

HRSD Commission Meeting Agenda
9:00 a.m. – October 26, 2021

Location: **2389 G. Avenue, Newport News, VA 23602**

Public participation and observation of all HRSD Commission and committee meetings is available electronically via Zoom due to space limitations currently in place to protect the health of the Commissioners, staff and the public. To receive a link for virtual attendance/observation or to request accommodations to attend the meeting in-person, please send your request to Jennifer Cascio at jcascio@hrsd.com or by phone to 757.460.7003. Requests must be received by noon one business day prior to the meeting.

| <u>No.</u> | <u>Topic</u> | <u>Resource</u> |
|------------|--|-----------------|
| | Call to Order | Elofson |
| | Roll Call of HRSD Commission | Cascio |
| 1. | Awards and Recognition | Henifin |
| a. | Service Award | |
| b. | Promotion Announcement | |
| c. | Hampton Roads Society of Human Resource Management (HR-SHRM) Award | |
| d. | Top 40 Under 40 Award | |
| e. | Water Environment Federation (WEF) Morgan Operational Solutions Award | |
| f. | Water Environment Federation (WEF) Volunteer Service Recognition | |
| 2. | Consent Agenda | Henifin |
| a. | Approval of Minutes | |
| b. | Contract Awards | |
| c. | Task Order | |
| d. | Contract Change Order | |
| e. | Sole Source | |
| f. | HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award | |
| g. | Service Area Amendment | |

| <u>No.</u> | <u>Topic</u> | <u>Resource</u> |
|------------|---|-----------------|
| 3. | <u>Fiscal Year 2021 Comprehensive Annual Financial Report</u> | Bernas |
| 4. | <u>Diversity Procurement Report</u> | Bernas |
| 5. | <u>Virginia Clean Water Revolving Loan Fund (VCWRLF) Rate Resets and Amendment to the Master Financing Agreement for the Atlantic Treatment Plant Digester Gas to Energy, Atlantic Treatment Plant, Chesapeake-Elizabeth Treatment Plant, and Colonial Williamsburg Pump Station Projects Resolutions</u> | Bernas |
| 6. | <u>Atlantic Treatment Plant Electrical Workspace Renovation Initial Appropriation</u> | de Mik |
| 7. | <u>Berkley Trunk Sewer Section M Emergency Gravity Sewer Replacement Additional Appropriation</u> | Husselbee |
| 8. | <u>Coliseum Pressure Reducing Station Off-Line Storage Tank Odor Control Upgrades New CIP and Initial Appropriation</u> | de Mik |
| 9. | <u>Colley Avenue Pump Station Pump Replacement Initial Appropriation</u> | Husselbee |
| 10. | <u>James River Recharge Wells (Off Site) New CIP and Initial Appropriation</u> | Husselbee |
| 11. | <u>James River Recharge Wells (On Site) Contract Award and Task Order</u> | Husselbee |
| 12. | <u>James River Treatment Plant Automation Improvements Phase I New CIP and Initial Appropriation</u> | Husselbee |
| 13. | <u>Middlesex Interceptor System Program Phase III (Deltaville) New CIP and Initial Appropriation</u> | Husselbee |
| 14. | <u>City of Norfolk Wastewater Pump Station No. 57 (WPS #57) Facility Transfer Agreement</u> | Husselbee |
| 15. | <u>Northern Accomack Wastewater Conveyance, Treatment, and Disposal Study New CIP, Initial Appropriation and Task Order (>\$200,000)</u> | Husselbee |
| 16. | <u>Virginia Initiative Plant Motor Control Center Replacements Initial Appropriation and Task Order (>\$200,000)</u> | Husselbee |
| 17. | <u>Disposition of Real Property 3851 Monticello Avenue, James City County, VA</u> | Husselbee |
| 18. | <u>COVID-19 Wastewater Surveillance Study Update</u> | Curtis |
| 19. | <u>Capital Improvement Program Quarterly Update</u> | Husselbee |

| <u>No.</u> | <u>Topic</u> | <u>Resource</u> |
|------------|---|-----------------|
| 20. | Executive Search Committee Report | Levenston |
| 21. | Unfinished Business | Henifin |
| 22. | New Business | Henifin |
| 23. | Commissioner Comments | |
| 24. | Public Comments – A request to make public comments during the meeting via Zoom or written comments to be read into the minutes should be submitted to Jennifer Cascio by email to jcascio@hrsdc.com or by phone to 757.460.7003 and must be received by noon one business day prior to the meeting. | Cascio |
| 25. | Informational Items | Henifin |
| | a. Management Reports | |
| | b. Strategic Planning Metrics Summary | |
| | c. Effluent and Air Summaries with Items of Interest | |
| 26. | Closed Meeting | Henifin |
| 27. | Reconvened Meeting | Henifin |

Next Regular Commission Meeting Date: **November 23, 2021 at the South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455**

AGENDA ITEM 1. – October 26, 2021

Subject: Awards and Recognition

Recommended Action: No action is required.

Brief:

a. Service Award

Chair Elofson will present a service award to Mr. Erin Girardi, Capital Program Manager. Erin will mark 25 years of service with HRSD on October 28, 2021. Erin was hired in 1992 as a part-time summer helper and then was hired into a full-time position in 1996 as a maintenance assistant at the Virginia Initiative Plant (VIP). He's a graduate of the Apprenticeship Program and held a Class One wastewater license. He was promoted to Planner in the Engineering Department and currently serves as the Capital Program Manager in the Finance Department, managing the funding of the CIP and leading the Business Intelligence Group responsible for the ERP applications.

Erin obtained a BS in Urban Planning from Old Dominion University and an MBA from the College of William and Mary. He is a licensed Project Management Professional (PMP). Some of the notable projects Erin has undertaken include implementing the project management application for Engineering (Unifier), implementing the ERP budgeting module for CIP, leading the WIFIA funding for the SWIFT program, and ensuring that the CIP can be managed efficiently as it grows into the future. He serves as a leadership facilitator and takes pride in creating new programs to mentor and grow future leaders. Erin has helped to create classes such as *Effective Meetings*, *Project Management*, and *Design Thinking*. He was previously a member of the Operations Challenge team and participated on a team that won first place in Division 1.

b. Promotion Announcement

Mr. Henifin will introduce Ms. Natalie Vanvranken who was recently promoted to Customer Care Manager in the Call Center. Natalie was hired in April 2021 as a supervisor in the Customer Care Center. Natalie has worked in varying leadership roles for 20 years, most recently in the car rental industry coming from Avis Budget Group. She graduated from ODU with a BS in Business Administration with a major in Management and minor in Public Service. Natalie's team-focused management style fosters an environment of empowerment and gives team members a platform to express their ideas, ensuring solid commitment to the organization.

c. Hampton Roads Society for Human Resource Management (HR-SHRM) 2021 *Excellence in Employee Relations Award*

Ms. Inda Ratcliff, Human Resources Business Partner, received the Excellence in Employee Relations Award during the HR-SHRM celebration of HR Professionals Day. This award recognizes the efforts made by an individual to develop/create positive relationships with employees across the workforce and with management.

Inda joined HRSD in 2003 as a Human Resources Specialist and was promoted to Human Resources Business Partner in 2019. She holds a Bachelor of Science Degree in Business Administration from Old Dominion University. She started her career at HRSD focusing on

recruitment then moved to benefits administration, classification & compensation and generalist duties for the last 12 years. She works collaboratively as a Human Resources Business Partner while continuing to gain professional knowledge by earning her Professional in Human Resources (PHR)®, SHRM-Certified Professional (CP), and International Public Management Association Senior Certified Professional (IPMA-SCP) certifications.




Excellence in Employee Relations
Inda Ratcliff
SHRM-CP, PHR®, IPMA-SCP
Human Resource Business Partner
Hampton Roads Sanitation District
(HRSD)

d. Top 40 Under 40 Award

The General Manager will recognize Dr. Raul Gonzalez, who was honored on October 25 as one of Hampton Roads' "Top 40 Under 40." *Inside Business* annually recognizes a group of outstanding young professionals who exemplify success in their profession, are active within their communities and use their talents to advance the region. Honorees are chosen by an independent judging panel from publicly-submitted nominees.

Raul joined HRSD in 2014 as a Stormwater Specialist in the Technical Services Division and was promoted in 2015 to Environmental Scientist in the newly created pathogen program. In this position he uses state of the art DNA methods to identify fecal contamination in surface waters and address other environmental microbiology concerns. He graduated from UCLA with a degree in biology. After a brief stint at the Los Angeles County Sanitation Districts, he returned to graduate school at UNC-Chapel Hill, where he earned his Ph.D. in Environmental Science and Engineering. Most recently, Raul has been leading the COVID-19 wastewater surveillance collaboration with VDH/CDC, the Hampton Roads Wastewater Surveillance Workgroup, and the Virginia Wastewater Surveillance Community of Practice.




HRSD congratulates its 2021 Top 40 Under 40 honoree,
Raul Gonzalez, Ph.D.

As an Environmental Scientist at HRSD, Dr. Gonzalez leads and develops innovative clean water research, including HRSD's monitoring and testing program for COVID-19 in raw wastewater. This program helps detect COVID infection trends at a community level, providing critical data to the Virginia Department of Health and Centers for Disease Control.

HRSD's more than 800 environmentally-focused employees come from many backgrounds, but all share one vision. Future generations will inherit clean waterways and be able to keep them clean.

Visit [HRSD.com](https://www.hrzd.com) to learn more about rewarding career opportunities with the organization that has been reducing human impact on the environment for 80 years.



e. Water Environment Federation (WEF) Morgan Operational Solutions Award: Michael Parsons

Mr. Michael (Mike) Parsons, Treatment Process Engineer, was awarded the Morgan Operational Solutions Award during the recent Water Environment Federation Technical Exhibition and Conference (WEFTEC). The Morgan Operational Solutions Award recognizes valuable contributions to the in-facility study and solution of operational problems.

Mike joined HRSD in 2009 as Plant Manager at the Williamsburg Treatment Plant. He was promoted to Treatment Process Engineer in 2016. Mike holds a Civil Engineering Degree from the Virginia Military Institute and a master's degree in Environmental Engineering from the University of Cincinnati.

Mike has been a driving force for innovation and optimization at HRSD. He led the effort to get HRSD's multiple hearth incinerators into MACT 129 compliance and more recently, developed and demonstrated biological and nutrient removal processes that will revolutionize the industry. Mike converted the aeration tanks at Williamsburg Treatment Plant (WBTP), originally configured as a MLE process, to a unique, 5-stage biological nutrient removal (BNR), step-feed process for less than \$200,000. He used PVC roofing panels and fiberglass supports for aeration tank baffle walls at a cost of only \$4,000 each. For anaerobic and anoxic zone mixing, Mike designed an inexpensive large bubble mixing system that uses an inverted bell siphon, made with PVC fittings, and low-pressure air from the main aeration system. The mixing system worked so well and cost so little to construct, it was deployed at three other HRSD treatment plants resulting in dramatically decreased activated sludge mixing costs. With the addition of sensors, control system improvements, and other upgrades, Mike's design resulted in decreasing the effluent total nitrogen (TN) from about 8 to 3 mg/L, reducing chemical costs through biological phosphorus removal, and reducing aeration energy requirements.

Mike used his homemade baffle walls and large bubble mixers with control system improvements at the York River Treatment Plant (YRTP), converting it from a fully aerobic step-feed process to two-pass step-feed BNR with an anaerobic zone. Mike then went one step further. Based on the success of mainstream partial denitrification/anammox (PdNA) pilot testing at HRSD, Mike controlled ammonia residual in the secondary effluent and established anammox in the denitrification filters. YRTP became the first mainstream process in the world to consistently remove a substantial amount of ammonia with anammox. Once anammox were established, it became crucial to operate the BNR process with precise ammonia vs NO_x (AvN) control. To meet this need, Mike designed a novel intermittent aeration/intermittent step feed control system, where air is turned on and off, and step feed is controlled to meet ammonia/NO_x ratio in the effluent. The results were significant cost savings in chemicals for denitrification, phosphorus removal, and alkalinity, as well as energy savings and an increase in effective plant capacity.

f. Water Environment Federation (WEF) Volunteer Service Recognition: Bob Rutherford

Mr. Bob Rutherford, Chief of Treatment, was awarded the WEF Volunteer Service Recognition pin during the recent WEFTEC event. The Committee Leadership Council (CLC) and House of Delegates (HOD) created the Volunteer Service Recognition to recognize those members who significantly contribute to the successes and achievements of WEF through service in a WEF Committee or the HOD. Bob was recognized by his peers at WEF as “one of the program’s most uniquely essential contributors over the years,” providing leadership during the program’s transformative time of growth and advocating for the program on the WEF executive committee. He was honored for his knowledge, dedication and generosity throughout the years.

Bob was hired in 1987 as the James River Treatment Plant Manager and in 2015 was promoted to Chief of Treatment overseeing the James River, Williamsburg and York River Treatment Plants. He earned bachelor’s degrees from the United States Merchant Marine Academy and ODU and master’s degrees from George Washington University and Virginia Tech. Bob is a licensed Professional Engineer and holds a Class I Wastewater Operators License. He is active with the Water Environment Federation (WEF) where he served on WEF’s Executive Committee and chaired the Operations Challenge Committee. He received the WEF William D. Hatfield Award in 2005 for outstanding performance and professionalism in the operation of a wastewater treatment facility.

AGENDA ITEM 2. – October 26, 2021

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

a. Approval of Minutes

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

b. Contract Awards

- | | | |
|----|---|-------------|
| 1. | Emissions Stack Testing Services Contract | \$412,375 |
| 2. | Land Application Services | \$8,560,202 |

c. Task Orders

- | | | |
|----|---|-----------|
| 1. | SWIFT Program Management (Nansemond SWIFT Facility) | \$299,003 |
|----|---|-----------|

d. Contract Change Orders

- | | | |
|----|--|-----------|
| 1. | Oracle Business for Intelligence Applications (OBIA) and Oracle Business Intelligence Enterprise Edition (OBIEE) Upgrade | \$150,049 |
|----|--|-----------|

e. Sole Source

- | | | |
|----|---|--|
| 1. | 457 Deferred Compensation Plans Administrative Services | |
| 2. | Oracle Primavera Unifier Adapters Enhancement, Annual Subscriptions, and Managed Services provided by Ensto, Inc. | |

| | |
|--|-----------|
| Blanket Purchase Order Project Management System | \$450,000 |
| Blanket Purchase Order Unifier Managed Services | \$267,165 |

- | | | |
|----|---|-----------|
| 3. | Oracle WebCenter Suite Upgrade Sole Source and Contract Award | \$260,000 |
|----|---|-----------|

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

- | | | |
|----|---|-----------|
| 1. | Audio Visual Support and Maintenance Services | \$266,910 |
| 2. | Microsoft® Enterprise Licensing Agreement | \$741,565 |

g. Service Area Amendment

- | | | |
|----|--|--|
| 1. | County of Mathews, Dutton Service Area | |
|----|--|--|

CONSENT AGENDA ITEM 2.b.1. – October 26, 2021

Subject: Emissions Stack Testing Services Contract
Contract Award (>\$200,000)

Recommended Action: Award a blanket purchase contract for Emissions Stack Testing Services to Grace Consulting, Inc. in the estimated amount of \$82,475 for year one with four annual renewal options and an estimated cumulative value of \$412,375.

