HRSD Commission Meeting Agenda
9:00 a.m. – August 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 to receive a link to the virtual meeting, address the Commission, submit written comments to be read into the minutes or to request accommodations to attend the meeting in-person.

Reservations must be submitted by noon one business day prior to the meeting. Instructions to submit your reservation request are available on the website: https://www.hrsd.com/meeting-minutes

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.	Birdneck Road Trunk Force Main Emergency Mitigation and Repair (SF-135) New CIP and Initial Appropriation – Non-Regulatory	Husselbee
5.	High Priority Inflow and Infiltration Reduction Program Additional Appropriation and Interim Agreement	Husselbee
6.	Interceptor System Pump Station Control and SCADA Upgrades and Enhancements Phase III Initial Appropriation – Non-Regulatory, Task Order (>$200,000)	Abisaab
7.	James River SWIFT Facility and SWIFT Program Management Joint Funding Agreement, Purchase Orders (>$200,000)	Mitchell
8.	Larchmont Area Sanitary Sewer Improvements Cost Sharing Agreement – Termination Amendment	Husselbee
9.	Nansemond Recharge Wells (Off Site) (GN016382) and Nansemond Recharge Well Integration (GN016383) Initial Appropriation, Contract Award (>$200,000)	Husselbee
10.	Williamsburg Treatment Plant Emissions Monitoring System Initial Appropriation – Non-Regulatory	Husselbee
11.	York River Treatment Plant Main Switchgear Relay Replacements New CIP and Initial Appropriation – Non-Regulatory	Abisaab

No.	Topic	Resource
12.	New Business	Bernas
13.	Unfinished Business	Bernas
14.	Commissioner Comments	
15.	Informational Items	Bernas

Next Regular Commission Meeting: September 24, 2024 in Virginia Beach

Resource: Jay Bernas

AGENDA ITEM 1. – August 27, 2024

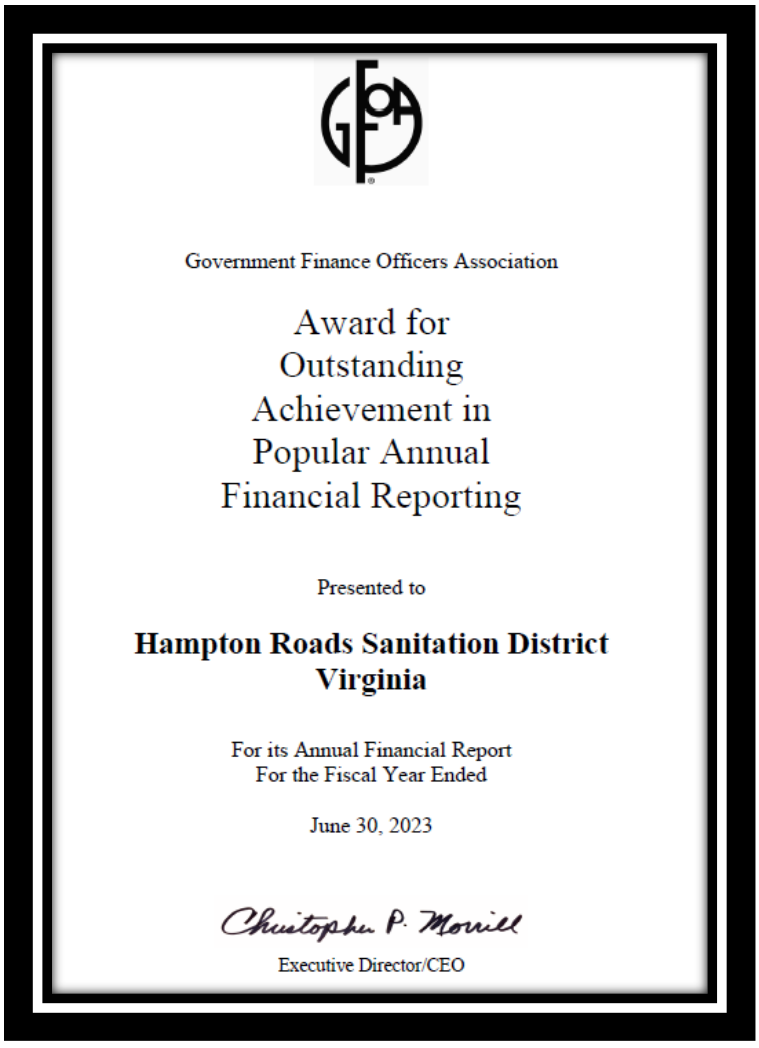
Subject: Awards and Recognition

Recommended Action: No action is required.

Brief: HRSD is pleased to announce the following:

a. New Employee Introduction – John Kent was recently hired as a Payment and Vendor Manager in the Customer Care Department. John holds a master's degree in public administration from Capella University. John recently worked in the healthcare customer service industry for 12 years, worked for municipal water operations, and served in the US Navy. He has experience in customer service, office administration, leadership, and water treatment. John will be leading towards growing within HRSD, helping to form the new branding, and the development of his team. John is an active participant with the National Society of Leadership and Success through Capella University and an avid volunteer with two local non-profits organizations in supporting worthy causes in the community.

b. Awards – HRSD has earned the Award for Outstanding Achievement in Popular Annual Financial Reporting from the Government Finance Officers Association (GFOA) for its first Popular Annual Financial Report for Fiscal Year ended June 2023. The award represents a significant achievement by HRSD and was granted based on an evaluation of the publication in the following categories: information presented, reader appeal, understandability, creativity, usefulness and other elements.



Resource: Jay Bernas

AGENDA ITEM 2. – August 27, 2024

Subject: Public Comments Not Related to Agenda

Resource: Jay Bernas

AGENDA ITEM 3. – August 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.	Customer Care and Billing Managed Services Support	$768,750
2.	Fleet Management (FY-2025) Biosolids Dump Trailers	$366,852
3.	Fleet Management (FY-2025) Combination Sewer Flusher	$482,780
4.	Fleet Management (FY-2025) John Deere Wheel Loader	$279,160
5.	King William Treatment Plant Improvements Phase II Package Membrane Filtration System	$1,242,000
6.	MIKE+ Hydraulic Model Software License Support	$560,010
7.	Riverside Nassawadox Treatment Plant Decommissioning	$246,000
8.	Storage Facility Lease for South Shore Operations Complex	$262,703

c. Task Orders (>$200,000)

1.	Chesapeake Boulevard Pump Station (PS 105) Replacement and Norfolk Pump Station (PS 57) Rehabilitation	$380,962
2.	Kiln Creek Interceptor Force Main Replacement	$506,074
3.	South Shore Gravity Sewer Improvements Phase I	$499,543

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

1.	Atlantic Treatment Plant Secondary Clarifier Effluent Weir Replacement and Enhancements	
	Additional Appropriation	$149,635
	Change Order	$290,575
2.	South Shore Aerial Crossing Improvements	
	Additional Appropriation	$473,220
	Task Order	$475,065
3.	Treatment Plant Grease Handling Facility	$263,596

Resource: Steve de Mik

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

Subject: Customer Care and Billing Managed Services Support Contract Award (>$200,000)

Recommended Action: Award a contract to Red Clay Consulting, Inc. in the amount of $153,750 for one year with four renewal options and an estimated cumulative value of $768,750.

Type of Procurement: Competitive Negotiation

A Public Notice was issued on April 11, 2024. Eleven firms submitted proposals on May 16, 2024, and all firms were determined to be responsive and deemed fully qualified, responsible, and suitable to the Professional Services Selection Committee (Committee) and to the requirements in the Request for Proposals. Four firms were short-listed, interviewed, and technically ranked as listed below:

Proposers	Technical Points	Recommended Selection Ranking
Red Clay Consulting, Inc.	91	1
TMG Utility Advisory Services, Inc. DBA TMG Consulting Inc.	75	2
Blue Heron Consulting Corporation	71	3
Meridian Integration, LLC	70	4

HRSD Estimate: $250,000/year

The Committee recommends award to Red Clay Consulting, Inc., whose professional qualifications and proposed services best serve the interest of HRSD. Red Clay's proposal showcases their extensive knowledge and experience of the Oracle customer and care billing system, interfaces and integrations. In addition, they have a high level of experience with cloud services implementation. The software tools that Red Clay proposes as part of their methodology and management approach are anticipated to be extremely beneficial to HRSD.

Contract Description: This contract is for a managed services partner to provide support for the Oracle Customer Care and Billing (CC&B) system, related applications and interfaces. CC&B is used to perform enterprise-wide Accounts Receivable and Billing for multiple jurisdictions and interfaces with multiple systems including Oracle Field Service, Oracle Enterprise Business Suite, Geographic Information System, e-bill, e-pay, Pretreatment Information Management System (PIMS), and Customer Engagement Portal. As a functional and technical resource, Red Clay will assist HRSD subject matter experts on an as required basis, provide project management, transition management, testing, training and knowledge transfer. Red Clay will also provide project planning support for future migration to Oracle Customer Cloud Service.

Analysis of Cost: The HRSD Estimate is based on five years spend with previous managed support provider.

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

Resource: Eddie Abisaab

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

Subject: Fleet Management (FY-2025)
Biosolids Dump Trailers
Contract Award (>$200,000)

Recommended Action: Award a contract to Virginia Truck Center, Inc. DBA Excel Truck Group in the amount of $366,852.

CIP Project: GN020400

Regulatory Requirement: None

Budget	$4,432,780
Previous Expenditures and Encumbrances	($761,898)
Available Balance	$3,670,882

Type of Procurement: Use of Existing Contract Vehicle

HRSD Estimate: $366,852

Project Description: This project will provide for replacement of aging fleet vehicles and purchase of additional vehicles to meet the needs of the organization. An itemized list of vehicles to be replaced or added is maintained by the Support Systems Division.

Project Justification: Replacement of aging vehicles will result in lower repair costs and the purchase of additional vehicles will provide for increased staff efficiency.

Contract Description: This contract is for the purchase of four Dump Trailers with 28-foot frame (25 cubic yard) and tarps for biosolids hauling. The trailers include curbside shovel hangers, two bottom gate winders, and lift axles.

Upon evaluation of the Sourcewell Contract 092922-MCT terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Virginia Truck Center, Inc. DBA Excel Truck Group.

Analysis of Cost: By utilizing the Sourcewell Contract 092922-MCT for MAC Trailers, HRSD is receiving a seven percent cost savings.

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

Resource: Eddie Abisaab

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

Subject: Fleet Management (FY-2025)
Combination Sewer Flusher
Contract Award (>$200,000)

Recommended Action: Award a contract to Atlantic Machinery, Inc. in the amount of $482,738.

CIP Project: GN020400

Regulatory Requirement: None

Budget	$4,432,780
Previous Expenditures and Encumbrances	($646,012)
Available Balance	$3,786,768

Type of Procurement: Use of Existing Contract Vehicle

HRSD Estimate: $482,738

Project Description: This project will provide replacement of aging fleet vehicles and purchase of additional vehicles to meet the needs of the organization. An itemized list of vehicles to be replaced or added is maintained by the Support Systems Division.

Project Justification: Replacement of aging vehicles will result in lower repair costs and the purchase of additional vehicles will provide for increased staff efficiency

Contract Description: This contract is for the purchase of a combination sewer flusher vehicle with a 3-yard debris body and 500 gallons of freshwater capacity.

Upon evaluation of the Virginia Sheriff's Contract #24-05-0713 terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Atlantic Machinery, Inc.

Analysis of Cost: By utilizing the Virginia Sheriff's Contract #24-05-0713 for Heavy Equipment, HRSD is receiving a six percent cost savings.

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

Resource: Eddie Abisaab

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

Subject: Fleet Management (FY-2025)
John Deere Wheel Loader
Contract Award (>$200,000)

Recommended Action: Award a contract to Coastal Equipment Corp. in the amount of $279,160.

CIP Project: GN020400

Regulatory Requirement: None

Budget	$4,432,780
Previous Expenditures and Encumbrances	($849,590)
Available Balance	$3,583,190

Type of Procurement: Use of Existing Contract Vehicle

HRSD Estimate: $279,160

Project Description: This project will provide for replacement of aging fleet vehicles and purchase of additional vehicles to meet the needs of the organization. An itemized list of vehicles to be replaced or added is maintained by the Support Services Department.

Project Justification: Replacement of aging vehicles will result in lower repair costs and the purchase of additional vehicles will provide for increased staff efficiency.

Contract Description: This contract is for the purchase of a John Deere 644 G-Tier Wheel Loader. This vehicle includes a rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, and full fuel tank.

Upon evaluation of the Sourcewell Contract 011723-JDC terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Coastal Equipment Corp.

Analysis of Cost: By utilizing the Sourcewell Contract 011723-JDC for Heavy Construction Equipment, HRSD is receiving an 11 percent cost savings.

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

Resource: Bruce Husselbee

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

Subject: King William Treatment Plant (KWTP) Improvements Phase II
Package Membrane Filtration System
Contract Award (>$200,000)

Recommended Action: Award a contract to Kubota Membrane USA Corporation in the amount of $1,242,000.

CIP Project: MP013300

Regulatory Requirement: None

Budget	$16,923,311
Previous Expenditures and Encumbrances	($2,335,657)
Available Balance	$14,587,654

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 June 26, 2024, and two bids were received on July 9, 2024, as listed below:

Bidder	Bid Amount
Kubota Membrane USA Corporation	$1,242,000
Sherwood Logan and Associates Inc. (Newterra)	$1,755,018

Engineer Estimate: $1,600,000

Project Description: This project is intended to increase capacity for King William from 100,000 gallons per day (GPD) Average Daily Flow (ADF) to a firm capacity of 150,000 GPD ADF.

Project Justification: KWTP can currently treat 100,000 GPD ADF. Development in King William County has been accelerating in recent years. New subdivisions are planned, and construction has ramped up in existing subdivisions in addition to the current flow. Buildout of approved subdivisions will require an expansion of capacity beyond 100,000 GPD ADF.

Contract Description: This contract is for the purchase of a package membrane filtration system for the King William Treatment Plant for the separation of biological solids from an existing suspended growth Biological Nitrogen Removal (BNR) activated sludge-based wastewater treatment system. The intent of this purchase is to increase capacity for King William.

Analysis of Cost: Kubota Membrane USA Corporation's cost is determined to be fair and reasonable based on the competitive bid results compared to the cost estimate conducted by HRSD staff and AH Environmental Consultants Inc.

Schedule:

PER	July 2021
Design	October 2022
Bid	July 2024
Construction	November 2024
Project Completion	November 2025

Resource: Don Corrado

CONSENT AGENDA ITEM 3.b.6. – August 27, 2024

Subject: MIKE+ Hydraulic Model Software License Support Contract Award (>$200,000)

Recommended Action: Award a contract to DHI Water and Environment in the amount of $112,002 for one year with four renewal options and an estimated cumulative value of $560,010.

Type of Procurement: Sole Source

HRSD Estimate: $560,010

Contract Description: This contract is for MIKE+ Water Modelling and Simulation software license and support services for use by the Information Technology (IT) Department. MIKE+ is a comprehensive platform featuring integrated modules and tools designed to model, analyze, and manage various aspects of water systems. The proprietary software was originally selected in 2008 by HRSD through the completion of the Regional Wet Weather Management Plan.

Analysis of Cost: The HRSD Estimate includes a negotiated 21 percent discount for holding the price firm for two years with a 2.5 percent annual increase for the remaining three years.

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

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.b.7. – August 27, 2024

Subject: Riverside Nassawadox Treatment Plant Decommissioning Contract Award (>$200,000)

Recommended Action: Award a contract to East Coast Abatement Co., Inc. in the amount of $246,000.

CIP Project: ES010900

Regulatory Requirement: None

Budget	$1,047,000
Previous Expenditures and Encumbrances	($175,857)
Available Balance	$871,143

Type of Procurement: Competitive Bid

In accordance with HRSD's competitive sealed bidding procedures, the Engineering Division advertised and solicited bids directly from potential bidders. The project was advertised on June 18, 2024, and four bids were received on July 25, 2024, as listed below:

Bidder	Bid Amount
East Coast Abatement Co., Inc.	$246,000
CM Munden Construction Services	$295,915
Macsons, Inc	$304,744
J. Sanders Construction Co.	$461,422

Engineer Estimate: $2,493,064

The design engineer, HDR Engineering, Inc., evaluated the bids based upon the requirements in the invitation for bid and recommends award to the lowest responsive and responsible bidder East Coast Abatement Co., Inc. in the amount of $246,000.

Project Description: This project will demolish the existing facilities at the Riverside Nassawadox Plant and will also look at other potential uses of the site after the plant has been decommissioned. This project also includes a Closure Plan, which is a Department of Environmental Quality (DEQ) requirement.

Project Justification: The Riverside Nassawadox Treatment Plant Feasibility Study conducted by HRSD resulted in taking the plant offline and diverting the flow to the Onancock Treatment Plant (ONTP). A new pipeline and pump stations have been installed with the Eastern Shore Infrastructure Improvements-Transmission Force Main Phase 1 (ES010100) CIP. The Eastern Shore Transmission Force Main Phase 1 project did not address the abandonment of the Nassawadox Treatment Plant. This project will properly sanitize and demolish the abandoned treatment plant.

Contract Description: This contract is for demolition of a wastewater treatment plant facility including removal of above-grade and below-grade concrete structures, buildings, sheds, above-grade piping, instrumentation and electrical equipment, mechanical equipment, and miscellaneous debris. Other project elements include salvage of equipment and instruments, abandonment of below-grade utilities, fence installation, and site restoration.

Analysis of Cost: The four bids received are grouped relatively near each other and the consistency of these four bid amounts suggest the low bid received is reflective of current market conditions for projects of this type, size, and location. It appears the Opinion of Probable Construction Cost (OPCC) prepared by the Engineer significantly misjudged the level of effort required to complete the project and misread the market conditions for this type of project. Recent trends in the marketplace related to resource availability, competition, supply chains, and contractor workload have typically led to higher than anticipated prices, which contributed in part to the higher OPCC.

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

Schedule:		
	Construction	October 2024
	Project Completion	May 2025

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.b.8. – August 27, 2024

Subject: Storage Facility Lease for South Shore Operations Complex
Contract Award (>$200,000)

Recommended Action: Award a contract to Bayside Investors, LLC in the amount of $85,478 for one year with two renewal options and an estimated cumulative value of $262,703.

Regulatory Requirement: None

Type of Procurement: Sole Source

Contract Description: This contract is for the lease of storage facilities from Bayside Investors, LLC. for use by the South Shore Operations Complex. The units are located at 5741 Bayside Road, Virginia Beach, numbers 106 and 108. Each unit is 3,050 square feet and equipped with HVAC. One unit is needed while building 1424 is being emptied for renovations for the Electrical and Energy Management group and the other unit is needed for storage purposes in preparation for and duration of construction of the new Central Environmental Lab facility. The units are close to the South Shore Operation Complex that will allow for continuity of operations.

Analysis of Cost: The cost is based on agreed upon the lease agreements negotiated between HRSD Real Estate Department and Bayside Investors, LLC.

This work is in accordance with Commission Adopted Procurement Policy.

Resource: Bruce Husselbee

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

Subject: Chesapeake Boulevard Pump Station (PS 105) Replacement and Norfolk Pump Station (PS 57) Rehabilitation Task Order (>$200,000)

Recommended Action: Approve a task order with Hazen and Sawyer in the amount of $380,962.

CIP Project: VP015430

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

Budget	$ 20,566,000
Previous Expenditures and Encumbrances	($ 551,012)
Available Balance	$ 20,014,988

Contract Status with Task Orders:	Amount
Original Contract with Hazen and Sawyer (VP015400)	$665,468
Total Value of Previous Task Orders (VP015400, VP015410, VP015420)	$3,838,271
Requested Task Order (VP015430)	$380,962
Total Value of All Task Orders	$4,219,233
Revised Contract Value	$4,884,701
Engineering Services as % of Construction	5%

Project Description: This project will construct a new Chesapeake Boulevard Pump Station (PS) to replace the old existing pump station. This project also includes the replacement of existing equipment at the HRSD acquired Norfolk PS 57, which has been renamed to HRSD PS 167/ Robinhood Road PS. The new equipment will be installed in accordance with HRSD's standards.

This project was originally part of the overall VP015400 CIP effort to replace multiple pump stations within the City of Norfolk. This portion of the original CIP has been separated from the larger project to better align the timing of acquisitions for the various sites and ability to move some projects forward into construction sooner than others.

The attached map depicts the project location.

Project Justification: This project will address aging infrastructure pertaining to the condition of the wet wells, pumps, motors, controls, appurtenances, and emergency generator/pump for the facilities. The pumps, motors, and controls are nearing the end of their useful life and replacement parts are not available.

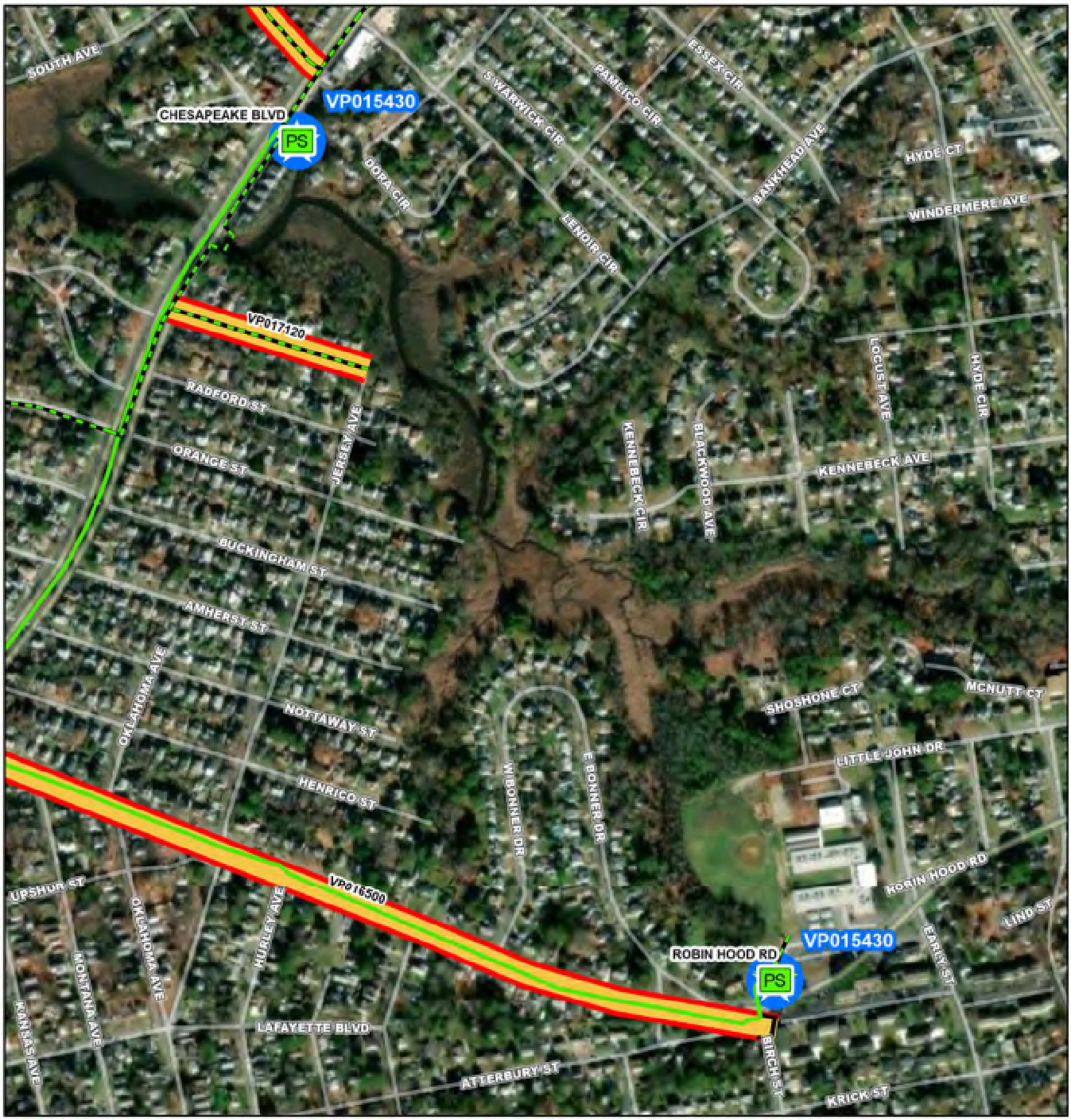
Task Order Description and Analysis of Cost: The original design of the Chesapeake Boulevard PS and Robinhood Road PS was completed in August 2021. Since then, HRSD has procured additional land needed for constructing the Chesapeake Boulevard PS, which was recently approved at the July 2024 Commission Meeting. The recent land purchase included the parcel to the south of the existing Chesapeake Boulevard PS, while the original design assumed expansion to the north. The parcel to the north of the existing pump station was determined to be more costly and time consuming to acquire than the parcel to the south. This task order will provide for design and bid phase services to revise the contract documents to reflect the new location for the Chesapeake Boulevard PS Replacement.

In addition, since design completion in August 2021, a CIP project (VP015431 – Norfolk Pump Station (PS 57) Interim Bypass) was created and completed to bypass the Robinhood Road PS until VP015430 construction could be completed. This task order will also update the contract documents to show the new bypass plan and demo requirements for construction.

This task order is an extension of the previous design services under CIP VP015400, Lafayette Norview-Estabrook PS Replacements. Hazen and Sawyer and HRSD staff reviewed the scope of services and determined a fee of $380,962 is reasonable when compared to other projects of similar size and scope.

Schedule:

PER	January 2019
Design	September 2024
Bid	August 2025
Construction	December 2025
Project Completion	July 2028



VP015430

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

Legend

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

0 190 380 760 1,140 1,520 Feet

N
W E
S

CIP Location

VP015430

Chesapeake Boulevard Pump Station (PS 105) Replacement and Norfolk Pump Station (PS 57) Rehabilitation

HRSD

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.c.2. – August 27, 2024

Subject: Kiln Creek Interceptor Force Main Replacement
Task Order (>$200,000)

Recommended Action: Approve a task order with Whitman, Requardt & Associates, LLP (WRA) in the amount of $506,074.

CIP Project: JR014200

Regulatory Requirement: None

Budget	$12,553,200
Previous Expenditures and Encumbrances	($218,995)
Available Balance	$12,334,205

Contract Status with Task Orders:	Amount
Original Contract with Engineer	$218,995
Total Value of Previous Task Orders	$0
Requested Task Order	$506,074
Total Value of All Task Orders	$506,074
Revised Contract Value	$725,069
Engineering Services as % of Construction	4.8%

Project Description: This project will replace approximately 7,100 linear feet of 24-inch ductile iron pipe along Brick Kiln Boulevard and Kiln Creek Parkway from the currently under construction Jefferson Avenue Phase III project to the Kiln Creek Interceptor Force Main Contract B project. This project will upsize the existing pipeline from 24-inch to 30-inch.

The attached map depicts the project location.

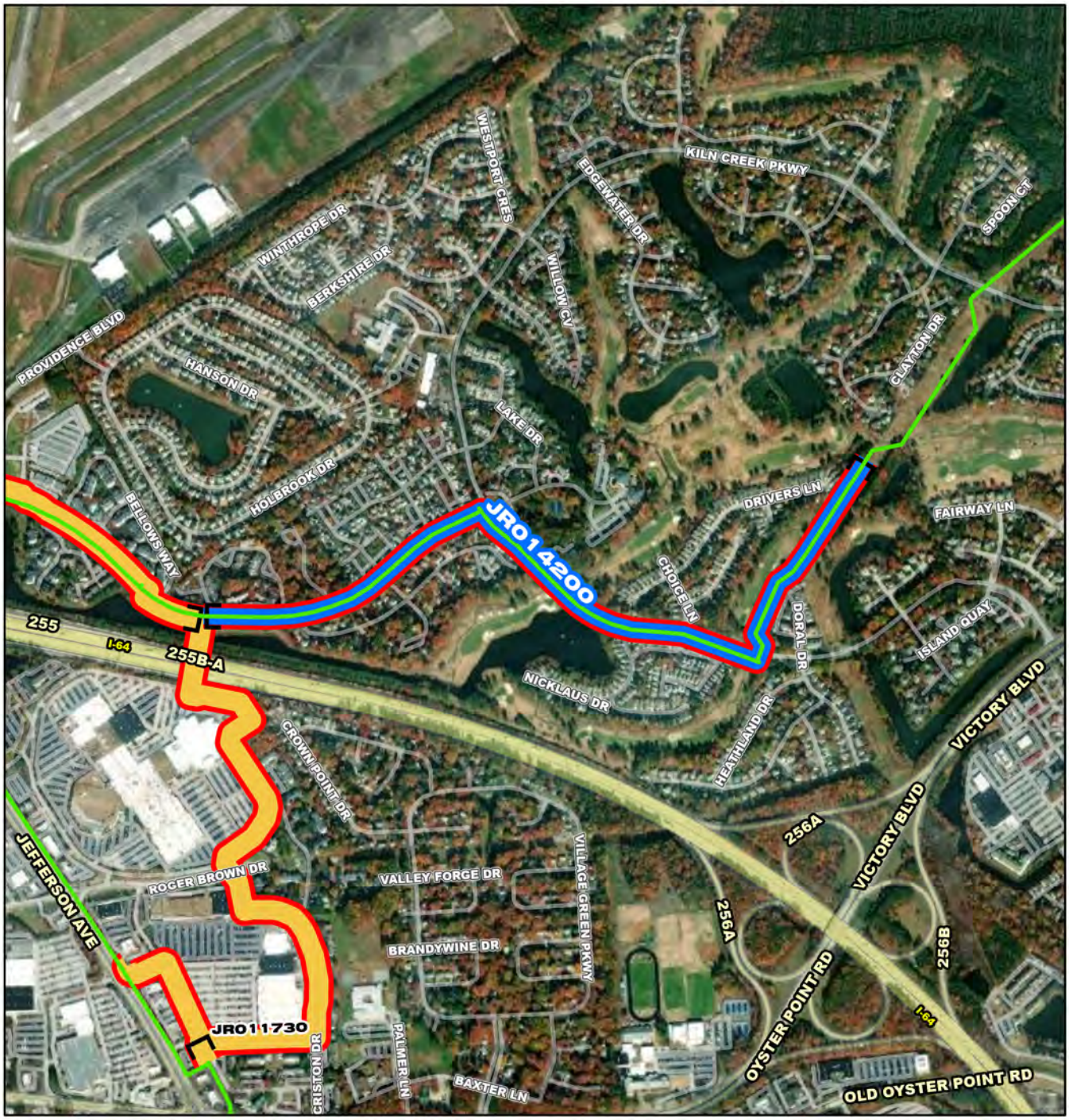
Project Justification: The Colony Area Interceptor Force Main Section B pipeline was constructed by a private developer in 1987 with the Kiln Creek residential neighborhood and turned over to HRSD. Due to complications with the developer, no as-builts were available and multiple air vents along this run were not installed at actual highpoints. This issue leads to large gas pockets that increase system pressures along with a greater risk of internal pipe corrosion. During a recent diversion these issues presented themselves in the form of a significant hydraulic restriction. This project will upsize the existing force main to 30-inch diameter to create a 30-inch force main loop within the James River (JRTP) and York River (YRTP) Treatment Plant service areas. In conjunction with the Tabb Pressure Reducing Station and off-line storage infrastructure, this force main will maximize wet weather capabilities and flow optimization between JRTP and YRTP.

Task Order Description: This contract is for design and preconstruction phase services.

Analysis of Cost: The estimated construction cost for the project is $14,805,825 and is based on an AACE Class 5 cost estimate completed by WRA. A fee of $506,074 was negotiated with WRA and is approximately 3.31% of the current estimated construction cost. This fee has been compared to similar projects of similar scope and size and is acceptable.

Schedule:

Design	September 2024
Bid	August 2025
Construction	November 2025
Project Completion	January 2027



JR014200

- 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

0 410 820 1,640 2,460 3,280 Feet

N W E S

CIP Location

JR014200

Kiln Creek Interceptor Force Main Replacement

HRSD

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.c.3. – August 27, 2024

Subject: South Shore Gravity Sewer Improvements Phase I
Task Order (>$200,000)

Recommended Action: Approve a task order with Bridgeman Civil Inc. in the amount of $499,543.

