

HRSD Commission Meeting Agenda
9:00 a.m. – October 22, 2024

In-person for Commissioners and essential staff at
2389 G. Avenue, Newport News, VA 23602
Training Room – 2nd 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>

<u>No.</u>	<u>Topic</u>	<u>Resource</u>
	Call to Order	Chair
1.	Awards and Recognition	Bernas
2.	Public Comments Not Related to the Agenda	Secretary
3.	Consent Agenda	Bernas
4.	Great Bridge Interceptor Force Main Emergency Replacement (SF-180) Public Hearing on Determination of Public Need for Easement Acquisition and Easement Acquisition Resolution	Husselbee
5.	Annual Comprehensive Financial Report	Pagan
6.	Financial Policy Biennial Update	Pagan
7.	Diversity Procurement Report	Pagan
8.	Adjustable Gas Siphon (MINIONS Big Bubble Mixing) License Agreement	Bott
9.	Bethel-Poquoson Force Main Part IV Replacement-Wythe Creek Exposed Crossing Additional Appropriation – Non-Regulatory (>\$1,000,000) and Contract Change Order (>25% of original contract value or \$50,000, or whichever is greater)	Husselbee
10.	Cybersecurity Briefing	Caslow
11.	Capital Improvement Program (CIP) Update	Husselbee
12.	New Business	Bernas

<u>No.</u>	<u>Topic</u>	<u>Resource</u>
13.	Unfinished Business	Bernas
14.	Commissioner Comments	
15.	Informational Items	Bernas

Next Regular Commission Meeting: November 19, 2024 in Virginia Beach

AGENDA ITEM 1. – October 22, 2024

Subject: Awards and Recognition

Recommended Action: No action is required.

Brief: HRSD is pleased to announce the receipt of the following awards:

a. **Virginia Water Environment Association (VWEA) WaterJAM 2024**

- (1) **Delegate Service Award – Lauren Zuravnsky, Director of Design & Construction-SWIFT.** In recognition of the outstanding work by Member Association Delegates.
- (2) **Facility Maintenance Award, Operations & Maintenance awarded to the Atlantic Treatment Plant.** The purpose of the VWEA Facility Maintenance Award is to recognize outstanding performance, professionalism, and dedication specific to the maintenance of wastewater treatment equipment and processes.
- (3) **Laboratory Analyst Award - Megan Pennington-Boggio, Laboratory Supervising Chemist.** Recognizes individuals for outstanding performance, professionalism and contributions to the water quality analysis profession.



b. **Water Environment Federation Technical Exhibition and Conference (WEFTEC) 2024**

- (1) **Water Environment Federation's 2024 Morgan Operational Solutions Award – Alexandria "Ali" Gagnon.** The Morgan Operational Solutions Award recognizes valuable contributions to the in-facility study and solution of operational problems.



- (2) **Intelligent Water Systems Challenge – Jeff Sparks, Black & Veatch and Kansas State University** joined forces in the Leaders Innovation Forum for Technology (LIFT) program challenge. Their submission for a new Chlorine Dosage Controller for Disinfection took 2nd place out of 60 submissions.



- (3) **Operations Challenge** – Team HRSD placed 13th overall in the Division II Operations Challenge. However, their outstanding performance earned 3rd place in the Laboratory event, 4th in Pump Maintenance event, and 5th in the Safety event.
- (4) **Water Environment Federation Education Awards – Student Chapter of the Year Award** presented to Old Dominion University Environmental Engineering Student Association.

AGENDA ITEM 2. – October 22, 2024

Subject: Public Comments Not Related to Agenda

AGENDA ITEM 3. – October 22, 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. [Electrical Services](#) \$8,000,000
 - 2. [Fleet Management \(FY-2025\) - Road Tractor for Biosolids Hauling](#) \$909,616
 - 3. [Mobile Workforce Database License Maintenance and Support](#) \$256,186
 - 4. [Organizational Development Consulting and Training Services](#) \$1,275,000
 - 5. [South Shore Gravity Sewer Improvements Phase One Contract Award \(>\\$200,000\) and Task Order \(>\\$200,000\)](#) \$759,755
\$291,130
- c. Task Orders (>\$200,000)
 - 1. [Army Base 24-Inch and 20-Inch Transmission Main Replacements](#) \$499,621

CONSENT AGENDA ITEM 3.b.1. – October 22, 2024

Subject: Electrical Services
Contract Award (>\$200,000)

Recommended Actions:

- a. Award a contract to Saunders Contracting Services, Inc. in the amount of \$1,000,000 for one year with three renewal options and an estimated cumulative value of \$4,000,000.
- b. Award a contract to REW Corporation in the amount of \$1,000,000 for one year with three renewal options and an estimated cumulative value of \$4,000,000.

Regulatory Requirement: None

Type of Procurement: Competitive Negotiation

A Public Notice was issued on July 5, 2024. Three firms submitted proposals on August 20, 2024, and two 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. Two firms were interviewed and technically ranked as listed below:

Proposers	Technical Points	Recommended Selection Ranking
Saunders Contracting Services, Inc.	86	1
REW Corporation	74	2

The Committee recommends award to Saunders Contracting Services, Inc., and REW Corporation whose professional qualifications and proposed services best serve the interest of HRSD. Both contractors held the previous five-year term contracts. As with the previous term, it is in HRSD's best interest to have two contractors for the entire service area. The required personnel qualifications and availability of equipment will help with redundancy on critical projects.

HRSD Estimate:

\$1,835,000/yr

Contract Description: This contract is an agreement for various electrical services on an as needed basis through scheduled requests and/or emergency response for use by the Electrical and Instrumentation Department. Contractors will provide all necessary labor, equipment, materials and supervision to perform services related to high technical and/or critical project-based requests. Services include but are not limited to repairs and/or installations of switchgear, motor control centers, transformers, panel boards, motors, and generators.

This is a Task Order based estimated use contract with individual task orders limited to \$1,000,000. All task orders will be issued based on the unit prices submitted with the proposals.

Analysis of Cost: The HRSD Estimate reflects the past five-year term spend between both contractors. Detailed rate costs from both contractors were evaluated, negotiated and found to be in line with industry standards.

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

CONSENT AGENDA ITEM 3.b.2. – October 22, 2024

Subject: Fleet Management (FY-2025)
Road Tractor for Biosolids Hauling
Contract Award (>\$200,000)

Recommended Action: Award a contract to Peterbilt of Richmond Inc dba The Pete Store - Chesapeake in the amount of \$909,616.

CIP Project: GN020400

Regulatory Requirement: None

Budget	\$4,432,780
Previous Expenditures and Encumbrances	(\$2,052,109)
Available Balance	<u>\$2,380,671</u>

Type of Procurement: Use of Existing Contract Vehicle

HRSD Estimate: \$909,616

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 Peterbilt 567 Day Cab Road Tractors for Biosolids Hauling. The tractors include a Cummins X15 450HP motor, Allison 4,000RDS disc brakes, and 30-40 GPM installed hydraulic wet line kits.

Upon evaluation of the Sourcwell Contract 032824-PMC terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Peterbilt of Richmond Inc dba The Pete Store – Chesapeake.

Analysis of Cost: By utilizing the Sourcwell Contract 032824-PMC for Cab and Chassis, Vocational and Medium-duty Trucks, class 6, 7, and 8, HRSD is receiving a twenty-five percent cost savings.

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

CONSENT AGENDA ITEM 3.b.3. – October 22, 2024

Subject: Mobile Workforce Database License Maintenance and Support
Contract Award (>\$200,000)

Recommended Action: Award a contract to Mythics, Inc. in the amount of \$44,885 for one year with four renewal options and an estimated cumulative value of \$256,186.

Regulatory Requirement: None

Type of Procurement: Use of Existing Contract Vehicle

Contract Description: This contract is for mobile workforce database license maintenance and support for use by the Information Technology Department. This is an Oracle enterprise database license for technical support for various existing software updates and continuous support during the contractual term.

Upon evaluation of the Virginia Information Technology Agency agreement VITA-VA-230503-MYTH terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Mythics, Inc.

Analysis of Cost: This is an estimated use contract. By utilizing the Virginia Information Technology Agency agreement VITA-VA-230503-MYTH for Oracle Software, HRSD is receiving fixed renewal pricing for years one through three with years four and five estimated to be at the typical Oracle annual renewal percent increase.

This work is in accordance with the Commission Adopted Procurement Policy

CONSENT AGENDA ITEM 3.b.4 – October 22, 2024

Subject: Organizational Development Consulting and Training Services
Contract Award (>\$200,000)

Recommended Action: Award a contract for Organizational Development Consulting and Training Services to Hicks Carter Hicks, LLC in the estimated amount of \$255,000 for one year with four annual renewal options and an estimated cumulative value in the amount of \$1,275,000.

Regulatory Requirement: None

Type of Procurement: Competitive Negotiation

A Public Notice was issued on June 17, 2024. Sixteen firms submitted proposals on July 12, 2024, and 11 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
Hicks-Carter-Hicks, LLC	95	1
Dr. Maria Church International, LLC	87	2
The SAB Group, LLC DBA Prism Leadership Group	79	3
iSuccess Consulting, Inc.	77	4

HRSD Estimate:

\$259,000/yr

The Committee recommends award to Hicks Carter Hicks, LLC, whose professional qualifications and proposed services best serve the interest of HRSD. Hicks-Carter-Hicks, LLC served as the organizational development and training consultant for the previous contract period.

Contract Description: This contract is for organizational development consulting and training services to be used by the Learning & Development Department. Services include supervisor and employee training curriculum development, instruction, coaching, organizational needs assessments and other services as required.

Analysis of Cost: This is an estimated use contract. The costs were compared to industry standards, previous contract rates with the same supplier, and results from the competitive negotiation. Rates were negotiated and determined to be fair and reasonable.

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

CONSENT AGENDA ITEM 3.b.5. – October 22, 2024

Subject: South Shore Gravity Sewer Improvements Phase One
Contract Award (>\$200,000) and Task Order (>\$200,000)

Recommended Actions:

- a. Award a contract to Tidewater Utility Construction, Inc. in the amount of \$759,755.
- b. Approve a task order with Gannett Fleming, Inc. in the amount of \$291,130.

CIP Project: GN015000

Regulatory Requirement: Rehab Action Plan Phase 2 (5/5/2025 Completion)

Budget	\$3,751,057
Previous Expenditures and Encumbrances	(\$1,776,090)
Available Balance	\$1,974,967

Contract Status with Task Orders:	Amount
Original Contract with Engineer	\$61,262
Total Value of Previous Task Orders	\$414,130
Requested Task Order	\$291,130
Total Value of All Task Orders	\$705,260
Revised Contract Value	\$765,522
Engineering Services as % of Construction	38%

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 August 23, 2024, and two bids were received on September 18, 2024, as listed below:

Bidder	Bid Amount
Tidewater Utility Construction, Inc.	\$759,755.00
Bridgeman Civil, Inc.	\$1,380,200.00

Engineer Estimate: \$1,394,777.50

The design engineer, Gannett Fleming, Inc., evaluated the bids based upon the requirements in the invitation for bid and recommends award to the lowest responsive and responsible bidder Tidewater Utility Construction, Inc. in the amount of \$759,755.

Project Description: This project will rehabilitate and/or replace gravity sewer segments at four locations in the South Shore Interceptor System. Project locations include Arctic Avenue Pump Station, Seay Avenue Pump Station, Elmhurst Lane Pump Station, and Bolling Avenue in between Powhatan Avenue and Studeley Avenue. The attached [map](#) depicts the project locations.

Project Justification: Condition assessment activities indicate that assets at these four project locations present a material risk of failure due to physical condition defects and Inflow and Infiltration (I/I).

Contract Description: This contract is for the Bolling Avenue project location only. Work at this location includes installation of approximately 360 linear feet of 12-inch diameter PVC sanitary sewer pipe and service laterals as well as abandonment of the existing 10-inch diameter clay sewer pipe.

Task Order Description: This task order will provide construction administration and construction inspection services at the two remaining project locations (Seay Avenue Pump Station and Bolling Avenue). HRSD and the design engineer, Gannett Fleming, negotiated a fee in the amount of \$291,130 based on subcontractor costs and an estimation of hours required for this effort. The Bolling Avenue construction administration fee is a high percentage of the overall construction costs due to the pre-construction field surveys and construction activity vibration and groundwater monitoring programs that will be utilized on this relatively small project.

Analysis of Cost: The cost for the construction contract has been reviewed by Gannett Fleming and has been determined to be reasonable and award is recommended to the low bidder. Although the bid price amounted to 63% of the Engineer's Opinion of Probable Construction Cost (OPCC), the bid item pricing was determined to be appropriate and aligns with current market conditions. Gannett Fleming prepared the OPCC using HRSD annual services contract pricing, as well as project pricing received for two HRSD projects in the same locality having similar scopes of work as the proposed project. The OPCC included a 15% contingency and was based on an interpolation of both cost estimates. Using the annual services contract pricing lead to a higher OPCC since that contract is reserved for smaller projects (under \$500,000 value) as well as emergency projects that are time sensitive.

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

<u>Schedule:</u>	Construction	November 2024
	Project Completion	March 2025

South Shore Gravity Sewer Improvements Phase I (GN015000)



Bolling Ave Gravity Sewer Replacement (Norfolk, VA)

Seay Ave PS (Norfolk, VA)

Elmhurst Lane PS (Portsmouth, VA)

Arctic Ave PS (VA Beach, VA)

CONSENT AGENDA ITEM 3.c.1. – October 22, 2024

Subject: Army Base 24-Inch and 20-Inch Transmission Main Replacements
Task Order (>\$200,000)

Recommended Action: Approve a task order with Bridgeman Civil Inc. in the amount of \$499,621.

CIP Project: AB010000

Regulatory Requirement: Rehab Action Plan Phase 2 (5/5/2025 Completion)

Budget	\$27,343,000
Previous Expenditures and Encumbrances	(\$3,146,962)
Available Balance	\$24,196,038

Contract Status with Task Orders:	Amount
Original Contract with Engineer	\$0
Total Value of Previous Task Orders	\$ 19,907,282
Requested Task Order	\$499,621
Total Value of All Task Orders	\$20,406,903
Revised Contract Value	\$20,406,903
Engineering Services as % of Construction	NA

Project Description: This project is to study, design and construct a replacement interceptor for Line SF-004, 24-inch cast iron pipe and 20-inch cast iron pipe and Line SF-005, 20-inch reinforced concrete pipe from Baker Street to Newport Avenue, approximately 4,650 linear feet (LF). A single line is planned to replace these twin lines along the current alignment. This single pipeline is planned to be 36-inch in the Regional Wet Weather Management Plan. The original scope of the CIP included an additional 13,000 LF of pipeline replacement from Newport Avenue to Simons Drive. At this time, condition assessment of this additional pipe is only planned in an effort to prioritize funds on the highest risk assets. This project also includes abandoning a portion of line SG-003, a section of gravity pipe from MH-SG-003-3889 to MH-SG003-3747 at the intersection of Baker Street and Hampton Boulevard that is not in service and is deteriorating. The EPA Rehabilitation Phase II portion of this original project has been addressed. This project is now in delay.

Project Justification: This project will address specific sections of SF-004 that was designed and built in 1956 according to the plans inherited from the City of Norfolk. The same plans show an existing 20-inch concrete line, now HRSD line number SF-005. Since SF-005 was turned over to HRSD in 1956, it is at least 50 years old. Both lines have multiple repairs installed by HRSD and repair history prior to HRSD ownership is unknown. Multiple branch valves along this alignment are 1948 or 1956 valves that are difficult to repair or get replacement parts. The valve guide AB-2005 area will be included in the condition assessment portion of the CIP. This area has several valves indicated as inoperable and an abandoned dead-end section of pipe. These lines are the main interceptors conveying wastewater from the City of Norfolk to the Army Base Treatment Plant. This project also includes abandoning the gravity line SF-002. Flow is currently bypassing this section of pipe, and the pipe is in poor condition from tuberculation and infiltration.

Task Order Description: This task order will include a 20" valve replacement and force main condition assessment. The existing 20" gate valve (AB1006-9) falls under Rehabilitation Action Plan Phase 2 with a completion deadline of May 5, 2025; therefore, the valve replacement work is a priority. The CIP project originally included full replacement of SF-004 and SF-005. However, due to

funding limitations, Condition Assessment Phase I was performed in 2022. The extents of the condition assessment included east of the proposed Section W (AB010500) tie-in location. The results of the 2022 condition assessment showed that the force mains were in good condition and had estimated remaining useful lives of 30+ years. Condition Assessment Phase II will include the remainder of SF-004 and SF-005—to the west of the proposed Section W tie-in location.

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

<u>Schedule:</u>	Design	March 2021
	Bid	January 2027
	Construction	April 2027
	Project Completion	April 2029

AGENDA ITEM 4. – October 22, 2024

Subject: Great Bridge Interceptor Force Main Emergency Replacement (SF-180)
Public Hearing on Determination of Public Need for Easement Acquisition and
Easement Acquisition Resolution

Recommended Actions:

- a. Conduct public hearing.
- b. Adopt a Resolution approving the public use determination and directing acquisition by condemnation, or other means, of temporary construction easement for the Great Bridge Interceptor Force Main Emergency Replacement (SF-180).

CIP Project: AT016400**Regulatory Requirement:** None

Budget	\$6,000,000
Previous Expenditures and Encumbrances	(\$5,729,956)
Available Balance	<hr/> \$270,044

Project Description: This project will replace the damaged 20-inch 1968 cast iron force main located within the Intracoastal Waterway via horizontal direction drill (HDD) parallel to the existing in-service City of Chesapeake water main and remove the failed abandoned water main and force main underneath the Waterway. The attached [map](#) depicts the project location.

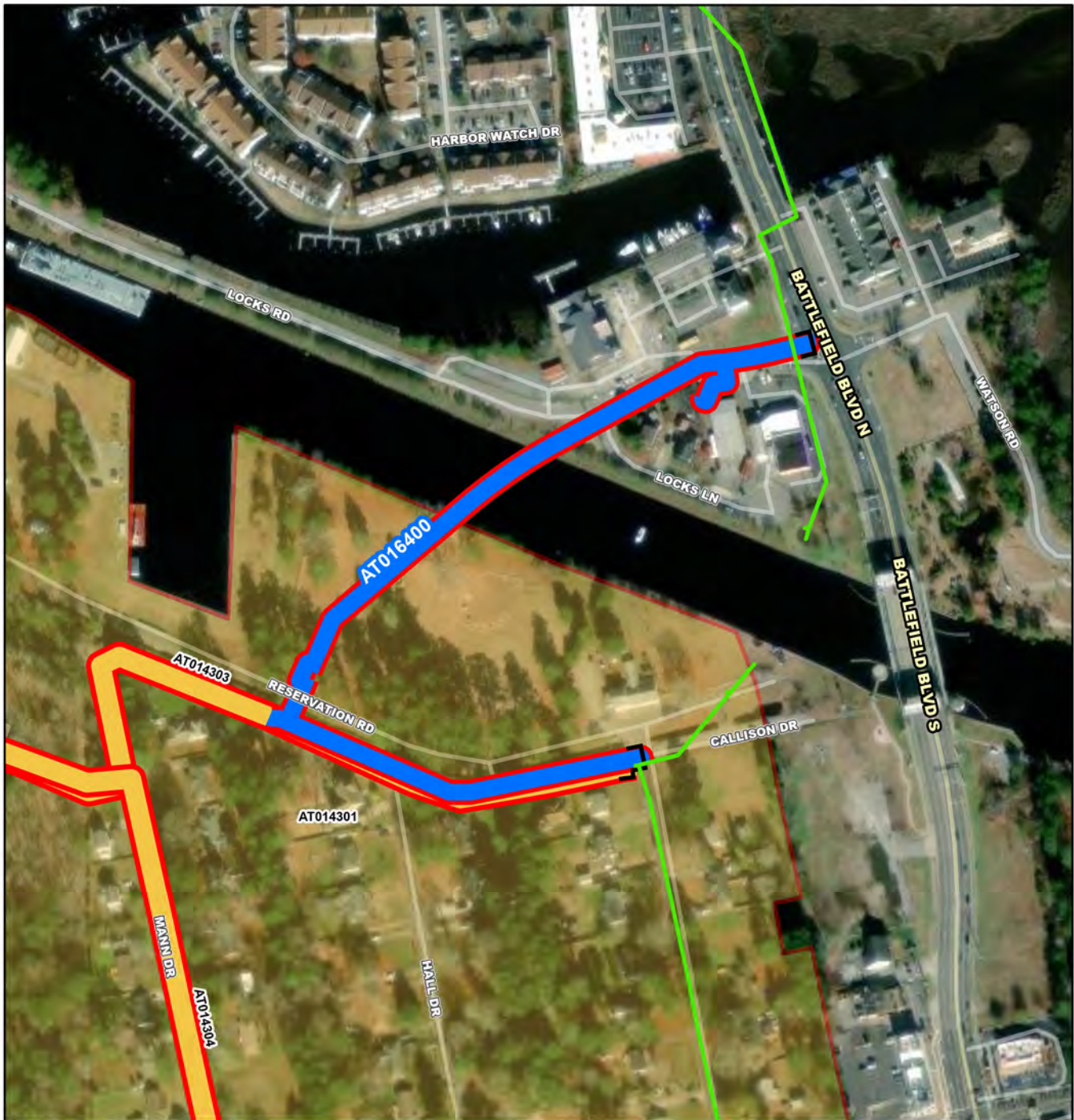
Project Justification: The SF-180 failure was on a 20-inch 1968 ductile iron force main that was caused by a dredge vessel spud. An emergency declaration was authorized on March 13, 2023. Although the failure was isolated, the project remains under an emergency declaration due to Elbow Road Pressure Reducing Station (PRS) operating continuously and the Great Bridge Interceptor Extension 16-inch Replacement (CIP Project No. AT011900), a Rehabilitation Action Plan Phase 2 project, requiring this section of pipeline in service for construction.

As part of the project, HRSD anticipates a total of three (3) temporary and permanent easements. At this time, two easements are yet to be acquired.

A public hearing will be held to review the scope of the project, to define the public need of the project and identify the specific impact to the property where condemnation may be considered and to receive public input. Attempts to reach an agreement with the property from the owner have been unsuccessful. While a purchase is still possible, condemnation may likely be necessary to keep the project on schedule. The attached [resolution](#) meets the requirements of the Code of Virginia should condemnation be necessary. The resolution has been reviewed by HRSD legal counsel.

Staff will provide a short overview for the Commission and the public immediately prior to the Public Hearing.

<u>Schedule:</u>	Emergency Declaration	March 2023
	PER	March 2023
	Design	May 2023
	Construction	March 2025
	Project Completion	Unknown at this time



- AT016400**
- 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 95 190 380 570 760 Feet

AT016400

Great Bridge Interceptor Force Main Emergency Replacement (SF-180)



CIP Location





RESOLUTION

***Providing for the acquisition by condemnation, if necessary,
of parcels and/or easements with respect to
Great Bridge Interceptor Force Main Emergency Replacement (SF-180); CIP
NO.AT016400***

WHEREAS, Hampton Roads Sanitation District (hereinafter "HRSD"), as part of its Capital Improvement Program, is proceeding with the project known as Great Bridge Interceptor Force Main Emergency Replacement Project (SF-180) (CIP No. AT016400) (the "Project"); and

WHEREAS, as a part of said Project, HRSD has determined that it is necessary to acquire certain property and easements (the "Property") by condemnation (or other means); and

WHEREAS, HRSD provided proper public notice, duly published in newspapers of general circulation in the City of Chesapeake, and held a public hearing on this matter at HRSD Commission Meeting, 2389 G Avenue, Newport News, Virginia on October 22; and

WHEREAS, at the public hearing, HRSD allowed for public input with respect to the proposed condemnation, as well as considered information provided by HRSD staff, and considered whether the proposed use is a public use and whether the acquisition of the said Property by condemnation (or other means) should be authorized by HRSD; and

WHEREAS, after holding a public hearing on the matter, HRSD has determined that a public necessity exists for the acquisition of the Property for the Project is in the public interest;

NOW, THEREFORE, BE IT RESOLVED, on the 22 day of October, by the HRSD Commission that

1. The Project is approved as a public use, necessary for the construction of said Project within HRSD's system; and said Project is further declared to be in the public interest;
2. The acquisition of the Property by purchase or condemnation is necessary for the installation and operation of said Project and is hereby approved;
3. The Property will be used by HRSD in furtherance of its public functions pursuant to the Virginia Code, and that that the acquisition of the Property for that public use: (i) will serve only public interests which dominate any private gain; (ii) are sought for the primary purpose of serving public interests and not private financial gain, private benefit, or an increase in employment; and (iii) otherwise complies with §1-219.1 of the Virginia Code;
4. HRSD previously has made bona fide efforts to acquire the Property from the landowners, but, to date, those efforts have been ineffectual;

5. HRSD authorizes its staff and counsel, respectively, to take all actions for and on behalf of HRSD which are or may be appropriate or necessary for HRSD to acquire the Property through the exercise of its power of eminent domain, including but not limited to, the filing of any papers or pleadings with the applicable circuit court, and other actions related to the initiation of any legal proceedings necessary or appropriate to acquire the Property by eminent domain, *provided, however*, that nothing in this Resolution shall be construed as preventing the continued negotiation by HRSD, its staff, and/or counsel for the acquisition by purchase or other means of the Property before the initiation of any such eminent domain proceedings; and
6. This resolution shall take effect immediately upon its adoption.

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

[HRSD Seal]

Stephen C. Rodriguez
HRSD Commission Chair

AGENDA ITEM 5. – October 22, 2024

Subject: Fiscal Year 2024 Annual Comprehensive Financial Report (ACFR)

Recommended Action: Accept the Finance Committee's Report regarding the ACFR.

Brief: Political subdivisions of the Commonwealth of Virginia are required to publish a complete set of audited financial statements. HRSD is also required by its Trust Agreement to prepare and distribute its financial statements within 150 days following the close of the fiscal year.

The Department of Finance is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States. Staff expect the auditors, Cherry Bekaert LLP, to provide an unmodified (clean) opinion on the financial statements on October 21.

The Government Finance Officers Association of the United States and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to HRSD for its Annual Comprehensive Financial Report for the fiscal year ended June 30, 2023. This was the 41st consecutive year that HRSD received this prestigious award and reflects the commitment and dedication of the Accounting Department.

The Finance Committee, along with Commissioner Elofson, met with staff to review the draft report on October 15, 2024. The Finance Committee will provide their report to the Commission and staff will provide a brief overview of the financial statements. A copy of the draft ACFR will be provided during the meeting.

AGENDA ITEM 6. – October 22, 2024

Subject: Financial Policy
Biennial Update

Recommended Action: Approve the revised Financial Policy

Brief: HRSD's Financial Policy is a comprehensive policy designed to help guide its financial operations. The policy was originally drafted in 2009 and most recently revised in 2023. The policy requires the Deputy General Manager/Chief Financial Officer, Bond Counsel and HRSD's Financial Advisor to review the policy every two years.

The Financial Policy is the primary document that places financial parameters on management and defines financial management practices that are acceptable to HRSD. The Policy covers reserves; budgetary principles, practices, and controls; key financial metrics; internal controls; risk management practices; debt affordability; and debt, derivative, and investment management practices. The Policy also covers fiduciary responsibility and investment parameters associated with the Retiree Health Plan Trust.

Although the recommended changes to the policy are mostly administrative in nature whereby definitions are updated and clarified and some redundancies are eliminated, some changes specifically to note include:

- Changes throughout the document necessitated by discharging and extinguishing all senior obligation debt as a result of the 2024A revenue bond refunding transaction;
- Minor changes to the investment asset allocation for the Retiree Health Plan and certain changes necessitated by HRSD's change from a discretionary investment advisor to a non-discretionary investment advisor; and
- Changes throughout the document to recognize organizational title changes.

The attached [Financial Policy](#) was prepared by staff, and HRSD's bond counsel, financial advisor and investment advisor.

The proposed changes to the Financial Policy were also reviewed with the Finance Committee at their October meeting.

COMMISSION ADOPTED POLICY

Financial Policy



Adopted: May 26, 2009

Commission Revision:
Effective:

~~September 26, 2023~~ ~~October 22,~~
~~2024~~
~~October 1, 2023~~ ~~November 1, 2024~~

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1.0 PURPOSE AND NEED

Hampton Roads Sanitation District (HRSD) was created in 1940 by the Virginia General Assembly as a political subdivision of the Commonwealth of Virginia and was established as a governmental instrumentality to provide for the public health and welfare. HRSD was created for the specific purpose of abating pollution in the Hampton Roads area of Virginia through the interception of existing wastewater outfalls, the construction of wastewater treatment facilities and the installation of interceptors throughout the service area.

HRSD operates under the direction of the Hampton Roads Sanitation District Commission (the Commission) comprised of eight members appointed by the Governor for staggered terms of four years.

Regulatory requirements to reduce nutrients, hydraulic expansion, aging infrastructure renewals and replacements, and increased treatment capacity are addressed through HRSD's Capital Improvement Program (CIP).

HRSD recognizes that adherence to formal financial policies is critical to sound financial management. This sentiment is echoed by bond rating agencies, investors and the Government Finance Officers Association.

This Financial Policy (Policy) is designed to help protect HRSD's financial resources by:

- a. Promoting sound financial management;
- b. Ensuring the legal and prudent use of HRSD's debt issuance authority; and
- c. Guiding HRSD and its managers in policy, investment and debt issuance decisions.

2.0 DEFINITIONS

2.1 Adjusted Days Cash on Hand. Days Cash on Hand that excludes accrued debt service, the Risk Reserve, the Renewal and Replacement Reserve, and cash ~~budgeted-set aside~~ for the CIP (i.e., Pay-go).

2.2 ~~Annual~~-Actuarial Determined Contribution (ADC). The annual contribution requirement determined by an actuary for a defined benefit plan.

2.3 Arbitrage. The simultaneous purchase and sale of an asset in order to profit from a difference in the price. It is a trade that profits by exploiting price

COMMISSION ADOPTED POLICY
Financial Policy



Adopted: May 26, 2009

Commission Revision:
Effective:

~~September 26, 2023~~ ~~October 22,~~
~~2024~~
~~October 1, 2023~~ ~~November 1, 2024~~

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differences of identical or similar financial instruments in different markets or in different forms. For the purposes of this Policy, Arbitrage refers to the difference between the interest paid on the tax-advantaged securities and the interest earned by investing the security proceeds in higher-yielding taxable securities. The IRS Code governs arbitrage on the proceeds of or security for the repayment of tax-advantaged municipal securities.

- 2.4 Asset Allocation.** An investment strategy that attempts to balance risk versus reward by adjusting the percentage of each asset in an investment portfolio according to the investor's risk tolerance, goals and investment time frame.
- 2.5 Balloon Maturity.** As defined in the Trust Agreements, a maturity that contains twenty-five percent (25%) or more of the original principal amount of an issue and that is not required to be amortized by redemption prior to maturity.
- 2.6 Bankers' Acceptance.** A draft or bill or exchange accepted by a bank or trust company. The accepting institution guarantees payment of the bill, as well as the issuer.
- 2.7 Basis Swap.** An agreement between two parties to exchange interest payments based on different variable-rate indices, e.g. SIFMA vs. SOFR; a floating-to-floating swap.
- 2.8 Benchmark.** A comparative base for measuring the performance or risk tolerance of an investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.
- 2.9 Bond Anticipation Notes.** Notes which are generally repaid from the proceeds of the issuance of long-term indebtedness.
- 2.10 Bond Insurance.** Credit Enhancement provided by a bond insurer that insures the payment of the principal of and interest on one or more maturities of Bonds.
- 2.11 Broker.** Matches buyers and sellers of securities for a commission.
- 2.12 Bullet Maturity.** A maturity within an issue of bonds for which there are no sinking fund payments prior to the stated maturity date.
- 2.13 Call Provisions.** The term of a bond giving the issuer the right to redeem all or a portion of such bond prior to its stated maturity at a specific price, usually at or above par.

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- 2.14 Capital Appreciation Bond.** A municipal security on which the interest accruing on an initial principal amount is not paid currently but accrued at a stated compounding rate until maturity. At maturity the investor receives a single payment (the “maturity value”) representing both the initial principal amount and the accrued, compounded interest.
- 2.15 Capital Asset.** A unit of property purchased by, constructed by or donated to HRSD that (1) was acquired or produced and has a value of \$20,000 or more and (2) has an economic useful life of a minimum of 60 months. Capital Assets must be capitalized and depreciated for financial statement purposes. ~~Assets constructed and paid for by HRSD that improve the performance of the Wastewater System and subsequently transferred to a Locality constitute Locality Assets and will not be capitalized by HRSD for any purpose.~~
- 2.16 Capital Improvement Program (CIP).** HRSD’s planned program of capital projects (*generally*, greater than \$100,000), such as property, plant and equipment and related engineering, legal and construction services, and may consist of Capital Assets and Locality Assets.
- 2.17 Capitalized Interest.** A portion of the proceeds of a bond issue which is set aside to pay interest on one or more bond issues for a specific period of time. Interest capitalized for the construction period of the project is typically treated as a capital cost under the IRS Code.
- 2.18 Certificate of Deposit (CD).** A time deposit with a specific maturity evidenced by a certificate. Large-denomination CDs are typically negotiable.
- 2.19 Collateral.** Securities, evidence of deposit or other property, which a borrower pledges to secure repayment of a loan. Also refers to securities pledged by a bank to secure deposits of public money.
- 2.20 Commercial Paper (CP).** Short-term, unsecured promissory notes issued by corporations or governments to finance receivables for a maturity specified by the purchaser that ranges from three days to 270 days. Notes are generally sold at a discount and carry credit ratings issued by a Nationally Recognized Statistical Rating Organization (NRSRO).
- 2.21 Competitive Sale.** A sale/auction of securities by an issuer in which underwriters or syndicates of underwriters submit bids to purchase the securities.
- 2.22 Constant Maturity Swap.** An interest rate swap that is predicated upon the shape of the forward implied yield curve whereby counterparties exchange interest rate payments based on an anticipated future interest rate and a variable

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swap index rate. The interest rate on one leg of the swap is reset periodically but with reference to a market swap rate rather than an index such as SOFR or a substitute. The other leg of the swap is generally a market index, such as SOFR or a substitute.

- 2.23 Continuing Disclosure.** The principle that accurate and complete information material to an issuer of securities be made available on an ongoing basis. Pursuant to SEC Rule 15c2-12, underwriters of HRSD's bonds are generally obligated to obtain a Continuing Disclosure Agreement (CDA) from HRSD prior to underwriting such bonds.
- 2.24 Corporate Notes.** Unsecured promissory notes issued by corporations to raise capital for a maturity that is longer than 270 days. Corporate Notes are generally sold at a discount and carry credit ratings issued by an NRSRO.
- 2.25 Credit Enhancement.** Credit support purchased by the issuer to raise the credit rating of a debt issue. The most common credit enhancements consist of Bond Insurance, direct or standby Letters of Credit, and Lines of Credit.
- 2.26 Credit Support Annex.** A legal document that regulates credit support (collateral) for derivative transactions.
- 2.27 Days Cash on Hand.** Measured by current and non-current unrestricted cash and investments, plus any restricted cash and investments, if available for general system purposes, divided by Operating Expenses, divided by 365.
- 2.28 Dealer.** Acts as a principal in securities transactions, buying and selling for its own account.
- 2.29 Debt Service Coverage Ratio – GAAP.** Calculated in accordance with HRSD's ~~Senior~~ Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service on Senior Obligations (as defined in the Trust Agreement) [Note-VRA obligations are Senior Obligations but not issued under the Trust Agreement]. In such calculation, funds spent on Locality Assets are considered an expense. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).
- 2.30 Debt Service Coverage Ratio - Adjusted.** Calculated in accordance with HRSD's ~~Subordinate~~ Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service. In such calculation, funds spent on Locality Assets may be excluded from the calculation of Net Revenues under the circumstances described within the definitions of Net Revenues and Operating

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Expenses. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).

- 2.31 Debt Service Reserve Fund.** The fund in which money is placed that may be used to pay debt service if revenues available for debt service, are insufficient to pay debt service on HRSD's bonds secured by a Debt Service Reserve Fund as it becomes due and payable.
- 2.32 Delivery versus Payment.** Delivery of securities with an exchange of money for the securities.
- 2.33 Derivative.** A financial product whose value is derived from some underlying asset value.
- 2.34 Designation Policies.** Outline how an investor's order is filled when a bond's maturity is oversubscribed when there is an underwriting syndicate. The senior managing underwriter and issuer decide how the bonds will be allocated among the syndicate. There are three primary classifications of orders which form the designation policy: Group Net orders; Net Designated orders and Member orders.
- 2.35 Discount.** A bond that is issued for less than its par (or face) value, or a bond currently trading for less than its par value in the secondary market.
- 2.36 Diversification.** A process of investing assets among a variety of security types by sector, maturity and quality rating.
- 2.37 Enabling Act.** HRSD's Enabling Act is Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended.
- 2.38 Encumbrances.** Commitments related to unperformed contracts for goods and services (i.e., purchase orders, contracts and commitments). Encumbrance accounting is utilized to the extent necessary to assure effective budgetary control and accountability and to facilitate effective cash planning and control.
- 2.39 Escrow.** A fund established to hold money pledged and to be used to pay debt service on one or more maturities of HRSD's defeased bonds or other indebtedness.
- 2.40 Federal Agency.** Government sponsored/owned entity created by the U.S. Congress, generally for the purpose of acting as a financial intermediary by borrowing in the marketplace and directing proceeds to specific areas of the economy considered to otherwise have restricted access to credit markets, also

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referred to as Government Sponsored Enterprises (GSEs). The largest GSEs are Government National Mortgage Association (Ginnie Mae), Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac), Federal Home Loan Bank (FHLB), Federal Farm Credit System (FFCS), and Tennessee Valley Authority (TVA).

2.41 Federal Funds Rate. The rate of interest at which Federal Funds are traded. This rate is currently set by the Federal Reserve through open-market operations.

2.42 Federal Funds. Funds placed in Federal Reserve Banks by depository institutions in excess of current reserve requirements, and frequently loaned or borrowed on an overnight basis between depository institutions.

2.43 FINRA. The Financial Industry Regulatory Authority.

2.44 Fitch. Fitch Ratings is an NRSRO.

2.45 Forward Swap. A swap executed today, the exchange of interest payments on which starts at some future date (the Effective Date), based on rates and terms determined and agreed upon today. On the Effective Date of a Forward swap begin net exchange of swap payments. On the Trade Date of the swap:

- Enter into Forward swap agreement
- Set terms of the swap
- Pay commitment fees for swap and bond insurance (if done in conjunction with a synthetic forward refunding of bonds)

2.46 Interest Rate Cap. An option that pays its holder when and if the floating interest rate index is above the pre-determined fixed rate (strike price).

2.47 Interest Rate Collar. The simultaneous purchase and sale of an Interest Rate Cap and an Interest Rate Floor on a floating index.

2.48 Interest Rate Floor. An option that pays its holder when and if the floating interest rate index is below the pre-determined fixed rate (strike price).

2.49 Interest Rate Swap. A contract between two parties, referred to as "counterparties", to exchange interest rate payments at specified dates in the future. One party under the swap contract normally makes payments based on a fixed rate while the other party makes payments based on a variable (floating) rate.

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- 2.50 Internal Controls.** Systematic measures (such as reviews, checks and balances, methods and procedures) instituted by an organization to: conduct its business in an orderly and efficient manner; safeguard its assets and resources; deter and detect errors, fraud, and theft; ensure accuracy and completeness of its accounting data; produce reliable and timely financial and management information; and ensure adherence to its policies and plans. An important concept in establishing appropriate internal controls is that the cost of the controls should not exceed their anticipated benefits.
- 2.51 IRS Code.** The Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.
- 2.52 Knock-in Option.** An option the existence of which is conditional upon a pre-set trigger price trading before the option's designated maturity. If the trigger is not touched before maturity, then the option is deemed not to exist.
- 2.53 Letter of Credit.** A bank facility wherein the bank agrees to deliver funds to a third party for the benefit of the account party, upon the presentation of the documents described in the Letter of Credit. A Letter of Credit may be used as Credit Enhancement or a Liquidity Facility for HRSD's indebtedness.
- 2.54 Line of Credit.** A bank facility wherein the bank permits the borrower to access funds at any time, subject to a maximum loan balance. A Line of Credit may *also* be used as Credit Enhancement or a Liquidity Facility for HRSD's indebtedness.
- 2.55 Liquidity.** The ability of ease with which an asset can be converted into cash without a substantial loss of value. May also refer to unrestricted cash or investments of an issuer.
- 2.56 Liquidity Facility.** A type of bank credit facility wherein the bank agrees to purchase securities, typically variable rate debt *with a tender option feature*, that cannot be immediately remarketed to investors. The Liquidity Facility provider purchases the securities until they can be remarketed.
- 2.57 Locality Assets.** Assets constructed and paid for by HRSD and subsequently transferred to a locality. A resolution of the HRSD Commission is required to exclude these costs from the calculation of the Operating Expenses for purposes of the calculation of the Debt Service Coverage Ratio – Adjusted.
- ~~**2.58 London InterBank Offered Rate (LIBOR).**~~ LIBOR is the rate on U.S. dollar denominated deposits with maturities from one day to 12 months transacted between banks in London. LIBOR was the predominant benchmark floating index in the taxable or corporate swap market. This index is expected to be discontinued after June 2023. The leading replacement is the Secured Overnight

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~~Financing Rate (SOFR), which is based on the cost of overnight borrowing using U.S. treasury securities as collateral.~~

~~2.59~~**2.58** **Management Fee.** The fixed percentage of the gross spread which is paid to the senior managing underwriter for structuring a bond issue.