Type of Procurement: Competitive Bid

| Bidder | Bid Amount |
|--|------------|
| Grace Consulting, Inc. | \$82,475 |
| Air Hygiene International, Inc. | \$104,220 |
| McHale & Associates, Inc. | \$125,880 |
| Environmental Source Samplers, Inc. | \$171,610 |
| FD Pace LLC DBA Pace Environmental | \$189,922 |
| AST Source Testing LLC DBA Alliance Source Testing LLC | \$223,700 |

HRSD Estimate:

\$88,840

Contract Description: This contract is an agreement for emissions stack testing services required by HRSD to comply with the Clean Air Act Section 129 Sewage Sludge Incinerations Rule. Services, including testing and associated travel, will be performed at the Army Base Treatment Plant, Virginia Initiative Plant, Boat Harbor Treatment Plant, Williamsburg Treatment Plant, and Atlantic Treatment Plant.

CONSENT AGENDA ITEM 2.b.2. – October 26, 2021

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

Recommended Action: Award a contract for land application services to Agnutrients Inc. in the estimated amount of \$3,668,658 for years one through three with two two-year renewal options and an estimated cumulative value in the amount of \$8,560,202.

Type of Procurement: Competitive Negotiation

| Proposers | Technical Points | Recommended Selection Ranking |
|-------------------|-------------------------|--------------------------------------|
| Agnutrients Inc. | 88 | 1 |
| Synagro-WWT, Inc. | 64 | 2 |

Contract Description: This contract is an agreement for the management of HRSD's biosolids land application program at the Atlantic Treatment Plant along with the maintenance of the Progress Farm, an agricultural research property adjacent to the plant. A Public Notice was issued on July 15, 2021. Two firms submitted proposals on August 31, 2021 and all firms were determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Request for Proposals. Two firms were short-listed and technically ranked. The proposal submitted by Agnutrients was ranked by technical points to be the highest qualified.

Analysis of Cost: Cost is considered fair and reasonable. Price was an evaluation criterion and Agnutrients costs were below the other offeror's costs and in line with the previous land application contract.

CONSENT AGENDA ITEM 2.c.1. – October 26, 2021

Subject: SWIFT Program Management (Nansemond SWIFT Facility)
Task Order (>\$200,000)

Recommended Action: Approve a task order with AECOM in the amount of \$299,003.

CIP Project: GN016320

| | |
|--|----------------|
| Budget | \$80,000,000 |
| Previous Expenditures and Encumbrances | (\$25,008,520) |
| Available Balance | \$54,991,480 |

| Contract Status: | Amount |
|---|--------------|
| Original Contract with AECOM | \$5,264,440 |
| Total Value of Previous Task Orders | \$19,519,452 |
| Requested Task Order | \$299,003 |
| Total Value of All Task Orders | \$19,818,455 |
| Revised Contract Value | \$25,082,895 |
| Engineering Services as % of Construction | 0.11% |

Project Description: The SWIFT Full Scale Implementation Program (FSIP) Management team will manage the delivery of the advanced water treatment facilities to take HRSD’s already highly treated wastewater and produce SWIFT water. The Program Management team may also deliver conveyance, wastewater treatment plant improvements, and other such projects to support full scale SWIFT implementation. The Program Management team will implement the processes, procedures, and systems needed to design, procure, construct, permit, manage, and integrate the new SWIFT related assets.

Task Order Description: This task order will provide pre-planning services to finalize concept development of SWIFT facilities and Managed Aquifer Recharge well locations on the Nansemond Treatment Plant. Work will identify key decisions and project risks, perform early engineering support and rezoning efforts, and generally advance the definition of the project to support subsequent development of the Nansemond SWIFT Facility procurement documents.

Analysis of Cost: The cost for this task order is based on a detailed negotiated scope of work for pre-planning efforts. The proposed fee is 0.11 percent of the estimated construction cost for the project. This task order will be issued as an amendment to the Professional Services Agreement with AECOM for SWIFT Full Scale Implementation. The total hours budgeted are appropriate for the scope proposed for this task order and the labor rates for each category in the proposed fee are consistent with the rates structure in the Agreement, as approved for FY-2022.

Design-Build Schedule:

| | |
|--|----------------|
| Preliminary design begins | June 2022 |
| Preliminary design approval and begin Request for Qualifications (RFQ/ Request for Proposals (RFP)process | September 2023 |
| Selection of Design-Build firm / establish Contract Cost Limit (CCL) | June 2024 |
| Detailed design development / Stipulated Fixed Final Price | June 2025 |
| Construction Complete | August 2028 |

CONSENT AGENDA ITEM 2.d.1. – October 26, 2021

Subject: Oracle Business for Intelligence Applications (OBIA) and Oracle Business Intelligence Enterprise Edition (OBIEE) Upgrade
Contract Change Order (>25% or \$50,000)

Recommended Action: Approve a change order with Emtec, Inc. in the amount of \$150,049.

| Contract Status: | Amount | Cumulative % of Contract |
|---------------------------------------|---------------|-------------------------------------|
| Original Contract with Emtec, Inc. | \$102,852 | |
| Total Value of Previous Change Orders | \$6,948 | 11.67% |
| Requested Change Order No. 3 | \$150,049 | |
| Total Value of All Change Orders | \$156,997 | 164.31% |
| Revised Contract Value | \$156,997 | |

| | | |
|---------------------------------|--|----|
| Time (Additional Calendar Days) | | 90 |
|---------------------------------|--|----|

Change Order Description: This change order includes the second phase of the upgrade to the OBIA and OBIEE environments within the Oracle E-Business Suite (ERP). This upgrade is required in order to stay compatible with the new version of ERP that is scheduled for implementation in April 2022.

Analysis of Cost: The cost of this change order is based on the labor rates set forth in the Managed Support Services Agreement with Emtec and the initial Oracle OBIA upgrade project.

CONSENT AGENDA ITEM 2.e.1. – October 26, 2021

Subject: 457 Deferred Compensation Plans Administrative Services
Sole Source (>\$10,000)

Recommended Action: Approve the use of International City Management Association Retirement Corporation (ICMA-RC) doing business as MissionSquare Retirement to provide administrative services for HRSD's 457 deferred compensation plans.

Sole Source Justification:

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

Details: As administrator of the plan, ICMA-RC performs all nondiscretionary functions which include but are not limited to, communications concerning investment alternatives, account maintenance, account recordkeeping, investment and tax reporting, transaction processing, and benefit disbursement. ICMA-RC maintains and administers the Plan in accordance with the requirements for eligible deferred compensation plans under Section 457 of the Internal Revenue Code and other applicable federal laws.

The Commission, at its regular meeting on January 24, 1989, adopted a resolution authorizing HRSD to establish a deferred compensation plan for its employees through the adoption of the ICMA Retirement Plan and Trust. HRSD desires to continue this deferred compensation plan with ICMA-RC as the administrators to offer participants additional choices and options for savings. ICMA-RC offers several fund choices including an option for a Roth IRA. They provide participants advice on how to reach their individual goals through their managed account program.

CONSENT AGENDA ITEM 2.e.2. – October 26, 2021

Subject: Oracle Primavera Unifier Adapters Enhancement, Annual Subscriptions, and Managed Services provided by Enstoa, Inc.
Sole Source Award (>\$10,000) and Contract Award (>\$200,000)

Recommended Actions:

- a. Approve the use of Oracle Primavera Unifier Adapters Integration Enhancement, Annual Subscriptions and Managed Services by Enstoa, Inc. for the Information Technology Division.
- b. Award a blanket purchase contract for Oracle Primavera Project Management System Enhancement Subscriptions (Adapters and Panoptra) to Enstoa, Inc. in the estimated amount of \$90,000 for year one with four annual renewal options and an estimated cumulative value in the amount of \$450,000.
- c. Award a blanket purchase contract for Oracle Primavera Unifier Managed Services to Enstoa, Inc. in the estimated amount of \$53,433 for year one with four annual renewal options and an estimated cumulative value in the amount of \$267,165.

Sole Source Justification: Adapters Integration Enhancement

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

Details: Product includes the purchase of the Adapters enhancement subscription that assists with integrating the Oracle E-Business Suite (EBS) application with the cloud hosted Unifier application. This enhancement solution custom made and proprietary to Enstoa, Inc.

Contract Description: Services include annual subscriptions for the Adapters enhancement solution and Panoptra visualization platform. An analysis was completed during original project management system implementation that showed the Enstoa Adapters solution provided the most efficient means for integration between Unifier and EBS. There are plans to re-evaluate the need for this subscription at the end of the five years.

The Panoptra visualization platform subscription was previously approved as a sole source in April 2017 and only requires contract award approval for multi-year continuous use.

Sole Source Justification: Managed Services

- Compatibility with existing equipment or systems is required
- Support of a special program in which the product or service has unique characteristics essential to the needs of the program

- Product or service is covered by a patent or copyright
- Product or service is part of standardization program to minimize training for maintenance and operation, and parts inventory

Details: Services include Enstoa support resources to assist with issues related to system integration strategies, policies and procedures previously implemented on the Unifier Project Management System and during post go-live. This includes support for the Adapters enhancement solution which is proprietary to Enstoa. With the integration between Unifier and EBS, HRSD will need to maintain support from Enstoa to ensure resolution of any issues regarding integration cost records.

Contract Description: This contract is an agreement for annual managed services for the Oracle Unifier Primavera Project Management System. The scope of these services will be Unifier, Panoptra (P6), Reporting, Integrations (Adapters), and Escalation and Management of Oracle service requests all of which were previously performed by HRSD staff. The services will be a retainer model in order to provide dedicated resources immediately. This service contract will be re-evaluated in five years alongside the Adapters enhancement solution.

CONSENT AGENDA ITEM 2.e.3. – October 26, 2021

Subject: Oracle WebCenter Suite Upgrade
Sole Source (>\$10,000) and Contract Award (>\$200,000)

Recommended Actions:

- a. Approve the limited sole source use of Application Software Technology, LLC (AST) services for Oracle WebCenter Suite Upgrade for the Information Technology Division.
- b. Award a contract to Applications Software Technology, LLC (AST) in the amount of \$260,000.

Sole Source Justification:

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

Details: Services include AST resources to perform the necessary upgrades to Oracle WebCenter Suite for the Information Technology Division. These upgrades are required in order to be compatible with the new version of Oracle E-Business Suite (EBS) scheduled for implementation in April 2022.

This is a limited sole source approval due to the aggressive schedule and immediate time constraints for the EBS version upgrade project. AST was previously selected through a competitive negotiation process as the original implementer of the EBS system and wrote the custom code for the integration between EBS and WebCenter. By AST having the source code and performing the upgrade, this would eliminate a few areas of risk for HRSD. These include another contractor potentially having to rewrite the code to perform the upgrades and delays in the project timeline for the EBS version upgrade.

Contract Description: This contract is an agreement for AST to perform the necessary upgrades to Oracle WebCenter platform from 11g to 12c in order to be compatible with the new version of EBS scheduled for upgrade in April 2022. The scope of work includes review of existing installation and application functionality, upgrade of the software in three environments (development, test, production), migration of historical content, cutover and deployment, knowledge transfer and go-live support. All work is estimated to take approximately four to five months.

CONSENT AGENDA ITEM 2.f.1. – October 26, 2021

Subject: Audio Visual Support and Maintenance Services
HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award
(>\$200,000)

Recommended Actions:

- a. Approve the use of the Virginia Commonwealth University (VCU) contract for Audio Visual Products, Services and Maintenance from Vlcom-Virginia Integrated Communication in the estimated amount of \$53,382 for one year with four annual renewal options and an estimated cumulative value of \$266,910.
- b. Award a contract to Vlcom-Virginia Integrated Communication in the amount of \$53,382.

HRSD Estimate: \$60,000

Contract Description: This contract is an agreement for full-service maintenance for various audio visual equipment throughout the conference rooms of all HRSD facilities.

Analysis of Cost: By utilizing the cooperative contract through VCU, HRSD is receiving seven percent cost savings.

CONSENT AGENDA ITEM 2.f.2. – October 26, 2021

Subject: Microsoft® Enterprise Licensing Agreement
HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Award
(>\$200,000)

Recommended Actions:

- a. Approve the use of the Virginia Information Technology Agency (VITA) contract Microsoft® products to SHI International Corporation in the estimated amount of \$741,565 for one year with two annual renewal options and an estimated cumulative value in the amount of \$2,224,695
- b. Award a contract to SHI International Corporation in the amount of \$741,565.

HRSD Estimate: \$750,000

Contract Description: This contract is an agreement for a Microsoft Enterprise Licensing Agreement that includes all Microsoft products and licensing through the use of the Commonwealth of Virginia (VCU) cooperative contract with VITA. HRSD has switched to a Microsoft 365 E5 plan which has advanced threat protection, security compliance, voice and analytical capabilities, among other security features. While utilizing the cooperative contract, the authorized Microsoft reseller for Virginia may change; however, the terms of the MS agreement and all pricing will remain the same for all five years based on HRSD's current equipment.

Analysis of Cost: By utilizing the cooperative contract through VCU, HRSD is receiving 16 percent cost savings. This contract will also have unknown estimated true-up costs each year to account for new licenses.

CONSENT AGENDA ITEM 2.g.1. – October 26, 2021

Subject: Service Area Amendment
County of Mathews, Dutton Service Area

Recommended Action: Approve the modification to the existing Mathews Service Area as requested by the County of Mathews.

Project Description: The County of Mathews has requested a modification to the HRSD Service Area boundary in the Dutton area of the County as shown on the attached [Vicinity Map](#).





HRSD has capacity to accept flows from development within this amended service area as shown based on the proposed development and projected land use within the expansion. HRSD and the County have discussed the requirements that proposed development must follow to satisfy the HRSD [Service Area Expansion](#) Commission Adopted Policy.

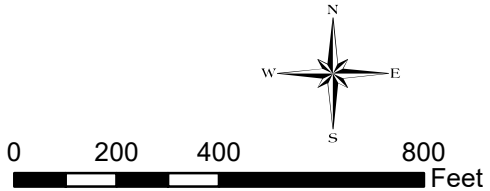
1. HRSD shall provide conveyance and treatment works capacity.
2. The Locality shall provide the infrastructure necessary to reach the Regional Interceptor System.
3. Once complete, all facilities shall be conveyed to HRSD.

In addition, the County of Mathews shall work with HRSD to require a community water system be installed and maintained to facilitate collection of consumption data and provide enforcement mechanisms. HRSD shall be provided rights to this system equivalent to a public water system.

DUTTON SERVICE AREA EXPANSION



-  Proposed Pump Station
-  HRSD Interceptors
-  Proposed Transmission Line
-  Dutton Expansion



1.0 Purpose and Need

This policy establishes the procedures and guidelines to submit, review, and approve service area expansion requests. Localities request sewer service area expansions to facilitate development or provide sewer service to previously unserved areas.

2.0 Definitions

Comprehensive Plan. A plan that shows the locality's long-range recommendations for the general development of the territory as required by Code of Virginia section 15.2-2223.

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

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

Localities. Cities, Counties, and Towns within the HRSD Service Area.

Metro Area. Area encompassing the following localities: Cities of Virginia Beach, Norfolk, Chesapeake, Suffolk, Portsmouth, Hampton, Newport News, and Williamsburg; the Counties of Isle of Wight, Gloucester, and James City; and the Town of Smithfield.

