forth on Schedule I attached hereto.

Copies of invoices relating to the items for which payment is requested are attached.

The undersigned certifies that the amounts requested by this requisition will be applied solely and exclusively to the reimbursement of the Grantee for the payment of Eligible Project Costs.

This requisition includes (if applicable) an accompanying Certificate of the Project Engineer as to the performance of the work.

Sincerely,

_____
(Authorized Representative of the Grantee)

Attachments

SCHEDULE 1
VIRGINIA WATER QUALITY IMPROVEMENT FUND
FORM TO ACCOMPANY REQUEST FOR REIMBURSEMENT

SCHEDULE 1
VIRGINIA WATER QUALITY IMPROVEMENT FUND
FORM TO ACCOMPANY REQUEST FOR DISBURSEMENT

Requisition # ___
Grantee: Hampton Roads Sanitation District
GRANT #440-S-22-02
CERTIFYING SIGNATURE:_____
TITLE:_____

Cost Category	Total Project Budget	Eligible Project Cost	75% WQIF Grant Share	Total Expenditures This Period	Previous Grant Disbursements	Grant Disbursement This Period	Grant Balance
			75.0%				$4,936,538
Construction- E.S. TFM	$30,433,667	$6,582,051	$4,936,538	$0.00	$0.00	$0.00	
TOTALS:	$30,433,667	$6,582,051	$4,936,538	$0.00	$0.00	$0.00	$4,936,538

Total Grant Amount:	$4,936,538
Previous Grant Disbursements:	$0.00
This Grant Request:	$0.00
Total Grant Requested to Date:	$0.00
Grant Proceeds Remaining:	$4,936,538.00

CERTIFICATE OF THE PROJECT ENGINEER
FORM TO ACCOMPANY REQUEST FOR REIMBURSEMENT

Grantee: Hampton Roads Sanitation District
Grant: #440-S-22-02

This Certificate is submitted in connection with Requisition Number _____, dated _____, 20__, submitted by the [insert name of the Grantee] (the "Grantee") to the Virginia Department of Environmental Quality. Capitalized terms used herein shall have the same meanings set forth in Article I of the Grant Agreement referred to in the Requisition.

The undersigned Project Engineer for _____ hereby certifies that insofar as the amounts covered by this Requisition include payments for labor or to contractors, builders or material men, such work was actually performed or such materials, supplies, or equipment were actually furnished to or installed in the Project.

_____
(Project Engineer)

_____
(Date)

EXHIBIT E
FORMULA FOR CALCULATING MONETARY ASSESSMENT
IN THE EVENT OF EARLY TERMINATION

Grantee: Hampton Roads Sanitation District
Grant: #440-S-22-02

Early termination in the operation of the conveyance project shall result in a monetary penalty using the formula below.

$$MA = CYR \times AnPay$$

where:

MA	=	Monetary Assessment
CYR	=	Contract Years Remaining
AnPay	=	Annual payment on grant; assumes principal payments amortized over 20 years and an interest rate of 5%. Using these assumed values leads to a "cost recovery factor" of 0.0802. The "cost recovery factor" times the grant amount yields the annual payment penalty amount.

Values used for Grant #440-S-22-02:

Total grant for conveyance project	= $4,936,538
Useful Service Life	= 20 years
Interest Rate	= 5%

Calculated (assumes grant 100% paid):

Expected performance	= 20 years
AnPay	= $395,910

Resource: Bruce Husselbee

AGENDA ITEM 6. – February 27, 2024

Subject: High Priority Inflow and Infiltration Reduction Program Resolution

Recommended Action: Adopt the resolution authorizing the Findings and Supplemental Guidelines for the Public-Private Education Facilities and Infrastructure Act of 2002 (PPEA) Solicitation and Evaluation for the High Priority Inflow and Infiltration Reduction Program.

CIP Projects: AT014301, GN020300, JR013700, NP013901, VP019300, and WB013200

Regulatory Requirement: Integrated Plan – HPP1 (2030 Completion)

Project Description: The High Priority Inflow and Infiltration (I&I) Reduction Program (Program) will reduce capacity-related sanitary sewer overflows (SSOs) within pre-selected locality catchments through the cost-effective reduction of I&I. Work may be located on locality-owned assets, HRSD-owned assets, and/or private assets/property, and may include the upsizing of gravity pipelines. The Regional Wet Weather Management Plan (RWWMP) identified basins where I&I reduction could be performed to cost-effectively reduce simulated SSOs. HRSD will coordinate the identification and reduction of overflows with locality partners.

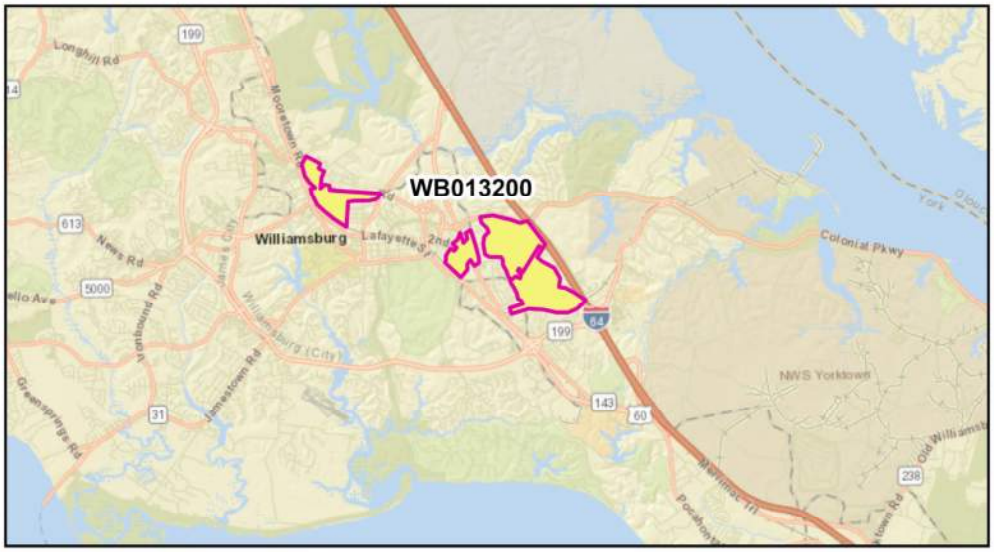
The attached map depicts the anticipated locality catchment areas to be impacted by this Program.

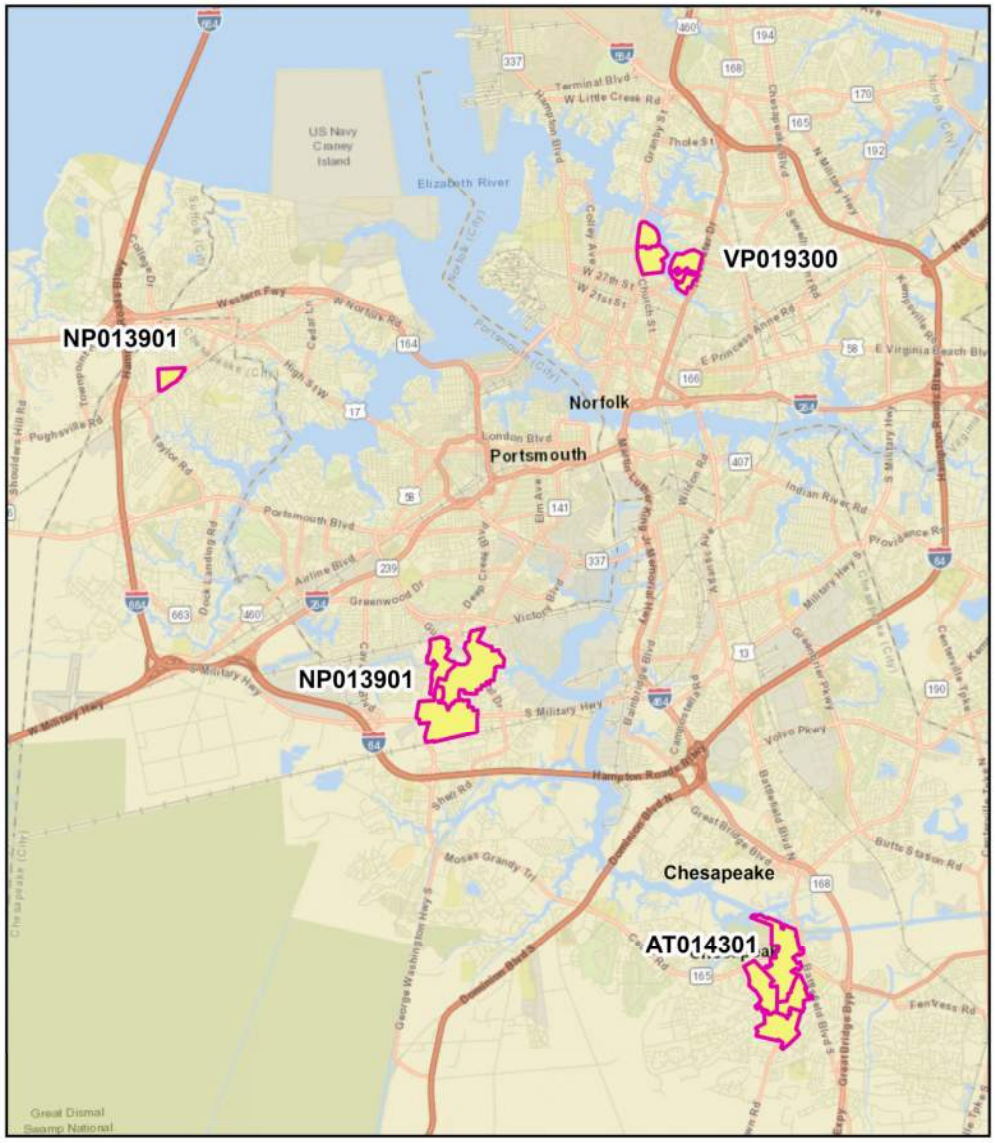
Project Justification: As part of HRSD's Integrated Plan, this Program of High-Priority RWWMP Projects will be constructed through 2030. The projects included in the Program were selected based on their ability to provide the greatest environmental and human health benefits. The goal of this $130 million investment will be to reduce simulated SSO volumes at the 5-year level of service by 47%.

Resolution Description: This Resolution addresses requirements of the PPEA process and is in conformance with the Commission Adopted Procurement Policy. The attached resolution was prepared by HRSD legal counsel and reviewed by staff.

Schedule:		
	Design	July 2024
	Construction	January 2025
	Project Completion	April 2030

Location of High Priority I&I Program Work





RESOLUTION

Resolution Adopting Findings and Supplemental Guidelines for PPEA Solicitation and Evaluation: The High Priority Inflow and Infiltration Reduction Program

WHEREAS, the Hampton Roads Sanitation District Commission (the "Commission") has adopted guidelines for implementation of the Public-Private Education Facilities and Infrastructure Act of 2002 (the "PPEA") as Appendix F of the Hampton Roads Sanitation District ("HRSD") Procurement Policy (the "Guidelines"); and

WHEREAS, the Commission desires to solicit proposals for qualifying projects for HRSD's High Priority Inflow and Infiltration Reduction Program (the "Program"); and

WHEREAS, the Commission desires to adopt supplemental guidelines for its consideration and approval of proposals received for the Program under the PPEA (each a "Proposal"); and

WHEREAS, the Commission finds that adoption of this resolution and the supplemental guidelines herein is in the best interests of HRSD, the public, and responsible selection of Proposals and completion of the Program;

NOW, THEREFORE, BE IT RESOLVED on the 27th day of February 2024, by the HRSD Commission that:

1. HRSD desires to solicit proposals for the Program as a qualifying project through a two-phase Request for Proposals under the PPEA.

2. Entering into a comprehensive agreement in accordance with guidelines that are consistent with procurement through competitive sealed bidding as set forth in Va. Code § 2.2-4302.1 would be detrimental to HRSD's effective and cost-efficient completion of the Program.

3. The evaluation of Proposals and negotiation of a comprehensive agreement in accordance with procedures that are consistent with competitive negotiation as set forth in § 2.2-4302.2 is likely to be advantageous to HRSD and the public based on (i) the scope, complexity, and priority of the Program; (ii) possible risk sharing and incentives, including guaranteed cost or completion guarantees; (iii) added value by private entities and collaborative partnerships; and (iv) other efficiency benefits that would not otherwise be available for the Program.

4. Proposals shall be evaluated and a comprehensive agreement negotiated for the Program under procedures consistent with procurement of a

multiphase professional services through competitive negotiation as set forth in § 2.2-4302.2 and as detailed in HRSD's Request for Proposals (Phases 1 and 2) related to the Program, which is ratified by the Commission. Such procedures shall include:

a. A two-phase Request for Proposal indicating in general terms that which is sought for the Program, specifying the factors that will be used in evaluating Proposals, indicating whether a numerical scoring system will be used in evaluation of the proposal, and containing or incorporating by reference the other applicable contractual terms and conditions, including any unique capabilities, specifications or qualifications that will be required.

b. The point values assigned to each of the evaluation criteria shall be included in Phase 1 and Phase 2 of the Request for Proposals.

c. Public notice of the Request for Proposals Phase 1 shall be given at least 10 days prior to the date set for receipt of proposals by posting on the Virginia Department of General Services' central electronic procurement website. HRSD may publish notice on other appropriate websites as determined by the General Manager or designee to provide reasonable notice to the maximum number of offerors that can be reasonably anticipated to submit proposals in response to the Request for Proposals Phase 1. Proposals may be solicited directly from potential offerors.

d. Notice of the Request for Proposals Phase 2 shall be given to offerors selected based on ranking of the Request for Proposals Phase 1 at least 10 days prior to the date set for receipt of Proposals by HRSD.

e. Proposals received by HRSD shall be posted by HRSD within 10 working days after acceptance on the Virginia Department of General Services' centralized electronic procurement website and HRSD's website.

f. At the conclusion of discussions HRSD shall select in the order of preference two or more offerors whose professional qualifications and proposed services related to the Program are deemed most meritorious and select an offeror on the basis of evaluation factors published in the Request for Proposal and all information developed in the selection process to this point. Notwithstanding the foregoing, should HRSD determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified and suitable than the others under consideration, HRSD may select only one offeror and proceed to negotiating an interim agreement and comprehensive agreement with that offeror.

g. Negotiations for an interim agreement shall be conducted, beginning with the Proposal ranked first. If an interim agreement satisfactory

and advantageous to HRSD can be negotiated at a price considered fair and reasonable and pursuant to contractual terms and conditions acceptable to HRSD, the award shall be made to that offeror conditioned on approval of the interim agreement by the Commission. Otherwise, negotiations with the offeror ranked first shall be formally terminated and negotiations conducted with the offeror ranked second, and so on until an interim agreement can be negotiated at a fair and reasonable price. Notwithstanding the foregoing, if the terms and conditions for multiple awards are included in the Request for Proposal, HRSD may award interim agreements to more than one offeror.

5. HRSD's approval of any Proposal shall be subject to the private entity's entering into an interim agreement with the Commission pursuant to Va. Code § 56-575.9:1 and a subsequent comprehensive agreement pursuant to Va. Code § 56-575.9.

6. Due to the complex, large, phased, and long-term nature of the Program, an interim agreement is necessary to negotiate a fair and reasonable price for the first phase of the Program, the completion of which is necessary to provide information critical to the negotiation of a fair and reasonable price for succeeding phases under a comprehensive agreement.

7. The Commission finds that analysis of the Proposals, including the specifics, advantages, disadvantages, and the long- and short-term costs of such Proposals shall be performed by employees of HRSD. To the extent deemed necessary or beneficial by the General Manger, or designee, HRSD is authorized to engage the services of qualified professionals, which may include an architect, professional engineer, or certified public accountant, not otherwise employed by HRSD, to provide independent analysis regarding the specifics, advantages, disadvantages, and the long- and short-term costs of any Proposal.

8. HRSD will approve one or more Proposals if it determines that:

    a. There is a public need for, and benefit derived from, the Proposal, in satisfaction of the Program;

    b. The estimated cost of the Proposal is reasonable in relation to similar facilities or projects to the Program; and

    c. The private entity's plans will result in the timely development or operation of the Program.

9. In evaluating any Proposal, HRSD and the Commission may rely upon internal staff reports prepared by personnel familiar with the operation of similar facilities or the advice of outside advisors or consultants having relevant experience.

10. In connection with its approval of a Proposal, HRSD shall establish a date for the commencement of activities related to the qualifying project, which may be extended by HRSD from time to time.

11. The findings and guidelines contained in this resolution shall be supplemental to the Guidelines and implemented in conjunction therewith for the solicitation and evaluation of Proposals for the Program.

The undersigned further certifies that the foregoing has been properly approved and adopted in accordance with all applicable requirements of the HRSD Commission.

[HRSD Seal]

_____
Steve Rodriguez, Chair

Resource: Bruce Husselbee

AGENDA ITEM 7. – February 27, 2024

Subject: City Park Pump Station (PS 106) Replacement and
Luxembourg Pump Station (PS 113) Replacement and Ashland Sewer Extension
Initial Appropriation, Contract Award (>$200,000) and Task Order (>$200,000)

Recommended Actions:

a. Appropriate total project funding in the amount of $40,979,570 ($10,379,642 for VP015410 and $30,599,928 for VP015420).

b. Award a contract to W.M. Schlosser Company, Inc. in the amount of $35,722,000 ($8,822,000 for VP05410 and $26,900,000 for VP015420).

c. Approve task orders with Hazen and Sawyer, PC in the amount of $1,685,370 ($675,442 for VP015410 and $1,009,928 for VP015420).

Regulatory Requirement: Rehab Action Plan Phase 2 (2027 Completion)

CIP Project: VP015410 and VP015420

Contract Status with Task Orders:	Amount
Original Contract with Hazen and Sawyer (VP015400)	$665,468
Total Value of Previous Task Orders (VP015400)	$2,152,901
Requested Task Orders (VP015410 and VP015420)	$1,685,370
Total Value of All Task Orders	$3,838,271
Revised Contract Value	$4,503,739
Engineering Services as % of Construction	12.6%

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Engineering Department advertised and solicited bids directly from potential bidders. The two projects were grouped together and released as one solicitation in the hopes of attracting more bidders. The project was advertised on January 8, 2024, and 3 bids were received on February 6, 2024, as listed below:

Bidder	Bid Amount
W.M. Schlosser Company, Inc.	$35,722,000
Crowder Construction Company	$38,095,000
MEB General Contractors, Inc.	$39,457,000

Engineer Estimate: $16,713,000

The Engineer, Hazen and Sawyer, evaluated the bids based upon the requirements in the invitation for bid and recommends award to the lowest responsive and responsible bidder, W.M. Schlosser Company, Inc., in the amount of $35,722,000.

Project Description: This project will construct a new City Park Pump Station and a new Luxembourg Pump Station to replace old existing pump stations. The existing Ashland Circle Pump Station will be demolished and replaced with new sanitary sewer connecting to the existing system. The attached maps depict the project locations.