CIP Project: GN015000

Regulatory Requirement: None

Budget	$3,751,057
Previous Expenditures and Encumbrances	($775,702)
Available Balance	$2,975,355

Contract Status with Task Orders:	Amount
Original Contract with Bridgeman Civil Inc.	$0
Total Value of Previous Task Orders	$16,459,283
Requested Task Order	$499,543
Total Value of All Task Orders	$16,958,826
Revised Contract Value	$16,958,826

Project Description: This project will rehabilitate and/or replace gravity sewer segments at various locations in the South Shore Interceptor System.

Project Justification: Condition assessment activities indicate that these assets present a material risk of failure due to physical condition defects and recessive infiltration/inflow.

Task Order Description: This task order is for the rehabilitation of the influent gravity sewer, realignment of the city force main, and rehabilitation of associated manholes located at the Seay Avenue Pump Station (PS 125).

Analysis of Cost: The cost for this task order is based on the pre-negotiated rates under the Annual Sewer Repair and Condition Assessment Services Agreement.

This work is in accordance with the Commission Adopted Procurement Policy

Schedule:

Design	August 2023
Bid	June 2024
Construction	August 2024
Project Completion	March 2025

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

Subject: Atlantic Treatment Plant (ATP) Secondary Clarifier Effluent Weir Replacement and Enhancements
Additional Appropriation - Non-Regulatory Capital Improvement Project (<$1,000,000)
Contract Change Order (>25% of original contract value or $50,000)

Recommended Actions:

a. Appropriate additional funding in the amount of $149,635.

b. Approve a change order to the contract with D&D Mechanical Inc. in the amount of $290,575.

CIP Project: AT015500

Regulatory Requirement: None

Budget	$3,148,740
Previous Expenditures and Encumbrances	($2,998,800)
Available Balance	$149,940
Proposed Change Order No. #1 to Contractor	($290,575)

Contract Status with Change Orders:	**Amount**	**Cumulative % of Contract**
Original Contract with Contractor	$2,998,800	
Total Value of Previous Change Orders	$0	%
Requested Change Order	$290,575	
Total Value of All Change Orders	$290,575	10%
Revised Contract Value	$3,289,375	

Time (Additional Calendar Days)		60

Change Order Description: This change order is for additional materials and labor to install the secondary clarifier weir and launder supports as a result of a site survey from the manufacturer NEFCO indicating that the existing supports were inadequate. The change order also includes crane rental needed for handling materials and equipment. Materials necessary for anchoring the clarifiers supports include 176 stainless steel brackets, anchors, and Hilti HY-200 epoxy, to ensure adequate reinforcement. Labor includes, but not limited to, shipping and handling of the brackets by the manufacturer to D&D Mechanical for hole punching and installation of all associated materials at the project site. This change request also includes a labor escalation fee due to project delays.

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

Schedule:

PER	July 2022
Design	July 2022
Bid	February 2023
Construction	September 2023
Project Completion	January 2025

Resource: Bruce Husselbee

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

Subject: South Shore Aerial Crossing Improvements
Additional Appropriation - Non-Regulatory Capital Improvement Project (<$1,000,000)
Task Order (>$200,000)

Recommended Actions:

a. Appropriate additional funding in the amount of $473,220.

b. Approve a task order with Bridgeman Civil Inc. in the amount of $475,065.

CIP Project: GN015400

Regulatory Requirement: None

Budget	$290,758
Previous Expenditures and Encumbrances	($238,913)
Available Balance	$51,845
Proposed Change Order No. # to Bridgeman Civil Inc.	($0)
Proposed Task Order to Bridgeman Civil Inc.	($475,065)
Proposed Contingency	($50,000)
Project Shortage/Requested Additional Funding	($473,220)
Revised Total Project Authorized Funding	$763,978

Contract Status with Task Orders:	Amount
Original Contract with Bridgeman Civil Inc.	$0
Total Value of Previous Task Orders	$16,958,826
Requested Task Order	$475,065
Total Value of All Task Orders	$17,433,891
Revised Contract Value	$17,433,891

Project Description: This project will repair/rehabilitate numerous aerial/exposed crossings on the South Shore Interceptor Sewer System.

Project Justification: Condition Assessment Activities and Annual yearly inspections suggested that these aerial/exposed crossings are at material risk of failure or require rehabilitation.

Task Order Description: This task order is for the replacement of various parts and required repairs at four aerial crossings located at Oastes Creek, Twin Bridges, Long Creek, and Wilroy Road. This includes, but not limited to, concrete crack repairs, replacing timber chocks and repairs to pedestrian barriers and all associated hardware.

Analysis of Cost: The cost for this task order is based on the pre-negotiated rates under the Annual Sewer Repair and Condition Assessment Services Agreement.

Schedule:

Design	March 2021
Bid	March 2022
Construction	March 2024
Project Completion	May 2025

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 3.d.3. – August 27, 2024

Subject: Treatment Plant Grease Handling Facility
Additional Appropriation - Non-Regulatory Capital Improvement Project (<$1,000,000)

Recommended Actions: Appropriate additional funding in the amount of $263,596.

CIP Project: GN013300

Regulatory Requirement: None

Budget	$12,528,929
Previous Expenditures and Encumbrances	($12,503,813)
Available Balance	$25,116
Proposed Change Order No. 5 to Contractor	($166,799)
Proposed Task Order to Engineer	($71,913)
Proposed Contingency	($50,000)
Project Shortage/Requested Additional Funding	($263,596)
Revised Total Project Authorized Funding	$12,792,525

Project Description: This project involves installation of a facility at Nansemond Treatment Plant (NTP) to receive Fats, Oils, and Grease (FOG) from indirect haulers. The facility will screen, decant, and process the FOG in a manner that will convert a portion to bio-fuel using the Greasezilla system. The portion of FOG converted to bio-fuel will be sold to Greasezilla per the HRSD/Greasezilla offtake agreement, the decanted FOG water will be sent to headworks for normal wastewater treatment, and the remaining processed FOG will be sent to the digesters.

Project Justification: The grease handling facilities will reduce the impact of high Biochemical Oxygen Demand (BOD) loading on the biological system and provide a more stable operation. The new facilities will also reduce the plugging of treatment process piping and equipment caused by the large quantities of grease being discharged over short time periods. This project also addresses the Regional Consent Decree which requires an effective FOG program.

Analysis of Cost: The cost is based on contract changes requested by HRSD to the engineer and contractor. These changes include contract administration, startup and testing assistance, installation of additional valves, piping and platforms, and additional instrumentation in the facility. Engineering costs will be invoiced on a time and materials basis, allowing HRSD to only utilize what is required. These costs are reasonable and approval is recommended.

Schedule: Project Completion October 2024

AGENDA ITEM 4. – August 27, 2024

Subject: Birdneck Road Trunk Force Main Emergency Mitigation and Repair (SF-135)
New CIP and Initial Appropriation – Non-Regulatory

Recommended Actions:

a. Approve a new CIP project.

b. Appropriate total project funding in the amount of $3,100,000.

CIP Project: AT016800

Regulatory Requirement: None

Project Description: This project will replace a section of a 42-inch prestressed concrete cylinder pipe (PCCP) force main that was damaged by a third-party contractor's bulldozer. The work consists of constructing a temporary access road, installing line stops and a bypass, securing and removing the bulldozer, and replacing approximately 32 linear feet (LF) of 42-inch PCCP with 42-inch ductile iron pipe (DIP). The attached map depicts the project location.

Project Justification: An emergency designation was authorized on August 6, 2024, due to potential damage to the Birdneck Road Trunk Force Main located in the City of Virginia Beach.

On August 5, 2024, staff was notified by a third-party party contractor that one of their large bulldozers (weighing approximately 40,000 pounds) was stuck in the mud on top of a 42-inch prestressed concrete cylinder pipe (PCCP) HRSD force main installed in the 1970s. The bulldozer was allegedly stolen from the contractor's nearby construction site and driven along the adjacent HRSD force main easement. The bulldozer was found abandoned after it sunk into the soft, swampy soils. Field observations indicate that the bulldozer has damaged the PCCP force main past the exterior mortar, inner prestressed wires, inner steel cylinder, and into a portion of the interior concrete core; thus, repair of the pipe is not possible. Instead, the damaged section of pipe will need to be isolated and replaced.

HRSD staff is utilizing Hazen and Sawyer (Hazen) and Bridgeman Civil, Inc. (BCI) to construct a temporary access road using heavy-duty matting to gain access to the location of the bulldozer which rests under high voltage power lines. The matting is needed due to poor wet soil and limited points of access to the site. Measures are also being taken to install line stops and a bypass for the segmental pipe replacement. Diverting flow in the system to isolate this force main is not possible.

Analysis of Cost: The cost estimate includes the force main condition assessment, emergency engineering design and inspection services, full replacement of the damaged pipe, and contingency. The costs have been reviewed by staff and are considered reasonable. The cost estimate differs from the $1,500,000 indicated in the emergency designation due to new and updated information provided by Hazen and BCI as the work continued after the emergency designation was executed.

Staff will provide a briefing during the meeting.

Schedule:

Emergency Declaration	August 2024
Construction	August 2024
Project Completion	October 2024

AT016800

- 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 95 190 380 570 760 Feet

N
W E
S

CIP Location

AT016800

Birdneck Road Trunk Force Main Emergency Mitigation & Repair (SF-135)

HRSD

Resource: Bruce Husselbee

AGENDA ITEM 5. – August 27, 2024

Subject: High Priority Inflow and Infiltration Reduction Program
Additional Appropriation and Interim Agreement

Recommended Actions:

a. Appropriate additional funding in the amount of $9,421,900 for the High Priority Inflow and Infiltration Reduction Program (GN020300)

b. Approve an interim agreement with Burns & McDonnell Engineering Company, Inc. for $8,900,000.

CIP Projects: GN020300

Regulatory Requirement: Integrated Plan – HPP1 (2030 Completion)

Budget for Program	$1,300,000
Previous Expenditures and Encumbrances	($41,900)
Available Balance	$1,258,100
Proposed Contract Award to Private Entity	($8,900,000)
Proposed Contingency	($1,780,000)
Proposal Compensation Payment	($0)
Project Shortage/Requested Additional Funding	($9,421,900)
Revised Total Project Authorized Funding	$10,721,900

Type of Procurement: Competitive Negotiation – PPEA

The use of the PPEA project delivery method was approved by the Commission at the October 2023 meeting. A Public Notice and a Request for Qualifications was issued on February 28, 2024. Two Proposers submitted a Statement of Qualifications on April 1, 2024, and both Proposers were considered responsive and deemed fully qualified, responsible, and suitable to the requirements in the Request for Qualifications. Both Proposers were short-listed. A Request for Proposals (RFP) was issued on April 12, 2024, to the short-listed teams. Both short-listed teams submitted Technical Proposals on May 17, 2024, and interviews were held on May 30, 2024. The points received and the final ranking for each of the short-listed teams are listed below. The selection was based on a maximum of 125 points.

Proposers	Technical Proposal	Recommended Selection Ranking
Burns & McDonnell Engineering Company, Inc.	106	1
Arcadis U.S., Inc.	100	2

The Selection Committee recommends the top-ranked team of Burns & McDonnell Engineering Company, Inc. with Brown and Caldwell, Hazen and Sawyer, P.C., RJN Group, and Whitman Requardt & Associates, LLP. The team not selected was Arcadis U.S., Inc. They completed the selection process and were fully responsive to the procurement process. No proposal compensation was offered for the unsuccessful team.

Project Description: The Program consists of a planning project (GN020300) and five locality-specific projects that each contain multiple locality catchments where inflow and infiltration (I/I) reduction activities will be performed. GN020300 was previously appropriated at the November 2023 Commission meeting. The locality-specific projects (AT014301, JR013700, NP013901, VP019300, and WB013200) will be appropriated when the Comprehensive Agreement is awarded. The work will generally consist of the rehabilitation and replacement of locality and private gravity sewers. Substantial completion of all projects must be obtained by December 31, 2030.

The attached map depicts the project locations.

Project Justification: As part of HRSD's Integrated Plan, High Priority Regional Wet Weather Management Plant (RWWMP) Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits and are anticipated to reduce modeled Sanitary Sewer Overflow (SSO) volume at the 5-year level of service by 47 percent.

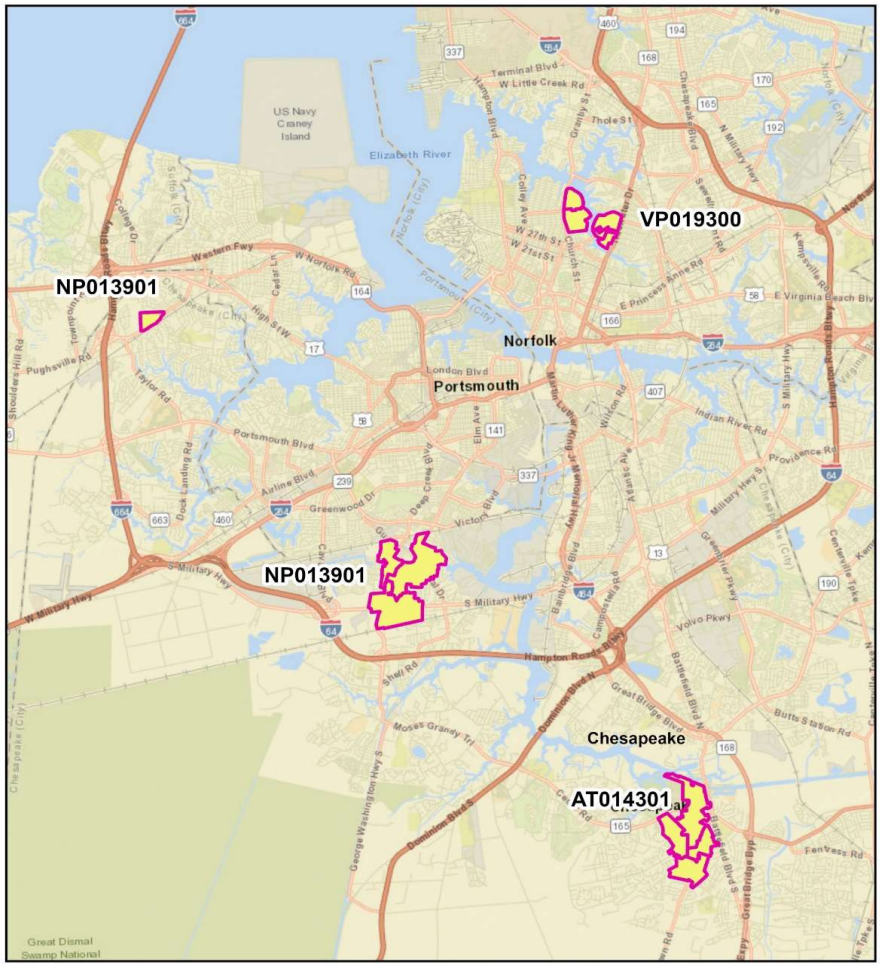
Inflow and infiltration projects require extensive field investigation due to the unknown location and severity of defects that allow the extraneous stormwater and groundwater into the sanitary sewer system. They also tend to be long-duration and iterative, as predicting the success of any rehabilitation activities is not possible due to the rather “fluid” nature of surface and groundwater in that they can migrate within a basin to find unfixed defects. Thus, these projects typically involve multiple rounds of investigation, rehabilitation, and verification.

Contract Description and Analysis of Cost: The Interim Agreement is for design-build services for initial data collection, analysis, and planning of the larger Inflow and Infiltration (I&I) Program described above and is a Guaranteed Maximum Price. A Comprehensive Agreement will be executed at the completion of the Interim Agreement for the construction of the planned I&I projects. The total cost for the initial task order is $8,400,000 including programmatic activities, existing data review and field investigations, data analysis and modeling, conceptual I&I reduction program plan, private inflow reduction program, preliminary I&I reduction plans, preconstruction support activities and development of the comprehensive agreement based on an estimate of labor hours and other direct costs. A total maximum allowance amount of $500,000 has been included for additional services including various tasks as authorized for a total amount of $8,900,000.

Funding Description: Total Program funding is based on estimates developed in the RWWMP and will be funded with cash.

Schedule:		
	Design-Build	August 2024
	Project Completion	December 2030

Proposed Location of High Priority I&I Program Work



AGENDA ITEM 6. – August 27, 2024

Subject: Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements Phase III
Initial Appropriation – Non-Regulatory, Task Order (>$200,000)

Recommended Actions:

a. Appropriate total project funding in the amount of $12,235,560.

b. Approve a task order with Hazen and Sawyer in the amount of $462,760.

CIP Project: GN019600

Project Description: This project includes a comprehensive review and possible upgrade of the existing hardware and software of the Supervisory Control and Data Acquisition (SCADA) system to ensure the long-term viability to extend into machine learning and SmartSewer applications. The project also includes the upgrades necessary to provide additional, necessary functionality. Additional functionality will include VeeterRoot Emergency Generator - Diesel Underground Storage Tank (UST) levels, leak detection, and total fuel quantities; Emergency Generator and Automatic Transfer Switch (ATS) Power Management connectivity and graphics; as well as individual Variable Frequency Drive (VFD) network cards and ethernet modbus communication to pump station VFDs.

Project Justification: The original SCADA system requirements were developed over fifteen years ago and technology has progressed and may have outpaced the original design. A comprehensive review of the network architecture, communications, database architecture, and system requirements is necessary to ensure the viability of the system to maximize security, minimize life-cycle costs, and ensure a viable platform to extend into machine learning and SmartSewer applications. This comprehensive review may also necessitate a possible upgrade of the system hardware and software to ensure ongoing viability. Additional functionality will be extended and include upgrades to and inclusion of HRSD's VeeterRoot Emergency Generator Diesel UST Leak detection systems, which include a wide range of mostly outdated models and alarms.

This project will update all systems to the latest technology and provide network cards to communicate this data to the top-end SCADA system. Leak detection, inner wall annular floats, sump floats, belly tanks, and fuel transfer pump conditions are a necessity for proper management, alarming, and upkeep for each pump station. USTs are regulated by the Department of Environmental Quality (DEQ) and these project improvements will provide a means for required leak detection and alarming, and ultimately better fuel management.

Emergency Generator, ATS, VFD, and Power Management connectivity are also included upgrades with this project for total visibility into each pump station's operation and power consumption. Availability of this data through the SCADA system will provide for complete awareness and better overall operations at each pump station.

Task Order Description: This task order will provide necessary preliminary engineering phase services (PER) for the subject project.

Analysis of Cost and Funding Description: Through the use of HRSD’s General Engineering Services Agreement, Hazen and Sawyer, will be utilized to complete this effort. The cost is based on a combination of actual, known cost for the PER phase and an Association for the Advancement of

Cost Engineering (AACE) Class V estimate prepared by HRSD. Funding for this project will include $462,760 for the PER phase, $1,040,000 for the Design phase, $5,200 for the Pre-Construction Phase, $8,944,000 for the Construction phase, $5,200 for the Closeout phase and $1,778,400 for Contingency.

Schedule:		
	PER	September 2024
	Design	January 2025
	Bid	September 2025
	Construction	January 2026
	Project Completion	June 2028

Resource: Jamie Mitchell

AGENDA ITEM 7. – August 27, 2024

Subject: James River SWIFT Facility and SWIFT Program Management Joint Funding Agreement, Purchase Orders (>$200,000)

Recommended Actions:

a. Approve the terms and conditions of the Joint Funding Agreement with the U. S. Geological Survey VA/WV Water Science Center (USGS) for the "Installation of a Subsidence Superstation at James River SWIFT and Expansion of Vertical Land Motion Monitoring in southeastern Virginia" 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.

b. Award a purchase order to USGS in the amount of $3,490,000 under the James River SWIFT Facility project (GN016360).

c. Award a purchase order to USGS in the amount of $310,000 under the SWIFT Program Management project (GN016320).

Regulatory Requirement: None

CIP Project: GN016360

Budget	$305,699,539
Previous Expenditures and Encumbrances	($289,895,775)
Available Balance	$15,803,764

Project Description: The James River SWIFT Facility project includes design, construction, and commissioning of new facilities that will apply advanced water treatment to highly treated wastewater from the James River Treatment Plant (JRTP) to produce SWIFT Water, which meets drinking water quality standards and is compatible with the Potomac Aquifer. The proposed facility is expected to have an advanced treatment capacity of 16 million gallons per day (MGD). The project is needed to reduce nutrients entering the Chesapeake Bay, create a sustainable source of groundwater, reduce the rate of ground subsidence, and protect groundwater from saltwater intrusion.

The attached map depicts the project locations.

CIP Project: GN016320

Budget	$80,000,000
Previous Expenditures and Encumbrances	($69,735,841)
Available Balance	$10,264,159

Project Description: The SWIFT Program Management project provides the professional services necessary for managing the delivery of the SWIFT Full Scale Implementation Program. The Program Management team is also delivering conveyance, wastewater treatment plant improvements, and other such projects to support full-scale SWIFT implementation. The Program Management team will implement the processes, procedures, and systems needed to design, procure, construct, permit, manage, and integrate the new SWIFT related assets.

Agreement Description: This agreement between the United States Geological Survey (USGS) and HRSD is for installation of a Subsidence Superstation near the James River SWIFT facility and the expansion of the Vertical Land Motion Monitoring Network within our region. HRSD's total cost participation is $3,725,000.

The agreement acknowledges that the USGS Research Drilling Program will mobilize equipment to install the extensometer, monitoring wells, and GNSS equipment. USGS staff will oversee all aspects of construction and start-ups. Additionally, USGS will provide $75,000 of equipment at their cost.

The installation of the Subsidence Superstation at James River will include a dual-stage extensometer, five observation wells, three global navigation satellite system (GNSS) stations (to monitor the dual extensometer and ground surface), and one Interferometric Synthetic Aperture Radar (InSAR) corner reflector. This portion of the scope of services will be charged to the existing James River SWIFT Facility project (GN016360).

The existing Nansemond Extensometer Station will be outfitted to create a second Subsidence Superstation with the installation of two additional GNSS units and an InSAR corner reflector. Further expansion of the vertical land motion monitoring network includes the placement of three GNSS stations and three InSAR corner reflectors on HRSD property in Virginia Beach, Norfolk and West Point. All stations will be connected to telemetry for real-time data collection. This portion of the scope of services will be charged to the existing SWIFT Program Management project (GN016320).

An extensometer is a very specialized instrument, which has been in use for over 40 years to produce reliable and accurate data describing aquifer thickness, groundwater levels, land surface elevation, and bedrock elevation. Installation of this extensometer and additional GNSS stations will expand the region's knowledge base and provide invaluable data to support HRSD's first full-scale SWIFT facility at James River. The impact of full-scale recharge at James River SWIFT will provide a better indication of the benefits of the SWIFT managed aquifer recharge on mitigating land subsidence within the Hampton Roads region.

The attached Agreement was prepared by USGS and reviewed by staff.

Staff will provide a briefing during the meeting.

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
VA/WV Water Science Center
1730 E. Parham Rd.
Richmond, VA 23228

July 31, 2024

Mr. Jay Bernas
General Manager and Chief Executive Officer
Hampton Roads Sanitation District
1460 Air Rail Avenue
Virginia Beach, VA 23455

Dear Mr. Bernas:

Enclosed is our standard joint-funding agreement 25LMJFAVA139 between the U.S. Geological Survey VA/WV Water Science Center and Hampton Roads Sanitation District for *Installation of a Subsidence Superstation at James River SWIFT and Expansion of Vertical Land Motion Monitoring in southeastern Virginia,*during the period October 1, 2024 through December 31, 2025 in the amount of $3,725,000 from your agency. U.S. Geological Survey contributions for this agreement are $0 for a combined total of $3,725,000. Please sign and return the agreement to Paige Nossaman at pnossaman@usgs.gov.

Federal law requires that we have a signed agreement before we start or continue work. Please return the signed agreement by **October 1, 2024**. If, for any reason, the agreement cannot be signed and returned by the date shown above, please contact Gregory Connock at (804) 261-2600 or email gconnock@usgs.gov to make alternative arrangements.

This is a fixed cost agreement to be billed quarterly via Down Payment Request (automated Form DI-1040). Please allow 30-days from the end of the billing period for issuance of the bill. If you experience any problems with your invoice(s), please contact Paige Nossaman at phone number (304) 347-5130 or pnossaman@usgs.gov.

The results of all work performed under this agreement will be available for publication by the U.S. Geological Survey. We look forward to continuing this and future cooperative efforts in these mutually beneficial water resources studies.

Sincerely,

Mark R. Bennett

Mark Bennett
Director

Enclosure
25LMJFAVA139

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000003196
Agreement #: 25LMJFAVA139
Project #: LM00VAV
TIN #: 54-6001749

Fixed Cost Agreement YES[X] NO[ ]

THIS AGREEMENT is entered into as of the October 1, 2024, by the U.S. GEOLOGICAL SURVEY, VA/WV Water Science Center, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Hampton Roads Sanitation District party of the second part.

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for negotiated deliverables (see attached), herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50, and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) include In-Kind-Services in the amount of $0.00

(a) $0 by the party of the first part during the period October 1, 2024 to December 31, 2025

(b) $3,725,000 by the party of the second part during the period October 1, 2024 to December 31, 2025

(c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of: $0

Description of the USGS regional/national program:

(d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program, and if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties. The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements, which are available on the USGS Fundamental Science Practices website (https://www.usgs.gov/office-of-science-quality-and-integrity/fundamental-science-practices).

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000003196
Agreement #: 25LMJFAVA139
Project #: LM00VAV
TIN #: 54-6001749

9. Billing for this agreement will be rendered **quarterly**. Invoices not paid within 60 days from the billing date will bear Interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C. § 3717) established by the U.S. Treasury.

USGS Technical Point of Contact

Name:	Gregory Connock Geologist
Address:	1730 East Parham Road Richmond, VA 23228
Telephone:	(804) 441-3238
Fax:	(804) 261-2657
Email:	gconnock@usgs.gov

Customer Technical Point of Contact

Name:	Dan Holloway HRSD Hydrogeologist, Technical Services
Address:	1460 Air Rail Avenue Virginia Beach, VA 23455
Telephone:	(757) 813-5126
Fax:	(n/a)
Email:	dholloway@hrsd.com

USGS Billing Point of Contact

Name:	Paige Nossaman Budget Analyst
Address:	11 Dunbar Street Charleston, WV 25301
Telephone:	(304) 347-5130
Fax:	(304) 347-5133
Email:	pnossaman@usgs.gov

Customer Billing Point of Contact

Name:	Dan Holloway HRSD Hydrogeologist, Technical Services
Address:	1460 Air Rail Avenue Virginia Beach, VA 23455
Telephone:	(757) 813-5126
Fax:	(n/a)
Email:	dholloway@hrsd.com

U.S. Geological Survey
United States
Department of Interior

Signature

By_____
Name: Mark Bennett
Title: Director

Hampton Roads Sanitation District

Signatures

By_____ **Date:** _____
Name:
Title:

By_____ **Date:** _____
Name:
Title:

By_____ **Date:** _____
Name:
Title:

Installation of a Subsidence Superstation at James River SWIFT and Expansion of Vertical Land Motion Monitoring in southeastern Virginia

Virginia and West Virginia Water Science Center

Background

The southeastern region of the Virginia Coastal Plain (VACP) is experiencing the highest rates of relative sea-level rise on the entire East Coast (~4.7 mm/yr at Sewell's Point in Norfolk, VA; Sweet and others, 2022) due to land-subsidence rates that are only exceeded by the Gulf Coast of Louisiana for U.S. coastlines (Jones and others, 2016). However, a reduction in current rates of land subsidence (a form of negative vertical land motion, VLM) is feasible given that anthropogenic activity, namely groundwater pumpage, is accountable for a significant fraction of land subsidence across the VACP via a process termed aquifer-system compaction (Galloway and others, 1999; Karegar and others, 2016).

The Hampton Roads Sanitation District's (HRSD) Sustainable Water Initiative for Tomorrow (SWIFT) program has the capacity to reduce ongoing rates of land subsidence through managed aquifer recharge (MAR) at the James River and Nansemond SWIFT facilities. This capacity is supported by previous investigations delineating the stratigraphic distribution and reversibility of skeletal deformation in the VACP aquifer system (Pope and Burbey, 2004), as well as by the Nansemond counterbalanced borehole-pipe extensometer and 5 groundwater-level observation wells situated ~$^1/_4$ mile from the Nansemond SWIFT Research Center. It is important to note that extensometers are unparalleled in analytical resolution (~0.05mm) and represent the only technique that directly measures a key driver of land subsidence – aquifer-system compaction. Time-series of compaction records, groundwater-levels, and daily injection volumes demonstrate the efficacy for SWIFT to induce expansion in the aquifer-system at the Nansemond Water Treatment Plant (Figure 1); however, intensive statistical analysis and interpretation is required to validate these coincident trends and additional monitoring is needed to extrapolate these observations beyond Nansemond. The latter is the focus of this proposal.

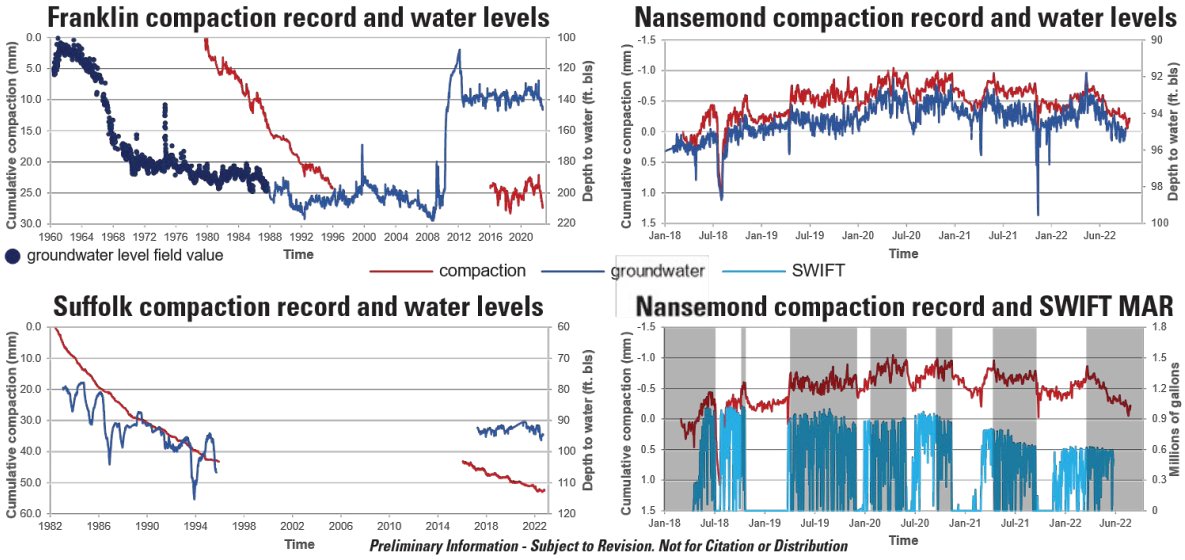


Figure 1: Time-series of groundwater levels (blue), compaction records (red), and SWIFT MAR (light blue). Note the effects of reduced pumpage on groundwater levels post-2008 at Franklin, continued compaction at Suffolk despite stable groundwater

levels, and effects of MAR on groundwater levels and aquifer-system thickness at Nansemond. The large gap in the compaction records from Franklin and Suffolk is a result of both extensometers being decommissioned in 1995 and subsequently restored to operational status in 2016. Consequently, the data collected post-2016 begin at the last measured cumulative compaction value from 1995, per USGS convention.

Objectives

HRSD recently approached the U.S. Geological Survey (USGS) to initiate planning for installation of a subsidence superstation for long-term (decadal) aquifer-system thickness, groundwater-level, and land-surface elevation monitoring at the James River SWIFT facility. In addition, HRSD has expressed interest in the development of an independent, continuous Global Navigation Satellite Systems (c-GNSS) network equipped with Synthetic Aperture Radar (SAR) corner reflectors to supplement the preexisting Virginia Extensometer Network (Figure 2). This will allow for not only an improved understanding of land subsidence in the region, but also will inform how the effects of SWIFT MAR propagate to the land surface and spatially across the VACP.