Private Sewer System. A private sewer is any infrastructure that conveys sanitary sewage, is located on private property, and is operated and maintained by the private owner.

Public Collection System. Any facility that conveys sanitary sewage that is owned and operated by either a locality or HRSD.

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

Regional Treatment Works. Wastewater treatment facilities, with physical, chemical, and biological processes to treat sewage and discharge treated water, which are owned and operated by HRSD.

Small Communities. Localities including but not limited to: the Counties of King William, King and Queen, Middlesex, Surry, and Mathews; the Towns located within these Counties; and the Lawnes Point development.

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

3.0 Guiding Principles

Localities control zoning and development. Localities are responsible for developing and maintaining their respective sanitary sewer master plan or similar plan which defines their sewer service areas in alignment with their Comprehensive Plan. HRSD partners with the Localities to strategically plan the Regional Interceptor System and Treatment Works. HRSD is committed to building the appropriate regional wastewater infrastructure at the appropriate time, in a manner that balances social, environmental and economic issues, and is integrated with the localities' planning and land use zoning.

HRSD will ensure capacity of the regional interceptor system and treatment works for locality sewer service areas located within the HRSD Service Area. The HRSD Service Area is the area generally within two miles of existing HRSD infrastructure. Localities shall be responsible for all sewer infrastructure required to connect to the regional interceptor system. HRSD will review all sanitary sewer service area expansion requests and update the HRSD Service Area map when expansions are approved.

4.0 Procedures

4.1 Request

To expand sewer service, localities shall submit a formal service area expansion request to HRSD for review and approval. All requests must be accompanied by proper documentation to include but not limited to the following:

- A. Service area expansion request executed and signed by the Locality's authorized representative.
- B. A map with a defined service area boundary. The map shall identify infrastructure required to convey the flow from the new service area to the point of entry into the regional interceptor system.



- C. Sanitary sewer flow projections for the expanded service area shall be based on HRSD's Regional Sewage Flow Projection Data policy or based on best engineering practices at the time of the service area expansion request.
- D. If the service area included in the expansion request is not contiguous to existing sewerage areas and such expansion would require regional interceptor facilities, the Locality shall be responsible to confirm with HRSD and submit in writing whether these gap areas should be included or not in the overall alignment and sizing of local and/or regional interceptor force mains.

It is the Locality's responsibility to coordinate with HRSD to identify the need of service area expansion at least two years prior to when actual development will occur in order to allow HRSD to plan and program necessary regional interceptor system and treatment works improvements.

4.2 Review

HRSD shall review and evaluate each request. The schedule for approval of requests shall be based on an evaluation of the conveyance and treatment works capacity as well as the criteria herein. Expansions requiring Regional Interceptor System or Treatment Works expansion may be granted conditional approval.

4.3 Obligations

HRSD and the Localities have separate responsibilities and obligations depending on where the proposed expansion is located.

The Locality shall make available public water supply to the service area considered for sewer service expansion.

4.3.1 Requests within 2 miles of the Regional Interceptor System

Metro Area:

- A. HRSD shall provide conveyance and treatment works capacity.
- B. The Locality shall provide the infrastructure necessary to reach the Regional Interceptor System.



Small Communities:

- A. HRSD shall provide conveyance and treatment works capacity.
- B. The Locality shall provide the infrastructure necessary to reach the Regional Interceptor System.
- C. Once complete, all facilities shall be conveyed to HRSD.

4.3.2 Requests greater than 2 miles from the Regional Interceptor System

Metro Area:

- A. HRSD will review the existing conveyance and treatment works facilities for capacity.
 - i. If capacity improvements are necessary, HRSD will plan for and program funds to provide the needed improvements.
 - ii. HRSD and the locality shall develop a specific cost sharing agreement unique to the request and approved by each governing body.

Small Communities:

- A. HRSD will review the existing conveyance and treatment works facilities for capacity. If capacity improvements are necessary, HRSD will plan for and program funds to provide the needed improvements.
- B. HRSD will extend the Regional Interceptor System to within 2 miles of the requested service area expansion.
- C. The Locality shall provide the infrastructure necessary to reach the extended Regional Interceptor System.
- D. Once complete, all facilities shall be conveyed to HRSD.

4.4 Approval

Upon HRSD Commission approval of a service area expansion request, HRSD will send a Service Area Expansion Authorization letter, signed by the General Manager. The HRSD Service Area map will be updated upon Commission approval.

COMMISSION ADOPTED POLICY
Service Area Expansion Policy



Adopted: September 30, 2019

Revised: N/A

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5.0 Responsibility and Authority

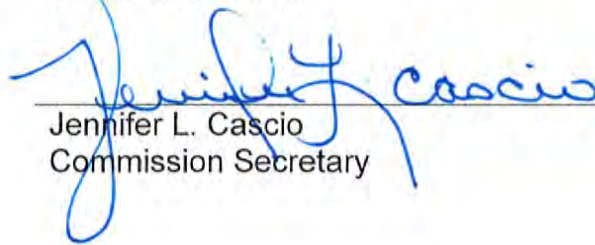
The Planning and Analysis Division of the Engineering Department shall be responsible to enforce this Policy as it relates to collection, conveyance, and treatment works facilities which it owns and operates to ensure there is adequate capacity available to meet current and future development in the Localities within its territory.

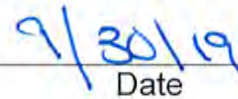
The Planning and Analysis Division of the Engineering Department shall be responsible for regular reviews and recommended updates to this policy.

Approved:


Frederick N. Elofson, CPA
Commission Chair


Date


Jennifer L. Cascio
Commission Secretary


Date

AGENDA ITEM 3. – October 26, 2021

Subject: Fiscal Year 2021 Comprehensive Annual Financial Report

Recommended Actions:

- a. Recognize the receipt of the Government Finance Officers Association (GFOA) of the United States and Canada Certificate of Achievement for Excellence in Financial Reporting for the CAFR for the fiscal year ended June 30, 2020.
- b. Accept the Finance Committee's Report regarding the Comprehensive Annual Financial Report for the fiscal year ended June 30, 2021.

Brief: Political subdivisions of the Commonwealth of Virginia are required to publish a complete set of audited financial statements. The Comprehensive Annual Financial Report, prepared by the Finance Department, summarizes the operating revenues and expenses for the fiscal year ending each June 30. HRSD is required by its Trust Agreement to prepare and distribute its financial statements within 150 days following the close of the fiscal year, which is November 27. The GFOA of the United States and Canada presents a Certificate of Achievement for Excellence in Financial Reporting to government units and public employee retirement systems whose Comprehensive Annual Financial Reports achieve the highest standards in government accounting and financial reporting. During the summer and early fall, the Accounting and Finance Division staff works diligently to prepare year-end financial statements, which are audited by Cherry Bekaert LLP. In addition, they complete a rather substantial financial and statistical package, which is submitted to the GFOA for review and possible certification. The Accounting and Finance Division has received this certification annually since 1983 – an impressive achievement for 38 consecutive years.

Commissioners Lakdawala and Rodriguez (committee chair) and were appointed as the Commission's Finance Committee in 2021 for Fiscal Year 2022. The Finance Committee, along with Commissioners Elofson, Glenn, Levenston, Taraski met with staff to review the draft [report](#) on October 13, 2021. The Finance Committee will provide their comments to the full Commission along with briefings by staff.

Comprehensive Annual Financial Report



For the Fiscal Years Ended June 30, 2021 and 2020
Hampton Roads Sanitation District
(A Component Unit of the Commonwealth of Virginia)

HRSD





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HAMPTON ROADS SANITATION DISTRICT

COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR THE FISCAL YEARS ENDED JUNE 30, 2021 AND 2020

PREPARED BY THE FINANCE DEPARTMENT



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Draft

The background features a series of overlapping, semi-transparent geometric shapes in shades of blue and green, creating a sense of depth and movement. A prominent blue horizontal banner is positioned across the middle of the image, containing the text 'Introductory Section' in white, bold, sans-serif font. The overall aesthetic is clean and modern, typical of a corporate or educational presentation.

Introductory Section



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November XX, 2021

Hampton Roads Sanitation District Commission
Virginia Beach, Virginia

Dear Commissioners:

Political subdivisions of the Commonwealth of Virginia are required to publish a complete set of audited financial statements. This report fulfills that requirement for the fiscal year ended June 30, 2021.

Hampton Roads Sanitation District's (HRSD) management assumes full responsibility for the completeness and reliability of the information contained in this report, based on a comprehensive framework of internal control it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements.

Cherry Bekaert LLP, Certified Public Accountants, has issued an unmodified ("clean") opinion on HRSD's financial statements for the year ended June 30, 2021. The independent auditors' report is located at the front of the financial section of this report.

Management's Discussion and Analysis (MD&A) immediately follows the independent auditors' report and provides a narrative introduction, overview and analysis of the basic financial statements. The MD&A, which complements this letter of transmittal, should be read in conjunction with it.

PROFILE OF HRSD

HRSD is an independent political subdivision of the Commonwealth of Virginia (the Commonwealth) created by referendum on November 5, 1940. HRSD was established to abate water pollution in the Hampton Roads area by providing a system of interceptor mains and wastewater treatment plants.

Approximately 1.7 million individuals, more than one-fifth of Virginia's population, reside in HRSD's service area, which is in the southeastern corner of the Commonwealth. HRSD's territory of approximately 5,000 square miles encompasses nine cities, eleven counties and several large military facilities. A brief history of HRSD is provided on page 6. HRSD is required by its Enabling Act to meet its obligations by charging user fees for its wastewater treatment services; no taxing authority is authorized by the Enabling Act. Currently, HRSD provides service and bills to approximately 481,000 service connections.

A board of eight commissioners (the Commission), appointed by the Governor of Virginia, governs HRSD. Commission members, who serve four-year staggered terms, can be reappointed without limitation and may be suspended or removed by the Governor at his pleasure. The Commission appoints a General Manager, who appoints the senior staff.

HRSD owns and operates 16 treatment plants. The nine major plants in Hampton Roads have design capacities ranging in size from 15 to 54 million gallons per day (MGD). Five of the major plants are located south of the James River and four are north of the James River (see map on page 6). The combined capacity of these nine plants is approximately 249 MGD. HRSD's seven small rural treatment plants have a combined capacity of one MGD.

HRSD maintains 540 miles of pipelines ranging from six inches to sixty-six inches in diameter. Interceptor pipelines, along with 90 pump stations in Hampton Roads, interconnect into two independent systems, one south of the James River and one north of the James River. The system allows some flow diversions to provide for maintenance or emergency work. HRSD owns and maintains 42 pump stations in the Small Communities.

PO Box 5915, Virginia Beach, VA 23471-0911 • 757.460.7003

Local Economy

HRSD's service area includes nearly all the Virginia Beach-Norfolk-Newport News Metropolitan Statistical Area (MSA). It is the eighth largest MSA in the southeastern United States and the thirty-seventh largest in the nation [AL1] [RL2]. Unlike many metropolitan areas, Hampton Roads' population nucleus is not confined to one central city. Instead, the approximately 1.7 million residents are spread among several cities and counties. Virginia Beach is the most populous city in the Commonwealth, with Norfolk and Chesapeake second and third, respectively. Suffolk is the largest city by land area. Unemployment rates remain below national averages in the region, which has a civilian labor force of 839,600 as of June 2021.

The regional economy is supported by one of the highest military concentrations in the nation, diverse manufacturing and service sectors, shipbuilding and repair work, international port activities and tourism. Several state and private colleges and a large healthcare infrastructure also lend stability to the region.

A diverse customer base allows HRSD to maintain stable revenues. The ten largest customers account for only 12.2 percent of wastewater revenues for fiscal year 2021. In addition, HRSD's 2021 revenues contained only limited reliance (2.2 percent) [AL1] on new customer connections.

Long-Term Financial Planning

HRSD's Financial Policy helps it maintain its solid fiscal health. Budgetary principles include using ongoing revenues to pay for ongoing expenses and establishing annual cash contribution goals of at least 15 percent of budgeted capital costs. Under the Financial Policy, senior debt service coverage and total adjusted debt service coverage ratios should not be less than 1.5 and 1.4 times annual debt service, respectively with a goal of maintaining 2.0. Operating and ten-year capital improvement budgets are adopted annually. Included in the operating budget is a long-range financial forecast, which is guided by projections of operating and capital needs and the aforementioned Financial Policy requirements.

Major Initiatives

HRSD continues its ambitious \$3.0 billion, ten-year Capital Improvement Program. Regulatory requirements to reduce nutrient discharges, initiatives to ensure appropriate wet weather capacity exists within the regional sanitary sewer system, major plant upgrades and replacements of interceptor pipelines drive the capital program. Major projects are currently under construction at the Army Base, Boat Harbor, Nansemond and the Virginia Initiative Treatment Plants. To minimize the impacts of its capital investments on ratepayers, HRSD continues to pursue grant and joint venture opportunities when available.

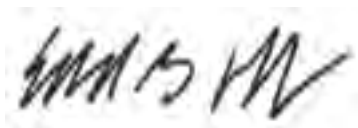
AWARDS and Acknowledgments

The Government Finance Officers Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to HRSD for its comprehensive annual financial report (Annual Report) for the fiscal year ended June 30, 2020. This was the 38th consecutive year that HRSD has received this prestigious award. In order to be awarded a Certificate of Achievement, HRSD must publish an easily readable and efficiently organized Annual Report that satisfies both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current Annual Report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

The preparation of this Annual Report was made possible by the dedicated service of the entire Department of Finance staff. All members of the department have our sincere appreciation for their contributions to the preparation of this report. Credit must also be given to the Commission for their support for maintaining the highest standard of professionalism in the management of HRSD's finances.

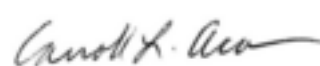
Respectfully submitted,



Edward Henifin, P.E.
General Manager



Jay A. Bernas, P.E.
Director of Finance



Carroll L. Acors, CPA
Chief of Accounting



Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Hampton Roads Sanitation District
Virginia**

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

June 30, 2020

Christopher P. Morill

Executive Director/CEO

Principal Officials
June 30, 2021

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Frederick N. Elofson, CPA, Chair

Maurice P. Lynch, PhD, Vice-Chair

Michael E. Glenn

Vishnu K. Lakdawala, PhD

Willie Levenston, Jr.