Project Justification: The projects will address aging infrastructure pertaining to the condition of the wet wells, pumps, motors, controls, appurtenances, and emergency generators for the facilities. The pumps, motors, and controls are nearing the end of their useful life and replacement parts are not available. The Luxembourg Pump Station building is experiencing differential settlement. The City Park and Ashland Circle Pump Stations are in a low-lying area and condition assessment activities gave evidence that tidal flooding likely occurs during severe wet weather events. The projects are included in the EPA Rehabilitation Action Plan Phase 2 with a Substantial Completion requirement of May 2027.

Contract Description: This contract will construct two new pump stations, demolition of an existing pump station, and installation of sanitary sewer.

Task Order Description: The task orders will provide services during construction including contract administration, field engineering and inspection services and post startup and certification services. Preliminary engineering and design phases were authorized under a single project for Lafayette Norview Estabrook Pump Station Replacement (VP015400). During design, a decision was made to separate construction into three projects. The task orders for construction phase services will be applied to the appropriate CIP project. HRSD and the Engineer, Hazen and Sawyer, negotiated a fee of $675,442 for VP015410 and $1,009,928 for VP015420 based upon anticipated hours required for this effort. The fee proposals are comparable to other projects of similar size and complexity.

Analysis of Cost: City Park Pump Station was bid as a standalone project in October 2023 and only one bid was received which was double the Engineer's estimate. The Commission agreed with the recommendation to reject this bid and move forward with a combined construction bid package including the City Park Pump Station, the Luxembourg Pump Station and the Ashland Sewer Extension to entice more competitive bidders. The cost for the construction contract has been reviewed by Hazen and Sawyer. The three bids received were within 10% of each other which indicates a reasonable cost based on current market conditions. The bids are significantly higher than the Engineer's estimate which can be attributed to labor shortages, subcontractor costs, and over saturation of the market. The Engineer's estimate should be discounted due to these market conditions. An evaluation of recent bids on gravity sewer and pump station projects at HRSD over the past 3 years, resulted in the following projects for comparison:

Bid Date	Project Name	Project Type	Lowest Bid
Nov-23	VP015410 City Park Pump Station Replacement	Pump Station	$8,798,722
Oct-22	VP014022 Sanitary Sewer Project 1950	Gravity Sewer	$17,274,540
Mar-22	BH013020 Willard Ave Pump Station	Pump Station	$14,460,331
Mar-22	VP018000 Park Ave Pump Station Replacement	Pump Station	$11,414,000

Sanitary Sewer Project 1950 is a larger scale project that includes 7,800 LF of gravity sewer ranging from 8-inch to 30-inch (4,700 LF of 30-inch at depth excess of 15 ft) for an overall project cost of $2,200/LF of sewer installed. For comparison, the Ashland Sewer Extension project has 3,600 LF of gravity sewer ranging from 8-inch to 12-inch (1500+ LF excess of 15 ft depth) which had a final bid estimate high range of $2,200/LF. The bid values submitted would result in an average cost of gravity sewer installation of over $6,000/LF. The Willard Avenue Pump Station and the Park Avene Pump Station projects are three and four times larger than the City Park and Luxembourg Pump Stations

respectively (comparing overall station foundation footprint and sheeting excavation area). These facilities had an average total project cost related to the overall station foundation footprint/excavation area of $123/cubic feet (CF) for Willard Avenue and $90/CF for Park Avenue. Applying similar cost per footprint/excavation or total building square foot (SF) area would equate to the City Park and Luxembourg Pump Stations costing between $4 and $5 million each. The Engineer's estimates for City Park and Luxembourg resulted in a similar metric for comparison purposes of $140/CF and $180/CF respectively. The submitted bid price for City Park Pump Station of $8.8 million by the low bidder equates to a total project cost of $278/CF and $8,515/SF, these values are historically high and unprecedented.

In addition to HRSD's numerous ongoing construction projects, i.e. another large pump station program in Norfolk, there is over $472M of private investment construction (Dominion, Con-Ed, Solenis) and $561M of government funding projects including airport infrastructure, coastal resilience programs through USACE, and Clean-Energy projects. With all of these construction projects ongoing, this is resulting in huge labor shortages and wages almost all job opportunities and rates being offered are three times Virginia Prevailing Wage rates and at least double Davis-Bacon rates.

Large projects in the area that require resources of concrete, gravel, asphalt, and trucking are creating high demands for those products driving the price higher than seen in recent years. The busy construction market, significant number of planned constructions projects to be bid in the near future and a reduced number of contractors doing this type of work in the Hampton Roads area, will continue to keep prices high and the number of bids low.

Funding Description: The total cost for the projects is estimated at $40,979,570 based on construction bids received and negotiated engineering costs. The funding request also includes 10% in contingency for any unforeseen costs.

Schedule:		
	Construction	April 2024
	Project Completion	May 2027

VP015410

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

Legend

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

0 55 110 220 330 440 Feet

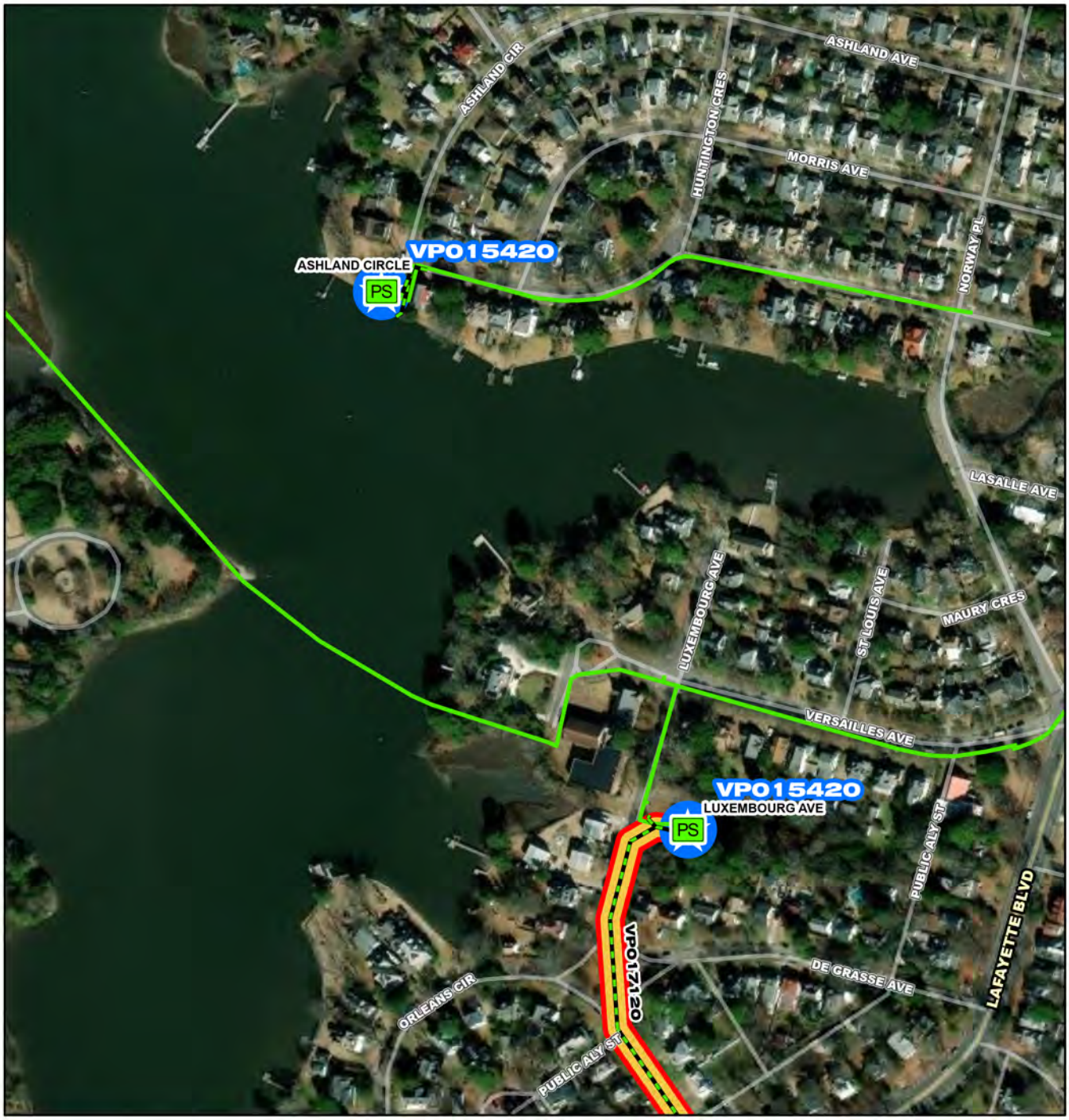
VP015410

City Park Pump Station (PS 106) Replacement

HRSD

N
W E
S

CIP Location



VP015420

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

Legend

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

0 105 210 420 630 840 Feet

N
W E
S

CIP Location

VP015420

Luxembourg Pump Station (PS 113) Replacement and Ashland Sewer Extension

HRSD

Resource: Bruce Husselbee

AGENDA ITEM 8. – February 27, 2024

Subject: Nansemond Recharge Well Integration
New CIP and Initial Appropriation

Recommended Actions:

a. Approve a new CIP project.

b. Appropriate total project funding in the amount of $72,931,000.

CIP Project: GN016383

Regulatory Requirement: Integrated Plan – SWIFT

Project Description: The project will design and construct the process mechanical, civil, site, structural, architectural, mechanical, electrical, and instrumentation and control elements of the infrastructure required at each off-site managed aquifer recharge well and monitoring well location. A section of the backflush and SWIFT Water piping will be constructed from the Nansemond Treatment Plant boundary to the traffic circle at the College Drive and Armstead Road intersection under a separate project, Boat Harbor Treatment Plant Transmission Force Main Section 2 (BH015720). The remaining off-site SWIFT Water and backflush piping will be designed and constructed under this project.

Project Justification: Nansemond Recharge Wells are required for managed aquifer recharge using SWIFT Water produced at Nansemond Treatment Plant. The monitoring wells are required by permit. Well drilling will be conducted under a separate project. This project allows for a focused selection of delivery methods and definition of specific contract requirements for infrastructure work outside of Nansemond Treatment Plant. Due to the schedule considerations for the numerous active projects at the Nansemond Treatment Plant, it is critical that we begin this work now to not delay other more significant projects.

Funding Description: The total cost for this project is estimated to be $72,931,000, which is based on a Class 5 estimate provided by the SWIFT Program Management Consultant, AECOM.

Schedule:		
	PER	August 2024
	Design	February 2025
	Bid	August 2026
	Construction	January 2027
	Project Completion	March 2029

Resource: Bruce Husselbee

AGENDA ITEM 9. – February 27, 2024

Subject: South Shore Galvanic Cathodic Protection System Rehabilitation Phase I
Initial Appropriation – Non-Regulatory

Recommended Action: Appropriate total project funding in the amount of $3,298,603.

CIP Project: GN018700

Regulatory Requirement: none

Project Description: This project will renew the cathodic protection system currently providing inadequate protection on 12 interceptor force main systems. The interceptor force mains with cathodic protection systems requiring renewal consists of SF-024, SF-081, SF-082, SF-083, SF-283, SF-084, SF-126, SF-172, SF 225, SF-260, SF-268, and SF-281.

The attached map depicts the project location.

Project Justification: HRSD Management, Operation, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and repaired to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during biennial evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While cathodic protection systems are maintained, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY-2021 evaluation results.

Analysis of Cost: Cost is based on Class 5 estimate provide by Hazen and Sawyer in January 2024. Engineering Services will be provided by Hazen and Sawyer under the General Engineering Annual Services Contract and the cost for the initial design task order is below the $200,000 Commission approval threshold.

Funding Description: The project will be funded by revenue bonds.

Schedule:

PER	March 2024
Design	May 2024
Bid	February 2025
Construction	May 2025
Project Completion	November 2025

GN018700 South Shore Galvanic Cathodic Protection System Rehabilitation Phase I

Resource: Jay Bernas

AGENDA ITEM 10. – February 27, 2024

Subject: New Business

Resource: Jay Bernas

AGENDA ITEM 11. – February 27, 2024

Subject: Unfinished Business

Resource: Commission Chair

AGENDA ITEM 12. – February 27, 2024

Subject: Commissioner Comments

Resource: Jay Bernas

AGENDA ITEM 13. – February 27, 2024

Subject: Informational Items

Recommended Action: No action is required.

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

a. Management Reports

(1) General Manager

(2) Communications

(3) Engineering

(4) Finance

(5) Information Technology

(6) Operations

(7) Talent Management

(8) Water Quality

(9) Report of Internal Audit Activities

b. Strategic Metrics Summary

February 13, 2024

Re: General Manager's Report

Environmental Responsibility

There were a number of SSOs in Dendron, King William, and West Point due to significant storm events with high-intensity rainfalls. There were MACT 129 air quality exceedances due to equipment issues and weather. More details are included in the Air and Effluent January Summary in the Water Quality Monthly report.

Treatment Compliance and System Operations:

- From FY 2024 to date, there have been four Permit Exceedances out of 32,974 Total Possible Exceedances.
- Pounds of Pollutants Removed in FY 2024 to date: 112,032,542 million pounds.

Water Quality: No civil penalties were issued in January.

Financial Stewardship

South Shore Interceptors supported the VIP plant by cleaning out the incinerator furnace. They were able to complete this work in four days as compared to a contractor that took a month at a cost of $60,000 last year.

The Treatment Projects Team, which works on small construction projects, continues to add value across HRSD as they continue to complete high quality projects saving ratepayers almost half a million dollars since this team was formed while also completing them in a timely manner.

After months of negotiations, the sixth modification to the EPA Consent Decree/Integrated Plan was lodged on January 19.

Water consumption remains slightly higher than projected resulting in wastewater revenues being ahead of target. Expenses remain under control.

Talent

Staff continue to prepare for the upcoming changeover to Sentara Health Plans from Cigna.

The Compensation Study continues to progress and will be presented to the Finance Committee in February. The final two phases are focused on pay structure, job slotting, and updating the job description template.

I participated in the following meetings/activities with HRSD personnel:

1. Visited Boat Harbor, York River, Nansemond, Atlantic, Williamsburg, and Onancock Treatment Plants to congratulate them on their NACWA Peak Performance Awards and held an informal Town Hall session
2. Reviewed Retreat Action Items with the Senior Leadership Team
3. Attended the HRSD brand refresh workshop

Community Engagement

The Fifth Annual SWIFT Industry Day was a success with almost 300 attendees and 50 of those being Small, Woman-owned, and Minority- Owned (SWaM) affiliated. In addition, there were five SWaM entities that signed up for our new Mentor Protégé program.

The Communications Director, Operations Director and Chief of Treatment attended the Ocean Lakes Annual Homeowners Meeting to provide an overview of the Reliability and Odor Control Improvements (ROCI) Program work being done to greatly reduce odors from the Atlantic Treatment Plant.

Working with the Hampton Roads Planning District Commission, I developed a “one-pager” for our Hampton Roads state legislators to request their support of the proposed Water Quality Improvement Fund (WQIF) budget amendment. I’m planning to present to the Hampton Roads Caucus on February 22.

I participated in the following external meetings/activities:

1. Attended the Virginia Association of Municipal Wastewater Agencies (VAMWA) quarterly meeting
2. Attended the monthly Director of Utilities meeting
3. Attended the River Star Business Recognition luncheon
4. Held the required Annual EPA Meeting on our Integrated Plan
5. Attended the Virginia Investment Pool quarterly meeting

Innovation

Our research team continues to embark on new pilot projects including:

- Biological process study to better utilize the Digested Sludge Storage Tank (DSST) at the ATP under the ROCI program
- Testing Cloth Media Filtration as a potential tertiary treatment technology at VIP
- Testing bead type media with anammox

Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth, and the environment.

I look forward to seeing you in person in Virginia Beach at 9:00 a.m. on Tuesday, February 27, 2024.

Respectfully submitted,

Jay Bernas, P.E.
General Manager

TO: General Manager

FROM: Director of Communications

SUBJECT: Monthly Report for January 2024

DATE: February 13, 2024

A. Publicity and Promotion

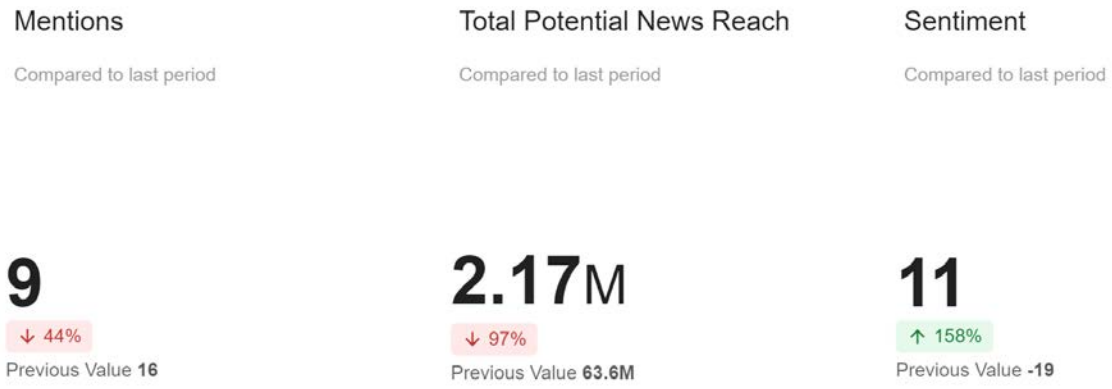
1. HRSD and SWIFT (Sustainable Water Initiative For Tomorrow) were mentioned or featured in five stories this month. Topics included:

   a. Column series in Smithfield Times detailing its history through its sewer system

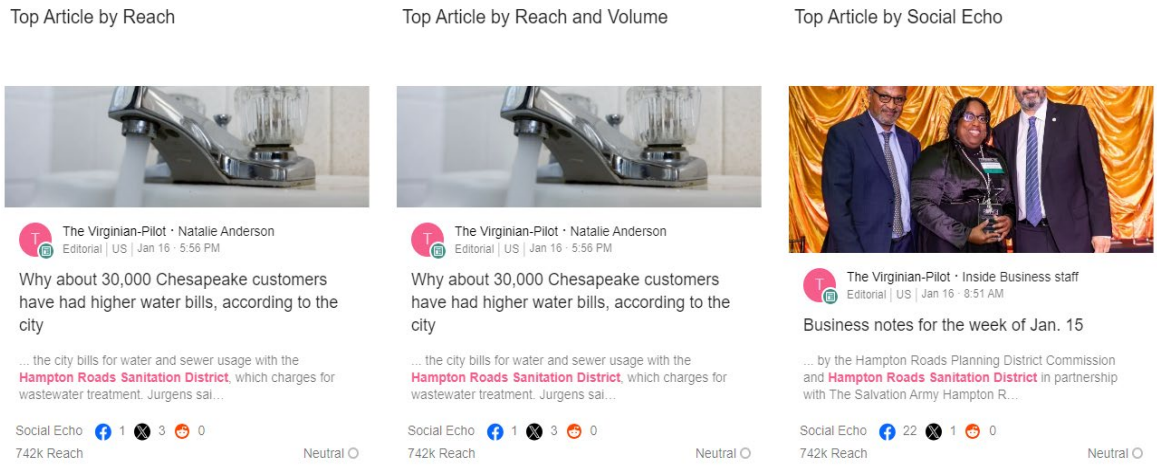
   b. Segment of Chesapeake customers reporting higher water bills