The objectives of this proposed effort are as follows:

James River SWIFT Subsidence Superstation

1. Evaluate and select a candidate location for the subsidence superstation within 1 mile of the James River SWIFT Facility.
2. Design and construct a dual-stage extensometer comprising deep ***and*** shallow counterbalanced borehole pipe extensometers to monitor the hydrostratigraphic zonation of aquifer-system compaction and expansion in response to groundwater pumpage and SWIFT MAR.
3. Construct 5 groundwater-observation wells in the surficial (1), Piney Point (1) and Potomac (3) aquifers to monitor the hydrogeologic distribution of groundwater levels.
4. Install and mount 3 continuous Global Navigation Satellite Systems units, one on each extensometer rod as well as on a shallow-augured monument, to deconvolve the VLM signal.
5. Install and orient a collocated corner reflector for optimal acquisition of C- and X-band SAR data.

c-GNSS station installation

1. Determine optimal placement and design (e.g., ground- vs. building-based) of each c-GNSS station (8 total, including units cited above for the James River site) based on site conditions.
2. Construct shallow-augured braced monuments for ground-based c-GNSS stations to provide an ultra-stable mount for a GNSS antenna at selected locations (see ‘Approach’ for details).
3. Buildout each c-GNSS station and ensure stations are connected to a telemeter for upload to a secure server, enabling raw data to be processed within a global reference frame by the Nevada Geodetic Laboratory for calculation of vertical and horizontal velocities.

SAR corner reflector installation

1. Determine optimal placement of each corner reflector (5 total, one for each location), collocating with proximal c-GNSS stations if possible.
2. Develop and construct ultra-stable support for each corner reflector, typically following a similar methodology used for the c-GNSS station monument construction.
3. Verify corner reflectors are properly oriented for desired SAR wavelength(s), likely C- and X-band, and reorient as needed.

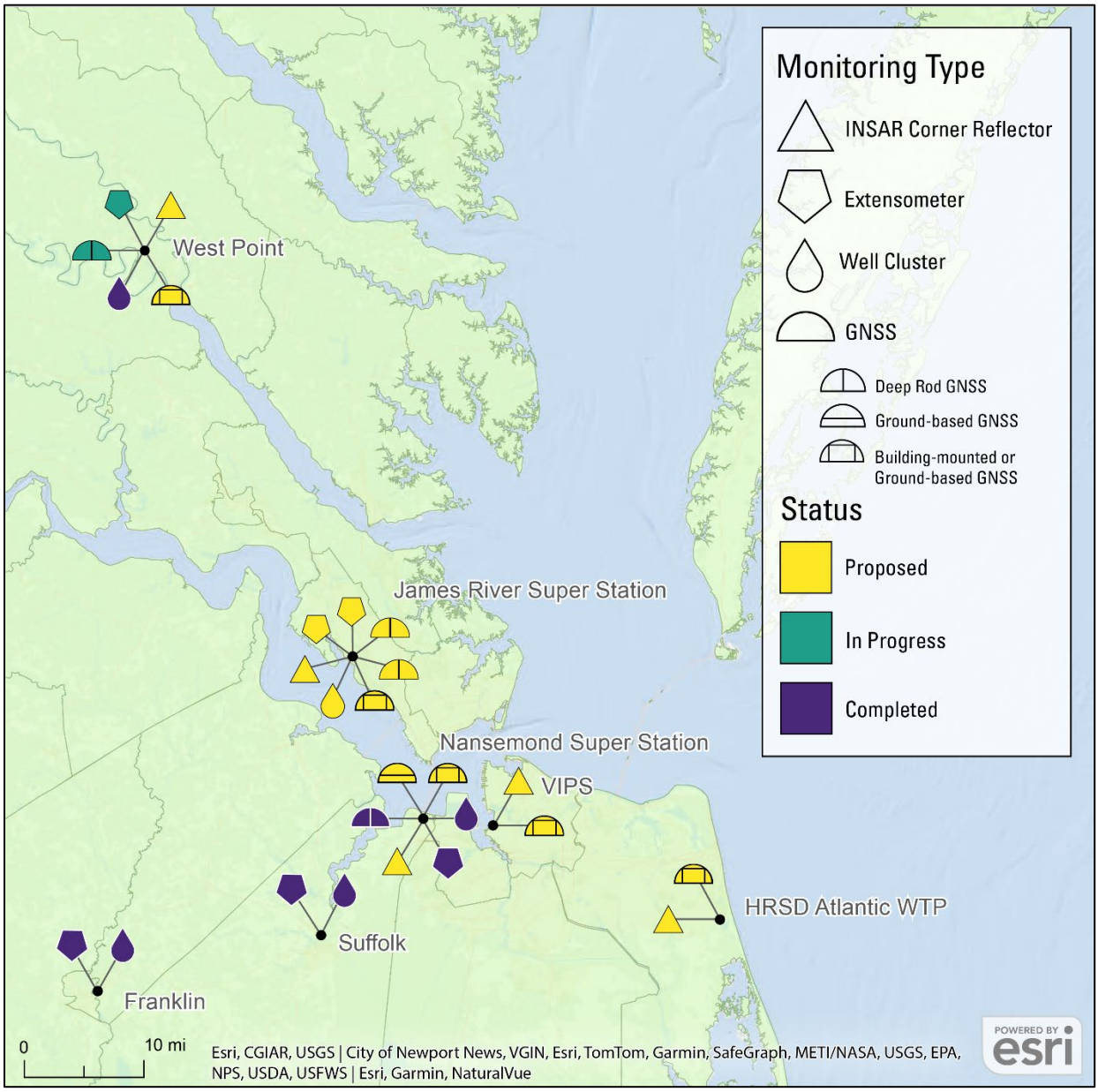


Figure 2: Map of existing, in progress, and proposed VLM monitoring instrumentation across the VACP.

Approach

The design, construction, and instrumentation of the James River SWIFT facility subsidence superstation, as well as installation of c-GNSS stations and corner reflectors, will be an iterative and collaborative process between HRSD and the USGS. For ease of reference, the following approach will be chronologically organized into four main sections corresponding to the pre-construction, construction, and post-construction phases of the James River SWIFT subsidence superstation, with details surrounding c-GNSS station and corner reflector installation provided in the final section ('VLM Monitoring Network Expansion'). Construction in this sense is analogous to 'drilling', as construction elements of superstation surface buildout will be included in the 'post-construction phase.'

Pre-construction phase

Site selection will be conducted in collaboration with HRSD to identify the ideal placement of the subsidence superstation relative to the James River SWIFT Facility injection well field (Figure 3).

Surface buildout of the extensometer and installation of the observation well cluster may occur at distinct locations to enable these two elements to be done concurrently, if desired. Key site requirements include accessibility via paved or gravel road, relatively flat terrain, and minimal sky obstruction by buildings or trees. A minimum work area of 250 ft. x 250 ft. will be required for the active construction phase of the extensometer and observation well cluster, with additional space (minimally 100 ft.x100 ft.) needed for staging equipment and materials. Requisite pre-construction plans needed to begin drilling and construction of the subsidence superstation, such as the erosion and sediment control plan, site plan, grading and drainage plan, as well as the easement for the extensometer surface reference frame, will be completed by HRSD. USGS will coordinate and execute plans as needed, such as implementing appropriate erosion and sediment control measures (e.g., silt fence), installing temporary stone access if required, and protecting the land surface within the work area through a combination of light duty (e.g., VersaMATS) and heavy duty (e.g., timber) mats.

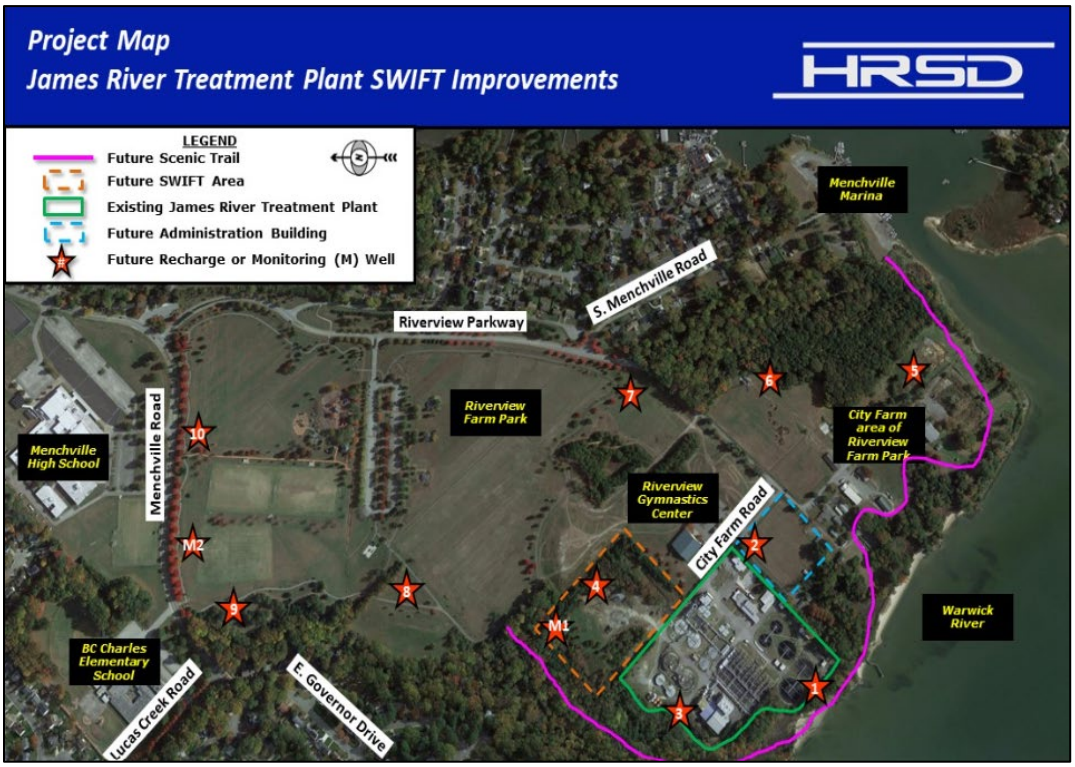


Figure 3: Map of James River SWIFT facility in Newport News, VA where a subsidence superstation will be constructed (source: HRSD, https://www.hrsd.com/james-river-tp-swift-improvements)

Construction phase

The USGS Virginia-West Virginia Water Science Center (VA-WV WSC) will partner with the USGS Research Drilling Program (RDP) to install the dual-stage counterbalanced borehole pipe extensometer and groundwater observation well cluster. Subsurface construction of the deep and shallow extensometer, surface reference frame support piers, and five observation wells will be completed by the RDP. Surface buildout, including associated equipment and sensors, and the installation of the rod-mounted GNSS units on the extensometers will be completed by the VA-WV WSC and detailed in the "post-construction phase" section.

The drilling program and subsurface construction of both the deep and shallow extensometer will be identical, differing only by total well depth. The deep extensometer will transect the entire aquifer system and penetrate basement rock, minimally by 100 ft. The shallow extensometer will terminate at the top of the Potomac confining zone, likely 400-600 ft. bls. This will enable the delineation of how the aquifer system responds to SWIFT MAR. An improved understanding of how the effects of SWIFT MAR propagate hydrostratigraphically will inform future SWIFT facility operation and refine groundwater and compaction model-based projections of land subsidence. As previous studies have demonstrated in the VACP (e.g., Pope and Burbey, 2004), the hydrogeologic zonation of groundwater withdrawals [and

injections] can be separated in space and time. A dual-stage extensometer will directly address the former (i.e., space) and indirectly the latter (i.e., time), in conjunction with the four extensometers in Franklin, Suffolk, Nansemond, and West Point. Both extensometers will be equipped with a rod-mounted GNSS unit for subsidence monitoring and QAQC purposes.

Construction of the dual-stage extensometer, in general terms, will be as follows. Refer to Figure 4 as a guide but note some dimensions in the text may differ from what is shown in the figure. Final design specifications will be captured in an updated schematic following superstation completion. A large borehole (24 in. to 30 in.) will be drilled to a to-be-determined (TBD) depth to set the conductor casing. Additional drilling will enable surface casing (14 in. to 16 in.) to be set within the conductor to a TBD depth. A pilot hole will be drilled to the target depth, either to basement or to the top of the Potomac confining zone, and then reamed until sufficient borehole stability and diameter is achieved to set the outer casing (7 in.) for the extensometer rod (2 in.). The extensometer rod will be lowered within the 7 in. outer casing and securely suspended above a cement plug at the base of the 7 in. outer casing. Finally, the support piers for the instrument table and bridge will be drilled to a TBD depth. Sub-millimeter sensitivities (0.05 mm) and long-term structural integrity of the instrument will be achieved through inclusion of the following subsurface reference-frame construction elements:

- 7 in. casing slip joints to facilitate accommodation of vertical stress and strain that can lead to casing failure
- Deep surface-mounted support piers to insulate the surface reference frame from soil compaction

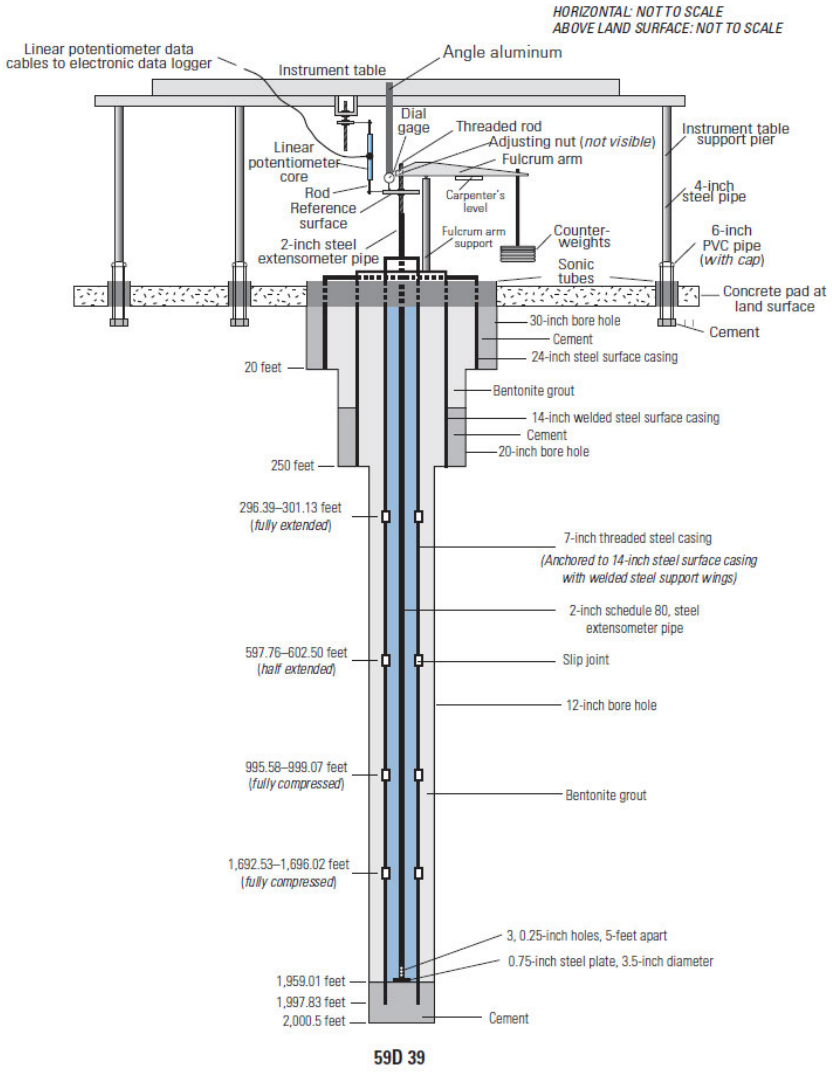


Figure 4: Schematic of the Nansemond counterbalanced borehole pipe extensometer. Note the second borehole discussed in the text is not depicted, as the Nansemond extensometer station is a single-stage instrument.

Five groundwater-observation wells will be drilled and screened within the surficial (1), Piney Point (1), and Potomac (3) aquifers to monitor groundwater-level changes at the James River subsidence superstation. However, stratigraphic reallocation of observation wells may be considered based on geologic conditions encountered while drilling to optimize groundwater-level monitoring with respect to the dual-stage extensometer. Specific observation-well depths will be determined by local aquifer characteristics interpreted from a combination of cuttings and geophysical logs. Well construction details, such as nesting and casing material, will be discussed with HRSD in preparatory meetings to ensure well design aligns with SWIFT objectives. Well development criteria will be included in these discussions. Also, the vertical distribution of target zones may be revised based on discussions with HRSD, RDP, and others with extensive drilling and hydrogeologic experience in the VACP, such as the Virginia Department of Environmental Quality, to better align with stakeholder interests.

Post-construction phase

The USGS VA-WV WSC, in coordination with HRSD, will lead the surface buildout of the dual-stage extensometer and greater subsidence superstation. Construction of an insulated metal framed and sided building (16-20 ft. x 16-20 ft. footprint) with a concrete foundation will be the first step following the drilling of the extensometer and may run concurrently with continued drilling of observation wells, if desired. While the USGS can procure construction of the metal building housing the surface instrumentation of the extensometer, it will likely be more expedient and cost-effective for HRSD to assume responsibility for shed construction. Additional details on the metal building, including a statement of work with design specifications, will be provided in a separate document. Please note costs for the metal building are not included in the "Funding and In-Kind Support" section.

Construction of the surface reference frame entails the following main elements (refer to Figures 4 and 5 as a reference):

- Extension of the surface piers to elevate the instrument table and bridge
- Fabrication of the instrument table and bridge
- Fabrication of fulcrums and counterweights

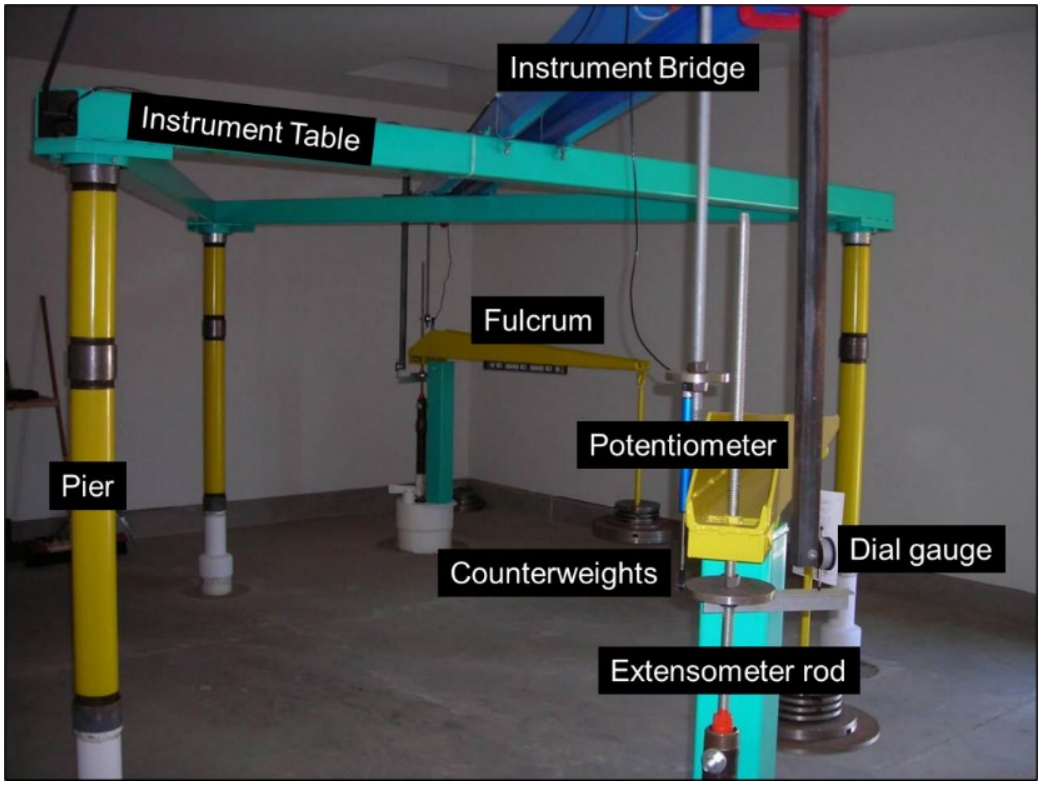


Figure 5: Surface reference-frame structures (support piers, instrument table, instrument bridge, counterweighted fulcrums, and instrumentation) at a dual-stage counterbalanced borehole pipe extensometer in San Lorenzo, CA (USGS Public Domain).

Once the surface reference frame is in place and both extensometers are effectively counterbalanced to minimize signal noise from shallow surface processes and friction in the subsurface reference frame, linear displacement sensors (potentiometers, dial gauges), barometer, thermometer, and data logging/communication equipment will be installed, as well as the GNSS units on the deep and shallow extensometer rods. In addition, each observation well will be equipped with a pressure transducer, data logger(s), and satellite telemetry once constructed. USGS will consult with HRSD to ensure that pressure transducers, installed to monitor water-level changes in each well, are engineered to tolerate potential head fluctuations induced by activity at the James River SWIFT facility.

The proposed instrumentation will enable the following data to be monitored and collected at the James River SWIFT facility subsidence superstation:

- aquifer-system compaction and expansion over two discrete intervals
- vertical and horizontal velocities of deep-rod benchmarks
    - ***vertical and horizontal velocities of the land surface will be recorded by a collocated shallow-augured c-GNSS station at the James River SWIFT facility, with details provided in the following section
- continuous (15-minute) groundwater levels in 5 discrete hydrogeologic units
- barometric pressure
- temperature
- instrument performance parameters

All data generated by the James River SWIFT facility subsidence superstation will be publicly available. Compaction records and groundwater levels will be served via the USGS National Water Information System (http://waterdata.usgs.gov/nwis), with GNSS daily solutions made publicly accessible by the National Geodetic Laboratory (http://geodesy.unr.edu/). Given that corner reflectors are passive instrumentation that enhance the collection and analysis of SAR data, there are no data to be shared associated with the corner reflector at James River SWIFT. Support needed for the first 5 years of maintenance and operation of the subsidence superstation are included in a separate proposal.

VLM Monitoring Network Expansion

HRSD and the USGS identified 5 distinct locations to install 8 c-GNSS stations of variable monument design (deep-rod, ground-based, building-based), with each location equipped with a SAR corner reflector (5 total, Figure 2) to tie VLM datasets (compaction records, GNSS, InSAR) into a local reference frame for targeted analysis of land surface deformation. The exact locations of c-GNSS stations and SAR corner reflectors remain undetermined and will be dependent on additional onsite assessments by the USGS and discussions with HRSD. Considerations for optimal placement include clear sky view and positioning relative to preexisting and planned structures. These factors will ultimately determine station resolution and sensitivity to both short- and long-term land-surface elevation changes caused by SWIFT MAR, groundwater pumpage, and post-glacial isostatic adjustment. The effectiveness of each SAR corner reflector will also be governed by proximal site conditions.

The USGS will acquire all materials needed for c-GNSS station construction. HRSD will procure the SAR corner reflector assemblies. The USGS will install all c-GNSS stations and SAR corner reflectors. Installation will be similar for both. Stainless steel rods will be driven to refusal in unconsolidated sediments in a similar fashion to the ultra-stable shallow-braced (non-drilled, hand augured) monuments widely adopted and accepted for use in geodetic networks and studies worldwide. Subject-matter experts from the NOAA National Geodetic Survey will accompany and assist USGS staff with installation of the first c-GNSS station monument. A list of c-GNSS station locations is provided below. SAR corner reflectors are not explicitly listed to minimize redundancy, but do note that each unique location will have 1 corner reflector for a total of 5.

1. James River SWIFT extensometer-mounted c-GNSS station (DEEP)
    a. Measures VLM caused by post-glacial isostatic adjustment.
    b. Location significance: forms a cornerstone of the James River Subsidence Superstation.
2. James River SWIFT extensometer-mounted c-GNSS station (SHALLOW)

    a. Measures VLM caused by post-glacial isostatic adjustment and aquifer-system thickness changes exclusive to the Potomac confining unit and Potomac aquifer.
    b. Location significance: forms a cornerstone of the James River Subsidence Superstation.
3. James River SWIFT well field shallow-braced c-GNSS station
    a. Measures total VLM in an area with limited VLM data.
    b. Location significance: proximity to James River SWIFT facility, fills data gaps, grants near-term preliminary understanding of the potential effects of 16 MGD of MAR on VLM-rates in the region.
4. Nansemond shallow-braced c-GNSS station
    a. Measures total VLM, providing a mechanism to frame rates derived from the extensometer and extensometer-mounted c-GNSS station.
    b. Location significance: forms a cornerstone of the Nansemond Subsidence Superstation.
5. Nansemond SWIFT well field shallow-braced c-GNSS station
    a. Measures total VLM and allows for double differencing to generate high-precision VLM-rate calculations.
    b. Location significance: double differencing, determination of potentially variable surface propagation of SWIFT MAR effects.
6. West Point extensometer shallow-braced c-GNSS station
    a. Measures total VLM and collocated with the West Point extensometer rod-mounted c-GNSS station funded by the Virginia Department of Environmental Quality.
    b. Location significance: strategically placed between the largest withdrawal source in the VACP and James River SWIFT facility.
7. HRSD Atlantic Treatment Plant shallow-braced c-GNSS station
    a. Measures total VLM.
    b. Location significance: monitors the far-field effects of SWIFT MAR in a coastal setting with no nearby injections or withdrawals.
8. HRSD Virginia Initiative Plant shallow-braced c-GNSS station
    a. Measures total VLM.
    b. Location significance: monitors areal propagation of Nansemond SWIFT signal and is proximal to fill material that may contribute to localized VLM anomalies in the region.

Timeline

The provided timing estimates in this section include only the construction and post-construction phases of the James River subsidence superstation. Uncertainties inherent to the pre-construction phase, such as the drafting and approval of site plans, would obscure accurate quantitation of the timeline. Please note the timeline below is relative (i.e., no exact dates are given), idealized and subject to change (Figure 6). However, the USGS aims to complete the work outlined in this proposal ***at least 3 months prior*** to full-scale operation of the James River SWIFT facility to establish baseline measurements of aquifer-system compaction, groundwater levels, and land-surface elevation. Surface buildout of the extensometer and observation well construction may be done concurrently to expedite the beginning of compaction records, which are crucial to monitor the potential effects of SWIFT MAR on preexisting rates of land subsidence in the area.

The drilling/construction phase, including the subsurface reference-frame buildout of the dual-stage extensometer and construction of five groundwater-observation wells, is anticipated to take 4 months. Once the metal building is procured and constructed, an additional 3 months will be required to complete surface reference-frame buildout and instrumentation of the extensometers, including installation of the rod-mounted GNSS units, and observation well cluster. Installation of the collocated shallow-augured c-GNSS station and corner reflector will likely be completed prior to the pre-construction phase, along with the additional c-GNSS stations and corner reflectors included in this proposal. At the end of this 3-month period, the subsidence superstation will be operational. The funding required for maintenance and operation of the subsidence superstation by the USGS through 2029 is included in a separate proposal.

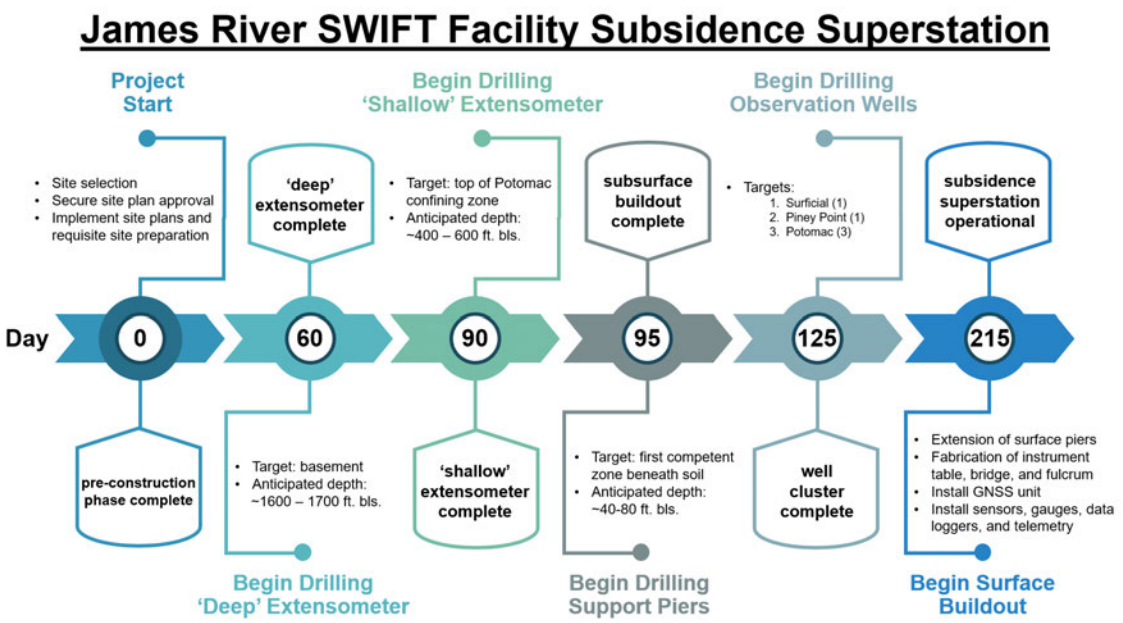


Figure 6: Generalized timeline for the completion of the James River SWIFT facility subsidence superstation. Note that drilling of the observation wells and surface buildout may run concurrently, reducing the overall project duration by ~30 days.

Funding and In-Kind Support

The total cost of this proposal is $3,800,000. However, USGS will provide all instrumentation for the dual-stage extensometer and observation wells at the James River SWIFT subsidence superstation at a value of $75,000.

In sum, total requested funding from HRSD to support the work outlined in this proposal is **$3,725,000**. Refer to the table below for a detailed cost breakdown.

Task	Quantity	Amount	Total
James River Subsidence Superstation			
Drilling – Dual-stage Extensometer			$1,990,000
Drilling – Groundwater-observation Wells	5	variable	$595,000
Extensometer Surface Buildout			$65,000
Extensometer and Well Instrumentation			$75,000
c-GNSS Station Installation/Instrumentation	3	$50,000	$150,000
SAR Corner Reflector Installation	1	$5,000	$5,000
Scientific Support and Project Management			$610,000
sub-total			$3,490,000
VLM Monitoring Network Expansion			
c-GNSS Station Installation/Instrumentation	5	$50,000	$250,000
SAR Corner Reflector Installation	4	$5,000	$20,000
Scientific Support and Project Management			$40,000
sub-total			$310,000
Grand Total			$3,800,000
USGS Contribution			$75,000
HRSD Contribution			**$3,725,000**

Please note costs associated with specific pre- and post-construction phase elements are omitted from the total proposal cost above and will need to be completed by HRSD. These include:

1. Securing a site for the subsidence superstation
2. Drafting and approval of all requisite site plans, permits, and easements
3. Construction of the metal building housing the extensometer(s) surface reference frame
4. Procurement and delivery of 5 SAR corner reflectors

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Resource: Bruce Husselbee

AGENDA ITEM 8. – August 27, 2024

Subject: Larchmont Area Sanitary Sewer Improvements
Cost Sharing Agreement – Termination Amendment

Recommended Action: Approve the terms and conditions of the Termination Amendment with the City of Norfolk for the Larchmont Area Sanitary Sewer Improvements 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.

CIP Project: VP015320

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

Budget	$52,974,257
Previous Expenditures and Encumbrances	($16,765,640)
Available Balance	$36,208,627

Project Update: The City of Norfolk, Department of Utilities, has requested termination of the Larchmont Area Sanitary Sewer Improvements cost sharing agreement dated July 10, 2020. HRSD was notified by letter dated July 9, 2024, from Robert Carteris, Director of Norfolk Department of Utilities, outlining reasons for the request and formally requesting termination. HRSD legal counsel has been directed to proceed with preparation of the termination amendment.