Stephen C. Rodriguez

Elizabeth A. Taraski, PhD

Molly J. Ward

COMMISSION SECRETARY

Jennifer L. Cascio

SENIOR STAFF

Edward G. Henifin, PE
General Manager

Jay A. Bernas, PE
Director of Finance and
Treasurer

Charles B. Bott, PhD, PE
Director of Water Technology And
Research

Donald C. Corrado
Director of Information
Technology

Steven G. de Mik, CPA
Director of Operations

Paula A. Hogg
Director of Talent Management

Bruce W. Husselbee, PhD, PE
Director of Engineering

James J. Pletl, PhD
Director of Water Quality

Leila E. Rice, APR
Director of Communications

COUNSEL

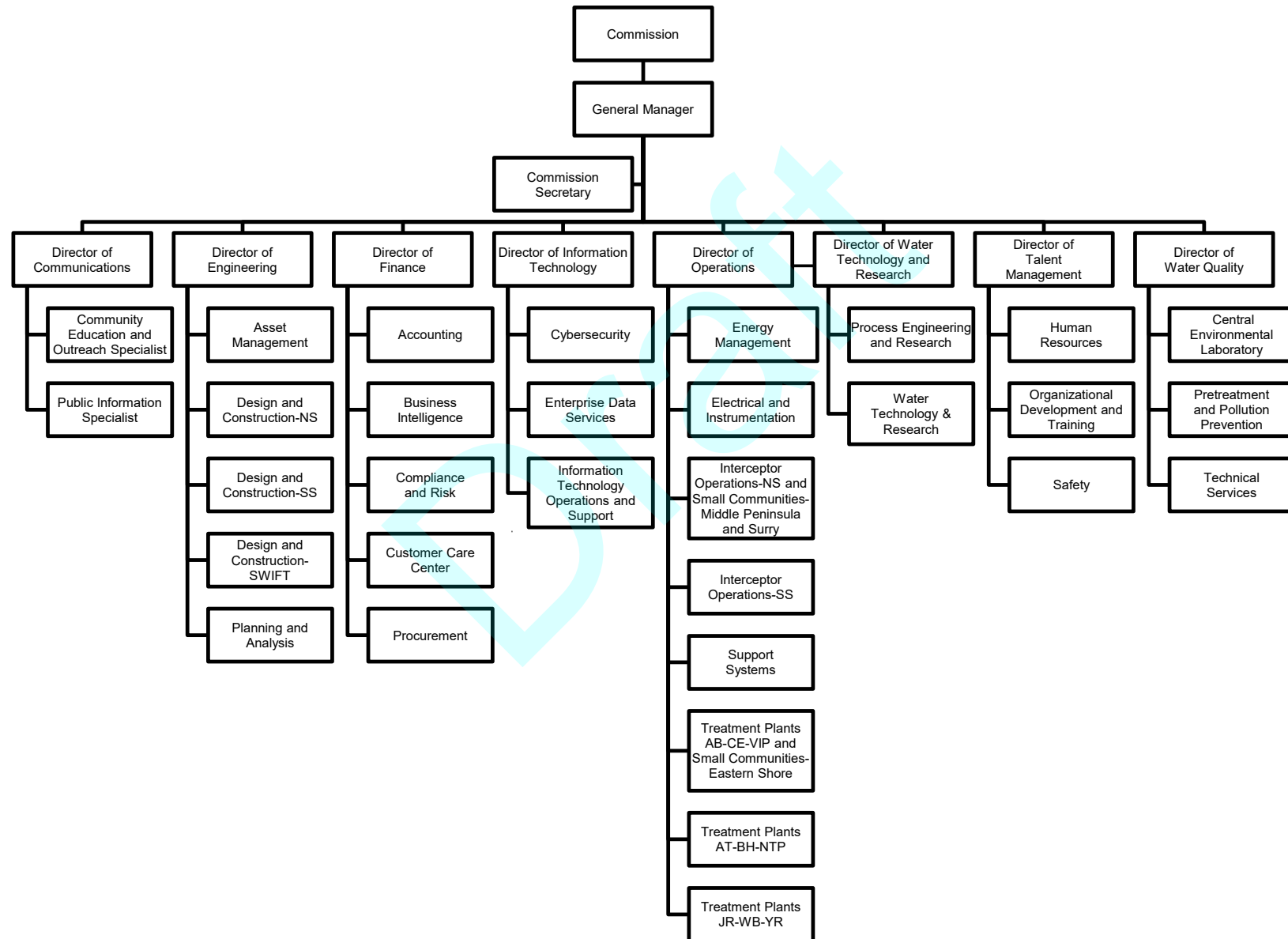
Sands Anderson, PC
General Counsel

AquaLaw, PLC
Special Counsel

Norton Rose Fulbright US, LLP
Bond Counsel

HRSD Organization Chart

June 30, 2021



HRSD Service Area A Political Subdivision of the Commonwealth of Virginia



History of HRSD

June 30, 2021

HRSD can trace its beginnings to 1925 when the Virginia Department of Health condemned a large oyster producing area in Hampton Roads. The closure resulted in the Virginia General Assembly creating in 1927 a “Commission to Investigate and Survey the Seafood Industry of Virginia.” Other studies recommended a public body to construct and operate a sewage system in the area. HRSD was named after Hampton Roads, a ship anchorage used for five centuries located near the convergence of the James, Elizabeth and Nansemond Rivers, before they flow into the Chesapeake Bay in southeastern Virginia.

In 1934, the Virginia General Assembly created the Hampton Roads Sanitation Disposal Commission with instructions to plan the elimination of pollution in Hampton Roads. Recommendations were made to the General Assembly, which resulted in the Sanitary Districts Law of 1938, along with “an Act to provide for and create the Hampton Roads Sanitation District.” This Act required the qualified voters within HRSD to decide in a general election on November 8, 1938, if they favored creation of such a District. This referendum failed to gain a majority by about 500 votes out of nearly 20,000 votes cast. This led to a revision of the Act and another referendum was held on November 5, 1940, which resulted in a majority vote for the creation of the Hampton Roads Sanitation District.

The Enabling Act provides for HRSD to operate as a political subdivision of the Commonwealth of Virginia for the specific purpose of water pollution abatement in Hampton Roads by providing a system of interceptor mains and wastewater treatment plants. Its affairs are controlled by a Commission of eight members appointed by the Governor for four-year terms. Administration is under the direction of a General Manager, supported by department directors and their staff.

HRSD began operations on July 1, 1946, using facilities acquired from the United States Government. The Warwick County Trunk Sewer, HRSD’s first construction project, began on June 26, 1946, and was funded by HRSD’s \$6.5 million Primary Pledge Sewer Revenue Bonds, dated March 1, 1946. The first treatment plant, the Army Base Plant, began operation on October 14, 1947. Since that time, the facilities of HRSD have grown to provide sanitary sewer service to all major population centers in southeastern Virginia. The population served has increased from nearly 288,000 in 1940 to about 1.7 million in 2020.

Throughout its rich history HRSD has earned many of its industry’s most prestigious awards. This tradition continued as the National Association of Clean Water Agencies (NACWA) presented Peak Performance Awards for outstanding compliance with National Pollutant Discharge Elimination System (NPDES) permits to the following HRSD treatment plants during the year ended June 30, 2021: Atlantic— Platinum Award (6 consecutive years of compliance), Boat Harbor—Platinum (19 consecutive years), James River—Platinum 7 consecutive years), Nansemond—Platinum (19 consecutive years), Virginia Initiative Plant—Platinum (25 consecutive years), Williamsburg—Platinum (26 consecutive years) and York River— Platinum (13 consecutive years).

Additional awards and honors received during the year ended June 30, 2021 include the Water Research Foundation (WRF) Outstanding Subscriber Award for Applied Science; The American Council of Engineering Companies (ACEC) National Grand Award for the nutrient reduction improvements project at the Virginia Initiative Plant) and the Elizabeth River Project’s Sustained Distinguished Performance Award.



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Financial Section



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FY21 Report not available yet

Report of Independent Auditor

To the Commissioners
Hampton Roads Sanitation District

Report on the Financial Statements

We have audited the accompanying financial statements of the Hampton Roads Sanitation District (hereafter referred to as "HRSD"), as of and for the years ended June 30, 2020 and 2019, and the related notes to the financial statements, which collectively comprise HRSD's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audit in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and the *Specifications for Audits of Authorities, Boards, and Commissions*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards and specifications require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of HRSD, as of June 30, 2020 and 2019, and the changes in its financial position and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and required supplementary information, as listed in the table contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise HRSD's basic financial statements. The Introductory, Statistical and Other Supplemental Sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Introductory, Statistical and Other Supplemental Sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 18, 2020, on our consideration of HRSD's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of HRSD's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering HRSD's internal control over financial reporting and compliance.

Cherry Bekant LLP

Virginia Beach, Virginia
November 20, 2020

MANAGEMENT'S DISCUSSION AND ANALYSIS (Unaudited)

This narrative overview and analysis of the financial activities of the Hampton Roads Sanitation District (HRSD) for the fiscal years ended June 30, 2021 and 2020, is provided by HRSD's management. Readers of the accompanying financial statements are encouraged to consider this information in conjunction with that furnished in the transmittal letter, which can be found on pages 1 through 2 of this report.

FINANCIAL HIGHLIGHTS

- Total net position increased by \$80.9 million, or 9.3 percent, in 2021 as a result of this year's operations.
- Total revenues increased by \$3.2 million, or 1.0 percent, due to a \$7.7 million increase in operating revenues and a \$0.9 million increase in facility charges offset by a \$5.4 million decrease in investment income, which was primarily due to market volatility and lower interest rates..
- Operating expenses increased by \$14.1 million, or 6.4 percent, principally due to a \$2.6 million increase in pension expense, a \$2.0 million increase in material and supplies, a \$3.5 million increase in contractual services, \$1.8 million increase in depreciation expense and a \$4.3 million increase in capital construction projects expense.
- Restricted cash and cash equivalents increased \$2.3 million, or 8.2 percent, due to an increase in cash restricted for debt service. Unrestricted cash and cash equivalents decreased \$47.7 million, or 19.9 percent, primarily due to utilizing cash to fund capital construction projects in FY21.
- Net Property, Plant and Equipment increased \$146.9 million, or 10.1 percent, due to \$115.0 million net increase in treatment plants and interceptor systems expansion and improvements and \$31.4 million increase in land purchases.

OVERVIEW OF FINANCIAL STATEMENTS

HRSD's Basic Financial Statements are comprised of the financial statements and the notes to the financial statements. This report also contains required supplementary information and other supplementary information in addition to the Basic Financial Statements.

The Basic Financial Statements, found on pages 20 through 23 of this report, are designed to provide readers with a broad overview of HRSD's finances in a manner similar to a private sector business.

The Statements of Net Position, found on pages 20 and 21 of this report, present information on all of HRSD's assets, deferred outflows of resources, liabilities, and deferred inflows of resources; the difference between these components is reported as net position. Over time, changes in net position may serve as a useful indicator of whether the financial position of HRSD is improving or deteriorating.

The Statements of Revenues, Expenses and Changes in Net Position, found on page 22 of this report, present all of HRSD's revenues and expenses, showing how HRSD's net position changed during the year. All changes in net position are reported as soon as the underlying event takes place, thus giving rise to the changes, regardless of the timing of the cash flows. Thus, revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods.

The Notes to Financial Statements, found on pages 26 through 58 of this report, provide additional information that is essential to a full understanding of the data provided in the financial statements.

In addition to the Basic Financial Statements and the related notes, this report also presents certain required supplementary information concerning HRSD's progress in funding its obligations to provide pension and other postemployment benefits to its employees.

Required Supplementary Information can be found beginning on page 61 of this report.

FINANCIAL ANALYSIS

As noted earlier, net position may serve over time as a useful indicator of HRSD’s financial position. Total assets and deferred outflows of resources exceeded total liabilities and deferred inflows of resources by \$950.8 million at June 30, 2021 and by \$869.9 million at June 30, 2020.

By far, the largest portion of HRSD’s net position (81.6 percent and 74.3 percent at June 30, 2021 and 2020, respectively) reflects its net investment in capital assets (e.g. land, buildings, machinery and equipment) less any related debt used to acquire those assets still outstanding, net of unspent bond proceeds. HRSD uses these capital assets to provide services to its customers; consequently, these assets are not available for future spending. Although HRSD’s net investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, because the capital assets themselves cannot be liquidated to reduce these liabilities.

HRSD’s net position is summarized in the following condensed Statements of Net Position as of June 30:

HRSD’s Condensed Statements of Net Position

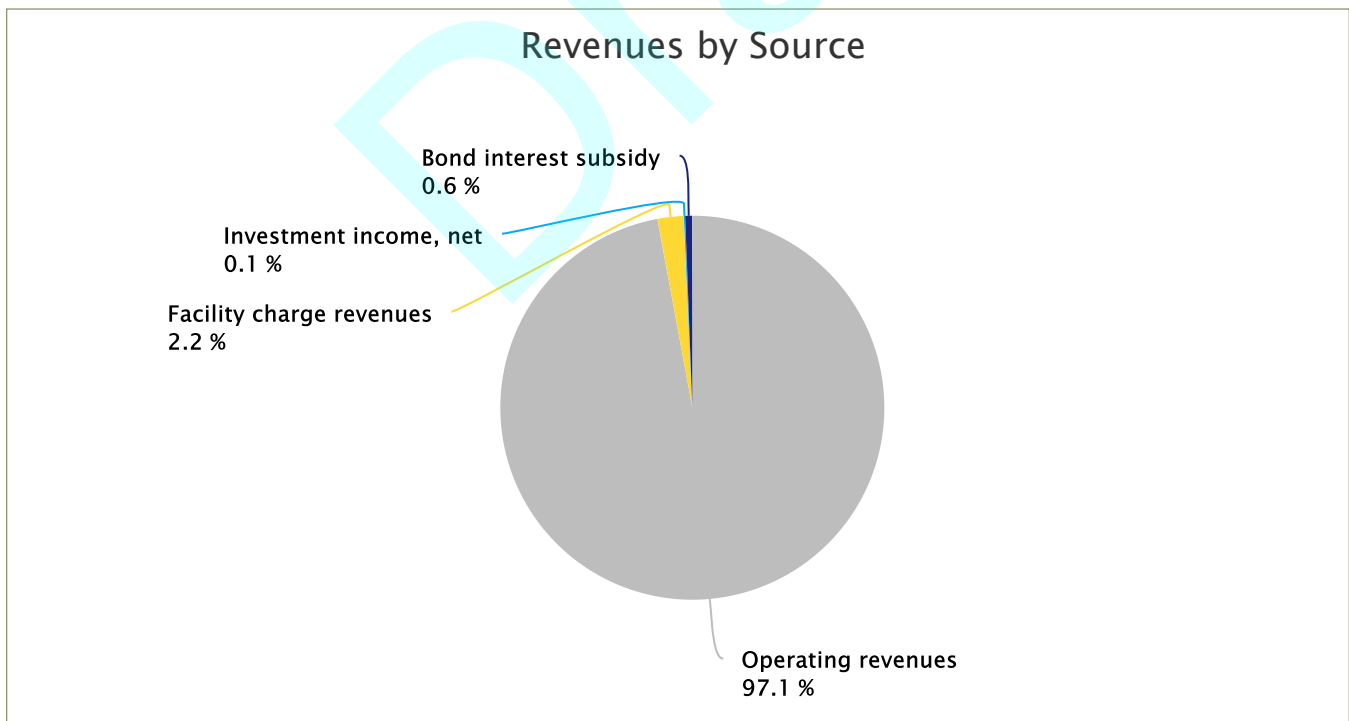
| (in thousands) | 2021 | 2020 | 2019 | 2021 vs. 2020 | |
|---------------------------------------|---------------------|---------------------|---------------------|-------------------|--------------|
| | | | | Dollars | Percent |
| Capital assets | \$ 1,604,840 | \$ 1,457,955 | \$ 1,358,327 | \$ 146,885 | 10.1% |
| Current and noncurrent assets | 309,670 | 337,233 | 399,840 | (27,563) | (8.2%) |
| Total assets | \$ 1,914,510 | \$ 1,795,188 | \$ 1,758,167 | \$ 119,322 | 6.6% |
| Deferred outflows of resources | \$ 42,277 | \$ 37,592 | \$ 21,442 | \$ 4,685 | 12.5% |
| Long-term liabilities | \$ 791,357 | \$ 791,705 | \$ 847,928 | \$ (348) | (0.0%) |
| Current liabilities | 196,704 | 157,752 | 140,564 | 38,952 | 24.7% |
| Total liabilities | \$ 988,061 | \$ 949,457 | \$ 988,492 | \$ 38,604 | 4.1% |
| Deferred inflows of resources | \$ 17,902 | \$ 13,416 | \$ 9,412 | \$ 4,486 | 33.4% |
| Net investment in capital assets | \$ 776,253 | \$ 646,505 | \$ 494,779 | \$ 129,748 | 20.1% |
| Restricted for debt service | 30,455 | 28,155 | 28,553 | 2,300 | 8.2% |
| Unrestricted | 144,116 | 195,247 | 258,373 | (51,131) | (26.2%) |
| Total net position | \$ 950,824 | \$ 869,907 | \$ 781,705 | \$ 80,917 | 9.3% |

At June 30, 2021 and 2020, HRSD had no unspent bond proceeds. The increase in capital assets and the corresponding decreases in current assets is primarily due to an increase in the utilization of cash to fund and complete capital improvement projects.