2. Analysis of media coverage

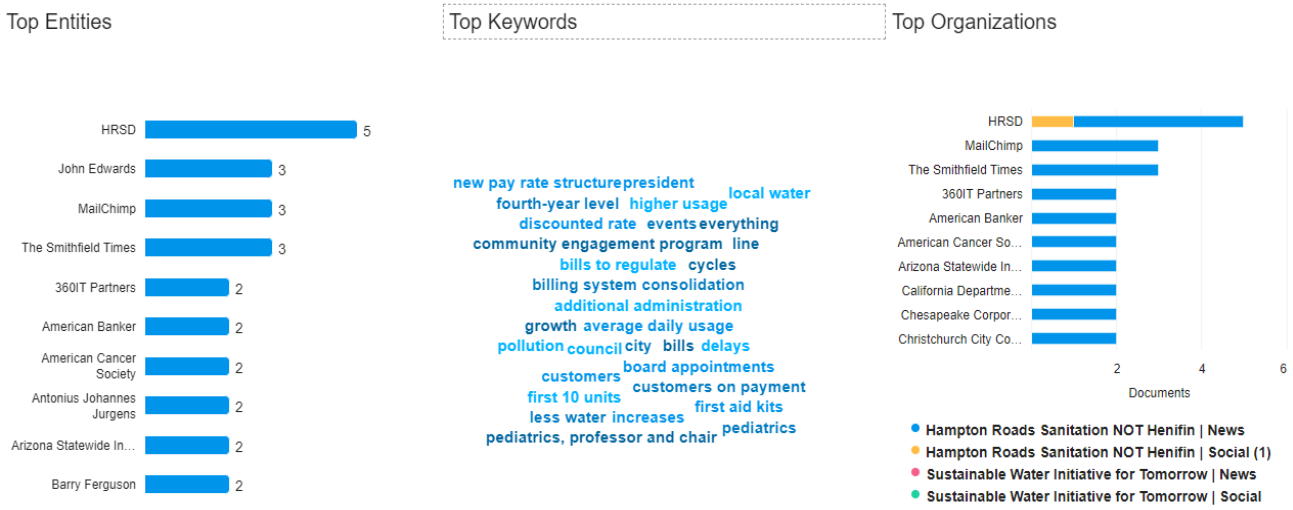
   a. Key results



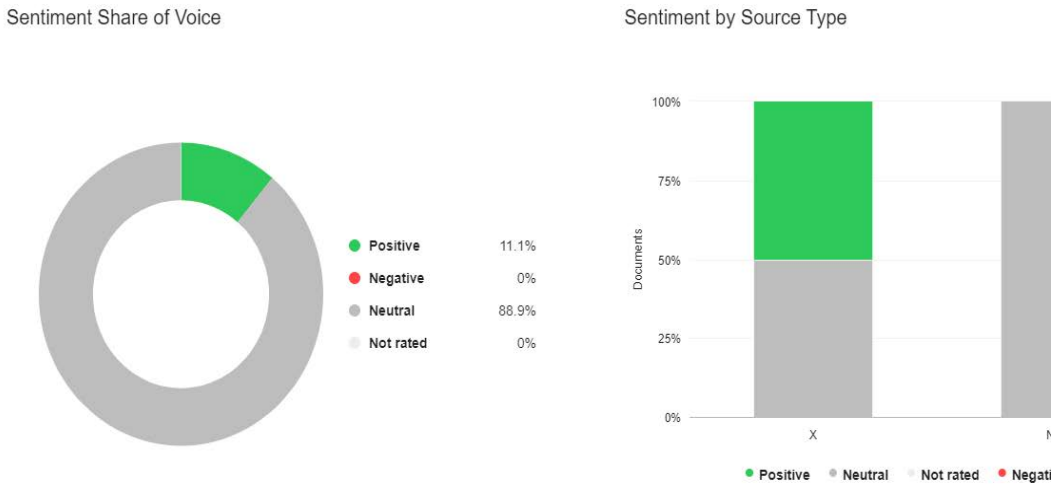
   b. Top performing news content



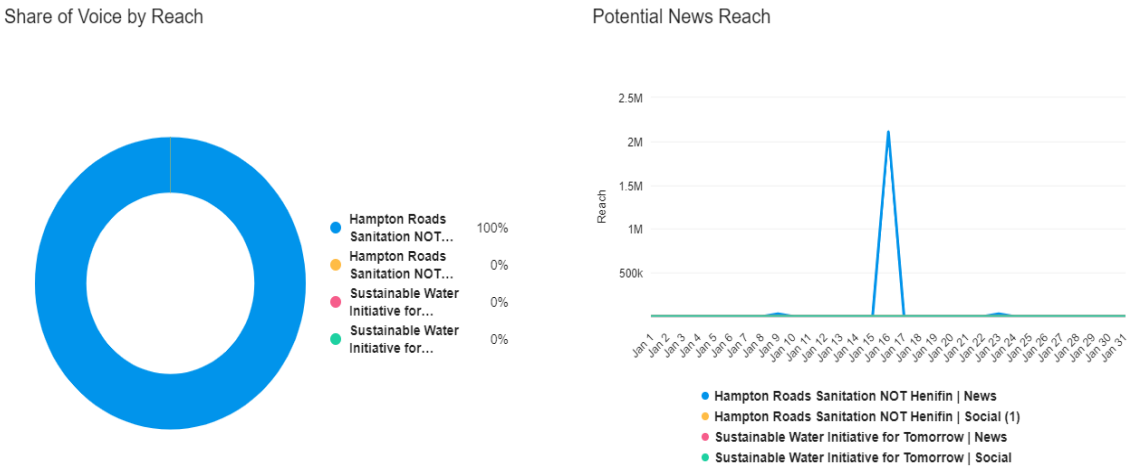
c. Top entities and keywords



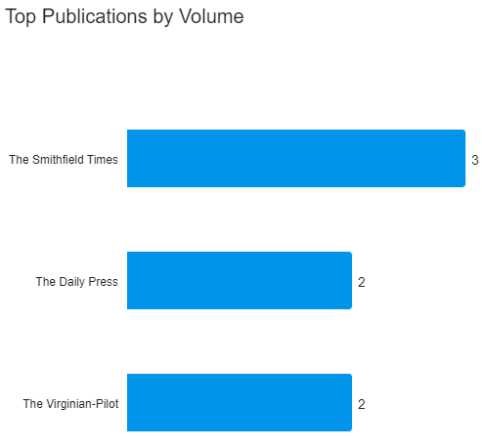
d. How favorable is the content?

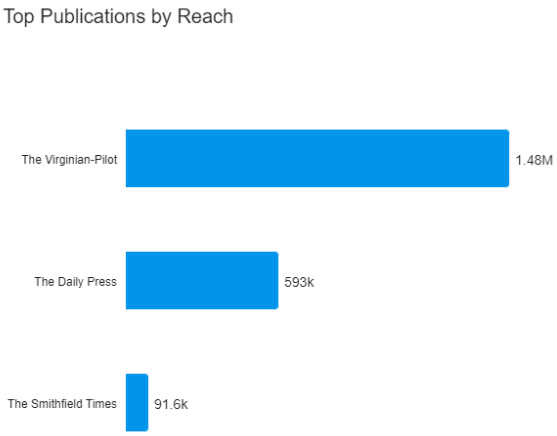


e. What is the potential reach?



f. Top publishers

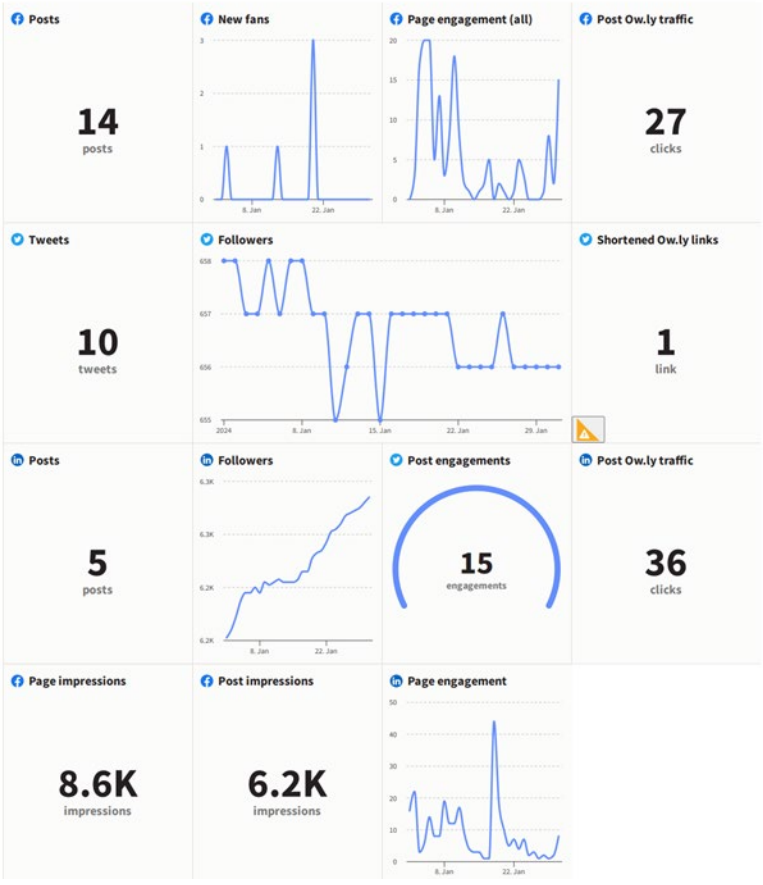




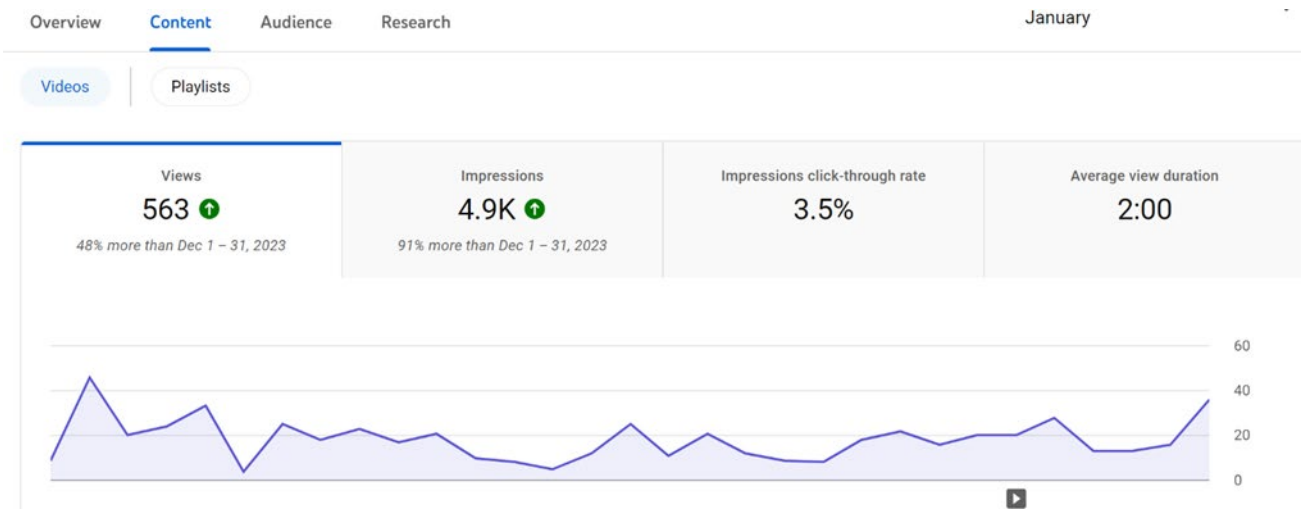
Community Engagement

B. Social Media and Online Engagement

1. Metrics – Facebook, X and LinkedIn



2. YouTube



3. Top posts on Facebook, Twitter, and YouTube

a. Top Facebook post

b. Top Tweet

c. Top YouTube Videos

(1) The Wastewater Treatment Process (139 views)

(2) SWIFT Research Center: What Is the Potomac Aquifer (56 views)

(3) HRSD Employee Testimonial- Robert (46 views)

(4) Atlantic Treatment Plant Cambi Tour (46 views)

(5) Why SWIFT Matters (37 views)

4. Website and Social Media Impressions and Visits

a. Facebook:

(1) 8,636 page impressions

(2) 6,151 post impressions reaching 5,854 users

(3) Facebook Engagement of 164 (124 reactions, 31 shares, and 9 comments)

b. X : 600 post impressions, 7.5% engagement rate

c. HRSD.com/SWIFTVA.com: 1,226 page visits

d. LinkedIn Impressions:

(1) 9,438 page impressions

(2) 5,473 post impressions

e. YouTube: 563 views

f. Next Door unique impressions: 27,783 post impressions from 25 targeted neighborhood postings and one regionally shared post with 664,073,610 total residents

g. Blog Posts (1): Navigating Uncharted Waters: Sewage Spill Response: It's in our DNA.

h. Construction Project Page Visits – 2,143 total visits (not including direct visits from home page, broken down as follows:

(1) 1865 visits to individual pages

(2) 278 to the status page

C. Education and Outreach Activity Highlights

Communications staff provided support to the Fifth Annual SWIFT Industry Day, participating onsite by staffing an information table and assisting as needed for the event. Community Outreach and Education staff led five different classroom activities across the region, reaching approximately 150 students with interactive learning experiences and educational presentations.

Project notices were distributed to 667 customers for 14 different projects across the service area this month. The department distributed and posted 14 construction or work notices, one news release and three traffic advisories to the HRSD.com Newsroom.

Communications Director, Operations Director and Chief of Treatment attended the Ocean Lakes Annual Homeowners Meeting to provide an overview of the work being done to greatly reduce odors from the Atlantic Treatment Plant.

There were three SWIFT Research Center tours given by the Communications department over the course of the month to a total of 17 people.

D. Internal Communications

Director participated in the following internal meetings and events:

1. Leadership retreat action planning review

2. Overarching HRSD brand review workshop

3. SWIFT Industry Day planning meetings

4. Department budget planning meetings

5. Boat Harbor Treatment Plant closure quarterly planning meeting

6. Architectural review committee meetings

7. UNIFIED Council meeting

8. Bi-weekly General Manager (GM) briefings

9. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST) and HRSD QST meetings

10. Check-in meetings with Deputy General Manager (DGM)

11. Director also conducted biweekly Communications department status meetings and weekly one-on-one check-in meetings.

12. Staff participated in 25 project progress meetings with various project managers.

Respectfully,

Leila Rice, APR

Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for January 2024

DATE: February 12, 2024

Environmental Responsibility

The City of Norfolk (the City) is working closely with the U.S. Army Corps of Engineers to study and make improvements to address climate change through coastal resiliency known as “Resilient Norfolk”. This is a huge effort ($2.6B) impacting large parts of the City. The project includes storm-surge barriers, nearly nine miles of floodwalls and levees, 11 tide gates, and ten pump stations, along with hundreds of non-structural projects that include home elevations, basement fills, and commercial floodproofing. HRSD has numerous assets within the City impacted by this potential work. This project could impact buried pipes, pump stations and two treatment plants (Army Base and the Virginia Initiative Plant). We will be creating an internal task force to coordinate with the City and their various consultants.

Flooding is also a regional challenge. The Virginia Department of Transportation (VDOT) has begun a study to create a flood forecasting and warning system for Hampton Roads. VDOT has requested a listing of all HRSD rain gauge sensors (we have 76 in use) and the specific coordinates of each instrument. They are considering using our gauges with other gauges in Hampton Roads to better predict localized flooding and warn drivers in near real-time.

Financial Stewardship

Capital Improvement Program (CIP) spending for the sixth month of FY 2024 was above the planned spending target.

CIP Spending ($M):

	Current Period	FYTD
Actual	57.59	283.51
Plan	48.90	282.90

Construction costs in 2023 rose by 2.6 percent as documented by the Engineering News Record (ENR) Construction Cost Index (CCI). The wider economy is generally strong but is hampered by inflation, staffing challenges, and lingering supply chain constraints. The public sector construction industry is a bright spot in the overall economy with concerns in the housing, warehouse, and manufacturing sectors. The ENR predicts a 2.3 percent increase in the cost forecast in 2024, caused by continued increases in both materials and labor. The Infrastructure Investment and Jobs Act, approved in 2021, should continue to impact the U.S. economy as more funds become available for

capital projects. The consultant community has been able to manage the challenges of the current economic situation, but staffing shortages are driving up salaries in the professional ranks.

HRSD has seen both increased pricing for construction and fewer bidders competing for work. As the local contracting community increases its backlog of work and as labor pressures from the limited availability of skilled trades and material prices increase, we expect to see increases in costs and potentially fewer bidders. These issues will likely result in an increase in costs for many of HRSD's CIP projects to be bid and constructed in the coming year.

Talent

Recruitment remains a challenge, and finding qualified candidates is a significant time commitment. The Engineering Department has had two open positions for the past six months. We are in the process of interviewing candidates for both open positions with a goal to fill these positions in the coming month. We will also be active in job fairs sponsored by HRSD and Old Dominion University later this year.

The Engineering Department is fortunate to add Ms. Melissa Josey-White as our new Compliance Manager. Melissa will be focused on assuring that HRSD is meeting our obligations as part of both federal and state requirements associated with the various grants and loans needed for our Capital Improvement Program. In recent years, we have benefitted from using these federal and state programs, but there are many complex labor and material purchasing requirements that must be followed. Melissa will help us stay in compliance with these requirements and be a resource to others as we apply for future grants and loans.

Community Engagement

The SWIFT Program was on display as we conducted the fifth annual HRSD SWIFT Industry Day. This in-person event was held in Newport News on January 25 with a large and enthusiastic turnout. The event was facilitated by HRSD's SWIFT consultant, AECOM. The event included an Opening Session discussing the SWIFT Program and HRSD procurement procedures. Breakout areas were available to attendees in which specific SWIFT projects were reviewed. Each of HRSD's Project Teaming Partners was given an opportunity to discuss their specific project and the various vendor, supplier and specialty subcontractor needs. The following metrics reflect the turnout of the event:

Total Registered	328 attendees
Total Attended	293 (90% of those registered)
Firms Represented	138 firms
On-Site Registration	39 individuals
First-Time Attendees	166 individuals
SWaM Ribbons Used	50 attendees
Mentor Protégé Forms	5 responses
Cookies Distributed	225 cookies

One of the goals of the SWIFT Program is to engage Small, Woman-owned, and Minority-owned (SWaM) Businesses. One challenge in this effort is to find experienced firms to assist in this work. Due to the complexities of competing and delivering complex CIP projects, many of the SWaM firms struggle to engage successfully. Through HRSD's Mentor Protégé Program, we will be creating

relationships between our larger and more experienced firms with SWaM firms interested in learning about ways to more successfully compete and deliver in this very competitive environment.