~~2.60~~**2.59** **Market Value.** The price at which a security is trading and could presumably be purchased or sold.

~~2.61~~**2.60** **Master Repurchase Agreement.** A written contract covering future transactions between the parties to repurchase/reverse repurchase agreements that establishes each party's rights in the transactions. A master agreement will often specify, among other things, the right of the buyer-lender to liquidate the underlying securities in the event of default by the seller borrower.

~~2.62~~**2.61** **Maturity.** The date upon which the principal or stated value of an investment becomes due and payable.

~~2.63~~**2.62** **Members.** Underwriters in a syndicate other than the senior underwriter.

~~2.64~~**2.63** **Moody's.** Moody's Investors Service, Inc., is an NRSRO.

~~2.65~~**2.64** **Nationally Recognized Statistical Rating Organization (NRSRO).** A credit rating agency registered with the SEC that issues credit ratings that the SEC permits other financial firms to use for certain regulatory purposes. Examples include Moody's, Fitch and S&P.

~~2.66~~**2.65** **Negotiated Sale.** A method of selling bonds in which the issuer chooses an underwriter to negotiate terms pursuant to which such underwriter will purchase and market the bonds.

~~2.67~~**2.66** **Net Revenues.** All revenues received by HRSD less Operating Expenses.

~~2.68~~ ~~**Net Revenues Available for Debt Service.** Under the Subordinate Trust Agreement, means all Net Revenues less debt service on Senior Bonds.~~

~~2.69~~**2.67** **Nominal Interest Rate.** The interest rate before taking inflation into account. Generally, it is the stated or quoted rate in a loan or deposit agreement.

~~2.70~~**2.68** **Normal Cost.** The annual current cost of a member's future retirement benefit.

~~2.71~~**2.69** **Operating Expenses.** Operating Expenses includes those expenses required to pay the cost of maintaining, repairing and operating the Wastewater

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System, including, but not limited to, reasonable and necessary usual expenses of administration, operation, maintenance and repair, costs for billing and collecting the rates, fees and other charges for the use of or the services furnished by the Wastewater System, insurance premiums, credit enhancement and liquidity support fees, legal, engineering, auditing and financial advisory expenses, expenses and compensation of the Trustee, and deposits into a self-insurance program. Operating Expenses shall exclude allowance for depreciation and amortization and expenses for extraordinary maintenance or repair or improvements. ~~In the Subordinate Trust Agreement only (i.e., not in the Senior Trust Agreement),~~ Operating Expenses shall also exclude expenses for improvements that will not be owned by HRSD, but which will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System.

2.722.70 Original Issue Discount. In general, the amount by which the original par amount of a bond or an issue exceeds its public offering price at the time it is originally offered to an investor.

~~**2.73 Percentage of (% of) SOFR Swap.** A swap whose floating rate is reset based on a percentage of a taxable rate (e.g. 67% of SOFR) rather than a tax-exempt rate, e.g. the SIFMA Index. A Percentage of SOFR swap generally carries a lower expected or nominal fixed rate than a comparable SIFMA swap to compensate the fixed payer (issuer) for the assumption of basis and tax risk.~~

2.742.71 Portfolio. Collection of securities held by an investor.

2.752.72 Premium. The difference between the higher price paid for a fixed-income security and the security's face amount at issue.

2.762.73 Present Value. The current value of a future cash flow.

2.772.74 Primary Dealer. A group of government securities dealers who submit daily reports of market activity and positions and monthly financial statements to the Federal Reserve Bank of New York and are subject to its informal oversight. Primary dealers include SEC-registered securities broker-dealers, banks, and a few unregulated firms.

2.782.75 Private Placement. The placement of an issue of indebtedness directly with one or more qualified or institutional investors.

2.792.76 Prudent Person Rule. An investment standard outlining the fiduciary responsibilities of public funds invested relating to investment practices.

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2.802.77 Rate Lock. An interest rate hedge that is cash-settled at maturity based on the prevailing level of an agreed upon underlying index. (e.g. the SIFMA 'AAA' scales)

2.812.78 Rate of Return. The yield obtainable on a security based on its purchase price or its current market price. This may be the amortized yield to maturity on a bond or the current income return.

2.822.79 Rebate. A requirement imposed by the IRS Code whereby the issuer of tax -exempt bonds must, under certain circumstances, pay the United States Treasury an amount equal to its profit earned from investment of tax-exempt bond proceeds at ~~rates-yields~~ exceeding the tax-exempt borrowing ~~rate~~yield. The tax-exempt borrowing rate (or bond yield) is calculated pursuant to the IRS Code. ~~together with all income earned on the accumulated profit pending payment.~~

2.832.80 Repurchase Agreement (RP or REPO). An agreement under which the holder of securities sells them to an investor with a contract to repurchase the securities at a fixed price on a fixed date. The security "buyer" in effect lends the "seller" money for the period of the agreement, and the terms of the agreement are structured to compensate the buyer for this.

2.842.81 Revenue Bonds. Bonds issued by HRSD secured by Net Revenues ~~or Net Revenues Available for Debt Service.~~

2.852.82 Revenue Anticipation Notes. Notes issued in anticipation of receiving revenues at a future date.

2.862.83 Safekeeping. A service to customers rendered by banks for a fee whereby securities and valuables of all types and descriptions are held in the bank's vaults for protection.

2.872.84 Secured Overnight Financing Rate (SOFR). SOFR is a benchmark interest rate in the taxable bond market. SOFR represents a secured interbank overnight interest rate. SOFR is also available in certain longer terms (e.g., 1 month, 3 month, 6 month). ~~With the discontinuation of LIBOR, SOFR is the default replacement in many cases.~~

2.882.85 Securities and Exchange Commission (SEC). Agency created by Congress to protect investors in securities transactions by administering securities legislation.

2.892.86 Securities Industry and Financial Markets Association Index (SIFMA). SIFMA is a high grade market index of 7-day variable rate demand notes that is

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produced by Municipal Market Data. SIFMA is the benchmark swap floating index in the tax-exempt swap market.

2.902.87 Self-Liquidity. A term used in connection with variable rate bond financings whereby the issuer agrees to repurchase, with its own capital, bonds that have been tendered but not yet remarketed without procuring a third-party Liquidity Facility. In this instance, the issuer uses its own funds to purchase securities.

2.912.88 Selling Group. A group of securities dealers that participate in an offering not as underwriters but rather receiving securities less a selling concession from the managing underwriter for distribution at the public offering price.

~~**2.92 Senior Bonds.** Bonds and other indebtedness issued by HRSD secured by the Senior Trust Agreement.~~

~~**2.93 Senior Trust Agreement.** The Trust Agreement, dated March 1, 2008, as the same may be amended and supplemented from time to time, between HRSD and a trustee. The Senior Trust Agreement secures HRSD's Senior Bonds. No additional Senior Bonds may be issued under the Senior Trust Agreement.~~

2.942.89 Serial Bond. A bond that matures on one date with no mandatory sinking fund redemptions that is part of an issue containing multiple Serial Bonds.

2.952.90 S&P. S&P Global Ratings is an NRSRO.

2.962.91 Stripped Security. Securities for which the rights to receive principal and interest payments have been decoupled and separately sold.

~~**2.97 Subordinate Bonds.** Bonds and other indebtedness issued by HRSD and secured by the Subordinate Trust Agreement.~~

~~**2.98 Subordinate Trust Agreement.** The Trust Agreement, dated October 1, 2011, as amended and restated as of March 1, 2016, as amended and supplemented from time to time, between HRSD and a trustee. The Subordinate Trust Agreement secures HRSD's Subordinate Bonds.~~

2.992.92 Swaption. An option on a forward swap. The purchaser of a swaption (counterparty) has the right, but not the obligation, to compel the swaption seller (usually an issuer) to enter into a pre-negotiated swap agreement at some future

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date (exercise date). In exchange for this right, the swaption purchaser pays the swaption seller a premium amount. This amount can be paid up front, at some future date, or as an annuity over time.

~~2.100~~**2.93** **Syndicate Policies.** The contractual obligations placed on the underwriting group relating to distribution, price limitations and market transactions.

~~2.101~~**2.94** **Term Bond.** A Bond whose principal is amortized based on sinking fund redemption.

~~2.102~~**2.95** **Termination Payment Risk.** The risk that an issuer is forced to liquidate a swap when it owes a termination payment to its counterparty.

~~2.103~~**2.96** **Treasury Bills.** A non-interest bearing discount security issued *at a discount* by the U.S. Treasury to finance the national debt. Most Treasury Bills are issued to mature in three months, six months, or one year.

~~2.104~~**2.97** **Treasury Bonds.** Long-term interest-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities of more than 10 years.

~~2.105~~**2.98** **Treasury Inflation Protected Security (TIPS).** The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When a TIPS matures, the adjusted principal or original principal, whichever is greater, is paid.

~~2.106~~**2.99** **Treasury Notes.** Medium-term interest-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities from one to 10 years.

~~2.107~~**2.100** **Trust Agreement.** The Trust Agreement, dated October 1, 2011, as amended and restated as of March 1, 2016, and further amended and restated as of July 1, 2024, as amended and supplemented from time to time, between HRSD and a trustee. The Trust Agreement secures HRSD's *Senior Revenue Bonds and VRA Obligations*.

~~2.108~~ ~~**Trust Agreements.** Collectively, the Senior Trust Agreement and the Subordinate Trust Agreement.~~

~~2.109~~**2.101** **Underwriter.** A dealer that purchases new issues of municipal securities from the Issuer and resells them to investors.

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2.1102.102 Underwriter's Discount. The difference between the price at which bonds are bought by the Underwriter from the Issuer and the price at which they are offered to investors.

2.1112.103 Underwriter's Expenses. Compensates senior managers for out-of-pocket expenses, generally including underwriter's counsel DTC charges, travel, syndicate expenses, dealer fees, communication expenses, CUSIP fees and postage. Underwriter's expenses are subject to negotiation and can vary from transaction to transaction.

2.1122.104 Uniform Net Capital Rule. SEC requirement that member firms as well as nonmember broker-dealers in securities maintain a maximum ratio of indebtedness to liquid capital, also called net capital rule or net capital ratio. Indebtedness covers all money owed to a firm, including margin loans and commitments to purchase securities, one reason new public issues are often spread among members of underwriting syndicates. Liquid capital includes cash and assets easily converted into cash.

2.1132.105 Variable Rate Debt (VRD). An interest rate on a security that changes at intervals according to an index or a formula or other standard of measurement or that changes in connection with a mandatory tender and remarketing or where interest is not set to maturity.

2.1142.106 VRA Master Financing Agreement. The Amended and Restated Master Financing Agreement, as amended and supplemented from time to time, between Virginia Resources Authority and HRSD.

2.1152.107 Water Infrastructure Finance and Innovation Act (WIFIA). - The Water Infrastructure Finance and Innovation Act of 2014, as amended (WIFIA), established the WIFIA, a federal credit program administered by EPA for eligible water and wastewater infrastructure projects. The WIFIA program provides long-term, low-cost supplemental loans for up to 49% of the total cost of an eligible project.

2.1162.108 WIFIA Agreements. Means the WIFIA Master Agreement, dated as of September 28, 2020, *as amended and restated*, between the EPA and HRSD, and each of the loan agreements entered into thereunder from time to time

2.1172.109 Yield. The rate of annual income return on an investment, expressed as a percentage. Income/current yield is obtained by dividing the current dollar income by the current market price for the security. Net yield or yield to maturity is the current income yield minus any premium above par or plus any discount from par in purchase price, with the adjustment spread over the period from the date of

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purchase to the date of maturity of the bond. In addition, Yield may, for certain purposes, be calculated in accordance with the IRS Code.

3.0 **GUIDING PRINCIPLES**

3.1 RESERVES. An important metric of HRSD's financial flexibility is its liquidity position as measured by available cash and investments. Setting a minimum liquidity position for known risks and obligations helps provide funding in emergency or other unexpected situations as they arise. The reserves represent an earmarking, for budgetary and ~~Policy~~ **policy** purposes, of cash and liquid investments (current and non-current). These reserves are in addition to existing reserves, *if any*, required by the Trust Agreements, if any, and any funds earmarked for debt service, capital improvements or budget carryover amounts.

3.1.1 General Reserve. HRSD will maintain sufficient liquidity to ensure adequate working capital for HRSD's operations. These funds are intended to help HRSD cover unanticipated expenses that cannot be paid from the current fiscal year's budgetary resources. Liquidity will be determined in terms of Days Cash on Hand and Adjusted Days Cash on Hand. Adjusted Days Cash on Hand at the end of a fiscal year should not be less than 270 days or greater than 365 days.

In the event the cash and investments are used to provide funding for unanticipated expenses and the Adjusted Days Cash on Hand falls below the ~~270-day~~ **270-day** minimum, the General Manager/**Chief Executive Officer** will submit a plan in writing to the Commission that will restore it to the policy level over a period not to exceed five fiscal years.

3.1.2 Risk Reserve. HRSD maintains a self-insurance program for some of its risk exposures.

A. HRSD will maintain a Risk Reserve as of the end of the fiscal year of not less than 25 percent of projected annual self-insured claims costs for known, retained risks.

B. In the event the Risk Reserve is used and reduced to a level that is less than the 25 percent minimum to provide funding of unanticipated self-insured expenses, the General Manager/**Chief Executive Officer** will submit a plan in writing to the Commission that will restore the reserve to the policy level over a period not to exceed five fiscal years.

~~3.1.3~~ **Renewal and Replacement Reserve.** As permitted by the Enabling Act, HRSD's Trust Agreements ~~s~~ **establishe**s a reserve to finance "anticipated renewals, replacements, extensions, additions and extraordinary repairs" to

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wastewater system the extent needed. Under the Trust Agreement~~s~~, the funding of the Renewal and Replacement Reserve is discretionary.

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3.2 BUDGETARY PRINCIPLES.

3.2.1 Long-Range Financial Forecast. Each fiscal year the General Manager/*Chief Executive Officer* will submit to the Commission a 20-year financial forecast of anticipated annual revenues and expenses and capital improvements.

This forecast will serve as the foundation for the General Manager/*Chief Executive Officer's* annual budget proposal to the Commission.

3.2.2 Annual Operating Budget. The Commission is required to adopt an operating budget no later than June 30 each fiscal year.

The Commission will adopt an operating budget that:

- A. Is structurally balanced whereby current budgetary revenues are sufficient to meet current budgetary expenses (those that are ongoing in nature);
- B. Considers the affordability of rates within the context of local wealth and income indicators;
- C. Is at a level necessary to ensure the adequate maintenance and operations of the wastewater system and ensure material compliance with all applicable regulatory requirements;
- D. Is sufficient to meet Actuarially Determined Contribution (ADC) *requirements* for HRSD's defined benefit plans;
- E. Includes amounts necessary to maintain the required reserves in amounts at least equal to the minimum balances as defined in this Policy;
- F. Enables HRSD to meet the debt service coverage targets defined in ~~these policies~~ *this Policy* and the covenants contained in its Trust Agreements; and
- G. Annually funds at least 15 percent of its capital improvement program in cash.

3.2.3 Capital Improvement Program (CIP). Each year HRSD will adopt a ten-year CIP that identifies capital projects to be undertaken over the next ten years to meet projected needs for regulatory compliance, infrastructure renewal, expansion, replacing old or new facilities, principally Capital Assets and Locality Assets.

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3.2.4 Budgetary Accounting and Control. HRSD operates in accordance with annual operating and capital budgets prepared on a basis of accounting that is different from generally accepted accounting principles.

- A. The operating budget is adopted by department, with budgetary controls exercised administratively by management at the ~~department~~ **division** level. The General Manager/**Chief Executive Officer** is authorized to transfer funds among **divisions**~~departments~~ without further approval by the Commission. Appropriations lapse at the end of the fiscal year. Valid, outstanding encumbrances (those for which performance under a contract is expected in the next year) are re-appropriated without further approval by the Commission and become part of the subsequent fiscal year's budget.
- B. The capital budget is a ten-year plan of CIP spending based on estimated project costs and prioritized schedules. Prior to beginning a capital project, however, the Commission must appropriate funding for the total project cost. If a project is expected to exceed its approved budget, staff must seek additional funding from the Commission through a supplemental appropriation.

3.3 DEBT SERVICE COVERAGE. HRSD will comply with the debt service coverage ratios included in its Trust Agreements. Beyond the Trust Agreements' minimums, HRSD will adopt operating and capital budgets that it projects will enable HRSD to maintain a Debt Service Coverage Ratio – Adjusted at a minimum of ~~1.5 times on Senior Bonds and~~ **1.4 times on total debt**.

3.4 DERIVATIVES. The Derivatives section outlined herein is intended to provide general direction regarding the use, procurement and execution of Derivatives by HRSD. The Policy is intended to relate to the use of various interest rate hedging techniques, including the contractual exchange of different fixed and variable rate payment streams through interest rate swap agreements. The Policy is not intended to relate to other derivative products, such as hedges for fuel or other commodities that HRSD may consider for hedging exposures other than to interest rates.

3.5 ACCOUNTING AND FINANCIAL REPORTING. *HRSD will prepare its annual financial reports in accordance with accounting principles generally accepted in the United States of America (GAAP). For purposes of calculating debt service coverage, Except as permitted by the ~~Subordinate~~ Trust Agreement, HRSD will adhere to all Generally Accepted Accounting Principles (GAAP). As permitted by the ~~Subordinate Trust Agreement~~, HRSD may present, or cause to be presented,*

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certain calculations that reflect certain adjustments that are not in accordance with GAAP.

HRSD will maintain a comprehensive framework of internal controls, and policies and procedures.

Over a period of not more than every five years, HRSD under the direction of the Finance Committee of the Commission will seek proposals from qualified firms of certified public accountants, including its current auditors if their performance has been satisfactory, to perform an annual audit of HRSD's financial statements. *If such an evaluation does not result in a change in auditors, HRSD may require that auditor senior engagement staff, such as engagement partners and senior managers, be rotated to provide a fresh perspective.*

3.6 RISK MANAGEMENT. HRSD will make diligent efforts to protect and preserve HRSD assets through a risk management program that generally transfers risk (purchase insurance) for high severity-low frequency exposures and retains risk (self-insurance) for low severity-high frequency exposures.

3.7 INTERNAL AUDIT. HRSD or its designee will conduct internal audits using a risk-based approach. Such audit efforts will be approved and directed by the Finance Committee of the Commission.

4.0 PROCEDURES

4.1 DEBT MANAGEMENT. HRSD's debt management program represents an effort to smooth out the fiscal impact of major capital investments while aligning the costs of utility service with the payment of those who will ~~actually use~~ **use** the service.

The proceeds of long-term indebtedness will not be used to finance current operations or expenses for normal maintenance. Long-term indebtedness will be structured such that financial obligations do not exceed the aggregate expected useful lives of the assets financed. Short-term borrowing may be utilized for the temporary funding of operational cash flow deficits or interim construction requirements.

The most appropriate instrument for a proposed sale of debt shall be determined ~~in light of~~ **considering** financing needs and expected market conditions at the time of sale.

4.1.1 Permitted Debt by Type.

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- A. **Lease Financing.** HRSD may use leasing for facilities or equipment if (1) it can be demonstrated that this is the most cost effective or appropriate way to secure financing, or (2) on small projects that do not warrant entry into the bond market.
- B. **Installment Purchases or Conditional Sale Contracts.** HRSD may utilize installment purchase or conditional sale contracts having an original term of one year or less.
- C. **Bond Anticipation Notes, Commercial Paper (CP) and Lines of Credit.** Each are typically short duration debt instruments issued to provide interim financing and, due to their short duration, expose HRSD to interest rate risk and market access risk upon renewal. Bond Anticipation Notes, Commercial Paper and Lines of Credit may be used
- (1) to provide interim financing designed to reduce the frequency of bond sales, thereby reducing cost of issuance;
 - (2) during times of high interest rates and when the expectation is that interest rates will stabilize in the future or trend downward;
 - (3) when market conditions are such that a Bond Anticipation Notes, Commercial Paper or Lines of Credit may be more readily received in the market than long-term debt; or
 - (4) as an interim financing tool during the construction period for a project(s) until the project(s) is placed into service and / or HRSD sells long-term debt or is reimbursed through a clean water revolving loan or WIFIA loan.
- D. **Long-Term Revenue Bonds.** HRSD may issue long-term revenue bonds to fund Capital Assets and Locality Assets.
- E. **Revenue Anticipation Notes.** May be issued to meet HRSD's operational cash flow needs.

4.1.2 Guidelines on Debt Issuance.

- A. **Trust Agreements, VRA Master Financing Agreement and WIFIA Agreements.** HRSD will abide by the covenants contained in its Trust Agreements, the VRA Master Financing Agreement and the WIFIA Agreements. As a matter of prudence, HRSD considers its financial covenants to be minimum requirements to be exceeded.

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- B. **Authorization.** Prior to the issuance of debt, the Commission will pass a resolution authorizing the financing arrangements and setting appropriate limits and parameters for the anticipated financing.
- C. **Lowest Cost Financing.** Generally, HRSD intends to pursue the lowest cost of financing within the parameters of this Policy, the Trust Agreements, the VRA Master Financing Agreement, the WIFIA Agreements and the Enabling Act.
- D. **Cash Financing from Available Sources.** HRSD intends to contribute at least 15 percent of each year's CIP in cash.
- E. **Project Costs Prior to Debt Issue.** If project costs are *expected to be* incurred prior to the issuance of debt, the Commission will pass a resolution documenting its intent to be reimbursed from bond proceeds. As a general practice, the Commission will consider and adopt a reimbursement resolution in connection with the adoption of each fiscal year's CIP.
- F. **Variable Rate Debt and Bond Anticipation Notes.** VRD and Bond Anticipation Notes carry inherent interest rate risk. Such securities typically have interest rates lower than fixed rate securities and offer the potential for lower debt service costs over the term of the bond issue without regard to the cost of Credit Enhancement. HRSD will consider using VRD when it improves matching of assets and liabilities, potentially lowers debt service costs, adds flexibility to HRSD's capital structure, or diversifies HRSD's investor base.
- (1) Debt service on VRD will be budgeted at a conservative rate based on historical fluctuations in interest activity and current market assumptions. Before issuing VRD, HRSD will determine how potential volatility in the debt service will be funded and consider the impact of various interest rate scenarios on its financial position and on various debt ratios.
 - (2) HRSD does not intend to issue VRD in excess of 15 percent of its total debt portfolio. This limitation, however does not apply to debt issued as part of an interim financing program (e.g. Bond Anticipation Notes, Lines of Credit, Commercial Paper) nor does it apply to hedged variable rate debt. In addition, if HRSD can demonstrate historical and projected sufficiency of offsetting principal and interest coverage from short-term and variable rate investment assets held in unrestricted, non-operating accounts, these assets may be netted from variable rate liabilities.

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- G. **Derivative Products.** HRSD recognizes that the use of Derivatives may aid HRSD in reducing the cost of capital and gaining flexibility in structuring its debt portfolio. The use of such products is governed by the Derivatives section of this policy.
- H. **Method of Sale.** HRSD will select a method of sale it believes is the most appropriate and economically advantageous ~~in light of~~ ~~considering~~ financial, market, transaction-specific and HRSD-related conditions. Acceptable methods of sale may include a competitive sale, a negotiated sale, a private placement, or a direct institutional investor purchase.
- I. **Duration of Debt.** HRSD will not issue debt for a period longer than the weighted useful lives of the projects being financed. Pursuant to the Enabling Act, HRSD cannot issue debt with a final maturity more than 40 years from its issuance date. Factors to be considered when determining the final maturity of debt include the average life of the assets being financed, relative level of interest rates, and HRSD's overall outstanding debt service.

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4.1.3 Debt Structure

- A. **Interest Rate Structure.** HRSD may make use of both VRD and fixed-rate debt in accordance with limitations set forth in this Policy.
- B. **Tax Status.** Tax-exempt debt will be used whenever possible and appropriate.
- C. **Maturity Structure.** HRSD's long-term debt may include serial and term bonds. Other maturity structures may also be considered when demonstrated to be advantageous to HRSD.
- D. **Coupon Structure.** Fixed-rate debt may include par, discount, and premium bonds, and may include current interest bonds and Capital Appreciation Bonds.
- E. **Call Provisions.** ~~In order to~~ ~~To~~ preserve flexibility and refinancing opportunities, HRSD debt shall generally be issued with Call Provisions. HRSD may consider Call Provisions that are shorter than traditional or non-callable debt or debt with yield maintenance features when warranted by market conditions. For each transaction, various call option scenarios will be evaluated so that the most beneficial can be utilized.
- F. **Credit Enhancement.** HRSD may use Credit Enhancement when it is economically advantageous to do so.
 - (1) When considering the use of Bond Insurance, HRSD will perform a maturity-by-maturity analysis. The economic feasibility of Bond Insurance will be analyzed based on the value of insurance as priced to the earlier of each maturity's first applicable call date and the maturity date of such maturity. Bond Insurance will be used when present value savings result or when such use permits HRSD to incorporate less restrictive covenants into a transaction which results in greater flexibility or lower user charges. HRSD may insure bonds in maturities that are borderline from an economic feasibility standpoint if warranted by other factors (e.g., use of insurance to attract investor interest where certain bond maturities might otherwise be difficult to sell).
 - (2) When considering the use of a Letter of Credit or Line of Credit as a Credit Enhancement or Liquidity Facility, HRSD will examine the economic feasibility thereof by ~~taking into account~~ ~~considering~~ the trading spread, the cost of the Letter of Credit or Liquidity Facility and the effect on interest costs of HRSD's debt.

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- G. **Debt Service Reserve Fund.** ~~The Senior Trust Agreement requires HRSD to fund a Debt Service Reserve Fund when certain debt service coverage and liquidity ratios are not met. HRSD will fund such reserve when and if it is required.~~ The ~~Subordinate~~ Trust Agreement permits, but does not require, the funding of a Debt Service Reserve Fund.
- H. **Capitalized Interest.** Capitalized Interest increases the amount of debt that is issued. If HRSD capitalizes interest on one or more series of indebtedness, it will do so only for the period prior to the project being financed is expected to be placed in service.
- I. **Refinancing of Debt.** HRSD will refinance debt from time to time to achieve debt service savings as market opportunities arise or if it determines that it is beneficial for another compelling business reason. To refinance debt, HRSD may use a range of financing tools including but not limited to tax-exempt current refundings, taxable advance refundings, and forward delivery bonds. HRSD's ~~Director of Finance~~ **Chief Financial Officer** will determine the appropriate financing tool based on tax law, market conditions and the risks associated with each tool (in addition to present value savings and refunding efficiency considerations).
- When a refinancing is undertaken to achieve debt service savings, HRSD will target minimum net present value savings of three percent of the amount refinanced. As set forth above, HRSD may refinance debt that does not meet this threshold for another compelling business reason. In addition, HRSD may consider the efficiency of a proposed refinancing transaction and any changes to the callability of debt after such refinancing. In any refinancing of long-term debt, HRSD maintains a bias to not extend maturities.
- J. **Escrow Structuring.** HRSD will utilize the least costly securities available in structuring refinancing escrows. Unless State and Local Government Securities (SLGS) are used, a certificate will be provided by a third-party agent stating that the securities were procured through an arms-length, competitive bid process (in the case of open market securities), and that the price paid for the securities was reasonable within federal guidelines. Under no circumstances will an underwriter, agent or financial advisor sell escrow securities to HRSD from its own account. HRSD will consult with Bond Counsel in connection with any defeasance escrows.
- K. **Hiring of Professionals.** All key members of the financial advisory team including underwriter, financial advisor, bond counsel, and other

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professionals will be selected in a manner consistent with HRSD's procurement policy for professional services.

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4.1.4 Underwriter Selection.

- A. **Senior Manager Selection.** HRSD will select a senior manager for any proposed negotiated sale. The selection criteria will include but not be limited to the following:
- (1) The firm's ability and experience in managing transactions similar to that contemplated by HRSD;
 - (2) Prior knowledge and experience with HRSD;
 - (3) The firm's ability and willingness to risk capital and demonstration of the firm's capital availability and underwriting of unsold balances;
 - (4) Quality and experience of personnel assigned to HRSD's engagement;
 - (5) Financing plan presented; and
 - (6) Cost, including underwriting fees and anticipated pricing.
- B. **Co-Manager Selection.** Co-managers may be selected on the same basis as the senior manager with the exception of underwriting fees, which are determined by the senior manager. In addition to their qualifications, co-managers appointed to specific transactions will be a function of transaction size and the necessity to ensure maximum distribution of HRSD's bonds.
- C. **Selling Groups.** HRSD may establish selling groups in certain transactions. To the extent that selling groups are used, HRSD may make appointments to selling groups, as the transaction dictates.
- D. **Underwriter's Counsel.** In any negotiated sale of HRSD debt in which the underwriter desires legal counsel, the appointment will be made by the senior managing underwriter.
- E. **Underwriter's Discount.** HRSD will evaluate the proposed underwriter's discount against other proposals and/or comparable issues in the market. Any additional expenses payable to an underwriter and paid out of the Underwriter's Discount must be substantiated.
- F. **Evaluation of Underwriter Performance.** HRSD will evaluate each bond sale after completion to assess the following: costs of issuance including underwriters' compensation, pricing of the bonds in terms of the overall

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interest cost and on a maturity-by-maturity basis, the distribution of bonds and sales credits, and the use of capital by the underwriters to take down bonds.

- G. **Syndicate Policies.** For each negotiated transaction, HRSD will establish syndicate policies that will describe the priority of orders and designation policies governing the upcoming sale.
- H. **Designation Policies.** To encourage the pre-marketing efforts of each member of the underwriting team, orders for HRSD's bonds will be net designated, unless otherwise expressly stated. HRSD shall require the senior manager to:
- (1) Fairly allocate bonds to other managers and the selling group.
 - (2) Comply with the Municipal Securities Rulemaking Board's (MSRB) regulations governing the priority of orders and allocations.
 - (3) Within 10 working business days after the sale date, submit to HRSD a detail of orders, allocations and other relevant information pertaining to HRSD's sale.

4.1.5 Consultants.

- A. **Financial Advisor.** HRSD will select a financial advisor (or advisors) to assist in its debt issuance and debt administration processes. Such financial advisor(s) will be an Independent Registered Municipal Advisor within the meaning of the Securities Exchange Act of 1934, as amended. Selection of HRSD's financial advisor(s) will be based on, but not limited to, the following criteria:
- (1) Experience in providing consulting services to entities similar to HRSD;
 - (2) Knowledge and experience in structuring and analyzing bond issues;
 - (3) Experience and reputation of assigned personnel; and
 - (4) Fees and expenses.
- B. **Bond Counsel.** HRSD debt will include a written opinion by legal counsel affirming that HRSD is authorized to issue the proposed debt, that HRSD has met all legal requirements necessary for issuance, and, if the interest

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on the debt to be issued is to be exempt under the IRS Code, a determination consistent therewith. The approving opinion and other documents relating to the issuance of debt will be prepared by counsel with extensive experience in public finance and tax issues. The Bond Counsel will be selected by HRSD.

- C. **Conflicts of Interest.** HRSD requires that its consultants and advisors provide objective advice and analysis, maintain the confidentiality of HRSD financial plans, and be free from any conflict of interest. In no case will HRSD's financial advisor be permitted to underwrite any portion of HRSD's bond issues, whether sold competitively or negotiated.
- D. **Disclosure by Financing Team Members.** All financing team members will be required to provide full and complete disclosure, relative to agreements with other financing team members and outside parties. The extent of disclosure may vary depending on the nature of the transaction. However, in general terms, no agreements will be permitted which could compromise the firm's ability to provide independent advice which is solely in HRSD's best interest or which could reasonably be perceived as a conflict of interest.

4.1.6 Communication and Disclosure.

- A. **Rating Agencies [NRSROs].** HRSD seeks to maintain the highest credit ratings it believes appropriate for its debt without compromising the delivery of its basic core services. The ~~Director of Finance~~ *Chief Financial Officer* will manage relationships with the rating analysts assigned to HRSD by the NRSROs.
- B. **Investors, Bond Insurers, Liquidity Providers.** The ~~Director of Finance~~ *Chief Financial Officer* will manage relationships using both informal and formal methods to disseminate information.
- C. **Continuing Disclosure.** HRSD recognizes that ongoing disclosure is imperative to maintaining the high credit quality of its debt and its reputation in the credit markets. HRSD will comply with all of its contractual obligations and applicable law and will meet such disclosure requirements in a timely and thorough manner.
- D. **Arbitrage Compliance.** HRSD will maintain a system of record keeping and reporting in order to comply with the Arbitrage Rebate Compliance Requirements of the IRS Code.

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- E. **Post-Issuance Compliance Procedures.** Separate from this policy, HRSD will maintain and follow post-issuance compliance procedures. Such procedures will include provisions regarding continuing disclosure and arbitrage and private use compliance, among others.

4.2 DERIVATIVES.

4.2.1 Approach and Objectives. Interest Rate Swaps and options (swaps) are Derivatives that can help HRSD meet important financial objectives. Properly used, these instruments can increase HRSD's financial flexibility, provide opportunities for interest rate savings or enhanced investment yields, and help HRSD manage its balance sheet through better matching of assets and liabilities.

- A. **Specific Objectives for Using Interest Rate Swaps.** HRSD may consider the use of specific Interest Rate Swaps if they meet one or more of the benefits previously described in this Policy or if they:

- (1) Result in an expected lower net borrowing cost than traditional debt alternatives;
- (2) Result in an improved capital structure (e.g., altered pattern of debt service payments or to create variable rate exposure) or better asset/liability matching;
- (3) Cap, limit, or hedge HRSD's exposure to changes in interest rates on a particular financial transaction; or
- (4) Provide a specific benefit not otherwise available.
- (5) Swaps must not be speculative or create unreasonable risk. Each swap will be reviewed on a case-by-case basis to determine whether or not the level of risk is appropriate for HRSD. Examples of swaps that HRSD considers speculative, and which create unreasonable risk include, without limitation:
 - Basis Swaps;
 - Constant Maturity Swaps;
 - Knock-in Options on Swaps;
 - Interest Rate Swaps that including a floating index multiplier greater than 1.0 (e.g., three times SIFMA); and
 - Interest Rate Swaps that are not associated with a specific bond issue.

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- (6) HRSD prefers Swaps that meet the ~~“consistent critical terms method” for evaluating~~ the effectiveness ~~of~~ **criteria for** Interest Rate Swaps as defined by the Governmental Accounting Standards Board in Statement #53: Accounting and Financial Reporting for Derivative Instruments **as amended by Statement #64.**

B. Prohibited Interest Rate Swap Features. HRSD will not use Interest Rate Swaps that:

- (1) Are speculative or create extraordinary leverage or risk;
- (2) Lack adequate liquidity to terminate without incurring a significant bid/ask spread;
- (3) Provide insufficient price transparency to allow reasonable valuation; or
- (4) Are not reasonably uniform to the risk evaluation criteria by this Policy.

C. Legal Authority. As stated in Section 29 of HRSD’s Enabling Act, as amended by the Virginia General Assembly on March 11, 2008,

“With respect to contracts concerning interest rates, currency, cash flow and other basis, the District may enter into any contract that the Commission determines to be necessary or appropriate to place any obligation or investment of the District, as represented by bonds or the investment of their proceeds, in whole or in part, on the interest rate, cash flow or other basis desired by the Commission. Such contracts may include, without limitation, contracts commonly known as interest rate swap agreements, rate locks, forward purchase agreements, and futures or contracts providing for payments based on levels of, or changes in, interest rates. Such contracts or arrangements may be entered into by the District in connection with, or incidental to, entering into or maintaining any (i) agreement that secures bonds or (ii) investment, or contract providing for investment, otherwise authorized by law. These contracts and arrangements may contain such payment, security, default, remedy, and other terms and conditions as determined by the Commission, after giving due consideration to the creditworthiness of the counterparty or other obligated party, including any rating by any nationally recognized rating agency.”

All Derivative contracts require Commission approval prior to execution.

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D. **Permitted Instruments.** HRSD may utilize the following financial products on a current or forward basis, after identifying the objective(s) to be realized and assessing the attendant risks.

- (1) Interest Rate Swaps, including fixed and floating rate swaps.
- (2) Options, including Swaptions, Interest Rate Caps, Interest Rate Floors, and Interest Rate Collars.

HRSD prefers Interest Rate Swaps that have strong price transparency and which are of a type referred to as “plain vanilla,” e.g., a fixed to floating rate SIFMA -based ~~or~~ *SOFR-based* Interest Rate Swap.

Interest Rate Swaps will be subject to the legal provisions set forth in HRSD’s Trust Agreements, applicable debt documents, and statutory requirements.

E. **Procedure for Submission and Execution.** HRSD may consider Interest Rate Swaps that are either presented as proposals or that are developed by HRSD in consultation with its ~~financial-swap~~ advisor and legal counsel. HRSD will give detailed consideration only to proposals that HRSD, in its sole discretion, believes will offer the projected savings or other benefits and will have the ability to meet one or more of the objectives outlined herein.

- (1) When feasible, Interest Rate Swaps should be competitively procured either under a competitive sealed bid or competitive negotiation (e.g., initiated via RFP). On a product-by-product basis, HRSD will have authority to negotiate the procurement of financial instruments that have customized or specific attributes designed for HRSD.
- (2) For both competitive and negotiated procurements, the execution of any Interest Rate Swap transaction will be subject to receipt of a fairness opinion from HRSD’s ~~financial-swap~~ advisor, finding that the terms and conditions of the swap reflect a fair market value of such transaction as of the date and time of its execution.
- (3) The execution of all Interest Rate Swaps will be subject to receipt of an opinion from a law firm with extensive experience in public finance and tax issues that the contract is a legal, valid and binding obligation of HRSD that complies with applicable law and has no adverse effect on the tax status of any related bonds.

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- F. **Interest Rate Swap Analysis and Participant Requirements.** In connection with any Interest Rate Swap, HRSD, its ~~financial-swap~~ advisor and legal counsel will review the proposed transaction and outline considerations associated with the transaction. Such a review will include the following:
- (1) The identification of the proposed benefit and potential risks, which will include, but not necessarily be limited to, those risks outlined in this Policy;
 - (2) Analysis of potential savings and stress testing of the proposed transaction;
 - (3) Fixed versus variable rate, ~~basis~~ and Interest Rate Swap exposure;
 - (4) To the extent HRSD deems relevant, any rating reports or criteria regarding Interest Rate Swaps by rating agencies; and
 - (5) Legal constraints.
- G. **Interest Rate Swap Risks.** In reviewing proposed or possible Interest Rate Swaps, HRSD will consider at a minimum each of the following types of risks, as applicable:
- (1) **Counterparty Risk.** The risk of a payment default on an Interest Rate Swap by a counterparty.
 - (2) **Termination Risk.** The risk that an Interest Rate Swap has a negative value and HRSD owes a “breakage” fee if the contract has to be terminated.
 - (3) **Tax Risk.** A mismatch between changes in the rate or price on HRSD’s underlying debt and the Interest Rate Swap caused by a reduction or elimination in the benefits of the tax exemption for municipal bonds, e.g., a tax cut that results in an increase in the ratio of tax-exempt to taxable yields.
 - (4) **Basis Risk.** A mismatch between the rate on HRSD’s underlying debt and the rate paid under the Interest Rate Swap (for example, an issue of tax-exempt Variable Rate Debt that bears interest at a variable rate equal to ~~67% of SOFR~~ **the weekly remarketing rate approximated by SIFMA** while HRSD receives ~~80~~**67**% of SOFR under the swap.