The changes in HRSD's net position can be determined by reviewing the following condensed Statements of Revenues, Expenses and Changes in Net Position:

HRSD's Condensed Statements of Revenues, Expenses and Changes in Net Position

| (in thousands) | 2021 | 2020 | 2019 | 2021 vs. 2020 | |
|-------------------------------------|-------------------|-------------------|-------------------|------------------|---------------|
| | | | | Dollars | Percent |
| Revenues: | | | | | |
| Operating revenues | \$ 329,769 | \$ 322,032 | \$ 303,121 | \$ 7,737 | 2.4% |
| Facility charge revenues | 7,379 | 6,444 | 6,662 | 935 | 14.5% |
| Investment income, net | 471 | 5,876 | 8,719 | (5,405) | (92.0%) |
| Bond interest subsidy | 2,167 | 2,205 | 2,308 | (38) | (1.7%) |
| Total revenues | 339,786 | 336,557 | 320,810 | 3,229 | 1.0% |
| Operating expenses: | | | | | |
| Wastewater treatment | 132,820 | 122,393 | 117,189 | 10,427 | 8.5% |
| General and administrative | 48,691 | 46,949 | 41,121 | 1,742 | 3.7% |
| Depreciation and amortization | 53,278 | 51,383 | 53,225 | 1,895 | 3.7% |
| Total operating expenses | 234,789 | 220,725 | 211,535 | 14,064 | 6.4% |
| Non-operating expenses: | | | | | |
| Bond issuance costs | 682 | 1,290 | 53 | (608) | (47.1%) |
| Capital distributions to localities | 376 | - | - | 376 | 10000.0% |
| Disposal of capital assets | - | 739 | - | (739) | (100.0%) |
| Interest expense | 25,339 | 26,179 | 27,964 | (840) | (3.2%) |
| Total non-operating expenses | 26,397 | 28,208 | 28,017 | (1,811) | (6.4%) |
| Total expenses | 261,186 | 248,933 | 239,552 | 12,253 | 4.9% |
| Income before capital contributions | 78,600 | 87,624 | 81,258 | (9,024) | (10.3%) |
| Capital contributions | 2,317 | 578 | 2,818 | 1,739 | 300.9% |
| Change in net position | 80,917 | 88,202 | 84,076 | (7,285) | (8.3%) |
| Total net position - beginning | 869,907 | 781,705 | 697,629 | 88,202 | 11.3% |
| Total net position - ending | \$ 950,824 | \$ 869,907 | \$ 781,705 | \$ 80,917 | 9.3% |



Operating revenues increased by \$7.7 million, or 2.4 percent, in 2021 and by \$18.9 million, or 6.2 percent, in 2020. The increase in 2021 was primarily due to an increase in consumption. The majority of 2020 increase was attributable to various rate increases in metered public wastewater services. Net Investment income decreased \$5.4 million in

2021, or 92.0 percent, primarily due to FY21 market volatility and reduced cash balances, compared to a \$2.8 million decrease, or 32.6 percent, in 2020.

Operating expenses increased by \$14.1 million, or 6.4 percent in 2021 and by \$9.2 million, or 4.3 percent, in 2020. Increases in 2021 were principally due to a \$2.6 million increase in pension expense, a \$2 million increase in material and supplies, \$3.5 million increase in contractual services, \$1.8 million increase in depreciation expense and a \$4.3 million increase in capital construction projects expense in FY21. Increases in 2020 were principally due to a \$1.6 million increase in contractual services, a \$3.3 million increase in personal services, \$3.1 million increase in fringe benefits and a \$1.2 million increase in bond cost of issuance.

In 2021 and 2020, HRSD received \$2.3 million and \$0.6 million, respectively, in capital contributions to help finance its capital improvement program.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

At the end of 2021 and 2020, HRSD had approximately \$1.6 billion and \$1.5 billion, respectively, invested in a broad range of capital assets, including land, wastewater treatment plants, interceptor systems, pump stations, administrative and maintenance buildings, equipment and software. These amounts represent a net increased \$146.9 million, or 10.1 percent in 2021 and a net increase of \$99.6 million, or 7.3 percent in 2020.

The following summarizes HRSD’s capital assets, net of accumulated depreciation, as of June 30:

HRSD’s Capital Assets

| (in thousands) | 2021 | 2020 | 2019 |
|--|---------------------|---------------------|---------------------|
| Land | \$ 43,658 | \$ 12,229 | \$ 12,174 |
| Treatment plants | 696,175 | 654,809 | 549,645 |
| Interceptor systems | 522,400 | 447,372 | 440,236 |
| Buildings | 26,021 | 27,305 | 29,617 |
| Small community facilities | 16,123 | 16,672 | 17,222 |
| Office equipment | 788 | 754 | 1,513 |
| Automotive | 1,715 | 1,716 | 1,941 |
| Other equipment | 13,999 | 4,309 | 6,007 |
| Software and intangible assets | 815 | 2,204 | 5,441 |
| | <u>1,321,694</u> | <u>1,167,370</u> | <u>1,063,796</u> |
| Construction in progress | 283,146 | 290,585 | 294,531 |
| Net property, plant and equipment | \$ 1,604,840 | \$ 1,457,955 | \$ 1,358,327 |

The following summarizes the changes in capital assets for the years ended June 30:

| (in thousands) | 2021 | 2020 | 2019 |
|---|---------------------|---------------------|---------------------|
| Balance at beginning of year | \$ 1,457,955 | \$ 1,358,327 | \$ 1,321,644 |
| Additions | 207,602 | 156,518 | 17,661 |
| Transfers/Retirements | - | (1,819) | (1,050) |
| Depreciation and amortization | (53,278) | (51,383) | (53,226) |
| Accumulated depreciations retired | - | 258 | 1,050 |
| Net increase (decrease) in construction in progress | (7,439) | (3,946) | 72,248 |
| Balance at end of year | \$ 1,604,840 | \$ 1,457,955 | \$ 1,358,327 |

The largest increase in capital assets over the past several years has been in treatment plant construction and interceptor system construction, which includes pipeline replacements, pump station rehabilitations and other improvements to the infrastructure. HRSD’s total capital expenditures were \$213.4 million during 2021 and \$161.1 million during 2020. Increases in 2021 are primarily due to increase in SWIFT project expansion expenses, increase in treatment plants and interceptor systems expansion and improvements projects and increase in land purchases. The largest increase in FY20 was the completion of the Virginia Initiative Treatment Plant Nutrient Reduction project and improvements to the Nansemond interceptor system.

LongTerm Debt

At June 30, 2021, HRSD had a total of \$835.0 million in revenue bonds outstanding versus \$835.5 million in 2020, less than a 0.01 percent decrease. Draws on existing approved bonds, in the amount of \$35.4 million, were offset by payments on existing senior and subordinate debt and amortization of bond premiums, in the amount of \$35.9 million.

The following summarizes HRSD's outstanding debt principal at June 30:

HRSD's Outstanding Debt

(in thousands, net of premium)

| | 2021 | 2020 | 2019 |
|-------------------------------|-------------------|-------------------|-------------------|
| Senior revenue bonds | \$ 198,670 | \$ 214,212 | \$ 313,340 |
| Subordinate revenue bonds | 616,533 | 597,745 | 512,168 |
| Total outstanding debt | \$ 815,203 | \$ 811,957 | \$ 825,508 |

HRSD's financial strengths are reflected in its high credit ratings listed below:

| Ratings Agency | Senior Debt | Subordinate Long-term | Subordinate Short-term |
|---------------------------|-------------|-----------------------|------------------------|
| Standard & Poor's | AA+ | AA+ | A-1+ |
| Fitch Ratings | AA+ | AA | F1+ |
| Moody's Investors Service | Aa1 | Aa1 | n/a |

The development of HRSD's Capital Improvement Program and its related debt programs are governed by revenue Trust Agreements. The Senior Trust agreement requires the senior debt coverage to be 1.2 times maximum annual debt service and total debt service coverage of 1.0 times maximum annual debt service, both on a Generally Accepted Accounting Principles basis. The Amended and Subordinate Trust agreement was amended in 2016 to account for future Consent Decree expenses related to Locality wet weather improvements that HRSD will not own. In the Amended Trust, Operating Expenses were redefined as shown below for the purposes of calculating an "Adjusted" debt service coverage on a cash basis:

"Operating Expenses" as defined by the Enabling Act and as used in the Senior Trust Agreement, operating expenses includes the cost of maintaining, repairing and operating such system or systems or sewer improvements and to provide such reserves therefore as may be provided in the resolution providing for the issuance of such revenue bonds or in the trust agreement securing the same. As defined in the Subordinate Trust Agreement, Operating Expenses includes those expenses required to pay the cost of maintaining, repairing and operating the Wastewater 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 expenditures for extraordinary maintenance or repair or improvements. 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.

The Amended and Subordinate Trust agreement requires total debt service coverage to be 1.2 times current year debt service on an Adjusted basis. HRSD's Financial Policy and operating and capital improvement plans were developed with the intent to maintain coverage ratios in excess of these requirements. HRSD's Financial Policy requires senior debt service coverage to be 1.5 times and total debt service coverage to be 1.4 times.

| | Senior Debt Service Coverage | | Total Debt Service Coverage | |
|-------------------------------------|------------------------------|-------------------------|-----------------------------|-------------------------|
| | GAAP | Adjusted | GAAP | Adjusted |
| Senior Trust Agreement | 1.20x (MADS) | None | 1.00x (MADS) | None |
| Amended Subordinate Trust Agreement | None | None | None | 1.20x (Current Year) |
| Financial Policy | None | 1.50x (Current Year) | None | 1.40x (Current Year) |

More detailed information regarding HRSD’s capital assets and long-term debt is presented in Notes 5 and 9, respectively.

ECONOMIC FACTORS AND RATES

The five-year rolling average billed consumption continues to decline, but the most recent fiscal year experienced a slight increase. This may be due to pandemic related water consumption as the economy reopened with vaccines being administered and working from home became more common.

In consideration of the economic stresses created by the COVID-19 pandemic on ratepayers, wastewater treatment rates for the 2021 fiscal year were not increased. HRSD reprioritized some planned investments, obtained relief from federal and state regulatory schedules, took advantage of historically low interest rates and judiciously used reserves previously set aside for unexpected needs to accommodate for deferred rate wastewater treatment rate increase. HRSD will continue to monitor the COVID-19 impact on our ratepayers and make further adjustments to investment plans should the economic conditions warrant.

CONTACTING HRSD’S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of HRSD’s finances for all those with an interest. Questions concerning the information provided in this report or any requests for additional information should be addressed to the Director of Finance, 1434 Air Rail Avenue, Virginia Beach, Virginia 23455.



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**STATEMENTS OF NET POSITION
AS OF JUNE 30, 2021 AND 2020**

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

(in thousands)

| | 2021 | 2020 |
|---|---------------------|---------------------|
| CURRENT ASSETS | | |
| Cash and cash equivalents | \$ 127,380 | \$ 175,210 |
| Cash and cash equivalents - restricted | 30,455 | 28,155 |
| Accounts receivable, net | 57,130 | 39,178 |
| Other current assets | 4,619 | 2,933 |
| TOTAL CURRENT ASSETS | 219,584 | 245,476 |
| NON-CURRENT ASSETS | | |
| Cash and cash equivalents | 65,054 | 64,900 |
| Inventory | 25,032 | 26,857 |
| | 90,086 | 91,757 |
| NET PROPERTY, PLANT AND EQUIPMENT | | |
| Land | 43,658 | 12,229 |
| Treatment plants | 1,460,237 | 1,384,293 |
| Interceptor systems | 725,600 | 638,150 |
| Buildings | 48,236 | 48,081 |
| Small community facilities | 25,625 | 25,625 |
| Office equipment | 45,049 | 44,613 |
| Automotive | 19,933 | 19,127 |
| Other equipment | 48,899 | 37,517 |
| Software and intangible assets | 40,074 | 40,074 |
| | 2,457,311 | 2,249,709 |
| Less: Accumulated depreciation and amortization | 1,135,617 | 1,082,339 |
| | 1,321,694 | 1,167,370 |
| Construction in progress | 283,146 | 290,585 |
| NET PROPERTY, PLANT AND EQUIPMENT | 1,604,840 | 1,457,955 |
| TOTAL NON-CURRENT ASSETS | 1,694,926 | 1,549,712 |
| TOTAL ASSETS | 1,914,510 | 1,795,188 |
| DEFERRED OUTFLOWS OF RESOURCES | | |
| Deferred loss on debt refunding, net | 21,717 | 24,029 |
| Differences between expected and actual experience: | | |
| OPEB plans | 5,129 | 2,894 |
| Pension plan | 525 | 1,268 |
| Changes of assumption: | | |
| OPEB plans | 251 | 312 |
| Pension plan | 4,149 | 5,764 |
| Net difference between projected and actual earnings on plans investments | | |
| OPEB plans | 160 | - |
| Pension plan | 6,456 | - |
| Change in proportion, OPEB plans | 30 | 41 |
| Contributions subsequent to the measurement date: | | |
| OPEB plans | 407 | 387 |
| Pension plan | 3,453 | 2,897 |
| TOTAL DEFERRED OUTFLOWS OF RESOURCES | 42,277 | 37,592 |
| TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES | \$ 1,956,787 | \$ 1,832,780 |