The SWIFT Industry Day was used as a springboard to begin this effort. We had five SWaM firms signup to begin this process with one of our larger firms. We are eager to begin this effort and see the results of these new relationships.

Innovation

Engineering Department staff met with representatives from the City of Newport News to review their use of aerial drones. Several applications were discussed including remote site inspections and surveys. HRSD will consider the benefits of this technology in the coming months and address issues such as licensure, insurance and privacy concerns.

Condition assessment of buried pipelines remains a focus here at HRSD. Since many of the existing pipelines and sewer force mains cannot be taken out of service for inspection, new technologies are being explored. We recently conducted a test of a technology that involves the insertion of a neutrally buoyant ball into the pipe. This ball is directed along the pipe to a known collection point. Data is stored within the ball for later analysis. This test had mixed results, and only one of the two balls could be retrieved. Critical to the success of this inspection effort is for the pipe to be free and clear of any debris. We will continue to learn from these tests to better assess the condition of existing pipelines.

Bruce W. Husselbee

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

TO: General Manager

FROM: Director of Finance

SUBJECT: Monthly Report for January 2024

DATE: February 14, 2024

Financial Stewardship

The sixth modification to the Consent Decree was lodged on January 19. The modification is available to view on the HRSD website.

The accompanying Interim Financial Report indicates that most revenue and expense accounts are generally in line with budgetary expectations.

Accounts Receivable over 30 days past due dropped slightly in January 2024, typical of the time of year following the holidays, primarily between 31-90 days. Since the Low-Income Household Water Assistance Program (LIHWAP) ended in December, staff anticipate increases in the months to come.

Field staff delivered 4,791 warning door tags and disconnected water service to 1,155 accounts during January 2024.

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

A. Interim Financial Report

1. Operating Budget for the Period Ended January 31, 2024.

	Amended Budget	Current YTD	Current YTD as % of Budget (58% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	$ 405,832,000	$ 244,316,727	60%	61%
Surcharge	1,600,000	836,170	52%	52%
Indirect Discharge	4,400,000	2,567,979	58%	79%
Fees	2,894,000	2,169,191	75%	69%
Municipal Assistance	800,000	760,930	95%	51%
Miscellaneous	1,295,000	1,320,134	102%	48%
Total Operating Revenue	416,821,000	251,971,131	60%	61%
Non Operating Revenues				
Facility Charge	6,095,000	4,186,890	69%	58%
Interest Income	3,000,000	8,366,101	279%	170%
Build America Bond Subsidy	1,954,000	995,531	51%	51%
Other	620,000	161,126	26%	139%
Total Non Operating Revenue	11,669,000	13,709,648	117%	75%
Total Revenues	428,490,000	265,680,779	62%	61%
Transfers from Reserves	17,120,789	9,987,127	58%	58%
Total Revenues and Transfers	$ 445,610,789	$ 275,667,906	62%	61%
Operating Expenses				
Personal Services	$ 70,450,193	$ 40,523,745	58%	61%
Fringe Benefits	28,487,963	16,105,093	57%	51%
Materials & Supplies	16,073,465	7,249,595	45%	50%
Transportation	2,003,573	931,843	47%	49%
Utilities	16,843,498	9,845,477	58%	59%
Chemical Purchases	17,688,997	8,587,598	49%	54%
Contractual Services	53,541,285	20,681,181	39%	40%
Major Repairs	13,696,912	3,822,302	28%	39%
Capital Assets	1,258,970	278,478	22%	20%
Miscellaneous Expense	3,938,563	1,792,668	46%	46%
Total Operating Expenses	223,983,419	109,817,980	49%	51%
Debt Service and Transfers				
Debt Service	76,150,000	47,919,643	63%	60%
Transfer to CIP	145,217,370	84,710,133	58%	58%
Transfer to Risk management	260,000	151,669	58%	58%
Total Debt Service and Transfers	221,627,370	132,781,445	60%	59%
Total Expenses and Transfers	$ 445,610,789	$ 242,599,425	54%	55%

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 Project (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 January 31, 2024.

HRSD - RESERVE AND CAPITAL ACTIVITY January 31, 2024

	General Reserve				Capital	
	General	CARES - ARPA	Debt Service	Risk Mgmt Reserve	Paygo	Debt Proceeds
	Unrestricted	Restricted	Restricted	Unrestricted	Unrestricted	Restricted
Beginning - July 1, 2023	**$ 203,718,301**	**$ 4,406**	**$ 33,830,226**	**$ 4,539,551**	**$ 3,115,384**	**$ -**
Current Year Sources of Funds						
Current Receipts	263,576,341					
Line of Credit						31,420,145
VRA Draws						46,731,376
WIFIA Draws						194,823,647
Transfers In				151,669	84,710,133	
Sources of Funds	263,576,341	-	-	151,669	84,710,133	272,975,168
Total Funds Available	**$ 467,294,642**	**$ 4,406**	**$ 33,830,226**	**$ 4,691,220**	**$ 87,825,517**	**$ 272,975,168**
Current Year Uses of Funds						
Cash Disbursements	163,104,342				32,375,433	272,975,168
CARES Transfer Out		4,406				
Transfers Out	84,861,802					
Uses of Funds	247,966,144	4,406	-	-	32,375,433	272,975,168
End of Period - October 31, 2023	**$ 219,328,498**	**$ -**	**$ 33,830,226**	**$ 4,691,220**	**$ 55,450,084**	**$ -**
Unrestricted Funds	**$ 279,469,802**					

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended January 31, 2024.

HRSD - PROJECT ANALYSIS						January 31, 2024
Classification/ Treatment Service Area	Appropriated Funds	Expenditures prior to 7/1/2023	Expenditures Year to Date FY2024	Total Project Expenditures	Encumbrances	Available Funds
Administration	71,284,950	25,407,455	3,475,471	28,882,926	3,936,245	38,465,779
Army Base	167,458,058	125,866,880	217,711	126,084,591	575,568	40,797,899
Atlantic	238,176,729	81,665,064	6,285,749	87,950,813	17,739,992	132,485,924
Boat Harbor	508,039,124	75,596,057	73,775,516	149,371,573	280,102,294	78,565,257
Ches-Eliz	87,134,516	34,995,850	364,859	35,360,709	1,484,877	50,288,930
Eastern Shore	63,122,892	26,927,768	11,022,486	37,950,254	6,168,474	19,004,164
James River	374,714,824	104,382,910	51,088,499	155,471,409	180,454,499	38,788,916
Middle Peninsula	98,206,116	23,493,172	4,043,090	27,536,262	6,754,807	63,915,047
Nansemond	482,462,276	83,702,138	62,598,473	146,300,611	259,774,519	76,387,146
Surry	60,391,465	41,079,533	2,482,830	43,562,363	8,828,332	8,000,770
VIP	195,460,792	34,150,127	14,523,635	48,673,762	55,367,422	91,419,608
Williamsburg	69,707,119	21,441,839	251,811	21,693,650	5,277,809	42,735,660
York River	116,602,638	21,027,494	11,922,037	32,949,531	53,913,509	29,739,598
General	1,107,820,982	201,364,418	87,215,265	288,579,683	246,994,318	572,246,981
	3,640,582,481	901,100,705	329,267,432	1,230,368,137	1,127,372,665	1,282,841,679

5. Active Capital Grants

Active Capital Grants Activities						
Grant Name	Funder	Project	CIP#	Application Submitted	Amount Requested	HRSD Award Amount
American Rescue Plan Act	VDEQ	Eastern Shore Infrastructure Improvements - Transmission Force Main Phase II (Accomac Sewer Collection System)	ES010200	11/28/2022	$ 8,367,000	$ 4,183,500
American Rescue Plan Act	VDEQ	James River Treatment Plant Advanced Nutrient Reduction Improvements	JR013400	10/7/2022	$ 50,000,000	$ 36,124,859
American Rescue Plan Act	VDEQ	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Phase II	NP013820	10/7/2022	$ 50,000,000	$ 31,693,207
FY2024 Congressionally Directed Funding Warner-Kaine	CDF FY24	Eastern Shore Wastewater Improvements	ES010100	3/9/2023	$ 9,677,112	$ -
Water Quality Improvement Fund, Conveyance	VDEQ	Chesapeake-Elizabeth Treatment Plant Conveyance	Multiple	2/7/2023	$ 100,647,746	$ -
Water Quality Improvement Fund, Conveyance	VDEQ	Eastern Shore TFM Phase 1	ES010100	5/2/2022	$ 4,900,000	$ -
Water Quality Improvement Fund, Nutrient Reduction	VDEQ	James River SWIFT - Advanced Nutrient Reduction Improvements	JR013400	3/23/2023	$ 344,741,547	$ -
					$ 568,333,405	**$ 72,001,566**

6. Debt Management Overview

HRSD - Debt Outstanding ($000's) — January 31, 2024

	Principal Dec 2023	Principal Payments	Principal Draws	Principal Jan 2024	Interest Interest Payments
Fixed Rate					
Senior	146,861	-	-	146,861	(653)
Subordinate	923,224	(48)	56,942	980,118	(2)
Variable Rate					
Subordinate	50,000	-	-	50,000	(154)
Line of Credit	100,000		-	100,000	(389)
Total	$ 1,220,085	$ (48)	$ 56,942	$ 1,276,979	$ (1,198)

HRSD- Series 2016VR Bond Analysis — February 02, 2024

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	4.71%	4.95%	0.24%
Average	1.09%	0.79%	-0.30%
Minimum	0.01%	0.01%	0.00%
As of 2/02/24	3.74%	3.45%	-0.29%

* Since October 20, 2011 HRSD has averaged 79 basis points on Variable Rate Debt

Subsidised Debt Activity

Source	Funder	Loan Amount	Current Drawn Total	% Remain	Initial Draw Date - Projected
WIFIA Tranche 1	EPA	$ 225,865,648	$ 167,696,604	26%	Ongoing
WIFIA Tranche 2	EPA	$ 476,581,587	$ 139,130,239	71%	Ongoing
WIFIA Tranche 3	EPA	$ 346,069,223	$ -	100%	July 2025
Clean Water Program 2022	DEQ	$ 100,000,000	$ 80,664,761	19%	Ongoing
Clean Water Program 2024	DEQ	$ 80,000,000	$ -	100%	March 2024

7. Financial Performance Metrics for the Period Ended January 31, 2024.

HRSD - UNRESTRICTED CASH — January 31,2024

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	**$**	**279,469,802**		**455**
Risk Management Reserve	$	(4,691,220)	(7)	448
Capital (PAYGO only)	$	(55,450,084)	(91)	357
Adjusted Days Cash on Hand	**$**	**219,328,498**		**357**

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 — January 31, 2024

Primary Source	Beginning Market Value July 1, 2023	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value January 31, 2024	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BOA Corp Disbursement Account	30,761,730	548,229,013	523,064,808	616,153	56,542,088	24.4%	N/A	0.55%
VIP Stable NAV Liquidity Pool	129,511,237	60,000,000	20,000,000	5,297,712	174,808,949	75.6%	AAAm	5.53%
Total Primary Source	**$ 160,272,967**	**$ 608,229,013**	**$ 543,064,808**	**$ 5,913,865**	**$ 231,351,037**	100.0%		

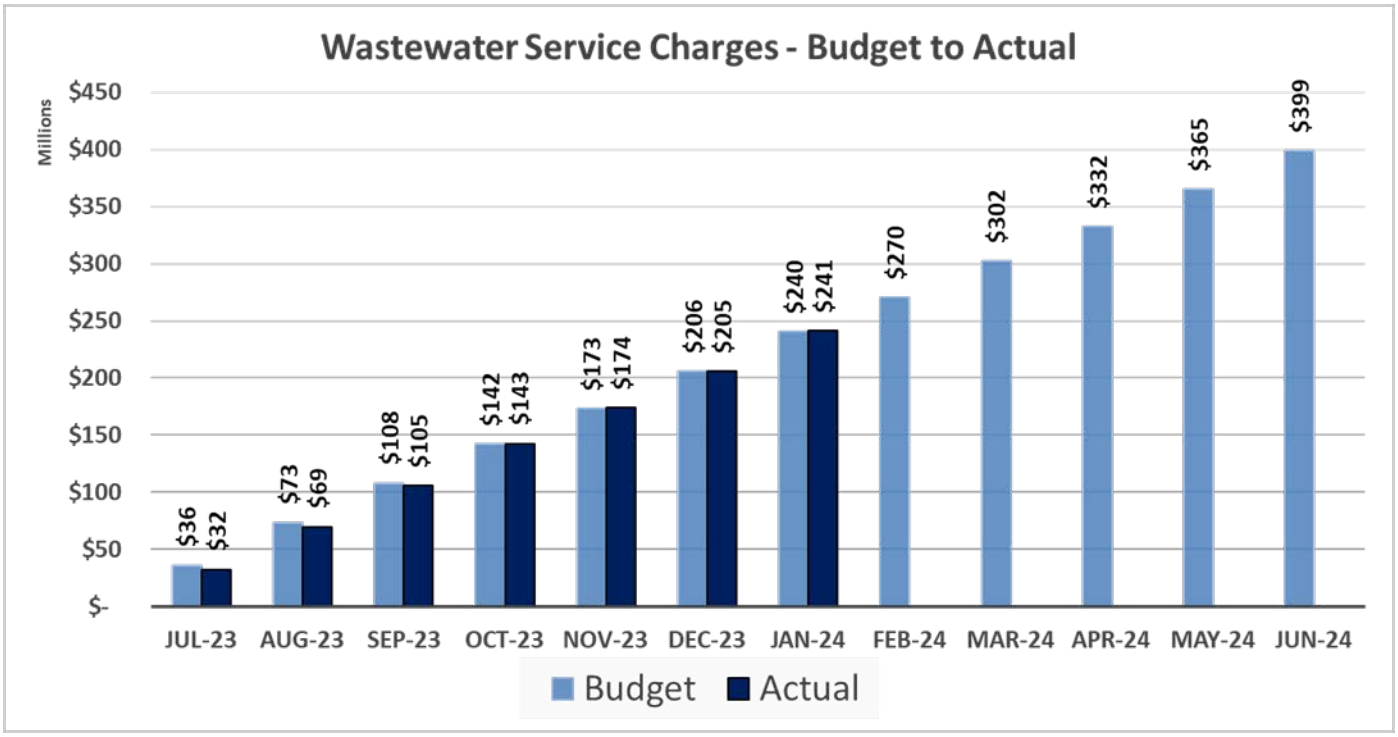
VIP Stable NAV Liquidity Pool performed 0.01% above Va Local Government Investment Pool's (the market benchmark) in the month of January 2024.

Secondary Source	Beginning Market Value July 1, 2023	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value January 31, 2024	Ending Cost	LTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	63,074,075	-	7,462	1,309,543	65,378,564	66,190,921	(812,358)	4.34%
Total Secondary Source	**$ 63,074,075**	**$ -**	**$ 7,462**	**$ 1,309,543**	**$ 65,378,564**	**$ 66,190,921**	**$ (812,358)**	

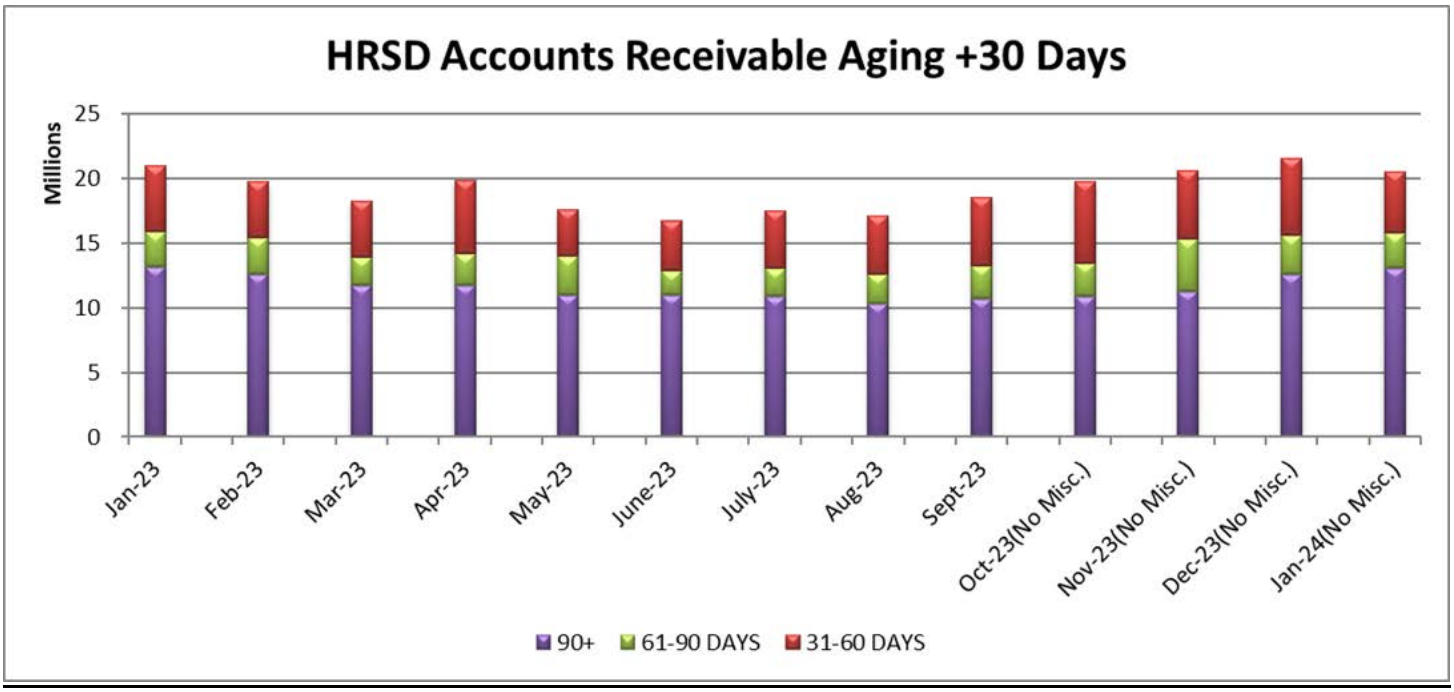
VIP 1-3 Year High Quality Bond Fund performed 0.01% below ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) in January 2024.