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- (5) **Liquidity/Remarketing Risk.** The risk that HRSD cannot secure a cost-effective renewal of a Letter or Line of Credit or suffers a failed remarketing with respect to its Variable Rate Debt.
- (6) **Rollover Risk.** The risk that the maturity of an Interest Rate Swap does not match maturity of the related debt or asset. *In no case should the maturity of the Interest Rate Swap be longer than the maturity of the related debt or asset.*

H. **Counterparty Risk Assessment.** HRSD will only enter into an Interest Rate Swap with highly rated financial institutions. Credit criteria for financial institutions are as follows:

- (1) The institutions' long-term, unsecured and unsubordinated obligations are rated at the time of execution of the Interest Rate Swap by at least ~~one two~~ rating ~~agency agencies~~ at least "Aa23" by Moody's or "AA" by S&P, ~~or "AA" by Fitch and by at least one other rating agency at no lower than "A2" by Moody's, "A" by S&P, or "A" by Fitch;~~ or
- (2) The institutions' obligations under the Interest Rate Swap and the Credit Support Annex are unconditionally guaranteed by a bank or non-bank financial institution the long-term, unsecured and unsubordinated obligations of which are rated at the time of execution of the swap by at least ~~one two~~ credit ~~agency agencies~~ at least "Aa3A2" by Moody's or "AA" by S&P or "AA" by Fitch ~~and by at least one other rating agency at no lower than "A2" by Moody's, "A" by S&P, or "A" by Fitch.~~

In the event of downgrade of an Interest Rate Swap counterparty below the minimal rating standard set forth above, the counterparty will be required to:

- a. Provide a substitute guarantor or assign the swap contract to an acceptable counterparty meeting the rating criteria, or
- b. Provide collateral as described in the Collateral section of this Policy.

I. **Benefit Expectation.** Financial transactions using Interest Rate Swaps or other Derivatives related to a debt issue should generate ~~at least two percent or~~ greater projected debt service savings *and/or additional financial flexibility* than a traditional debt alternative. Such ~~savings~~ analysis will include, where applicable, the consideration of the probability (based

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on historical interest rate indices, where applicable, or other accepted analytic techniques) of the realization of savings for the Derivative structure. The savings/~~flexibility target requirement~~ analysis is intended to reflect the complexity and risk of derivative financial instruments and should include a risk adjustment for other factors. For example, if the underlying debt is callable and the Interest Rate Swap is not, then the analysis should include a risk adjustment for this factor.

In determining any benefit in implementing an Interest Rate Swap, the cost of remarketing, in addition to the cost of credit enhancement or liquidity fees, will be added to the projected variable rate. Such a calculation should consider the trading performance of comparable indebtedness and any trading premium resulting from a specific form of credit enhancement or liquidity and/or any impact related to broader industry trends.

- J. **Hedging Derivatives.** When utilizing a Derivative to cap, limit or hedge HRSD's exposure to changes in interest rates, HRSD will evaluate various interest rate scenarios and the estimated impact on projected wastewater rates.
- K. **Legal and Contractual Requirements.** HRSD will use standard International Swap and Derivatives Association, Inc. swap documentation, including the Schedule to the Master Agreement and a Credit Support Annex, and related protocols. -HRSD may use additional documentation if the product is proprietary or HRSD deems in its sole discretion that such documentation is otherwise in its interest. The Interest Rate Swap agreement between HRSD and each counterparty will include payment, term, security, collateral, default, remedy, termination, and other terms, conditions, provisions and safeguards as HRSD, in consultation with its ~~swap advisor and~~ legal counsel, deems necessary or desirable.
- L. **Legal Terms of Swaps.** Terms and conditions of any Interest Rate Swap agreement will be negotiated by HRSD ~~and it's its swap advisor~~ in the best interests of HRSD. Swap documentation and terms should include the following:
 - (1) Downgrade provisions triggering termination based on HRSD's credit rating will in no event be less advantageous than those permitting termination based on a downgrade of the counterparty.
 - (2) Governing law for swaps will be New York law to the extent permitted by law, but should reflect that HRSD's authorization of the related agreement is governed by Virginia law.

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- (3) The specified debt related to credit events in any swap agreement should be narrowly drafted and refers only to specific debt.
- (4) Collateral thresholds will be set on a sliding scale reflective of credit ratings (see Collateral Section).
- (5) Eligible collateral will be as set forth in the Collateral Section.
- (6) Termination value will be established by “market quotation” methodology, which involves the solicitation of quotations from unrelated brokers regarding the valuation of the swaps.

M. **Notional Amount.** HRSD will limit the aggregate notional amount of derivatives to an amount not to exceed 20 percent of aggregate outstanding debt.

To the extent that HRSD is party to multiple derivatives contracts at any given time, HRSD will seek to diversify its counterparty credit risk by limiting its credit exposure to any single counterparty.

N. **Final Maturity.** The final maturity of any Interest Rate Swap will not extend beyond the ~~lesser~~ **earlier** of the final maturity date of HRSD’s related debt and the expiration date of any Letter of Credit or Liquidity Facility on the related bonds unless HRSD has the right to cancel the swap agreement without cost on such expiration date.

O. **Termination Provisions.** Interest Rate Swaps will contain provisions granting HRSD the right to optionally terminate an Interest Rate Swap at any time over its term. Such a provision will be required even if the termination is at market. In general, exercising the right to terminate an agreement should produce a benefit to HRSD, either through the receipt of a payment from a termination or, if the termination payment is made by HRSD, in conjunction with the conversion of the related indebtedness to a more beneficial interest rate mode or mitigates a risk to HRSD, as will be determined by HRSD in its sole discretion.

Any termination payment will be established by a “market quotation” methodology, unless HRSD deems an alternate methodology to be appropriate. HRSD’s ~~Director of Finance~~ **Chief Financial Officer** will provide a written report to the Commission with respect to any termination, including the reason(s) why the swap was terminated.

P. **Collateral.** As part of any swap, HRSD will require collateralization or other forms of credit enhancement to secure any or all swap payment

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obligations. As appropriate, HRSD, in consultation with its ~~financial~~-swap advisor and legal counsel, will require collateral or other credit enhancement to be posted by each swap counterparty as follows:

- (1) Each counterparty to HRSD will be required to post collateral if the long-term credit rating of the counterparty or its guarantor falls below the requirements outlined in the Counterparty Risk Assessment section of this Policy. Additional collateral for further decreases in credit ratings of a counterparty will be posted by the counterparty in accordance with the provisions contained in the related Collateral Support Annex. Threshold amounts for collateral posting will be determined by HRSD on a case-by-case basis.
- (2) In determining maximum uncollateralized exposure, HRSD will consider financial exposure that it may have to the same corporate entities through other forms of financial dealings, such as commercial paper investments.
- (3) Collateral will be deposited with a third-party trustee, or as mutually agreed upon between HRSD and the counterparty.
- (4) A list of acceptable securities that may be posted as collateral and the valuation of such collateral will be determined and mutually agreed upon during negotiation of the swap agreement with each swap counterparty. A complete list of acceptable securities and valuation percentages is included in the Acceptable Collateral section of the Policy.
- (5) The market value of the collateral will be determined on at least a weekly basis, or more frequently if HRSD determines it is in its best interest given the specific collateral.

Q. **Ongoing Management.** HRSD will seek to maximize the benefits and minimize the risks it carries by actively managing its Interest Rate Swap program. This will entail frequent monitoring of market conditions for emergent opportunities and risks. Active management may require modification of existing positions including, for example:

- Early full or partial termination;
- Shortening or lengthening the term of Interest Rate Swaps; or
- Sale or purchase of options.

Legal modification to an existing swap will require approval from the Commission. In modifying any swap, HRSD will fulfill all terms of this

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Policy and refer back to the original procurement and execution procedures outlined in this Policy.

- R. **Ongoing Reporting Requirements.** HRSD will take steps to ensure that there is full and complete disclosure of all Swaps to the Commission, to Rating Agencies and to EMMA. HRSD will also present a summary description of its swaps in its disclosure documents.

HRSD will provide a written report regarding the status of all Swap agreements to the Commission at least on a semi-annual basis and will include the following:

- (1) A description of all outstanding swap agreements, including, if and when applicable, bond series, type of Swap, rates paid and received by HRSD, total notional amount, average life of each swap agreement, remaining term of each Swap agreement and covenant compliance;
- (2) Highlights of all material changes to swap agreements or new swap agreements entered into by HRSD since the last report;
- (3) The credit rating of each Swap counterparty and credit enhancer insuring swap payments, if any;
- (4) A summary of Swap agreements that were terminated or that have expired;
- (5) A mark-to-market valuation of swap agreements and the source of the valuation, which HRSD may use for financial reporting purposes; and
- (6) A summary of Collateral postings.

S. **Acceptable Collateral.**

	<u>Security</u>	Collateral Requirement	
		<u>Valuation Percentage*</u>	Example: \$ Value Based on \$1.0 Million
	Cash	100%	\$1.0 million
	(x) Negotiable debt obligations issued by the U.S. Treasury Department or GNMA, or		

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~~(y) Mortgage-backed securities issued by
GNMA (but with respect to either (x) or (y)
excluding interest only or principal only
Stripped Securities, securities representing
residual interests in mortgage pools, or
securities that are not listed on a national
securities exchange or regularly quoted in a
national quotation service) and in each
case~~ having a remaining maturity of:

- | | | |
|--|-----|----------------|
| • less than one year or less | 98% | \$1.02 million |
| • greater than one year | 95% | \$1.05 million |

*To calculate the dollar amount required to satisfy the collateral requirement, divide the collateral requirement by the valuation percentage shown above.

- T. **Conformance with Dodd-Frank Act.** It is the intent of HRSD to conform to the requirements relating to legislation and regulations for over-the-counter derivatives transactions under Title VII of the Dodd-Frank Wall Street Transparency and Accountability Act of 2010, as amended from time to time, and the regulations promulgated thereunder (herein collectively referred to as Dodd-Frank). It is the policy of HRSD that (i) each swap advisor engaged or to be engaged by HRSD will function as the designated qualified investment representative of HRSD (Designated Qualified Independent Representative or QIR); (ii) each swap advisor ~~agrees~~ **agree** to meet and meets the requirements specified in the Commodity Futures Trading Commission Regulation 23.450(b)(1) or any successor regulation thereto (hereinafter referred to as the QIR Regulation); (iii) each swap advisor provide a written certification to HRSD to the effect that such swap advisor agrees to meet and meets the requirements specified in the QIR Regulation; (iv) HRSD monitor the performance of each swap advisor consistent with the requirements specified in the QIR regulation; (v) HRSD exercise independent judgment in consultation with its swap advisor in evaluating all recommendations, if any presented by any counterparty with respect to transactions authorized pursuant to this Financial Policy; (vi) HRSD rely on the advice of its swap advisor with respect to transactions authorized pursuant to this Financial Policy and not rely on recommendations, if any, presented by any counterparty with respect to transactions authorized pursuant to this Financial Policy; **and** (vii) HRSD comply with all recordkeeping reporting and certification requirements for end-users as applicable under the Commodity Exchange Act.

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4.3 INVESTMENT

4.3.1 Ethics and Conflicts of Interest. The ~~Director of Finance~~ **Chief Financial Officer** and other employees involved in the investment process will comply with the Code of Virginia Section 2.2-3100 et seq., the State and Local Government Conflict of Interests Act (the "Conflict of Interests Act").

A. Specifically, no officer or employee will:

- (1) ~~Accept~~ **Solicit or accept** any money, loan, gift, favor, service, or business or professional opportunity that reasonably tends to influence him in the performance of his official duties;
- (2) ~~Accept~~ **Solicit or accept** any business or professional opportunity when he knows there is a reasonable likelihood that the opportunity is being afforded to influence him in the performance of his official duties; or
- (3) Violate any of the provision of the Conflict of Interests Act.

B. All employees involved in the investment process will refrain from personal business activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make impartial decisions.

C. All employees involved in the investment process will disclose **in writing** to the ~~Director of Finance~~ **Chief Financial Officer** and the General Manager/**Chief Executive Officer** any material interest in financial institutions with which they conduct business. They will further disclose **in writing** any personal financial or investment positions that could be related to the performance of the investment portfolio.

D. All employees involved in the investment process will refrain from undertaking personal investment transactions with the same individual with whom business is conducted on behalf of HRSD.

4.3.2 Operating Funds

A. **Scope.** Except for funds maintained in trust for retirement and health and welfare benefits for employees and/or retirees, this Policy applies to all HRSD's cash and investments (the Investment Portfolio). The Policy will apply to such ~~monies~~ **money** from the time of receipt until the time the ~~monies~~ **money** leaves HRSD's accounts. Although these assets may be

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pooled for investment purposes, they may be segregated as necessary for accounting and budgetary reporting purposes.

B. Objectives.

- (1) All investments will be in compliance with the Code of Virginia Sections 2.2-4400 et seq. *(the Virginia Security of Public Deposits Act)* and 2.2-4500 et seq. *(the Investment of Public Funds Act)* and the Trust Agreements.
- (2) The cash management and investment activities of HRSD will be conducted in a manner ~~which~~ **that** is consistent with applicable law and prevailing prudent business practices ~~which~~ **that** may be applied by other public organizations of similar size and financial resources.
- (3) The Investment Portfolio will be managed to accomplish the following fundamental goals:
 - a. **Safety of Principal.** The single most important objective of the investment program is the preservation of principal of those funds within the Investment Portfolio.
 - b. **Maintenance of Liquidity.** The Investment Portfolio will be ~~managed at all times~~ **always managed** with sufficient Liquidity to meet all daily and seasonal needs, to fund special projects and other operational requirements ~~which~~ **that** are either known or which might reasonably be anticipated, and to provide adequate Self-Liquidity, if applicable.
 - c. **Maximizing Return.** The Investment Portfolio will be managed ~~so as to~~ **to** maximize the return on investments ~~within the context and parameters set forth by~~ **subject to** the safety and liquidity objectives above.

- C. **Standard of Prudence.** ~~All investments will be in compliance with the Code of Virginia Sections 2.2-4400 et seq. and 2.2-4500 et seq. and the Trust Agreements.~~ Public funds held and invested by HRSD are held for the benefit of its ratepayers, and any investment of such funds will be made solely in the interest of the ratepayers and with the care, skill, prudence, and diligence under the circumstances then prevailing that a person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

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The ~~Director of Finance~~ **Chief Financial Officer** and other HRSD employees acting in accordance with written procedures, including this Policy and exercising due diligence will be relieved of personal responsibility for an individual security's performance, provided that deviations from expectations are reported in a timely fashion to the Commission.

D. **General Account Structure.** In order to meet HRSD's general objectives, the Investment Portfolio is divided into three major investment strategies: an Operating Liquidity Strategy, a Total Return Strategy and a Capital Investment Strategy.

- (1) The **Operating Liquidity Strategy** consists of funds that are expected to provide for HRSD's day-to-day disbursement and operational needs. As such, Liquidity is the emphasis in this strategy. This strategy will be funded to meet all known operating needs. Selection of investment maturities will be consistent with the cash requirements of HRSD in order to minimize the forced sale of securities prior to maturity. It is expected that a portion of the Operating Liquidity Strategy will be invested in highly liquid funds such as money market funds, overnight repurchase agreements, bank deposit accounts, or other short-term investment vehicles. Funds invested pursuant to this strategy may be utilized to provide Self-Liquidity on debt financings.
- (2) The **Total Return Strategy** consists of operating funds that are not expected to be a major source of HRSD's day-to-day disbursement requirements and operational needs. The Total Return Strategy may therefore be invested in longer-term securities in order to generate an investment return, which, over time, is higher than the total return of the Operating Liquidity Strategy. Funds invested pursuant to this strategy may be utilized to provide Self-Liquidity on debt financings.
- (3) The **Capital Investment Strategy** is the source for capital improvement disbursements. The strategy will consist of unspent debt proceeds and unspent HRSD cash contributions to its CIP. It is anticipated that investments will be made in the Capital Investment Strategy with maturity dates matching the anticipated expenditures or invested in highly liquid funds such as money market funds, overnight repurchase agreements, bank deposits or other short-term investment vehicles.

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- E. **Authorized Investments.** Under the Trust Agreements, the ~~Director of Finance~~ **Chief Financial Officer** may invest in such of the following securities that are in compliance with the Investment of Public Funds Act (Code of Virginia Section 2.2-4500 et seq.), the Government Non-Arbitrage Investment Act (Code of Virginia Section 2.2-4700 et seq.) and any successor statutes as from time to time amended. The ~~Director of Finance~~ **Chief Financial Officer**, however, may impose additional requirements and restrictions in order to ensure that HRSD's goals are met.
- (1) **U.S. Treasury Obligations.** ~~TIPS~~, Treasury Bills, Treasury Notes and Treasury Bonds, and any other obligation or security issued by or backed by the full faith and credit of the United States of America. *TIPS are also permitted, provided HRSD carefully reviews the related risks.* The final maturity will not exceed a period of five years from the time of purchase.
 - (2) **Federal Agency Obligation.** Bonds, notes and other obligations of Federal Agencies, provided that such investments must be rated in one of the two highest rating categories by at least one NRSRO and or the have the same rating as those of U.S. Treasury obligations. The final maturity will not exceed a period of five years from the time of purchase.
 - (3) **Municipal Obligations.** Bonds, notes and other general obligation indebtedness, upon which there is no default, with a rating of at least "AA" from S&P and "Aa" from Moody's, maturing within five years of the date of purchase, and otherwise meeting the requirements of Code of Virginia Section 2.2-4501. However, HRSD is prohibited from purchasing its own debt for the purpose of investing its Operating Funds. Please see the *Self-Liquidity* section of this policy for important information related to Self-Liquidity and HRSD's purchase of its own debt.
 - (4) **Commercial Paper.** Commercial Paper issued by domestic corporations (corporations organized and operating under the laws of the United States or any state thereof) provided that the issuing corporation, or its guarantor, has a short-term debt rating of no less than "A-1" (or its equivalent) from at least two of the NRSROs.
 - (5) **Bankers' Acceptances.** Issued by domestic banks or a federally chartered office of a foreign bank, which are eligible for purchase by the Federal Reserve System with a maturity of 180 days or less.

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The issuing corporation, or its guarantor, must have a short-term debt rating of no less than "A-1" (or its equivalent) from at least two of the NRSROs.

- (6) **Corporate Notes.** Corporate Notes ~~with a rating of at least~~ *that have received at least two of the following ratings: at least* "Aa" by Moody's ~~and~~, at least "AA" by S&P, *or at least AA by Fitch.* [The final maturity will not exceed a period of five years from the time of purchase.]
- (7) **Negotiable Certificates of Deposit and Bank Deposit Notes.** Negotiable CDs and negotiable bank deposit notes of domestic banks and domestic offices of foreign banks *for maturities of one year or less* with *at least two of the following* ratings: ~~of~~ at least "A-1" *by S&P, at least* ~~from~~ P-1 ~~from~~ by Moody's, *or at least F-1 by Fitch; for maturities over one year, for maturities of one year or less, and a with at least two of the following* ratings: ~~of~~ at least "AA" ~~from~~ by S&P, *at least* ~~and~~ "Aa" ~~from~~ by Moody's, *or at least AA by Fitch, for maturities over one year.* The final maturity may not exceed a period of five years from the time of purchase.
- (8) **Money Market Mutual Funds (Open-Ended Investment Funds).** Shares in open-end, no-load investment funds provided such funds are registered under the Federal Investment Company Act of 1940, provided that the fund is rated ~~at least~~ "AAAm" or the equivalent by an NRSRO. The mutual fund must comply with the diversification, quality and maturity requirements of SEC Rule 2(a)-7, or any successor rule, provided the investments by such funds are restricted to investments otherwise permitted by the Code of Virginia for political sub-divisions.
- (9) **Local Government Investment Pool.** A specialized fund pursuant to Code of Virginia Section 2.2-4000 et seq. designed to offer a convenient, liquid, and cost-effective investment vehicle for public entities. The Fund is administered by the Treasury Board of the Commonwealth of Virginia.
- (10) **State Non-Arbitrage Pool Fund.** The pooled investment vehicle established for the investment of bond proceeds under the Government Non-Arbitrage Investment Act (Virginia Code Section 2.2-4700 et seq.).

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- (11) **Repurchase Agreements.** In overnight, term and open repurchase agreements provided that the following conditions are met:
- a. The contract is fully secured by deliverable U.S. Treasury Bills, Bonds or Notes or Federal Agency obligations as described in paragraph 1 and 2 above (with a maximum maturity of five years), having a market value at all times of at least 102 percent of the amount of the contract;
 - b. A Master Repurchase Agreement or specific written Repurchase Agreement governs the transaction;
 - c. The securities are free and clear of any lien and held by an independent third-party custodian acting solely as agent for HRSD, provided such third party is not the seller under the Repurchase Agreement;
 - d. A perfected first security interest under the Uniform Commercial Code in accordance with book entry procedures prescribed at 31 C.F.R. 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the ~~sole~~ benefit of HRSD;
 - e. For Repurchase Agreements with terms to maturity of greater than one day, HRSD will value the collateral securities daily and require that if additional collateral is required then that collateral must be delivered within one business day (if a collateral deficiency is not corrected within this time frame, the collateral securities will be liquidated);
~~and~~
 - f. The counterparty is a:
 - (1) Primary government securities dealer ~~who~~~~that~~ reports daily to the Federal Reserve Bank of New York; or
 - (2) A bank, savings and loan association, or diversified securities broker-dealer having at least \$5 billion in assets and \$500 million in capital and subject to regulation of capital standards by any state or federal regulatory agency; and

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- (3) The counterparty meets the following criteria: A long-term credit rating of at least 'AA' or the equivalent from an NRSRO; has been in operation for at least five years; is reputable among market participants.
- (12) **Collateralized Bank Deposits.** CDs and other evidence of deposit as permitted by Section 2.2.4400 et seq. of the Code of Virginia.
- (13) **U.S. Dollar Denominated Supra Sovereign Agency Bonds.** Bonds and other obligations issued, guaranteed or assumed by the International Bank for Reconstruction and Development, by the Asian Development Bank or by the African Development Bank, provided that the obligation is rated by an NRSRO *no less than* the higher of "AA" ~~or~~ *and* the *long-term* -rating on U.S. Treasury obligations.
- (14) **Virginia Investment Pool Trust Fund (VIP) Stable NAV Liquidity Pool.** This pool supports the cash management needs of municipalities, other governmental agencies and political subdivisions in Virginia that must manage investments conservatively. The objective of the fund is to obtain a competitive market yield on available financial assets consistent with the constraints imposed by the safety objectives, cash flow considerations and the laws of the Commonwealth of Virginia that govern the placement of public funds while facilitating daily liquidity and the maintenance of a stable Net Asset Value, with the price of shares in the portfolio targeted to maintain a value of \$1.00. The fund is governed by the Board of Trustees of the VIP.
- (15) **VIP 1-3 Year High-Quality Bond Fund.** This fund is a fixed income investment portfolio designed to provide another pooled investment alternative to those Participants that have excess funds and that have an investment horizon greater than that of money market instruments, typically one year or longer. The investment objective is to:
- a. Exceed the return of the Bank of America Merrill Lynch One-to Three-Year U.S. Corporate & Government Index over three-year periods
 - b. Preserve capital

The VIP 1-3 Year High Quality Bond Fund will generally invest in securities with greater potential returns and risk

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than those offered by money market type instruments. The fund is governed by the Board of Trustees of the VIP.

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- E. **Portfolio Diversification.** The Investment Portfolio will be diversified by security type and institution. -The maximum percentage of the portfolio permitted in each eligible security is as follows:

<u>Permitted Investment</u>	<u>Sector Limit</u>	<u>Issuer Limit</u>
Treasury Bonds, Notes and Bills	100%	100%
Federal Agency Obligations	100%	35%
Municipal Obligations	15%	5%
Commercial Paper	25%	5%
Bankers' Acceptances	25%	5%
Corporate Notes	25%	3%
Negotiable CDs and Bank Deposit Notes	25%	3%

<u>Permitted Investment</u>	<u>Sector Limit</u>	<u>Issuer Limit</u>
Money Market Mutual Funds	100%	100%
LGIP	100%	100%
SNAP Fund (bond proceeds only)	100%	100%
Repurchase Agreements	35%	35%
Collateralized Bank Deposits	100%	100%
Supra Sovereign Agency Bonds	15%	10%
VIP Stable NAV Liquidity Pool	100%	100%
VIP 1-3 Year High-Quality Bond Fund	100%	100%

The Sector Limit and Issuer Limit will be applied to the total Investment Portfolio value at the date of acquisition *of a particular investment*.

- F. **Maximum Maturity.** Maintenance of adequate Liquidity to meet the cash flow needs of HRSD is essential. Accordingly, to the extent possible, the investment portfolio will be structured in a manner that ensures sufficient cash is available to meet anticipated Liquidity needs. Whenever practical, selection of investment maturities will be consistent with the known cash requirements of HRSD in order to minimize the forced sale of securities prior to maturity. For the purposes of the Investment Policy:
- (1) The Funds Invested under the **Operating Liquidity Strategy** will be invested in short-term investments maturing in 12 months or less. Because of the difficulties inherent in accurately forecasting all cash flow requirements, at least 25 percent of the funds invested under this strategy will be continuously invested in readily available funds such as bank deposit accounts, money market funds and overnight repurchase agreements and at least 75 percent of this

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strategy will be invested in securities with maturities less than 180 days.

- (2) The Funds Invested in pursuant to **Total Return Strategy** will be invested in permitted investments with a stated maturity of not more than five years from the date of purchase. To manage volatility, the ~~Director of Finance~~ **Chief Financial Officer** will from time-to-time determine an investment duration target which will not exceed three years and which will be comparable to the selected performance standards as identified under the Performance Standards section of this Policy.
- (3) The Funds invested under the **Capital Investment Strategy** will be invested in compliance with the specific requirements of the Trust Agreements. However, in no case will bond proceeds, or funds set aside for capital projects, be invested in securities with a term to maturity that exceeds the expected disbursement date of ~~those monies~~ **such money**.
- (4) Accounts credited to Debt Service Reserve funds with longer term investment horizons may be invested in securities exceeding five years, provided that such investments will mature no later than the first call date for the related bonds.

- G. **Security Downgrades.** If any security held in the Investment Portfolio is downgraded below "AA" or equivalent rating by any NRSRO, the security will be sold within 180 days of such downgrade.
- H. **Self-Liquidity.** In the event that HRSD determines to provide Self-Liquidity for any issuance of CP, VRDs, or related indebtedness, funds invested under the Operating Liquidity Strategy and the Total Return Strategy may be used to support such obligations, if necessary, provided that HRSD will not be legally obligated to pledge such funds for such purpose. The investments identified to provide Self-Liquidity coverage will be sufficient to meet the quality, volatility, liquidity, and maturity guidelines of the NRSRO's then providing ratings on HRSD's debt obligations. If needed, HRSD is permitted to purchase its own debt on a temporary basis or for the retirement of the debt. Such purchase will not be limited to the sector and issuer diversification limits as set forth in the Portfolio Diversification section of this policy or the maximum maturity requirement as set forth in the Capital Investment Strategy section of this Policy.
- I. **Investment of Bond Proceeds.** HRSD intends to comply with all applicable sections of the Internal Revenue Code as it relates to Arbitrage

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Rebate and the investment of bond proceeds. All investment records will be maintained to ensure compliance with all regulations.

- J. **Collateralization of Bank Deposits.** All bank deposits of HRSD should be considered Public Deposits as defined by Code of Virginia Security for Public Deposits Act (Section 2.2-4400 et seq.) and all deposits must be made with Qualified Public Depositories within the meaning of such law.
- K. **Selection of Broker/Dealers.** All broker/dealers ~~who~~ **that** desire to provide investment services to HRSD will be provided with current copies of HRSD's Financial Policy. Before an organization can provide investment services to HRSD, it must confirm in writing that it has received and reviewed HRSD's Financial Policy.
- (1) At the request of the ~~Director of Finance~~ **Chief Financial Officer**, broker/dealers will supply HRSD with information sufficient to adequately evaluate their financial capacity and creditworthiness. The following information will be provided:
- (a) Audited financial statements;
 - (b) Regulatory reports on financial condition;
 - (c) Proof of Financial Institution Regulatory Authority (FINRA) certification and of state registration;
 - (d) A sworn statement by an authorized representative of the broker/dealer pledging to adhere to Capital Adequacy Standards established by the Federal Reserve Bank and acknowledging the broker/dealer understands that HRSD has relied upon this pledge; and
 - (e) Any additional information requested by the ~~Director of Finance~~ **Chief Financial Officer** in evaluating the creditworthiness of the institution.
- (2) Only firms meeting the following requirements will be eligible to serve as broker/dealers for HRSD:
- (a) "Primary" dealers and regional dealers that qualify under SEC Rule 15c3-1 (Uniform Net Capital Rule);
 - (b) Unrestricted Capital of at least \$10,000,000;

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- (c) Registered as a dealer under the Securities Exchange Act of 1934;
- (d) Member of the FINRA;
- (e) Registered to sell securities in the Commonwealth of Virginia; and
- (f) Engaged in the business of effecting transactions in U.S. government and agency obligations for at least five consecutive years.

(3) HRSD will designate broker/dealers on an annual basis.

L. Competitive Selection of Investment Instruments. All securities purchases and sales will be transacted only with designated broker/dealers through a formal and competitive process requiring the solicitation and evaluation of at least three bids/offers, taking into consideration current market conditions and any applicable provisions of the IRS Code. Electronic bids will be accepted. HRSD will accept the bid which, in the sole judgment of the ~~Director of Finance~~ **Chief Financial Officer** or his/her designee: (1) can be accepted under applicable provisions of the IRS Code; (2) offers the highest rate of return within the maturity required; and (3) optimizes the investment objective of the overall investment portfolio, including diversification requirements. When selling a security, HRSD will select the bid that generates the highest sale price, consistent with the diversification requirements and any applicable provisions of the IRS Code.

M. Safekeeping and Custody. All investment securities purchased by HRSD or held as collateral on deposits or investments will be held by HRSD or by a third-party custodial agent that may not otherwise be counterparty to the investment transaction.

- (1) All securities in HRSD's investment portfolio will be held in the name of HRSD and will be free and clear of any lien. Further, all investment transactions will be conducted on a delivery versus payment basis. On a monthly basis, the custodial agent will provide reports that list all securities held for HRSD, the book value of holdings, and the market value as of month-end.
- (2) HRSD officials and representatives of the custodial agent responsible for, or in any manner involved with, the safekeeping

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and custody process of HRSD will be bonded in such a manner as to protect HRSD from losses from malfeasance and misfeasance.

- (3) Confirming copies of all other investment transactions must be delivered to HRSD or its custodial agent.

N. **Internal Controls.** The ~~Director of Finance~~ **Chief Financial Officer** will establish a framework of internal controls governing the administration and management of HRSD's investment portfolio, and these controls will be documented in writing. Such controls will be designed to prevent and control losses of HRSD ~~monies~~ **money** arising from fraud, employee error, and misrepresentation by third parties, unanticipated changes in financial markets, or imprudent actions by any personnel. The internal control structure will be designed to provide reasonable assurance that these objectives are met. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived, and (2) the valuation of costs and benefits requires estimates and judgments by management.

O. **Records and Reports.** The ~~Director of Finance~~ **Chief Financial Officer** will prepare an investment report on at least a quarterly basis for the Commission.

P. **Performance Standards.** The investment portfolio will be designed to obtain at least a market level rate of return, given budgetary and economic cycles, commensurate with HRSD's investment risk and cash flow needs. HRSD's portfolio management approach will be active, allowing periodic restructuring of the investment portfolio to take advantage of current and anticipated interest rate movements.

- (1) The returns on HRSD's investments will be compared on a quarterly basis to indices of U.S. Treasury securities having similar maturities or to other appropriate benchmarks.

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- (2) The applicable benchmarks for each of HRSD's three major Investment strategies are listed below:

<u>Fund</u>	<u>Benchmark</u>
Operating Liquidity	3-Month Treasury Bill or Effective Federal Funds rate
Total Return	Merrill Lynch 1-3 Year U.S. Corporate & Government Index over three-year periods
Capital Investment	3-Month Treasury Bill, Effective Federal Funds rate, Virginia LGIP or similar index appropriate to the duration of the expected cash flows

Q. **Engagement of Investment Managers.** The ~~Director of Finance~~ *Chief Financial Officer* may engage one of more qualified firms to provide discretionary investment management services in compliance with this Policy for HRSD. All investment management firms ~~who~~ *that* desire to provide investment services to HRSD will be provided with current copies of HRSD's Investment Policy. Before an organization can provide investment services to HRSD, it must confirm in writing that it has received and reviewed HRSD's Investment Policy. The ~~Director of Finance~~ *Chief Financial Officer* will conduct appropriate due diligence in the selection of qualified investment management firms and will periodically confirm a manager's qualifications by visiting that manager's operational facilities that provide services to HRSD.

- (1) Only firms meeting the following requirements will be eligible to serve as investment manager for HRSD:
- (a) Must be registered with the SEC under the Investment Advisers Act of 1940;
 - (b) Must provide to HRSD an annual updated copy of Form ADV, Part II;
 - (c) Must be registered to conduct business in the Commonwealth of Virginia; and
 - (d) Must have proven experience in providing investment management services under Code of Virginia Sections 2.2-4500 et seq.

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- (2) Any firm engaged by HRSD to provide investment services will:
- (a) Maintain a list of approved security brokers/dealers selected by creditworthiness who are authorized to provide investment services in the Commonwealth of Virginia;
 - (b) Provide monthly reports of transactions and holdings to the ~~Director of Finance~~ **Chief Financial Officer**;
 - (c) Provide performance reports, at least quarterly, that display investment performance in comparison to HRSD's investment benchmarks; and
 - (d) Not collect any soft dollar fees from any broker/dealer or other financial firm in relation to services provided to HRSD.

4.3.3 Retiree Health Plan Trust

- A. **Background.** HRSD established the Hampton Roads Sanitation District Retiree Health Plan Trust (the Trust) originally effective July 1, 2002, and amended and restated effective January 22, 2008 and November 25, 2008. The Trust provides for funding of non-pension and Other Post-Employment Benefits (OPEB), for employees who meet the age and service requirements outlined in the Hampton Roads Sanitation District Health Benefits Plan (the Plan) originally effective July 1, 2002, as it may be amended from time to time.
- B. **Purpose.** The main investment objective of the Trust is to achieve long-term growth of Trust assets by maximizing long-term rate of return on investments and minimizing risk of loss in order to fulfill HRSD's current and long-term OPEB obligations. The purpose of the Policy is to achieve the following:
- (1) Document investment objectives, performance expectations and investment guidelines for Trust assets.
 - (2) Establish an appropriate investment strategy for managing all Trust assets, including an investment time horizon, risk tolerance ranges and asset allocation to provide sufficient diversification and overall return over the long-term time horizon of the Trust.
 - (3) Establish investment guidelines to control overall risk and liquidity.

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- (4) Establish periodic performance and cost reporting requirements that will effectively monitor investment results and ensure that the investment policy is being followed.
- (5) Comply with all fiduciary, prudence, due diligence and legal requirements for Trust assets.

C. **Investment Authority.** HRSD, as Plan Administrator (the Administrator), has oversight authority of certain policies and procedures related to the operation and administration of the Trust. Pursuant to the terms of the Trust, the Trustee is to hold title to the trust assets held for the Plan and to operate exclusively in the capacity as a directed Trustee. HRSD, as the named Administrator, has the authority not only to direct the Trustee but to appoint one or more investment managers. The Administrator will have authority to implement the investment policy and guidelines in the best interest of the Trust to best satisfy the purposes of the Trust.

- (1) The Administrator has a fiduciary duty to the Trust and the participants and beneficiaries, which requires integrity and competence. Integrity requires management of the Trust and the assets for the exclusive benefit of the Trust's participants and beneficiaries. The required level of competence is that of a prudent person acting in like capacity and familiar with such matters would act. This standard of competence extends to the retention and supervision of expert investment advice and all other areas of Trust's management.
- (2) In implementing this Policy, the Administrator, in accord with the provisions of the Trust, may delegate certain functions to:
 - (a) An investment advisor (the Investment Advisor) to assist the Administrator in the investment process and to maintain compliance with this Policy. The Investment Advisor may assist the Administrator in establishing investment policy objectives and guidelines. The Investment Advisor will ~~adjust~~ **advise on the** asset allocation for the Trust subject to the guidelines and limitations set forth in this Policy. The Investment Advisor will also **advise on the** selection of investment managers (Managers) and strategies consistent with its role as a fiduciary for the Trust. The investment vehicles allowed may include mutual funds, commingled trusts, separate accounts, limited partnerships and other investment vehicles deemed to be appropriate **on the advice**

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~~of by~~ the Investment Advisor. The Investment Advisor is also responsible for monitoring and reviewing investment managers; measuring and evaluating performance; and other tasks as deemed appropriate in its role as Advisor for Trust assets. The Investment Advisor may also ~~advise on the selection of~~ investment managers with discretion to purchase, sell, or hold specific securities, such as Exchange Traded Funds, that will be used to meet the Trust's investment objectives. The Investment Advisor shall never take possession of securities, cash or other assets of the Trust, all of which shall be held by the custodian. The Investment Advisor must be registered with the SEC. The ~~Director of Finance~~ ~~Chief Financial Officer~~ will conduct appropriate due diligence in the selection of the Investment Advisor and will periodically confirm the Investment Advisor's qualifications by visiting its operational facilities that provide services to the Trust and HRSD.

- (b) A custodian to physically maintain possession of securities owned by the Trust, collect dividend and interest payments, redeem maturing securities, and effect receipt and delivery following purchases and sales, among other things. The custodian may also perform regular accounting of all assets owned, purchased, or sold, as well as movement of assets into and out of the Trust.
 - (c) A trustee appointed by the Trust, such as a bank trust department, if the Trust does not have its own Trustees, to assume fiduciary responsibility for the administration of Trust assets; provided, however, that if the Administrator shall have appointed an investment advisor, then any trustee appointed under this paragraph shall have no authority with respect to selection of investments.
 - (d) Specialists such as attorneys, auditors, actuaries and, retirement plan consultants to assist the Administrator in meeting its responsibilities and obligations to administer Trust assets prudently.
- (3) HRSD Commissioners, staff, investment advisors, consultants and managers will refrain from engaging in any activity that impairs (or has the potential to impair) their ability to make impartial investment decisions for the Trust. Persons who nevertheless engage in such

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conduct will immediately disclose the conduct to the Administrator. HRSD members, staff, investment managers and advisers will also immediately disclose to the Administrator any activity engaged in by their respective firms, employers, employees and agents which conflicts (or has the potential to conflict) with the execution of HRSD's investment program for the Trust.

D. **Statement of Investment Objectives.** The investment objectives of the Trust are as follows:

- (1) **Funding.** The primary objective of the Administrator is to maintain the assets of the Trust at the funding level necessary to provide a pool of funds to be used to provide post-retirement welfare benefits to Plan participants. To obtain this objective the Administrator will diversify Trust assets and adopt an investment strategy consistent with the Trust's investment objectives.
- (2) **Safety.** In order to maintain the safety of Trust assets the Administrator will:
 - (a) Invest assets of the Trust in a manner consistent with the following fiduciary standards: all transactions undertaken must be for the sole interest of Trust beneficiaries and defray reasonable expenses in a prudent manner, and assets are to be diversified in order to minimize the impact of large losses in individual investments.
 - (b) Conserve and enhance the value of Trust assets in real terms through asset appreciation and income generation, while maintaining a moderate investment risk profile.
 - (c) Minimize principal fluctuations over the Time Horizon (as defined below).
 - (d) Achieve a long-term level of return commensurate with contemporary economic conditions and equal to or exceeding the investment objective set forth in this policy under the Performance Expectations section of the Policy.
- (3) **Liquidity.** The Trust's Investment Portfolio in combination with the projected net cash flows will provide sufficient Liquidity to enable the Plan to meet all operating requirements which may be reasonably anticipated.

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E. **Investment Guidelines.** Within this section of the Policy, several terms will be used to articulate various investment concepts. The descriptions are meant to be general and may share investments otherwise considered to be in the same asset class. They are:

- (1) **Growth Assets** - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on capital appreciation. Investments within this category can include income and risk mitigating characteristics, so long as the predominant investment risk and return characteristic is capital appreciation. Examples of such investments or asset classes are: domestic and international equities or equity funds, private or leveraged equity, certain real estate investments, and hedge funds focused on equity risk mitigation or equity-like returns.
- (2) **Income Assets** - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on income generation. Investments within the Income Assets category can include capital appreciation and risk mitigating characteristics, so long as the primary investment risk and return characteristic is income generation. Examples of such investments or asset classes are: fixed income securities, guaranteed investment contracts, certain real estate investments, and hedge funds focused on interest rate risk mitigation or income investment-like returns.
- (3) **Real Return Assets** - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on real returns after inflation. Investments within this category can include inflation protected securities, commodities, certain real estate investments and hedge funds.

F. **Time Horizon.** The Trust's investment objectives are based on a market-cycle investment horizon so that interim fluctuations should be viewed with appropriate perspective. HRSD has adopted a long-term investment horizon such that the chances and duration of investment losses are carefully weighed against the long-term potential for appreciation of assets.