See Accompanying Notes to Financial Statements

**STATEMENTS OF NET POSITION
AS OF JUNE 30, 2021 AND 2020**

LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION

(in thousands)

| | 2021 | 2020 |
|--|---------------------|---------------------|
| CURRENT LIABILITIES | | |
| Trade and contracts payable | \$ 57,054 | \$ 37,454 |
| Contract retention | 8,778 | 7,626 |
| Accrued salaries and wages | 3,395 | 3,154 |
| Current portion of bonds payable | 38,419 | 35,906 |
| Variable rate demand bonds | 50,000 | 50,000 |
| Notes payable | 15,299 | - |
| Current portion of compensated absences | 5,765 | 6,160 |
| Debt interest payable | 8,532 | 8,875 |
| Other liabilities | 9,462 | 8,577 |
| TOTAL CURRENT LIABILITIES | 196,704 | 157,752 |
| LONG-TERM LIABILITIES | | |
| Compensated absences | 3,139 | 2,410 |
| Net OPEB liability | 2,516 | 10,664 |
| Net pension liability | 39,115 | 29,058 |
| Bonds payable | 746,587 | 749,573 |
| TOTAL LONG-TERM LIABILITIES | 791,357 | 791,705 |
| TOTAL LIABILITIES | 988,061 | 949,457 |
| DEFERRED INFLOWS OF RESOURCES | | |
| Differences between expected and actual experience: | | |
| OPEB plans | 5,541 | 6,343 |
| Pension plan | 1,226 | 1,281 |
| Changes of assumptions: | | |
| OPEB plans | 1,574 | 1,852 |
| Pension plan | 526 | 1,388 |
| Net difference between projected and actual earnings on: | | |
| OPEB plan investments | 8,984 | 703 |
| Pension plan investments | - | 1,848 |
| Change in proportion, OPEB plans | 51 | 1 |
| TOTAL DEFERRED INFLOWS OF RESOURCES | 17,902 | 13,416 |
| NET POSITION | | |
| Net investment in capital assets | 776,253 | 646,505 |
| Restricted for debt service | 30,455 | 28,155 |
| Unrestricted | 144,116 | 195,247 |
| TOTAL NET POSITION | 950,824 | 869,907 |
| TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION | \$ 1,956,787 | \$ 1,832,780 |

See Accompanying Notes to Financial Statements

**STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
FOR THE FISCAL YEARS ENDED JUNE 30, 2021 and 2020**

(in thousands)

| | 2021 | 2020 |
|--|--------------------------|--------------------------|
| OPERATING REVENUES | | |
| Wastewater treatment charges | \$ 325,817 | \$ 318,585 |
| Miscellaneous | 3,952 | 3,447 |
| TOTAL OPERATING REVENUES | <u>329,769</u> | <u>322,032</u> |
| OPERATING EXPENSES | | |
| Wastewater treatment | 132,820 | 122,393 |
| General and administrative | 48,691 | 46,949 |
| Depreciation and amortization | 53,278 | 51,383 |
| TOTAL OPERATING EXPENSES | <u>234,789</u> | <u>220,725</u> |
| OPERATING INCOME | <u>94,980</u> | <u>101,307</u> |
| NON-OPERATING REVENUES (EXPENSES) | | |
| Wastewater facility charges | 7,379 | 6,444 |
| Investment income | 471 | 5,876 |
| Bond interest subsidy | 2,167 | 2,205 |
| Bond issuance costs | (682) | (1,290) |
| Capital distributions to localities | (376) | - |
| Disposal of capital assets | - | (739) |
| Interest expense | (25,339) | (26,179) |
| NET NON-OPERATING EXPENSES | <u>(16,380)</u> | <u>(13,683)</u> |
| INCOME BEFORE CAPITAL CONTRIBUTIONS | <u>78,600</u> | <u>87,624</u> |
| CAPITAL CONTRIBUTIONS | | |
| Other capital contributions | 2,317 | 578 |
| CAPITAL CONTRIBUTIONS | <u>2,317</u> | <u>578</u> |
| CHANGE IN NET POSITION | 80,917 | 88,202 |
| TOTAL NET POSITION - Beginning | <u>869,907</u> | <u>781,705</u> |
| TOTAL NET POSITION - Ending | <u>\$ 950,824</u> | <u>\$ 869,907</u> |

See Accompanying Notes to Financial Statements

STATEMENTS OF CASH FLOWS
FOR THE FISCAL YEARS ENDED JUNE 30, 2021 and 2020

| (in thousands) | 2021 | 2020 |
|--|-------------------|-------------------|
| CASH FLOWS FROM OPERATING ACTIVITIES | | |
| Cash received from customers | \$ 303,702 | \$ 320,147 |
| Cash received from CARES Act | 4,163 | - |
| Other operating revenues | 3,952 | 3,447 |
| Cash payments to suppliers for goods and services | (119,627) | (105,554) |
| Cash payments to employees for services | | (59,675) |
| Net cash provided by operating activities | <u>132,515</u> | <u>159,306</u> |
| CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES | | |
| Capital distributions to localities | <u>(376)</u> | <u>-</u> |
| CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES | | |
| Wastewater facility charges | 7,379 | 6,444 |
| Acquisition and construction of property, plant and equipment | (180,623) | (136,586) |
| Proceeds from capital debt | 60,751 | 29,238 |
| Bond interest subsidy | 2,167 | 2,205 |
| Principal paid on capital debt | (42,206) | (28,743) |
| Funds for cash defeasance | - | (65,352) |
| State capital grants | - | - |
| Other capital contributions | 2,317 | 578 |
| Bond issuance costs | (682) | (1,290) |
| Fees paid on interim financing | (82) | (14) |
| Interest paid on capital debt | (27,007) | (30,268) |
| Net cash used in capital and related financing activities | <u>(177,986)</u> | <u>(223,788)</u> |
| CASH FLOWS FROM INVESTING ACTIVITIES | | |
| Sales and maturities of investments | - | - |
| Interest and dividends on investments | 471 | 5,876 |
| Net cash provided by investing activities | <u>471</u> | <u>5,876</u> |
| NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS AND CASH AND CASH EQUIVALENTS - RESTRICTED | <u>(45,376)</u> | <u>(58,606)</u> |
| CASH AND CASH EQUIVALENTS, AND CASH AND CASH EQUIVALENTS - RESTRICTED, AT BEGINNING OF YEAR | <u>268,265</u> | <u>326,871</u> |
| CASH AND CASH EQUIVALENTS, AND CASH AND CASH EQUIVALENTS - RESTRICTED, AT END OF YEAR | <u>\$ 222,889</u> | <u>\$ 268,265</u> |
| Reconciliation of Operating Income to Net Cash Provided by Operating Activities (in thousands) | | |
| Operating income | 94,980 | \$ 101,307 |
| Adjustments to reconcile operating income to net cash provided by operating activities: | | |
| Depreciation and amortization | 53,278 | 51,383 |
| (Increase) decrease in operating assets: | | |
| Accounts receivable | (17,952) | 3,799 |
| Inventory | 1,825 | 30 |
| Net change in other current assets | (1,686) | 172 |
| Increase (decrease) in operating liabilities: | | |
| Trade and contracts payable | 1,212 | 226 |
| Accrued salaries and wages | 241 | 451 |
| Compensated absences | 334 | 481 |
| Net change in other liabilities | (657) | 2,645 |
| CARES Act Funds | 1,542 | - |
| OPEB liabilities | (3,240) | (1,744) |
| Pension liabilities | 2,638 | 556 |
| NET CASH PROVIDED BY OPERATING ACTIVITIES | <u>\$ 132,515</u> | <u>\$ 159,306</u> |
| Noncash Capital and Related Financing Activities: | | |
| Proceeds of refunding debt principal | \$ - | \$ 205,675 |
| Refunding of debt principal | - | (219,721) |
| Accrual for capital expenditures | 18,388 | 11,703 |
| Amortization of premium | (3,719) | (42,599) |
| Amortization of deferred loss on bond refunding | (2,312) | (10,284) |
| Loss on disposal of asset | - | (739) |

See Accompanying Notes to Financial Statements

**STATEMENTS OF FIDUCIARY NET POSITION
FOR THE FISCAL YEARS ENDED JUNE 30, 2021 and 2020**

(in thousands)

| | Retiree Health (OPEB) Trust Fund | | Coronavirus Relief Custodial Fund | |
|---|-------------------------------------|------------------|-----------------------------------|-------------|
| | 2021 | 2020 | 2021 | 2020 |
| ASSETS | | | | |
| Cash and cash equivalents | \$ 98 | \$ 187 | \$ 1,542 | \$ - |
| Investments at fair value | | | | |
| Domestic equity | 29,467 | 21,315 | - | - |
| International equity | 15,208 | 10,605 | - | - |
| Other growth | - | 1,424 | - | - |
| Fixed income | 22,058 | 20,969 | - | - |
| Other income | 2,632 | 2,412 | - | - |
| Real return | 2,203 | - | - | - |
| Total investments | <u>71,568</u> | <u>56,725</u> | <u>-</u> | <u>-</u> |
| Total assets | <u>\$ 71,666</u> | <u>\$ 56,912</u> | <u>\$ 1,542</u> | <u>\$ -</u> |
| NET POSITION | | | | |
| Restricted for: | | | | |
| Postretirement benefits other than pensions | 71,666 | 56,912 | - | - |
| CARES ACT payments for utility customers | - | - | 1,542 | - |
| Total net position | <u>\$ 71,666</u> | <u>\$ 56,912</u> | <u>\$ 1,542</u> | <u>\$ -</u> |

See Accompanying Notes to Financial Statements

**STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION
FOR THE FISCAL YEARS ENDED JUNE 30, 2021 and 2020**

(in thousands)

| | Retiree Health (OPEB) Trust Fund | | Coronavirus Relief Custodial Fund | |
|--|----------------------------------|-----------|-----------------------------------|------|
| | 2021 | 2020 | 2021 | 2020 |
| ADDITIONS: | | | | |
| Contributions: | | | | |
| Employers | \$ 1,963 | \$ 2,730 | \$ - | \$ - |
| CARES Act | - | - | 9,053 | - |
| Total contributions | 1,963 | 2,730 | 9,053 | - |
| Net investment earnings | 14,216 | 3,343 | | |
| Total additions | 16,179 | 6,073 | 9,053 | - |
| DEDUCTIONS: | | | | |
| Benefit payments for participants | 1,425 | 1,186 | - | - |
| Investment expenses | | | | |
| Payments for customers | - | - | 7,511 | - |
| Total deductions | 1,425 | 1,186 | 7,511 | - |
| Net increase in fiduciary net position | 14,754 | 4,887 | 1,542 | - |
| Net position - beginning | 56,912 | 52,025 | - | - |
| Net position - ending | \$ 71,666 | \$ 56,912 | \$ 1,542 | \$ - |

NOTES TO FINANCIAL STATEMENTS

NOTE 1 - GENERAL INFORMATION

Organization and Administration

The Hampton Roads Sanitation District (HRSD) was created by the Virginia General Assembly in 1940, as a political subdivision of the Commonwealth of Virginia (the Commonwealth), to construct, maintain, and operate a wastewater treatment system in the Hampton Roads area. The Hampton Roads Sanitation District Commission (the Commission) is HRSD’s governing body and consists of eight members, appointed by the Governor. The Commission’s functions were updated by Chapter 66 of the Acts of the Assembly of Virginia of 1960, as amended. The administration of HRSD is under the direction of a General Manager, supported by eight department directors.

Regulatory Oversight

HRSD’s operations are subject to regulations established by the United States Environmental Protection Agency and the Virginia Department of Environmental Quality. HRSD currently meets all of its permit requirements. Changes in these regulations could require HRSD to modify its treatment processes and require additional capital investment and/ or incur additional costs.

Purpose of HRSD

HRSD was created for the specific purpose of abating pollution in the Hampton Roads area through the interception of wastewater outfalls, installation of interception service into new areas as necessary and providing treatment facilities. HRSD provides points of interception throughout the region. The responsibility of providing lateral sewers and subtrunk facilities to carry sewage from industries, residences and businesses is generally the responsibility of the local municipal governments.

Corporate Limits of HRSD

The geographical limits of HRSD include:

| | | |
|----------------------------------|------------------------|-----------------------|
| City of Chesapeake | City of Suffolk | King and Queen County |
| City of Hampton | City of Virginia Beach | King William County |
| City of Newport News | City of Williamsburg | Mathews County |
| City of Norfolk | Eastern Shore | Middlesex County |
| City of Poquoson | Gloucester County | Surry County* |
| City of Portsmouth | Isle of Wight County | York County |
| *Excluding the Town of Claremont | James City County | |

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

HRSD is a political subdivision of the Commonwealth and a government instrumentality. The Commission is granted corporate powers by the *Code of Virginia*. The Governor of the Commonwealth appoints the Commission members, who serve at his pleasure. HRSD is reported in the Commonwealth’s Comprehensive Annual Financial Report as a discretely presented component unit. The Commonwealth is not obligated to repay HRSD’s debt. HRSD derives its revenues primarily from charges for wastewater treatment services. HRSD has no taxing authority.

Basis of Accounting

The accompanying financial statements report the financial position and results of operations of HRSD in accordance with accounting principles generally accepted in the United States of America (GAAP). Because HRSD is a political subdivision of the Commonwealth, the preparation of HRSD’s financial statements are governed by the pronouncements of the Governmental Accounting Standards Board (GASB). These statements are prepared on an enterprise fund basis and present HRSD’s operating revenues and expenses in a manner similar to a private

business, where the costs, including depreciation, of providing services to the general public on a continuing basis are financed or recovered primarily through user charges.

An enterprise fund, a proprietary fund type, is accounted for on an economic resources measurement focus. All assets and liabilities, whether current or noncurrent, associated with its activities are included on its Statements of Net Position. Proprietary fund type operating statements present increases (revenues) and decreases (expenses) in fund equity. The financial statements are presented using the accrual basis of accounting, whereby revenues are recognized when earned and expenses are recognized when incurred.

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. The operating budget is adopted by department, with budgetary controls exercised administratively by management at the department level. The General Manager is authorized to transfer funds among departments without further approval by the Commission. The Capital Budget represents a ten-year plan. Funds for the Capital Budget are appropriated throughout a fiscal year on a project basis. Transfers among projects require approval by the Commission. Appropriations for these budgets continue until the purpose of the appropriation has been fulfilled.

Cash Equivalents

All short-term investments that are highly liquid are considered to be cash equivalents. Cash equivalents are readily convertible to cash, and at the day of purchase, have an original maturity date of no longer than three months. Current restricted cash and cash equivalents are for debt service payments payable within the next year. Money market investments include the VACo/VML Virginia Investment Pool's (VIP) 1-3 Year High Quality Bond Fund and Stable NAV Liquidity Pool, which are recorded at amortized cost, which approximates fair value. See Note 3 and Note 13 for additional discussion of cash and cash equivalent and investment valuations.

Investments

Investments, which consist of U.S. government obligations including agencies, FDIC-guaranteed corporate notes, other corporate notes and bonds, and municipal bonds, are reported at fair value. HRSD's investment practices are governed by its formal investment policy.

Allowance for Uncollectible Accounts

HRSD provides an allowance for estimated uncollectible accounts receivable based on its bad debt experience. The balance in the allowance for uncollectible accounts is considered by management to be sufficient to cover anticipated losses on reported receivable balances.

Inventory

Inventory is carried at the lower of cost or market value and consists primarily of operating and maintenance materials.

Property, Plant and Equipment

HRSD funds its capital improvement program through the issuance of debt and its own resources. The proceeds of debt are reported as restricted assets. 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.

Property, plant and equipment purchased or constructed are reported at cost, including interest cost on funds borrowed to finance the construction of major capital additions. The capitalization threshold is \$5,000. Donated assets are reported at acquisition value at the date of donation. Property, plant and equipment are depreciated using the straight-line method over the following estimated useful lives:

| | |
|--|------------|
| Treatment plants, buildings and facilities | 30 years |
| Interceptor systems | 50 years |
| Office furniture and equipment | 5-10 years |
| Software and intangible assets | 5-7 years |
| Automotive | 5 years |

NOTES TO THE FINANCIAL STATEMENTS

Depreciation and amortization recognized on property, plant and equipment is an operating expense.