The City will take the lead on notifying residents affected by the termination. HRSD will provide a review of the notification, which will include a statement that HRSD is proceeding with the remainder of the project.

Staff will provide a briefing during the meeting.

Schedule:

Construction	September 2024
Project Completion	December 2027

AGENDA ITEM 9. – August 27, 2024

Subject: Nansemond Recharge Wells (Off Site) (GN016382) and Nansemond Recharge Well Integration (GN016383)
Initial Appropriation, Contract Award (>$200,000)

Recommended Actions:

a. Appropriate total project funding for GN016382 in the amount of $60,616,800.

b. Award a contract to CDM Smith, Inc. in the amount of $483,197 for GN016382 and $1,170,565 for GN016383.

Note: Funds for GN016383 were appropriated in February 2024.

CIP Project: GN016382 and GN016383

Regulatory Requirement: Integrated Plan – SWIFT

Type of Procurement: Competitive Negotiation

A Public Notice was issued on June 5, 2024. Three firms submitted proposals on July 2, 2024, and all firms were determined to be responsive and deemed fully qualified, responsible, and suitable to the Professional Services Selection Committee (Committee) and to the requirements in the Request for Proposals. Three firms were short-listed, interviewed, and technically ranked as listed below:

Proposers	Technical Points	Recommended Selection Ranking
CDM Smith, Inc.	89	1
Gannett Fleming, Inc.	85	2
Kimley Horn & Associates, Inc.	77	3

The Committee recommends award to CDM Smith, Inc., whose professional qualifications and proposed services best serve the interest of HRSD.

Project Description:

Nansemond Recharge Wells – Off Site (GN016382): This project will provide for the design and construction of recharge wells and monitoring wells and services for the development, logging, testing, and conditioning of wells associated with SWIFT at the Nansemond Treatment Plant (NTP). The scope does not include well site development, or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells. The well locations are outside the boundary of NTP property.

Nansemond Recharge Well Integration (GN016383): This project will design and construct the process mechanical elements, mechanical, civil/site, structural/architectural, electrical, and instrumentation and control for the infrastructure required to convey SWIFT Water from the Nansemond SWIFT facility to the off-site managed aquifer recharge wells and monitoring wells. A section of the backflush and SWIFT Water piping will be constructed from the NTP boundary to the traffic circle at the College Drive/Armstead Road intersection under a separate project, Boat Harbor

Treatment Plant (BHTP) Transmission Force Main Section 2 project. The remaining off-site SWIFT Water and backflush piping will be constructed under this project.

Project Justification:

Nansemond Recharge Wells – Off Site (GN016382): are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

Nansemond Recharge Well Integration (GN016383): Nansemond Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit. Separation of this project from the well drilling and advanced water treatment facility projects allows for a focused selection of delivery methods and contract requirements for off-site work.

Contract Description: This contract is for professional engineering services to provide preliminary design, final design, construction administration, construction inspection, and other such services to complete two capital projects to deliver the off-site managed aquifer recharge wells and monitoring wells associated with Nansemond SWIFT facility.

Analysis of Cost: The cost is based on a negotiated scope of work for a preliminary engineering report (PER) for each project. Each PER will be focused on alternatives evaluation, preliminary design required for each project scope, and estimated project cost. For the GN016382 project, the ratio of PER fee to construction cost is 0.76%. For the GN016383 project, the ratio of PER fee to construction cost is 1.63%. Both efforts are within a reasonable range of engineering efforts at the PER phase compared to past large HRSD projects.

Schedule:		
	PER	September 2024
	Design	January 2025
	Bid	August 2026
	Construction	January 2027
	Project Completion	December 2028

Resource: Bruce Husselbee

AGENDA ITEM 10. – August 27, 2024

Subject: Williamsburg Treatment Plant (WTP) Emissions Monitoring System
Initial Appropriation – Non-Regulatory

Recommended Actions: Appropriate total project funding in the amount of $650,000

CIP Project: WB013910

Regulatory Requirement: None

Project Description: This project will replace the total hydrocarbon (THC) continuous Emissions Monitoring System (CEMS) at the WTP. HRSD currently operates CEMS for Sewage Sludge Incinerator (SSI) compliance with the Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) Part 503E standards.

Project Justification: The current THC CEM system is obsolete and unreliable. It is no longer able to meet regulatory EPA Office of Water's Part 503 Subpart E requirements for monitoring.

Funding Description: The total project cost estimate of $650,000 includes $500,000 for construction and $150,000 for contingency and is based on a Class 5 CIP-prioritization level cost estimate prepared by HRSD.

Schedule:		
	Bid	September 2024
	Construction	October 2024
	Project Completion	July 2025

Resource: Eddie Abisaab

AGENDA ITEM 11. – August 27, 2024

Subject: York River Treatment Plant (YRTP) Main Switchgear Relay Replacements
New CIP and Initial Appropriation – Non-Regulatory

Recommended Actions:

a. Approve a new CIP project.

b. Appropriate total project funding in the amount of $1,000,000.

CIP Project: YR015100

Regulatory Requirement: None

Project Description: This project will retrofit the existing switchgear instrument compartment doors with newly fabricated pre-wired compartment doors in the 5kV main switchgear along with the replacement of 18 protective relays. In addition, the project will require modifications to the control wiring to interface with the existing equipment. The project will also include programming, testing, and commissioning of the new equipment. The switchgear was installed as part of the York River Treatment Plant Expansion Phase I Contract A project completed in 2010.

Project Justification: In May 2024, the plant experienced a failure of the Main A protective relay. The relay failure caused the Main A breaker to trip and lock open, resulting in an unintended transfer from utility to generator power, and prohibiting the main breaker from returning to the utility. As an interim strategy, a similar refurbished relay was installed allowing the switch back to utility power. Although the refurbished relay allowed the return to utility power, reliability remains a concern due to the unknown longevity of the refurbished relay. Additionally, staff must initiate a total power loss to return to utility, which results in the task of resetting equipment. The existing relays are no longer available, and no replacement parts exist. All critical electrical distribution to the plant equipment loads originates at the switchgear. The main switchgear houses the utility feed breakers, emergency generator interconnection breakers, and electrical distribution loop feeder breakers. Replacing the relays will improve reliability, ensure that critical processes are not adversely impacted and provide a seamless transition between utility and generator sources.

Analysis of Cost and Funding Description: The estimated cost of this effort is $1,000,000 and will be funded by the YRTP Main Switchgear Relay Replacements (YR015100) project. The project costs consist of design and construction costs of $500,000, a 25% Contingency of $250,000 and an additional amount to accommodate any unforeseen conditions during construction. The cost for this is based on high-level, preliminary estimates developed by Design-Builder ITAC Power Systems.

Schedule:

Emergency Declaration	August 2024
Construction	December 2024
Project Completion	January 2025

Resource: Jay Bernas

AGENDA ITEM 12. – August 27, 2024

Subject: New Business

Resource: Jay Bernas

AGENDA ITEM 13. – August 27, 2024

Subject: Unfinished Business

Resource: Commission Chair

AGENDA ITEM 14. – August 27, 2024

Subject: Commissioner Comments

Resource: Jay Bernas

AGENDA ITEM 15. – August 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 Measures Summary

c. Emergency Designations

(1) Birdneck Road Trunk Force Main Emergency Mitigation and Repair (SF-135)

(2) Hampton University- East College Place (NF-133)

(3) Online and Interactive Voice Response (IVR) Payment Processing

(4) York River Treatment Plant Main Switchgear Relay Replacements

August 16, 2024

Re: General Manager's Report

Environmental Responsibility

Staff held a Hurricane Drill during the week of July 15. This also included a damage assessment exercise where we utilized an internally developed app to collect damage and preliminary cost information. On Friday, July 19, HRSD was impacted by the global CrowdStrike outage which coincided with the simulated Hurricane arrival day, so this added an extra layer of realism to our drill. Staff documented lessons learned and will be working to incorporate recommended changes to our plan.

Treatment Compliance and System Operations: There were multiple events reported this month. Additional details are available in the Air and Effluent Summary in the Water Quality monthly report.

- From Fiscal Year (FY) 2025 to date, there have been zero Permit Exceedances out of 4,711 Total Possible Exceedances.
- Pounds of Pollutants Removed in FY 2025 to date: 18.1 million pounds.

Water Quality: No civil penalties were issued in July.

Financial Stewardship

Staff successfully sold $268 million in revenue bonds which will be used to fund our capital projects. The overall interest rate was 4.15%. Prior to the sale, our ratings agencies reaffirmed our Aa1 and AA+ ratings.

, The new legislation prohibiting disconnections above 92 degrees within a 24-hour period went into effect on July 1. With the high temperatures, staff performed other work including outbound collection calls, arranging pay plans and leaving financial assistance tags.

Wastewater revenues were slightly below expectations as water consumption was 1% lower than expected, but expenses were below budget by a larger margin.

HRSD's Quarterly Investment Report is included in this report. For the Retiree Health Plan, total assets are $75.8 million with year-to-date performance through June 30 at 6.39% above the blended benchmark of 6.09%.

Talent

Several peer reviewed journal articles were published by HRSD staff on a range of topics, see the Operations report for a listing and hyperlinks to the articles.

Human Resources continued with the transition-related work with our new benefit carriers that became effective July 1.

Staff met with Old Dominion University to discuss a partnership related to the governor approved lab school focused on maritime industries.

Learning & Development procured a new Learning Management System (LMS) called Cornerstone to assist with departmental and compliance training.

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

1. Attended the Operations QST.
2. Held a meeting with our legal team and staff.
3. Met with the Employees Association.

Community Engagement

Commissioner Glenn and I met with the Friends of Lamberts Point Civic Group on July 9. We walked around both the City and HRSD's property.

Staff met with Vice-Mayor Rosemary Wilson on July 24 and provided her a tour of the Atlantic Treatment Plant. She was very appreciative of HRSD's efforts and liked our idea to develop a Memorandum of Understanding between the City and HRSD that will document our efforts to reduce odors in the surrounding community.

Staff held a Community Commitment Program workshop for all our participating consultants and contractors. This was helpful for all involved to share ideas on this impactful program.

Staff held the 31st Annual Pretreatment Excellence and Pollution Prevention Awards on July 30. This was attended by over one hundred permittees that won awards for compliance and included presentations by both HRSD and the Chesapeake Bay Foundation, which underscored the importance of their hard work.

Staff held an Citizen Odor Task Force at the Atlantic Treatment Plant where they reviewed short-term efforts currently underway.

Innovation

A US patent was granted in June 2024 in the gravimetric technology family:

> Maureen O'Shaughnessy, Christine Debarbadillo, **Charles Bott**, Haydee De Clippeleir, Bernhard Wett, and Sudhir Murthy. 2024. Method and apparatus for multi-deselection in wastewater treatment. USPTO US11999641B2, https://patents.google.com/patent/US11999641B2/en

I attended the Cyber Fortress Distinguished Visitor Day on July 11. Cyber Fortress is an annual exercise of the Virginia National Guard together with state and federal organizations who would respond to a real-world cyber incident. This year, the focus was on the water sector and HRSD played a major role in helping to develop the exercise. The event was attended by a few Virginia Delegates and one Senator.

Staff continue to expand the use of PowerBI which enables staff to visualize data via powerful dashboards to make data-driven decisions. This tool is essential for our monthly metrics review and its use continues to expand to other areas.

Staff are developing an internal development tracking tool that improves upon our current software. With the number of developments increasing, this will improve our efficiency.

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

Respectfully submitted,

Jay Bernas, P.E.
General Manager

TO: General Manager

FROM: Chief Communications Officer

SUBJECT: Monthly Report for July 2024

DATE: August 19, 2024

A. Publicity and Promotion

1. HRSD and Sustainable Water Initiative For Tomorrow (SWIFT) were mentioned or featured in 13 stories this month. Topics included:

   a. Business notes announcing Commission reappointments

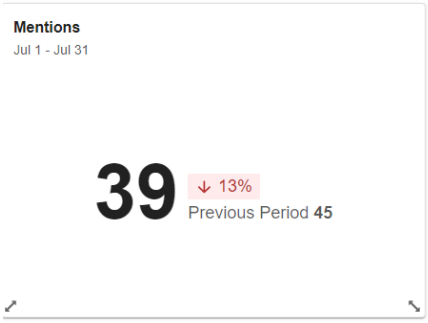
   b. Water and Wastes Digest feature on upcoming HRSD construction projects

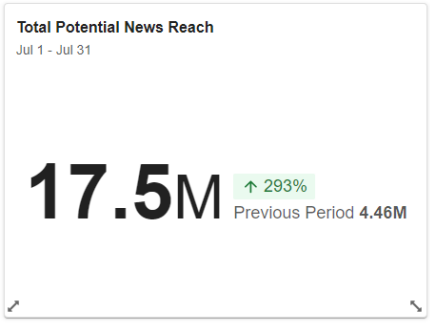
   c. Water and Wastes Digest feature on Clean Water state Revolving Fund

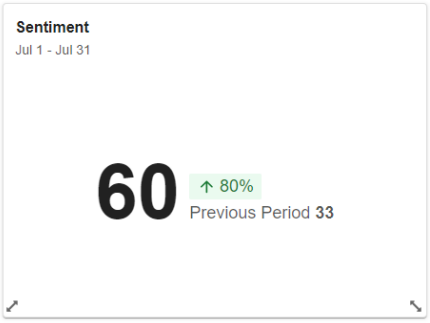
   d. Moody's Ratings assignment for HRSD

2. Analysis of Media Coverage

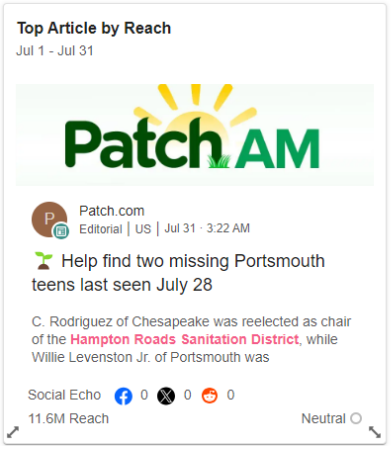
   a. Key results for July

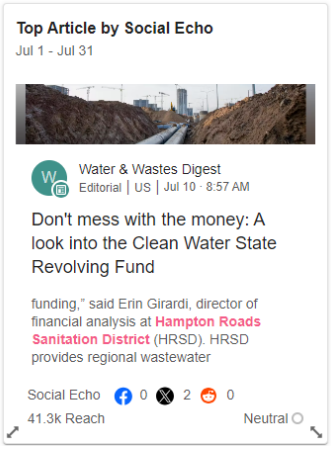


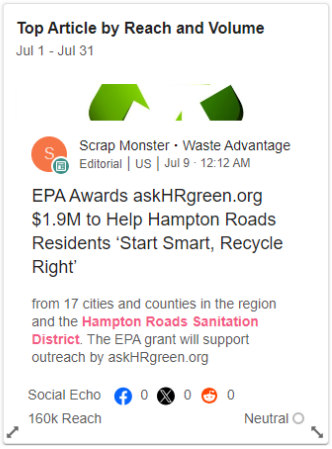




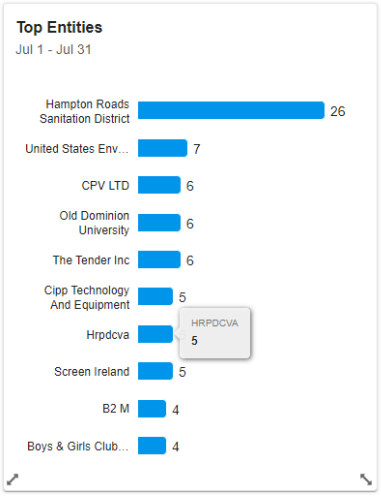
   b. Top performing news content

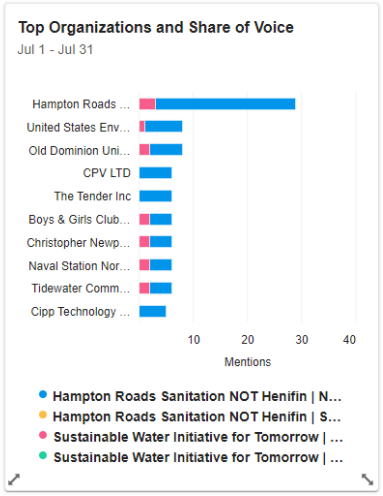




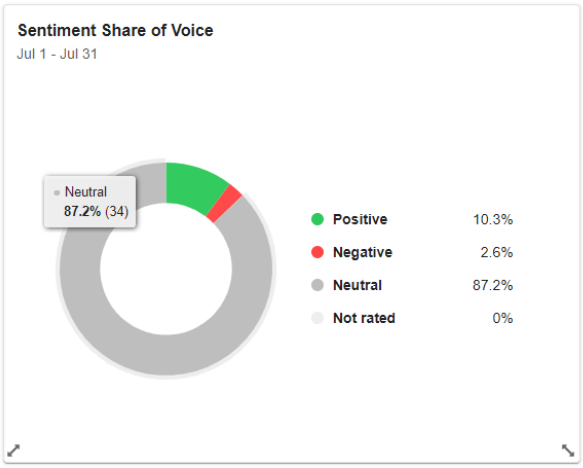


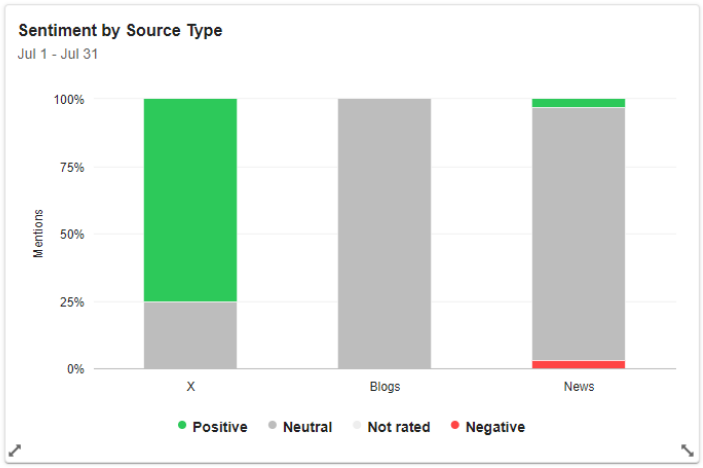
c. Top entities and keywords





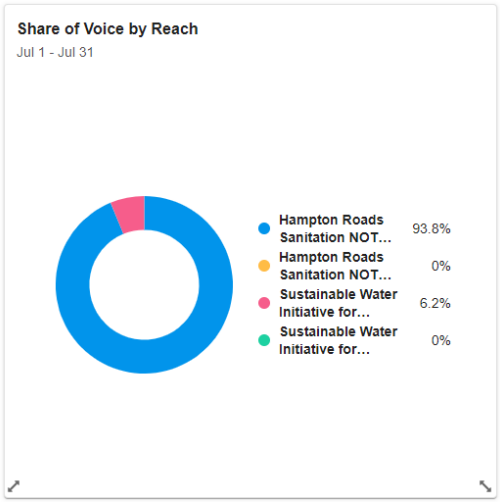
d. How favorable is the content?

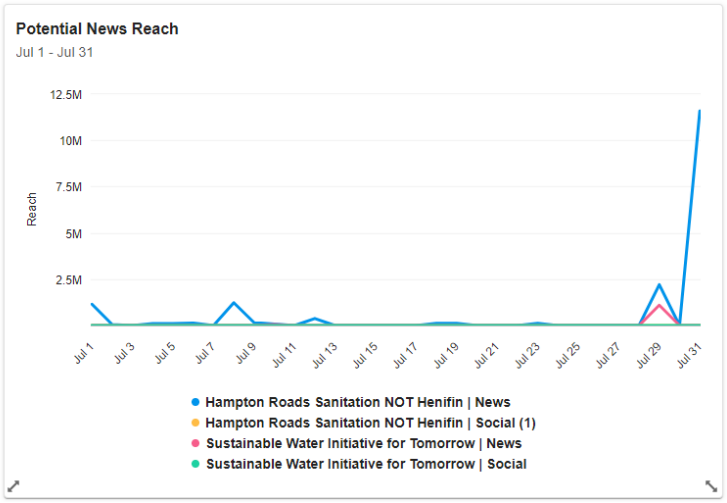




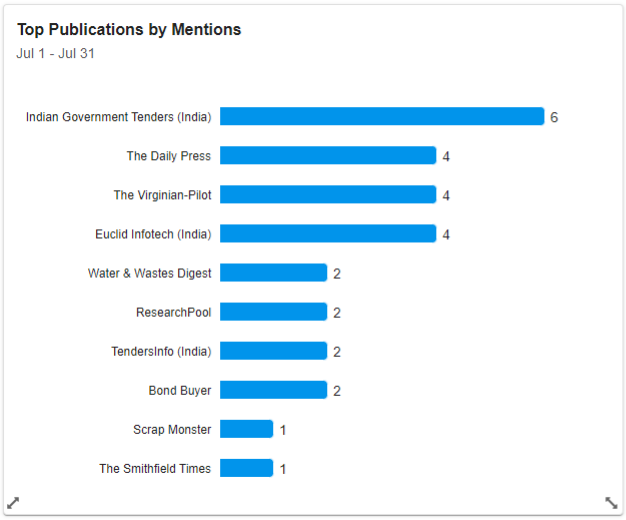
(Negative sentiment attributed to story about Middle Peninsula pipeline project being halted due to cost)

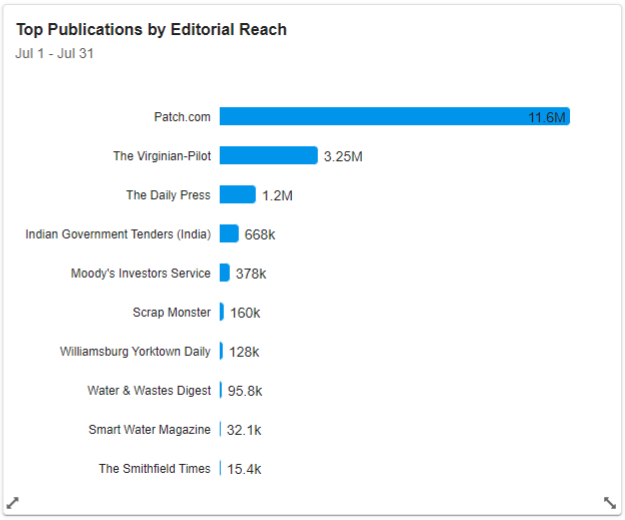
e. What is the potential reach?





f. Top publishers

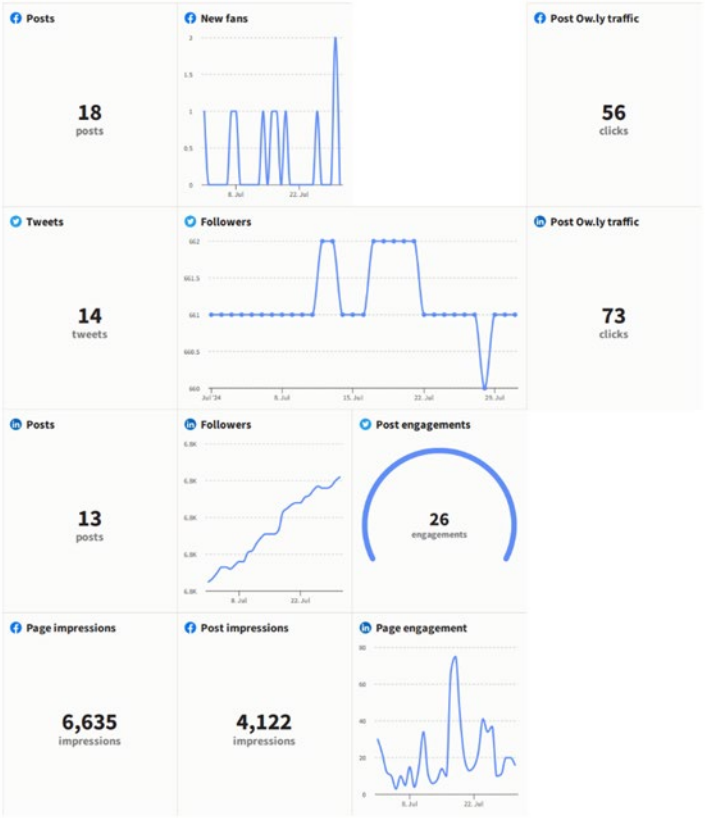




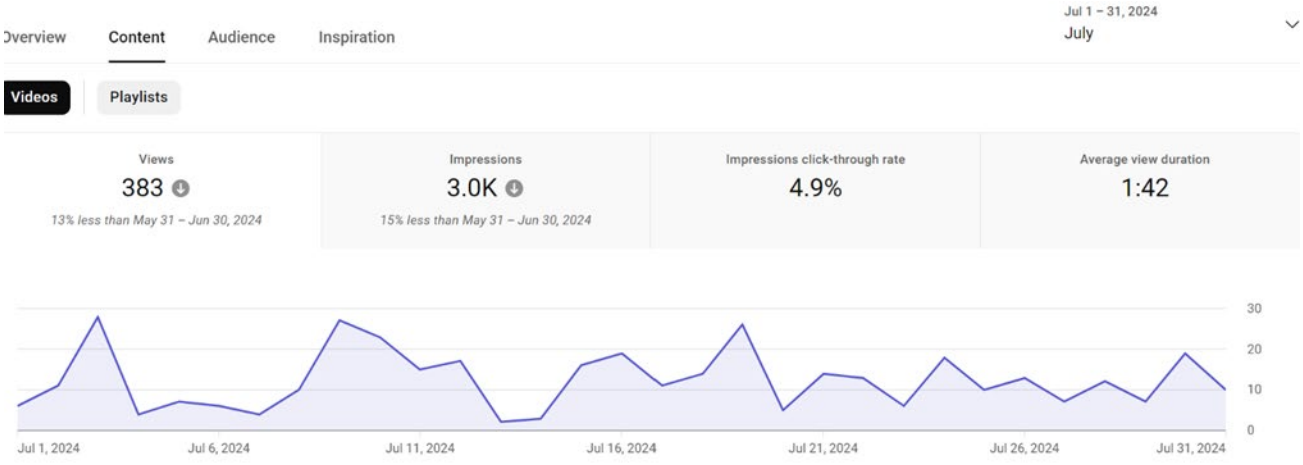
Community Engagement

B. <u>Social Media and Online Engagement</u>

1. Metrics – Facebook, X and LinkedIn



2. YouTube



3. Top posts on Facebook, Twitter, and YouTube

    a. Top Facebook post

b. Top X Post

c. Top YouTube Videos (based on views in the month)

(1) The Wastewater Treatment Process

(2) HRSD Employee Testimonials - Robert

(3) SWIFT Research Center: What Is the Potomac Aquifer

(4) HRSD Atlantic Treatment Plant Cambi THP Tour

(5) What is Asset Management

4. Website and Social Media Impressions and Visits

a. Facebook:

(1) 6,635 page impressions

(2) 4,122 post impressions reaching 3,910 users.

(3) Facebook Engagement of 100 (97 reactions, 2 shares, and 1 comment)

b. X: 3.27% engagement rate

c. HRSD.com/SWIFTVA.com: 1,029 page visits

d. LinkedIn Impressions:

(1) 20,378 page impressions

(2) 16,061 post impressions

e. YouTube: 383 views

f. Next Door unique impressions: 23,276 post impressions from 11 targeted neighborhood postings and one region-wide posting sent to 736,719 total residents across the service region.

g. Blog Posts (0):

h. Construction Project Page Visits – 2,148 total visits (not including direct visits from home page, broken down as follows:

(1) 1,904 visits to individual pages

(2) 244 to the status page

C. Education and Outreach Activity Highlights

Community Outreach and Education Specialists and HRSD Ambassadors provided and participated in six different outreach events this month. Community partners included Junior Achievement of Greater Hampton Roads, the Elizabeth River Project, Keep Norfolk Beautiful, Norfolk State University, Old Dominion University and the REECH Foundation.

Project notices were distributed to 2331 customers for eight different projects across the service area this month. The department distributed and posted seven construction or work notices, two news releases and two traffic advisories to the HRSD.com Newsroom.

D. Internal Communications

Director participated in the following internal meetings and events:

1. Atlantic Treatment Plant monthly communications check-in meeting
2. SWIFT Strategic Communications monthly meeting
3. Rebranding meetings
4. SWIFT Community Commitment Plan steering committee meeting
5. Atlantic Treatment Plant Odor taskforce check-in meeting
6. HRSD Security Team meeting
7. Bi-weekly General Manager (GM) briefings
8. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST), and HRSD QST meetings
9. Check-in meetings with Deputy General Manager (DGM)
10. Monthly collaboration meeting with Director of Talent Management
11. Director also conducted biweekly Communications department status meetings and weekly one-on-one check-in meetings.
12. Staff participated in 15 project progress and/or construction meetings and communication planning meetings with various project managers, plant staff and external stakeholders.

Talent

The Communications department is currently fully staffed. Professional development activities and pursuits for July included the following:

- Director participated in an online training, “Beyond Compliance: Crafting a Future-Proof AI Policy”
- Public Information Specialist staff participated completed FEMA IS-0800.D National Response Framework, An Introduction and FEMA: IS-0201: Forms Used for the Development of the Incident Action Plan Course.
- Public Information Specialist staff completed several Adobe webinars on Generative AI, Adobe Firefly and editing for effective storytelling.
- Community educator staff participated in DEQ webinars for Water Quality Monitoring and Projection and Ambient Air Quality.

Respectfully,

Leila Rice, APR

Chief Communications Officer

TO: General Manager

FROM: Chief Engineer

SUBJECT: Engineering Monthly Report for July 2024

DATE: August 14, 2024

Environmental Responsibility

HRSD staff and our consultant, AECOM, have been working with the U.S. Fish and Wildlife Service to review options and consider an approach to monitor eagle nests on the HRSD Nansemond Plant site. Bald eagles are no longer endangered but are still protected and construction efforts within 330 feet of a known nest requires approvals. With the upcoming construction efforts associated with the proposed SWIFT Facility at Nansemond, concerns have been raised that the work could impact these known eagle nest sites. A plan to monitor the nests and considerations to limit impacts from the construction efforts are under review.

A hurricane drill (Hurricane Maizy) was conducted in July to ready HRSD for a potentially above average storm season. The drill included an effort to use the newly updated Damage Assessment software tool for both office and field use. Several lessons learned resulted from the drill and will be shared with senior leadership at an upcoming management meeting schedule for August.

Financial Stewardship

Capital Improvement Program (CIP) spending for the final month of FY2024 was above the planned spending target.

CIP Spending ($M):

	Current Period	FYTD
Actual	60.78	577.35
Plan	48.50	580.00

The final plan-to-actual-spend ratio is 99% which is above recent years and is a strong indicator that HRSD is implementing the CIP in accordance with planning projections. HRSD has an even more ambitious target to spend $820M in FY2025. This is by far HRSD's largest CIP spend in one fiscal year. This high level of spending will continue for the next few years as the Sustainable Water Initiative for Tomorrow (SWIFT) Program continues to be delivered. Operating costs for the Engineering Division were below planned levels in FY2024. We ended the FY at 96% of the planned Operating Budget spending. This spending limitation was primarily due to a few unfilled positions over the FY.

The SC&H Audit of the HRSD construction cost estimation procedures is still underway with several steps completed in the past month. Discussions are underway with a few consultants that prepare these estimates to understand best practices and areas for improvement. Past estimates are also

under review to look for trends or areas that could benefit from a more structured process for preparing these estimates. One option under consideration is to create a Construction Cost Estimate User Group. This group would meet monthly and share recent bidding results from current projects and lessons learned from other public sector projects in the region.

Talent

The Engineering Division has begun efforts to conduct both Team Building exercises and SPARC Sessions with staff. This effort will allow the organization and the Engineering Division specifically to work more closely to address continuous improvement goals and form closer ties with staff members. This effort will continue over the coming months and the sessions have been divided by Departments within Engineering to facilitate small group discussions and build a renewed sense of comradery.

Recruitment continues to be a focus of the Engineering Division. We currently have six (6) open positions that are critical to the success of the division. Recruitment is actively underway for each open position with a goal to have new hires on board in the next few months. Three open Project Manager positions need to be filled to keep the HRSD CIP moving forward as planned.