G. **Liquidity and Diversification.** Trust will hold an adequate amount of protected liquidity needs for benefit payments and expenses in cash or cash equivalents, as determined necessary. The liquidity assets will be invested in accordance with statutory requirements applicable to liquid

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assets, as determined by the Administrator. The remaining assets will be invested in longer-term securities.

Investments will be diversified with the intent to minimize the risk of long-term investment losses. The total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in individual issues, issuers, countries, governments or industries.

H. **Asset Allocation.** The Administrator recognizes that asset allocation is one of the most important investment decisions that an investor makes. The Administrator *upon advice of the* ~~or~~ Investment Advisor, as appropriate, will allocate Trust assets in keeping with the Prudent Person Rule. The Administrator ~~or~~ *upon advice of the* Investment Advisor has determined that to achieve the greatest likelihood of meeting the applicable investment objectives and achieving the best balance between risk and return for optimal diversification, the Trust should allocate assets into two broad classes called Investment Assets and Liquidity Assets.

(1) The Investment Assets will be invested in accordance with the targets for each asset class as follows to achieve an average total annual rate of return that is equal to or greater than the Trust's actuarial discount rate as described in the Section titled "Performance Expectations." The Liquidity Assets will be held in cash equivalent investments and used to pay for benefits and expenses of the Trust.

~~(2)~~ — The Administrator, *upon advice of the* Investment Advisor, or *the* Managers will have discretion to temporarily invest a portion of the assets in cash reserves *according to the investment policy and guidelines* when they deem it appropriate. However, the Investment Advisor and each Manager will be evaluated against their peers on the performance of the total funds under their direct management.

(2)

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INVESTMENT ASSETS

<u>Asset Classes</u>	<u>Asset Range</u>	<u>Weightings Target</u>
Growth Assets		
Domestic Equity	19 38% - 59 58%	39 48%
International Equity	17 % - 41 17%	21 12%
Other	0% - 10%	0%
Income Assets		
Fixed Income Core/Core Plus	20 19% - 60 39%	40 29%
Fixed Income		
High Yield Fixed Income Other	0% - 10 7.5%	0 5%
Other	0% - 10%	0%
Real Return Assets	0% - 20 %	0 %
Core Real Estate	0% - 7%	4%
Cash Equivalents	0% - 20 5%	0%

LIQUIDITY ASSETS

<u>Asset Classes</u>	<u>Asset Range</u>	<u>Weightings Target</u>
Cash Equivalents	0% - 100%	100%

- I. **Rebalancing Philosophy.** The asset allocation range established by this Policy represents a long-term perspective. For that reason, rapid unanticipated market shifts or changes in economic conditions may cause the asset mix to fall outside the Policy range. When these divergences occur, the Administrator ~~or~~ **upon advice from the** Investment Advisor, as appropriate, will rebalance the asset mix to its appropriate targets and ranges. Rebalancing will typically occur on at least a quarterly basis, unless the divergence is deemed an appropriate tactical strategy by the Administrator or Investment Advisor. Similarly, if the cash requirement to handle liquidity needs falls to a level at which near-term distributions (over the following six months or less) cannot be met and no contributions are anticipated, the Administrator ~~or~~ **upon advice from the** Investment Advisor will rebalance the fund to its appropriate targets and ranges.

Regarding allocating contributions to the Trust, the Administrator or Investment Advisor will review the Trust allocation and fill the liquidity allocation first and the remaining investment allocations last.

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J. **Risk Tolerance.** The Trust will be managed in a style that seeks to minimize principal fluctuations over the established Time Horizon and that is consistent with the Trust's investment objectives.

K. **Performance Expectations.** Over the long-term, a rolling five-year period, the performance objective for Trust assets will be to achieve an average total annual rate of return that is equal to or greater than the Trust's current actuarial discount rate. Additionally, it is expected that the annual rate of return on Trust assets will be commensurate with the then prevailing investment environment. Measurement of this return expectation will be judged by reviewing returns in the context of industry standard benchmarks, peer universe comparisons for individual Trust investments and blended benchmark comparisons for the Trust in its entirety. Costs will be reviewed by the Administrator and Investment Advisor to determine that they are minimized to the extent possible and are reasonable when compared to benchmarks.

(1) **Total Fund Policy Benchmark.** *The Total Fund's long-term returns shall be measured against a benchmark with constituents that are appropriate based on the asset allocation, asset class composition, strategy, style and risk characteristics. Peer results and rankings shall be measured against an appropriate Universe as generally representative of the Plan's objectives, operating structure and asset allocation.*

(2) **Asset Class Benchmarks.** *Individual asset class components shall be measured against appropriate indices and peer Universes as indicative of the characteristics the respective broad asset classes.*

~~(1)~~(3) **Manager Benchmarks.** *Individual managers shall be measured against appropriate benchmarks and peer universes as indicative of their individual asset class, strategy, style and risk characteristics.*

L. **Selection of Investment Managers.** The Administrator *upon advice of the* ~~or~~ Investment Advisor will prudently select appropriate investment managers to manage the assets of the Trust. Managers must meet the following criteria:

(1) The investment manager must be a bank, insurance company, or investment adviser as defined by the Investment Advisers Act of 1940.

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- (2) With respect to Trust assets invested in a mutual fund, the investment manager must provide historical quarterly performance data for the mutual fund compliant with SEC and FINRA standards.
- (3) The investment manager must provide historical quarterly performance data compliant with Global Investment Performance Standards, SEC, FINRA or industry recognized standards, as appropriate, calculated on a time-weighted basis, based on a composite of all fully discretionary accounts of similar investment style and reported net of fees.
- (4) The investment manager must provide detailed information on history of the firm, key personnel, key clients, fee schedule (including most favored nation clauses) and support personnel.
- (5) The investment manager must clearly articulate the investment strategy that will be followed and document that the strategy has been successfully adhered to over time.
- (6) The investment professionals making the investment decisions must have a minimum of three years of experience managing similar strategies either at their current or at previous firms.
- (7) The investment manager for portfolios other than Pooled Vehicles (see the following Guidelines for Portfolio Holdings) must confirm that it has received, understands and will adhere to this policy and any manager specific policies by signing a consent form.

M. **Guidelines for Portfolio Holdings.** The Administrator will make every effort to prudently select funds that follow the guidelines listed below.

- (1) Until the Trust reaches a size for which investment in separate accounts is viable and appropriate, the Trust will invest in pooled vehicles such as commingled and/or mutual funds. Pooled vehicles are regulated by either the Office of the Comptroller of the Currency (OCC) or the SEC and provide the Trust the ability to appropriately diversify its holdings in a cost-effective manner. Inherent within the Pooled Vehicle structure is the limitation on customizing the underlying security selection based on Trust specific economic, ~~social~~ or other screens. *Pooled vehicles normally operate according to guidelines outlined in a prospectus, offering memorandum or other applicable legal documents that normally may not be amended by the Administrator. As such, every effort will be made*

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to select pooled investments with guidelines that are in line with the guidelines outlined in this Policy.

- (2) **Direct Investments ~~by Advisor~~.** Every effort shall be made, to the extent practical, prudent and appropriate, to select investments that have investment objectives and policies that are consistent with this Policy (as outlined in the following sub-sections of the Guidelines for Portfolio Holdings). However, given the nature of the investments, it is recognized that there may be deviations between this Policy and the objectives of these investments.

- (3) **Limitations on Investment Manager's Portfolios.**

It is recognized that certain diversified pooled vehicles that otherwise adhere to the guidelines within this policy, may have prospectus or other legal guidelines that are not consistent with the guidelines of this policy. While every effort shall be made to select pooled vehicles with guidelines that adhere to this policy, certain deviations may occur

- (a) **Growth Assets.**

Equities. Not more than five percent or weighting in the relevant index (Russell 3000 Index for U.S. issues and MSCI All County World Index (ACWI) ex-U.S. for non-U.S. issues) of the total equity portfolio valued at market may be invested in the common stock of any one corporation. MSCI is a publicly traded company that is an independent provider of research-driven insights and tools for institutional investors. The MSCI ACWI is an index that captures all sources of equity returns in ~~23~~ *most of the major* developed and ~~23~~ emerging markets. Ownership of the shares of one company will not exceed two percent of those outstanding. Not more than 25 percent of stock valued at market may be held in any one sector, as defined by the Global Industry Classification Standard.

- (1) **Domestic Equities.** Other than these constraints, there are no quantitative guidelines suggested as to issues, industry or individual security diversification. However, prudent diversification standards should be developed and maintained by the investment manager(s).

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(2) **International Equities.** The overall non-U.S. equity allocation, if any, should include a diverse global mix that is comprised of the equity of companies from multiple countries, regions and sectors.

(b) **Income Assets.**

Fixed Income. Fixed income securities, other than U.S. Treasury Bonds/Note/Bills or Federal Agency issues, of any one issuer or obligation will not exceed five percent of the total bond portfolio at time of purchase. The five percent limitation does not apply to issues of the U.S. Treasury.

The overall weighted rating of the fixed income assets will be at least "A", based upon the ratings of such assets from a NRSRO.

For separately managed portfolios, If the credit quality of any one issue should drop below investment grade (as defined by at least two of the following three NRSROs – Fitch, Moody's and S&P), the investment manager should notify the Administrator and Investment Advisor immediately detailing a plan of action regarding the security

(c) **Other Assets (Growth and Income Assets).**

Other Assets (Alternatives). Alternatives may consist of non-traditional asset classes such as real estate and commodities, when deemed appropriate. -The total allocation to this category may not exceed 10 percent of the overall portfolio.

~~**Real Estate.** Consists of publicly traded Real Estate Investment Trust (REIT) securities and/or non-publicly traded private real estate and shall be diversified across a broad array of property types and geographic locations. Investments of this type are designed to provide a stable level of income combined with potential for price appreciation, particularly in periods of unexpected inflation. For private real estate, the illiquid, long-term nature should be considered. For purposes of asset allocation targets and limitations, publicly traded REITs will be categorized as~~

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~~“Other” under the Growth Assets category. Depending on the investment characteristics of a private real estate fund, the fund will be categorized as “Other” under either the Income Assets category, for example, a core real estate fund, or under the Growth Assets category, for example, an opportunistic real estate fund where capital gains are expected to make up a significant portion of the total return.~~

Portfolio Risk Hedging. Portfolio investments designed to hedge various risks including volatility risk, interest rate risk, etc. are allowed to the extent that the investments are not used for the sole purpose of leveraging Trust assets. One example of a hedge vehicle is an Exchange Traded Fund (“ETF”) which takes short positions.

(d) **Real Return Assets.**

***Real Estate.** Consists of publicly traded Real Estate Investment Trust (REIT) securities and/or non-publicly traded private real estate and shall be diversified across a broad array of property types and geographic locations. Investments of this type are designed to provide a stable level of income combined with potential for price appreciation, particularly in periods of unexpected inflation. For private real estate, the illiquid, long-term nature should be considered. For purposes of asset allocation targets and limitations, publicly traded REITs will be categorized as “Other” under the Growth Assets category. Depending on the investment characteristics of a private real estate fund, the fund will be categorized as “Other” under either the Income Assets category, for example, a core real estate fund, or under the Growth Assets category, for example, an opportunistic real estate fund where capital gains are expected to make up a significant portion of the total return.*

Inflation Hedge. Shall consist of pooled vehicles holding among other assets: TIPS, commodities or commodity contracts, index-linked derivative contracts, certain real estate or real property funds and the equity of companies in businesses thought to hedge inflation. Inflation hedge assets will be reported in the Real Return Assets category.

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~~If the credit quality of any one issue should drop below investment grade (as defined by at least two of the following three NRSROs—Fitch, Moody's and S&P), the investment manager should notify the Administrator and Investment Advisor immediately detailing a plan of action regarding the security.~~

(e) **Cash Equivalents.** Liquidity and temporary cash equivalent reserves will be invested according to the provisions of Code of Virginia Sections 2.2-4500 through 2.2-4518 applicable to liquid assets.

(f) **Additional Limitations.**

(1) **Prohibited Investments.** Except for purchase within authorized investments *and pooled funds that otherwise comply with this Policy*, the following investments and transactions are not authorized and will not be purchased:

- Letter stock and other unregistered securities,
- Direct commodities or commodity contracts,
- Short sales,
- Margin transactions,
- Private placements (with the exception of Rule 144A securities),
- Venture capital funds,
- Private equity,
- Hedge funds;
- Cryptocurrencies

Further, derivatives, options or futures for the sole purpose of portfolio leveraging (portfolio leveraging refers specifically to investments which can lead to losses in excess of 100 percent of initial invested capital) are also prohibited. Direct ownership of real estate, natural resource properties such as oil, gas or timber and the purchase of collectibles is also prohibited.

(2) **Safekeeping.** All securities will be held by a third-party custodian selected through a public procurement process by the Administrator, pursuant to contract approval, for safekeeping. The custodian

COMMISSION ADOPTED POLICY
Financial Policy



Adopted: May 26, 2009

Commission Revision:
Effective:

~~September 26, 2023~~ ~~October 22,~~
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will produce statements monthly listing the name and value of all assets held, and the dates and nature of all transactions. Assets of the Trust held as liquidity or investment reserves will, at all times, be invested in interest-bearing accounts. Investments and portfolio securities may not be loaned.

(g) Control Procedures.

- (1) Legal Requirements, Controls, and Investment Policy Statement Review.** At all times the Administrator will comply with all State, and federal reporting requirements. The Administrator will establish, maintain and review prudent internal controls for the assets of the Trust, including those used by HRSD staff, and the Trust's Investment Advisor and custodian. The Administrator will provide for annual review of the adequacy and compliance of these control procedures.
- (2)** The Administrator will review the Financial Policy no less than annually and provide documentation to HRSD when their review is complete. Specifically, the investment component of the Financial Policy will be reviewed when any one of the following occurs:
 - Change in investment advisors
 - Initial use of investment vehicles other than mutual funds
 - Significant change in Trust assets
 - Significant change in funded status
 - Significant change in market conditions
- (3) Review of Investment Objectives.** The Administrator will review annually the appropriateness of this Policy for achieving the Trust's stated objectives. It is not expected that the Policy will change frequently. In particular, short-term changes in the financial markets should not require an adjustment in the investment policy.
- (4) Review of Investment Performance.** The Administrator, on a quarterly basis, will review the

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Financial Policy



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total Trust investment performance, including all fees and costs and provide a report to the Commission. In addition, should investment functions be delegated, the Investment Advisor will be responsible for keeping the Administrator advised of any material change in investment strategy, investment managers, and other pertinent information potentially affecting performance of the Trust.

The Administrator will compare the investment results, including all fees and costs, on a quarterly basis to appropriate benchmarks, as well as to market index returns in both equity and debt markets [as outlined in this Policy](#). Examples of benchmarks and indexes that will be used include the:

- Russell 3000 Index for broad U.S. equity strategies;
- S&P 500 Index for large cap U.S. equities,
- Russell 2000 Index for small cap U.S. equities,
- MSCI ACWI ex-U.S. Index for broad based non-U.S. equity strategies;
- MSCI Europe, Australasia, and Far East (EAFE) Index for developed markets international equities,
- Barclays Capital Aggregate Bond Index for fixed income securities, and
- U.S. 91 Day Treasury Bill for cash equivalents
- Russell 3000 Index will be used to benchmark the U.S. equities portfolio;
- MSCI ACWI ex-U.S. Index will be used to benchmark the non-U.S. equities portfolio;
- Barclays U.S. Aggregate Bond Index will be used to benchmark the fixed income portfolio.

The categories "Other" will be benchmarked against appropriate indices depending on the specific characteristics of the strategies and funds used. The Administrator will also compare investment results with the Virginia Retirement System at the end of each fiscal year.

- (5) **Voting of Proxies.** The Administrator recognizes that proxies are a significant and valuable tool in

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corporate governance. The voting rights of individual stocks held in separate accounts or collective, common, or pooled funds will be exercised by the investment managers in accordance with their own proxy voting policies. The voting rights of funds will be exercised by the Investment Advisor.

Investment manager(s) are expected to be aware of corporate provisions that may adversely affect stockholdings, including but not limited to “golden parachutes,” “super majorities,” “poison pills,” “fair price” provisions, staggered boards of directors, and other tactics. Proxies should be vigorously voted with the interest of preserving or enhancing the security’s value.

The investment manager(s) of a commingled trust or mutual fund that holds the assets of the Trust along with assets of other funds with conflicting proxy voting policies must reconcile the conflicting policies to the extent possible, and, if necessary, to the extent legally permissible, vote the proxies to reflect the policies in proportion to each fund’s interest in the pooled fund.

- (6) **Review of Actuarial Data.** The Administrator will review the Trust’s actuarial data at least once every two years or more frequently if deemed necessary, to determine whether any substantive change in the investment policy is appropriate. The Administrator will provide for an actuarial valuation in compliance with GAAP, at least every two years.

(h) ***Cure period.*** *Investments that fall outside of the guidelines as prescribed herein shall be brought back into compliance, removed or rebalanced as appropriate to maintain compliance within 180 days of the date of non-compliance.*

4.4 ASSET CAPITALIZATION

4.4.1 Notifications. Accounting must be notified when any Capital Asset is placed in service or is in the process of disposal to ensure accurate asset records are kept.

A. **Cost.**

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- (1) Property, plant and equipment purchased, donated or constructed is recorded at historical cost as of the date acquired.
- (2) Cost includes capitalized interest borrowed to finance the construction of major capital additions.
- (3) Generally, for projects funded with both debt proceeds and other resources, it is HRSD's policy to use available debt proceeds to pay project expenditures prior to using its own resources.
- (4) Assets costing below the \$20,000 threshold amount are recorded as an expense in HRSD's financial statements.
- (5) Routine repairs and maintenance are expensed as incurred.
- (6) Vehicles, office furniture, equipment, software and intangible assets are reviewed monthly to determine whether the asset meets the capitalization threshold.
- (7) Assets that are constructed over a period of time, such as capital projects, treatment plants, buildings and facilities, and interceptor systems, are reviewed at completion to determine the appropriate capitalization value, which may include interest costs.

B. Useful Life.

- (1) Assets with an economic useful life of less than 60 months are required to be expensed for financial statement purposes, regardless of the acquisition or production cost.
- (2) Major repairs that substantially extend the life of an asset or expand its service capacity may be capitalized. For example, if a roof repair or coating is expected to extend the asset's useful life 20 years or beyond, the cost may be capitalized.

- (2) The service lives for Capital Assets are as follows:

Treatment plants, buildings and facilities	30 years
Interceptor systems	50 years
Office furniture, computer hardware and equipment	5-10 years

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Software and intangible assets	5-7 years
Automotive	5 years

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5.0 RESPONSIBILITY AND AUTHORITY

These financial policies were created after much study and evaluation and were specifically adopted by the Commission. They were developed subject to the requirements of HRSD's Trust Agreements, the VRA Master Financing Agreement, *the WIFIA Agreements*, the Enabling Act and the Code of Virginia. Any changes and exceptions to these policies will be made in writing and approved by the Commission.

HRSD's General Manager/*Chief Executive Officer* and ~~Director of Finance~~ *Chief Financial Officer* are the designated administrators of these policies. The ~~Director of Finance~~ *Chief Financial Officer* shall have the day-to-day responsibility and authority for implementing the provisions of these policies.

HRSD understands that changes in the capital markets or other unforeseen circumstances may from time to time produce situations that are not covered by the Policy and will require modifications or exceptions to achieve the Policy goals. In these cases, HRSD's management flexibility is appropriate provided specific authorization from the Commission is obtained. This Policy is not a contract or other obligation of HRSD, and no party shall have any right or standing to enforce any provision of this Policy. Failure to comply in any manner with this Policy will not result in any liability on the part of HRSD to any party.

HRSD, together with HRSD's financial advisor and legal counsel, will no less than every two years review the Policy and recommend appropriate changes.

Approved:

Stephen C. Rodriguez
Commission Chair

Date

Attest:

Jennifer L. Cascio
Commission Secretary

Date

AGENDA ITEM 7. – October 22, 2024

Subject: Diversity Procurement Report

Recommended Action: No action is required.

Brief: The goal of HRSD’s Diversity Procurement Policy is to promote business opportunities for small businesses and businesses owned by women, minorities and service-disabled veterans (SWaM). The objectives of the policy are to identify goods and services provided by SWaM businesses; increase competition through a diverse source of contractors and suppliers; and maintain and strengthen the overall competitiveness of HRSD procurements.

A few of the higher value contracts for commodities and services awarded to SWaM businesses this past fiscal year included engineering and construction services, electrical services, coating services, technology services and gravity flow monitoring, cleaning and inspections.

Overall total spend has increased in FY-2024 with the largest gains in Capital Improvement Program SWaM spend from the previous fiscal year. This increase is driven mostly by SWIFT related contracts and subcontractor payments.

The following is a comparison of fiscal years 2022 to 2024 on total spend for Operating Contracts; Corporate VISA Card Transactions; and Capital Improvement Program (CIP) Agreements and Contracts compared to total spend with SWaM businesses:

Three Year Comparison of Spend Activity with SWaM Contractors and Suppliers			
Payment Type	Percentage SWaM Spend of Total Spend		
	FY-2022	FY-2023	FY-2024
Operating	23%	18%	14%
Corporate VISA Card	6%	4%	6%
Capital Improvement Program	35%	36%	47%
<i>Total</i>	30%	32%	43%

A [summary](#) of activities and [transaction charts](#) for the period of July 1, 2023 through June 30, 2024 are attached.

HRSD DIVERSITY PROCUREMENT REPORT FISCAL YEAR 2024

PAYMENT TYPE	TOTAL OF ALL PAYMENT TRANSACTIONS ¹				TOTAL PAYMENTS MADE TO SWaM CONTRACTORS COMPARED TO HRSD's TOTAL PAYMENTS	
	ALL BUSINESS TYPES		SMALL, WOMEN-OWNED AND MINORITY-OWNED BUSINESSES (SWaM)			
	NO.	SPEND	NO.	SPEND	NO.	SPEND
OPERATING	6,594	\$64,126,481	784	\$9,009,291	12%	14%
CORPORATE VISA CARD	28,919	\$17,259,628	928	\$1,036,437	3%	6%
CAPITAL IMPROVEMENT PROGRAM	2,326	\$564,780,738	543	\$265,303,714 ²	23%	47%
TOTAL	37,839	\$646,166,848	2,255	\$275,349,443	6%	43%

¹Excludes expenses for utilities, rent, easements, municipal expenditures, personal services, professional development, etc.

²Includes payments of \$97,830,531 made to SWaM subcontractors, as reported by HRSD's prime contractors.

DIVERSITY PROCUREMENT PROGRAM ACTIVITIES

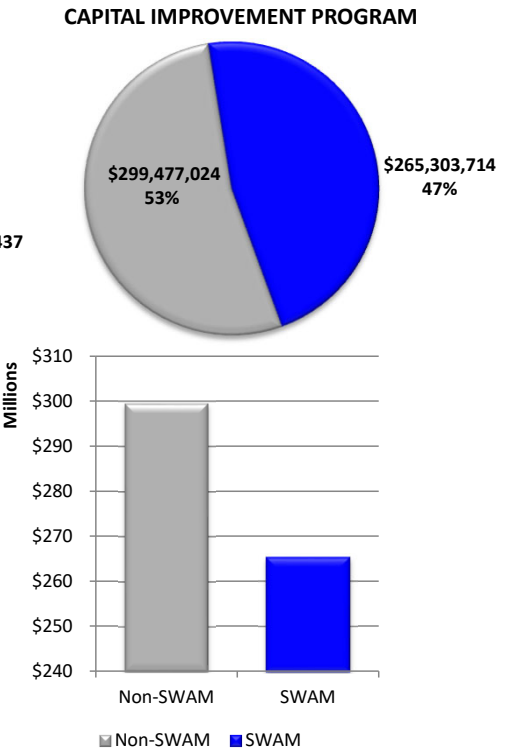
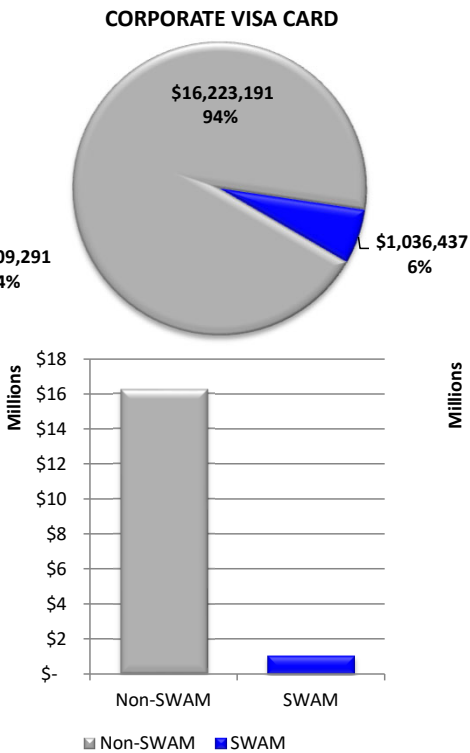
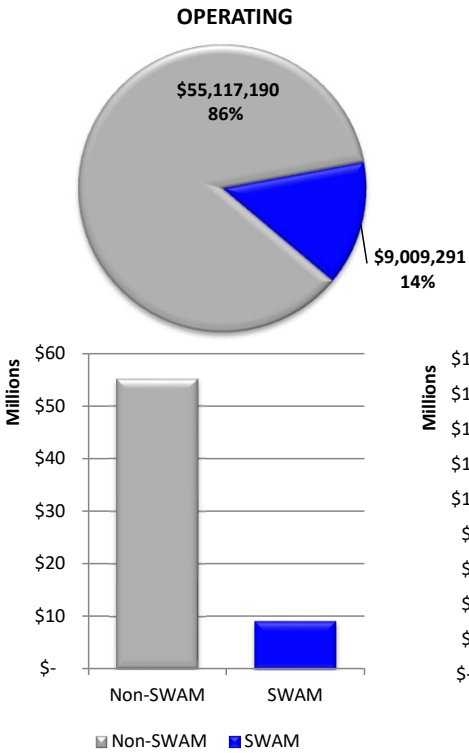
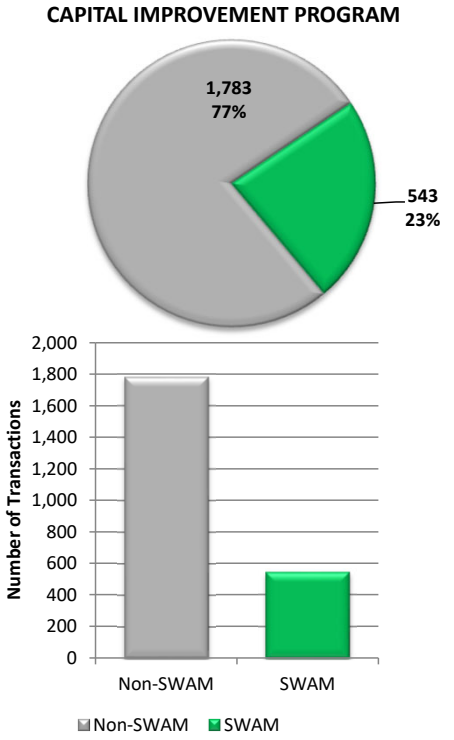
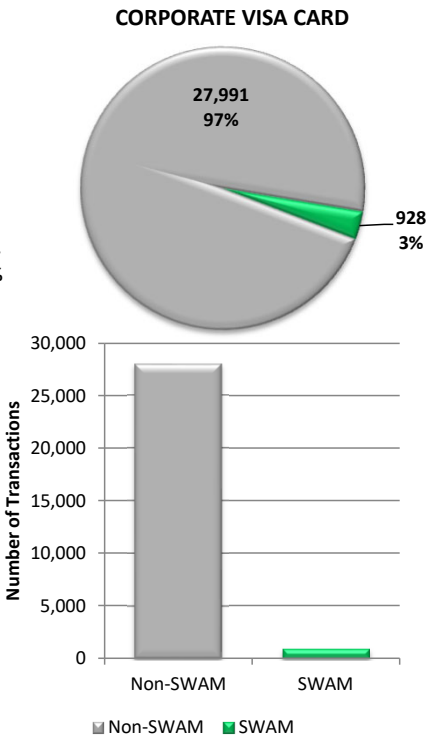
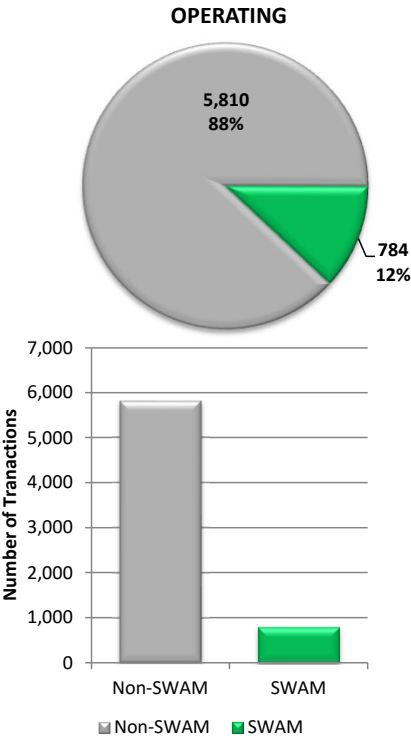
HRSD participated in several outreach opportunities throughout the year including:

- 2023 Christopher Newport University SWaMFair
- 2023 NIGP (The Institute for Public Procurement) Forum
- 2023 Virginia Beach Minority Business Council Expo
- SWIFT Industry Outreach Day 2024
- Virginia Water Environment Association WaterJAM 2023
- Water Environment Federation WEFTEC 2023

HRSD uses the Virginia Department of Purchases and Supply eProcurement Portal, eVA to advertise HRSD business opportunities to Suppliers, including SWaM businesses that have registered to do business with the Commonwealth of Virginia.

HRSD uses the Virginia Department of Small Business and Supplier Diversity (SBSD) as a resource to identify and locate SWaM businesses for HRSD bid opportunities. SBSD promotes access to the Commonwealth of Virginia's contracting opportunities by providing SWaM businesses a certification program, access to state-wide bid opportunities and other resources.

FY2024 Transaction Charts



AGENDA ITEM 8. – October 22, 2024

Subject: Adjustable Gas Siphon (MINIONS Big Bubble Mixing)
License Agreement

Recommended Action: Approve the terms and conditions of the exclusive license agreement with ARA Consult GmbH and NEWhub Holding Company for the commercialization of the adjustable gas siphon (MINIONS big bubble mixing) line of technologies as developed through the family of patents shown in the agreement, 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.

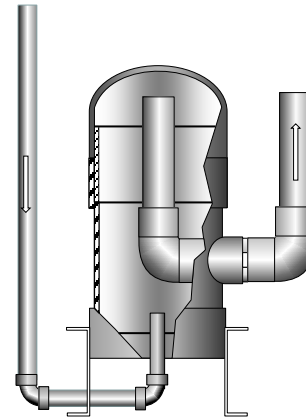
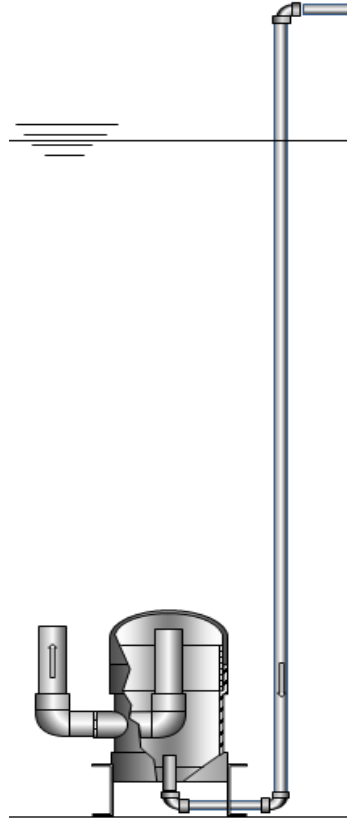
Brief: Over the period from 2017 through 2018, HRSD Treatment Process Engineer, Mike Parsons, invented, developed, and first deployed a novel big bubble mixing system at the Williamsburg Treatment Plant. This technology is simple, cost-effective, adaptable, and easily deployed. The most common version of the HRSD big bubble mixer was named [MINIONS](#) by several plant staff at York River Treatment plant, and the name stuck. Since the original development, MINIONS mixers have been installed in various iterations and applications at six HRSD treatment plants, upgrades to include MINIONS are in planning stages at several other plants, and MINIONS are being installed as part of several capital projects.

Other utilities and several consulting engineering firms have been very interested in this technology, but it is hard for them to access, because no vendors are producing this technology, and construction contractors have been hesitant to fabricate them as part of a project. Some engineering firms are uncertain about designing and specifying them without vendor engineering input. With so much interest in MINIONS and with several novel aspects and modifications of the technology in development, HRSD staff decided to file a provisional patent application. This is an important aspect of commercialization, and technology providers can then offer MINIONS to other utilities through a traditional procurement and installation process.

With this [license agreement](#), ARA Consult GmbH and NEWhub Holding Company are authorized to develop partnerships to sublicense this technology to a worldwide network of technology providers. For North American sales, the royalty payments will be directed to The Water Research Foundation to support research efforts on topics relevant the water sector. For royalties obtained from projects and technology providers outside of North America, as well as all sublicense consideration, the payments will be made directly to HRSD. This approach is consistent with the previous commercialization of the AvN, inDENSE, and Anammox Biofilm lines of technologies. The North American sublicensee will be World Water Works (WWW). WWW will also have a sublicense to provide this technology in several other parts of the world as well.

The license agreement has been developed working with the HRSD Intellectual Property attorneys and purposely do not obligate HRSD in any way. The agreements also shield HRSD from liability associated with the technology not performing as expected.

HRSD MINIONs Big Bubble Mixer



HRSD

ADJUSTABLE GAS SIPHON EXCLUSIVE PATENT LICENSE AGREEMENT

This Adjustable Gas Siphon Exclusive Patent License Agreement (“**Agreement**”) is made and entered into effective as of October 22, 2024 (“**Effective Date**”) by and between ARA Consult GmbH (“**ARA**”), an Austrian company, NEWhub Holding Company (“**NEWhub**”), a Virginia corporation, and the Hampton Roads Sanitation District (“**HRSD**”), a political subdivision of the Commonwealth of Virginia. ARA, NEWhub, and HRSD, each are referred to in this Agreement individually as a “**Party**” and collectively as the “**Parties**.”

RECITALS

WHEREAS, HRSD desires to serve its industry through services and technologies for the benefit of water quality, future technology development, and global utility financial and resource sustainability;

WHEREAS, HRSD is the assignee of the Patents (as defined below), possessing all rights, title, and interest in and to the Patents, including all discoveries and inventions described therein;

WHEREAS, HRSD desires to have the Patents developed and commercialized to benefit the public and is willing to grant a license hereunder to the extent of the Field (as defined below) and the Territory (as defined below);

WHEREAS, ARA and NEWhub are each a provider of certain services and goods relating to design, development, construction, and operation of water and wastewater treatment plants, and ARA and NEWhub have represented to HRSD, to induce HRSD to enter into this Agreement, that ARA and NEWhub will each commit itself to a thorough, vigorous and diligent program of exploiting the Patents so that public and non-public utilization will result therefrom; and

WHEREAS, ARA and NEWhub each desire to obtain an exclusive license under the Patents upon the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

ARTICLE ONE (DEFINITIONS)

1.1 Definitions. In this Agreement, the following terms have the meanings set forth below, which will be equally applicable to both the singular and the plural form, except where indicated otherwise:

“Affiliate”	means, with respect to a Party, any corporation, firm, partnership or other entity that directly or indirectly controls, is controlled by, or is under common control with such Party. A business entity or Party will be regarded as in control of another business entity if it owns, or directly or indirectly controls at least fifty percent (50%) (or such
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lesser percentage which is the maximum allowed to be owned by a foreign entity in a particular jurisdiction) of the voting stock, income interest or other ownership interest of the other entity, or if it directly or indirectly possesses the power to direct or cause the direction of the management and policies of the other entity by any lawful means whatsoever.

“Agreement”	has the meaning set forth in the introductory paragraph, and includes all exhibits, attachments, schedules, addenda and other appendices (all of which are incorporated herein by reference) and any amendments to any of the foregoing made as provided herein or therein.
“ARA”	has the meaning set forth in the introductory paragraph.
“Coinventor”	means each of Chandler Johnson, Sudhir Murthy, Bernhard Wett, or Eugenio Giraldo.
“Effective Date”	has the meaning set forth in the introductory paragraph.
“Extra-Territory”	means the entire world except for and excluding Europe and North America.
“Field”	means all processes and technologies for treating water and wastewater that use adjustable gas siphon for mixing in any tank, vessel, container, and natural or manmade structure intended to treat or remove a pollutant.
“HRSD”	has the meaning set forth in the introductory paragraph.
“Indemnitees”	has the meaning set forth in <u>Section 8.1</u> .
“Licensed Product”	means any and all devices, products and processes that fall within the Field and the Territory and that are covered by, used in, or include subject matter that (a) but for the license granted pursuant to this Agreement, would constitute a misappropriation, or infringe, or contribute to or induce the infringement of a claim of any issued, unexpired patent in the Patents, or (b) is covered by a claim in a pending patent application in the Patents. “Covered by a claim in a pending patent application” means that use, practice, manufacture, sale, or offer for sale or import into the Territory of a device, product, or process that would, but for the license granted pursuant to this Agreement, constitute infringement, contributory infringement, or inducement of infringement, of such claim if such claim were issued.
“Licensee”	means (i) both ARA and NEWhub as co-exclusive licensees in the Field and the Extra-Territory and (ii) ARA alone as exclusive

licensee in the Field and all of Europe, and (iii) NEWhub alone as exclusive licensee in the Field and all of North America. The Extra-Territory will be actively managed in a manner to allow either Licensee to license the Licensed Product in the Extra-Territory in a manner that such Licensee may pursue and manage following written notification by such Licensee to the other Licensee.

“Licensor”	means HRSD.
“NEWhub”	has the meaning set forth in the introductory paragraph.
“North America”	means the United States and its territories and Canada.
“Notice Date”	has the meaning set forth in <u>Section 13.3(a)</u> .
“Patents”	means the patents and applications for patents listed in <u>Appendix A</u> (Adjustable Gas Siphon Patents), including all divisions, continuations, continuations-in-part, renewals, substitutes, extensions, reexaminations, and reissues thereof, and including all inventions and discoveries described therein.
“Patent Challenge”	means a challenge to the validity, patentability, enforceability or non-infringement of any of the Patents or otherwise opposing any of the Patents.
“Party”	has the meaning set forth in the introductory paragraph.
“Parties”	has the meaning set forth in the introductory paragraph.
“Person”	means an individual, corporation, partnership, joint venture, limited liability company, governmental authority, unincorporated organization, trust, association, or other entity.
“Reimbursable Expenses”	has the meaning set forth in <u>Article Four</u> .
“Remedy”	has the meaning set forth in <u>Section 7.4</u> .
“Reporting Period”	means annually with the period of time beginning on January 1 st of each calendar year and ending on December 31 st of such calendar year.
“Reserve Account”	has the meaning set forth in <u>Article Four</u> .
“Reserve Amount”	has the meaning set forth in <u>Article Four</u> .
“Royalties”	has the meaning set forth in <u>Article Four</u> .
“Sell, Sale or Sold”	means any performance, service, maintenance, provision, transfer or other disposition of Licensed Product for which consideration is

received by Licensee, Sublicensor or Sublicensee. A Sale will be deemed completed at the time such consideration is received by Licensee, Sublicensor or Sublicensee.

- “Sublicense Agreement”** means any agreement or arrangement pursuant to which Licensee or Sublicensor grants to any Person any rights to use any of the Patents or any other rights or licenses granted under this Agreement.
- “Sublicensee Breach”** has the meaning set forth in Section 2.3(f).
- “Sublicense Consideration”** means any revenue or payment, other than Royalties or Remedy, received by the Licensee from any Person in exchange for a sublicense under the Patents. For avoidance of doubt, Sublicense Consideration does not include any Royalties or Remedy, or revenue or payment received as consideration unrelated to any sublicense under the Patents.
- “Sublicense Term”** means the period of time during which a Sublicense Agreement is effective, beginning with the effective date and ending upon the date of termination of such Sublicense Agreement.
- “Sublicensee”** means any sublicensee of the rights granted Licensee under Section 2.1.
- “Sublicensor”** means a Sublicensee that is granted a right to grant to a Person a further sublicense under the Patents.
- “Term”** has the meaning set forth in Section 12.1.
- “Territory”** means (i) all of Europe for ARA alone, (ii) all of North America for NEWhub alone, and (iii) the Extra-Territory for ARA and NEWhub together.
- “WRF”** means The Water Research Foundation, a 501(c)(3) nonprofit research organization.
- “WRF Fund”** means that research fund or account established by Licensor and WRF.