	Total	Fund Alloc
Total Primary Source	**$ 231,351,037**	**78.0%**
Total Secondary Source	**$ 65,378,564**	**22.0%**
TOTAL SOURCES	**$ 296,729,601**	**100.0%**

8. Summary of Billed Consumption

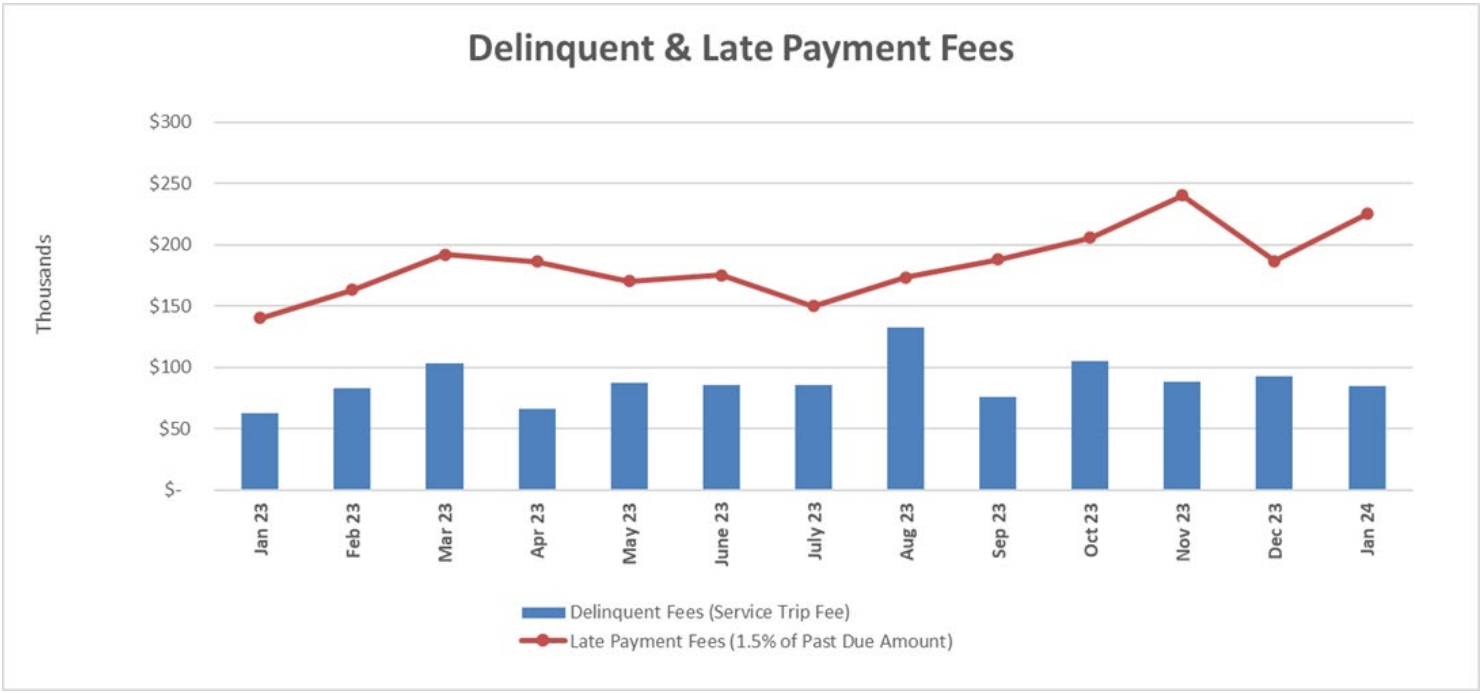


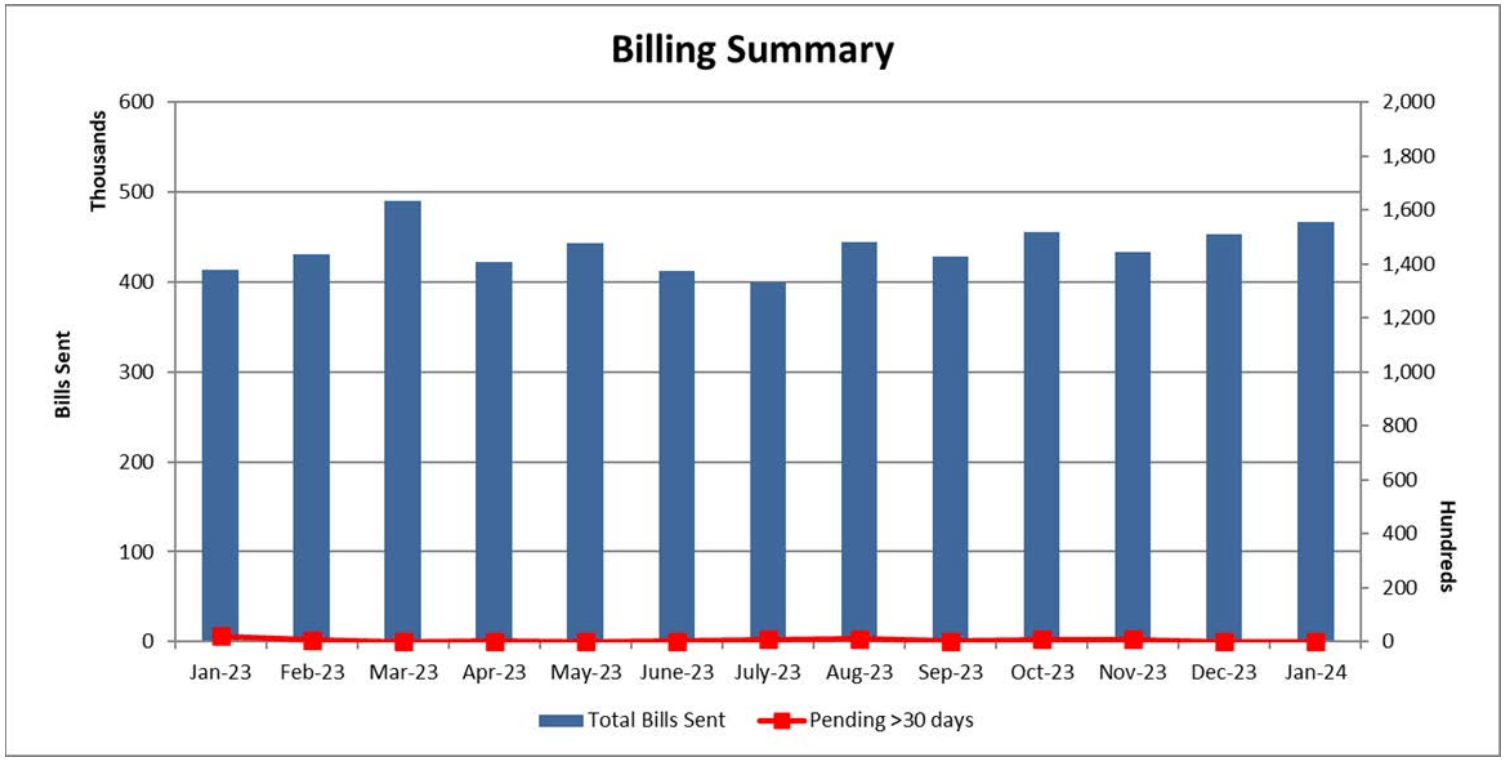
Summary of Billed Consumption (,000s ccf)							
			% Difference		% Difference		% Difference
Month	*FY2024 Cumulative Budget Estimate*	*FY2024 Cumulative Actual*	*From Budget*	*Cumulative FY2023 Actual*	*From FY2023*	*Cumulative 3 Year Average*	*From 3 Year Average*
July	4,678	4,504	-3.7%	4,682	-3.8%	4,803	-6.2%
Aug	9,644	9,432	-2.2%	9,652	-2.3%	9,543	-1.2%
Sept	14,196	13,965	-1.6%	14,208	-1.7%	14,297	-2.3%
Oct	18,663	18,854	1.0%	18,680	0.9%	18,863	0.0%
Nov	22,756	23,004	1.1%	22,777	1.0%	22,307	3.1%
Dec	27,109	27,127	0.1%	27,133	0.0%	27,430	-1.1%
Jan	31,641	31,819	0.6%	31,669	0.5%	32,004	-0.6%
Feb	35,568	-	N/A	35,601	N/A	35,952	N/A
March	39,770	-	N/A	39,807	N/A	40,351	N/A
Apr	43,694	-	N/A	43,735	N/A	44,473	N/A
May	48,027	-	N/A	48,072	N/A	48,548	N/A
June	52,500	-	N/A	52,549	N/A	53,329	N/A

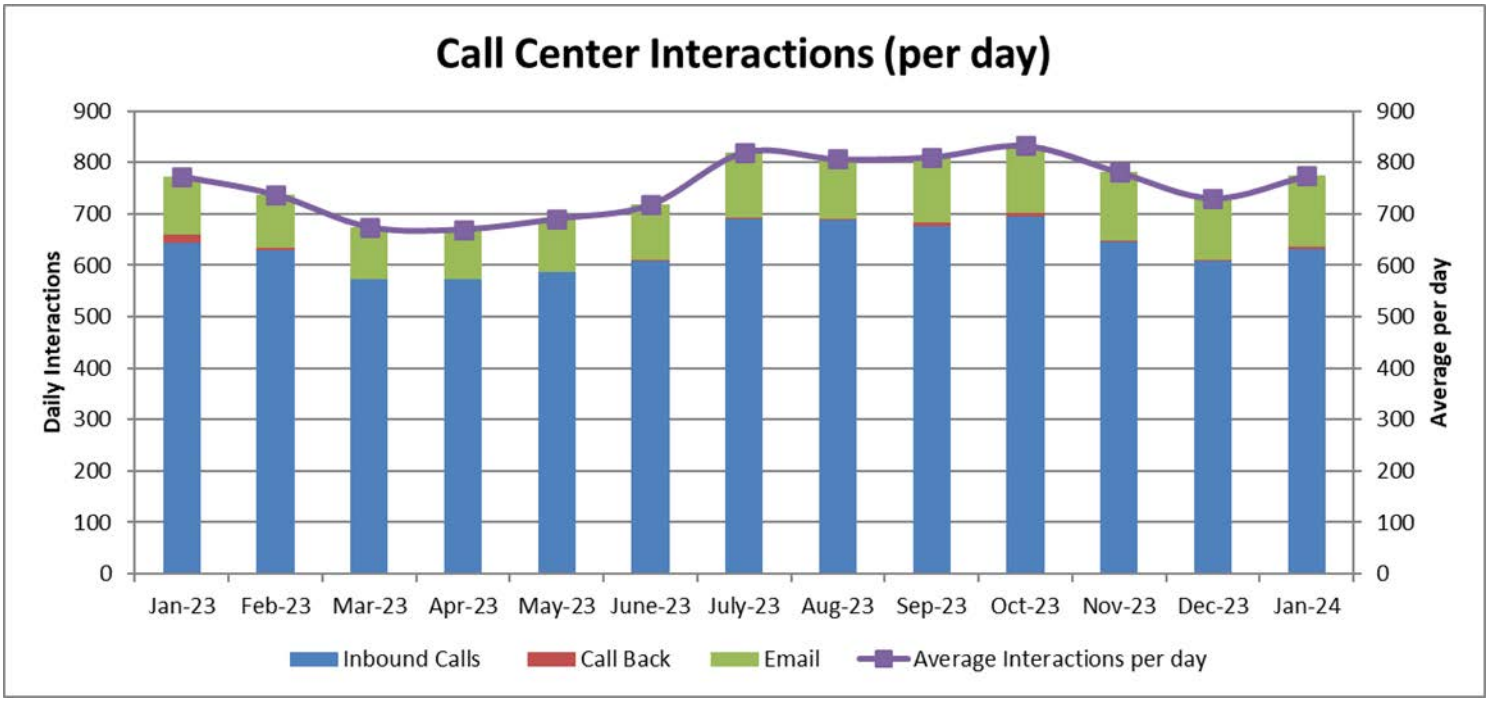


B. Customer Care Center

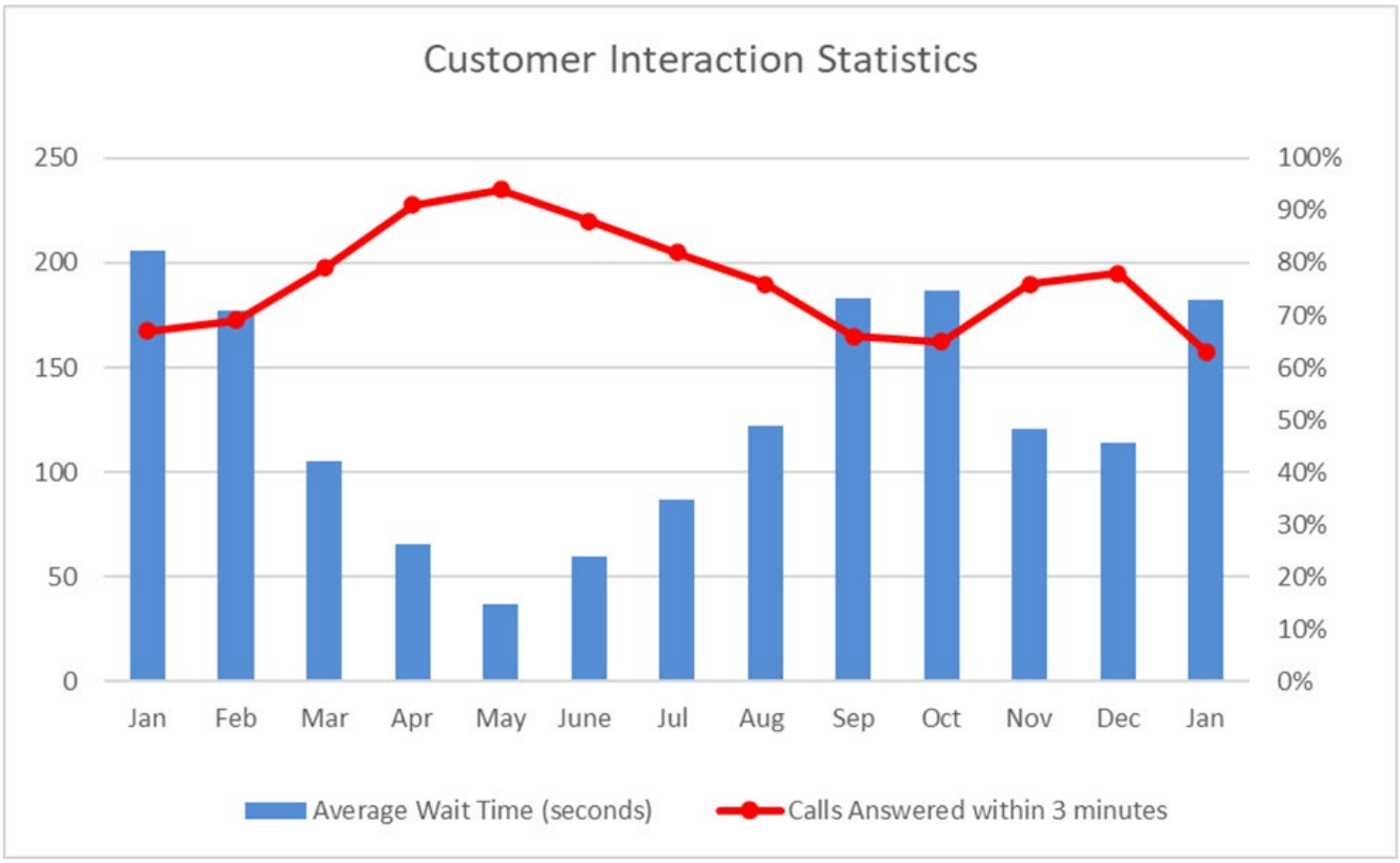
1. Accounts Receivable Overview



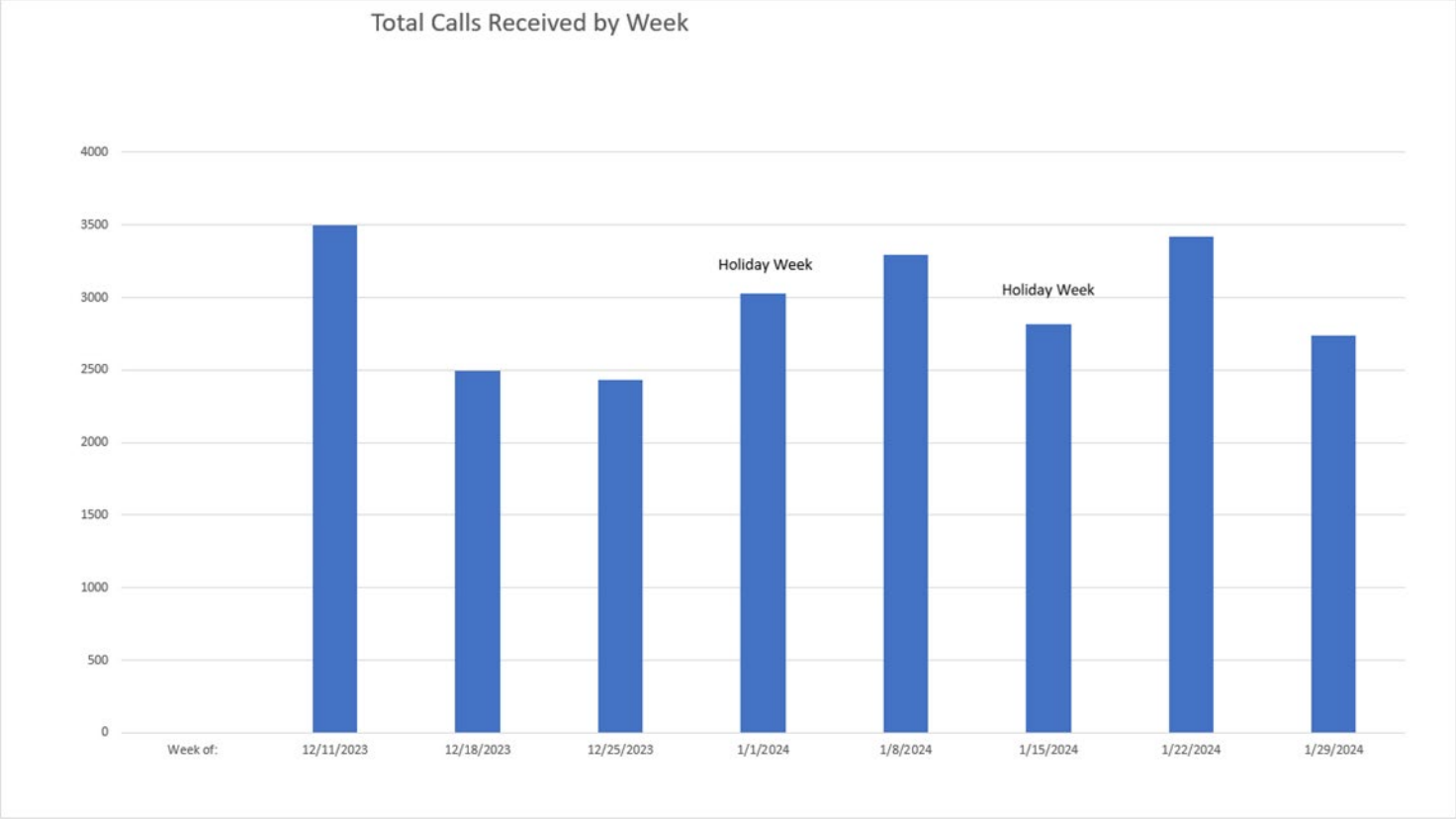

Billing Summary
Thousands
Bills Sent
Hundreds
600
500
400
300
200
100
0
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Jan-23
Feb-23
Mar-23
Apr-23
May-23
June-23
July-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Total Bills Sent
Pending >30 days