Community Engagement

HRSD's SWIFT Program includes a significant initiative involving community engagement at many levels. This program includes a number of elements including:

- Environmental Stewardship
- Economic Development
- Growth of the Industry Through Education
- Workforce Development
- Equitable Water Future
- Support of Community Basic Needs

An annual meeting of the various project team members took place on July 24. This meeting provided an opportunity for each team to discuss accomplishments in FY24, highlight a meaningful event in the past year, and present their plan for FY25. HRSD's Steering Committee provides oversight for the Community Commitment Program and have been active in verifying each team's compliance with the goals of the program.

The Atlantic Treatment Plant (ATP) Odor Control Citizen Task Force was created to assist HRSD as we plan, design and construct odor control improvements at the ATP. The Team's Mission is to identify odors, communicate how the odors are impacting the community, and present issues to HRSD in an effort to work together to develop any additional solutions and strategies that would support the planned long-term ATP odor improvements. The most recent Task Force Meeting included a review of the short-term efforts that are underway and a discussion about how to inform the group on the status of the various work efforts underway at the plant.

Innovation

HRSD has adopted the use of PowerBI to share data throughout the organization. Staff has seen the benefit of this software program and has requested numerous custom views. Engineering staff have created a Business Use Case Request form to be used to help prioritize the on-going work. A few of the recently completed/requested Dashboards include:

- Operations Preventative Maintenance Reporter
- Design and Construction CIP Project Management Tracker
- CIP Predicted Cost/Schedule vs. Actual Cost/Schedule Reporter
- Strategic Planning Measures Reporter
- Engagement Survey Reporter
- WQ DMR Report

Staff has recently beta-tested a software application to automate Development Services submittals received from the public. Requests have increased in recent years and a more robust program is needed to track and respond to these requests. The HRSD IT Division has created this software tool to allow for information to be stored in an enterprise database system. The team working to implement this new system is currently developing training materials that will eventually be available on-line to assist new system users.

Bruce W. Husselbee

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

TO: General Manager

FROM: Deputy General Manager and Chief Financial Officer

SUBJECT: Monthly Report for July 2024

DATE: August 14, 2024

Financial Stewardship

On July 23, 2024, HRSD conducted a successful sale of the Wastewater Revenue Bonds, Series 2024B (the 2024B Bonds), raising $268 million to fund capital projects, including HRSD's Sustainable Water Initiative for Tomorrow (SWIFT) projects.

The bonds were sold at an overall interest rate of 4.15% and will be repaid through 2054.

The bonds were sold via a negotiated sale process with Bank of America Securities, Inc. as the senior managing underwriter. There was exceptional demand for HRSD's bonds, with orders from 27 separate investors. The types of investors that placed orders were diverse, ranging from individual investors placing orders for $10,000 to an investment management firm placing an order for just over $166 million of the HRSD's bonds. The strong demand allowed staff to improve (lower) the interest rate on the 2024B Bonds following the initial order period.

Prior to the bond sale, Moody's Investors Service and S&P Global Ratings affirmed HRSD's bond ratings of Aa1 and AA+, respectively. As part of the credit review process, the rating agencies carefully evaluated the HRSD's system size and capacity, service area, finances, debt, and management, among other factors. Moody's report noted, "Governance is a driver of the rating, particularly management's adherence to formal fiscal and debt policies, demonstrated a willingness to raise rates and future plans to do so, and robust long-term financial and capital planning practices."

Staff continues to work with the Environmental Protection Agency (EPA) on the next Water Infrastructure Finance & Innovation Act (WIFIA) loan closing. The anticipated closing date is currently early September.

The financial records of HRSD are held open through July and for the first two weeks of August to capture revenues and expenditures related to Fiscal Year (FY) 2024. Our independent auditors, Cherry Bekaert LLC, will start FY 2024 year-end audit fieldwork in early September.

Past due accounts receivable increased slightly during July 2024, most notably in the 61-90 and 90+ days bucket.

The Debt Solutions team has been actively conducting an outbound call program, advising customers of pending disconnection, promoting available financial assistance, and reviewing pay plan options. Staff is also reviewing the past-due account process flow and exploring collection options for non-severance accounts.

Effective July 1, 2024, Customer Care suspended residential account disconnection activities due to the legislative change prohibiting residential disconnection when the forecasted temperature is 92 degrees or higher within a 24-hour period of scheduled disconnection.

Debt Solutions strategies include temporary work assignments, assisting Norfolk with past due business account disconnections, increasing outbound collections calls, arranging pay plans, leaving additional financial assistance information in the absence of a warning tag, and third-party collections for closed accounts.

Attached is the quarterly Retiree Health Plan Investment Performance Review. The overall content of the report remains unchanged, however, the format has been modified somewhat to better align with our investment consultant's, Mariner, accounting and reporting system.

A. Interim Financial Report

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

	Amended Budget	Current YTD	Current YTD as % of Budget (8% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	$ 442,031,000	$ 37,232,465	8%	8%
Surcharge	1,400,000	138,041	10%	6%
Indirect Discharge	3,970,000	370,623	9%	10%
Fees	3,172,000	258,381	8%	9%
Municipal Assistance	837,000	68,608	8%	17%
Miscellaneous	1,982,000	35,974	2%	2%
Total Operating Revenue	453,392,000	38,104,092	8%	8%
Non Operating Revenues				
Facility Charge	6,170,000	770,420	12%	12%
Interest Income	7,300,000	1,601,626	22%	30%
Build America Bond Subsidy	-	-	0%	0%
Other	330,000	11,789	4%	8%
Total Non Operating Revenue	13,800,000	2,383,835	17%	15%
Total Revenues	467,192,000	40,487,927	9%	8%
Transfers from Reserves	-	-	0%	0%
Total Revenues and Transfers	$ 467,192,000	$ 40,487,927	9%	8%
Operating Expenses				
Personal Services	$ 80,140,274	$ 5,790,362	7%	7%
Fringe Benefits	30,765,222	2,065,945	7%	7%
Materials & Supplies	13,842,929	328,726	2%	2%
Transportation	2,356,067	42,130	2%	2%
Utilities	16,512,148	842,703	5%	5%
Chemical Purchases	16,539,326	823,245	5%	4%
Contractual Services	45,973,922	3,418,694	7%	6%
Major Repairs	12,668,008	123,286	1%	1%
Capital Assets	1,055,400	-	0%	0%
Miscellaneous Expense	4,003,299	251,780	6%	6%
Total Operating Expenses	223,856,595	13,686,871	6%	6%
Debt Service and Transfers				
Debt Service	87,700,000	566,728	1%	18%
Transfer to CIP	155,635,405	12,969,617	8%	8%
Transfer to Risk management	-	-	0%	8%
Total Debt Service and Transfers	243,335,405	13,536,345	6%	12%
Total Expenses and Transfers	$ 467,192,000	$ 27,223,216	6%	9%

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 July 31, 2024.

HRSD - RESERVE AND CAPITAL ACTIVITY July 31, 2024

	General Reserve			Capital	
	General	Debt Service	Risk Mgmt Reserve	Paygo	Debt Proceeds
	Unrestricted	Restricted	Unrestricted	Unrestricted	Restricted
Beginning - July 1, 2024	**$ 228,255,040**	**$ 33,830,226**	**$ 4,799,555**	**$ 37,468,922**	**$ -**
Current Year Sources of Funds					
Current Receipts	44,404,030				
Line of Credit					-
VRA Draws					3,914,939
WIFIA Draws					28,734,554
Grants					-
Transfers In				12,969,617	
Sources of Funds	44,404,030	-	-	12,969,617	32,649,493
Total Funds Available	**$ 272,659,070**	**$ 33,830,226**	**$ 4,799,555**	**$ 50,438,539**	**$ 32,649,493**
Current Year Uses of Funds					
Cash Disbursements	20,712,208			28,487,096	32,649,493
Transfers Out	12,969,617				
Uses of Funds	33,681,825	-	-	28,487,096	32,649,493
End of Period - July 31, 2024	**$ 238,977,245**	**$ 33,830,226**	**$ 4,799,555**	**$ 21,951,443**	**$ -**
Unrestricted Funds	**$ 265,728,243**				

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

HRSD - PROJECT ANALYSIS July 31, 2024

Classification/ Treatment Service Area	Appropriated Funds	Expenditures prior to 7/1/2024	Expenditures Year to Date FY2025	Total Project Expenditures	Encumbrances	Available Funds
Administration	76,193,950	32,801,479	279,556	33,081,035	2,870,046	40,242,869
Army Base	176,442,597	126,238,488	5,712	126,244,200	9,297,339	40,901,058
Atlantic	262,832,729	93,123,288	228,508	93,351,796	14,080,846	155,400,087
Boat Harbor	526,086,433	195,525,030	1,489,440	197,014,470	267,362,726	61,709,237
Ches-Eliz	90,389,467	35,622,765	260,283	35,883,048	4,778,052	49,728,367
Eastern Shore	65,012,749	41,673,621	816,966	42,490,587	3,535,541	18,986,621
James River	377,728,708	199,322,849	3,728,345	203,051,194	132,625,165	42,052,349
Middle Peninsula	96,429,769	28,624,658	182,045	28,806,703	3,563,485	64,059,581
Nansemond	488,559,100	212,128,008	370,855	212,498,863	208,833,672	67,226,565
Surry	60,391,465	45,528,213	207,426	45,735,639	6,971,456	7,684,370
VIP	271,226,629	68,101,536	2,311,414	70,412,950	78,522,399	122,291,280
Williamsburg	83,032,019	22,399,476	-	22,399,476	6,159,840	54,472,703
York River	115,418,863	46,258,282	1,944,239	48,202,521	38,515,323	28,701,019
General	1,559,321,098	347,908,831	7,512,134	355,420,965	854,039,679	349,860,454
	$ 4,249,065,576	$ 1,495,256,524	$ 19,336,923	$ 1,514,593,447	$ 1,631,155,569	$ 1,103,316,560

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 - TFM Phase I (Accomac)	ES010100	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, Kiggans	CDF FY24	Eastern Shore Wastewater Improvements, Chincoteague	ES010500	3/7/2023	$ 9,677,112	$ 1,250,000
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 and Nassawadox Treatment Plant Conveyance	ES010100, ES010900	5/2/2022	$ 4,900,000	$ 4,936,538
Water Quality Improvement Fund, Nutrient Reduction	VDEQ	James River SWIFT - Advanced Nutrient Reduction Improvements	JR013400	3/23/2023	$ 344,741,547	$ -
Water Quality Improvement Fund, Nutrient Reduction	VDEQ	Boat Harbor Pump Station and Conveyance	Multiple	3/4/2024	$ 311,286,392	$ -
Water Quality Improvement Fund, Nutrient Reduction	VDEQ	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Phase II	NP013820, GN016380	3/4/2024	$ 127,657,505	$ -
Building Resilient Infrastructure and Communities (BRIC)	VDEM-FEMA	Dozier's Corner Pump Station and Washington District Pump Station Resiliency Improvements	AT013000, AT015400	2/6/2024	$ 18,988,629	$ -
FY2024 Congressionally Directed Funding, Warner/Kaine, Kiggans	CDF FY24	Onancock Treatment Plant Solids Handling Improvements	ES010800	3/21/2024	$ 6,624,248	$ -
Climate Pollution Reduction Grant - Implementation	EPA	PdNA Implementation to Reduce GHG	AB011800	4/1/2024	$ 59,540,142	$ -
					$ 1,092,430,321	$ 78,188,104

6. Debt Management Overview

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

	June 2024	July 2024					
	Principal Balance	Principal Activity: Bond Series 2024	Principal Activity: Payments	Principal Activity: Draws	Principal Activity: Capitalized Interest	Principal Balance	Interest Payments
Fixed Rate	$ 1,244,324	$ -	$ (48)	$ 32,649	$ 308	$ 1,277,233	$ (2)
Variable Rate	50,000	-	-	-	-	50,000	(128)
Line of Credit	100,000	-	-	-	-	100,000	(389)
Total	$ 1,394,324	$ -	$ (48)	$ 32,649	$ 308	$ 1,427,233	$ (519)

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

	SIFMA Index	HRSD Series 2016VR	Spread to SIFMA
Maximum	4.71%	4.95%	0.24%
Average	1.29%	0.89%	-0.40%
Minimum	0.01%	0.01%	0.00%
As of 8/02/24	3.51%	3.41%	-0.10%

Since October 20, 2011 HRSD has averaged 89 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	$207,468,527	8%	Ongoing
WIFIA Tranche 2	EPA	$476,581,587	$220,036,587	54%	Ongoing
WIFIA Tranche 3	EPA	$346,069,223	$ -	100%	July 2025
Clean Water Program 2022	DEQ	$100,000,000	$100,000,000	0%	Closed
Clean Water Program 2024	DEQ	$ 80,000,000	$ 3,757,546	95%	Ongoing

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

HRSD - UNRESTRICTED CASH

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	**$**	**265,728,243**		**433**
Risk Management Reserve	$	(4,799,555)	(8)	425
Capital (PAYGO only)	$	(21,951,443)	(35)	390
Adjusted Days Cash on Hand	**$**	**238,977,245**		**390**

Risk Management Reserve as a % of Projected Claims Cost is 25% YTD compared to 25% Policy Minimum
Adjusted Days Cash on Hand Policy Minimum is 270-365 days.

HRSD - SOURCES OF FUNDS

July 31, 2024

Primary Source	Beginning Market Value July 1, 2024	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value July 31, 2024	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BOA Corp Disbursement Account	31,786,393	87,890,657	89,174,782	109,552	30,611,820	14.6%	N/A	0.55%
VIP Stable NAV Liquidity Pool	178,789,050	-	-	822,495	179,611,545	85.4%	AAAm	5.42%
Total Primary Source	**$ 210,575,443**	**$ 87,890,657**	**$ 89,174,782**	**$ 932,047**	**$ 210,223,365**	100.0%		

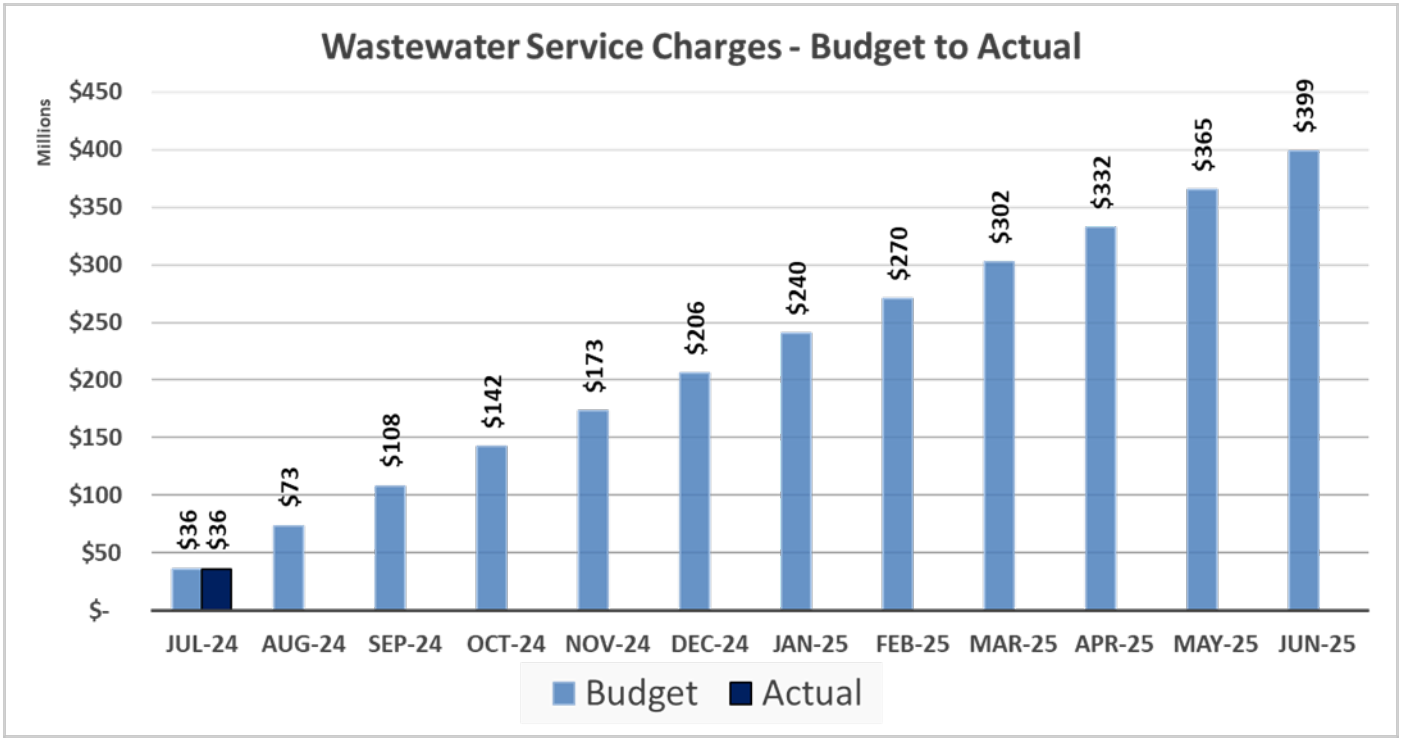
VIP Stable NAV Liquidity Pool performed 0.01% above Va Local Government Investment Pool's (the market benchmark) in the month of July 2024.

Secondary Source	Beginning Market Value July 1, 2024	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value July 31, 2024	Ending Cost	LTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	65,915,924	-	1,078	239,668	66,584,426	67,544,717	(960,290)	4.38%
Total Secondary Source	**$ 65,915,924**	**$ -**	**$ 1,078**	**$ 239,668**	**$ 66,584,426**	**$ 67,544,717**	**$ (960,290)**	

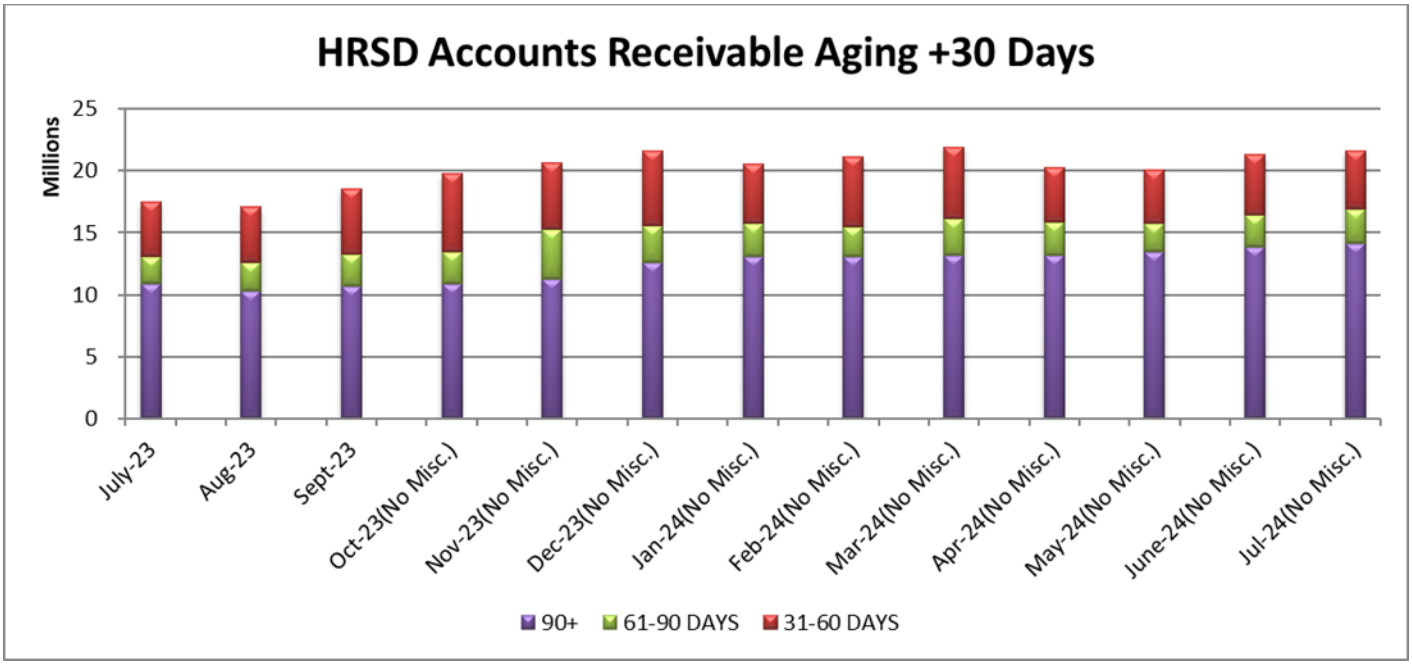
VIP 1-3 Year High Quality Bond Fund performed 0.01% below ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) in July 2024.

	Total	Fund Alloc
Total Primary Source	**$ 210,223,365**	**75.9%**
Total Secondary Source	**$ 66,584,426**	**24.1%**
TOTAL SOURCES	**$ 276,807,791**	**100.0%**

8. Summary of Billed Consumption

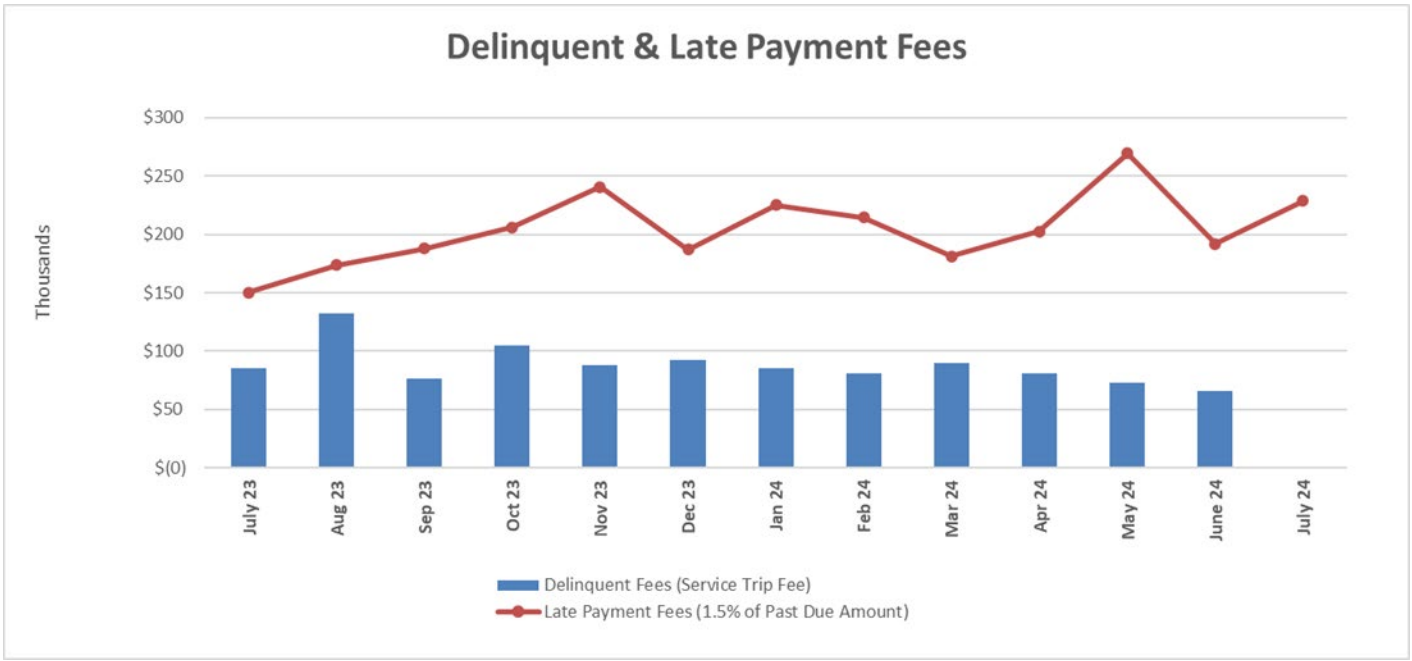


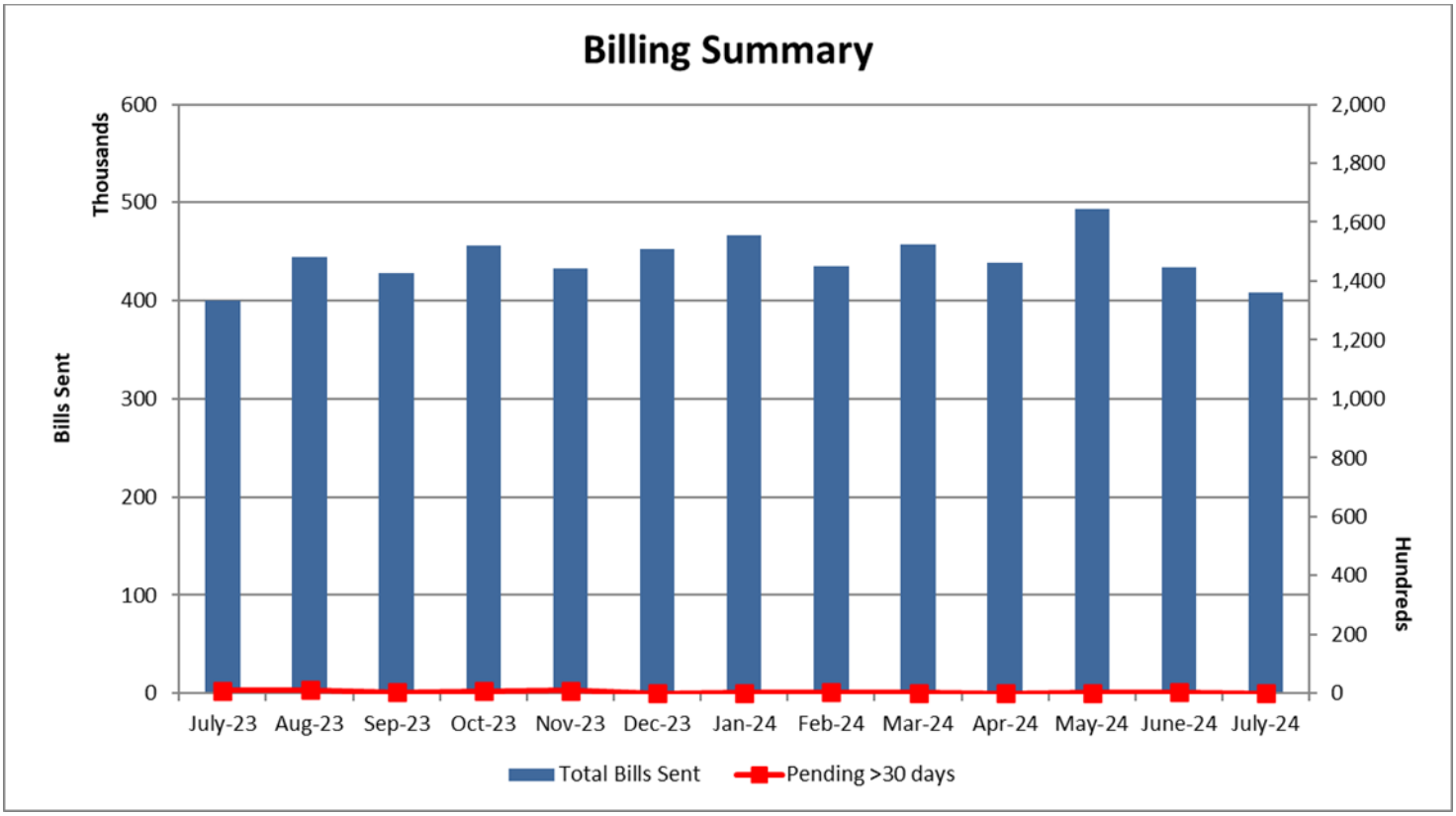
Summary of Billed Consumption (,000s ccf)							
			% Difference		% Difference		% Difference
Month	*FY2025 Cumulative Budget Estimate*	*FY2025 Cumulative Actual*	*From Budget*	*Cumulative FY2024 Actual*	*From FY2024*	*Cumulative 3 Year Average*	*From 3 Year Average*
July	4,678	4,630	-1.0%	4,504	2.8%	4,721	-1.9%
Aug	9,644	-	N/A	4,928	N/A	4,813	N/A
Sept	14,196	-	N/A	4,533	N/A	4,639	N/A
Oct	18,663	-	N/A	4,890	N/A	4,688	N/A
Nov	22,756	-	N/A	4,149	N/A	4,050	N/A
Dec	27,109	-	N/A	4,124	N/A	4,356	N/A
Jan	31,641	-	N/A	4,692	N/A	4,517	N/A
Feb	35,568	-	N/A	4,363	N/A	4,206	N/A
March	39,770	-	N/A	3,644	N/A	3,964	N/A
Apr	43,694	-	N/A	4,228	N/A	4,165	N/A
May	48,027	-	N/A	4,706	N/A	4,263	N/A
June	52,500	-	N/A	4,446	N/A	4,617	N/A