ARTICLE TWO (GRANT OF RIGHTS)

- 2.1 License Grant. Subject to the terms of this Agreement, Licensor hereby grants to:
- (a) ARA and NEWhub jointly, as co-exclusive licensees in the Field and to the extent of the Extra-Territory, a royalty-bearing license for the Term under the Patents to (i) make, have made, use, sell, offer to sell, and import Licensed Products, (ii) sue

for present and future damages, and (iii) collect damages for infringement of the Patents; and

- (b) ARA, as exclusive licensee in Europe and to the extent of the Field, a royalty-bearing license for the Term under the Patents to (i) make, have made, use, sell, offer to sell, and import Licensed Products, (ii) sue for present and future damages, and (iii) collect damages for infringement of the Patents; and
- (c) NEWhub, as exclusive licensee in North America and to the extent of the Field, a royalty-bearing license for the Term under the Patents to (i) make, have made, use, sell, offer to sell, and import Licensed Products, (ii) sue for present and future damages, and (iii) collect damages for infringement of the Patents.

The license granted hereunder does not include the right to sue or collect for damages prior to the Effective Date.

2.2 Exclusivity. Except as otherwise provided for in this Agreement, the license granted to Licensee under the Patents in Section 2.1 is exclusive and nontransferable except to the extent permitted under Section 10.1.

2.3 Sublicenses. Licensee has the right to grant sublicenses (which right will include the right to grant further sublicenses through multiple tiers) under any or all of the rights and licenses granted in Section 2.1 to any Person; provided that any and all granted sublicenses and Sublicense Agreements under the Patents are consistent with the terms of this Agreement, and are subject to the following:

- (a) Each Sublicense Agreement will include a Sublicense Term and will include terms and conditions sufficient to enable Licensee to comply with this Agreement. Each Sublicense Agreement will require that in the event that any Person granted a sublicense under such Sublicense Agreement, or any Affiliate of such Person, brings a Patent Challenge, or assists another party in bringing a Patent Challenge then Licensee may terminate such Sublicense Agreement. For the avoidance of doubt, no license or sublicense will exceed the scope of the rights and licenses granted to Licensee under Section 2.1 of the Agreement.
- (b) All sublicenses granted under the licenses granted to Licensee hereunder must be in writing and be subject to and consistent with the applicable terms and conditions of this Agreement. Any sublicense granted by a Sublicensor to any Person under this Section 2.3 will prohibit such Person from further sublicensing without the prior written consent of such Sublicensor.
- (c) Each Sublicense Agreement that grants to a Sublicensee a sublicense with the right to grant further sublicenses under the Patents will require such Sublicensee to provide to Licensee or Sublicensor, whichever is applicable under such Sublicense Agreement: (i) written notice prior to granting a sublicense under the Patents to any Person; and (ii) within fifteen (15) days of execution, a copy of the fully executed written Sublicense Agreement granting such sublicense to such Person(s).

- (d) Each Sublicense Agreement will set royalties, royalty fees or other payment requirements that, calculated on an equivalent or comparable basis, are not less than the Royalties in Article Four of this Agreement.
- (e) Licensee will keep Licensor informed of each sublicense granted to a Person, specifying the name of the sublicensee and the material terms (including duration) of the sublicense. At the request of Licensor, Licensee will provide, within thirty (30) days of such request, a fully executed, complete, and accurate copy written in the English language of each Sublicense Agreement. Receipt of such Sublicense Agreement by Licensor will not constitute a waiver of any of Licensor's rights or Licensee's obligations under this Agreement.
- (f) Notwithstanding any Sublicense Agreement, Licensee will remain primarily liable to Licensor for all of the Licensee's duties and obligations contained in this Agreement. Any act or omission of a Sublicensor or Sublicensee that would be a material breach of this Agreement if performed by Licensee will be deemed to be a material breach by Licensee of this Agreement. Each Sublicense Agreement will contain (i) a right of termination by Licensee or Sublicensor, as applicable, in the event that the sublicensee materially breaches the payment obligations under such Sublicense Agreement (a "**Sublicensee Breach**") and, (ii) in the event of a Sublicensee Breach, and if after a reasonable opportunity to cure as provided in any such Sublicense Agreement, such sublicensee fails to cure such Sublicensee Breach, then the Licensee or Sublicensor, as applicable, will terminate the Sublicense Agreement.

2.4 Retained Rights. Licensor reserves and retains the right (and the rights granted to Licensee in this Agreement will be limited accordingly), and Licensee hereby grants to Licensor a fully-paid-up royalty-free nonexclusive nontransferable nonassignable license under the Patents to make, have made, import, have imported, use and have used Licensed Products (i) for operation of treatment plants belonging to, operated by, or operated under direct guidance of HRSD and (ii) to grant royalty-free nonexclusive nontransferable nonassignable licenses to any of the foregoing rights to educational and non-profit institutions for educational and research purposes, including without limitation, any sponsored research performed for or on behalf of commercial entities and including publication and other communication of any research results. Except for Royalties and Sublicense Consideration received under this Agreement, Licensor will not receive any payment or consideration for any license granted under the Patents.

2.5 Use of Licensor Name. In publicizing anything made, used, offered for sale, sold, or imported under this Agreement, Licensee may disclose that part of the sales proceeds will go to the WRF Fund to be used in support of clean water initiatives. Any other use of the name of HRSD and references to any organization related to HRSD requires the prior written approval of Licensor.

2.6 No Additional Rights. Nothing in this Agreement will be construed to confer any rights upon Licensee by implication, estoppel, or otherwise as to any intellectual property (including, patents, trademarks, copyrights, trade secrets and know-how) of HRSD other than the Patents.

ARTICLE THREE (LICENSEE DILIGENCE OBLIGATIONS)

3.1 Diligence Requirements. Licensee will use diligent efforts to develop and commercialize Licensed Products in the Territory. In order to induce Licensor to enter into this Agreement, Licensee represents and covenants to Licensor that it has the capacity and expertise to duly observe and perform its obligations under this Agreement. Licensee accepts its appointment as exclusive licensee under the Patents to the extent of the Field and the Territory and will observe all the terms, conditions and provisions, and perform all of the obligations contained in this Agreement. In the event that Licensor determines that Licensee has failed to fulfill any of the material obligations under this Section 3.1, then such failure may be treated as a material breach in accordance with Section 12.4(b).

ARTICLE FOUR (SALES TARGET, ROYALTIES AND PAYMENT TERMS)

This Agreement includes Appendix B (Royalties and Payment Terms), which is hereby incorporated herein in its entirety in this Article Four. The Parties will meet within twelve (12) months of the Effective Date and annually thereafter to review and assess sales targets, royalty rates, royalty base(s), and royalty structure and to determine whether to modify this Agreement, including Appendix B.

ARTICLE FIVE (REPORTS AND RECORDS)

5.1 Frequency of Reports.

- (a) Before First Commercial Sale. Prior to the first commercial Sale of any Licensed Product, Licensee will deliver reports to Licensor biannually, within thirty (30) days of the end of each Reporting Period, containing information concerning the immediately preceding Reporting Period.
- (b) Upon First Commercial Sale. Licensee will report to Licensor the date of first commercial Sale of a Licensed Product within thirty (30) days of occurrence in each country.
- (c) After First Commercial Sale. After the first commercial Sale of a Licensed Product, Licensee will deliver reports to Licensor within thirty (30) days of the end of each Reporting Period, containing information concerning the immediately preceding Reporting Period.

5.2 Content of Reports and Payments. Each report delivered by Licensee to Licensor will contain at least the following information for the immediately preceding Reporting Period:

- (a) the number of Licensed Products Sold in each country (including the total number of Licensed Products Sold by Licensee, Sublicensors and Sublicensees), and, if applicable, the number of Licensed Products used by Licensee, Sublicensors and Sublicensees in the provision of services in each country;

- (b) the number of gas discharge outlets sold for each Licensed Product;
- (c) total Royalties payable on Sales for Licensed Products in U.S. dollars, together with the exchange rates used for conversion; and
- (d) the number of Sublicense Agreements entered into for the Patents and Licensed Products.

If no amounts are due to for any Reporting Period, the report will so state.

5.3 Records. Licensee will maintain, and will cause its Affiliates and Sublicensees to maintain, complete and accurate records relating to the rights and obligations under this Agreement and any amounts payable to Licensors in relation to this Agreement, which records will contain sufficient information to permit Licensors to confirm the accuracy of any reports delivered to Licensors and compliance in other respects with this Agreement. Licensee will retain such records for at least five (5) years following the end of the calendar year to which they pertain, during which time Licensors, or Licensors's appointed agent, will have the right, at Licensors's expense, to inspect such records during normal business hours to verify any reports and payments made or compliance in other respects under this Agreement. In the event that any audit performed under this Section 5.3 reveals an underpayment in excess of five percent (5%), Licensee will bear the full cost of such audit and will remit any amounts due to Licensors within thirty (30) days of receiving notice thereof from Licensors.

ARTICLE SIX (MANAGEMENT OF PATENTS)

6.1 Prosecution of Patents. Licensors will have the sole and exclusive right to file, prosecute, and maintain the Patents, and to determine whether or not, and where, to file patent applications, to abandon the prosecution of any patents or patent applications, or to discontinue the maintenance of any patents or patent applications. Licensors will notify Licensee within sixty (60) days of any patent being granted that includes the Patents. Licensors will notify Licensee sixty (60) days prior to abandoning any patent application in the Patents or discontinuing the maintenance of any patent in the Patents. Licensee may, at Licensee's sole option and expense, choose to assume responsibility for maintaining and paying all expenses (including, but not limited to, all professional fees and costs, all government fees and costs, and all administrative costs) associated with prosecuting and maintaining such patent application or patent in the applicable Territory for the remaining duration of this Agreement; provided that Licensee gives Licensors written notice within fifteen (15) days of receiving notice of Licensors's intent to abandon such application or discontinue maintenance of such patent. All patent applications, patents and any future improvements associated with the Patents will be held in the name of Licensors. Licensors will have sole responsibility for retaining and instructing patent counsel.

6.2 Fees/Costs Related to Patents. Unless otherwise agreed to in writing, Licensors agrees to pay patent counsel, including all reasonable expenses incurred in connection with searching, filing, prosecuting and maintaining U.S. and foreign patent applications and patents defined as Patents, as well as any continuations, continuations-in-part, divisions, reissues, reexaminations, renewals or substituted applications thereof. Licensors will pay all patent expenses associated with the Patents for those territories Licensors determines are economically reasonable

to pursue patent protection, for as long as this Agreement is effective, regardless of whether such expenses are incurred with U.S. or with foreign patent filings.

ARTICLE SEVEN (INFRINGEMENT)

7.1 **Notification of Infringement.** Each Party agrees to provide written notice to the other parties promptly after becoming aware of any infringement of the Patents in the Field in the Territory.

7.2 **Right to Prosecute Infringements.**

- (a) **Licensee Right to Prosecute.** So long as Licensee is the exclusive licensee of the Patents in the Field in the Territory, Licensee, to the extent permitted by law, will have the right, under its own control and at its own expense, to prosecute any infringement of the Patents in the Field in the Territory, subject to Section 7.4. For the avoidance of doubt, for purposes of this Article Seven, the retention or exercise of any rights by Licensor pursuant to Section 2.4 will not preclude Licensee from being considered an exclusive licensee. If required by law, Licensor may permit any action under this Section 7.2 to be brought in its name, including being joined as party-plaintiff, provided that Licensee will hold Licensor harmless from, and indemnify Licensor against, any costs, expenses, or liability that Licensor incurs in connection with such action. Licensee's selection of counsel (to represent Licensee and Licensor in such an action) will be subject to Licensor's approval, which will not be unreasonably withheld. Prior to commencing any such action, Licensee will consult with Licensor and will consider the views of Licensor regarding the advisability of the proposed action and its effect on the public interest.
- (b) **Licensor Right to Prosecute.** In the event that Licensee is unsuccessful in persuading the alleged infringer to desist or fails to have initiated an infringement action within six (6) months after Licensee first becomes aware of the basis for such action, Licensor will have the right, and the Parties will grant all rights and licenses to Licensor necessary for Licensor to prosecute such infringement under the control and at the expense of the Licensor, and any recovery obtained will belong solely to Licensor.

7.3 **Declaratory Judgment Actions.** In the event that a Patent Challenge is brought against Licensor or any Affiliate of Licensor, or relating in any way to the Patents, by any Person, Licensor, at its sole option, will have the right within twenty (20) days after commencement of such action to take over the sole defense of the action at Licensor's own expense and the Parties will grant all rights and licenses to Licensor necessary to, at Licensor's sole discretion, carry out such defense under Licensor's sole control and at Licensor's sole expense, and any recovery obtained will belong solely to Licensor. If Licensor does not exercise this right, Licensee may take over the sole defense of the action at Licensee's sole expense as exclusive licensee of the Patents, subject to Section 7.4.

7.4 Recovery. Any recovery obtained in an action brought by Licensee under Section 7.2 or Section 7.3 (“**Remedy**”) will be distributed as follows: (i) each Party will be reimbursed for any expenses incurred in the action, (ii) as to ordinary damages, Licensee will receive an amount equal to its lost profits or a reasonable royalty on the infringing sales, or whichever measure of damages the court will have applied, and Licensee will pay to Licensor based upon such amount a reasonable approximation of the Royalties and other amounts that Licensee would have paid under this Agreement if Licensee had sold the infringing products, processes and services rather than the infringer, and (iii) as to special or punitive damages, the Parties will share in any award according to the percentages set forth in the royalty distribution in Article Four.

7.5 Cooperation. For any action under this Article Seven that is controlled by Licensor, Licensee agrees to cooperate with Licensor in such action, provided that Licensor reimburses Licensee for any costs and expenses incurred by Licensee in connection with providing such assistance. For any action under this Article Seven that is controlled by Licensee, Licensor agrees to cooperate with Licensee in such action, provided Licensee reimburses Licensor for any costs and expenses incurred by Licensor with providing such assistance.

7.6 Right to Sublicense. So long as Licensee is the exclusive licensee of the Patents in the Field in the Territory, Licensee will have the right to sublicense any alleged infringer in the Field in the Territory for use of the Patents in accordance with the terms and conditions of this Agreement relating to sublicenses. Any upfront fees and other revenues to Licensee pursuant to such sublicense will be treated as Sublicense Consideration under Article Four.

ARTICLE EIGHT (INDEMNIFICATION)

8.1 Indemnification by Licensee. Licensee will indemnify, defend, and hold harmless Licensor and its officers, directors, agents, employees and Affiliates (the “**Indemnitees**”) at Licensee’s expense, from and against any and all claims, demands, actions, costs, expenses, liabilities, judgments, causes of action, proceedings, suits, losses and damages of any nature, which are threatened or brought against, or are suffered or incurred by Indemnitees or any such person resulting from any acts or omissions of Licensee, Licensee’s Affiliates or Sublicensees relating to this Agreement.

8.2 Procedures. Licensor agrees to provide Licensee with written notice of any claim, suit, action, demand, or judgment for which indemnification is sought under this Agreement. Licensee agrees, at its own expense, to provide attorneys reasonably acceptable to Licensor to defend against any such claim. The Indemnitees will cooperate fully with Licensee in such defense and will permit Licensee to conduct and control such defense and the disposition of such claim, suit, or action (including all decisions relative to litigation, appeal, and settlement). Licensee agrees to keep Licensor informed of the progress in the defense and disposition of such claim and to consult with Licensor with regard to any proposed settlement.

ARTICLE NINE (REPRESENTATIONS AND WARRANTIES)

9.1 LICENSOR MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE PATENTS OR THE LICENSED PRODUCTS, AND HEREBY

DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF LICENSOR OR THIRD PARTIES, VALIDITY, ENFORCEABILITY AND SCOPE OF PATENTS, WHETHER ISSUED OR PENDING, AND THE ABSENCE OF LATENT OR OTHER DEFECTS, WHETHER OR NOT DISCOVERABLE.

9.2 IN NO EVENT WILL LICENSOR OR ITS OFFICERS, DIRECTORS, AGENTS, EMPLOYEES, OR AFFILIATES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ECONOMIC DAMAGES OR INJURY TO PROPERTY AND LOST PROFITS, REGARDLESS OF WHETHER LICENSOR WILL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT WILL KNOW OF THE POSSIBILITY OF THE FOREGOING.

ARTICLE TEN (ASSIGNMENT)

10.1 This Agreement is specific to Licensee and no rights or obligations may be assigned by Licensee without the prior written consent of Licensor. Licensee may not assign or otherwise transfer this Agreement or the licenses granted to Licensee herein, except to Licensee's Affiliates. Licensee may not delegate any of its rights, duties, or obligations under this Agreement, including any transfer due to the merger, consolidation, or sale of substantially all of its assets, to any party without the prior written consent of Licensor, which will not be unreasonably withheld. Any attempted or purported assignment or other transfer not complying with the foregoing will be null and void. This Agreement will inure to the benefit of the successors and assigns of Licensor and any successors and permitted assigns of Licensee, and will be binding upon the successors and assigns of the Parties.

ARTICLE ELEVEN (GENERAL COMPLIANCE WITH LAWS)

11.1 Compliance with Laws. Licensee will use reasonable commercial efforts to comply with all commercially material local, state, federal, and international laws and regulations relating to the development, manufacture, use, and sale of Licensed Products.

11.2 Patent Marking. To the extent commercially feasible and consistent with prevailing business practices, Licensee will mark, and will cause its Affiliates and Sublicensees to mark, all Licensed Products that are manufactured or sold under this Agreement with the number of each issued patent under the Patents that applies to such Licensed Product.

11.3 Governmental Approval or Registration. If this Agreement or any associated transaction is required by the law of any nation to be either approved or registered with any governmental agency, Licensee will assume all legal obligations to do so. Licensee will notify Licensor if Licensee becomes aware that this Agreement is subject to a United States or foreign government reporting or approval requirement. Licensee will make all necessary filings and pay all costs, including fees, penalties, and all other out-of-pocket costs, associated with such reporting or approval process.

ARTICLE TWELVE (TERM AND TERMINATION)

12.1 Term. This Agreement will be effective on the Effective Date and will continue and remain in effect until the expiration or abandonment of all issued patents and filed patent applications within the Patents, unless earlier terminated in accordance with the provisions of this Agreement (the “**Term**”).

12.2 Cessation of Business. If Licensee ceases to carry on its business related to this Agreement, Licensor will have the right to terminate this Agreement immediately upon written notice to Licensee; provided that all Sublicense Agreements will be assigned to and assumed by Licensor.

12.3 Termination upon Bankruptcy. Upon the filing of a petition in bankruptcy, insolvency or reorganization against or by Licensee, or Licensee making an assignment for the benefit of its creditors, or Licensee going into receivership or otherwise becoming insolvent, this Agreement may be terminated by Licensor by giving written notice of termination to Licensee, such termination immediately effective upon the giving of such notice of termination; provided that all Sublicense Agreements will be assigned to and assumed by Licensor.

12.4 Termination for Default.

- (a) Nonpayment. In the event Licensee fails to pay any amounts due and payable to Licensor hereunder, and fails to make such payments within thirty (30) days after receiving written notice of such failure, Licensor may terminate this Agreement immediately upon written notice to Licensee.
- (b) Material Breach. In the event Licensee commits material breach of its obligations under this Agreement, except for breach as described in Section 12.5(a), and fails to cure that breach within thirty (30) days after receiving written notice thereof, Licensor may terminate this Agreement immediately upon written notice to Licensee.

12.5 Termination as a Consequence of Patent Challenge.

- (a) By Licensee. If Licensee or any of its Affiliates brings a Patent Challenge or assists others in bringing a Patent Challenge, then Licensor may immediately terminate this Agreement.
- (b) By Sublicensee. If a Sublicensee brings a Patent Challenge or assists another party in bringing a Patent Challenge, then Licensor may send a written demand to Licensee to terminate such sublicense. If such Patent Challenge is not terminated, or if Licensee fails to so terminate such sublicense within thirty (30) days after Licensor’ demand, Licensor may immediately terminate this Agreement.

12.6 Disputes regarding Termination. If Licensee disputes any termination by Licensor under this Article Twelve, Licensee will notify Licensor in writing of the nature of such dispute and the proposed manner in which to resolve the dispute within ten (10) days of receipt of

notification of breach or notification of termination by Licensor, whichever is sooner. If the parties do not resolve such dispute within ten (10) days of such notification, then Licensee will be required to initiate the dispute resolution procedures outlined in Section 13.3 immediately. If Licensee does not do so, Licensee will be considered to have waived its rights to dispute the termination.

12.7 Effect of Termination.

- (a) Survival. Expiration or termination of this Agreement will not relieve the Parties of any obligations accruing before the effective date of expiration or termination. Any right, obligation, or required performance of the Parties under this Agreement that by its express terms or nature and context is intended to survive expiration or termination of this Agreement will survive any such expiration or termination, including the rights, obligations or required performance of the Parties set forth in the following provisions of the Agreement:
 - Article 1 (Definitions);
 - Article 8 (Indemnification);
 - Article 9 (Representations and Warranties);
 - Article 13 (Dispute Resolution);
 - Article 14 (Miscellaneous);
 - Section 5.2 (Content of Reports and Payments);
 - Section 5.3 (Records);
 - Section 11.1 (Compliance With Laws);
 - Section 12.6 (Disputes Regarding Termination); and
 - Section 12.7 (Effect of Termination).
- (b) Pre-termination Obligations. In no event will termination of this Agreement release Licensee, its Affiliates or Sublicensees from the obligation to pay any amounts that became due on or before the effective date of termination.
- (c) Reversion of rights. In case of termination of this Agreement the Patents will revert to the Licensor, including all rights, titles and interests.
- (d) Reserve Amount Distribution. Upon termination of this Agreement the Reserve Amount together with all interest will be paid to Licensor, within twelve months, pursuant to the royalty distribution in Article Four.
- (e) Disposition of Licensed Products upon Termination. Termination of this Agreement will be without prejudice to any rights or obligations that accrued to the benefit of any Party prior to such termination. Upon termination of this Agreement, and for a period of twelve months after such termination, Licensee may complete the making of any partially made Licensed Products and may sell, offer to sell, import, or export any Licensed Products that were in possession of Licensee or a sublicensee on the

effective date of such termination; provided that all Sales will be subject to the terms of this Agreement including, but not limited to, the payment of Royalties and Sublicense Consideration.

ARTICLE THIRTEEN (DISPUTE RESOLUTION)

13.1 **Mandatory Procedures.** Any dispute arising out of or relating to this Agreement will be resolved solely by means of the procedures set forth in this Article Thirteen, and such procedures constitute legally binding obligations on the Parties. If any Party fails to observe the procedures of this Article Thirteen, as may be modified by the Parties' written agreement, the other parties may bring an action for specific performance of these procedures in any court of competent jurisdiction.

13.2 **Equitable Remedies.** Although the procedures specified in this Article Thirteen are the sole and exclusive procedures for the resolution of disputes arising out of or relating to this Agreement, a Party may seek a preliminary injunction or other provisional equitable relief if, in its reasonable judgment, such action is necessary to avoid irreparable harm to itself or to preserve its rights under this Agreement.

13.3 **Dispute Resolution Procedures.**

- (a) **Mediation.** In the event of any dispute arising out of or relating to this Agreement, any Party may initiate mediation upon written notice to the other parties ("**Notice Date**"), whereupon all Parties will be obligated to engage in a mediation proceeding. The mediation will commence within forty-five (45) days of the Notice Date. The mediation will be conducted by a single mediator in Richmond, Virginia. The Party requesting mediation will designate two (2) or more nominees for mediator in its notice. The other parties may accept one of the nominees or may designate their own nominees by notice addressed to the American Arbitration Association (AAA) and copied to the requesting party. If within, fifteen (15) days following the request for mediation, the Parties have not selected an unanimously acceptable mediator, a mediator will be appointed by the AAA according to the Commercial Mediation Rules. The mediator will attempt to facilitate a negotiated settlement of the dispute, but will have no authority to impose any settlement terms on the Parties. The expenses of the mediation will be borne equally by all Parties, but each Party will be responsible for its own counsel fees and expenses.
- (b) **Good Faith Efforts to Resolve Disputes.** Upon the appointment of mediator, the Parties will make good faith efforts to resolve any claim, dispute or controversy between the Parties arising out of or relating to this Agreement, including but not limited to those arising out of or related to the breach, termination, or invalidity of this Agreement.
- (c) **Trial Without Jury.** If the dispute is not resolved by mediation within forty-five (45) days after commencement of mediation, each Party will have the

right to pursue any other remedies legally available to resolve the dispute, provided, however, that the Parties expressly waive any right to a jury trial in any legal proceeding under this Article.

13.4 Performance to Continue. Each Party will continue to perform its undisputed obligations under this Agreement pending final resolution of any dispute arising out of or relating to this Agreement; provided, however, that a Party may suspend performance of its undisputed obligations during any period in which the other parties fail or refuse to perform their undisputed obligations. Nothing in this Article Thirteen is intended to relieve Licensee from its obligation to make undisputed payments pursuant to this Agreement.

13.5 Statute of Limitations. The Parties agree that all applicable statutes of limitation and time-based defenses (including, but not limited to, estoppel and laches) will be tolled while the procedures set forth in Sections 13.3(a) are pending. The Parties will cooperate in taking any actions necessary to achieve this result.

ARTICLE FOURTEEN (MISCELLANEOUS)

14.1 Notice. Any notices required or permitted under this Agreement will be in writing, will specifically refer to this Agreement, and will be sent by hand, recognized national overnight courier, confirmed facsimile transmission, confirmed electronic mail, or registered or certified mail, postage prepaid, return receipt requested, to the following addresses or facsimile numbers of the Parties:

If to ARA (Licensee):	ARA Consult GmbH Unterbergerstr.1, A-6020 Innsbruck Attn: Bernhard Wett, CEO Email: Bernhard.wett@araconsult.at
If to NEWhub (Licensee):	NEWhub Holding Company 12602 Denmark Dr. Oak Hill, VA 20171 Attn: Maureen O'Shaughnessy Email: maureen@oshaughnessywater.com
If to HRSD (Licensor):	Hampton Roads Sanitation District 1434 Air Rail Avenue Virginia Beach, VA 23455 Attn: Jay Bernas, General Manager Email: jbernas@hrsd.com

All such notices, consents, waivers and other communications will (i) if delivered personally in the manner and to the address provided in this Section 14.1, be deemed given upon delivery, (ii) if delivered by facsimile transmission or electronic mail in the manner and to the facsimile number or e-mail address provided in this Section 14.1, be deemed given on the earlier of receipt or the first business day after transmission, (iii) if delivered by mail in the manner, and to the address

provided in this Section 14.1, be deemed given on the earlier of the fourth business day following mailing or upon receipt, and (iv) if delivered by overnight courier in the manner and to the address provided in this Section 14.1, be deemed given on the earlier of receipt or the first business day following the date sent by such overnight courier.

14.2 Governing Law; Venue. The Parties hereto agree that this Agreement, and any controversy arising pursuant to this Agreement, will be governed by the laws of the Commonwealth of Virginia. Subject to Article Thirteen (Dispute Resolution), the Parties hereto irrevocably and unconditionally submit to the exclusive jurisdiction of the federal or state courts in Virginia. The Parties hereto irrevocably and unconditionally waive any objection to the laying of venue of any such suit, action or proceeding brought in any such court and any claim that such suit, action or proceeding brought in any such court has been brought in an inconvenient forum.

14.3 Force Majeure. No Party will be liable to the other parties for delays in any performance or failure to render any performance when such delay or failure is beyond the reasonable control of, and without intentional wrongdoing or bad faith of, the Party asserting the claim of force majeure, including but not limited to acts of God, strikes, terrorist attacks, lockouts or other labor disputes, industrial or civil disturbances, material shortages, and acts, directives or binding orders of any court or government authority or agencies.

14.4 Waiver. Any waiver of any rights or failure to act in a specific instance will relate only to such instance and will not be construed as an agreement to waive any rights or fail to act in any other instance, whether or not similar. Except as provided in this Agreement, no delay or failure on the part of a Party in exercising any right, power, or privilege hereunder will operate as a waiver thereof, nor will any waiver on the part of any Party of any such right, power, or privilege, nor any single or partial exercise thereof, preclude any other or further exercise thereof or the exercise of any other right, power, or privilege hereunder.

14.5 Severability. In the event that any provision of this Agreement will be held invalid or unenforceable for any reason, such invalidity or unenforceability will not affect any other provision of this Agreement, and the Parties will negotiate in good faith to modify this Agreement to preserve (to the extent possible) their original intent. If the Parties fail to reach a modified agreement within thirty (30) days after the relevant provision is held invalid or unenforceable, then the dispute will be resolved in accordance with the procedures set forth in Article Thirteen (Dispute Resolution). While the dispute is pending resolution, this Agreement will be construed as if such provision were deleted by agreement of the Parties.

14.6 Binding Effect. This Agreement will be binding upon and inure to the benefit of the Parties and their respective permitted successors and assigns.

14.7 Third-Party Beneficiaries. Except as set forth in Article Four, Sections 4.3, 4.4, 4.5, and 4.8, the Parties do not confer any rights or remedies upon any Person other than the Parties and their respective successors and permitted assigns. The Parties hereby designate each Coinventor as a third-party beneficiary of Article Four, Sections 4.3, 4.4, 4.5, and 4.8.

14.8 Entire Agreement. This Agreement constitutes and contains the complete and final understanding and agreement of the Parties relating to the subject matter of this Agreement. Any

and all prior negotiations, correspondences, understandings and agreements, whether oral or written, between the Parties respecting the subject matter hereof will henceforth not be binding on any Party except to the extent expressly set forth in this Agreement. Nothing in this Agreement, express or implied, is intended to confer upon any party, other than the Parties and their respective successors and assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. This Agreement may not be amended, modified or supplemented except by a writing executed by all Parties.

14.9 Further Assurances. The Parties hereto will do and perform or cause to be done and performed all such further acts and things and will execute and deliver all such other documents as any Party may reasonably request from time to time in order to carry out the intent and purpose of this Agreement contemplated hereby. No Party will voluntarily undertake any course of action inconsistent with satisfaction of the requirements applicable to them set forth in this Agreement and each Party will promptly do all such acts and take all such measures as may be appropriate to enable them to perform as early as practicable the obligations herein required to be performed by them.

14.10 Facsimile; Counterparts. This Agreement may be executed in one or more counterpart copies, each of which will be deemed to be an original copy of this Agreement and all of which, when taken together, will be deemed to constitute one and the same agreement. The exchange of copies of this Agreement and of signature pages by facsimile, email, or other electronic transmission will constitute effective execution and delivery of this Agreement as to the Parties and may be used in lieu of the original Agreement for all purposes. Signatures of the parties transmitted by facsimile or electronic transmission will be deemed to be their original signatures for all purposes.

14.11 Relationship of Parties. Nothing in this Agreement will be deemed to constitute any Party a partner, joint venturer, co-owner or employee of the other parties. No Party is, or will represent itself to be, an agent or legal representative of any of the other parties. No Party will have the authority to bind the other parties or to assume or create any liability or obligation, express or implied, on behalf of the other parties.

14.12 Captions; Rules of Construction. The titles to the Articles and Sections of this Agreement are solely for the convenience of the Parties and will not be used to explain, modify, simplify or aid in the interpretation of the provisions of this Agreement. Any reference in this Agreement to any Article or Section refers to the corresponding Article or Section of this Agreement. Any reference in this Agreement to any Appendix refers to the corresponding Appendix attached to this Agreement and all such Appendices are incorporated herein by reference. The word “including” in this Agreement means “including without limitation.” This Agreement will be construed as if drafted by all of the Parties and no presumption or burden of proof will arise favoring or disfavoring any Party by virtue of the authorship of any provision in this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

ARA CONSULT GmbH

By: _____
Name: Bernhard Wett
Title: CEO
Date: _____, 2024

NEWHUB Holding Company

By: _____
Name: Maureen O'Shaughnessy
Title: President
Date: _____, 2024

**HAMPTON ROADS SANITATION
DISTRICT**

By: _____
Name: Jay Bernas
Title: General Manager & CEO
Date: _____, 2024

[Signature Page]

APPENDIX A
(ADJUSTABLE GAS SIPHON PATENTS)

<u>Country</u>	<u>Application No.</u>	<u>Filing Date</u>	<u>Patent / Pub. No.</u>	<u>Grant Date</u>
US	63/593,585	October 27, 2023	N/A	N/A
US	18/____,____	_____, 2024 (UNFILED)	N/A	N/A
WO	PCT/US2024/_____	_____, 2024 (UNFILED)	N/A	N/A

APPENDIX B

ARTICLE FOUR (ROYALTIES AND PAYMENT TERMS)

CONFIDENTIAL – EXCLUDED FROM MANDATORY DISCLOSURE (VA CODE § 2.2-3705.6.3)

AGENDA ITEM 9. – October 22, 2024

Subject: Bethel-Poquoson Force Main Part IV Replacement-Wythe Creek Exposed Crossing Additional Appropriation – Non-Regulatory (>\$1,000,000) and Contract Change Order (>25% of original contract value or \$50,000, or whichever is greater)

Recommended Actions:

- a. Appropriate additional funding in the amount of \$249,749.
- b. Approve a change order to the contract with Bridgeman Civil, Inc. in the amount of \$490,327.

CIP Project: YR014600**Regulatory Requirement:** None

Budget	\$4,068,204
Previous Expenditures and Encumbrances	(\$3,627,626)
Available Balance	\$440,578
Proposed Change Order No. 5 to Bridgeman Civil, Inc.	(\$490,327)
Proposed Contingency	(\$200,000)
Project Shortage/Requested Additional Funding	(\$249,749)
Revised Total Project Authorized Funding	\$4,317,953

Contract Status with Change Orders:	Amount	Cumulative % of Contract
Original Contract with Bridgeman Civil, Inc.	\$2,978,796	
Total Value of Previous Change Orders	\$455,404	15.3%
Requested Change Order	\$490,327	
Total Value of All Change Orders	\$945,731	31.7%
Revised Contract Value	\$3,924,527	

Time (Additional Calendar Days)	295 days
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Project Description: This project will replace approximately 1,600 linear feet (LF) of 20-inch prestressed concrete cylinder pipe (PCCP) and approximately 1,600 LF of 18-inch high-density polyethylene (HDPE) pipe running above the marsh adjacent to the Wythe Creek Bridge. The existing cantilever beams will be removed, and the original pile bents will be replaced for the new 20-inch HDPE pipe. A new stringer support system will be added in between the existing bents to support the new 20-inch HDPE pipe. The attached [map](#) depicts the project location.

Project Justification: In 2009, a temporary 18-inch HDPE force main was installed along the existing aerial crossing of New Market Creek on Wythe Creek Road in Hampton. This pipe was installed due to the failure of the adjacent 20-inch PCCP that was installed in the 1970s. At that time, the new HDPE pipe was installed on the original aerial support system. This aerial support was utilized by extending wooden cantilever beams from the existing pile bents adjacent to the 20-inch PCCP. In December 2019, Collins Engineers, Inc. performed an inspection of the aerial crossing supports and found deterioration and defects along several pile supports and bents. The cantilevers have had numerous repairs over the last decade and need repair again. The existing 18-inch HDPE pipe also requires the counterbalance weight of the PCCP pipeline to support the cantilever, thus requiring the old 20-inch PCCP to remain in place as long as this cantilever system exists. This

project will remove the 20-inch PCCP along with the 18-inch HDPE pipelines, make repairs to the aerial crossing supports, and install a new 20-inch HDPE pipeline across Wythe Creek.

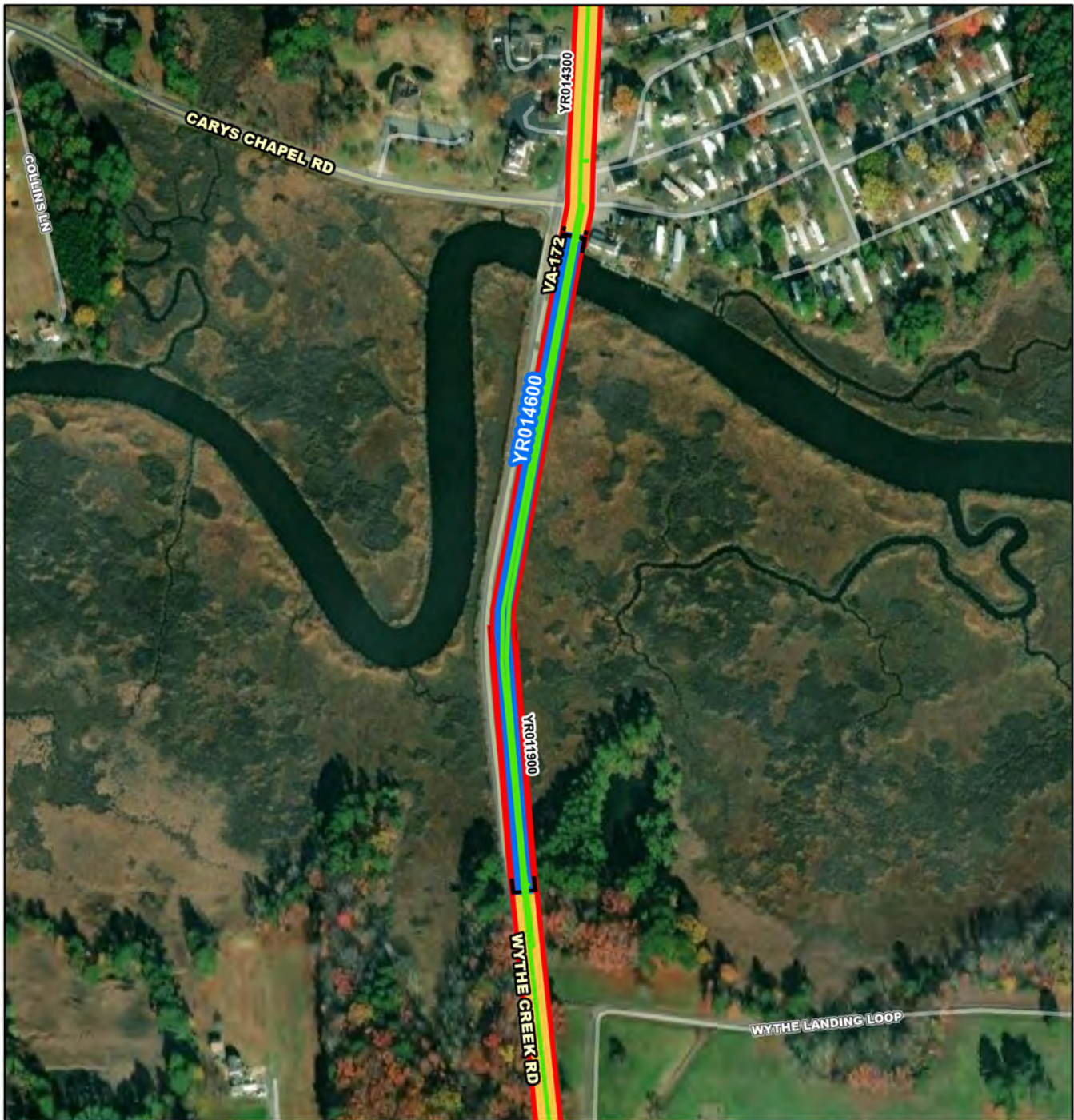
The project received a Stop Work Order from the City of Hampton on April 8, 2024 due to erosion and sedimentation control concerns. The Stop Work Order was lifted on July 24, 2024 upon issuance of the Land Disturbance Permit.

The Bethel-Poquoson Force Main Part III Replacement (YR011900) CIP project will be replacing the existing 20-inch force main to the south of this section of pipe. YR011900 is being performed as part of the VDOT roadway widening project on Wythe Creek Road.

Change Order Description: This change order includes additional cost of the erosion and sedimentation controls needed to lift the Stop Work Order; clearing the site and removing the vegetation upon remobilization after the Stop Work Order; an additional 80 LF of ductile iron pipe (DIP) for the north end tie-in; and an additional 100 LF of DIP and two plug valves for the south end tie-in.

Analysis of Cost: The value of Bridgeman Civil's Change Order No. 5 is \$490,327. When combined with Change Order Nos. 1 through 4, the cumulative change order amount is above the Commission approval threshold of 25% above the original contract value. This change order has been reviewed by Collins Engineers, Inc. and is determined to be reasonable for the additional construction activities related to the Stop Work Order and design modifications. Since the project is approximately 70% complete at this time, a \$200,000 contingency is being requested to accommodate unforeseen conditions for the remainder of construction.

Schedule: Project Completion January 2025



YR014600

- 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

0 112.5 225 450 675 900 Feet

YR014600

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

N
W E
S

CIP Location

AGENDA ITEM 10. – October 22, 2024

Subject: Cybersecurity
Briefing

Recommended Action: No action is required.

Description: Staff will present a Cybersecurity briefing which aligns with HRSD policy and industry best practices to empower attendees in maintaining safety and security within the digital environment.