Deferred Outflows and Inflows of Resources

In addition to assets, the Statements of Net Position reports a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to future periods and so will not be recognized as an outflow of resources (expenses) until then. HRSD has eight items that qualify for reporting in this category. The first is the deferred loss on refunding reported in the Statements of Net Position. A deferred loss on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. The second through sixth amounts are: differences between expected and actual experience on the OPEB and pension plans; changes of OPEB and pension assumptions; and the change in proportion for OPEB plans. These differences will be recognized in pension expense in future reporting periods. The seventh and eighth deferred charges are for OPEB and pension contributions to the Virginia Retirement System (VRS) made subsequent to the measurement dates of June 30, 2019 and 2018. These contributions will be recognized as reductions of the Net OPEB and Net Pension Liabilities during the years ended June 30, 2021 and 2020, respectively.

In addition to liabilities, the Statements of Net Position reports a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time. HRSD has seven items that qualify for reporting in this category: the differences between expected and actual experience for OPEB and pension plans; the changes of OPEB and pension assumptions; the net difference between projected and actual earnings on OPEB and pension plan investments; and change in proportion for OPEB investments. These items will be recognized in pension expense in future reporting periods.

Revenue Recognition

Generally, wastewater treatment charges are computed based on a user's water consumption. These charges are recognized as revenue when billed. Revenues earned but unbilled through June 30 of each fiscal year are accrued at year-end. Wastewater facility charges are computed based on a new connection's water meter size and potential for high strength pollutant discharges, and are recognized as revenue prior to the issuance of a building or operating permit.

Operating and Non-operating Revenues and Expenses Recognition

HRSD distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses result from providing services and producing and delivering goods in connection with HRSD's principal service of providing wastewater treatment. The majority of operating revenues are from wastewater treatment, but other associated miscellaneous income from other related services and charges are also included. Revenues and expenses not meeting the operating definition are reported as non-operating. These consist mainly of wastewater facility charges, investment income, capital contributions and interest expense.

Compensated Absences

All permanent employees earn leave upon starting a full-time position. The amount and type of leave earned is based upon the employee's date of hire and years of service and is expensed as employees earn the right to these benefits.

Permanent employees hired prior to January 1, 2014 earn from 15 to 27 days of annual leave per year. The maximum annual leave an employee may accumulate at year-end varies by the years of service, with the maximum being 54 days. An employee has a vested right to their annual leave when earned. These employees also earn eight hours per month of sick leave regardless of the number of years of service. The amount of sick leave that may be accumulated is unlimited. After five years of service with HRSD, an employee has vested rights to 35 percent of accumulated sick leave to a maximum of \$10,000. For these employees, long-term disability (LTD) insurance is an optional employee paid benefit that replaces part of their income if the employee suffers a serious illness or injury and can't work for an extended period of time.

Permanent employees hired after January 1, 2014 earn 8 hours of paid time off for each two-week pay period. Employees may use accumulated paid time off for any type of absence from work, subject to supervisor approval. The maximum paid time off an employee may accumulate at year-end is 208 hours. After five years of service with HRSD, an employee has vested rights to 50 percent of their accumulated paid time off at separation. For these employees, HRSD also provides a state mandated long-term disability (LTD) benefit since these employees are not eligible for disability retirement benefits through VRS. The long-term disability benefit provides income replacement for employees who become disabled and unable to work for an extended period of time due to a non-work-related or

work-related condition (as determined under the Virginia Workers' Compensation Act). Long-term disability benefits begin at the expiration of an additional state mandated employer paid short-term disability (STD) benefit period of 125 days.

Postemployment Benefits Other Than Pensions (OPEB)

HRSD employees participate in three postemployment benefits other than pensions (other postemployment benefits or OPEB) plans:

The HRSD Retiree Health Plan (RHP) is a single employer, defined benefit plan that provides health and dental benefit plans for eligible members through a self-funded plan administered by a third-party vendor. HRSD administers the Plan through the Hampton Roads Sanitation District Retiree Health Trust. For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the RHP and additions to/deductions from the plan's fiduciary net position have been determined on the same basis as they are reported by the RHP. For this purpose, the RHP recognizes benefit payments when due and payable in accordance with the benefit terms.

The VRS Political Subdivision Health Insurance Credit Program (HIC) is a multiple-employer, agent-defined benefit plan that provides a credit toward the cost of health insurance coverage for retired political subdivision employees of participating employers. The Political Subdivision HIC Program was established pursuant to §51.1-1400 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. For purposes of measuring the net HIC OPEB liability, deferred outflows of resources and deferred inflows of resources related to the HIC OPEB, and the HIC OPEB expense, information about the fiduciary net position of the VRS HIC; and the additions to/deductions from the VRS HIC's fiduciary net position have been determined on the same basis as they were reported by VRS. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

The VRS Group Life Insurance (GLI) Program is a multiple employer, cost sharing plan, that provides coverage to state employees, teachers, and employees of participating political subdivisions. The GLI Program was established pursuant to §51.1-500 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. The GLI Program is a defined benefit plan that provides a basic group life insurance benefit for employees of participating employers. For purposes of measuring the net GLI Program OPEB liability, deferred outflows of resources and deferred inflows of resources related to the GLI Program OPEB, and GLI Program OPEB expense, information about the fiduciary net position of the VRS GLI Program OPEB and the additions to/deductions from the VRS GLI Program OPEB's fiduciary net position have been determined on the same basis as they were reported by VRS. In addition, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Pensions

HRSD employees participate in an agent multiple-employer defined benefit pension plan administered by the VRS, which acts as a common investment and administrative agent for political subdivisions in the Commonwealth. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of HRSD's Retirement Plan and the additions to or deductions from HRSD's Retirement Plan's net fiduciary position have been determined on the same basis as they were reported to HRSD by VRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms.

Use of Estimates

The preparation of these financial statements requires management to make estimates and assumptions. These estimates affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from management's estimates.

New Accounting Pronouncement

During the fiscal year ended June 30, 2021, HRSD adopted GASB Statement No. 84, *Fiduciary Activities*, effective July 1, 2020. The objective of this Statement is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. This Statement establishes criteria for identifying fiduciary activities of all state and local governments. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries

NOTES TO THE FINANCIAL STATEMENTS

with whom a fiduciary relationship exists. The requirements of this Statement apply to the financial statements of all state and local governments.

NOTE 3 - DEPOSITS AND INVESTMENTS

Deposits

Custodial Credit Risk. This risk is associated with the inability of a governmental entity to recover deposits from a financial institution in the event of a failure. At June 30, 2021 and 2020, the carrying values of HRSD's deposits were \$48,943,000 and \$24,703,000, respectively, and the bank balances were \$47,808,000 and \$21,883,000, respectively. All of the bank balances at June 30, 2021 were covered by federal depository insurance or collateralized in accordance with the Virginia Security for Public Deposits Act (the Act). In accordance with the Act, the depository institution pledged collateral in the form of federal obligations with a fair value equal to 110 percent of HRSD's deposits with a third party trustee in the name of the Treasurer of the Commonwealth. In the event that the banking institution fails, the Treasurer will take possession of the collateral, liquidate it and reimburse HRSD up to the value of its deposits. The State Treasury Board is responsible for monitoring compliance with the collateralization and reporting requirements of the Act and for notifying local governments of compliance by banks.

Credit Risk. HRSD invests in VACo/VML Virginia Investment Pool's (VIP) 1-3 Year High Quality Bond Fund and Stable NAV Liquidity Pool. Oversight is provided by the VACo/VML Board of Trustees. HRSD's investments in the VIP 1-3 Year High Quality Bond Fund and the VIP Stable NAV Liquidity Pool were rated AA+f/S1 and AAAm, respectively, by Standard & Poor's.

The components of restricted cash and cash equivalents at June 30 are as follows:

| (in thousands) | 2021 | 2020 |
|--|------------------|------------------|
| Debt service | \$ 30,455 | \$ 28,155 |
| Total cash and cash equivalents - restricted | <u>\$ 30,455</u> | <u>\$ 28,155</u> |

HRSD OPEB Trust Investments

The HRSD OPEB Trust has investments in mutual funds, cash, and cash equivalents on deposit with its trustee, US Bank. Investments are reported at fair value. HRSD's OPEB investment practices are governed by its formal investment policy.

The plan had the following investments and maturities at June 30:

| (in thousands) | 2021 | 2020 |
|--------------------------|-------------------------|-------------------------|
| Domestic equity | \$ 29,467 | \$ 21,315 |
| International equity | 15,208 | 10,605 |
| Other growth | - | 1,424 |
| Fixed income | 22,058 | 20,969 |
| Other income | 2,632 | 2,412 |
| Real Return | 2,203 | - |
| Money market | 98 | 187 |
| Total Investments | <u>\$ 71,666</u> | <u>\$ 56,912</u> |

Fixed income investments have an average maturity of 7.74 years and an average credit quality of A. Other investments do not have a stated maturity or credit rating.

Custodial Credit Risk. For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, HRSD will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. HRSD's policy is to utilize its Trustee, U.S. Bank Trust Department, for its OPEB investments as recipient of all investment transactions on a delivery versus pay basis. The Trustees may not be a counterparty to the investment transaction. At June 30, 2021, the Trust Department of the U.S. Bank held

\$70,528,000 in investments in the Trustee's name for HRSD. The difference between reported and U.S. Bank Trust valuation is the value of the Boyd Watterson security. U.S. Bank Trust value is lagging as they update those funds when they receive notice.

NOTE 4 - ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS

An analysis of the allowance for uncollectible accounts for the years ended June 30:

| (in thousands) | 2021 | 2020 |
|---|-----------------|-----------------|
| Balance, beginning of year | \$ 2,822 | \$ 2,689 |
| Add: Current provision for uncollectible accounts | 2,033 | 2,237 |
| Less: Charge-off of uncollectible accounts | (2,171) | (2,104) |
| Balance, end of year | <u>\$ 2,684</u> | <u>\$ 2,822</u> |

HRSD's collection ratios for the years ended June 30, 2021 and 2020 was 99.3% for each year.

NOTE 5 - PROPERTY, PLANT AND EQUIPMENT

Analysis of property, plant and equipment activity for years ended June 30:

| (in thousands) | Balance 2019 | Additions | Transfers/ Retirements | Balance 2020 | Additions | Transfers/ Retirements | Balance 2021 |
|--|---------------------|-------------------|---------------------------|---------------------|-------------------|---------------------------|---------------------|
| <u>Non-Depreciable Capital Assets</u> | | | | | | | |
| Land | \$ 12,174 | \$ 55 | \$ - | \$ 12,229 | \$ 31,429 | \$ - | \$ 43,658 |
| Construction in progress | 294,531 | 152,253 | (156,199) | 290,585 | 198,597 | (206,036) | 283,146 |
| <u>Depreciable Capital Assets</u> | | | | | | | |
| Treatment plants | 1,248,897 | 135,700 | (304) | 1,384,293 | 75,944 | - | 1,460,237 |
| Interceptor systems | 619,068 | 19,546 | (464) | 638,150 | 87,450 | - | 725,600 |
| Buildings | 49,132 | - | (1,051) | 48,081 | 155 | - | 48,236 |
| Small community facilities | 25,625 | - | - | 25,625 | - | - | 25,625 |
| Office equipment | 44,613 | - | - | 44,613 | 436 | - | 45,049 |
| Automotive | 18,540 | 587 | - | 19,127 | 806 | - | 19,933 |
| Other equipment | 36,887 | 630 | - | 37,517 | 11,382 | - | 48,899 |
| Software and intangible assets | 40,074 | - | - | 40,074 | - | - | 40,074 |
| Total | <u>\$ 2,389,541</u> | <u>\$ 308,771</u> | <u>\$ (158,018)</u> | <u>\$ 2,540,294</u> | <u>\$ 406,199</u> | <u>\$ (206,036)</u> | <u>\$ 2,740,457</u> |
| Less accumulated depreciation and amortization | | | | | | | |
| Treatment plants | (699,252) | (30,232) | - | (729,484) | (34,578) | - | (764,062) |
| Interceptor systems | (178,832) | (11,946) | - | (190,778) | (12,422) | - | (203,200) |
| Buildings | (19,515) | (1,519) | 258 | (20,776) | (1,439) | - | (22,215) |
| Small community facilities | (8,403) | (550) | - | (8,953) | (549) | - | (9,502) |
| Office equipment | (43,100) | (759) | - | (43,859) | (402) | - | (44,261) |
| Automotive | (16,599) | (812) | - | (17,411) | (807) | - | (18,218) |
| Other equipment | (30,880) | (2,328) | - | (33,208) | (1,692) | - | (34,900) |
| Software and intangible assets -amortization | (34,633) | (3,237) | - | (37,870) | (1,389) | - | (39,259) |
| Total | <u>(1,031,214)</u> | <u>(51,383)</u> | <u>258</u> | <u>(1,082,339)</u> | <u>(53,278)</u> | <u>-</u> | <u>(1,135,617)</u> |
| Net property, plant and equipment | <u>\$ 1,358,327</u> | <u>\$ 257,388</u> | <u>\$ (157,760)</u> | <u>\$ 1,457,955</u> | <u>\$ 352,921</u> | <u>\$ (206,036)</u> | <u>\$ 1,604,840</u> |

NOTE 6 - COMPENSATED ABSENCES

Analysis of liability for vested annual, sick, paid time off and compensatory leave for years ended June 30:

| (in thousands) | Balance 2019 | Earned | Taken | Balance 2020 | Earned | Taken | Balance 2021 |
|-------------------------|-----------------|-----------------|-------------------|-----------------|-----------------|-------------------|-----------------|
| Annual leave | \$ 4,844 | \$ 3,721 | \$ (3,300) | \$ 5,265 | \$ 3,118 | \$ (2,720) | \$ 5,663 |
| Sick leave | 2,839 | 1,747 | (1,543) | 3,043 | 1,396 | (1,575) | 2,864 |
| Paid time off | 406 | 1,173 | (1,317) | 262 | 1,585 | (1,470) | 377 |
| Total | <u>8,089</u> | <u>\$ 6,641</u> | <u>\$ (6,160)</u> | <u>8,570</u> | <u>\$ 6,099</u> | <u>\$ (5,765)</u> | <u>8,904</u> |
| Less: Current liability | 5,888 | | | 6,160 | | | 5,765 |
| Long-term liability | <u>\$ 2,201</u> | | | <u>\$ 2,410</u> | | | <u>\$ 3,139</u> |

NOTES TO THE FINANCIAL STATEMENTS

NOTE 7 – POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB)Plan Description

As discussed in Note 2, HRSD provides postemployment benefits other than pensions (OPEB) for its employees through three OPEB plans: the Hampton Roads Sanitation District RHP, a single employer defined benefit plan, and two plans administered by VRS, the GLI, a multiple employer cost sharing plan, and the HIC, a multiple-employer, agent defined benefit plan.