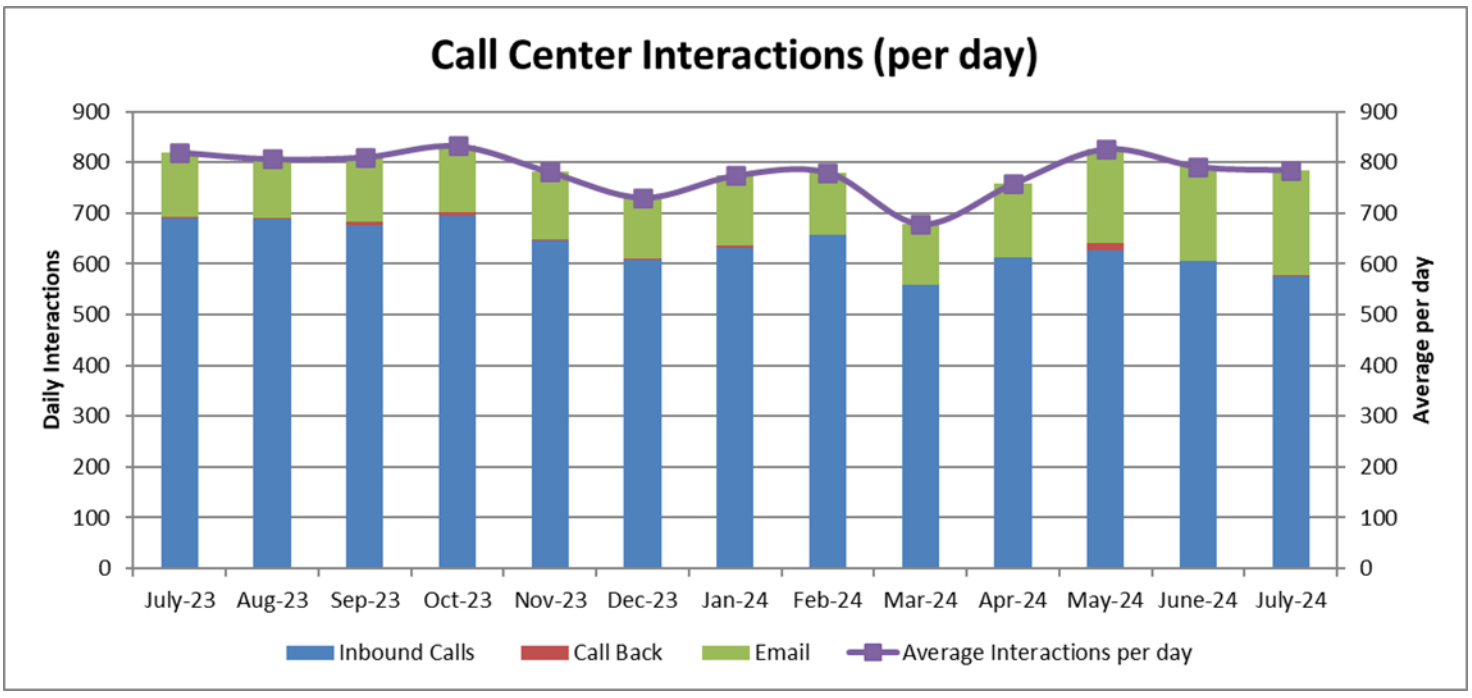


B. Customer Care Center

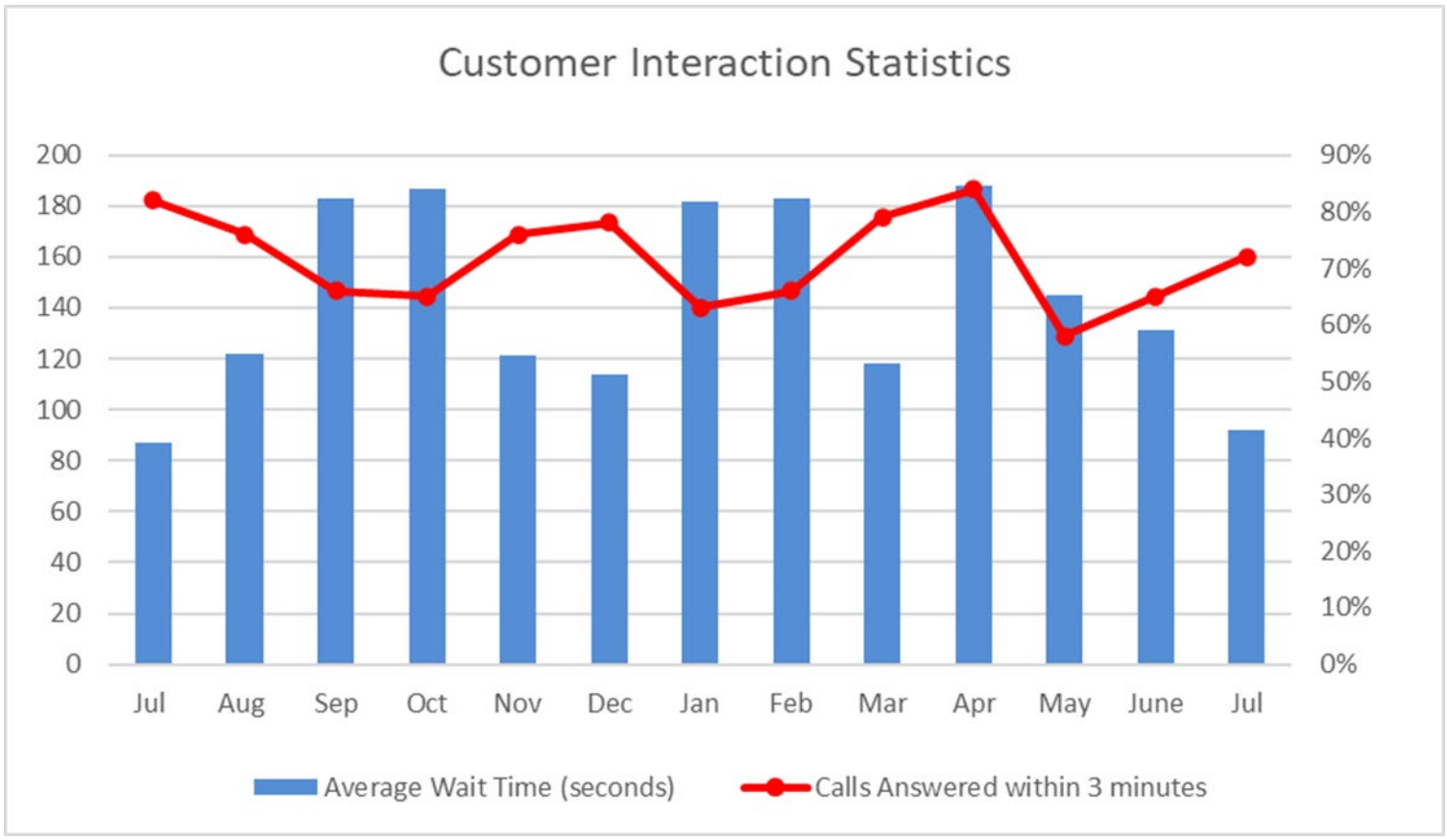
1. Accounts Receivable Overview



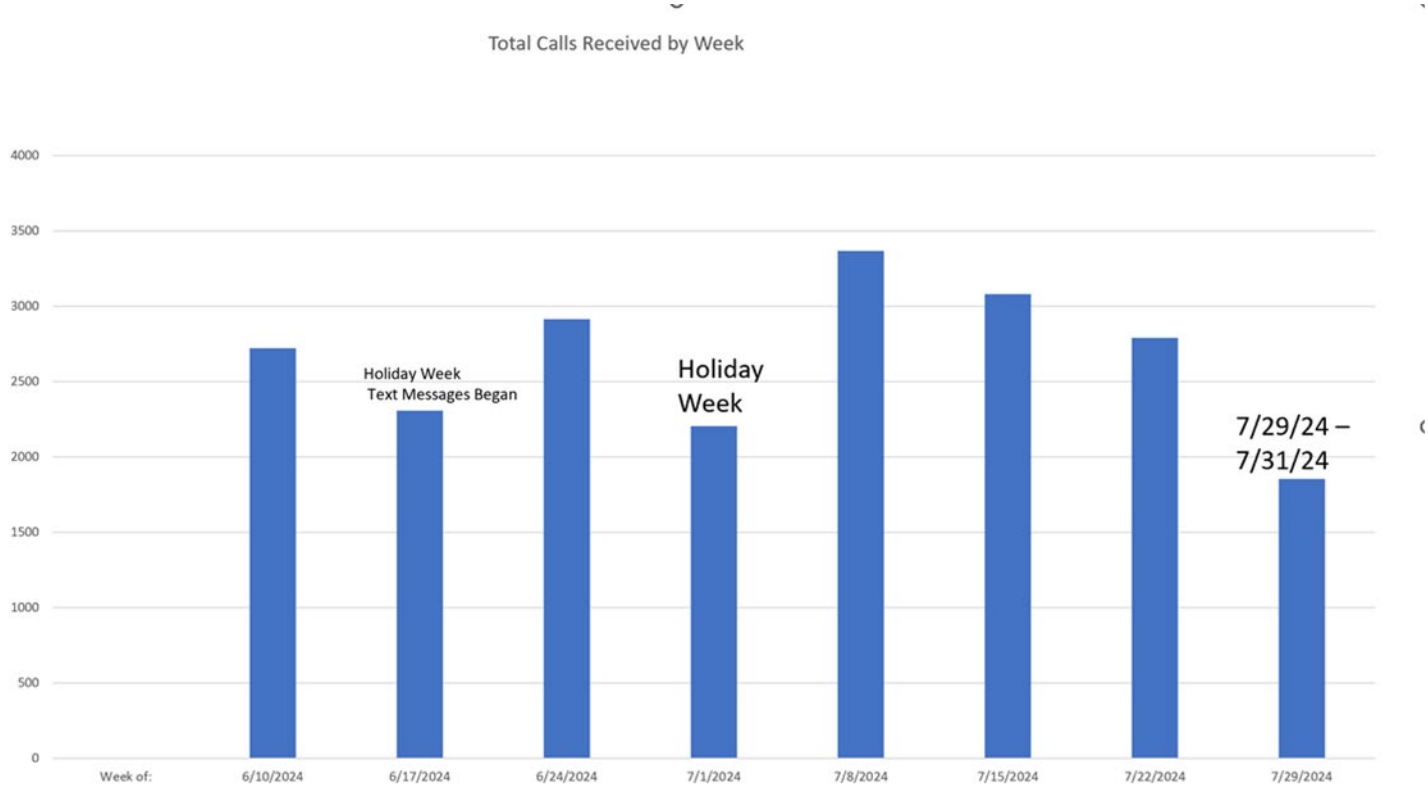

Billing Summary
Thousands
Bills Sent
600
500
400
300
200
100
0
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Hundreds
July-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
June-24
July-24
Total Bills Sent
Pending >30 days


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

2. Customer Care Center Statistics



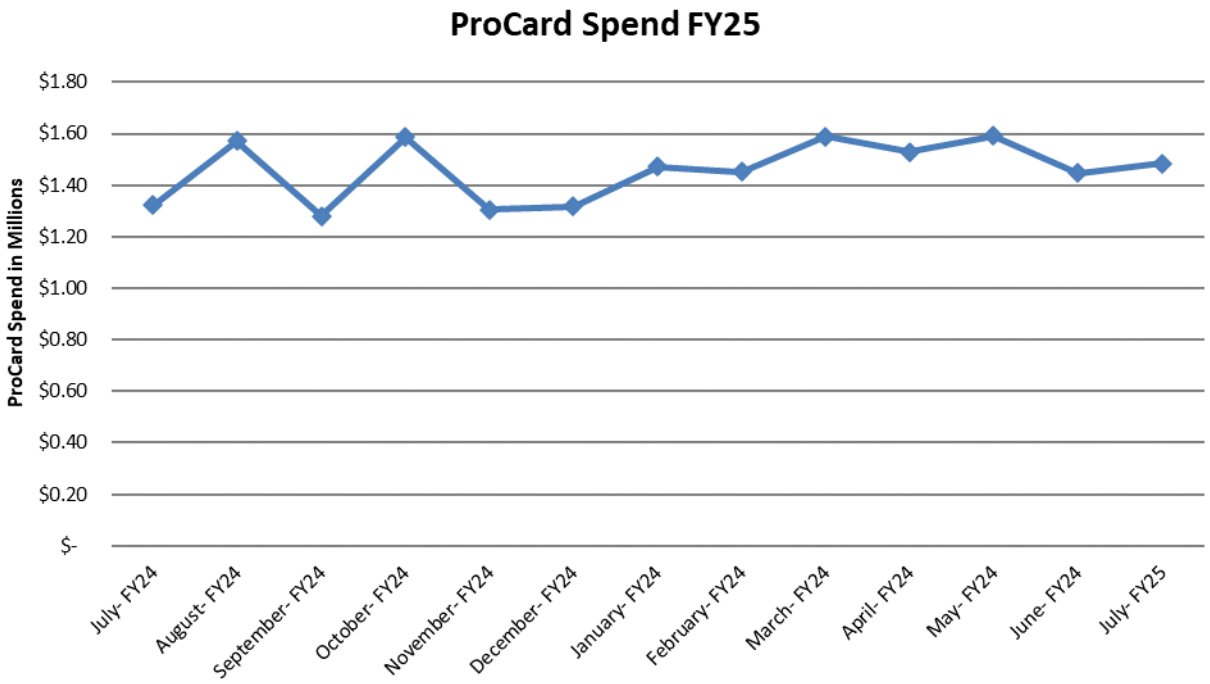
Customer Interaction Statistics	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul
Calls Answered within 3 minutes	82%	76%	66%	65%	76%	78%	63%	66%	79%	84%	58%	65%	72%
Average Wait Time (seconds)	87	122	183	187	121	114	182	183	118	188	145	131	92
Calls Abandoned	7%	8%	11%	12%	10%	9%	13%	12%	10%	8%	15%	11%	9%



C. Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings[1]	$71,579	$71,579
Negotiated Savings[2]	$0	$0
Salvage Revenues	$15,720	$15,720
Corporate VISA Card - Estimated Rebate	$23,000	$23,000

[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,

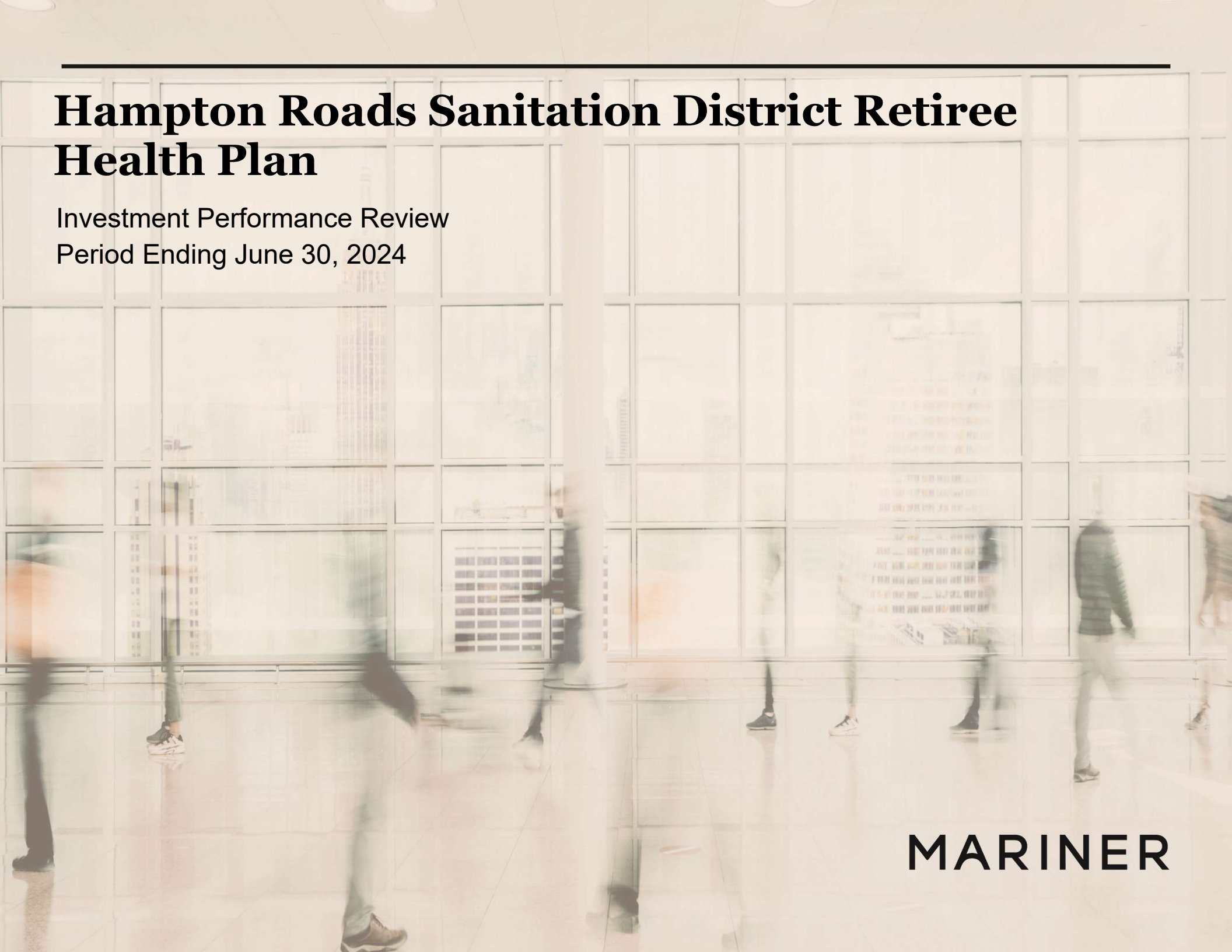
Steven G. de Mik

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

Attachments: HRSD Retiree Health Plan Investment Performance Review
Quarterly Performance Report – 4th Quater

Hampton Roads Sanitation District Retiree Health Plan

Investment Performance Review
Period Ending June 30, 2024



MARINER

Financial Reconciliation
Total Fund - Combined Assets
Year To Date Ending June 30, 2024

Financial Reconciliation Year to Date

	Market Value 01/01/2024	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Return On Investment	Market Value 06/30/2024
Total Fund - Combined Assets	**71,304,208**	**-**	**-**	**-**	**-**	**-9,105**	**4,550,433**	**75,845,536**
Total Fund - Investment Assets	**71,255,923**	**-**	**-**	**-**	**-**	**-9,099**	**4,549,171**	**75,795,994**

The Economy

- The US Federal Reserve (the Fed) continued on its stable trajectory, holding rates steady during the second quarter. Capital markets have struggled to accurately predict the pace and timing of future Fed actions, resulting in an up and down quarter. In its press release for the June meeting, the Fed continued to assert that "In considering any adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks."
- The Fed's prolonged pause in its rate-hiking cycle and the insertion of the word "any" in its December press release provided capital markets hope that the Fed may pivot in its stance and begin reducing rates to a less restrictive level in 2024. The Fed's published June "Dot Plot" revised expectations from three quarter-point rate cuts during the year to just one quarter-point rate cut. If this projection were to materialize, it would result in the first rate cut since the COVID pandemic in 2020.
- Growth in the US labor market continued in June, as nonfarm payrolls increased by 206,000 while unemployment rose slightly from 3.8% at the end of the first quarter to 4.1% at the end of the second quarter. Federal Reserve Chair Jerome Powell has maintained that "an unexpected weakening in the labor market could also warrant a policy response," later defining unexpected weakening as something that would occur outside of their general forecasts.

Equity (Domestic and International)

- US equity results were mixed for the quarter, with large-capitalization (cap) stocks strongly outpacing small-cap stocks. As market participants continue to revise projections of future Fed actions, they sought safety among large-cap stocks due to these companies lessened dependence on external financing. The S&P 500 Index rose a solid 4.3% for the quarter, but ended a two-quarter streak of double-digit gains.
- Large-cap equity benchmarks continue to experience top-heavy concentration among a limited number of stocks. The top 10 stocks in the S&P 500 Index make up nearly 36% of the index's weight as of June 2024. Year-to-date, these 10 stocks have contributed to more than 60% of the benchmark's total return.
- International stocks also continued to experience growth during the second quarter, but results were muted by a strengthening US Dollar (USD). USD performance of international stocks lagged local currency (LCL) returns in most regions for the quarter, albeit to varying degrees.

Fixed Income

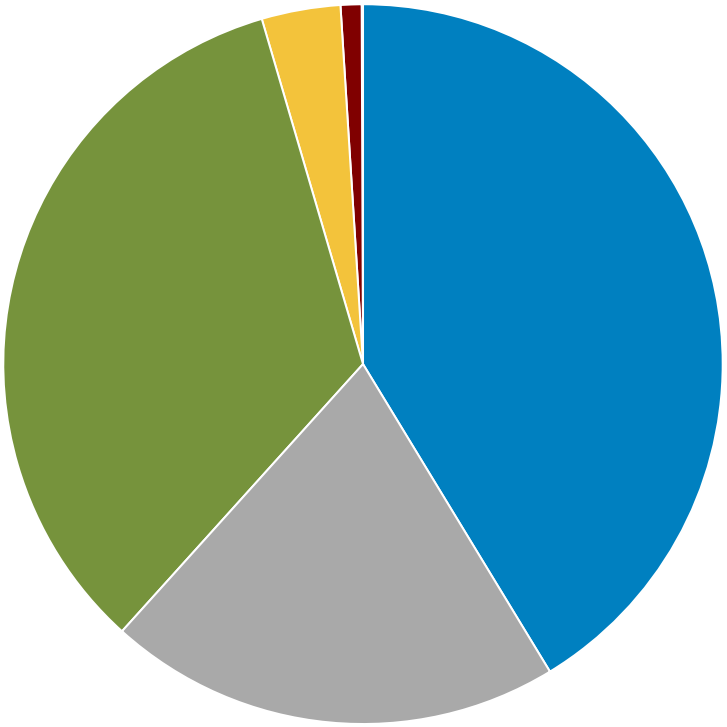
- Fixed-income markets remained largely steady during the quarter. While sticky inflation numbers and a robust job market prompted the Fed to keep the fed funds rate unchanged during the quarter, this lack of action also tempered expectations for the number of potential rate cuts in 2024.
- High-yield bonds outperformed investment-grade issues for the quarter, largely due to higher coupons. The high-yield index edged out the Bloomberg US Aggregate Bond Index, the bellwether bond benchmark, due to relative stability in both the yield curve and economic conditions.
- Global bonds continue to lag the domestic bond market, with the Bloomberg US Aggregate Bond Index outpacing the Global Aggregate ex-US Index by 2.2% for the quarter. The return gap between the two benchmarks continues to widen as the domestic index has outperformed the global index by 3.3% year-to-date.

Market Themes

- Domestic and international equity markets posted strong results in the second quarter. Continuing their robust 2023 run, large-cap growth sectors continued to outpace their value counterparts in 2024, and by a wider margin than the prior year. The brief increased breadth markets experienced during of the first quarter did not continue during the second quarter, and so once again, large-cap growth stocks were the best-performing US asset category.
- Central banks remained vigilant in their stances to bring inflation under control. While inflation readings remain stubbornly elevated, signs of stable-to-cooling price pressures have shown up in most regions around the world. Domestically, job growth has slowed from a pace of 300,000+ month-over-month growth to just over 200,000 net new jobs.
- Policy rates were stable across most developed markets as central banks continued their tight monetary stances. Expectations of looser monetary policy have been frustrated by mixed economic data and central banks' inaction so far this year.
- Ongoing military conflicts coupled with global economic uncertainty continue to act as headwinds to international market results. While global disruptions from the Russia-Ukraine conflict seemed to subside during the quarter, the proxy war in the Middle East has spread to other countries in the region and unsettled shipping channels globally.

Asset Allocation By Asset Class
Total Fund
As of June 30, 2024

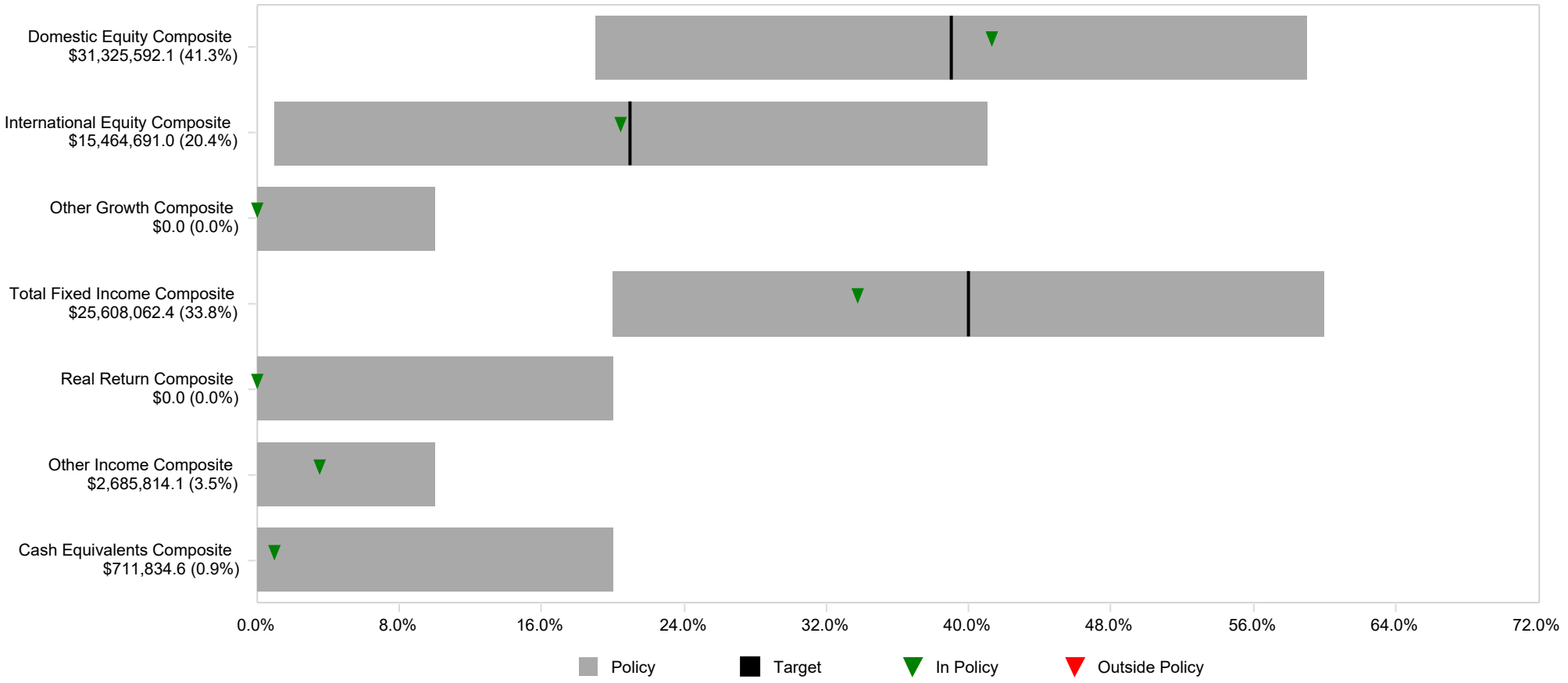
Jun-2024 : $75,845,536



Allocation

	Market Value	Allocation
Domestic Equity Composite	31,325,592	41.3
International Equity Composite	15,464,691	20.4
Total Fixed Income Composite	25,608,062	33.8
Other Income Composite	2,685,814	3.5
Cash Equivalents Composite	711,835	0.9
Total Fund - Liquidity Assets	49,541	0.1

Executive Summary



Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund - Investment Assets	**75,795,994**	**100.0**	**100.0**	**N/A**	**N/A**
Domestic Equity Composite	31,325,592	41.3	39.0	19.0	59.0
International Equity Composite	15,464,691	20.4	21.0	1.0	41.0
Other Growth Composite	-	0.0	0.0	0.0	10.0
Total Fixed Income Composite	25,608,062	33.8	40.0	20.0	60.0
Real Return Composite	-	0.0	0.0	0.0	20.0
Other Income Composite	2,685,814	3.5	0.0	0.0	10.0
Cash Equivalents Composite	711,835	0.9	0.0	0.0	20.0

Asset Allocation & Performance

	Allocation		Performance(%)									
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR	7 YR	10 YR	Inception	Inception Date
Total Fund - Combined Assets	**75,845,536**	**100.0**										
Total Fund - Investment Assets (Net of Fees)	**75,795,994**	**99.9**	**1.51**	**1.60**	**6.39**	**12.50**	**1.83**	**7.11**	**7.18**	**6.54**	**7.78**	**Sep-2009**
Blended Benchmark			1.57	1.49	6.09	12.30	2.15	6.76	6.88	6.04	7.50	
Total Equity Composite	**46,790,283**	**61.7**	**1.90**	**2.39**	**10.65**	**-**	**-**	**-**	**-**	**-**	**23.37**	**Oct-2023**
Vanguard Total Stock Market ETF (VTI)	29,824,775	39.3	3.08 (24)	3.29 (23)	13.57 (28)	23.18 (25)	7.91 (28)	14.06 (21)	13.43 (18)	12.10 (16)	20.57 (29)	Apr-2020
Russell 3000 Index			3.10	3.22	13.56	23.12	8.05	14.14	13.48	12.15	20.63	
IM U.S. Core Equity (MF) Median			0.35	-0.93	6.93	15.45	5.15	10.30	9.70	8.76	19.04	
Jensen Quality Growth Fund (JENYX)	1,500,817	2.0	2.48 (78)	1.33 (88)	5.71 (97)	11.62 (96)	6.78 (83)	12.06 (86)	12.91 (59)	-	12.00 (91)	Apr-2019
S&P 500 Index			3.59	4.28	15.29	24.56	10.01	15.05	14.28	12.86	15.20	
IM U.S. Large Cap Core Equity (MF) Median			3.26	3.54	14.68	23.89	8.62	14.08	13.35	11.78	14.22	
International Equity Composite	**15,464,691**	**20.4**	**-0.34**	**0.80**	**5.90**	**-**	**-**	**-**	**-**	**-**	**16.97**	**Oct-2023**
Vanguard Total International Stock ETF (VXUS)	8,374,223	11.0	-0.80 (47)	0.80 (48)	5.26 (53)	11.05 (45)	0.40 (41)	5.81 (43)	5.23 (40)	4.05 (43)	12.22 (40)	Apr-2020
MSCI AC World ex USA (Net)			-0.10	0.96	5.69	11.62	0.46	5.55	5.17	3.84	11.66	
IM International Equity (MF) Median			-0.98	0.60	5.45	10.47	-0.69	5.40	4.77	3.76	11.38	
J. O. Hambro International Select (JOHIX)	1,051,438	1.4	-0.29 (39)	-4.15 (98)	3.62 (70)	7.80 (69)	-4.60 (72)	3.91 (70)	5.02 (46)	4.71 (25)	6.11 (47)	Jan-2016
MSCI EAFE IMI			-1.79	-0.37	5.06	11.57	2.49	6.64	5.94	4.80	6.77	
IM International Equity (MF) Median			-0.98	0.60	5.45	10.47	-0.69	5.40	4.77	3.76	6.01	
Harding Loevner International Equity (HLMIX)	1,005,568	1.3	-1.53 (60)	-0.04 (61)	1.58 (85)	5.24 (83)	-1.64 (56)	5.51 (49)	5.48 (34)	5.27 (16)	6.29 (61)	Jul-2020
MSCI AC World ex USA (Net)			-0.10	0.96	5.69	11.62	0.46	5.55	5.17	3.84	8.31	
IM International Equity (MF) Median			-0.98	0.60	5.45	10.47	-0.69	5.40	4.77	3.76	7.23	
Goldman Sachs GQG Ptnrs Intl Opportunities (GSIMX)	1,280,444	1.7	0.26 (2)	2.98 (1)	17.01 (1)	29.38 (1)	8.70 (1)	12.11 (1)	12.09 (1)	-	28.68 (1)	Sep-2023
MSCI AC World ex USA (Net)			-0.10	0.96	5.69	11.62	0.46	5.55	5.17	3.84	12.34	
IM International Large Cap Core Equity (MF) Median			-1.72	-0.09	5.37	10.30	1.87	6.33	5.16	3.85	11.87	
Vanguard FTSE Developed Markets ETF (VEA)	1,550,404	2.0	-1.66 (48)	-0.58 (69)	4.73 (61)	10.78 (43)	1.87 (51)	6.57 (44)	5.71 (24)	4.54 (11)	4.69 (56)	Mar-2022
MSCI EAFE (Net) Index			-1.61	-0.42	5.34	11.54	2.89	6.46	5.73	4.33	5.77	
IM International Large Cap Core Equity (MF) Median			-1.72	-0.09	5.37	10.30	1.87	6.33	5.16	3.85	5.04	
Vanguard FTSE All-World ex-US Small-Cap ETF (VSS)	714,339	0.9	-1.25 (28)	1.28 (17)	2.87 (44)	9.63 (40)	-2.06 (41)	5.03 (48)	4.01 (53)	3.38 (72)	8.64 (49)	Sep-2023
MSCI AC World ex USA Small Cap (Net)			-1.06	0.66	2.78	11.26	-1.45	6.13	4.92	4.44	8.92	
IM International Small Cap Equity (SA+CF+MF) Median			-2.46	-0.93	1.88	7.93	-3.09	4.91	4.14	4.11	8.45	

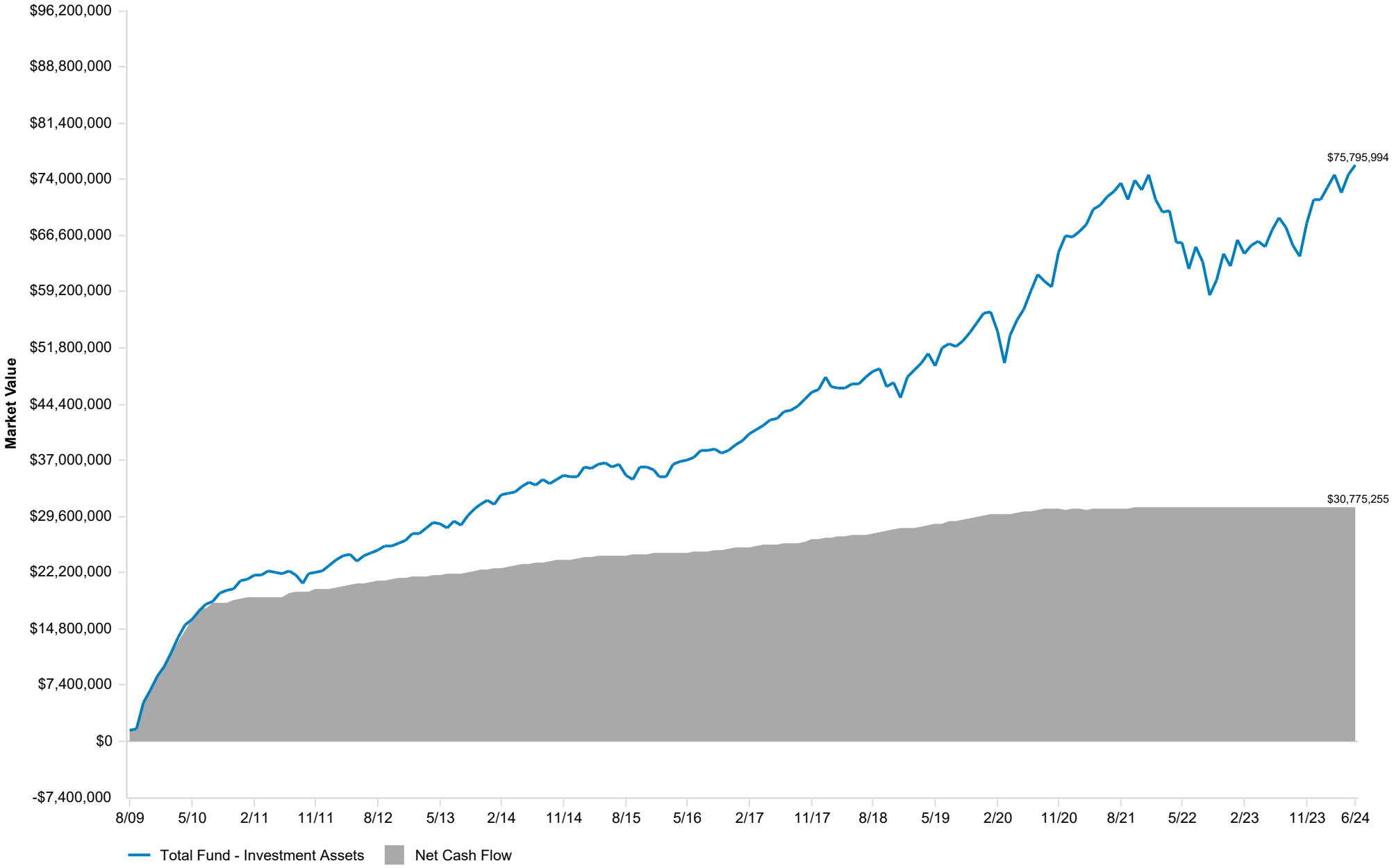
See the disclosure page at the end of the report.