Three distinct factsheets are provided to support the briefing:

- [Social Engineering-Factsheet](#). Outlines methods for recognizing and safeguarding against this type of attack.
- [Social Engineering-Types Of Attacks-Factsheet](#). Details different manipulation tactics to watch out for.
- [Seven-signs-of-phishing-factsheet](#). Emphasizes the seven key indicators of a phishing email.

5 Ways to Engage Your Shield Against SOCIAL ENGINEERING ATTACKS

Resist the Rush

Social engineers often create a tremendous sense of urgency, such as telling you there is a tight deadline, to trick you into making a mistake. If someone pressures you to bypass or ignore our policies, it is most likely an attack.

Recognize the 'Bag of Tricks'

Social engineers use emotions, such as fear, intimidation, curiosity, or excitement, to get you to do what they want. If something sounds suspicious or too good to be true, it probably is.

Think Before You Click

Social engineers want you to carelessly click on links and not think twice before opening attachments. Be cautious: one wrong move could infect your device and spread it to others.

Don't Just Download It or Plug It In

Social engineers count on you to download unapproved software or plug in infected USB drives or external devices. Only use authorized hardware and software. If you are not sure if something is authorized, just ask.

Ask Questions, and If It Feels Odd or Suspicious, Contact Security

If you feel you are experiencing a social engineering attack, hang up the phone (or do not respond to the email), and contact security right away.





Types of Attacks



Social engineering is the art of human manipulation. It is when bad guys attempt to fool or trick you into doing something you should not do. Some of the most common social engineering attacks to look out for are:



Phishing Emails or Messages

These emails or messages attempt to fool you into taking an action, such as clicking on a malicious link, opening an infected attachment, or filling out an online form.

How to Spot:

- A strong sense of urgency rushing you into making a mistake.
- Generic greetings rather than using your name or title.
- The From or Reply-To address is a personal email address, such as @gmail.com or @hotmail.com.
- An offer that plays on your curiosity or seems too good to be true, such as notification of a package delivery even though you did not order anything.

Spear Phishing

Spear phishing is similar to phishing, but instead of randomly emailing millions of people the attacker targets specific individuals. They research their target and create a customized email, one their victim is more likely to fall for.

How to Spot:

- The email appears to come from a friend or coworker you know, but the tone of the message does not sound like them.
- There's a strong sense of urgency, pressuring you to ignore or bypass our policies.
- The email is work related, but comes from a personal email address, such as @gmail.com or @hotmail.com.



CEO Fraud

Attackers pretend to be a senior leader from our organization in order to trick you into doing something you should not do. The clues of a CEO fraud attack are similar to a spear phishing attack. However, there is no infected attachment or malicious link. Instead, they are attempting to trick you into doing something, such as approving a wire transfer or sending sensitive documents.

How to Spot:

- The email appears to come from a friend or coworker you know, but the tone of the message does not sound like them.
- There's a strong sense of urgency, pressuring you to ignore or bypass our policies.
- The email is very short and urgent (only one or two sentences) and the signature says the email was sent from a mobile device.
- The email is work related, but comes from a personal email address, such as @gmail.com or @hotmail.com.

Phone Calls (aka Vishing)

In addition to email- and messaging-based attacks, attackers can call you on the phone pretending to be an individual or organization you know and trust, such as the help desk or a vendor.

What to Do:

- Be very suspicious if someone creates a strong sense of urgency or asks you to help them without first proving who they are. Always follow our procedures for verifying a person's identity before discussing any sensitive information over the phone.



USB Drops

Attackers give away or intentionally place infected media, such as USB drives, in hopes that someone will pick them up and insert them into their computers.

What to Do:

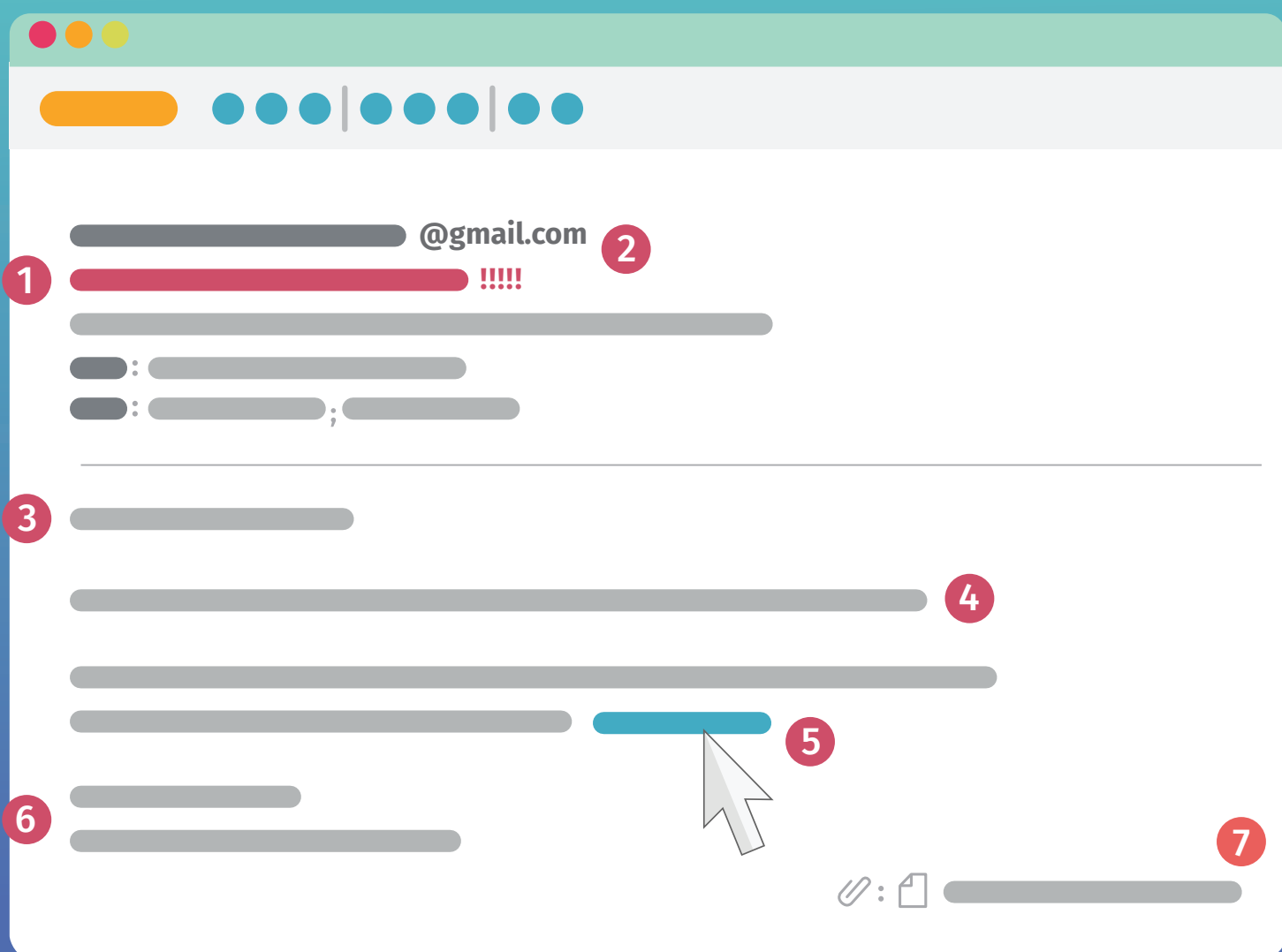
- Never use an unknown or unauthorized USB device or other external media and plug it into your computer. Never let others connect devices to your computer as well.

If you believe you are the target of a social engineering attack, stop all communication with the attacker and report the incident immediately.

7 SIGNS OF PHISHING

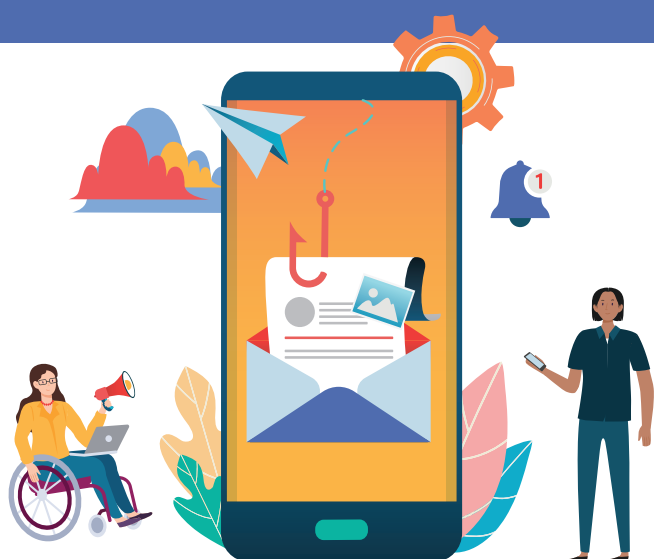
Can you spot a phishing attack?

Cyber criminals use phishing attacks to try to infect your computer, steal your passwords, fool you into sharing sensitive data, and more. While phishing attacks often have different goals, they share many of the same indicators. If you know what to look for, you can spot and stop these attacks. Watch out for these seven signs of a phishing attack:



1

An URGENT Subject: Does the subject line or message try to create a tremendous sense of urgency, often using fear or demanding immediate action? Another approach is curiosity. Is the email offering something that appears too good to be true?



Who is This “From”? Watch out for emails that appear to come from official organizations, such as your bank or the government, but the From or Reply-To address is actually someone’s personal email account, such as @gmail.com.

2

3

“Hello Valued Customer:” Watch out for generic greetings. Often cyber attackers don’t know who you are. They are just trying to reach as many people as possible.



“Please provide your credit card number...”: Is the sender asking for your password, bank account details, or some other sensitive data they should not have access to?

4

5

Under Pressure: Is the sender pressuring you to ignore or bypass our security policies?



Suspicious Characters: Be cautious if an email appears to come from a friend or coworker, but the wording seems odd, or the message doesn’t read like something they would send. The signature may even be inaccurate.

6

7

Don’t Get Attached: Do not open unexpected or suspicious attachments.



SPOT AND PREVENT PHISHING ATTACKS.

AGENDA ITEM 11. – October 22, 2024

Subject: Capital Improvement Program (CIP)
Update

Recommended Action: No action is required.

Brief: Implementing the CIP continues to be a significant challenge as we address numerous regulatory requirements, SWIFT Program implementation and the need to replace aging infrastructure. Staff will provide a briefing describing the status of the CIP, financial projections, projects of significance and other issues affecting the program.

AGENDA ITEM 12. – October 22, 2024

Subject: New Business

AGENDA ITEM 13. – October 22, 2024

Subject: Unfinished Business

AGENDA ITEM 14. – October 22, 2024

Subject: Commissioner Comments

AGENDA ITEM 15. – October 22, 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](#)

October 11, 2024

Re: General Manager's Report



Environmental Responsibility

Staff continue to discuss ways to reduce odors from the Atlantic Treatment Plant. Starting in October, staff will begin reducing the pad storage volume by hauling biosolids in the middle of the night to the Waverly landfill. In addition, an odor adsorbing misting system will be installed on the storage pad.

I was briefed on the new version of the Regional Hydraulic Model (RHM) and all the new capabilities. Comparing what I used when I first started at HRSD in 2005 as an Interceptor Engineer to the current version is night and day. We will have very high confidence levels when we make data-driven decisions based on RHM model output.

The EPA is requesting more information on our force majeure claim for a deadline extension to the Larchmont project. If you recall, after the costs came in higher than expected, the City of Norfolk terminated the cost participation agreement for their portion of the project causing a significant delay to revise the construction bid documents. Staff will work to send EPA additional information to support the claim.

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 14,132 Total Possible Exceedances.
- Pounds of Pollutants Removed in FY 2025 to date: 55.1 million pounds.

Water Quality: One civil penalty was issued in September to Total Fiber Recovery in Chesapeake after they discharged solid material to the sanitary system. The Enforcement Order was accepted, and the fines were paid.



Financial Stewardship

Staff successfully closed the \$268 million Tranche 3 WIFIA loan and locked in the interest rate at 4.15%. As we discussed, this provides an important option for Fiscal Year 2026 CIP funding as we can get a rate reset if it falls more than 10% below 4.15% as long as we have not started drawing funds.

The Chesapeake-Elizabeth Treatment Plant (CETP) Offline Program Water Quality Improvement Fund (WQIF) grant is expected to be executed in October after the public comment period.

Revenues continue to exceed expenses after the first quarter. Interest Income remain strong. Higher than budgeted water consumption is driving wastewater revenues higher than expected.

Our Learning and Development group received a \$500,000 sub-award from the federal Apprenticeship Building America grant to expand and enhance our apprenticeship opportunities.



Talent

After our last annual retreat, the Senior Leadership Team and Directors have started meeting on a quarterly basis to discuss emergent issues. At the last meeting, we discussed our HSA Healthy Equity card issue, Department Roadmaps, and making HRSD the anchor for a water technology focused innovation ecosystem.

I was unanimously voted to remain on the Virginia Investment Pool's (VIP) Board of Trustees by the membership. This is important because the VIP includes \$250 to \$300 million of HRSD's treasury funds. HRSD's treasury funds represents approximately 10% of the VIP's assets under management.

I attended the annual health insurance claims review. HRSD continues to perform better than other organizations. One of the primary drivers is that HRSD has 60% of its staff meet with their doctor annually where the industry average is only 30%. Staff have set a new goal of getting 100% to see their doctor annually and will be revamping our wellness program to increase participation.



Community Engagement

I presented HRSD's Strategic Plan along with Hazen at WaterJAM. The presentation focused on the scenario planning process and how we have implemented the plan.

Staff held a kick-off, and two Locality focused High Priority Inflow and Infiltration meetings the week of September 16th.

I met with James City Service Authority's (JCSA) leadership about groundwater trading and high-pressure concerns in northern James City. We will continue working with their staff on these issues.

The City of Chesapeake is working quickly to provide service to the Coastal Virginia Commerce Park. Staff are coordinating closely with the City as this project is a high priority for the City and the Commonwealth.

Staff attended a focus group session for our proposed new HRSD logo and tagline. This information along with our internal survey will guide our next steps.

With the new moratorium on shutoffs above 92 degrees suspending field activity for most of July and August, September saw a significant increase in call volume as shutoffs resumed.



Innovation

Samsung representatives from their Environmental Technology Development Center flew in from South Korea to learn more about our patented technologies. As part of our presentation, I invited the Hampton Roads Alliance (HRA), Hampton Roads Executive Roundtable, Hampton Roads Planning District Commission and 757 Collab to attend. HRA, as our regional Economic Development entity, provided an overview of Hampton Roads as this was a great opportunity to highlight our region should Samsung ever wanted to start a North American water business unit.

Staff are working on a new research project to remove PFAS from landfill leachate using Foam Fractionization. This includes testing technologies that can destroy the PFAS concentrate. One of the technologies is an electron beam developed by Jefferson Labs.

I look forward to seeing you in Newport News at 9:00 a.m. on Tuesday, October 22, 2024.

Respectfully submitted,

Jay Bernas, P.E.
General Manager

TO: General Manager

FROM: Chief Communications Officer

SUBJECT: Monthly Report for September 2024

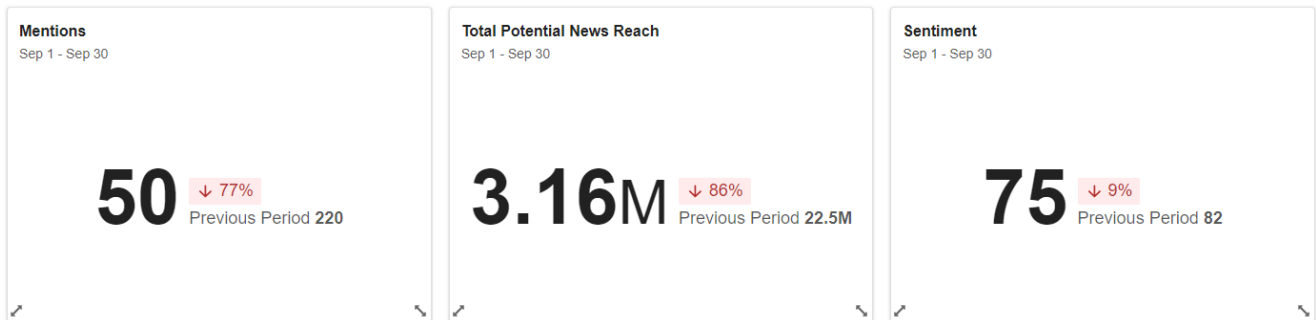
DATE: October 10, 2024

A. Publicity and Promotion

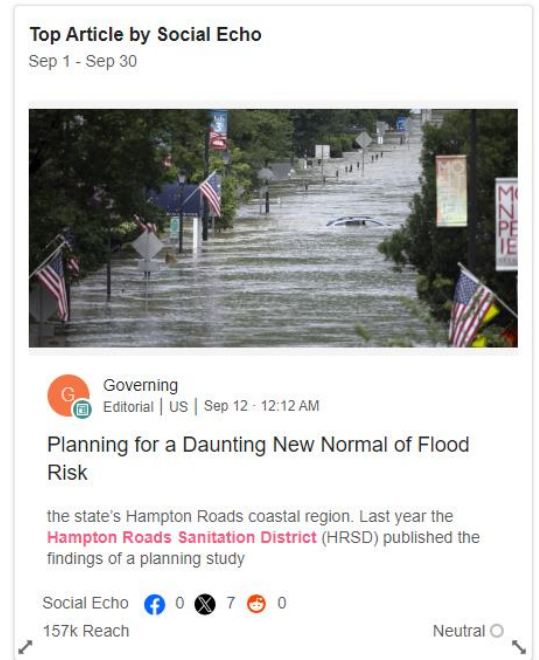
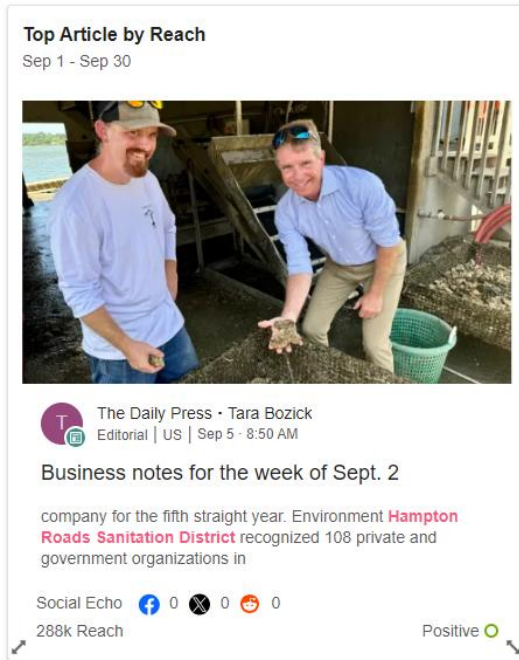
1. HRSD and Sustainable Water Initiative For Tomorrow (SWIFT) were mentioned or featured in eight stories this month. Topics included:
 - a. Garney/Dewberry record-breaking HDD operation in the James River
 - b. Planning for future floods
 - c. Eastern Shore sewer system nears completion, Exmore council discusses growth

2. Analysis of Media Coverage

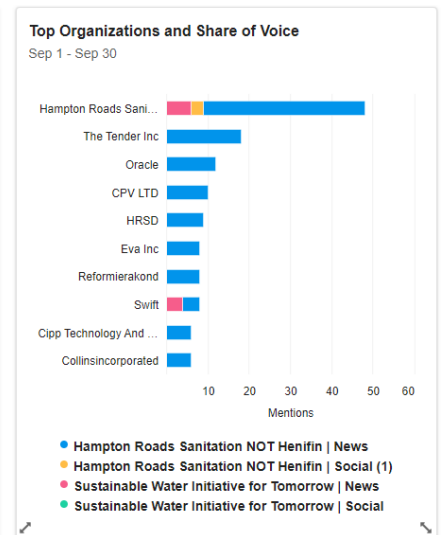
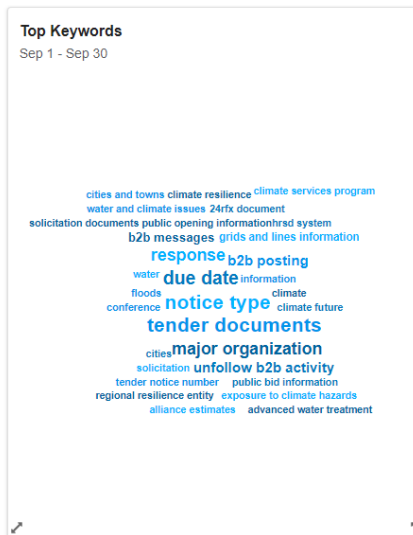
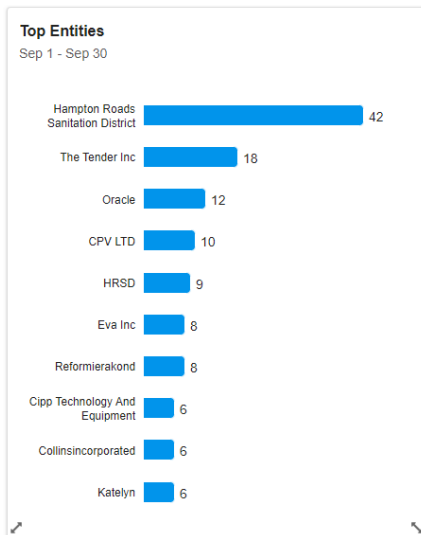
a. Key results for September



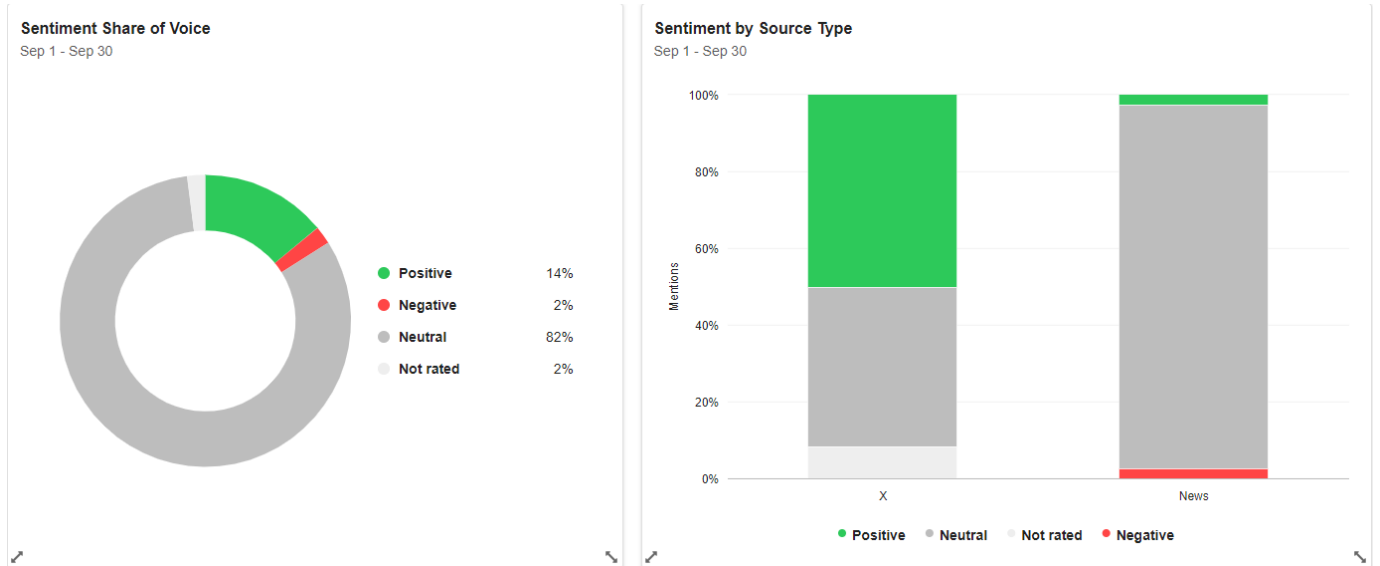
b. Top performing news content



c. Top entities and keywords

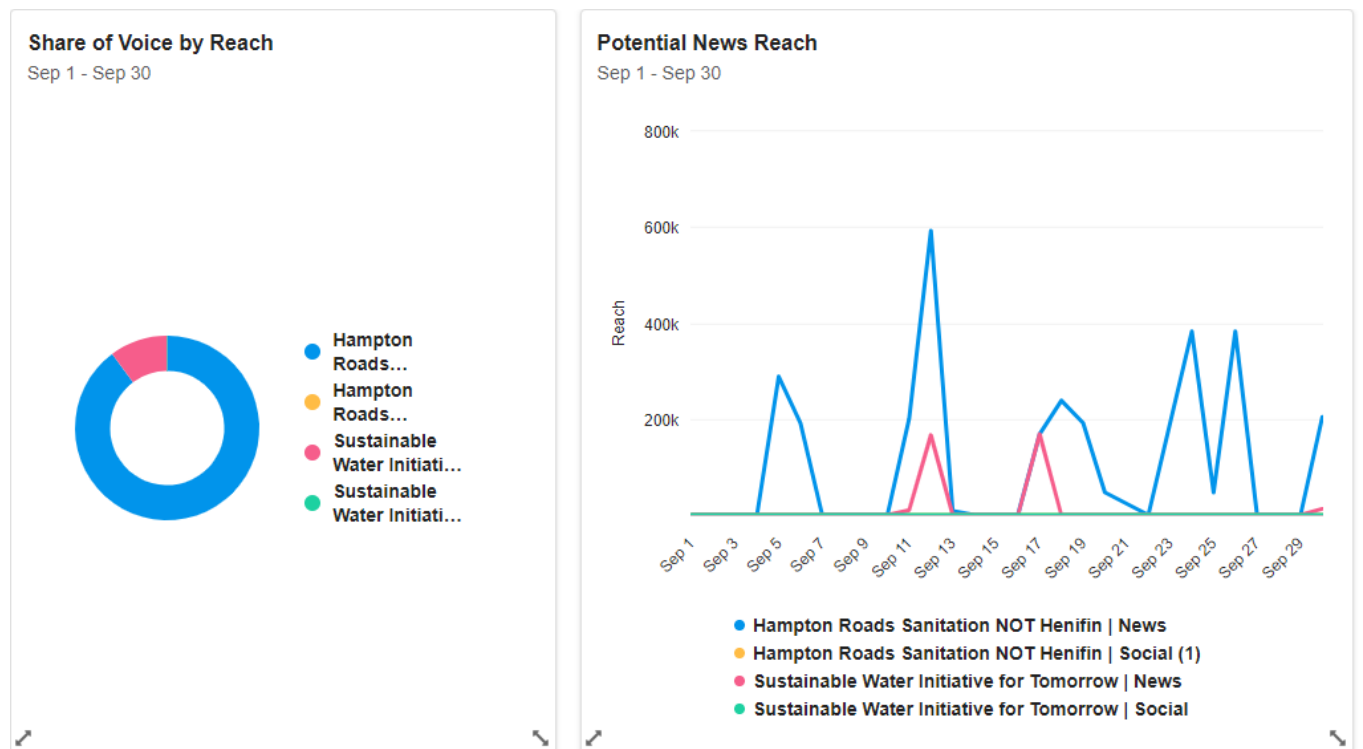


d. How favorable is the content?

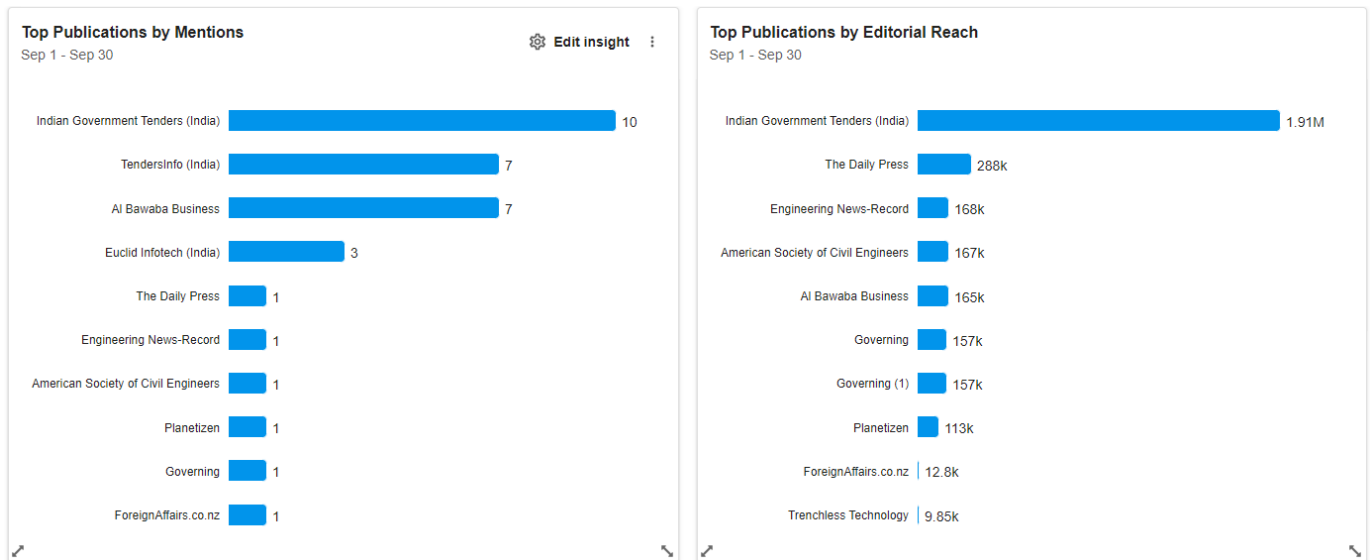


(Negative sentiment attributed to story about planning for future floods and was not specific to HRSD)

e. What is the potential reach?



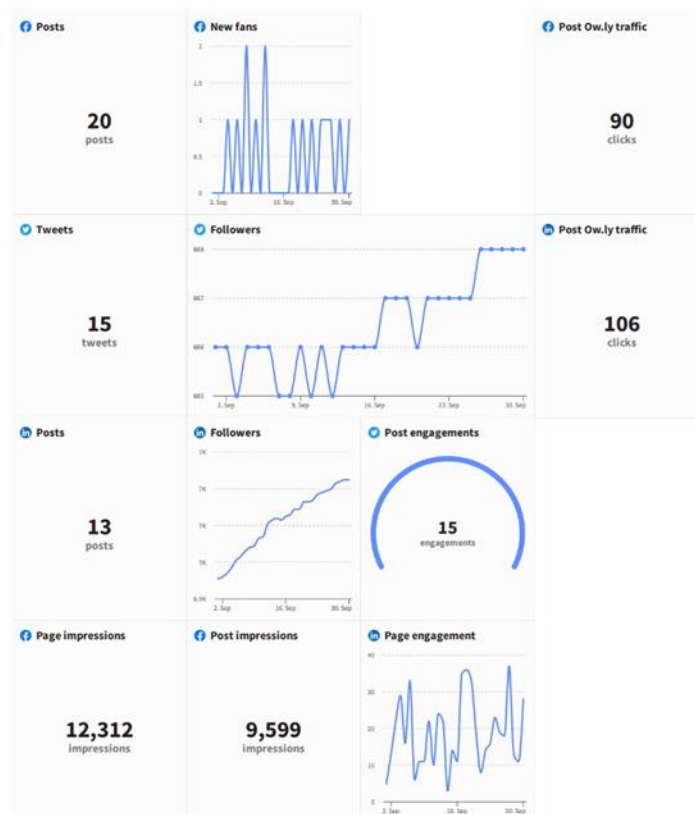
f. Top publishers



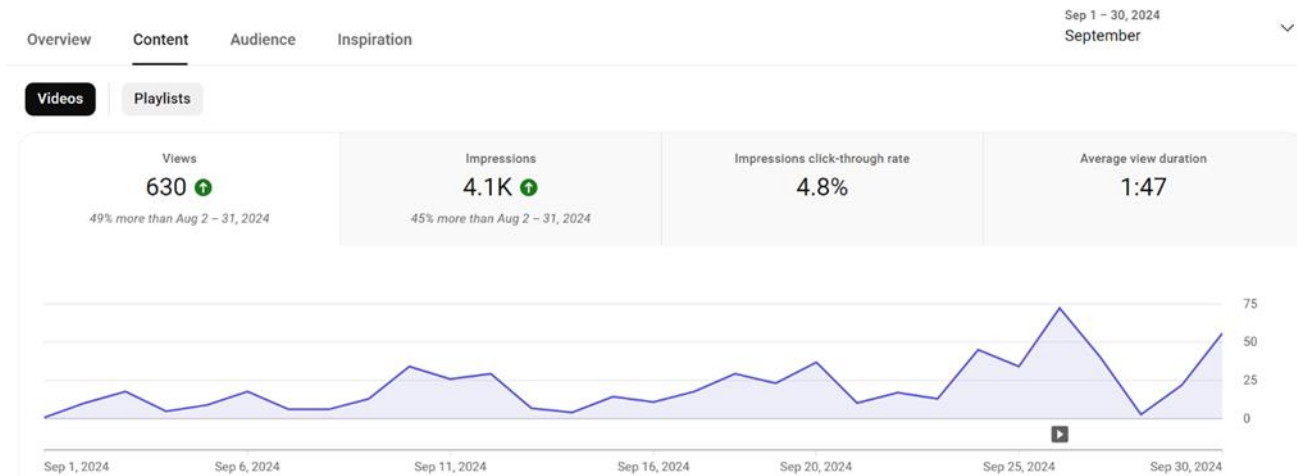
Community Engagement

B. Social Media and Online Engagement

1. Metrics – Facebook, X and LinkedIn



2. YouTube



3. Top posts on Facebook, Twitter, and YouTube

a. Top Facebook post

In Case You Missed It

Our dedicated crews worked around the clock to successfully pull a pipeline under the James River! 🌊🔧 This crucial pipeline will transport sewage from the Boat Harbor Pump Station across the river to the Nansemond Treatment Plant, where it will undergo advanced treatment before recharging the Potomac Aquifer!

This project is a huge step forward in enhancing our wastewater management and supporting a sustainable future. Thank you to everyone involved!

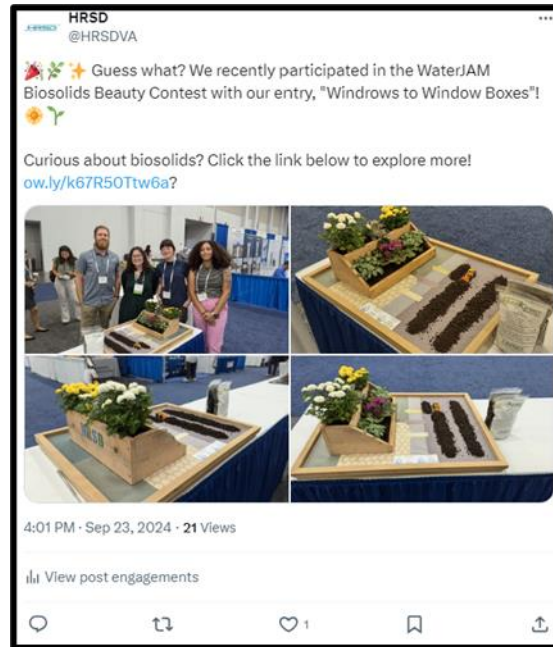
For more details and pictures, check out our latest blog post! <https://ow.ly/rFUR50Tw842>

[See insights and ads](#) [Boost post](#)

37

2 comments 3 shares

b. Top X Post



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

- (1) [The Wastewater Treatment Process](#)
- (2) [SWIFT Research Center: What Is the Potomac Aquifer](#)
- (3) [Why SWIFT Matters](#)
- (4) [Horizontal Directional Drilling Under the James River](#)
- (5) [HRSD Atlantic Treatment Plant Cambi THP Tour](#)

4. Website and Social Media Impressions and Visits

a. Facebook:

- (1) 12,312 page impressions
- (2) 9,601 post impressions reaching 9,212 users.
- (3) Facebook Engagement of 278 (249 reactions, 23 shares, and 6 comments)

b. X: 3.37% engagement rate

c. HRSD.com/SWIFTVA.com: 964 page visits

d. LinkedIn Impressions:

- (1) 16,997 page impressions
 - (2) 13,722 post impressions
- e. YouTube: 630 views
- f. Next Door unique impressions: 77,964 post impressions from 21 targeted neighborhood postings and one region-wide posting.
- g. Blog Posts (0):
- h. Construction Project Page Visits – 1560 total visits (not including direct visits from home page, broken down as follows:
 - (1) 1,097 visits to individual pages
 - (2) 463 to the status page

C. Education and Outreach Activity Highlights

Community Outreach and Education Specialists and HRSD Ambassadors coordinated and participated in six different outreach events this month. Community partners included the York County School Division, Canon Virginia, the Virginia Living Museum and Foxhill United Methodist Church.

South Shore Public Information Specialist participated in the virtual Environmental Assessment meeting for the Wilroy Road Pressure Reducing Station and Offline Storage Facility.

Chief Communications Officer (CCO) and staff provided a SWIFT Tour to the Virginia Living Museum (VLM) educators team. HRSD has formed an educational partnership with VLM and is working toward establishing an interactive exhibit at the museum.

CCO, together with the General Manager and Deputy General Manager observed the external focus group testing for the proposed new HRSD logo. Results of the focus group testing and the internal survey will be used to determine next steps in adoption of a new look and potential tagline for HRSD.

Project notices were distributed to 619 customers for 12 different projects across the service area this month. The department distributed and posted 11 construction or work notices and two traffic advisories to the HRSD.com Newsroom.

D. Internal Communications

CCO participated in the following internal meetings and events:

- 1. HRSD Leadership meeting
- 2. HRSD Security Team meeting

3. Atlantic Treatment Plant monthly communications check-in meeting
4. SWIFT Strategic Communications monthly meeting
5. SWIFT Industry Day 2025 planning meetings
6. SWIFT Community Commitment Plan steering committee meeting
7. Atlantic Treatment Plant Odor taskforce check-in meeting
8. High Priority Infiltration and Inflow and partnering kickoff meeting
9. Website phase 3 development meeting
10. Bi-weekly General Manager (GM) briefings
11. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST), and HRSD QST meetings
12. Check-in meetings with Deputy General Manager (DGM)
13. Director conducted biweekly Communications department status meetings and weekly one-on-one check-in meetings.
14. Staff participated in 16 project progress and/or construction meetings and communication planning meetings with various project managers, plant staff and external stakeholders.



Talent

Professional development activities and pursuits for September included the following:

- CCO participated in the Public Relations Society of Hampton Roads Professional Development Summit.
- CCO attended FOIA Public Records Training.
- CCO attended the PRSA Employee Communication Section Webinar: Working Smarter with Generative AI Tools.
- North Shore Public Information Specialist began LEAD of Greater Williamsburg training with an orientation meeting and two-day retreat.
- Community educator attended several “Methods of Teaching Environmental Education” and Environmental Literacy trainings totaling 14.5 hours.

Respectfully,

Leila Rice, APR

Chief Communications Officer

TO: General Manager

FROM: Chief Engineer

SUBJECT: Engineering Monthly Report for September 2024

DATE: October 11, 2024



Environmental Responsibility

A hurricane drill (Hurricane Maizy) was conducted earlier this year to better prepare HRSD for a potential storm event. With recent severe weather impacting numerous parts of the U.S., this was a timely exercise. The drill included an effort to use the newly updated Damage Assessment software tool for both office and field use. Several lessons learned were found as a result of the drill and these results have been shared with senior leadership over the last two months.

The City of Norfolk is working closely with the U.S. Army Corps of Engineers to study and make improvements to address climate change through coastal resiliency known as “Resilient Norfolk”. This is a huge effort (\$2.6B) impacting large parts of Norfolk. The project includes storm-surge barriers, nearly 9 miles of floodwalls and levees, 11 tide gates, and ten pump stations, along with hundreds of non-structural projects that include home elevations, basement fills, and commercial floodproofing. HRSD has numerous assets in Norfolk impacted by this potential work. This project could impact buried pipes, pump stations and two treatment plants (Army Base and VIP). We have created an internal task force to coordinate with Norfolk and their various consultants. Close coordination is underway to determine the impact of the proposed floodwall on HRSD infrastructure located along Waterside Drive in downtown Norfolk. HRSD is also working with Norfolk to determine the impacts to both the Army Base and VIP Treatment Plants and to determine ways to mitigate potential flooding.



Financial Stewardship

Capital Improvement Program (CIP) spending for the second month of FY2025 was slightly below the planned spending target.

CIP Spending (\$M):

	Current Period	FYTD
Actual	66.26	82.55
Plan	68.80	102.60

One metric used to measure the effort to manage the CIP is available through the HRSD ERP system. This metric involves the calculation of time spent by staff on every CIP project. Since the cost of the project is known, a ratio of labor cost incurred vs. total project cost can be calculated. For HRSD CIP projects this ratio is typically between 0.001 to 0.05. Smaller CIP projects tend to have a higher ratio since these projects have certain fixed efforts even if the project cost is low, i.e. project meetings, cost accounting, reporting, etc. This metric allows HRSD to measure the time and cost associated with project management.