Call Center Interactions (per day)
Daily Interactions
Average per day
900
800
700
600
500
400
300
200
100
0
Jan-23
Feb-23
Mar-23
Apr-23
May-23
June-23
July-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Inbound Calls
Call Back
Email
Average Interactions per day

2. Customer Care Center Statistics



Customer Interaction Statistics	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Calls Answered within 3 minutes	67%	69%	79%	91%	94%	88%	82%	76%	66%	65%	76%	78%	63%
Average Wait Time (seconds)	206	177	105	66	37	60	87	122	183	187	121	114	182
Calls Abandoned	12%	11%	7%	5%	4%	5%	7%	8%	11%	12%	10%	9%	13%

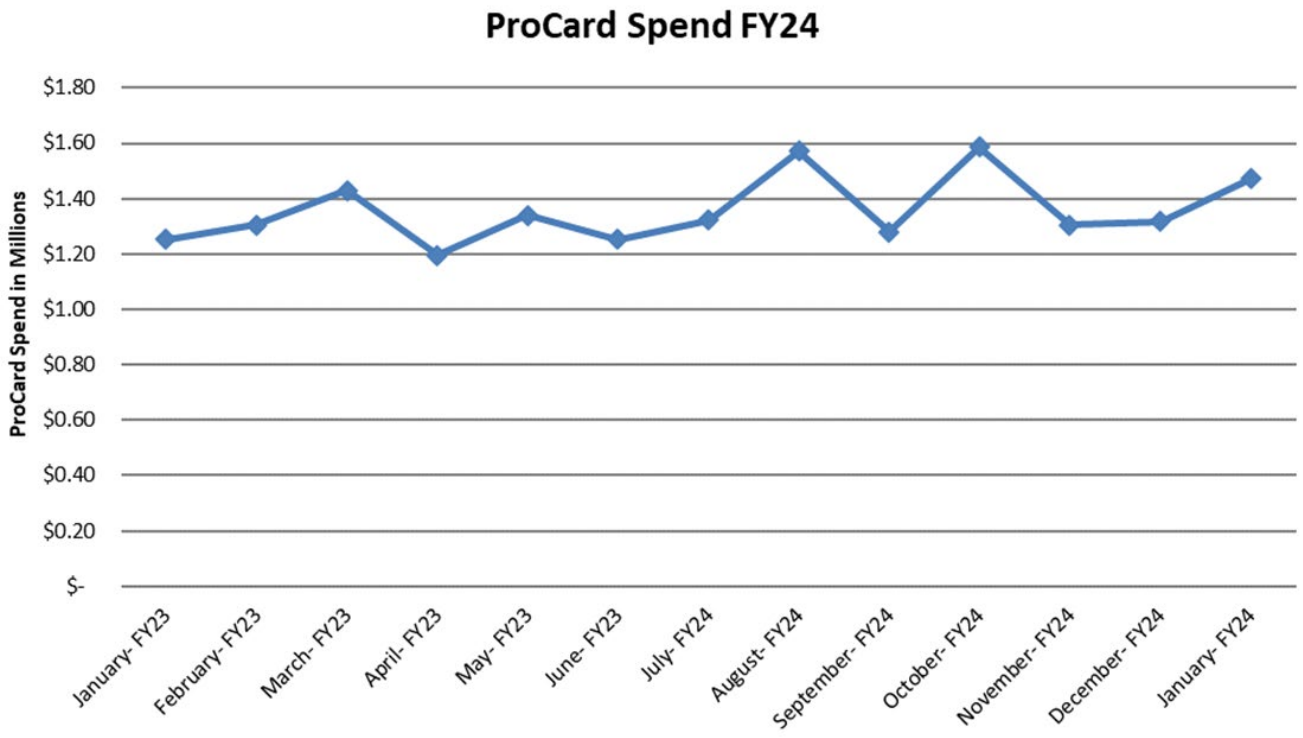


C. Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings[1]	$240,221	$601,368
Negotiated Savings[2]	$2,338	$22,071
Salvage Revenues	$4,249	$129,386
Corporate VISA Card - Estimated Rebate	$21,940	$146,828

[1] Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

[2] Negotiated savings are savings obtained during a Request for Proposal process, or if all bids received exceed the budgeted amount, or if only one bid is received.



Respectfully,

Steven G. de Mik

Steven G. de Mik
Deputy General Manager/Chief Financial Officer

Attachments: HRSD's Operating Cash Strategies and Retiree Health Trust (OPEB)

Hampton Roads Sanitation District
Qtrly Performance Report
For the Quarter Ending December 31, 2023

Total Portfolio Summary

Operating Strategies	December 31, 2023	September 30, 2023
Primary Source	$ 198,464,081	$ 213,775,515
Secondary Source	65,142,860	63,525,043
	$ 263,606,941	**$ 277,300,558**

Primary Source Summary

The Primary Source Portfolio consists of Bank of America (BOA) Corp Disbursement Account $24.46m and VaCo/VML VIP Stable NAV Liquidity Pool $174.00m. BOA Corp Disbursement Account returned 0.55% for the quarter ending December 31, 2023. VIP LIQ Pool Fund 30 Day Avg Net Yield was 5.56% as of December 31, 2023. VIP Stable NAV Liquidity Pool performed 0.01% above Va Local Government Investment Pool's (the market benchmark) in the month of December 2023. 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. VIP 1-3 Year High Quality Bond Fund's Yield to Maturity at Market was 4.35% in December, which was 0.04% less than ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) performance. 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	December 31, 2023	September 30, 2023
Investment Assets	71,255,923	65,244,211
Liquidity Assets	48,285	47,657
Combined Assets	**$ 71,304,208**	**$ 65,291,868**

Retiree Health Plan Trust Summary

The Retiree Health Plan Trust portfolio returned 9.21% (investment assets) for the quarter ended December 31, 2023, slightly below the 9.49% return of the Blended Benchmark.

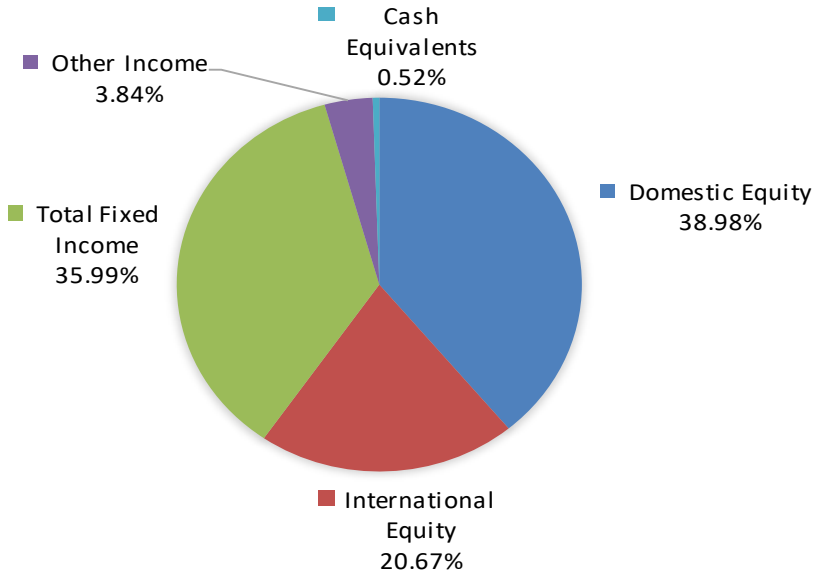
Total Portfolio Value		
	September 30, 2023	December 31, 2023
Investment Assets	$ 65,244,211	$ 71,255,923
Combined Assets	$ 65,291,868	$ 71,304,208

Portfolio Recap & Strategy

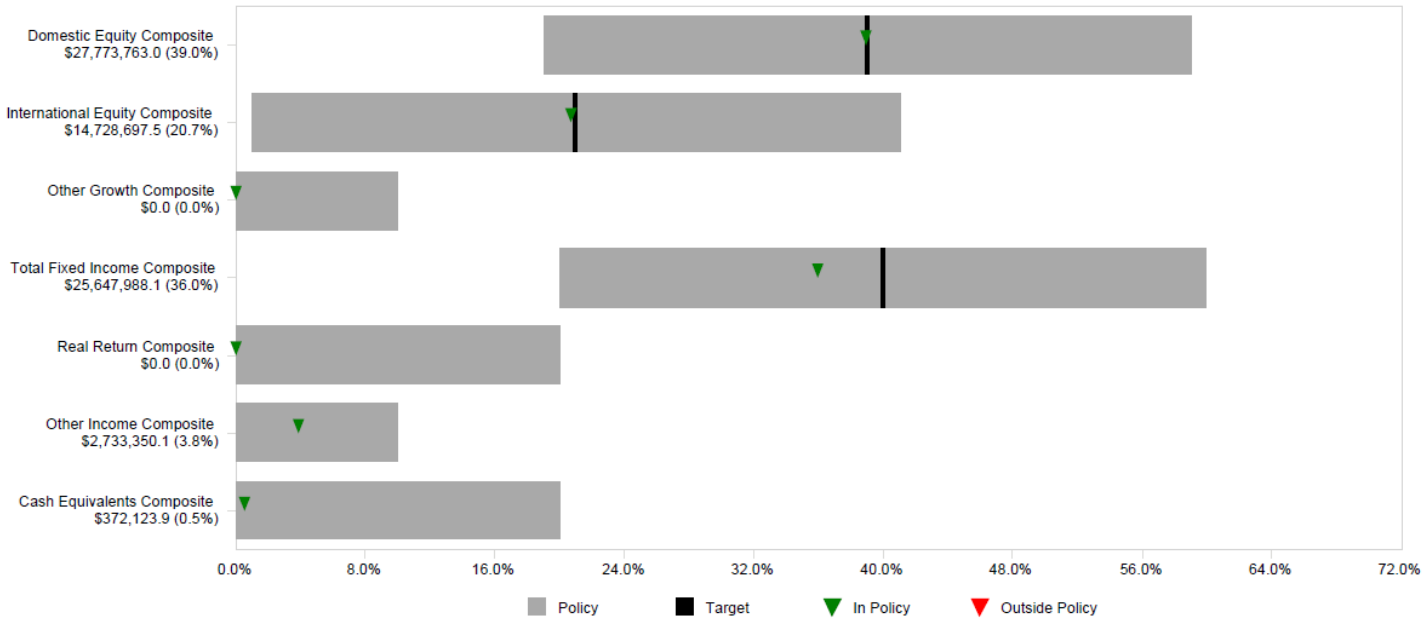
- The Retiree Health Plan Trust portfolio returned 9.21% (investment assets) for the quarter ended December 31, 2023.
- The US Federal Reserve Bank (the Fed) paused on additional rate hikes during the fourth quarter. As evidenced by capital market performance during the quarter, the pause was welcomed by participants. The Fed continued to prioritize fighting higher inflation over full employment. In its press release for the December meeting, the Fed said that in determining the extent of any additional policy firming that may be appropriate to return inflation to 2 percent over time, the Committee will take into account the cumulative tightening of monetary policy, the lags with which monetary policy affects economic activity and inflation, and economic and financial developments. They also indicated the Committee will continue to reduce the holdings on its balance sheet.
- The Fed's prolonged pause in its rate-hiking cycle and the insertion of the word "any" in its December press release gave the market hope that the Fed may be ready to pivot in its stance and begin reducing rates to a less restrictive level in 2024.
- Muted growth in the US labor market continued in December, as nonfarm payrolls increased by 216,000, and unemployment held steady at 3.7%. Unemployment was little changed over the last year, closing 2022 at a level of 3.5%.
- While economic data signaled that inflation continued to moderate, the Fed maintained its conviction in fighting inflation by keeping the fed funds rate unchanged during the quarter. Equity and fixed-income markets rallied on the hope that this could signal a pivot in the Fed's policy stance in 2024.US equities moved broadly higher during the fourth quarter, led by a broad recovery across multiple sectors and expectations of a more favorable interest rate environment. The S&P 500 Index rose 11.7% for the quarter, its best-performing period since the first quarter of 2021. Small-cap value (15.3%) was the best- performing segment of the domestic equity market during the quarter, while large- cap value (9.5%), though solid, was the weakest relative performer for the period.
- International stocks experienced robust growth during the year, helped by a weakening US Dollar (USD). USD performance outpaced local currency (LCL) performance in most regions for the quarter, though both benchmarks were positive as the USD traded lower during the period.
- Central banks remained vigilant in their stance against inflation going into the new year. Signs of cooling price pressures have shown up in most regions around the world, and many central banks have chosen to pause on their rate hiking cycle, much in line with the US Fed's stance.
- Geopolitical risk around the world continues to be a headwind for global growth and economic stability. In addition to the conflict in Ukraine, a proxy war arose in the Middle East in October between Israel and Palestine, which could drag on performance in the region in quarters to come.
- Short-term interest rates remained consistent across most developed markets as central banks continued their tight policy stance with an eye towards potential rate cuts in the indeterminate future.
- 2023 closed with both US and international equity markets affirming their recovery from the disappointing performance of 2022. Growth sectors significantly outpace value sectors during the year.

	September 2023		December 2023	
Security Type	**Market Value**	**Portfolio %**	**Market Value**	**Portfolio %**
Domestic Equity	25,944,518	39.7%	27,773,764	39.0%
International Equity	12,960,858	19.9%	14,728,697	20.7%
Total Fixed Income	23,341,737	35.7%	25,647,988	36.0%
Other Income	2,794,706	4.3%	2,733,350	3.8%
Cash Equivalents	202,392	0.3%	372,124	0.5%
Total Fund - Liquidity Assets	47,657	0.1%	48,285	0.1%
Totals	**65,291,868**	**100%**	**71,304,208**	**100%**

PORTFOLIO COMPOSITION
(AS OF 12/31/2023)

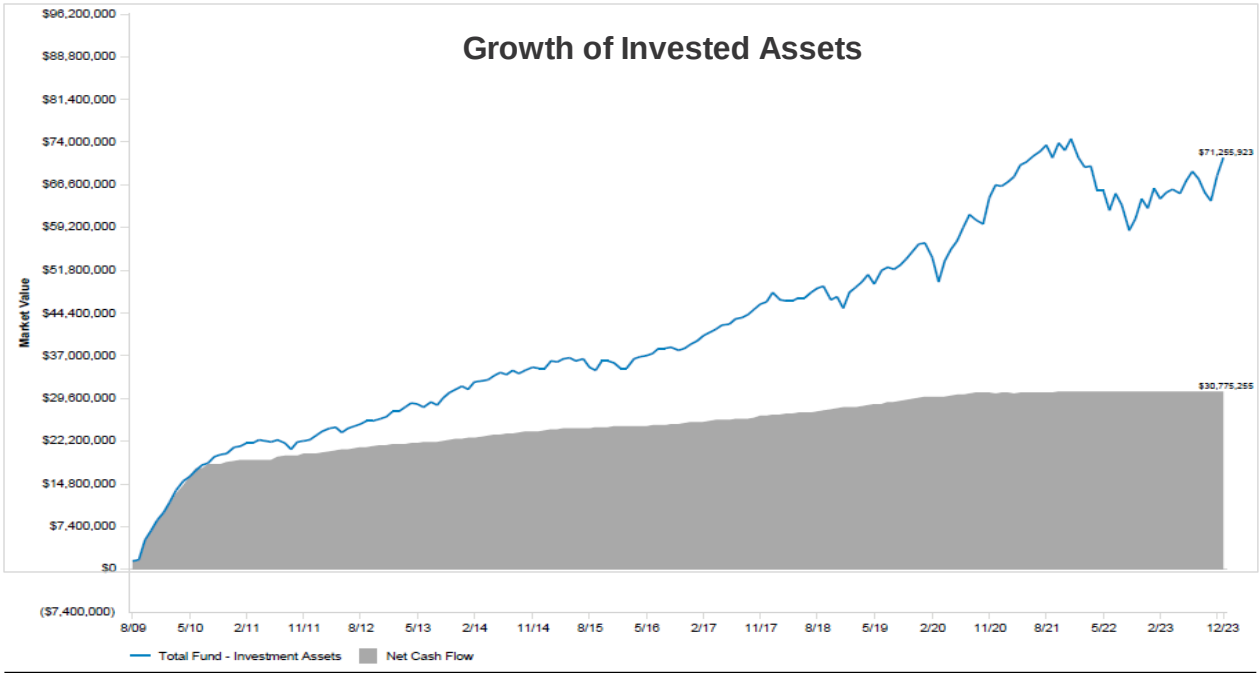


Executive Summary



Index	Allocation		Performance (%)							
	Market Value	%	QTR	Year To Date	Trailing 1 YR	Trailing 3 YR	Trailing 5 YR	Trailing 7 YR	Trailing 10 YR	Inception Date
Domestic Equity	**$27,773,764**	**39.0**	**10.9**							
Vanguard Total Stock Market ETF (VTI)	$26,353,957	37.0	12.15	26.01	26.01	8.44	15.07	12.77	11.44	Apr-2020
Jensen Quality Growth Fund (JENYX)	$1,419,807	2.0	9.69	16.99	16.99	8.52	14.44	13.91	-	Apr-2019
International Equity	**$14,728,697**	**20.7**	**10.5**							
Vanguard Total International Stock ETF (VXUS)	$8,049,253	11.3	9.90	15.49	15.49	1.79	7.37	6.54	4.11	Apr-2020
J. O. Hambro International Select (JOHIX)	$1,014,668	1.4	10.61	18.12	18.12	-4.45	6.14	6.15	4.91	Jan-2016
Harding Loevner International Equity (HLMIX)	$989,927	1.4	12.14	15.06	15.06	-0.14	8.46	7.67	5.51	Jul-2020
Goldman Sachs GQG Ptnrs Intl Opportunities (GSIMX)	$1,094,288	1.5	12.53	22.15	22.15	6.90	12.54	12.17	-	Sep-2023
Vanguard FTSE Developed Markets ETF (VEA)	$1,502,719	2.1	10.98	17.56	17.56	3.53	8.36	7.09	4.54	Mar-2022
Vanguard FTSE All-World ex-US Small-Cap ETF (VSS)	$699,382	1.0	10.29	15.10	15.10	0.76	6.87	5.77	0.00	Sep-2023
Hartford Schroders Emerging Markets (SEMTX)	$656,024	0.9	8.24	8.98	8.98	-6.91	4.09	5.53	0.00	Mar-2018
iShares MSCI Emerging Markets ex China ETF (EMXC)	$722,436	1.0	12.49	18.87	18.87	1.39	6.34	-	0.00	Sep-2023
Fixed Income	**$25,647,988**	**36.0**	**7.0**							
Baird Core Plus (BCOIX)	$6,663,899	9.3	7.12	6.89	6.89	-2.67	2.01	2.01	0.00	May-2014
DoubleLine Core Fixed Income (DBLFX)	$2,886,763	4.0	6.50	6.43	6.43	-2.55	1.08	1.43	0.00	Sep-2017
PGIM Total Return Bond (PTRQX)	$5,415,104	7.6	7.16	7.78	7.78	-3.20	1.73	2.09	0.00	Sep-2017
Voya Intermediate Bond (IIBZX)	$2,898,133	4.1	7.12	7.07	7.07	-3.10	1.62	1.80	0.00	Jan-2020
iShares Core US Aggregate Bond ETF (AGG)	$5,376,770	7.5	6.68	5.58	5.58	-3.36	1.05	1.24	0.00	Feb-2023
iShares Intermediate-Term Corporate Bond ETF (IGIB)	$1,260,324	1.8	8.38	9.46	9.46	-2.56	3.01	2.57	0.00	Oct-2019
BBH Limited Duration (BBBIX)	$208	0.0	2.80	7.70	7.70	2.59	3.02	2.81	0.00	Feb-2023
MainStay MacKay High Yield Corp Bond Fund (MHYSX)	$1,146,788	1.6	5.82	11.97	11.97	2.83	5.29	4.53	0.00	Jun-2021
Other Income	**$2,733,350**	**3.8**	**-2.2**							
Boyd Watterson GSA Fund	$2,733,350	3.8	-2.20	-3.13	-3.13	3.05	-	0.00	0.00	Jul-2019
Cash Equivalent	**$372,124**	**0.5**	**1.3**	0.00	0.00	0.00	0.00	0.00	0.00	
First American Government Obligation - Z-(FGZXX)	$372,124	0.5	1.33	4.96	4.96	2.14	1.77	1.62	0.00	Jan-2004
Total Fund - Liquidity Assets	**$48,285**	**0.1**	**1.3**	0.00	0.00	0.00	0.00	0.00	0.00	
First American Government Obligation - Z (FGZXX)	$48,285	0.0	1.32 (33)	4.96 (39)	4.96 (39)	2.14 (29)	1.77 (27)	1.62 (26)	0.00	Jan-2004
Total Fund - Investment Assets	**$71,304,208**	**100.0**	-0.03	0.04	0.11	0.02	0.05	0.06	0.07	**9/1/2009**

Schedule of Investable Assets



TO: General Manager

FROM: Director Services Information Technology

SUBJECT: Information Technology Department Report for January 2024

DATE: February 13, 2024

Innovation

The upcoming Surface Pro rollout is quickly approaching. End user testing should be complete this month, with limited distribution of Surface Pros to ITD staff for final image tuning the first week of March. Once staff have evaluated performance and secure interoperability, imaging and distribution of the Surface Pros will occur en masse.