	Allocation		Performance(%)									
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR	7 YR	10 YR	Inception	Inception Date
Hartford Schroders Emerging Markets (SEMTX)	716,425	0.9	4.15 (19)	5.56 (27)	9.21 (31)	11.09 (53)	-6.13 (55)	3.39 (48)	4.05 (37)	-	1.45 (44)	Mar-2018
MSCI Emerging Markets (Net) Index			3.94	5.00	7.49	12.55	-5.07	3.10	3.54	2.79	1.00	
IM Emerging Markets Equity (MF) Median			2.95	4.24	7.34	11.62	-5.78	3.23	3.36	2.54	1.05	
iShares MSCI Emerging Markets ex China ETF (EMXC)	771,850	1.0	4.92 (10)	3.70 (60)	7.74 (46)	16.45 (20)	0.56 (10)	6.05 (20)	-	-	18.11 (15)	Sep-2023
MSCI Emerging Markets (Net) Index			3.94	5.00	7.49	12.55	-5.07	3.10	3.54	2.79	12.91	
IM Emerging Markets Equity (MF) Median			2.95	4.24	7.34	11.62	-5.78	3.23	3.36	2.54	12.17	
Domestic Fixed Income Composite	**25,608,062**	**33.8**	**0.99**	**0.37**	**0.25**	**-**	**-**	**-**	**-**	**-**	**7.23**	**Oct-2023**
Baird Core Plus (BCOIX)	6,671,897	8.8	0.94 (67)	0.30 (33)	0.12 (26)	4.32 (19)	-2.30 (12)	0.65 (10)	1.60 (7)	2.07 (4)	2.19 (4)	May-2014
Blmbg. U.S. Aggregate Index			0.95	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	1.44	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.99	0.21	-0.34	3.13	-3.10	-0.08	0.89	1.34	1.45	
DoubleLine Core Fixed Income (DBLFX)	2,889,310	3.8	1.02 (36)	0.26 (52)	0.09 (40)	3.47 (59)	-2.44 (26)	-0.09 (66)	1.01 (57)	1.64 (35)	0.81 (58)	Sep-2017
Blmbg. U.S. Aggregate Index			0.95	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	0.69	
IM U.S. Broad Market Core+ Fixed Income (MF) Median			0.96	0.26	-0.05	3.66	-2.96	0.25	1.14	1.47	0.96	
PGIM Total Return Bond (PTRQX)	5,447,983	7.2	1.09 (22)	0.47 (14)	0.61 (13)	5.10 (11)	-2.53 (31)	0.33 (45)	1.59 (21)	2.21 (11)	1.38 (25)	Sep-2017
Blmbg. U.S. Aggregate Index			0.95	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	0.69	
IM U.S. Broad Market Core+ Fixed Income (MF) Median			0.96	0.26	-0.05	3.66	-2.96	0.25	1.14	1.47	0.96	
Voya Intermediate Bond (IIBZX)	2,915,023	3.8	1.21 (7)	0.64 (8)	0.58 (15)	4.88 (14)	-2.56 (33)	0.38 (42)	1.44 (32)	1.97 (18)	-0.21 (48)	Jan-2020
Blmbg. U.S. Aggregate Index			0.95	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	-0.79	
IM U.S. Broad Market Core+ Fixed Income (MF) Median			0.96	0.26	-0.05	3.66	-2.96	0.25	1.14	1.47	-0.24	
iShares Core US Aggregate Bond ETF (AGG)	5,258,670	6.9	0.88 (82)	0.03 (84)	-0.70 (82)	2.52 (78)	-3.05 (45)	-0.28 (68)	0.81 (60)	1.30 (54)	1.08 (71)	Feb-2023
Blmbg. U.S. Aggregate Index			0.95	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	1.16	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.99	0.21	-0.34	3.13	-3.10	-0.08	0.89	1.34	1.44	
iShares Intermediate-Term Corporate Bond ETF (IGIB)	1,242,389	1.6	0.71 (65)	0.43 (19)	0.35 (25)	6.07 (10)	-2.06 (15)	1.12 (20)	2.26 (12)	2.29 (36)	0.64 (21)	Oct-2019
ICE BofAML U.S. Corporate 5-10 Year Index			0.82	0.53	0.58	6.02	-2.17	1.15	2.24	2.71	0.67	
IM U.S. Corporate Bonds (MF) Median			0.76	0.12	-0.12	4.62	-3.11	0.50	1.57	2.10	0.00	
BBH Limited Duration (BBBIX)	211	0.0	0.48 (62)	1.51 (5)	2.86 (19)	7.57 (4)	3.22 (7)	3.04 (2)	3.03 (3)	2.55 (2)	6.50 (4)	Feb-2023
Blmbg. U.S. Treasury: 1-3 Year			0.58	0.91	1.19	4.51	0.33	1.02	1.30	1.12	3.34	
IM U.S. Short Term Investment Grade (MF) Median			0.52	1.18	2.25	6.00	1.31	1.89	1.97	1.66	4.85	
MainStay MacKay High Yield Corp Bond Fund (MHYSX)	1,182,579	1.6	0.91 (44)	1.41 (22)	3.12 (31)	9.69 (55)	2.54 (15)	4.22 (19)	4.45 (14)	4.55 (7)	2.85 (16)	Jun-2021
ICE BofA U.S. High Yield Index			0.97	1.09	2.62	10.45	1.65	3.73	4.10	4.21	2.05	
IM U.S. High Yield Bonds (MF) Median			0.88	1.15	2.67	9.81	1.28	3.34	3.58	3.47	1.66	
Other Income Composite	**2,685,814**	**3.5**	**0.00**	**0.00**	**-1.74**	**-**	**-**	**-**	**-**	**-**	**-3.90**	**Oct-2023**

See the disclosure page at the end of the report.

	Allocation		Performance(%)									
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR	7 YR	10 YR	Inception	Inception Date
Boyd Watterson GSA Fund	2,685,814	3.5	0.00 (-)	0.00 (21)	-1.74 (24)	-4.72 (15)	0.68 (64)	3.43 (38)	-	-	3.43 (38)	Jul-2019
NCREIF Office Total Return			-	-	-	-	-	-	-	-	-	
IM U.S. Open End Private Real Estate (SA+CF) Median			-	-0.72	-2.94	-9.03	0.99	3.21	4.70	6.94	3.21	
Cash Equivalents Composite	**711,835**	**0.9**	**0.43**	**1.30**	**2.69**	**-**	**-**	**-**	**-**	**-**	**4.06**	**Oct-2023**
First American Government Obligation - Z- (FGZXX)	711,835	0.9	0.43 (18)	1.30 (19)	2.69 (3)	5.41 (12)	3.05 (21)	2.08 (22)	1.96 (23)	1.42 (22)	1.51 (18)	Jan-2004
ICE BofAML 3 Month U.S. T-Bill			0.41	1.32	2.63	5.40	3.03	2.16	2.07	1.51	1.56	
IM U.S. Taxable Money Market (MF) Median			0.41	1.27	2.55	5.20	2.93	1.98	1.84	1.31	1.37	
Total Fund - Liquidity Assets	**49,541**	**0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Sep-2009**
First American Government Obligation - Z (FGZXX)	49,541	0.1	0.43 (26)	1.30 (29)	2.61 (28)	5.32 (29)	3.02 (29)	2.07 (27)	1.95 (26)	1.41 (25)	1.51 (19)	Jan-2004
ICE BofAML 3 Month U.S. T-Bill			0.41	1.32	2.63	5.40	3.03	2.16	2.07	1.51	1.56	
IM U.S. Taxable Money Market (MF) Median			0.41	1.27	2.55	5.20	2.93	1.98	1.84	1.31	1.37	

Schedule of Investable Assets



Data prior to 10/1/2023 was provided by the prior consultant.

As of 10/1/2023, AndCo began calculating client level returns for the underlying strategies and the asset class composites. Prior to this date, product returns are shown where possible. This data was not provided by the prior consultant.

Returns for periods greater than one year are annualized.

Active Return - Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.

Alpha - A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.

Consistency - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.

Distributed to Paid In (DPI) - The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.

Down Market Capture - The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance

Downside Risk - A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.

Excess Return - Arithmetic difference between the manager's performance and the risk-free return over a specified time period.

Excess Risk - A measure of the standard deviation of a portfolio's performance relative to the risk free return.

Information Ratio - This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.

Public Market Equivalent (PME) - Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.

R-Squared - The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.

Return - Compounded rate of return for the period.

Sharpe Ratio - Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.

Standard Deviation - A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.

Total Value to Paid In (TVPI) - The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life

Tracking Error - This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.

Treynor Ratio - Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.

Up Market Capture - The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

Mariner Institutional compiled this report for the sole use of the client for which it was prepared. Mariner Institutional is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. Mariner Institutional uses the results from this evaluation to make observations and recommendations to the client.

Mariner Institutional uses time-weighted calculations which are founded on standards recommended by the CFA Institute. The calculations and values shown are based on information that is received from custodians. Mariner Institutional analyzes transactions as indicated on the custodian statements and reviews the custodial market values of the portfolio. As a result, this provides Mariner Institutional with a reasonable basis that the investment information presented is free from material misstatement. This methodology of evaluating and measuring performance provides Mariner Institutional with a practical foundation for our observations and recommendations. Nothing came to our attention that would cause Mariner Institutional to believe that the information presented is significantly misstated.

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***IMPORTANT DISCLOSURE INFORMATION RE GREENWICH QUALITY LEADER AWARD**

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Methodology for this Award: For the 2022 Greenwich Quality Award for Overall U.S. Investment Consulting – Midsize Consultants – Between February and November 2022, Coalition Greenwich conducted interviews with 727 individuals from 590 of the largest tax-exempt funds in the United States. These U.S.-based institutional investors are corporate and union funds, public funds, and endowment and foundation funds, with either pension or investment pool assets greater than $150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset management and investment consulting providers, including qualitative assessments of those firms soliciting their business and detailed information on important market trends.

Hampton Roads Sanitation District
Qtrly Performance Report
For the Quarter Ending June 30, 2024

Total Portfolio Summary

Operating Strategies	June 30, 2024	March 31, 2024
Primary Source	$ 210,575,443	$ 247,241,391
Secondary Source	65,915,924	65,337,935
	$ 276,491,367	**$ 312,579,326**

Primary Source Summary

The Primary Source Portfolio consists of BAML Corp Disbursement Account $31.79m and VaCo/VML VIP Stable NAV Liquidity Pool $178.79m. BAML Corp Disbursement Account returned 0.55% for the quarter ending June 30, 2024. VIP LIQ Pool Fund 30 Day Avg Net Yield was 5.42% as of June 30, 2024. VIP Stable NAV Liquidity Pool performed 0.01% above Va Local Government Investment Pool's (the market benchmark) in the month of June 2024. 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 4.81% in June, which was 0.02% 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	June 30, 2024	March 31, 2024
Investment Assets	75,795,995	74,652,033
Liquidity Assets	49,541	48,910
Combined Assets	**$ 75,845,536**	**$ 74,700,943**

Retiree Health Plan Trust Summary

The Retiree Health Plan Trust portfolio returned 1.6% (investment assets) for the quarter ended June 30, 2024, above the 1.49% return of the Blended Benchmark. Fixed-income markets remained largely steady during the quarter. The US Federal Reserve (the Fed) continued on its stable trajectory, holding rates steady during the second quarter. US equity results were mixed for the quarter, with large-capitalization (cap) stocks strongly outpacing small-cap stocks. Domestic and international equity markets posted strong results in the second quarter.

TO: General Manager

FROM: Chief Information Officer

SUBJECT: Information Technology Department (ITD) Report for July 2024

DATE: August 12, 2024

Innovation

Distribution of a faulty file update by one of our cybersecurity service providers, CrowdStrike, impacted approximately 18 percent of HRSD computers and a far smaller number of servers (20). All servers were remediated and back online within 5 hours, with the affected computers taking several days, as each computer required manual intervention by IT staff.

In accordance with manufacturers' recommendations and HRSD's technology refresh program, staff is replacing various netwok and computer components across the organization.

Talent Management and ITD are working to address the long standing challenge of attracting and hiring qualified applicants for unfilled IT positions. It is anticipated that the recent adjustment in compensation to market will have a positive impact. Additionally, expanding advertising reach, hosting IT-specific job fairs, and the creation of a formal internship program are among the first steps being taken to address the challenge.

The IT Help Desk processed 346 work orders and requests for assistance in July, ensuring availability of computing resources to those working locally and remotely.

Community Engagement

Thanks to the collaborative efforts of the Customer Engagement Portal project Team, Staff is pleased to report it began its initial review of the propsed system architecture for online billing processes as well as the implementation of numerous customer self-service features and overall cybersecurity readiness. The Portal is projected to debut, by year's end.

Respectfully,

Don Corrado

TO: General Manager/Chief Executive Officer

FROM: Chief Operating Officer

SUBJECT: Operations Monthly Report for July 2024

DATE: August 14, 2024

Community Engagement

Staff participated in several community events as follows:

1. On July 17, North Shore (NS) Interceptor Operations conducted an in-person meeting with the City of Hampton Public Works. The purpose of the meeting was to review existing planning and development projects and to address ongoing operational and organizational matters.

2. On July 10, Mr. David Ewing, Atlantic Treatment Plant (ATP) Operations Superintendent and Mr. Jeff Powell, ATP Maintenance Superintendent, gave a tour to an Ocean Lakes resident who reached out about odors. The tour went very well with the neighbor helping to identify sources of odors detected off-site.

3. On July 31, Mr. Germano Salazar-Benites, Treatment Process Engineer (TPE) provided a tour at Sustainable Water Initiative for Tomorrow (SWIFT) to our colleagues from Hazen, Ulliman Schutte-Alberici, Tetra Tech, AECOM, Emerson, HDR, Black & Veatch, Veolia, and Carollo as part of the SWIFT Research Center Lessons Learned workshop.

4. Small Communities Division (SCD) and Technical Service Division (TSD) staff met on July 24 with Nestle Purina staff to discuss reuse operations and collaboration opportunities to optimize the system, provide more consistent reuse water, and create an open line of communication for Nestle's new staff that are unfamiliar with the process.

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 monthly report.

Internal Air and Odor Compliance:

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

1. There were five reportable events at Virginia Initiative Plant (VIP) in July for failing to record two valid Total Hydrocarbon (THC) readings in an hour, all caused by a faulty span calibration pod. The THC analyzer has been replaced to resolve the situation.

2. There were two THC permit deviations at Army Base Treatment Plant (ABTP) in July for failing to record two valid THC readings in one hour. The first happened after changing the Helium bottle. The next one happened after changing the Hydrogen resulting in the continuous emissions monitoring system (CEMS) unit being replaced.

3. ABTP had one deviation for odor control wet scrubber exception. An issue with caustic feeding created and overflow in the containment area. Caustic feed was adjusted to prevent any further issue.

4. ATP staff remains focused on reducing off site odors as follows:

    a. The Project Team, along with Electrical and Instrumentation (E&I) staff, completed the work needed to start up the spray header around the digester annular spaces. The units were started on July 16, and so far, appear to be mitigating the digester gas odors associated with the annular space.

    b. Work continues by ATP staff in upgrading equipment and replacing media on Odor Control System D. All mist eliminators have been installed on the first stage scrubbers, and all second stage media has been replaced. Once the bushings for the dampers are received, staff will begin installing new locking inlet damper actuators. This work should be completed by late August.

    c. On July 22, plant staff started a three-week trial of turning the uncured Biosolids from 9pm to 5am to see if this would reduce off site odor complaints. TSD is taking odor readings in the morning and recording the results. ATP staff and TSD will meet after the trial and discuss the results.

    d. Staff rebuilt and re-installed the gas regulator for waste gas burner #2.

    e. Staff completed preventative maintenance on the Bioscrubber for digester gas and have seeded the scrubber. The Bioscrubber should be in full operation in August.

5. Boat Habor Treatment Plant (BHTP):

    a. One reportable event for the Odor control system occurred in the month of July. The odor control system was shut down for routine drain cleaning and maintenance.

    b. One MACT 129 deviation occurred in the month of July. Due to low water flow to the venturi the minimum to meet the MACT 129 permit was not met for the 12-hour block. The issue was addressed by operation changes.

    c. Five THC reportable events occurred in the month of July. The CEMS unit failed calibration 4 times throughout the month. The CEMS unit lost communication and was repaired by E&I staff and a contractor.

6. James River Treatment Plant (JRTP) received an odor complaint for a strong odor near Menchville Road and Riverview Farm Parkway. The odor source may have been a primary clarifier tank being emptied for maintenance. There was also one odor scrubber exhaust exception which occurred when the #2 odor scrubber recirculation pump tripped out while switching to generator power.

7. Williamsburg Treatment Plant (WBTP) had six incinerator deviations. One deviation was a failure of the Total Hydrocarbon Analyzer to record two valid readings in an hour for almost the entire month. The unit was removed from service at the beginning of the month for troubleshooting. It was determined that the calibration gas may be the issue. One deviation was a use of the incinerator emergency bypass stack after the induced draft fan tripped out on overload. There were four odor control scrubber effluent deviations due to influent hydrogen sulfide concentration spikes.

8. An Odor complaint was received for King William Treatment Plant (KWTP) from a business owner. SCD staff investigated the complaint and is in the process of installing watertight manhole casting at the site to eliminate the odor. The customer has received an update and was very appreciative.

9. Urbanna Treatment Plant (UBTP) had a successful month operating under the new sample point location that was approved last month by the Virginia Department of Environmental Quality.

10. West Point Treatment Plant (WPTP) dewatering trailer was returned to West Point and in the process of starting to dewater at the facility. This will reduce the need to pump and haul from the WPTP to WBTP.

Additional Topics of Interest:

1. On July 18, the utility locating contractor on SS inadvertently misfiled a miss utility ticket in their digital filing system. The ticket was subsequently marked 15 minutes after the no-show designation. To avoid this error in the future, the contractor has worked with the utility locating software company to create an alarm if a ticket is misfiled.

2. SCD Staff have been working to transition plant data entry from Enterprise Data Solutions to Hach Water Information Management Solution. The dual entry period for the WPTP and KWTP occurred in July. UBTP and Central Middlesex Treatment Plant (CMTP) Hach WIMS are currently in development and, once completed, will undergo a dual entry period.

3. E&I staff worked with Saunders, an electrical contractor, to replace the Motor Control Center (MCC) with separate starter panels for Raw Sewage Pumps #1, #2, and #3 at BHTP. The MCC required replacement because Hydrogen Sulfide Gas (H2S) severely degraded the internal copper bus leading to a decrease in operational reliability. Raw sewage pumps 1, 2, and 3 were successfully cutover, tested, and returned to normal operation.

4. E&I staff worked with Saunders Construction Company to complete the replacement of a 1500KVA transformer at VIP. The existing transformer deteriorated beyond repair and its location is in a low-lying area that could receive water damage if flooded. Work involved raising the concrete pad twelve inches, extending conductors for the new height and several shutdowns to disconnect and reconnect cables after testing. The transformer is now operating normally.

5. E&I staff worked with Electrical Equipment Company and Allen Bradley to replace several failed components in multiple Variable Frequency Drives (VFD's) installed during recent upgrades to four South Shore (SS) Pump Stations (PS's). These VFD's were found to have a factory defected cable connection within a large component module. Delays involved procuring all the parts required to have a working system. The work was completed successfully, and stations are operating normally.

6. ATP staff completed sending digester solids (seed) to the Neuse River Plant in North Carolina to aid in the plant startup. Plant staff sent over 600,000 gallons of digestate (132.60 dry tons) to the facility. This effort allowed ATP staff to catch up on curing the solids that remained on the pad from 2023.

7. BHTP dye testing on secondary clarifier #1 was conducted to verify if the leak found in May had been repaired. The dye testing revealed the leak is still active and repairs will be needed.

8. On the Advanced Nutrient Removal Improvement (ANRI)/SWIFT Project at the JRTP the #3 secondary clarifier and the return activated solids buildings were demolished, demolition of the #4 secondary clarifier is underway, the new south electrical building foundation was constructed, and inside walls and roof installation continued on the new administration building. On the SWIFT side, concrete roof panels and architecture block were installed on building #1, concrete poured on the roof of building #2, and the methanol building was erected.

9. WBTP staff reviewed design options with our engineer for meeting upcoming, stricter effluent phosphorus limits and our wet weather management plan. The review included options for carbon feed, recycling intermediate clarifier effluent (ICE) to the aeration tank anoxic zones, adjusting the contact effluent weir, and diverting of ICE to the secondary clarifier effluent pipe.

10. Repair of the #3 primary effluent pipe at WBTP from the break that occurred in May is underway. The plan is to replace corroded sections of pipe and apply coatings where needed.

11. The York River Treatment Plant (YRTP) lost feed of sodium hypochlorite for disinfection for about thirteen minutes due to failure of the feed pump. The plant operator switched to a standby pump and there was no noticeable impact on contact tank thirty-minute chlorine residuals.

12. Onancock Treatment Plant Membrane #1 replacement was completed in house in July. This is the first of three membranes that need to be replaced. The membranes are all over 10 years old and are programmed for replacement one per fiscal year.

Financial Stewardship

1. Over the past several months, Mr. Jacob Hoagland, Lead Operator, worked with Mr. Jeff Nicholson, TPE, and Ms. BJ Ward, Solids Process Engineer, to bring down polymer and natural gas usage for VIP dewatering and incineration. The estimated savings are around $140,000/year.

2. The Transportation Group is currently supporting SCD by transporting digester solids from the WPTP to the WBTP while the mobile dewatering trailer is being utilized on the Eastern Shore. This assistance ensures all SCD treatment plant operations are not affected by not having adequate digester capacity to waste Mixed Liquor Suspended Solids and other settleable solids from treatment processes and saves HRSD money by not having to contract pump and hauler operation to complete this task. Estimated savings are $5,000/week.

3. The Machine Shop had 15 projects during the month of July. Some of the more notable projects completed include four pump rebuilds and the fabrication of a special ceramic filter mount for the process control team. Staff are also working on repairs to a centrifuge tub for VIP by repairing cracks in the stainless-steel tub bottom.

Innovation

1. The Supervisory Control and Data Acquisition (SCADA) program continues to make progress as more sites were finalized with the application of global changes to the ControlWave Programmable Logic Controller. The new Advanced Prime Guard program was tested at Artic Avenue PS. Numerous variances and network issues were resolved at Coliseum Pressure Reducing Station; and cutover for this site is anticipated for l September.

2. VIP staff and Mr. Aidan Blair, Research Intern, worked to operate and monitor a ballasted filtration and a cloth media filtration pilot process for phosphorus and suspended solids removal from plant effluent, to evaluate different processes needed to meet lower phosphorus permit levels.

3. The total volume of SWIFT recharge into the Potomac aquifer for the month of July was 20.1 million gallons (MG) (74.3% Recharge Time based on 610 gallons per minute).

4. Testing continued at NTP for the startup of the new Greasezilla process, where the plant will receive fats, oils, and grease (FOG) waste, and convert it to a bunker fuel to be hauled by a third party offsite as a renewable fuel source. Staff is working closely with the project team in leading this startup effort. This system should be fully functional by the end of summer, which will aid in the amount of FOG impacting the main process at the plant.

5. SCD and E&I staff have been working on a system that will allow remote monitoring on the Mathews County Vacuum System. This remote monitoring will aid operations staff in troubleshooting the vacuum system and should help minimize after hours alarm calls which require staff to respond immediately.

6. SCD and E&I staff have been working on a project to set up a radar level measurement device for the storage pond at WPTP, this will allow us to use the pond for influent flow equalization.

7. Ms. Stephanie Klaus, SCD TPE, is working with E&I staff to program the KWTP reuse pumps to run in automatic operation using Nestle Purina's storage tank level as the control point for operations. Currently an SCD System Operator has to start/stop the reuse pumps manually.

8. A US patent was granted in June 2024 in the gravimetric technology family:

   Maureen O'shaughnessy, Christine Debarbadillo, Charles Bott, Haydee De Clippeleir, Bernhard Wett, and Sudhir Murthy. 2024. Method and apparatus for multi-deselection in wastewater treatment. USPTO US11999641B2, https://patents.google.com/patent/US11999641B2/en

Talent

1. NS Interceptor Operations three open positions, two Interceptor Assistant positions and one heavy equipment operator position.

2. NS Interceptor Operations would like to congratulate Mr. Brandyn Bagwell and Mr. Edward Hawkins on their promotions to Interceptor Technician.

3. Mr. Anthony DeLucia transferred from Small Communities to SS Interceptor Operations on July 1 as an interceptor technician.

4. Mr. Domingo Sigur and Mr. Gianni Ponseti joined SS Interceptors on July 1 from the Hampton Roads Public Works Academy (HRPWA) as interceptor interns.

5. On July 17, Mr. Shawn Heselton, Director of SS Interceptor Operations, hosted and moderated a Virginia Section of the American Water Works Association (VA AWWA) and Virginia Water Environment Association (VWEA) Leadership Academy webinar on Diversity, Equity, and Inclusion.

6. SCD has two system operator vacancies currently open. Interviews were conducted and offers have been sent to both candidates.

7. Several peer-reviewed journal articles have also been published recently by HRSD staff on a range of topics. Some examples are listed and linked below:

   a. Robert Pearce, Samantha Hogard, Erik Rosenfeldt, Germano Salazar-Benites, and Charles Bott. 2024. Upstream Ozone or Downstream UVAOP: Where to Manage 1,4-Dioxane and Other Trace Contaminants in High-Bromide Applications of Carbon-Based Advanced Water Treatment, *Environmental Science and Technology | Engineering*, https://doi.org/10.1021/acsestengg.4c00105

   b. Megan Bachmann, Mike Parsons, Stephanie Klaus, Halil Kurt, Kartik Chandran, Daniel Stockard, George Wells, Haydee De Clippeleir, and Charles Bott. 2024. Comparing methanol and glycerol as carbon sources for mainstream partial denitrification/anammox in an IFAS process. Water Environment Research, https://doi.org/10.1002/wer.11017

   c. Alexandria Gagnon, Kris Villez, and Charles Bott. 2024. Application of step-response lambda tuning to proportional-integral controllers in water resource recovery facilities, *Water Practice & Technology*, https://doi.org/10.2166/wpt.2023.136

   d. Hannah Stohr, Ramola Vaidya, Christopher Wilson, Amy Pruden, Germano Salazar-Benites, and Charles Bott. 2024. Cometabolic Treatment of 1,4-Dioxane in Biologically Active Carbon Filtration with Tetrahydrofuran and Propane at Relevant Concentrations for Potable Reuse, Environmental Science and Technology | Water, https://doi.org/10.1021/acsestwater.3c00182

e. Juliet Johnston, Katherine Vilardi, Irmarie Cotto, Ashwin Sudarshan, Kaiqin Bian, Stephanie Klaus, Megan Bachmann, Mike Parsons, Christopher Wilson, Charles Bott, and Ameet Pinto. 2024. Metatranscriptomic analysis reveals synergistic activities of comammox and anammox bacteria in full-scale attached growth nitrogen removal system, Environmental Science & Technology, https://doi.org/10.1021/acs.est.4c04375

f. Matthew F Blair, Ramola Vaidya, Germano Salazar Benites, Charles Bott, Amy Pruden. 2024. Relating Microbial Community Composition to Treatment Performance in an Ozone-Biologically Active Carbon Filtration Potable Reuse Treatment Train, Water Research, https://doi.org/10.1016/j.watres.2024.122091

Respectfully submitted,

Eddie M. Abisaab, PE, PMP, ENV SP
Chief Operating Officer

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											
2.7	# of PS Annual PMs Performed (SS)	53	2											
2.7	# of Backup Generator PMs Performed	4.6	6											
2.8	# of FM Air Release Valve PMs Performed (NS)	234	397											
2.8	# of FM Air Release Valve PMs Performed (SS)	1,550	208											
2.9	# of Linear Feet of Gravity Clean (NS)	2,417	1,614											
2.9	# of Linear Feet of Gravity Clean (SS)	2,417	730											
2.9	# of Linear Feet of Gravity CCTV Inspection	3,300	0											

TO: General Manager

FROM: Director of Talent Management

SUBJECT: Talent Management Monthly Report for July 2024

DATE: August 14, 2024

Talent

Staff retention and recruitment remain significant priorities for the Talent Management (TM) Department. Human Resources has reopened the recruitment for the Talent Acquisition Specialist position, our original selection declined due to leaving the area.

Human Resources (HR): After a successful open enrollment process, HR staff continued to meet weekly with the new benefit carriers to complete the transition and implementation of our benefits starting July 1, 2024.

Participation in HRSD's Wellness Program continues to grow. Plan education, wellness related presentations, individual and group coaching, and virtual guided meditation sessions continue.

Learning and Development (L&D): In July, L&D increased partnerships for work-based learning programs, continued to support work center and work group initiatives, and delivered our scheduled programs, including leadership training for the Leadership and Management Academy (LAMA).

Lab School Partnership: L&D met with Old Dominion University staff to discuss partnership related to the governor-approved lab school focused on maritime industries. The lab school will be located in Newport News and L&D will work to develop a work-based learning initiative tailored for the lab school.

DiSC Workplace: L&D hosted a second pilot on the DiSC Workplace team workshop. This training focuses on the benefits of understanding personal and coworker motivations, inspirations, and preferences to enhance workplace communication and collaboration. L&D offers DiSC training as a work group training to foster team building.

StrengthsFinder Refresher: This tailored workshop focuses on continued integration of a strengths-based leadership approach and builds on the StrengthsFinder foundation course offered to employees.

Cornerstone LMS: L&D has acquired a corporate learning management system aimed at departmental and compliance training needs. Talent Management will be developing training content across its departments and will pilot test initiatives prior to rolling out organization wide.

Regularly scheduled programs: L&D hosted the 2024 LAMA cohort for Ethics & Leadership training, conducted Your Role in Quality full-day training, and held our quarterly Department Leaders Forum.

L&D facilitators have been preparing to facilitate work center SPARC Sessions beginning in August and will be hosting sessions throughout the remainder of the year.

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 two reported work-related injuries requiring medical attention and four auto/property damage accidents.