Talent

We have recently added Mr. Mike Hess as our new SWIFT Deputy Program Manager. Mike comes to the Engineering Division from the South Shore Interceptors Department. In addition to his experience with Operations, he also has prior experience as a consulting engineer, which should be helpful in his new role within the SWIFT Program.

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 for the three open Project Manager positions has been finalized and we expect to have these individuals on board in the coming month. Mr. Ray Holmes recently retired from HRSD, and we have begun the recruitment effort for his replacement in our Asset Management Department.



Community Engagement

An important aspect of community engagement is proper planning. HRSD has begun two important planning initiatives. The first effort is the Middle Peninsula Sewer Master Plan. This effort includes close coordination with the communities on the Middle Peninsula to understand their needs and estimate future wastewater flows. In areas like the Middle Peninsula, a few residential developments can greatly impact the capacity of facilities. Numerous options exist to serve this relatively undeveloped area, so careful review of these options is essential to finding cost effective solutions. The second effort is the Development Plan 2025. This plan will serve as a roadmap to guide HRSD for the planning, design, and construction of future CIP projects in a proactive and phased approach. This type of effort has not been conducted since 2000, due to the many constraints related to regulatory compliance and the associated work resulting from these initiatives. This plan is a comprehensive review of all HRSD's service areas (except small communities) and will recommend future interceptor sewers, pump stations, wet weather storage, and treatment plant expansions and/or possible consolidations. This effort will be conducted over the next two years and will require significant coordination with each of the communities served by HRSD.



Innovation

The hydraulic model used by HRSD to manage the complex series of sewer pipes and pump stations throughout the region is known as Mike Urban. This software program was developed by the Danish Hydraulic Institute (DHI) in the Netherlands. This modeling software has been very valuable over the years as we have managed numerous interceptor system improvements and worked with the US EPA to better understand how wet weather impacts the regional sewer system. HRSD recently moved to the DHI Mike+ software program as part of a review of other potential tools. Some of the early benefits of this software program include:

- Ability to store multiple wet weather parameters within a single model instead of having to keep separate files for rainfall simulation
- Ability to run only portions of the regional sewer system to get faster results
- Faster overall processing speed to save time by staff waiting for output

- Initial results indicate that the new model is giving similar results when compared to the previous model

This improved modeling software program is already showing benefits and is a more user-friendly tool that will help to improve modeling efforts for many years to come.

At the August Commission Meeting, an agreement was approved to coordinate with the United States Geological Survey (USGS) to install a Subsidence Superstation at the James River Treatment Plant. An extensometer and related equipment will be installed to measure land subsidence in the coming years. This is an obvious location due to the SWIFT facilities and recharge wells under construction at this site. The SWIFT Project Team is coordinating with the USGS to find a location for this equipment that will ensure accurate results and give easy access to USGS staff. Coordination meetings will be held in the coming months to choose the final site location and coordinate the construction efforts. This effort will help to define the benefits of the SWIFT managed aquifer recharge on mitigating land subsidence within the Hampton Roads region.

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 September 2024

DATE: October 10, 2024



Financial Stewardship

The Chesapeake-Elizabeth Treatment Plant (CETP) Offline Program Water Quality Improvement Fund (WQIF) application was approved by the Commission on September 24. The public comment period will continue until mid-October and then the grant agreement can become fully executed. The \$78 million included in the grant agreement will be the first phase of reimbursements for interceptor assets installed to convey flow from the CETP to the Atlantic Treatment Plant (ATP). Staff will work with the Department of Environmental Quality (DEQ) to negotiate the second phase, an amount of up to \$22 million of this grant that will reimburse for work done at the ATP that was needed to accept the flow from CETP.

The \$268 million loan agreement for WIFIA Tranche 3 and the modifications to the WIFIA master Agreement closed on September 30. WIFIA Tranche 3 will be used to pay for the costs of the Sustainable Water Initiative For Tomorrow (SWIFT) program in Fiscal Year (FY) 2026. Closing on Tranche 3 now provides a low-cost alternative means of financing that will allow staff to determine the lowest cost of capital financing prior to needing the funds in early FY 2026.

The accompanying Interim Financial Report for the first quarter of the year indicates that most revenue and expense accounts are generally in line with the amended budget.

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. Staff estimates outbound calling generated just over \$1million in payments following contact.

Field staff delivered 5,849 warning door tags and disconnected water service to 894 accounts during September 2024. This activity resumed in September following a temporary moratorium during July and August due to the 2024 legislative requirement effective July 1 suspending disconnection activities when the forecasted temperature is 92 degrees or higher within 24 hours of scheduled disconnection.

Partially as a result of resumed field activities and questions regarding longer billing periods from delayed meter reading activities by our locality partners, customer call and email volumes increased in September, ranging from 3,000 to 3,750 per week.

A. Interim Financial Report

1. Operating Budget for the Period Ended September 30, 2024.

	Amended Budget	Current YTD	Current YTD as % of Budget (25% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	\$ 442,031,000	\$ 117,040,619	26%	26%
Surcharge	1,400,000	449,600	32%	22%
Indirect Discharge	3,970,000	1,086,482	27%	28%
Fees	3,172,000	858,158	27%	30%
Municipal Assistance	837,000	144,354	17%	37%
Miscellaneous	1,982,000	583,565	29%	48%
Total Operating Revenue	453,392,000	120,162,778	27%	27%
Non Operating Revenues				
Facility Charge	6,170,000	1,919,900	31%	32%
Interest Income	7,300,000	6,986,788	96%	95%
Build America Bond Subsidy	-	-	0%	0%
Other	330,000	119,475	36%	11%
Total Non Operating Revenue	13,800,000	9,026,163	65%	42%
Total Revenues	467,192,000	129,188,941	28%	27%
Transfers from Reserves	19,475,990	4,868,998	25%	25%
Total Revenues and Transfers	\$ 486,667,990	\$ 134,057,939	28%	27%
Operating Expenses				
Personal Services	\$ 80,140,274	\$ 17,619,942	22%	23%
Fringe Benefits	30,767,169	6,523,967	21%	22%
Materials & Supplies	15,245,514	2,848,248	19%	15%
Transportation	2,382,779	334,979	14%	20%
Utilities	16,643,039	3,469,412	21%	21%
Chemical Purchases	16,974,110	3,213,333	19%	23%
Contractual Services	57,868,703	9,146,955	16%	16%
Major Repairs	16,778,801	1,051,737	6%	10%
Capital Assets	2,361,019	154,972	7%	9%
Miscellaneous Expense	4,171,177	1,880,199	45%	23%
Total Operating Expenses	243,332,585	46,243,744	19%	19%
Debt Service and Transfers				
Debt Service	87,700,000	18,528,480	21%	41%
Transfer to CIP	155,635,405	38,908,851	25%	25%
Transfer to Risk management	-	-	0%	25%
Total Debt Service and Transfers	243,335,405	57,437,331	24%	31%
Total Expenses and Transfers	\$ 486,667,990	\$ 103,681,075	21%	25%

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 the 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 September 30, 2024.

HRSD - RESERVE AND CAPITAL ACTIVITY September 30, 2024

	General Reserve			Capital		
	General	Debt Service	Risk Mgmt Reserve	Paygo	SNAP	CIP Proceeds
	Unrestricted	Restricted	Unrestricted	Unrestricted	Restricted	Restricted
Beginning - July 1, 2024	\$ 240,258,497	\$ 22,307,000	\$ 4,799,555	\$ 37,468,922	\$ -	\$ -
Current Year Sources of Funds						
Current Receipts	127,397,478					
Line of Credit						
VRA Draws						11,699,581
WIFIA Draws						74,198,212
Grants						13,136,680
Series 2024B					268,087,870	
Series 2024B Interest					2,128,908	
Transfers In				38,908,851		
Sources of Funds	127,397,478	-	-	38,908,851	270,216,778	99,034,473
Total Funds Available	\$ 367,655,975	\$ 22,307,000	\$ 4,799,555	\$ 76,377,773	\$ 270,216,778	\$ 99,034,473
Current Year Uses of Funds						
Cash Disbursements	70,429,001			34,779,994		99,034,473
Transfers Out	38,908,851					
Uses of Funds	109,337,852	-	-	34,779,994	-	99,034,473
End of Period - September 30, 2024	\$ 258,318,123	\$ 22,307,000	\$ 4,799,555	\$ 41,597,779	\$ 270,216,778	\$ -
Unrestricted Funds	\$ 304,715,457					

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended September 30, 2024.

HRSD - PROJECT ANALYSIS September 30, 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	1,681,309	34,482,788	3,895,551	37,815,611
Army Base	176,442,597	126,238,488	64,019	126,302,507	9,865,453	40,274,637
Atlantic	262,172,364	89,606,122	2,842,507	92,448,629	30,868,253	138,855,482
Boat Harbor	526,086,433	195,525,030	8,939,110	204,464,140	262,895,603	58,726,690
Ches-Eliz	60,564,467	20,454,851	293,911	20,748,762	5,085,973	34,729,732
Eastern Shore	63,812,749	41,487,070	1,174,875	42,661,945	3,261,918	17,888,886
James River	374,571,240	196,624,027	11,483,274	208,107,301	125,480,043	40,983,896
Middle Peninsula	92,488,041	26,445,704	669,885	27,115,589	4,455,817	60,916,635
Nansemond	485,050,400	210,474,584	25,930,927	236,405,511	183,640,743	65,004,146
Surry	60,391,465	45,528,213	210,105	45,738,318	6,968,958	7,684,189
VIP	274,947,838	68,101,536	9,936,238	78,037,774	71,808,607	125,101,457
Williamsburg	87,324,019	22,399,476	228,214	22,627,690	6,307,653	58,388,676
York River	112,420,863	43,280,559	4,241,373	47,521,932	36,833,917	28,065,014
General	1,644,211,174	347,184,688	31,853,594	379,038,282	843,968,209	421,204,683
	\$ 4,296,677,600	\$ 1,466,151,827	\$ 99,549,341	\$ 1,565,701,168	\$ 1,595,336,698	\$ 1,135,639,734

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	\$ 78,276,470
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-FEM	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	\$ 156,464,574

6. Debt Management Overview

HRSD - Debt Outstanding (\$000's)				September 30, 2024		
		Aug 2024		Sept 2024		
		Principal		Principal		Interest
		Balance	Payments	Draws	Capitalized Interest	Balance
Fixed Rate		\$ 1,557,536	\$ (7,021)	\$ 10,039	\$ 392	\$ 1,560,946
Variable Rate		50,000	-	-	-	50,000
Line of Credit		100,000	-	-	-	100,000
Total		\$ 1,707,536	\$ (7,021)	\$ 10,039	\$ 392	\$ 1,710,946
						\$ (2,354)

HRSD- Series 2016VR Bond Analysis			September 27, 2024
	SIFMA Index	HRSD Series 2016VR	Deviation to SIFMA
Maximum	4.71%	4.95%	0.24%
Average	1.34%	0.92%	-0.42%
Minimum	0.01%	0.01%	0.00%
As of 9/27/24	3.15%	3.10%	-0.05%

Since October 20, 2011 HRSD has averaged 92 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	\$ 225,865,648	0%	Closed Out
WIFIA Tranche 2	EPA	\$ 476,581,587	\$ 282,791,861	41%	Ongoing
WIFIA Tranche 3	EPA	\$ 268,087,870	\$ -	100%	July 2025
Clean Water Program 2024	DEQ	\$ 80,000,000	\$ 12,781,302	84%	Ongoing

7. Financial Performance Metrics for the Period Ended September 30, 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	\$ 304,715,457		457
Risk Management Reserve	\$ (4,799,555)	(7)	450
Capital (PAYGO only)	\$ (41,597,779)	(63)	387
Adjusted Days Cash on Hand	\$ 258,318,123		387

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

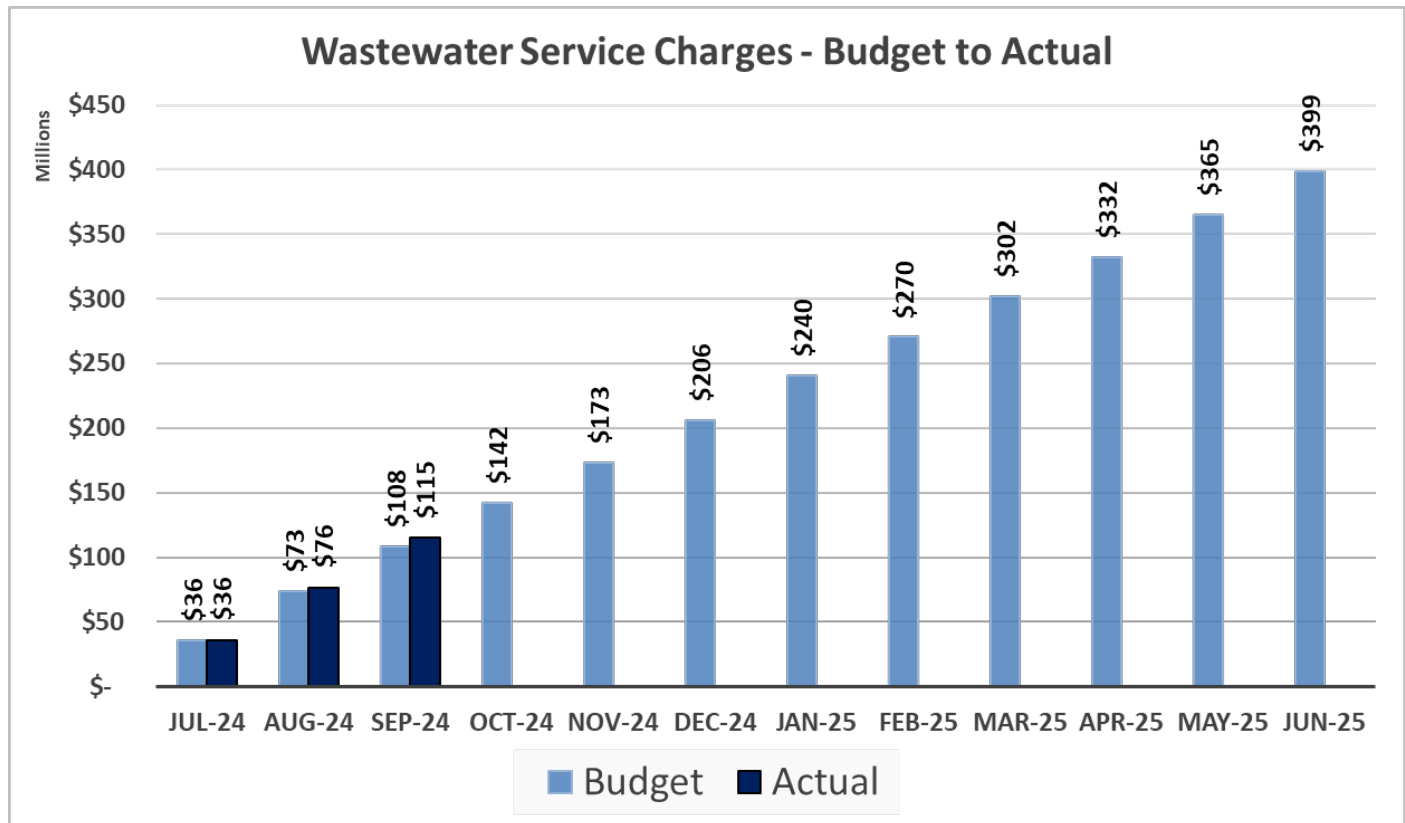
September 30, 2024

Primary Source	Beginning Market Value July 1, 2024	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value September 30, 2024	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BOA Corp Disbursement Account	31,786,393	240,875,643	256,140,315	332,907	16,854,628	7.1%	N/A	0.55%
VIP Stable NAV Liquidity Pool	178,789,050	40,000,000	-	2,634,363	221,423,413	92.9%	AAAm	5.29%
Total Primary Source	\$ 210,575,443	\$ 280,875,643	\$ 256,140,315	\$ 2,967,270	\$ 238,278,041	100.0%		

Secondary Source	Beginning Market Value July 1, 2024	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value September 30, 2024	Ending Cost	LTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	65,915,924	-	3,334	714,835	67,753,845	68,017,628	(263,784)	3.74%
Total Secondary Source	\$ 65,915,924	\$ -	\$ 3,334	\$ 714,835	\$ 67,753,845	\$ 68,017,628	\$ (263,784)	

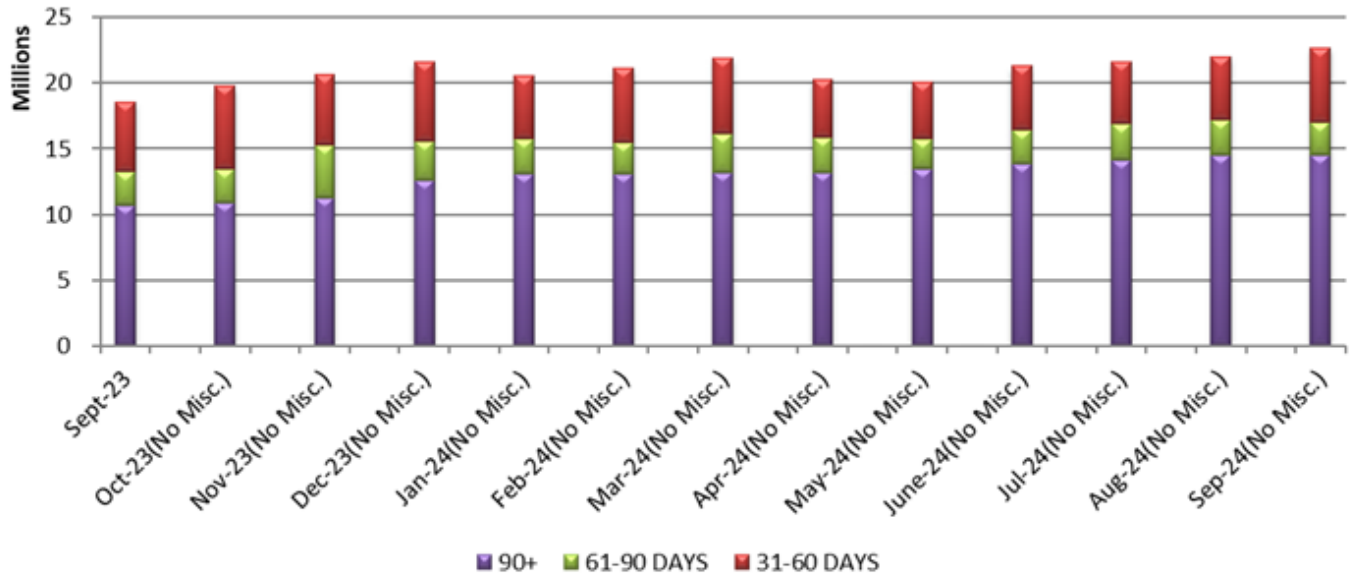
	Total	Fund Alloc
Total Primary Source	\$ 238,278,041	77.9%
Total Secondary Source	\$ 67,753,845	22.1%
TOTAL SOURCES	\$ 306,031,886	100.0%

8. Summary of Billed Consumption



Summary of Billed Consumption (,000s ccf)							
			<u>% Difference</u>		<u>% Difference</u>		<u>% Difference</u>
	<i>FY2025</i>	<i>FY2025</i>		<i>Cumulative</i>		<i>Cumulative 3</i>	
	<i>Cumulative</i>	<i>Cumulative</i>		<i>FY2024</i>	<i>From</i>	<i>Year Average</i>	<i>From 3 Year</i>
<i>Month</i>	<i>Budget</i>	<i>Actual</i>	<i>From</i>	<i>Actual</i>	<i>FY2024</i>		<i>Year Average</i>
	<i>Estimate</i>		<i>Budget</i>				
July	4,678	4,630	-1.0%	4,504	2.8%	4,721	-1.9%
Aug	9,644	9,518	-1.3%	9,432	0.9%	9,534	-0.2%
Sept	14,196	14,223	0.2%	13,965	1.9%	14,173	0.4%
Oct	18,663	-	N/A	18,854	N/A	18,861	N/A
Nov	22,756	-	N/A	23,004	N/A	22,911	N/A
Dec	27,109	-	N/A	27,127	N/A	27,267	N/A
Jan	31,641	-	N/A	31,819	N/A	31,784	N/A
Feb	35,568	-	N/A	36,182	N/A	35,990	N/A
March	39,770	-	N/A	39,826	N/A	39,954	N/A
Apr	43,694	-	N/A	44,054	N/A	44,119	N/A
May	48,027	-	N/A	48,760	N/A	48,383	N/A
June	52,500	-	N/A	53,206	N/A	52,999	N/A

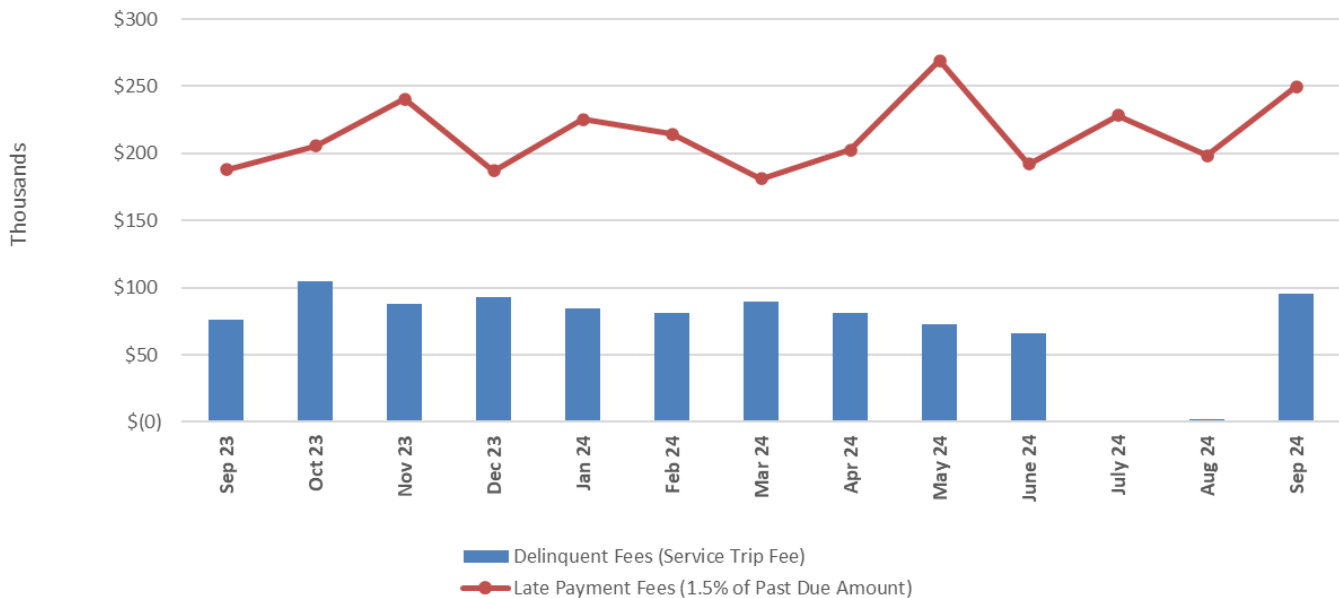
HRSD Accounts Receivable Aging +30 Days



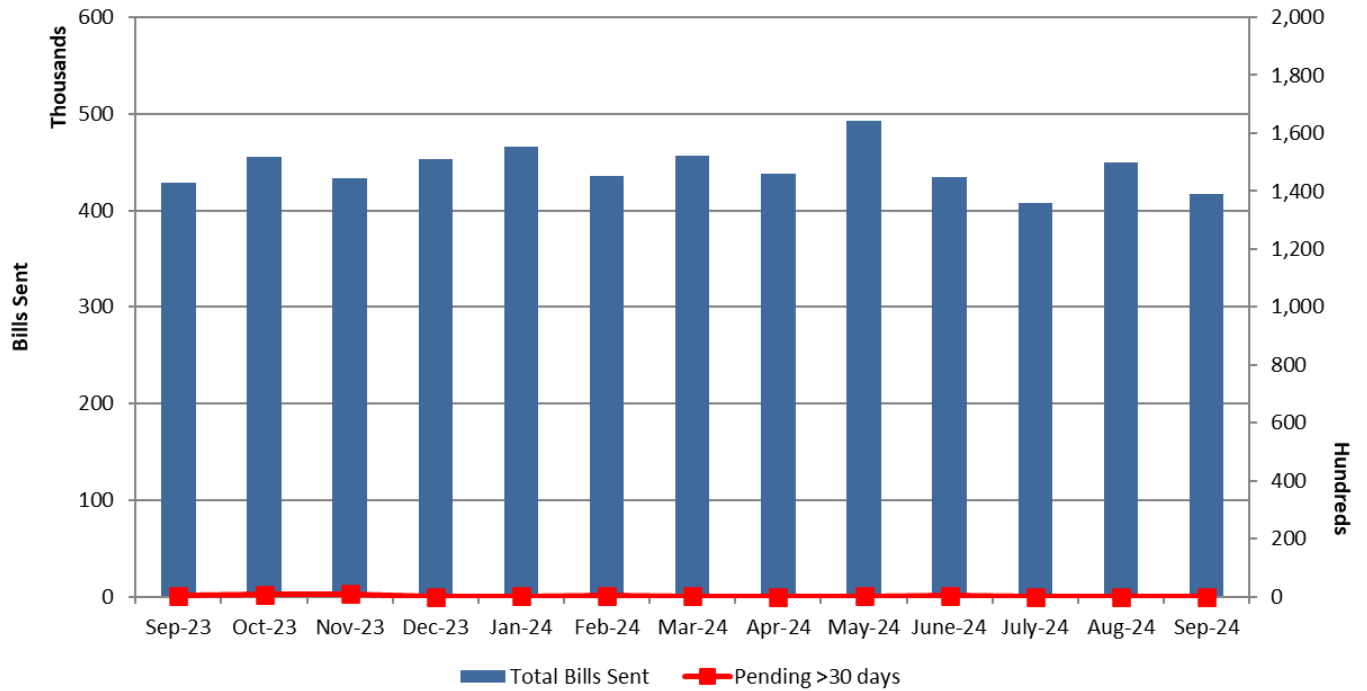
B. Customer Care Center

1. Accounts Receivable Overview

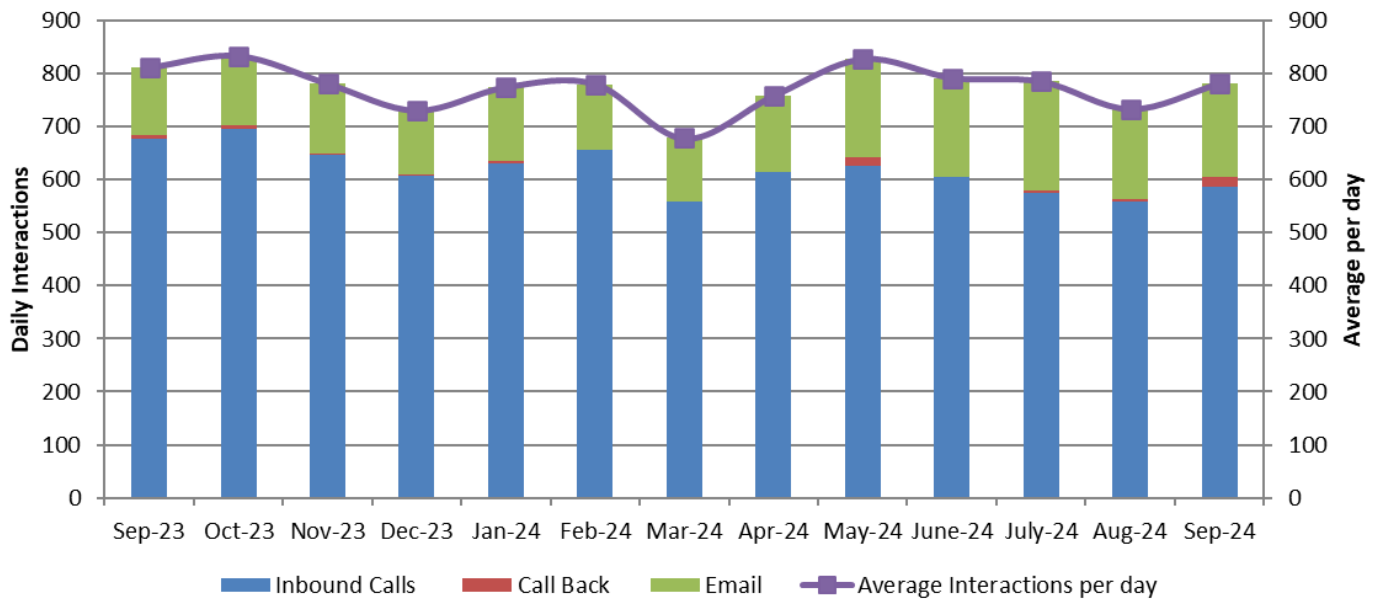
Delinquent & Late Payment Fees



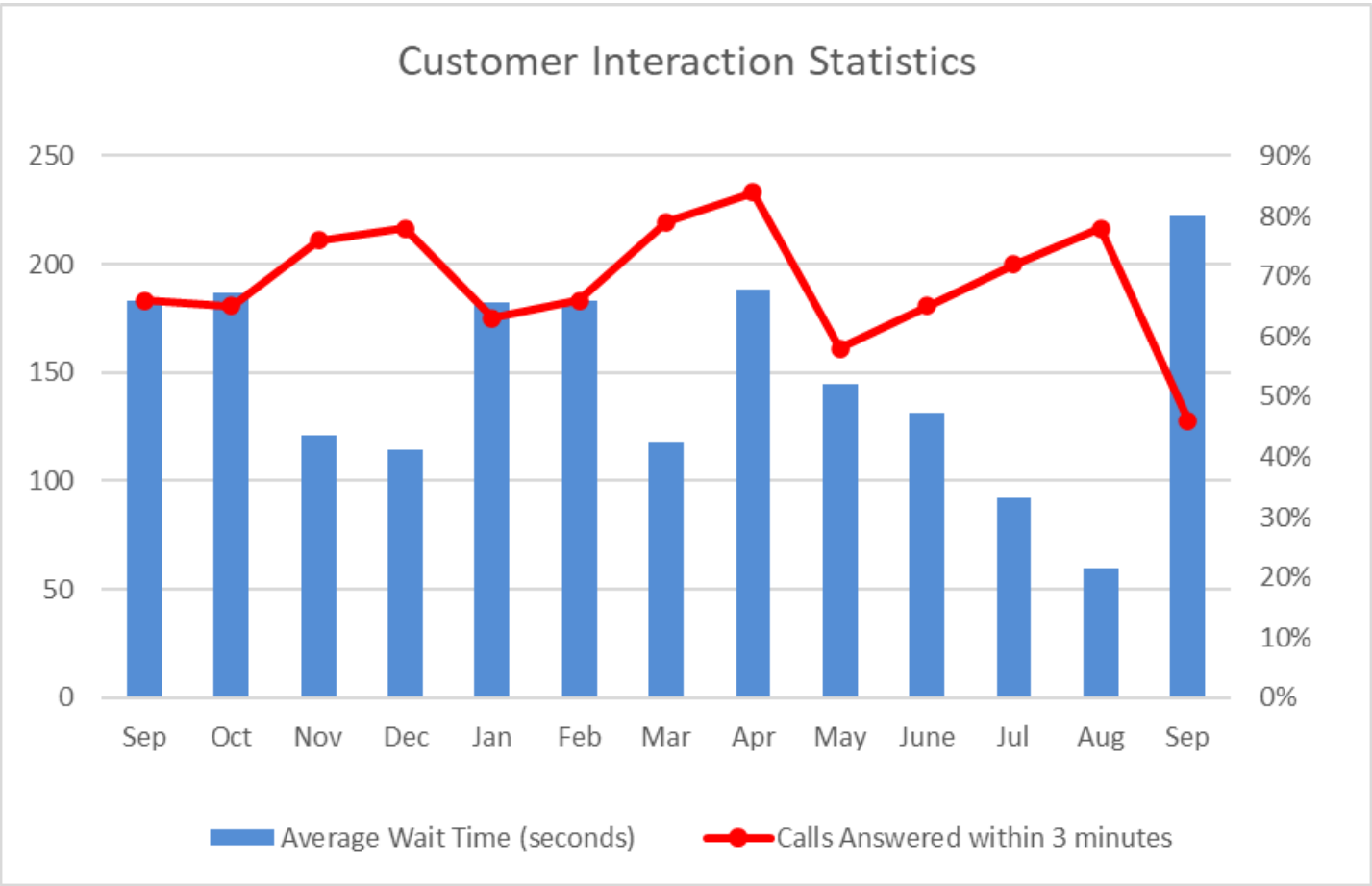
Billing Summary



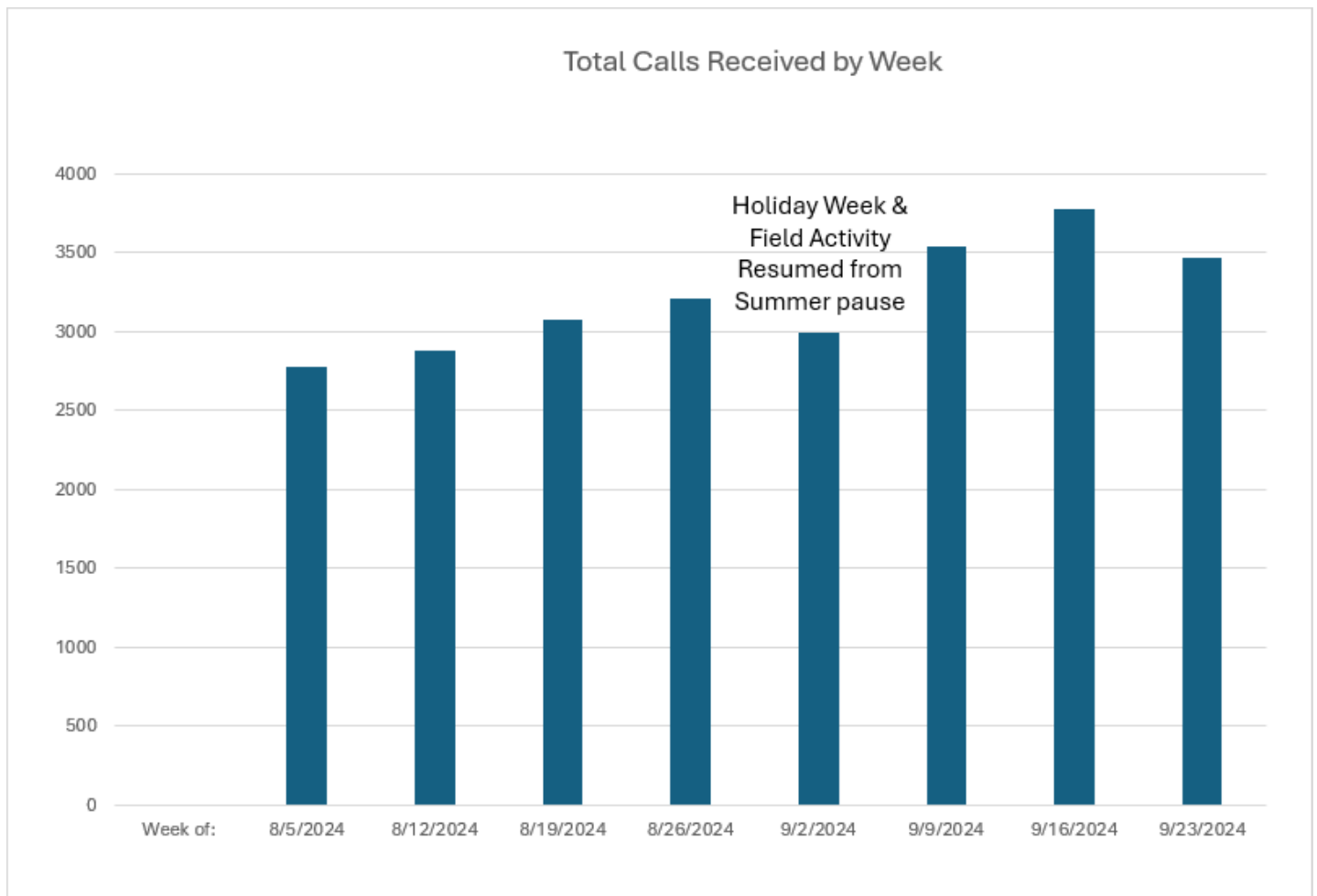
Call Center Interactions (per day)



2. Customer Care Center Statistics



Customer Interaction Statistics	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep
Calls Answered within 3 minutes	66%	65%	76%	78%	63%	66%	79%	84%	58%	65%	72%	78%	46%
Average Wait Time (seconds)	183	187	121	114	182	183	118	188	145	131	92	60	222
Calls Abandoned	11%	12%	10%	9%	13%	12%	10%	8%	15%	11%	9%	6%	18%



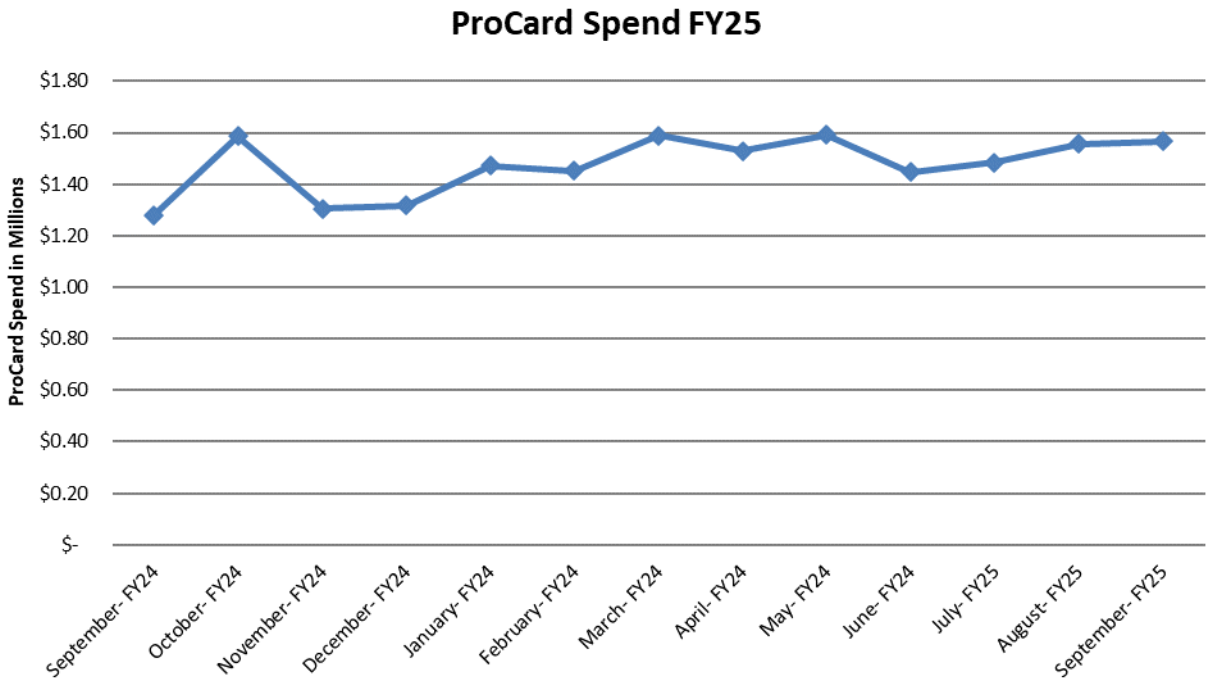
C. Procurement Statistics

Savings	Current Period	FYTD
*Competitive Savings ¹	\$579,693	\$726,460
Negotiated Savings ²	\$4,472	\$5,297
Salvage Revenues	\$51,204	\$64,613
Corporate VISA Card - Estimated Rebate	\$23,349	\$69,635

*Competitive Savings - FYTD total has been decreased by \$1,102 due to an error on the August 2024 report.

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

TO: General Manager

FROM: Chief Information Officer

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

DATE: October 13, 2024



Innovation

Staff is upgrading the operating systems for mid-tier computing platforms within the data center. The upgrade is progressing on schedule and extensive testing throughout the process ensures both data and system integrity.

Programming staff continues working on requisite changes within eBusiness Suite and other relevant systems to accommodate end-of-year and new year data processing and reporting changes (e.g. tax code changes, benefit changes, payroll, etc.).

Initial preparations for the upgrade of the Pre-treatment Information Management System (PIMS) are underway, including cybersecurity and systems engineer review of proposed network and application platform configuration changes.

With the Surface Pro rollout complete, staff is replacing outdated desktop computers throughout HRSD to ensure consistency and reliability of HRSD networked assets are maintained.