The IT Help Desk processed 436 work orders and requests for assistance in January, ensuring availability of computing resources to those working locally and remotely.

Oracle database instances were upgraded for numerous test, development, and production platforms.

User acceptance testing of the new call center platform revealed a couple of issues which require additional correction. Staff are providing remediation support to ensure minimal delays in final acceptance and deployment.

Numerous cybersecurity enhancements are being made within the operational technology network which provide advanced monitoring of all network activity for anomalies. Through applied artificial intelligence and machine learning algorithms, normal activity is baselined, and deviations identified.

Staff continued refinement of budgetary needs for the upcoming fiscal year.

Community Engagement

Staff continues their work with a cross-departmental team and third-party vendors in developing a Customer Engagement Portal. Several workshops were conducted to identify and refine requirements, ensuring the end product meets expectations.

Respectfully,

Don Corrado

TO: General Manager

FROM: Director of Operations

SUBJECT: Operations Monthly Report for January 2024

DATE: February 14, 2024

Environmental Responsibility

Treatment and Interceptor System Reportable Items:

There were multiple events reported this month. Additional details are available in the Air and Effluent Summary in the Water Quality (WQ) monthly report.

Internal Air and Odor Compliance:

1. Staff addressed six odor complaints. Additional details are available in the Air and Effluent Summary in the WQ monthly report.

2. There was one MACT 129 deviation at Virginia Initiative Plant (VIP) on January 26 for use of the incinerator bypass stack for 20 minutes due to a bad signal on the induced draft fan control loop, which was subsequently resolved.

3. There were two reportable events at Army Base Treatment Plant (ABTP) for shutdown of Odor Control System B. The first was on January 4 resulting from broken belts on the induced draft fan which were subsequently replaced. The second shutdown was on January 15 which resulted from a bearing associated with the fan that was also replaced.

4. There was one MACT 129 deviation at ABTP on January 6 due to an operator mishap. Multiple deviations were documented due to failure of the Total Hydrocarbon (THC) continuous emissions monitoring (CEM) system to record two valid readings per hour starting on December 29 and lasting until January 22. Electrical and Instrumentation (E&I) staff were able to repair the analyzer and successfully put it back online.

5. Boat Harbor Treatment Plant (BHTP) had two reportable events for the odor control system. On January 24 and 25 the odor control system needed to be shut down for electrical work to be completed by outside contractors.

6. BHTP received one MACT 129 deviation during a wet weather event on January 9.The plant lost power which led to the use of the emergency bypass stack.

7. Six THC reportable events occurred at BHTP. On January 4, the THC monitor failed calibration. The unit was removed and a spare unit was installed. That spare unit would not reach temperature and was removed, and our original one reinstalled after it was repaired. The unit failed calibration again on January 22, and staff were able to calibrate it. On January 24, the screen failed and needed to be replaced. After a series of unfortunate events, the unit is currently running as it should.

8. The Williamsburg Treatment Plant (WBTP) had 21 incinerator deviations. One was a use of the emergency bypass stack due to high vibration tripping out the induced draft fan. Twenty were a

failure of the THC CEM system to record two valid readings per an hour due to calibration issues. A FY 2025 solids handling capital improvement project is being submitted which includes replacing the THC CEM monitoring equipment with an updated and more reliable system. There were also five odor scrubber exhaust exceptions of effluent odor scrubber exhausts over 50 parts per million (ppm). Four were a result of chemical feed being too low for the level of hydrogen sulfide gas entering the odor scrubber. One was caused by issues with the odor scrubber recirculation pump.

Air Compliance Summary:

The THC monthly averages (not to exceed 100 ppm) were met by all Multiple Hearth Incineration (MHI) plants: ABTP, BHTP, VIP, and WTP, with a THC continuous emissions monitoring valid data captured of greater than 70%.

Additional Topics for Compliance:

1. Staff managed the conveyance and treatment of over 154 million gallons (MG) of wastewater this month.

2. On January 9, ATP experienced a high flow event which saw hourly flows peak as high as 109 MGD. This high flow caused a high influent channel reading resulting in the influent bypass screen opening. This allowed large amounts of rags and grit to enter the plant process tanks resulting in one grit train and three primary clarifiers becoming overwhelmed, which resulted in needed repairs to all four tanks. Staff repaired all four tanks and placed them back in operation.

3. Various construction activities are in progress on the Advanced Nutrient Removal Improvement (ANRI) and SWIFT projects at JRTP.

4. Eastern Shore (Onancock Plant and Collection System) received a Department of Environmental Quality Inspection on January 18. No significant findings awaiting the issuance of the final report.

5. On January 14, the #2 secondary clarifier at West Point Treatment Plant (WPTP) overflowed due to a control system power loss. The overflow was under control within a few minutes after being discovered. Approximate overflow was 55,000 gallons of Secondary Clarifier Effluent.

6. On January 9, the WPTP rain gauge measured 2.0" of rain with 1.3" occurring in under two hours. As a result, on January 10, a sewer manhole upstream of the treatment plant overflowed.

7. On January 9, the King William Treatment Plant (KWTP) rain gauge measured 2.4" of rain with 1.7" occurring in under four hours. As a result, a sewer manhole upstream of the treatment plant overflowed.

8. On January 9, over 1.6 inches of rain was recorded at the Surry Town Plant Pump Station rain gauge between noon and midnight. This caused a sewer overflow from the Dendron PS1.

9. E&I staff worked with Allen Bradley, the Variable Frequency Drive (VFD) manufacturer, to complete warranty repairs at Atlantic Pressure Reducing Station (PRS). All four VFD controllers failed due to manufacturing defects associated with faulty soldered connections on the modular harmonic filter. All equipment was functionally tested and returned to full service.

10. E&I staff successfully completed cutover testing for the new Ovation Supervisory Control and Data Acquisition (SCADA) system at Hanover and Acquinton Church Pump Stations (PSs). These sites are now active on the new Ovation SCADA systems.

Miss Utility:

South Shore Interceptors had 12 Miss Utility no-shows reported for January; five were on January 9, one on January 10, one on January 11, and five on January 22. While all tickets were addressed shortly after the deadline, McKim and Creed, the new utility locating company, had significant operational challenges causing the no-shows. They noted that they received an inordinate amount of marking requests in comparison to past similar spans of time, a field locator dedicated to this effort left the company, and they also experienced weather delays.

HRSD issued a “Cure Letter” to address the issues and inquire about corrective action. McKim and Creed has hired two more experienced field locators, augmented their local staff with staff in the region for heavy ticket loads, and revised their work week to accommodate for weather issues and heavy ticket loads. SS Interceptor Operations and Procurement will be meeting with McKim and Creed bi-weekly until the issues are resolved.

Financial Stewardship

1. On January 2, SS Interceptor Operations provided Vactor and Vac-Con support to clean the incinerator furnace at VIP. Staff was able to remove three dump truck loads (approximately 29 cubic yards) of material from the furnace in four days. The same effort last year took a contractor a month to complete and cost HRSD approximately $60,000.

2. The Treatment Projects Team continues to provide high quality projects with significant cost savings to HRSD:

    a. West Point PS #2 rehabilitation was completed. Staff obtained contractor pricing on a previous similar effort and based on the burdened labor booked versus contracted labor, an estimated $150,000 in savings was achieved as a result.

    b. The Non-Potable Water System for the Eastern Shore is now online and operational. This system will save over $100,000 per year in potable water expenses.

    c. WPTP Pond cleaning was completed for a savings of approximately $200,000. This project will assist with equalization of the treatment plant.

3. Staff are in the process of issuing a Request for Proposal for the ATP to either upgrade the Combined Heat and Power (CHP) system with heat recovery for steam generation or upgrade the biogas to Renewal Natural Gas (RNG) for natural gas pipeline injections. In addition, an RFP is being written for the NTP to upgrade the CHP system with heat recovery for steam generation. Both efforts will result in cost savings to HRSD.

4. Staff are developing a marketing RFP for biosolids at ATP to identify reliable and diversified end uses for the new Class A biosolids.

5. Wastewater License Exam preparation class: a pilot study is being conducted with Water Otter, a training firm, to provide an eight-week preparation class that is geared for the class 1 and 2 license exams. It is an online class for one hour per week. This will provide additional training material that will help staff pass the national license exam.

Talent

1. NS Interceptors welcomed Mr. Jame Michael Dianna as an interceptor assistant. Michael transferred from Small Communities Division (SCD) to NS.

2. SS Interceptor Operations welcomed Mr. Chris Branch as an Interceptor Technician and promoted Wesley Tallon from Interceptor Assistant to Interceptor Technician.

3. Mark Ballew, Lead Operator of Maintenance at VIP officially transitioned to his new role as Condition Assessment Superintendent. Mark is a huge asset and will be missed at VIP. Interviews to fill Mark's role will be held in February.

4. The Atlantic, Boat Harbor, Nansemond TP (ABN) team selected two new Treatment Process Engineers. Holly Anne Matel and Megan Bachmann were selected to fill these vacancies.

5. SCD welcomed Mr. Cameron Kellam as a System Operator on the Middle Peninsula.

Community Engagement

1. Army Base Treatment Plant staff continued participation in the Norfolk Coastal Storm Risk Management project by completing a stage one survey developed by Moffatt and Nichol to assist in understanding the plant's major risks and potential concept solutions.

2. On January 10, Christel Dyer, Eddie Abisaab, and Leila Rice attended the Ocean Lakes Neighborhood Annual Board Meeting and provided a presentation about the ongoing efforts related to the Reliability and Odor Control Improvements (ROCI) Program for the ATP.

3. Christel Dyer and the Communications staff hosted the quarterly ATP Roundtable Committee meeting on January 16. Topics included planning for the May 18 HRSD and Lynnhaven River NOW Outreach Event, odor control project updates, and the upcoming hauling season.

4. ATP leadership and other HRSD staff conducted the monthly Earth Action Day planning meeting with Ocean Lakes High School.

5. A tour of York River Treatment Plant w(YRTP) as conducted for staff from the fire station adjacent to the plant. With many new firefighters, a tour was requested to get them familiar with what is on the treatment plant site. There were fifteen firefighters on the tour which emphasized the methanol, chemical, and fire suppression systems. Fire extinguishers, emergency response, and maintenance of critical systems were also items of interest. The fifteen firefighters represented only half the personnel assigned to the station. A second tour will be conducted in the future for the remaining firefighters.

6. On January 11, Chris Stephan attended the Virginia Living Museum's External Relations and Fundraising Committee meeting.

Innovation

1. A biological process pilot study is being conducted to determine how to better utilize the Digested Sludge Storage Tank (DSST) at the ATP under the ROCI program. The intent of this pilot is to

determine whether aeration, mixing, and/or chemical addition to digested liquid biosolids held in the DSST could have desirable effects on downstream dewatering polymer demand, dewaterability, and biosolids aesthetics (e.g., curability and odors) and help to mitigate nuisance scaling and precipitation of phosphorus minerals in the sludge conveyance and dewatering systems. Preliminary results show that sufficient mixing and aeration without chemical addition can reduce soluble phosphate by 40-50% (reducing potential for scaling and potentially improving polymer use). The next stage of testing will include the application of magnesium and calcium-based chemicals (chemically similar to the Nansemond Struvite Recovery Facility) to further decrease soluble phosphate concentrations and improve biosolids cake quality.

2. The SCADA program continues to progress as additional sites were brought online and global changes completed. Work is currently underway for the Godwin Advanced Prime Guard program interface to be updated and incorporated into the Emerson Top-End system.

3. HRSD executed an agreement with Aqua-Aerobic Systems Inc., to pilot Cloth Media Filtration as a potential tertiary treatment technology to comply with future 2032 phosphorus limits. The pilot will be conducted during summer, fall, and winter of 2024-2025 in conjunction with the study being completed by HDR.

4. The total volume of SWIFT recharge into the Potomac aquifer for the month was 9.05 million gallons (MG) (31.5% Recharge Time based on 650gpm).

5. A bead-type media was tested for retaining anammox bacteria in the deammonification system tank at YRTP. Unlike honeycomb type media used at JRTP, the bead media is designed to settle, allowing anammox to be retained during the settling phase of the deammonification process. Unfortunately, not all the bead media settled during testing, so the media was removed, and we are working with the supplier to possibly test a different media.

Respectfully submitted,

Eddie M. Abisaab, PE, PMP, ENV SP
Director of Operations

Attachment: MOM Reporting

MOM Reporting Numbers

MOM #	Measure Name	Measure Target	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
2.7	# of PS Annual PMs Performed (NS)	37	3	3	3	4	3	3	4					
2.7	# of PS Annual PMs Performed (SS)	53	4	0	7	5	7	3	5					
2.7	# of Backup Generator PMs Performed	4.6	12	7	14	14	10	4	26					
2.8	# of FM Air Release Valve PMs Performed (NS)	234	234	199	296	241	109	116	210					
2.8	# of FM Air Release Valve PMs Performed (SS)	1,550	154	174	59	569	71	148	141					
2.9	# of Linear Feet of Gravity Clean (NS)	2,417	2,808	2,762	3,791	4,969	5,741	4,074	3,429					
2.9	# of Linear Feet of Gravity Clean (SS)	2,417	5,994	5,637	7,169	1,610	0	0	1,693					
2.9	# of Linear Feet of Gravity CCTV Inspection	3,300	0	0	0	0	0	0	0					

TO: General Manager

FROM: Director of Talent Management

SUBJECT: Talent Management Monthly Report for January 2024

DATE: February 14, 2024

Talent

Staff retention and recruitment remain significant priorities for the Talent Management (TM) Department. Talent Management has one position currently in the background process for a Workforce Development Specialist. We are fully staffed in all divisions, outside of this new position.

Human Resources (HR) On January 1, 2024, HRSD began our policy with AETNA for our Medicare retirees. There have been a few issues to resolve; however, HR staff continue to work to ensure all retirees on the plan understand the new plan and how to utilize the benefits. Additionally, HR staff and representatives from all departments continue working on the large compensation project with Mercer. The final two phases of the project are focused on the pay structure (paytable), job slotting (placement of jobs into the recommended structure) and a new job description template. Finally, HR staff continue to meet with the new benefit carriers weekly to work on the transition and implementation of our benefits for an effective date of July 1, 2024.

Participation in HRSD's Wellness Program continues to grow. The Wellness Specialist conducted onsite visits, virtual lunch and learns, emailed informational flyers, and facilitated virtual guided meditation sessions.

Learning and Development (L&D): L&D developed the annual training calendar and incorporated organizational feedback provided during the Leadership Retreat. During the January QST meeting, the revised work center planning day, now called SPARC Sessions, was unveiled, and received full support. L&D will be finalizing and implementing Strategic Planning Alignment Results in Change (SPARC) Sessions for all divisions by the fall. L&D also welcomed a new cohort of the Leadership and Management Academy (LAMA) program while continuing to support the 2023 cohort that will be graduating in March. Finally, L&D is developing training related to the ongoing compensation study to inform all employees on the purpose, structure, and progress of the compensation study. Employees will participate in compensation study training sessions throughout the month of February.

Safety: Staff conducted required safety trainings and medical monitoring. Weekly, monthly, and quarterly safety inspections, and testing and monitoring were performed at various work centers and construction sites. There were four reported work-related injuries requiring medical attention and four auto/property damage accidents.

Community Engagement

Staff provided outreach at career events. This outreach was focused on the variety of career fields represented at HRSD. Information was shared about our open positions, the Apprenticeship Program, how we positively impact the local waterways and our generous benefits. Staff also explained how to apply for a position at HRSD and answered questions about what it's like to work at HRSD.

Respectfully submitted,

Dorissa Pitts-Paige

Director of Talent Management

TO: General Manager

FROM: Director of Water Quality (DWQ)

SUBJECT: Monthly Report for January 2024

DATE: February 14, 2024

Environmental Responsibility

1. HRSD's Regulatory Activities:

   a. Monthly Discharge Monitoring Report (DMR) Summary and Items of Interest: Effluent and Air Emissions Summary.

   b. HRSD received a reissued permit for King William on January 22 that became effective February 1, 2024.

   c. The Central Environmental Laboratory (CEL) received a final schedule for the Virginia Environmental Laboratory Accreditation Program onsite assessment. Based on the completeness of the data packet submitted in November 2023, the assessment has been condensed to four days, instead of the originally scheduled five.

2. Pretreatment and Pollution Prevention (P3) Program Highlights:

   No civil penalties were issued by the P3 Division in January.