In July, Safety asked work centers to submit a Safety Innovation/improvement from their work center. The innovation/improvement must make an operational task safer and had to be in operation during 2023 and 2024. Five work centers submitted innovations/improvements, and the Safety Team will vote on a winner(s) at the August meeting.

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

Chief People Officer

TO: General Manager/ Chief Executive Officer

FROM: Chief of Water Quality (CWQ)

SUBJECT: Monthly Report for July 2024

DATE: August 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. From Fiscal Year (FY) 2025 to date, there have been zero Permit Exceedances out of 4,711 Total Possible Exceedances.

   c. Pounds of Pollutants Removed in FY 2025 to date: 18.1 million pounds.

   d. The draft Island Utilities VPDES permit was finalized and submitted for a 30-day public notice beginning on July 31, 2024.

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

   a. No civil penalties were issued in July.

   b. Hosted a luncheon recognizing Pretreatment Excellence and Pollution Prevention award winners.

3. Environmental and Regulatory Advocacy

   Chief participated in the following advocacy and external activities:

   a. Provided a briefing and tour on HRSD's SWIFT program to a representative from the National Groundwater Association (NGWA). The NGWA has previously reported on the SWIFT program's regulatory framework.

   b. Submitted comments to the President's Council of Advisors on Science and Technology in response to their request for "Public Input on America's Groundwater Challenges". This provided the opportunity to highlight the SWIFT program and its role in supporting the sustainability of the groundwater supply.

   c. Led multiple Chesapeake Bay Program Wastewater Treatment Workgroup sub-team meetings, each focused on a different topic area as it relates to

modifications to nutrient loads in the Phase 7 Watershed Model: Combined Sanitary Overflows (CSOs), Gravity Line Exfiltration, and Boater Pump-Out BMPs.

d. Attended the National Association of Clean Water Agencies (NACWA) Utility Leadership Conference and associated Board Meeting. The overarching theme of this year's conference was about the need for the wastewater sector to proudly proclaim its role as a water protector and find opportunities to collaborate with entities that share these same water protection goals. In line with this, speakers and discussions repeatedly stressed the need for wastewater utilities become visible members of the communities that they serve to build trust and opportunities to share the value of the work we do.

   Also co-chaired the Water Quality committee meeting at this conference. The discussion continues to center around the timing of upcoming regulations for Per- and Polyfluorylalkyl Substances (PFAS). Draft risk assessment values for biosolids land application are expected to be released this fall. Water Quality Criteria for the protection of Aquatic Life and for the protection of Human Health are also expected within the next few months. While the Aquatic Life criteria are not anticipated to require any additional actions for the majority of wastewater utilities, there is a high likelihood that the Human Health criteria and the pending biosolids regulations will require at least a concerted effort to control industrial sources of PFAS in wastewater. Initially driven by the SWIFT program, HRSD has been evaluating industrial sources of PFAS within the current and future Phase I SWIFT service areas and within the Atlantic service area.

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. City of Fredericksburg
3. New Kent County
4. Northumberland County
5. Westmoreland County

Talent

Mr. Oliver Urquiza started as a P3 Technician in the South Shore Field Office.

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

Respectfully submitted,

Jamie Heisig-Mitchell
Chief of Water Quality

EFFLUENT SUMMARY FOR JULY 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	9.05	50%	2	3.0	1	1	0.36	0.73	5.0	4.2	11
ATLANTIC	49.96	93%	15	7.6	13	1	NA	NA	NA	NA	11
BOAT HARBOR	10.78	43%	6	5.1	17	2	0.95	0.67	29	23	4
CENT. MIDDLESEX	0.014	56%	<2	<1.0	<1	<1	NA	NA	NA	NA	NA
JAMES RIVER	10.80	54%	7	5.6	1	<1	0.31	0.57	12	9.9	15
KING WILLIAM	0.094	94%	<2	0.50	NA	1	0.17	0.17	1.6	2.2	NA
NANSEMOND	16.59	55%	3	4.4	4	1	0.95	1.4	3.9	4.0	17
ONANCOCK	0.221	29%	0	0.55	1	1	0.51	0.23	7.7	3.3	NA
SUNSET BAY	0.024	62%	2	<1.0	1	1	NA	NA	NA	NA	0
URBANNA	0.066	66%	4	14	4	5	6.1	2.9	21	15	NA
VIP	29.73	74%	3	2.5	3	1	0.69	0.37	3.8	3.7	2
WEST POINT	0.344	57%	15	6.7	3	1	3.7	2.6	15	14	0
WILLIAMSBURG	9.16	41%	6	2.9	7	3	1.2	0.97	2.2	2.8	14
YORK RIVER	10.83	72%	3	1.5	1	5	0.20	0.24	4.8	5.1	12
	147.67										

	% of Capacity
North Shore	50%
South Shore	74%
Small Communities	43%

AIR EMISSIONS SUMMARY FOR MAY 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	0	0	50	85	0
BOAT HARBOR	0	0	0	n/a	0	0	0	0	18	24	0
VIP	0	0	0	n/a	0	0	0	0	24	98	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	2	14	10	0

Items of Interest – July 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). The THC continuous emissions monitoring (CEM) valid data capture varied greatly this month with Boat Harbor and Williamsburg having significant CEMs issues and downtime.

The MHIs had no deviations from the required 129 SSI rule minimum operating parameters, one (1) minor bypass event (< 60 minutes) and one reportable use of the bypass stack.

On July 3 at 2:43AM Williamsburg's induced draft (ID) fan tripped on overload causing the MHI malfunction event that lasted one hour and 13 minutes. The overload fault reset is located inside an electrical panel. Electrical and Instrumentation (E&I) was called in and reset the overload fault. Once reset, the ID fan was restarted to restore normal furnace operation. DEQ was notified per Title V air permit requirements.

Submitted to DEQ the Army Base second quarter hydrogen chloride (HCl) corrective action plan report. The consent order-based reporting over the last four years continues to demonstrate the corrective actions taken that support continued compliance with the 129 HCl emissions limit.

The 129 MHI semiannual deviation reports were submitted to DEQ. Reports demonstrated excellent MHI performance in meeting the 129 minimum operating parameter requirements. All plants had well less than <1% of operating time with reportable deviations.

A stack test protocol was submitted to DEQ for planned 129 emissions limits testing of MHI # 1 at VIP on August 27, 2024.

AIR PERMITS and ODOR CONTROL

There was a total of thirty-two (32) odor control complaints of which 31 complaints were HRSD related and one non-HRSD related.

Atlantic Plant received thirty (30) odor complaints from Ocean Lakes and Lago Mar neighbors. Plant Staff responded to all complaints. The sources of the odors are from the solids pad, digesters, and general plant odors. Plant staff took corrective action where possible. TSD recorded all complaints in the air permit required complaint log.

James River received a complaint regarding odors and an inquiry as to when the ongoing plant construction would be completed. Plant staff responded to the complaint. The most likely source was the solids trailer parked at the front of the plant coupled with unfavorable Met conditions. Communications followed up with our neighbor. No further complaints have been received.

The one non-HRSD complaint was odors from a local jurisdiction's pump station. North Shore Operations relayed that complaint to the City of Newport News.

CENTRAL ENVIRONMENTAL LABORATORY

The King William Treatment Plant did not meet the required E. coli monitoring frequency for the week of June 30, 2024, for Outfall 650 (Reuse). The sample collected on July 1, 2024, was removed from incubation prematurely and flagged IA2, analytical procedural error. This issue was discovered during the monthly data review and a resample was not possible. All other subsequent weekly E. coli monitoring requirements were met and in permit compliance for the month.

For the week of June 30, 2024, the West Point STP did not meet the required Total Nitrogen (TN) monitoring frequency of 2 Days/Week for the nutrient general permit (VAN030052). Samples were collected on July 2 and 3, 2024. The July 2nd sample was analyzed but the July 3rd sample was not analyzed due to a laboratory sample handling error. By the time the error was discovered there was not sufficient time left to collect another TN composite sample for the week. All other subsequent weekly TN monitoring requirements were met and in permit compliance for the month.

SYSTEM/TREATMENT, SMALL COMMUNITIES, AND EASTERN SHORE

Dendron

On July 30 heavy rain associated with a storm inundated the Dendron PS service area. Pump stations were observed to be operating properly. Following the event solids were removed and lime was spread on affected areas. The following raw wastewater overflow events were reported:

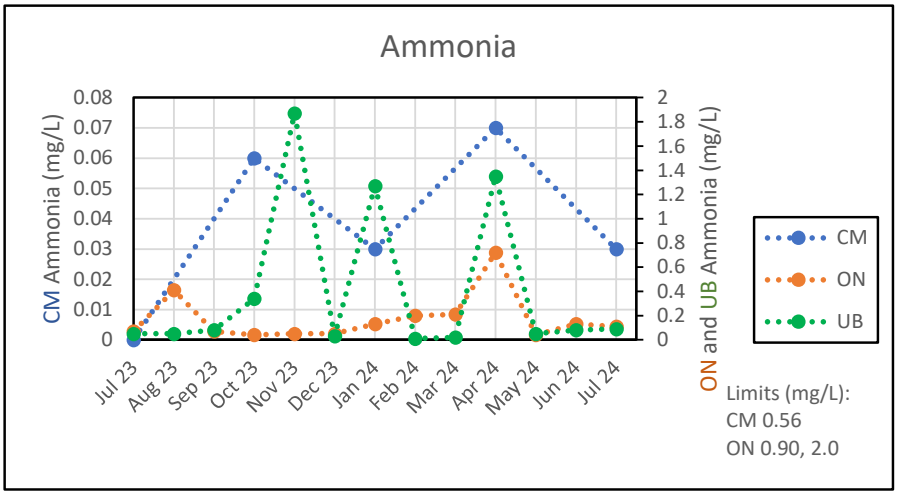
- Dendron PS1, 3,800 gallons to Cypress Swamp with a total rainfall of 2.34”.
- Dendron PS2, 2,680 gallons to Cypress Swamp with a total rainfall of 2.34”.

Urbanna

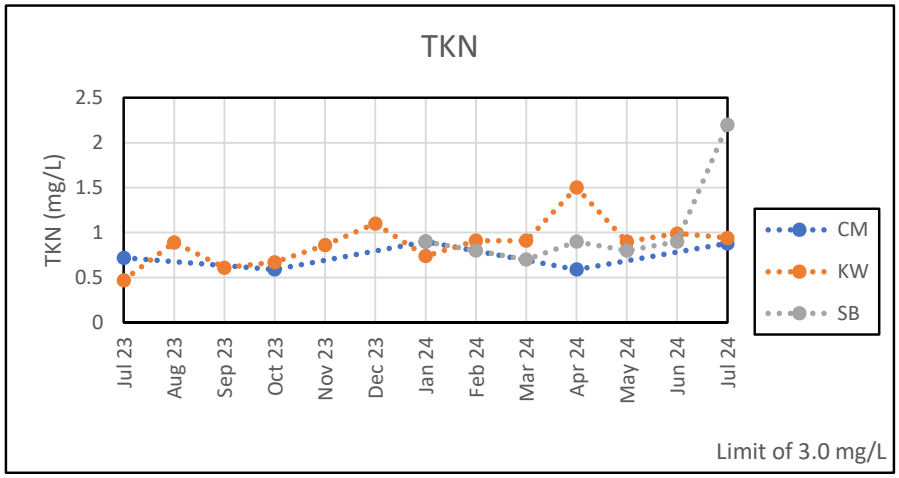
On July 27 an Operator discovered a 4” hose used for pump and haul trickling water from the digester tank. Upon removing the hose which had been tied down, an attempt to pull on it failed and when the hose was released it began siphoning from the digester and spilling on the concrete and gravel between the aeration tanks. The Operator cut the rope and retrieved the hose but couldn’t hold onto it and when dropped the remaining volume of water in the hose spilled to the ground. Approximately 100 gallons of digested mixed liquor suspended solids were released. This event did not meet the 24-hr notification requirement.

Flow summaries, nutrient data, and rainfall information is located here:
DMR - Power BI (powerbigov.us)

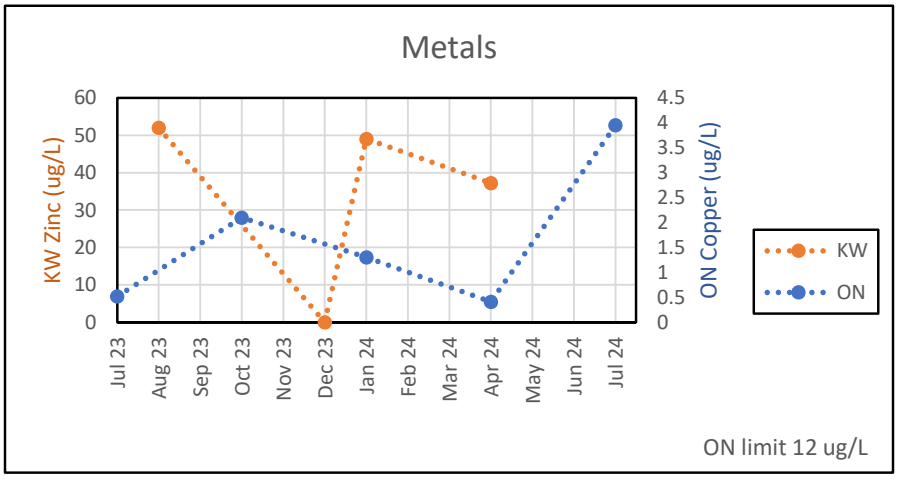
	Ammonia		
	CM	ON	UB
Jul 23	<0.02	0.07	0.05
Aug 23		0.41	0.05
Sep 23		0.07	0.08
Oct 23	0.06	0.04	0.34
Nov 23		0.05	1.87
Dec 23		0.05	0.03
Jan 24	0.03	0.13	1.27
Feb 24		0.20	0.01
Mar 24		0.21	0.02
Apr 24	0.07	0.72	1.35
May 24		0.04	0.05
Jun 24		0.13	0.08
Jul 24	0.03	0.11	0.09



	TKN		
	CM	KW	SB
Jul 23	0.72	0.47	
Aug 23		0.89	
Sep 23		0.61	
Oct 23	0.59	0.67	
Nov 23		0.86	
Dec 23		1.1	
Jan 24	0.90	0.74	0.90
Feb 24		0.91	0.80
Mar 24		0.91	0.70
Apr 24	0.59	1.5	0.90
May 24		0.90	0.80
Jun 24		0.99	0.90
Jul 24	0.88	0.94	2.2



	Zinc	Copper
	KW	ON
Jul 23		0.52
Aug 23	52	
Sep 23		
Oct 23		2.1
Nov 23		
Dec 23	<5.0	
Jan 24	49	1.3
Feb 24		
Mar 24		
Apr 24	37	0.41
May 24		
Jun 24		
Jul 24		4.0



Hampton Roads Sanitation District
Internal Audit Status
July 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 (July 2024)**
  - Completed testing except for Jame River (awaiting open items).
  - Continued to follow-up on open items for James River (open).
  - Performed Manager review on testing.
- **Upcoming Tasks (August 2024)**
  - Continue to request/follow up for documentation on James River.
  - Perform testing and review on James River documentation (once obtained).
  - Discuss findings with HRSD contacts.
  - Draft report.

Design and Construction Estimating

- **Completed Tasks (July 2024)**
  - Reviewed additional sample selection for project comparison.
  - Contacted and scheduled external engineering firm interviews.
  - Confirmed listing of organizations for benchmarking interview/survey.
  - Drafted the front end of the report.
- **Upcoming Tasks (August 2024)**
  - Participate in the Consultant Coordination Meeting (8/5).
  - Meet with external engineering firms and organizations for benchmarking.
  - Draft report.

II. Upcoming Projects

- IT governance: ~Fall CY2024
- Model 3: ~Fall/winter CY2024
- Talent management investigations: ~Fall/winter CY2024

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	August 2024	0	3	3
Safety Division	August 2024	2	1	3
Freedom of Information Act	August 2024	0	1	1
Family Medical Leave Act (FMLA)	August 2024	0	4	4
Succession Planning	August 2024	2	2	4
AP, ProCard	July 2025	0	2	2
Closed Audit/Projects (x16)	Closed	127	0	127
	Totals	131	13	144

Strategic Measures
July 2024

Strategic Planning Measure	Department	Jul-24	FY-24	FY-25
Educational and Outreach Events	Communications	5	226	5
Number of Community Partners	Communications	4	160	4
Number of Technical Presentations	All	1	87	1
Revenue vs. Budget	Finance	9%	57%	9%
Wastewater Expenses vs. Budget	Finance	6%	46%	6%
Accounts Receivable (HRSD)	Finance	$44,394,792	$44,431,665	$44,394,792
Aging Accounts Receivable	Finance	32.70%	29.30%	32.70%
Turnover Rate wo Retirements	Talent Management	0.47%	4.36%	0.47%
Turnover Rate w Retirements	Talent Management	0.47%	6.94%	0.47%
Avg Time to Hire	Talent Management	2 months 28 days	3 months 9 days	2 months 28 days
Number of Vacancies	Talent Management	88	53	518
Average number of applicants per position	Talent Management	9.1	9.0	9.1
Percentage of positions filled with internal applicants	Talent Management	28.6%	28.2%	28.6%
Recruitment source Return on Investment	Talent Management	*	*	*
Average time required (days) to onboard new employees, including from initial posting of position to candidates' first day	Talent Management	*	*	*
Customer Call Wait Time (mins)	Finance	1.32	2.51	1.32
Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	Water Quality / ENG	*	1	*
Non-Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	Water Quality / ENG	*	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.	Operations	*	*	*
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.	Operations	*	*	*
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.	Operations	*	*	*
Monthly CIP Spending	Engineering	$453,806	$50,691,201	$453,806

***Not currently tracking due to constraints collecting the data.**

**** Updated after EPA Quarterly Report submittal.**

*****Billing is one month behind**

Strategic Measures
July 2024

Education Outreach and Community Partners			
Date	**Event**	**Community Partner**	**Departments**
07/09/2024	ODU Lab School	ODU	Talent Management
07/10/2024	VWEA meeting for HRSD apprenticeship collaboration	VWEA	Talent Management
07/12/2024	SWIFT Employee Friends and Family Tour	HRSD Employees	Communications
07/20/2024	REECH Foundation STEAM Day event at Norfolk State University	Norfolk State University	Water Quality, Communications
07/22/2024	Regional Training Meeting for OT/L&D municipal employees		Talent Management
07/23/2024	DEI meeting with City of Hampton to discuss formation of the UNIFIED Council		Talent Management
07/26/2024	SWIFT RC Tour - Boater Pump Out Interns	Boater Pump Out Program	Communications
07/26/2024	SWIFT RC Tour - Keep Norfolk Beautiful	Keep Norfolk Beautiful/City of Norfolk	Communications
07/31/2024	SWIFT RC Tour - Elizabeth River Project Interns	Elizabeth River Project	Communications

Resource: Bruce Husselbee

AGENDA ITEM 15.c.1. – August 27, 2024

Subject: Birdneck Road Trunk Force Main Emergency Mitigation and Repair (SF-135) Emergency Declaration

Recommended Action: No action is required.

CIP Project: AT016800

Regulatory Requirement: None

Brief: An emergency designation was authorized on August 6, 2024, due to a bulldozer on top of the Birdneck Road Trunk Force Main in the City of Virginia Beach.

On August 5, 2024, staff was notified by a third-party contractor that one of their large bulldozers (weighing approximately 40,000 pounds) was stuck in the mud on top of a 42-inch prestressed concrete cylinder pipe (PCCP) HRSD force main installed in the 1970s. The bulldozer was allegedly stolen from the contractor's nearby construction site and driven along the adjacent HRSD force main easement. The bulldozer was found abandoned after it sunk into the soft, swampy soils. Field observations indicate that the bulldozer has damaged the PCCP force main past the exterior mortar, inner prestressed wires, inner steel cylinder, and into a portion of the interior concrete core; thus, repair of the pipe is not possible. Instead, the damaged section of pipe will need to be isolated and replaced.

HRSD staff will use Hazen and Sawyer (Hazen) and Bridgeman Civil, Inc. (BCI) to replace a section of the damaged force main. The work consists of constructing a temporary access road, installing line stops and a bypass, securing and removing the bulldozer, and replacing approximately 32 linear feet (LF) of 42-inch PCCP with 42-inch ductile iron pipe (DIP).

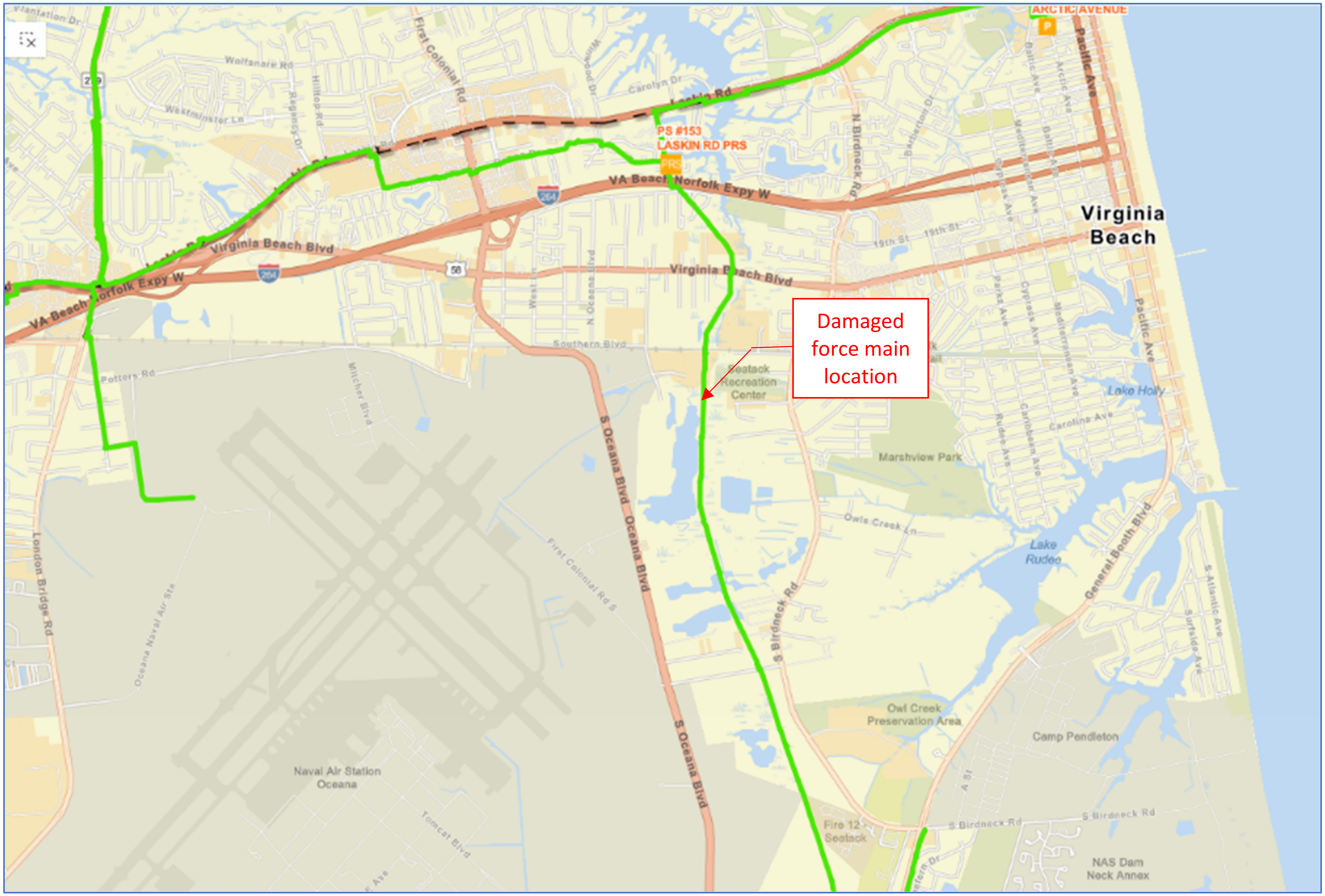
The attached map depicts the damaged force main location.

Analysis of Cost: The estimated cost of this work is $3,100,000 and will be funded by the new CIP project and initial appropriation. The cost estimate includes the force main condition assessment, emergency engineering design services, replacement of the damaged pipe, and contingency. The costs have been reviewed by staff and are considered reasonable. The cost estimate differs from the $1,500,000 indicated in the emergency designation due to new and updated information provided by Hazen and BCI as the work continued after the emergency designation was executed.

Staff will provide a briefing during the meeting.

Schedule:

Emergency Declaration	August 2024
Construction	August 2024
Project Completion	October 2024


Damaged
force main
location
PS #153
LASKIN RD PRS
ARCTIC AVENUE
Virginia
Beach
Laskin Rd
VA Beach Norfolk Expy W
Virginia Beach Blvd
Southern Blvd
S Oceana Blvd
N Birdneck Rd
S Birdneck Rd
Pacific Ave
General Booth Blvd
Seatack
Recreation
Center
Marshview Park
Owls Creek Ln
Lake
Rudee
Lake Holly
Owl Creek
Preservation Area
Camp Pendleton
Naval Air Station
Oceana
Fire 12
Seatack
NAS Dam
Neck Annex
First Colonial Rd
London Bridge Rd
Potters Rd
Wolfsnare Rd
Westminster Ln
Carolyn Dr
19th St
Oceana Naval Air Sta
Mitcher Blvd
Tomcat Blvd
S Atlantic Ave

Resource: Eddie Abisaab

AGENDA ITEM 15.c.2. – August 27, 2024

Subject: Hampton University- East College Place (NF-133)
Emergency Declaration

Recommended Action: No action is required.

Regulatory Requirement: None

Brief: An emergency declaration was authorized on August 8, 2024, due to a force main failure in the City of Hampton that was discovered on August 6, 2024. The failure is believed to be caused by pipe wall thickness degradation due to internal corrosion.

On August 6, 2024, HRSD North Shore Interceptor Operations staff were field verifying utilities for an upcoming connection to a new 24-inch pipe recently installed as part of the replacement pipe for the Hampton Trunk Sewer Extension Divisions I & J Relocation Phase II (BH014220) project. While on site at the existing 10-inch connection from Hampton's Pump Station No. 3, a sink hole was observed over top of our existing force main NF-133 (a 1945 30-inch reinforced concrete pipe). No active spill was occurring; however, evidence of a prior spill was present and there was sewage ponding in the sinkhole.

HRSD staff-initiated setting changes at downstream Bridge Street Pump Station and the sewage present in the hole subsided into the buried pipe (now visible) through a large longitudinal hole observed on the crown of the 30-inch pipe. Photographic inspection indicates that this crown corrosion is present and extends for a long distance in either direction. There is no bypass or diversion options available and any repair would be extremely challenging with an extremely low probability of success and a high probability of making the problem worse. Additionally, HRSD has taken interim action to mitigate a reoccurrence at this location, but the vulnerability of a wet weather event causing a future SSO is extremely high. Staff has set up a standpipe at the failure and installed a bypass pump to capture possible future flows at the break site and pump them into an adjacent City of Hampton manhole. An alarm system has also been established to alert staff of sewage outside of the pipe at this location.

The Contractor is actively working to complete the CIP and finalize the connections for the 3 smaller force mains on Hampton University property. However, the vast majority of the flow through the failed 30-inch reinforced concrete pipe is pumped from our existing Willard Avenue Pump Station. The replacement Willard Avenue Pump Station (BH013020) is under construction but will not be complete and available until the end of 2024. Planning efforts to divert flows away from our existing Willard Avenue Pump Station to the new, available 24-inch force main adjacent to the new Willard Avenue Pump Station CIP have begun. The work to complete this will include installation of bypass pumps at the existing Willard Avenue Pump Station and installation of approximately 800 linear feet of temporary piping to connect to the available 24-inch force main. Until flows can be removed from the old line, this failure remains an emergency.

Contractual services will be necessary to supplement HRSD staff to fully establish and support emergency bypass piping, pumping, construction services for installation of a large bypass system, possible pump and haul services, engineering services and other ancillary equipment and contractual services to help mitigate and restore normal operations. HRSD will utilize Tidewater Utility Construction, Inc., Xylem Inc., and potentially RK&K and others to assist HRSD in deploying this temporary emergency repair.

Analysis of Cost: The estimated cost of this work is $150,000 and will be performed in-house and funded by the operating budget but a new CIP may be necessary in the near future. The cost estimate includes emergency bypass piping, pumping, construction services for installation of a large bypass system, possible pump and haul services, engineering services and other ancillary equipment and contractual services to help mitigate and restore normal operations and contingency. These estimates have been reviewed by staff and are considered reasonable.

Staff will provide a briefing during the meeting.

Schedule:		
	Emergency Declaration	August 2024
	Construction	August 2024
	Project Completion	September 2024

Resource: Steve de Mik

AGENDA ITEM 15.c.3. – August 27, 2024

Subject: Online and Interactive Voice Response (IVR) Payment Processing Emergency Declaration

Recommended Action: No action is required.

Regulatory Requirement: None

Brief: An emergency declaration was authorized on August 8, 2024, due to significant concerns with our current bill print provider, HRSD issued a 60-day letter of "non-renewal" on August 5, 2024, effective October 5, 2024. The current bill print provider subcontracts processing of online payments with Invoice Cloud Inc.; therefore the 60-day letter included those services as well. New bill print provider services will soon be provided by InfoSend Inc., whose contract was approved by the Commission on May 28, 2024. A separate contract for online and IVR payments is necessary to ensure there is no lapse in payment processing services. Because of the extremely short time frame necessitated by our 60-day notice, we do not have time to complete a formal competitive process for this critical process.

HRSD is currently developing a customer engagement portal called IDEA with Meridian Integration, LLC to create a digital platform portal to provide enhanced services for HRSD customers. Meridian has an existing and positive relationship with Diversified Data Processing & Consulting, Inc., DBA DivDat, to accept online payments and IVR payments inside the IDEA platform and the ability to deliver payments real-time to HRSD's billing system. This functionality is currently in use with other utilities, and significantly decreases the implementation and testing times required to go live with such services.

HRSD will entered into a contract for online and IVR payment processing with DivDat in order to avoid any lapse in these crucial services which provide revenue collection.

Analysis of Cost: The estimated cost of this work is $936,000 per year and will be funded through Customer Care Center's operating budget. The cost estimate is for ongoing support services for the next three years. The cost is based on negotiated cost with DivDat and were compared to current cost for these same services. These estimates have been reviewed by staff and are considered reasonable.

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

Schedule:

Emergency Declaration	August 2024
Implementation	September 2024
Project Completion	October 2024

Resource: Eddie Abisaab

AGENDA ITEM 15.c.4. – August 27, 2024

Subject: York River Treatment Plant (YRTP) Main Switchgear Relay Replacements Emergency Declaration

Recommended Action: No action is required.

CIP Project: YR015100

Regulatory Requirement: None

Brief: The YRTP 5kV switchgear, to include the breakers and protective relays, were installed in 2010. The switchgear is a “Main A”-Tie-Tie-“Main B” configuration. A single utility feed services the plant and is connected to the Main A breaker. A parallel utility feed to the Main B breaker is not installed. In May 2024, the plant experienced a failure of the Main A protective relay. The relay failure caused the Main A breaker to trip and lock open, resulting in an unintended utility to generator power transfer, and prohibiting a return to utility power.

A couple of parallel solutions were pursued to address the issue. First, the unused Main B relay was removed and tested. It failed field testing, so that option was abandoned. Second, as an interim solution, we purchased and installed a similar refurbished relay since these are no longer in production (obsolete). Although the refurbished relay allowed us to transfer back to utility power, our reliability is still in jeopardy due to the unknown longevity of this relay.

In addition, the failed Main A and Main B relays were removed and sent out for repair, and testing determined both relays were unrepairable.

Due to the vulnerability of a similar failure occurring with the remaining switchgear relays, and the unavailability of similar relays in the market, this project will replace all 18 main switchgear protective relays.

Analysis of Cost: The estimated cost of this work is $1,000,000 and will be funded by the YRTP Main Switchgear Relay Replacements (YR015100). The cost for this is based on high-level, preliminary estimates developed by the Design-Builder ITAC Power Systems.

Schedule:

Emergency Declaration	August 2024
Construction	December 2024
Project Completion	January 2025