The IT Help Desk processed 370 work orders and requests for assistance in September, ensuring availability of computing resources to those working locally and remotely.



Community Engagement

Work is progressing nicely on the upcoming rollout of the Customer Portal. Staff from multiple work centers continue user acceptance testing, error identification and remediation, and finalization of the cutover plan into production for go live. The revised go live is now slated for November.

Respectfully,

Don Corrado

TO: General Manager/Chief Executive Officer

FROM: Chief Operating Officer

SUBJECT: Operations Monthly Report for September 2024

DATE: October 09, 2024



Community Engagement

Staff participated in several community events as follows:

1. On September 30, North Shore (NS) Interceptor Operations held our annual combined locality coordination meeting with most all our member jurisdictions in attendance. A wide range of topics were discussed including Saltwater Chasers, Sustainable Water Initiative for Tomorrow (SWIFT) updates, CIP updates, and operational reviews.
2. On September 16, South Shore (SS) Interceptor Operations staff held a locality collaboration meeting with City of Suffolk Public Utilities Department Operation's staff to discuss operational issues, initiatives, and projects.
3. On September 9, Mr. David Ewing and Mr. Jeff Powell, Operations Superintendent and Maintenance Superintendent respectively at the Atlantic Treatment Plant (ATP) gave a tour of the Total Petroleum Hydrocarbons (TPH) to staff from the City of Arlington, Virginia.
4. Kickoff meeting was held for the second phase of improvements to Riverview Farm Park with the City of Newport News Parks and Recreation and our consultant. This phase includes connector trails on the old City Farm property and access roads to well sites. Three recharge wells are in the phase two improvements area. Trails under phase one are scheduled to open to the public at the end of October.
5. Small Communities Division (SCD) and Electrical and Instrumentation (E&I) staff met with York County Public Works staff to discuss vacuum sewer operation and optimization.
6. SCD staff, Surry County staff, Surry County Schools staff and Prince George Electric Co-op staff met to negotiate a path forward for providing electrical service for the new Surry High School Pump Station.



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 two reportable events at Virginia Initiative Plant (VIP) in September for failing to record two valid Total Hydrocarbon (THC) readings in an hour, resolved by replacing the THC analyzer.
2. Army Base Treatment Plant (ABTP) had two reportable events in September for failing to record two valid THC readings in one hour. The Continuous Emission Monitoring System (CEMS) unit was replaced by E&I staff.
3. ABTP had one reportable event in September for "shutdown of odor control scrubber for more than one hour". The issue was caused when emergency generators were operated during black start procedures.

4. ATP main Thermal Hydrolysis Process (THP) steam boiler kept failing due to a flame failure when running on digester gas (d-gas). Staff called in a contractor that found the d-gas regulator needed adjustment to provide the needed pressure for this boiler to operate on this source of gas. Staff has the backup boiler on to keep the THP process, which directly impacts keeping all of solids handling, up and running. This back-up boiler is a known source for noise complaints, so the plant is expediting repairs as quickly as possible, with the long-term goal of having a permanent back up boiler in the space where the CHP engines are currently sitting.
5. Williamsburg Treatment Plant (WBTP) had one reportable use of the incinerator emergency bypass stack due to the induced draft fan tripping out due to a power blip. The incinerator total hydrocarbon analyzer had a total data capture of only 14.5 percent due to calibration issues.
6. The York River Treatment Plant (YRTP) Odor Control Scrubbers were off-line for more than one hour due to planned electrical shut down. The purpose of the shutdown was to allow a contractor safe access the main switch gear to investigate an issue.

Additional Topics of Interest:

1. On September 25, SS Interceptor Operations supported the Chesapeake-Elizabeth Treatment Plant (CETP) decommissioning and demolition by installing pumps and pipelines to drain the clarifiers that have filled with rainwater.
2. On September 30, SS Interceptor Operations helped the City of Portsmouth Public Utilities Department with the repair of a damaged concrete raw water main in Suffolk that services Portsmouth.
3. There was a reportable event at VIP on September 17 when the plant operator recorded an effluent chlorine residual value lower than 0.10 mg/L, caused by a process upset following a high flow event.
4. On the Advanced Nutrient Removal Improvement (ANRI)/SWIFT Project at the JRTP, sheet piles are still being installed in preparation for constructing the new #2 secondary clarifier, while the #3 secondary clarifier weir box is under construction. Construction of the new final effluent sample building was completed. On the SWIFT side, two more plate settlers were installed in building #1 and concrete work continued on the upper decks of building #2.
5. On September 11, ATP had the annual inspection from the Virginia Beach Fire Marshal. The inspection went well. There were a few minor issues that are being addressed and the Fire Marshal is scheduled to reinspect in early October.
6. E&I staff replaced all the conduit and wire for three burners and three thermocouples that were damaged on incinerator #1 in June at the Boat Harbor Treatment Plant (BHTP).
7. SCD staff successfully repaired a force main break in Mt. Olive that was caused by a private contractor who struck a 2-inch force main pipe while directionally boring for communications cable. The pipe carries flow to the Mt. Olive Treatment Plant.
8. SCD staff have been working to transition plant data entry from the Electronic Data System (EDS) to Hach Water Information Management Systems (WIMS). Dual entry period for West Point Treatment Plant (WPTP) and King William Treatment Plant (KWTP) will continue in October. Urbanna and Central Middlesex are now online with Hach WIMS and undergoing the dual entry period for October.
9. E&I are in the process of designing a temporary solution to counteract a H₂S issue at the centrifuge building at WBTP. H₂S is causing corrosion of electrical components that control the centrifuges and has resulted in significant down time. They are also evaluating permanent solutions that are sustainable and cost effective.
10. E&I staff installed a Hach Sc5500 Low Range phosphate analyzer for the Filter Pilot at VIP. The plant staff is assessing tertiary treatment technologies that will meet new phosphorous limits by 2026, and phosphorous analyzers will be evaluated to ensure permit compliance.
11. Staff managed the conveyance and treatment of over 135 million gallons (MG) of wastewater this month.



Financial Stewardship

1. HRSD Project Team completed liner repairs to the storage pond at the WPTP. Performing this task resulted in cost and time savings and allowed for repairs to be scheduled around operational needs of the Treatment Plant.
2. The Machine Shop had 21 projects during the month of September with two of them being pump rebuilds. Another notable project was for ATP, draft tube mixer flanges were salvaged from worn-out parts. Staff used available materials to re-hub the flanges back to tolerance, returning them to service at minimal cost.
3. The Carpenter shop completed a total of five work orders in September. A significant amount of time has been dedicated to upgrading the old NS Carpenter shop for the Project Team. Current projects include building a CO2 analyzer holder for the boat at TSD, constructing a podium for the wellness team, and repairing and painting office walls.



Innovation

1. The SCADA program continues to make significant progress as more sites were finalized. Numerous variances and network issues were resolved at Coliseum Pressure Reducing Station; however, finalization of this site will not happen until October. The SCADA system continues to be an invaluable tool for helping system performance during emergency operations and during wet-weather events.
2. VIP staff and Mr. Aidan Blair, Research Intern, continues to operate and monitor a ballasted sedimentation and a cloth media filtration pilot for tertiary phosphorus removal. Plant staff have been extremely efficient and creative in assisting with optimization modifications such as mixer installations, piping adjustments, and set-up for various test scenarios.
3. The total volume of SWIFT Research Center recharge into the Potomac aquifer for the month of September was 8.8 million gallons (MG) (33.7% Recharge Time based on 660 gallons per minute). Several factors interfered with recharge operations this month to include process configuration and maintenance related efforts.
4. SCD and E&I staff have been working on a system that will allow remote monitoring on the Mathews County Vacuum System. After meeting with York County Public Works staff, it was determined that a system from FloVac is currently used by their team and is more cost effective than building one of our own. HRSD is working with FloVac for a proposal of their system that meets HRSD's needs.
5. SCD 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.
6. SCD staff along with the HRSD Project Team, met and discussed adding hydrocyclones to the KWTP to help extend the service life of the current membranes. A work plan was developed for the Project Team to execute when time allows.



Talent

1. NS Interceptor Operations has two open positions, one Interceptor Assistant positions and one Interceptor Specialist position.
2. Mr. Lonnie Donaldson joined SS Interceptor Operations as an Interceptor Technician. Mr. Lloyd Favors joined SS Interceptor Operations as an Interceptor Assistant. Mr. Gregory Bailey joined SS Interceptor Operations as a Heavy Equipment Operator.
3. SS Interceptor Operations would like to congratulate Mr. Dylan Poland on his promotion to Heavy Equipment Operator. In addition, congratulations to Mr. Jeff Steadman, Mr. Jeff Midgett, Jr., and Mr. Robert Garcia on their promotion to Utility Locators.
4. On September 10, the Atlantic Treatment Plant received the VWEA Facility Maintenance award at WaterJAM.

5. Eastern Shore has one vacancy for a Maintenance Operator Assistant. We have already begun receiving applications and plan to begin the interview process in October.
6. Middle Peninsula is fully staffed after filling two vacancies during the month of September. Ms. Rachel Cooke started with us as a Systems Operator (SO), and another candidate has accepted an offer for a SO position.
7. The inaugural internal Instrumentation and Controls (I&C) training course began September 10. E&I Superintendent, Mr. Lee Inman, is facilitating training for six E&I Specialists and anticipates completing all classroom and lab instruction by December 17. The formal training course will be offered twice a year, with training objectives focused on enhancing the instrumentation knowledge base and troubleshooting skills.
8. Ms. Ashleigh Payne, Mr. Jonah Jones, and Mr. Andrew Williams joined the Materials Transportation & Logistics team.
9. Mr. Mack Pearce has been selected to serve as the new SWIFT Treatment Process Engineer. He will be primarily assigned to JRTP with the objective of successfully commissioning and starting up the new SWIFT facilities. Over the eight years he has been with us as a Research Intern, he completed his Master's degree in Environmental Engineering at Virginia Tech, and he is now nearly finished with his PhD. Mack has been working on SWIFT since nearly the beginning of the treatment testing at the initial York River pilot testing facility. He was also intimately involved in the design and startup of the SWIFT Research Center, and his pilot work on ozone and other processes has been critical for the design of the full-scale SWIFT facilities at James River and Nansemond. Specifically, the ozone contactor design and bromate control approach were based exactly on Mack's ideas and pilot work.

Respectfully submitted,

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

[Attachment: MOM Reporting](#)

MOM Reporting Numbers

[illegible]

TO: General Manager

FROM: Director of Talent Management

SUBJECT: Talent Management Monthly Report for September 2024

DATE: October 9, 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 and continues to review applications for our new Human Resources Business Partner. The two other new positions are going through the C&C process before the recruiting efforts begin.

Human Resources (HR): There were numerous issues identified with Health Equity, our new Health Savings account carrier. HR staff work through and communicated with employees as progress was made. The transfer of funds from our old HSA bank to Health Equity was successful with only 40 employees falling out from that process.

HR Staff reviewed the renewal for the Medicare Advantage plan which will renew in January 2025. Additionally, HR Staff met with Marsh McLennan Agency (MMA), our benefits consultant, to review information from their new Pathways section to map out better ways for HRSD to address the most common health issues.

HR staff are working with Learning & Development (L&D) and Safety staff to develop the Learning Management System (LMS) structure for the newly purchased Cornerstone software platform.

Learning and Development (L&D): In September, L&D solicited bids for the Organizational Development & Training contract renewal, continued development of our corporate learning management system, and strengthened community partnerships to develop and expand access to training.

Organizational Development & Training RFP: L&D's RFP was posted and received 13 bids. Four organizations were interviewed, and the RFP panel is working to award a contract. The RFP and award will be presented in the October Commission Meeting.

Cornerstone LMS: L&D Staff are working to build and implement the LMS and transition current training to an online management system.

Industry and Community Partnerships: The Hampton Roads Workforce Council (HRWC) was awarded \$6 million for their proposed regional apprenticeship hub

program through the federal Apprenticeship Building America Grant. As part of the grant award, HRSD's Apprenticeship Program received a \$500,000 sub-award to expand and enhance apprenticeship opportunities in the Hampton Roads area. L&D Staff are working closely with HRWC to build a framework for accomplishing the projected goals over the next four years.

Lastly, L&D facilitators have continued scheduled training for the LAMA cohort, with intended graduation scheduled for December 2024.

Safety: The Safety staff conducted mandatory training for various work centers, including Telehandler Training, Overhead Crane Training, and American Heart Association CPR, First Aid, and AED courses. Annual audiometric testing is currently being administered by Concentra for employees enrolled in HRSD's Hearing Conservation Program, which applies to those exposed to noise levels of 85 decibels or higher. Additionally, several work centers underwent their quarterly safety inspections this month. Owen McLean from Sentry Insurance joined Safety and plant staff for the Eastern Shore Quarterly Safety Inspection. There were seven reported work-related injuries requiring medical attention and two auto/property damage incidents.

Since becoming certified to teach Stop the Bleed, Safety staff have started conducting training sessions for various work centers, including TSD and several plants. These classes are designed to equip employees with the skills to assist co-workers in stopping severe bleeding during emergency situations.



Community Engagement

Staff participated in the United Way Day of Caring event and 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 September 2024

DATE: October 10, 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 14,132 Total Possible Exceedances.
- c. Pounds of Pollutants Removed in FY 2025 to date: 55.1 million pounds.
- d. HRSD received a draft VPDES permit for Army Base on September 24. Owner comments will be drafted and submitted by October 9.

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

One civil penalty was issued in September to Total Fiber Recovery at Chesapeake LLC – Chesapeake.

An Enforcement Order was issued to Total Fiber Recovery at Chesapeake, LLC in August 2024 for a technical violation and an administrative violation.

In May 2024, the Permittee discharged solid material to the sanitary sewer causing damages to Chesapeake Pump Station #241 and resulting in the City of Chesapeake having to perform line cleaning and repairs at Pump Station 241. HRSD issued a 4.0-point REG3 violation for an Unauthorized Discharge with harm caused.

Additionally, the Permittee failed to notify HRSD that process wastewater discharge to the sanitary sewer had commenced and failed to start their Initial Wastewater Characterization (IWC) sampling, leading to an administrative violation.

A Show Cause Meeting was held in July 2024 and the Permittee attributed the cause of the unauthorized discharge to their pulper overflowing. The Permittee took corrective action to lock out the sump where the spill occurred, and this remains locked out to this date.

The Enforcement Order issued which contained two invoices: one with a Civil Penalty of \$11,000 and a Cost Recovery/Civil Liability of \$2,856.60 for HRSD labor costs incurred by the investigation and resolution of these events. The Enforcement Order was accepted, and the fines were paid in full on September 25, 2024.

3. Environmental and Regulatory Advocacy

Chief participated in the following advocacy and external activities:

- a. Chaired a subcommittee meeting of the Chesapeake Bay Program's Wastewater Treatment Workgroup, focused on addressing exfiltration loads from wastewater collection systems in the Chesapeake Bay watershed model. Also chaired another subcommittee meeting for this same workgroup, this one focused on evaluating the utility of adding Boater Pump-outs into the model as a management tool for addressing nutrient load reductions.
- b. Attended a meeting of the Eastern Virginia Groundwater Management Advisory Committee and provided the group with a briefing on the current status of HRSD's SWIFT program.
- c. Met with the Virginia Institute of Marine Science (VIMS), the Virginia Department of Health's Division (VDH) of Shellfish Safety, and the Virginia Department of Environmental Quality to discuss updates to water quality modeling around the site of the new, proposed outfall on the island of Chincoteague. This new outfall would replace the existing outfall structure and could potentially support increased capacity for wastewater treatment to meet the needs of the community. The model is specifically evaluating whether changes would be needed to existing shellfish condemnation zones within the channel. Modeling results thus far indicate that the existing zones are protective and would not need to be changed. VIMS and VDH requested additional information as part of their internal evaluations.
- d. Participated in abstract review for the Environment Virginia Symposium.
- e. Participated in the Virginia Association of Municipal Wastewater Agencies (VAMWA) Board and general membership meetings.
- f. Participated in a Virginia Forever Membership Development Committee meeting to evaluate and develop new opportunities for member recruitment.



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.

1. HRSD provided sampling and analytical services to the following to support monitoring required for their respective Virginia Permit Discharge Elimination System (VPDES) permits:
 - a. City of Chesapeake
 - b. City of Fredericksburg
 - c. Hanover County
 - d. Northumberland County
 - e. Westmoreland County
2. [MAP Billed Reimbursements](#) for service provided from July 1 to September 30, 2024.
3. [MAP Invoice Summary](#) for the third Quarter 2024 calendar year.



Talent

1. Megan Pennington-Boggio of the Central Environmental Laboratory (CEL) was honored with an award for the 2024 VWEA Laboratory Analyst Excellence Award at the 2024 WaterJAM Conference.
2. Catherine Svingos graduated from the VWEA Leadership Academy at the 2024 WaterJAM Conference.



Community Engagement

1. 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:
 - a. City of Chesapeake (Southern Branch)
 - b. City of Hampton (New Market Creek)
 - c. City of Newport News (Southeast Newport News)
 - d. City of Norfolk (Mason Creek)

- e. City of Suffolk (downtown)
 - f. City of Virginia Beach (Thalia Creek)
 - g. James City County
2. TSD Staff presented biosolid PFAS research for the Virginia Soybean Field Day at the Virginia Tech Agricultural Research and Extension Center in Warsaw, VA.
 3. Staff participated in a Day of Caring at A Night's Welcome, which is a nightly shelter that provides a safe and warm place to those in need.



Innovation

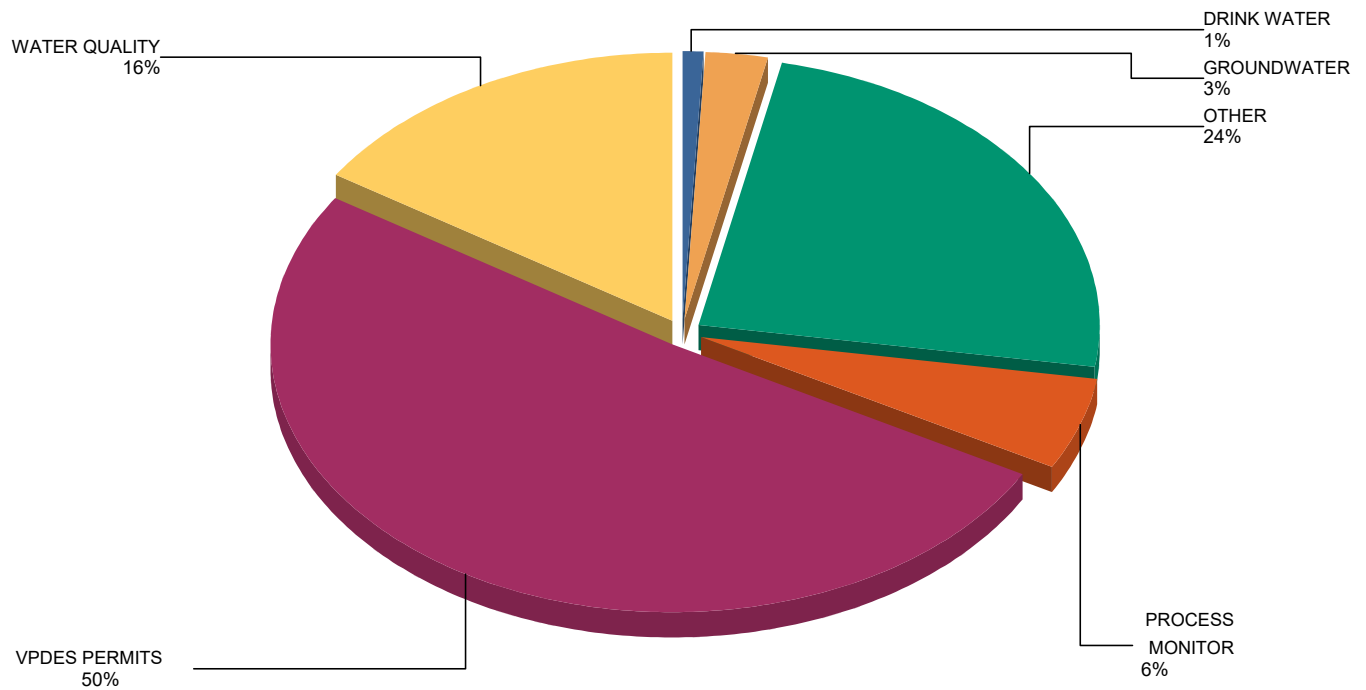
1. CEL staff began collaboration with the Potomac Aquifer Recharge Monitoring Laboratory (PARML) to develop a Perfluoroalkyl Carboxylic Acids (PFCA) analytical method manuscript. This analytical method has a rapid turnaround time and allows SWIFT operational staff to maintain tight process control on the performance of the Granulated Activated Carbon (GAC) media in removing Per- and Polyfluoroalkyl Substances (PFCs). This method will have value for the broader water and wastewater professional community.
2. Technical Presentations:
 - a. Micaela Griffin, WaterJAM - "A Partnership for Potable Reuse: Achieving 1,4-Dioxane Removal through Cometabolic Biological Pretreatment".
 - b. Micaela Griffin, North Carolina Pretreatment Consortium Annual Conference - "A Partnership for Potable Reuse: Achieving 1,4-Dioxane Removal through Cometabolic Biological Pretreatment".
 - c. Amanda Albright, North Carolina Pretreatment Consortium Annual Conference - "HRSD's Approach to Mitigating FOG".
 - d. Jack Denby, WaterJAM - "Application of Online Analyzers for Compliance Reporting: A Case Study".
 - e. Jamie Heisig-Mitchell, WaterJAM Workshop: A Decade of ENR: Current Strategies and Future Outlook - "HRSD SWIFT: A One Water Approach for Nutrient Load Reduction".

Respectfully submitted,

Jamie Heisig-Mitchell
Chief of Water Quality

**Municipal Assistance Billed Reimbursements per Service
From 07/01/2024 to 09/30/2024**

Attachment 1



Notes: Other = Equipment purchase, consultation, validation studies, boater pump-out program, etc.

Municipal Assistance Invoice

From 7/1/2024 - 9/30/2024

Municipality	Reimbursements
Accomack County	\$3,984.82
Buckingham County	\$257.81
City of Chesapeake	\$2,443.54
City of Emporia	\$271.83
City of Franklin	\$1,989.26
City of Fredericksburg	\$6,893.59
City of Hampton	\$8,888.56
City of Norfolk	\$8,672.24
City of Norfolk-Dept of Utilities	\$1,299.76
City of Portsmouth	\$7,735.51
City of Roanoke	\$1,050.00
City of Suffolk	\$2,951.54
City of Virginia Beach	\$8,484.69
Hanover County	\$20,961.18
Henrico County	\$1,725.86
Hopewell RWTF	\$7,621.37
Lynnhaven River NOW	\$254.06
New Kent County	\$22,878.30
Northampton County WWTP	\$3,340.81
Northumberland Co. - Callao WWTP	\$2,450.09
ST BRIDES CORRECTIONAL CENTER	\$552.46
St Brides Corr Ctr WWTP	\$2,342.97
Stafford County	\$108.63
Town of Cape Charles-VAW	\$9,566.60
Town of Round Hill	\$196.91
Virginia Aquarium & Marine Science Ctr	\$7,428.43
Virginia Department of Health	\$14,333.69
Westmoreland County	\$2,004.41
Totals:	<u>\$150,688.92</u>

EFFLUENT SUMMARY FOR SEPTEMBER 2024

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBI	ENTERO #/UBI	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	CONTACT TANK EX
ARMY BASE	8.56	48%	1	1.7	<1	<1	0.37	0.64	5.5	4.4	26
ATLANTIC	43.37	80%	18	9.8	9	7	NA	NA	NA	NA	13
BOAT HARBOR	10.89	44%	12	5.5	52	5	1.2	0.78	30	24	8
CENT. MIDDLESEX	0.015	62%	<2	<1.0	<1	<1	NA	NA	NA	NA	NA
JAMES RIVER	10.75	54%	10	7.7	1	<1	0.65	0.57	15	11	17
KING WILLIAM	0.093	93%	<2	2.3	NA	1	0.057	0.15	1.8	2.1	NA
NANSEMOND	15.64	52%	4	6.6	6	1	1.4	1.3	5.3	4.2	5
ONANCOCK	0.190	25%	<2	<1.0	1	1	0.19	0.23	2.9	3.3	NA
SUNSET BAY	0.02	43%	4	2.2	16	3	NA	NA	NA	NA	0
URBANNA	0.056	56%	3	13	4	4	6.5	3.6	20	17	NA
VIP	27.37	68%	3	3.0	2	1	1.5	0.55	5.2	3.8	3
WEST POINT	0.357	59%	19	7.7	4	13	3.6	2.8	20	15	3
WILLIAMSBURG	8.10	36%	2	2.0	3	4	1.1	0.97	3.6	2.9	18
YORK RIVER	10.23	68%	2	1.5	<1	2	0.31	0.24	5.7	5.0	16
	135.63										

% of
Capacity

North Shore
South Shore
Small Communities

48%
67%
41%

AIR EMISSIONS SUMMARY FOR SEPTEMBER 2024

	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	Temp	Venturi(s) PD	Precooler Flow	Spray Flow	Venturi Flow	Tray/PBs Flow	Scrubber	Any	THC	THC	BZ Temp
	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	pH	Bypass	Mo. Ave	DC	Daily Ave
MHI PLANT	(F)	(in. WC)	(GPM)	(GPM)	(GPM)	(GPM)	3 hr ave	Stack Use	(PPM)	(%)	Days >Max
ARMY BASE	0	0	0	0	0	0	0	0	65	27	0
BOAT HARBOR	0	0	0	n/a	0	0	0	0	7	99	0
VIP	0	0	0	n/a	0	0	0	0	27	98	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	29	15	0

Items of Interest – September 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 was 98% or greater for two of the four MHIs. While Army Base and Williamsburg continued to have CEMs systems performance issues that led to a low percent data capture for the month.

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

AIR PERMITS and ODOR CONTROL

On September 24, submitted to DEQ as requested on September 9 additional information for the air permit application for the diesel engine emergency generators to be installed at James River in support of SWIFT.

There was a total of thirty (31) odor control complaints this month.

Atlantic Plant received twenty-nine (29) odor complaints from Ocean Lakes and Lago Mar neighbors. Plant Staff responded to all complaints. In addition to the usual sources of the odors (curing and stored solids, digesters), a leak was found on the CHP gas skid September 10. Plant staff took immediate corrective action in securing the open drain valve on the CHP gas skid. Communications continues to provide responses to the neighbors as needed. TSD recorded all complaints in the air permit required complaint log.

One other complaint was received from Lake Wesley in Virginia Beach some three miles from Atlantic Plant. Complaint determined that odors were from a non-HRSD source.

James River received a complaint regarding plant odors from a neighbor on Horse Pen Road. Plant staff investigated and no clear single source of odor was identified. A potential combination of sources (solids trailer, a higher-than-normal H₂S scrubber exhaust, and maintenance activities) may have contributed to the complaint received. No further complaints have been received.

TREATMENT

DEQ was notified of the following reportable events:

Atlantic

On September 12, a sodium hypochlorite (hypo) feed line ruptured resulting in a low chlorine residual of 0.02 mg/l. The Operator increased the hypo dose while repairs were made, and feed was reestablished.

James River

On September 16, the plant experienced a brief loss of utility power, which caused rapid power cycling that created a water hammer effect, pressurizing a non-potable water (NPW) line and resulting in NPW spraying out of a flange. Approximately 2,000 gallons of NPW could not be recovered from the ground and storm drain.

Nansemond

On September 9, a contractor hit a NPW line while digging with an excavator. The valve on the NPW line was closed and a pump was used to recover as much water as possible. Approximately 2,000 gallons of chlorinated NPW soaked into the ground.

Virginia Initiative

On September 17, a low chlorine residual of 0.09 mg/L was recorded at 00:13 when chlorine demand outpaced what was dosed. Staff increased hypochlorite feed rate and started supplemental ammonia feed to the secondary effluent to lower the chlorine demand. The next residual recorded at 02:13 was within normal limits.

SYSTEM

On September 19, a contractor failed to take the necessary excavation precautions required by VA 811 law and struck the HRSD force main on Big Bethel Road in York County while boring for a conduit installation. HRSD staff successfully recovered 95% of the released flow, resulting in 750 gallons being discharged to the ground and ditch.

On September 26, a 2-inch vent pipe connected to YR6617-3 on Guinea Rd in Gloucester failed when a Bridgeman Civil (BC) contractor drove over the vent pipe with heavy equipment. BC utilized pump and haul trucks to contain sewage and completed repairs. Approximately 505 gallons of raw wastewater were released to the ground and ditch to Thorntons Creek.

SYSTEM/TREATMENT, SMALL COMMUNITIES, AND EASTERN SHORE

Dendron

On September 18 heavy rain inundated the Dendron PS service area, and flash flood warning was in effect during the time of this spill. 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, 2,080 gallons to Cypress Swamp with a total rainfall of 2.72".
- Dendron PS2, 4,650 gallons to Cypress Swamp with a total rainfall of 2.72".

On September 27 heavy rain associated with tropical storm Helene inundated the Dendron PS service area. The surrounding roads were flooded and caused a delay in response to the system. 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, 1,580 gallons to Cypress Swamp with a total rainfall of 2.19".
- Dendron PS2, 970 gallons to Cypress Swamp with a total rainfall of 2.19".

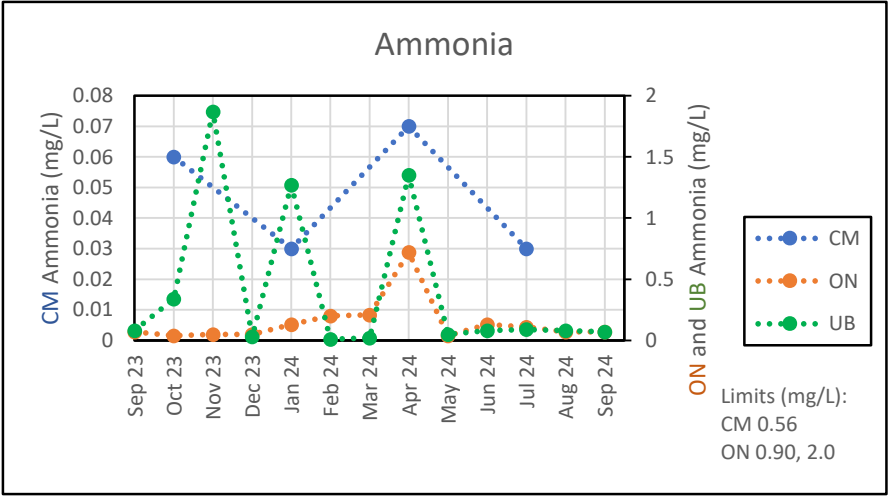
King William collection system

On September 13 a contractor bored into an active force main on Mt Olive Cohoke Road in King William. A vacuum truck was used to recover material and the line was repaired. Approximately 400 gallons of raw wastewater were released to the ground.

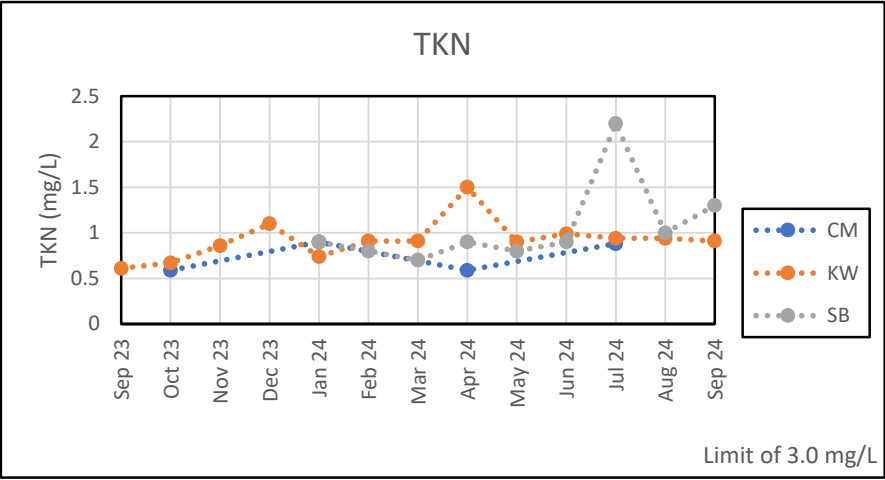
Mathews

On September 17 staff discovered the wet well at Church Street overflowing due to both station pumps in fault status. Upon discovery, the pump breakers were reset and the area was cleaned. No alarm was received initiating an overflow condition resulting in 49,500 gallons of raw wastewater released to the ground and Put-In Creek.

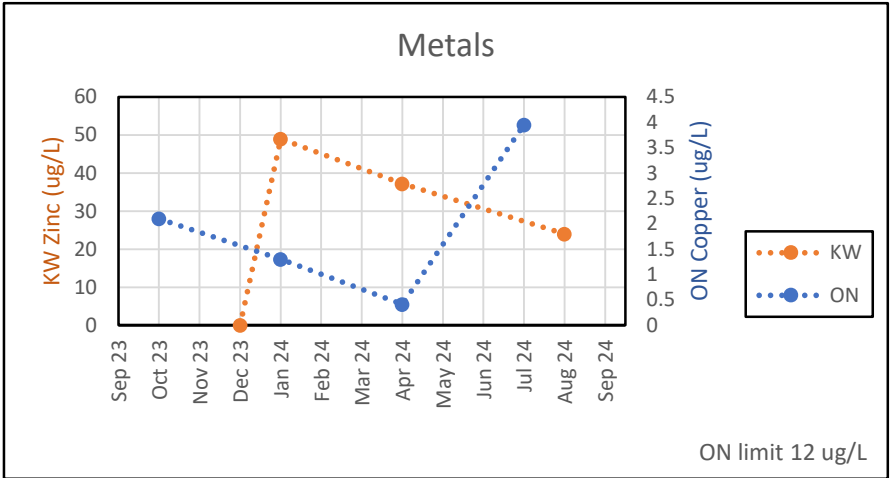
	Ammonia		
	CM	ON	UB
Sep 23		0.07	0.08
Oct 23	0.06	0.04	0.34
Nov 23		0.05	1.87
Dec 23		0.05	0.03
Jan 24	0.03	0.13	1.27
Feb 24		0.2	0.01
Mar 24		0.21	0.02
Apr 24	0.07	0.72	1.35
May 24		0.04	0.05
Jun 24		0.13	0.08
Jul 24	0.03	0.11	0.09
Aug 24		0.07	0.08
Sep 24		0.07	0.07



	TKN		
	CM	KW	SB
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
Aug 24		0.94	1.0
Sep 24		0.91	1.3



	Zinc	Copper
	KW	ON
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
Aug 24	24	
Sep 24		





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 (September 2024)**
 - Prepared draft report and addressed director's comments.
- **Upcoming Tasks (October 2024)**
 - Issue final report.

Design and Construction Estimating

- **Completed Tasks (September 2024)**
 - Conducted benchmarking organizations' interviews.
 - Sent secondary request for benchmarking interviews.
 - Drafted data analytics appendix to the report.
- **Upcoming Tasks (October 2024)**
 - Issue draft report with data analytics appendix.

IT Governance

- **Completed Tasks (September 2024)**
 - Identify contacts for each domain for walkthrough meetings.
 - Initiate planning procedures.
- **Upcoming Tasks (October 2024)**
 - Schedule and conduct walkthrough meetings.
 - Prepare draft audit program.

Talent Management Investigations

- **Upcoming Tasks (October 2024)**
 - Commence internal audit.
 - Conduct planning procedures.

II. Upcoming Projects

- Model 3: November 2024
- Risk assessment refresh: November/December 2024



III. Management Action Plan Status

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

For each recommendation noted in an audit report, SC&H gains an understanding of the steps performed to address the action plan and obtains evidence to confirm implementation, when available.

The following describes the current project monitoring status. This listing does not include audits which were determined by HRSD Management and the Commission to include confidential or sensitive information.

Audit / Project	Next Follow-up	Recommendations		
		Closed	Open	Total
Safety Division	October 2024	2	1	3
Freedom of Information Act (FOIA)	January 2025	0	1	1
Personally Identifiable Information (PII)	October 2024	3	1	4
AP, ProCard	July 2025	0	2	2
Closed Audit/Projects (x21)	Closed	135	0	135
Totals		140	5	145

Strategic Measures
September 2024

Strategic Planning Measure	Department	Aug-24	Sep-24	FY-25
Educational and Outreach Events	Communications	8	6	21
Number of Community Partners	Communications	12	2	20
Number of Technical Presentations	All	6	9	15
Revenue vs. Budget	Finance	18%		14%
Wastewater Expenses vs. Budget	Finance	13%		10%
Accounts Receivable (HRSD)	Finance	\$48,551,706		\$46,473,249
Aging Accounts Receivable	Finance	29.90%		31.30%
Turnover Rate wo Retirements	Talent Management	0.80%	0.80%	2.07%
Turnover Rate w Retirements	Talent Management	0.80%	0.92%	2.18%
Avg Time to Hire	Talent Management	3 months 3 days	2 months 29 days	3 months 1 days
Number of Vacancies	Talent Management	82	79	300
Average number of applicants per position	Talent Management	13.1	19.2	13.8
Percentage of positions filled with internal applicants	Talent Management	25.0%	45.8%	33.1%
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	1.00		1.16
Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	Water Quality / ENG	*	*	*
Non-Capacity Related Overflows with Stipulated Penalties (Reported Quarterly)	Water Quality / ENG	*	*	*
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	\$66,260,000	*	\$41,275,000

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

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

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

Strategic Measures
September 2024

Technical Presentations			
Date	Presentation	Presenter	Department
09/09/2024	WaterJAM - "A Partnership for Potable Reuse: Achieving 1,4-Dioxane Removal through Cometabolic Biological Pretreatment"	Micaela Griffin	Water Quality
09/09/2024	WaterJAM - "Application of Online Analyzers for Compliance Reporting: A Case Study".	Jack Denby	Water Quality
09/09/2024	WaterJAM Workshop: A Decade of ENR: Current Strategies and Future Outlook - "HRSD SWIFT: A One Water Approach for Nutrient Load Reduction".	Jamie Heisig-Mitchell	Water Quality
09/10/2024	WaterJam, Podium Speaker, "Conceptualizing a Regional GAC Reactivation Facility at HRSD"	Shirley Smith	Engineering
09/10/2024	WaterJam, Podium Speaker, "Healthy Tension or Tug of War? Capital Project Delivery Challenges and Solutions"	Bruce Husselbee	Engineering
09/11/2024	WaterJAM, Podium Speaker, "A Partnership for Potable Reuse: Achieving 1,4-Dioxane Removal through Cometabolic Biological Pretreatment"	Hannah Stohr	Operations
09/11/2024	WaterJam, Podium Speaker, "Incorporating Innovation in the Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Design-Build Project"	Lauren Zuravnsky	Engineering
09/12/2024	WaterJAM, Podium Speaker, "HRSD's Journey from Pilot to Full-Scale Implementation of Mainstream Partial Denitrification/Anammox (PdNA) IFAS"	Megan Bachmann	Operations
09/12/2024	WaterJAM, Podium Speaker, "Microbial Adaptation to Low Dissolved Oxygen Biological Nutrient Removal"	Lily McIntosh	Operations
09/12/2024	WaterJAM, Podium Speaker, "Biological Phosphorus Removal Benefits from Low Dissolved Oxygen Operation"	Haley Morgan	Operations
09/13/2024	WaterJam Panel Discussion on Owner Selection Process	Jeff Scarano	Engineering
09/16/2024	North Carolina Pretreatment Consortium Annual Conference - "A Partnership for Potable Reuse: Achieving 1,4-Dioxane Removal through Cometabolic Biological Pretreatment"	Micaela Griffin	Water Quality
09/16/2024	North Carolina Pretreatment Consortium Annual Conference - "HRSD's Approach to Mitigating FOG"	Amanda Albright	Water Quality

Strategic Measures
September 2024

Education Outreach and Community Partners			
Date	Event	Community Partner	Departments
09/01/2024	ODU		Operations
09/01/2024	Waste Management		Operations
09/10/2024	SWIFT Tour - Virginia Living Museum education staff	Virginia Living Museum	Communications
09/13/2024	WaterJam Panel Discussion on Owner Selection Process		
09/19/2024	SWIFT Tour - Fox Hill United Methodist Church	Foxhill United Methodist Church	Communications
09/19/2024	Canon Environmental Fair	Canon Virginia	
09/20/2024	United Way - The UpCenter		Engineering
09/21/2024	International Coastal Cleanup event	Virginia Living Museum	Water Quality, Communications
09/26/2024	SWIFT Tour - family visiting from Richmond, VA		Communications
09/26/2024	Yorktown Elementary School STEM Night	York County School Division	Water Quality, Communications