3. Environmental and Regulatory Advocacy

   a. The Sustainability Environment Advocacy (SEA) Group reported the following activities for the month of January:

      (1) Boat Harbor Treatment Plant staff performed monthly maintenance on the Trash Collector and removed approximately 15 pounds of trash from the waterway adjacent to the facility.

      (2) SEA Team members organized a food drive and educated employees on the issue of food waste and tips for reducing it. The event concluded February 2, and collection metrics are still being compiled. All collections will be donated to the Food Bank of Southeastern Virginia.

   b. Director participated in the following advocacy and external activities:

(1) A meeting between the National Association of Clean Water Agencies (NACWA) Biosolids and Pretreatment Committee members and the Environmental Protection Agency (EPA) to discuss EPA's study design for the Publicly Owned Treatment Works (POTW) influent study for per- and polyfluoroalkyl substances (PFAS). This influent study will require selected POTWs to monitor at up to ten industries as well as their influent, effluent, and biosolids, as well as a domestic source. EPA has listened to POTW concerns and has adapted the study design based on our input.

(2) Legislative meetings to discuss legislative proposals and advocacy needs for the 2024 General Assembly session with the following advocacy groups: Virginia Association of Municipal Wastewater Agencies (VAMWA), Virginia Biosolids Council (VBC), Mission H2O, and the Chesapeake Bay Foundation.

(3) A meeting of the Chesapeake Bay Program (CBP) Tracking Team, a coalition representing VAMWA, the Virginia Association of Municipal Stormwater Agencies (VAMSA), the Maryland Association of Municipal Wastewater Agencies (MAMWA) and the Metropolitan Council of Governments (MCOG). This team tracks key issues being considered by the CBP, particularly the Water Quality Goal Implementation Team, and provides input as needed to support practical implementation of the Bay restoration plan.

Financial Stewardship

Staff supported the generation of high-quality data for use in permitting and environmental management decisions through our Municipal Assistance Program (MAP), which offers services to other municipal and regional authorities throughout the state. HRSD costs for this program are reimbursed by the customer. Below are program highlights for the month.

HRSD provided sampling and analytical services to the following to support monitoring required for their respective Virginia Permit Discharge Elimination System (VPDES) permits:

1. City of Franklin

2. Northumberland County

3. Westmoreland County

Talent

Director participated in the following advocacy and external activities:

1. Technical Services Division quarterly breakfast meeting to provide organizational updates on the Compensation Study and Rebranding with Q&A.

2. Completed recruitment for the Quality Assurance Manager in the CEL. Kim Fielder was selected to fill the position of Reggie Morgan who is retiring after nearly 39 years of service on April 1. Congratulations to Kim and Reggie!

3. Participated in the selection panel for two Treatment Plant Process Engineers and one Solids Process Engineer.

Community Engagement

Staff supported Microbial Source Tracking (MST) investigations in partnership with Hampton Roads localities. This work is required as part of HRSD's Integrated Plan. Sampling and analytical services were provided for the localities and projects identified below:

1. City of Chesapeake (Southern Branch)

2. City of Hampton (New Market Creek)

3. City of Newport News (Southeast Newport News)

4. City of Norfolk (Mason Creek)

5. City of Suffolk (downtown)

6. City of Virginia Beach (Thalia Creek)

7. James City County

Innovation

The CEL began accepting samples for the SWIFT Research Center for Perfluorooctanoic Acid (PFOA) analysis as part of process monitoring.

Respectfully submitted,

Jamie Heisig-Mitchell
Director of Water Quality

EFFLUENT SUMMARY FOR JANUARY 2024

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBl	ENTERO #/UBl	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	CONTACT TANK EX
ARMY BASE	11.68	65%	5	5.7	2	1	0.73	0.73	3.9	3.9	13
ATLANTIC	45.61	84%	8	7.9	2	1	NA	NA	NA	NA	4
BOAT HARBOR	13.07	52%	6	5.8	1	1	0.35	0.35	16	16	6
CENT. MIDDLESEX	0.012	49%	<2	2.1	<1	<1	NA	NA	NA	NA	NA
JAMES RIVER	12.34	62%	9	7.2	3	2	0.53	0.53	9.4	9.4	13
KING WILLIAM	0.092	92%	<2	0.52	NA	1	0.093	0.093	2.6	2.6	NA
NANSEMOND	17.47	58%	7	8.8	2	1	1.4	1.4	3.5	3.5	5
ONANCOCK	0.220	29%	<2	0.25	<1	<1	0.11	0.11	1.1	1.1	NA
SUNSET BAY	0.007	18%	4	<1.0	1	2	NA	NA	NA	NA	1
URBANNA	0.049	49%	6	11	2	5	1.2	1.2	12	12	NA
VIP	32.01	80%	2	2.6	3	1	0.25	0.25	4.9	4.9	3
WEST POINT	0.637	106%	19	8.8	2	4	1.9	1.9	13	13	0
WILLIAMSBURG	8.07	36%	7	5.7	3	3	1.2	1.2	3.0	3.0	20
YORK RIVER	13.55	90%	3	0.67	1	3	0.32	0.32	4.4	4.4	1
	154.81										

	% of Capacity
North Shore	57%
South Shore	75%
Small Communities	58%

Tributary Summary

	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged YTD	Operational Projection CY24		Discharged YTD	Operational Projection CY24	
Tributaries	%	Lbs	%	%	Lbs	%
James River	4%	2,450,569	69%	5%	245,678	78%
York River	6%	233,510	81%	7%	14,799	77%
Rappahannock	5%	NA	NA	2%	NA	NA

[DMR - Power BI (powerbigov.us)]

Rainfall (inch)

	North Shore (PHF)	South Shore (ORF)	Small Communities (FYJ)
Month	5.33"	3.20"	4.16"
Normal for Month	3.56"	3.21"	3.49"
Year to Date Total	5.33"	3.20"	4.16"
Normal for YTD	3.56"	3.21"	3.49"

AIR EMISSIONS SUMMARY FOR JANUARY 2024

	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
MHI PLANT	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	1	0	37	70	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	25	76	0
VIP	0	0	0	n/a	0	0	0	1	28	100	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	22	73	0

Items of Interest – January 2024

MULTIPLE HEARTH INCINERATION (MHI)

Total Hydrocarbon (THC) monthly averages (not to exceed 100 ppm) were met by all four MHI plants (Army Base, Boat Harbor, Virginia Initiative, and Williamsburg) with a THC continuous emissions monitoring (CEM) valid data captured of greater than 70%.

The MHIs had one (1) deviation from the required 129 SSI rule minimum operating parameters and three (3) minor bypass events (< 60 minutes).

HRSD submitted Army Base's MHI 4th quarter HCl report. The next MHI 129 emission limits stack test including HCl is scheduled for May 1, 2024.

AIR PERMITS and ODOR CONTROL

On January 17, 2024, DEQ sent Army Base's draft T5 permit renewal to 30-day public notice with concurrent EPA review. If there is no adverse comment, a final permit should be issued by end of February.

HRSD submitted the annual RICE rule report to EPA for Atlantic's CHP engines in January. Per the final test report dated January 30, the CHP engines also demonstrated compliance with the RICE rule emissions limits.

HRSD and NRG/E2Comply submitted the required RICE rule reports for Atlantic, Boat Harbor, Nansemond, and York River. These four plants continue to successfully participate in the demand response energy share program with HRSD's contractors.

There were a total of six (6) odor control complaints during the month of January.

Atlantic Plant received three (3) odor complaints from Ocean Lakes neighbors. Plant Staff and TSD responded to all complaints.

James River SWIFT received one (1) odor complaint from a neighbor who lives a mile from the plant regarding odors at their residence. The JR SWIFT project team, plant staff, and TSD responded and to date the source of the odors is unknown. We will continue to monitor the situation and address any odors identified from HRSD as needed.

York River received two (2) odor complaints from a neighbor across the street from the plant on Back Creek Road. All complaints were addressed by Plant staff and TSD. HRSD has resolved most of our neighbor's previous complaints including their source of indoor odors. HRSD is continuing to respond to their outside odor complaints that occur under a variable NW wind where the plant could still be the odor source. Both of these complaints in January were under a NW wind condition yet the source of odor was undetermined.

TREATMENT
DEQ was notified of the following reportable events:

James River
On January 11, a contractor reported water coming out of the ground next to the sodium bisulfite building due to construction activities. The bisulfite feed and carry water were immediately secured and a temporary feed was started. Approximately 100 gallons of non-potable water (NPW) containing dilute sodium bisulfite were released onto the ground.

On January 12, three consecutive 30-minute contact tank residuals less than 0.10 mg/l occurred when the bisulfite tanks overflowed into the containment. A potable water line valve was opened accidently earlier when the system was taken offline. The sump of the bisulfite building discharged into an out of service contact tank scum well. Once the well became full, it backed up into the contact tank scum skimmers, at the end of the contact tanks, until they overflowed. Chlorination was constant and it is believed sodium bisulfite back-fed to the sample point causing the low readings.

On January 15, a contractor cracked a sodium bisulfite feed line next to a large excavation during construction activities. The operator was notified immediately and switched to the backup feedline. The contractor pumped the released NPW with dilute sodium bisulfite that had accumulated in the excavation to a storm drain without the direction from plant staff. Approximately 100 gallons of NPW containing dilute bisulfite were released to the ground and storm drain. Plant staff met with the project manager to discuss measures to prevent additional breaks, isolation protocols, and that nothing should be pumped without direction from plant staff.

On January 18, a loss of dechlorination occurred when a VFD faulted after transition from generator to utility power. Using trends, it was identified that the loss of sodium bisulfite flow occurred for approximately 45 minutes. The alarm graphic on the DCS did not function properly during this event. The Industrial Automation Programmer was notified to fix the alarm issue and a checklist has been developed to check critical processes after a power transition to and from generator power.

On January 22, a contractors' temporary NPW line cracked due to freezing temperatures. The valve was secured immediately after it was discovered, and the contractor removed their NPW piping as it is no longer needed. Approximately 1,500 gallons of NPW were released to the ground.

On January 23, construction activities uncovered a bisulfite line and pulled the pipe out of a repair coupling. The separated line discharged approximately 125 gallons of NPW containing dilute sodium bisulfite into the ground. Plant leadership met with the Project manager and the leadership of the lead contractor to develop a plan to prevent future release and the plan was delivered to the sub-contractor.

Nansemond
On January 4, a loss of dechlorination occurred for approximately 25 minutes due to a level indicator reporting incorrectly to DCS. The level indicator was reporting 600 gallons of sodium bisulfite remaining while the tank was empty. Plant Staff manually diverted all effluent flow to the effluent pond while Sodium Bisulfite tanks were switched, and flow was restored and stabilized.

On January 29, an expansion joint on anerobic/ anoxic tank #7 began to leak while being filled with non-potable water. Approximately 500 gallons of chlorinated NPW drained to an onsite stormwater holding pond.

SYSTEM/TREATMENT, SMALL COMMUNITIES, AND EASTERN SHORE

Dendron

On January 9, severe weather associated with a major cold front inundated the Dendron Pump Station (PS) service area releasing over 1.6" of rainfall. SSA was unable to respond until 5AM the next morning due to flooded roads and trees down throughout the area. A flood warning was in effect several times for Surry County throughout the overnight hours. The following raw wastewater overflow events were reported:

- Dendron PS1, quantity released unknown to Cypress Swamp
- Dendron PS2, quantity released unknown to Cypress Swamp

On January 12, severe weather associated with a major cold front inundated the already saturated area releasing over 1.4" of rainfall. The overflow alarm cleared prior to SSA arriving onsite. The quantity of raw wastewater released to Cypress Swamp is unknown.

King William

On January 9, a high wet well and overflow alarm came through for the main pump station. Staff arrived on site after the overflow alarm had cleared and found evidence the low rim manhole (KW-MH-C20) had overflowed. Staff confirmed the two submersible station pumps to be operating properly but the emergency standby pump had a fault code and had to be reset. The King William TP recorded 2.4" of rainfall during this event. The quantity of raw wastewater released to the ground and Jackpen Creek is unknown.

West Point

On January 9, severe weather associated with a major cold front inundated the service area releasing 2.0" inches of rainfall. Oncall staff monitoring the stations saw PS 8 in high level and confirmed the pumps were operating properly with no spill observed. A supervisor checked the low rim manhole (WP-MH-0841) up stream of PS 8 and found evidence an overflow had occurred during this rain event. The quantity of raw wastewater released to the ground and Pamunkey River is unknown.

On January 14, the secondary clarifier overflowed when a PLC failed along with a float switch that activates the influent flow diversion valve. Once staff manually opened the tertiary wet well bypass valve, the overflow stopped. Approximately 54,750 gallons of secondary clarifier effluent were released to the ground draining to the Mattaponi River.

Monthly flows are now located in PowerBI

2024 Metals, Ammonia, and TKN

		Limit	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Central Middlesex	Ammonia	0.56	0.03											
	TKN	3.0	0.90											
King William	Zinc	*	49											
	TKN	3.0	0.74											
Onancock	Copper	12	1.3											
	Ammonia	0.90, 2.0	0.13											
Sunset Bay	TKN	3.0	0.90											
Urbanna	Ammonia	3.83, 9.08	1.27											

*No limit.
Units: TKN, Ammonia: mg/L. Metals: ug/L

This page is under development

Hampton Roads Sanitation District
Internal Audit Status
January 31, 2024

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 projects, and the status of current management action plan monitoring.

I. Projects in Process

Operational Technology Security and Resilience

- **Completed Tasks (January 2024)**
  - Continued development of planning steps to construct an audit program.
  - Completed initial kickoff meeting.
  - Requested initial documentation for scoping and planning.
- **Upcoming Tasks (February 2024)**
  - Continue development of planning steps to construct an audit program.
  - Continue to meet with stakeholders to review audit objectives and scoping.
  - Obtain and review initial documentation requested.
  - Schedule additional client meeting(s) to continue general scoping, project plan, and timelines discussions.

Risk Assessment Refresh

- **Completed Tasks (January 2024)**
  - Prepared Commission and IT surveys for February distribution.
  - Distributed and closed Director and Chief survey.
  - Began analyzing Director and Chief survey results.
  - Updated risk assessment workbook documentation.
- **Upcoming Tasks (February 2024)**
  - Administer supplemental Commission and IT surveys and evaluate responses.
  - Perform interviews as necessary.

Design and Construction Estimating

- **Completed Tasks (January 2024)**
  - Conducted additional process understanding meetings with Engineering Chiefs.
  - Continued updating and refining process documentation.
- **Upcoming Tasks (February 2024)**
  - Continue updating and refining process documentation.
  - Schedule and meet with Engineering Director to present progress and talk through next steps.

Accounts Payable and ProCards

- **Completed Tasks (January 2024)**
  - Continued fieldwork procedures.
  - Communicated additional fieldwork requests and open items.
- **Upcoming Tasks (February 2024)**
  - Finalize fieldwork procedures.
  - Prepare and send draft report.

Remote Access

- **Completed Tasks (January 2024)**
  - Continued to follow up on the open request list items.
  - Continued conducting a weekly status meeting with HRSD.
  - Completed testing and internal reviews.
  - Began drafting report.
  - Conducted exit meeting with stakeholders.
- **Upcoming Tasks (February 2024)**
  - Issue draft report and request feedback from stakeholders.
  - Finalize audit report and deliver to stakeholders.

II. Upcoming Projects

- Billing, accounts receivable, and aging: March/April 2024

III. Management Action Plan Status

SC&H performs on-going management action plan (MAP) monitoring for completed internal audits/projects. SC&H begins MAP follow-up approximately one year following the completion of each audit and periodically follows up until conclusion.

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.

		Recommendations		
Audit / Project	**Next Follow-up**	**Closed**	**Open**	**Total**
Personally Identifiable Information	March 2024	0	3	3
Safety Division	February 2024	2	1	3
Freedom of Information Act	February 2024	0	1	1
Family Medical Leave Act (FMLA)	April 2024	0	4	4
Succession Planning	April 2024	2	2	4
Closed Audit/Projects (x16)	Closed	127	0	127
	Totals	131	11	142

Strategic Measures
January 2024

Strategic Planning Measure	Dec-23	Jan-24	FY-24
Educational and Outreach Events	11	9	120
Number of Community Partners	10	4	98
Number of Technical Presentations	1	0	29
Revenue vs. Budget	106%	107%	106%
Wastewater Expenses vs. Budget	102%	103%	102%
General Reserves	110%	113%	109%
Liquidity	346	357	340
Accounts Receivable (HRSD)	$44,932,157	$49,128,798	$44,309,476
Aging Accounts Receivable	33.20%	31.50%	27.16%
Turnover Rate wo Retirements	0.12%	0.35%	0.23%
Turnover Rate w Retirements	0.59%	0.47%	0.36%
Avg Time to Hire	2 months, 21 days	4 months, 23 days	3 months, 9 days
Number of Vacancies	52	57	35
Total number of applicants per position	7.2	16.6	7.6
Percentage of positions filled with internal applicants	19.2%	9.4%	28.0%
Recruitment source Return on Investment	*	*	*
Average time required (days) to onboard new employees, including from initial posting of position to candidates' first day	*	*	*
Customer Call Wait Time (mins)	1.54	3.02	2.45
Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	**	**	0
Non-Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	**	**	1
TONS OF CARBON: Tons of carbon produced per million gallons of wastewater treated. Energy consumed (gas (scfm) and electricity (kWh)) per million gallons of wastewater treated	*	*	*
GAS CONSUMPTION: Tons of carbon produced per million gallons of wastewater treated. Energy consumed (gas (scfm) and electricity (kWh)) per million gallons of wastewater treated	*	*	*
ELECTRICITY CONSUMPTION: Tons of carbon produced per million gallons of wastewater treated. Energy consumed (gas (scfm) and electricity (kWh)) per million gallons of wastewater treated	*	*	*
Monthly CIP Spending	$57,595,788	***	$47,299,067

*Not currently tracking due to constraints collecting the data.
** Entered after EPA Quarterly Report submittal.
***Billing is one month behind

Strategic Measures
January 2024

Community Partners		
Month	**Department**	**Partner**
January	Engineering	Norfolk Academy Chesapeake
January	Operations	Ocean Lakes High School
January	Operations	Old Dominion University
January	Operations	Waste Management

Education Outreach Events	
Date	**Event**
1/12/2024	Pancopia project meeting
1/17/2024	Tour of the SWIFT Research Center
1/18/2024	Union Ministries Apprenticeship Presentation
1/22/2024	Four CEL representatives attended The NELAC Institute 2024 Winter Meeting January 22-25, 2024 and participated on committees developing accreditation standards, chaired a meeting of Proficiency testing Program Executive Committee and presented on issues related to regulations, and employee retention and effective training.
1/23/2024	ATP Tour for ODU Public Health Students
1/23/2024	U.S DOE Energy's Industrial Efficiency & Decarbonization Office Measuring Life-Cycle Greenhouse Gas Emissions Workshop
1/24/2024	ATP Tour for students from Virginia Challenge
1/26/2024	YRTP Tour for city Fire Department
1/29/2024	ATP Tour for HRSD Engineering interns