RHP

The RHP was established and may be amended by the Commission. HRSD administers the RHP through the Hampton Roads Sanitation District Retiree Health Trust (the Trust), an irrevocable trust to be used solely for providing benefits to eligible retired employees and their beneficiaries (members) in the RHP. HRSD's contributions to the Trust are dedicated irrevocably to providing post-retirement health benefits, the RHP assets are exclusively dedicated to providing benefits to members, and the RHP assets of the Trust are not subject to the claims of HRSD creditors or the Plan administrator. Employer contributions are recorded in the year they are made. Investments are reported at market value based on published prices and quotations. The RHP does not issue stand-alone financial statements.

Eligible Employees

HRSD employees are eligible for benefits upon retirement provided the employee has 15 years of service with HRSD or 10 years of service with HRSD plus 10 years of service with another VRS employer with a retiree health plan; are qualified for unreduced retirement benefits from VRS; and are enrolled in the HRSD Health Insurance Plan prior to retirement. Participating beneficiaries may continue coverage under the plan after the death of the retiree. Medicare eligible participants are required to enroll in both Medicare Part A and Part B, and may participate in a Medicare supplement plan. Members not eligible for Medicare may participate in a high deductible health plan.

Benefits provided

The RHP health plan provides medical and prescription services using both in network and out of network providers through a self-funded plan administered by a third-party vendor. Members may elect to purchase dental and vision benefit plans at their own expense.

GLI

All full-time, salaried permanent employees of participating political subdivisions are automatically covered by the VRS GLI upon employment. This plan is administered by the VRS, along with pensions and other OPEB plans, for public employer groups in the Commonwealth of Virginia.

In addition to the Basic GLI benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional GLI Program. For members who elect the optional group life insurance coverage, the insurer bills employers directly for the premiums. Employers deduct these premiums from members' paychecks and pay the premiums to the insurer. Since this is a separate and fully insured program, it is not included as part of the GLI OPEB.

The specific information for GLI Program OPEB, including eligibility, coverage and benefits follows:

Eligible Employees

The GLI Program was established July 1, 1960, for state employees, teachers and employees of political subdivisions that elect the program. Basic group life insurance coverage is automatic upon employment. Coverage ends for employees who leave their position before retirement eligibility or who take a refund of their member contributions and accrued interest.

Benefit Amounts

The benefits payable under the GLI Program have several components.

- Natural Death Benefit – The natural death benefit is equal to the employee's covered compensation rounded to the next highest thousand and then doubled.
- Accidental Death Benefit – The accidental death benefit is double the natural death benefit.
- Other Benefit Provisions – In addition to the basic natural and accidental death benefits, the program provides additional benefits provided under specific circumstances. These include:
 - Accidental dismemberment benefit

- Safety belt benefit
- Repatriation benefit
- Felonious assault benefit
- Accelerated death benefit option

Reduction in Benefit Amounts

The benefit amounts provided to members covered under the GLI Program are subject to a reduction factor. The benefit amount reduces by 25% on January 1 following one calendar year of separation. The benefit amount reduces by an additional 25% on each subsequent January 1 until it reaches 25% of its original value.

Minimum Benefit Amount and Cost-of-Living Adjustment (COLA)

For covered members with at least 30 years of creditable service, there is a minimum benefit payable under the GLI Program. The minimum benefit was set at \$8,000 by statute. This amount is increased annually based on the VRS Plan 2 cost-of-living adjustment and was increased to \$8,463 effective June 30, 2020.

HIC

All full-time, salaried permanent employees of participating political subdivisions are automatically covered by the VRS Political Subdivision HIC Program upon employment. This plan is administered by the VRS, along with pension and other OPEB plans, for public employer groups in the Commonwealth of Virginia. Members earn one month of service credit toward the benefit for each month they are employed and for which their employer pays contributions to VRS. The health insurance credit is a tax-free reimbursement in an amount set by the General Assembly for each year of service credit against qualified health insurance premiums retirees pay for single coverage, excluding any portion covering the spouse or dependents. The credit cannot exceed the amount of the premiums and ends upon the retiree's death.

The specific information about the Political Subdivision HIC Program OPEB, including eligibility, coverage and benefits follows:

Eligible Employees

The Political Subdivision Retiree HIC Program was established July 1, 1993 for retired political subdivision employees of employers who elect the benefit and who retire with at least 15 years of service credit. Eligible employees of participating political subdivisions are enrolled automatically upon employment. They include full-time permanent salaried employees of the participating political subdivision who are covered under the VRS pension plan.

Benefit Amounts

The political subdivision's Retiree HIC Program provides the following benefits for eligible employees:

- At Retirement – For employees who retire, the monthly benefit is \$1.50 per year of service per month with a maximum benefit of \$45.00 per month.
- Disability Retirement – For employees who retire on disability or go on long-term disability under the Virginia Local Disability Program (VLDP), the monthly benefit is \$45.00 per month.

HIC Program Notes:

- The monthly HIC benefit cannot exceed the individual premium amount.
- No health insurance credit for premiums paid and qualified under the VRS Line of Duty Act Program (LODA), however, the employee may receive the credit for premiums paid for other qualified health plans.
- Employees who retire after being on long-term disability under VLDP must have at least 15 year of service credit to qualify for the health insurance credit as a retiree.

NOTES TO THE FINANCIAL STATEMENTS

Employees Covered by Benefit Terms

As of the June 30, 2020 and 2019 actuarial valuation dates the following employees were covered by the benefit terms of the RHP:

| | 2020 | 2019 |
|--|------------|------------|
| Beneficiaries currently receiving benefit payments | 160 | 170 |
| Active employees | 732 | 734 |
| Total | 892 | 904 |

There are no inactive employees entitled to but not yet receiving plan benefits.

As of the June 30, 2019 and 2018 actuarial valuation dates the following employees were covered by the benefit terms of the HIC:

| | 2019 | 2018 |
|--|--------------|--------------|
| Inactive members or their beneficiaries currently receiving benefit payments | 249 | 240 |
| Total Inactive Members | 249 | 240 |
| Active employees | 809 | 790 |
| Total | 1,058 | 1,030 |

Contributions

RHP contribution requirements are actuarially determined. Funding is subject to approval by the Commission. Medicare-eligible members contribute \$45 per month for retiree-only coverage and from \$442 to \$460 per month for retiree and dependent coverage. Members not eligible for Medicare contribute \$120 per month for retiree-only coverage and from \$517 to \$535 per month for retiree and dependent coverage. HRSD funds the cost of coverage under the RHP by paying the difference between the contributions it requires retirees to make and the actuarially determined contribution (ADC). The current employer contribution rate is approximately 5 percent of annual covered payroll. HRSD contributed \$1,963,000 and \$2,730,000 to the RHP for the years ended June 30, 2021 and 2020, respectively.

The GLI contribution requirements for the GLI Program are governed by §51.1-506 and §51.1-508 of the Code of Virginia, as amended, but may be impacted as a result of funding provided to state agencies and school divisions by the Virginia General Assembly. The total rate for the GLI Program was 1.31% of covered employee compensation. This was allocated into an employee and an employer component using a 60/40 split. The employee component was 0.79% (1.31% X 60%) and the employer component was 0.52% (1.31% X 40%). Employers may elect to pay all or part of the employee contribution, however the employer must pay all of the employer contribution. Each employer's contractually required employer contribution rate for the years ended June 30, 2021 and 2020 was 0.52% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The actuarially determined rate, when combined with employee contributions, was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. Contributions from HRSD to the GLI Program were \$293,000 and \$276,000 for the years ended June 30, 2021 and June 30, 2020, respectively.

The HIC contribution requirement for active employees is governed by §51.1-1402(E) of the Code of Virginia, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. HRSD's contractually required employer contribution rate for the years ended June 30, 2021 and 2020 was 0.21% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The actuarially determined rate was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Contributions from HRSD to the Political Subdivision HIC Program were \$114,000 for year ended June 30, 2021 and \$111,000 for year ended June 30, 2020.

RHP OPEB Expenses and Deferred Outflows of Resources Related to RHP OPEB

HRSD recognized RHP OPEB gain of \$1,160,000 and expense of \$1,158,000 for the years ended June 30, 2021 and 2020, respectively. HRSD reported deferred inflows of resources related to OPEB from the following sources:”)

| (in thousands) | Deferred Outflows of Resources | Deferred Inflows of Resources |
|--|--------------------------------------|-------------------------------------|
| Year ended June 30, 2021: | | |
| Differences between expected and actual experience | \$ 4,806 | \$ 5,502 |
| Changes in assumptions | - | 1,475 |
| Net diff between projected and actual earnings on plan investments | - | 8,984 |
| Total | <u>\$ 4,806</u> | <u>\$ 15,961</u> |
| Year ended June 30, 2020: | | |
| Differences between expected and actual experience | \$ 2,568 | \$ 6,288 |
| Changes in assumptions | - | 1,711 |
| Net diff between projected and actual earnings on plan investments | - | 604 |
| Total | <u>\$ 2,568</u> | <u>\$ 8,603</u> |

HRSD's measurement date is its fiscal year end so there are no deferred outflows of resources resulting from contributions subsequent to the measurement date. Other amounts reported as deferred outflows and inflows of resources related to OPEB will be recognized in OPEB expense in future reporting periods as follows:

| (in thousands) | | |
|----------------------|--------------------|-------------------|
| Years Ended June 30, | 2021 | 2020 |
| 2021 | \$ - | \$ (903) |
| 2022 | (2,734) | (903) |
| 2023 | (2,561) | (730) |
| 2024 | (2,522) | (690) |
| 2025 | (2,486) | (655) |
| 2026 | (330) | - |
| Thereafter | (522) | (2,154) |
| | <u>\$ (11,155)</u> | <u>\$ (6,035)</u> |

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the Group Life Insurance Program OPEB

At June 30, 2021 and 2020, HRSD reported liabilities of \$4,307,000 and \$4,265,000, respectively, for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liabilities were measured as of June 30, 2020 and June 30, 2019 and the total GLI OPEB liabilities used to calculate the Net GLI OPEB Liability were determined by actuarial valuations as of those dates. The covered employer's proportion of the Net GLI OPEB Liability was based on HRSD's actuarially determined employer contributions to the Group Life Insurance Program for the years ended June 30, 2020 and 2019 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2020 and 2019, HRSD's proportion was 0.25814% and 0.26208%, respectively. For the years ended June 30, 2021 and 2020, HRSD recognized GLI OPEB expenses of \$169,000 and \$109,000, respectively. Since there was a change in proportionate share between measurement dates, a portion of the GLI OPEB expense was related to deferred amounts from changes in proportion.

NOTES TO THE FINANCIAL STATEMENTS

At June 30, 2021 and 2020, HRSD reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

| (in thousands) | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|--------------------------------------|-------------------------------------|
| Year ended June 30, 2021: | | |
| Differences between expected and actual experience | \$ 276 | \$ 39 |
| Net diff bet projected and actual earnings on program investments | 129 | - |
| Change in assumptions | 216 | 90 |
| Changes in proportion | 30 | 51 |
| Employer contributions subsequent to the measurement date | 293 | - |
| Total | <u>\$ 944</u> | <u>\$ 180</u> |
| Year ended June 30, 2020: | | |
| Differences between expected and actual experience | \$ 284 | \$ 55 |
| Net diff bet projected and actual earnings on program investments | - | 88 |
| Change in assumptions | 269 | 129 |
| Changes in proportion | 41 | 1 |
| Employer contributions subsequent to the measurement date | 276 | - |
| Total | <u>\$ 870</u> | <u>\$ 273</u> |

HRSD reported \$293,000 and \$276,000 as of June 30, 2021 and 2020, respectively, as deferred outflows of resources related to the GLI OPEB resulting from the HRSD's contributions subsequent to the measurement date which will be recognized as a reduction of the Net GLI OPEB Liability in the Fiscal Years ending June 30, 2022 and 2021, respectively. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

| (in thousands) | 2021 | 2020 |
|----------------------|---------------|---------------|
| Years ended June 30, | | |
| 2021 | \$ - | \$ 25 |
| 2022 | 70 | 26 |
| 2023 | 106 | 63 |
| 2024 | 137 | 94 |
| 2025 | 133 | 90 |
| 2026 | 25 | - |
| Thereafter | - | 23 |
| | <u>\$ 471</u> | <u>\$ 321</u> |

HIC OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to HIC OPEB

For the years ended June 30, 2021 and 2020, HRSD recognized HIC Program OPEB expense of \$122,000 and \$106,000, respectively. HRSD reported deferred outflows of resources and deferred inflows of resources related to the Political Subdivision HIC Program from the following sources:

| (in thousands) | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|--------------------------------------|-------------------------------------|
| Year ended June 30, 2021: | | |
| Differences between expected and actual experience | \$ 47 | \$ - |
| Net diff bet projected and actual earnings on program investments | 31 | - |
| Change in assumptions | 35 | 9 |
| Employer contributions subsequent to the measurement date | 114 | - |
| Total | <u>\$ 227</u> | <u>\$ 9</u> |
| Year ended June 30, 2020: | | |
| Differences between expected and actual experience | \$ 42 | \$ - |
| Net diff bet projected and actual earnings on program investments | - | 11 |
| Change in assumptions | 43 | 12 |
| Employer contributions subsequent to the measurement date | 111 | - |
| Total | <u>\$ 196</u> | <u>\$ 23</u> |

HRSD reported \$114,000 for FY 2021 and \$111,000 for FY 2020 as deferred outflows of resources related to the HIC OPEB resulting from HRSD's contributions subsequent to the measurement date which will be recognized as a reduction of the Net HIC OPEB Liability in the Fiscal Year ending June 30, 2022 and 2021, respectively. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the HIC OPEB will be recognized in the HIC OPEB expense in future reporting periods as follows:

| (in thousands) | 2021 | 2020 |
|----------------------|---------------|--------------|
| Years ended June 30, | | |
| 2021 | \$ - | \$ 6 |
| 2022 | 17 | 6 |
| 2023 | 24 | 13 |
| 2024 | 26 | 15 |
| 2025 | 25 | 14 |
| 2026 | 10 | - |
| Thereafter | 2 | 8 |
| | <u>\$ 104</u> | <u>\$ 62</u> |

NOTES TO THE FINANCIAL STATEMENTS

Combined OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to RHP, GLI and HIC OPEB

For the years ended June 30, 2021 and 2020, HRSD reported deferred outflows of resources and deferred inflows of resources related to the RHP, GLI and HIC OPEB plans from the following sources:

| (in thousands) | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|--------------------------------------|-------------------------------------|
| Year ended June 30, 2021: | | |
| Differences between expected and actual experience | \$ 5,129 | \$ 5,541 |
| Net diff bet projected and actual earnings on program investments | 160 | 8,984 |
| Changes in proportion | 30 | 51 |
| Change in assumptions | 251 | 1,574 |
| Employer contributions subsequent to the measurement date | 407 | - |
| Total | <u>\$ 5,977</u> | <u>\$ 16,150</u> |
| Year ended June 30, 2020: | | |
| Differences between expected and actual experience | \$ 2,894 | \$ 6,343 |
| Net diff bet projected and actual earnings on program investments | | 703 |
| Change in assumptions | 312 | 1,852 |
| Changes in proportion | 41 | 1 |
| Employer contributions subsequent to the measurement date | 387 | - |
| Total | <u>\$ 3,634</u> | <u>\$ 8,899</u> |

HRSD reported \$407,000 for FY 2021 and \$387,000 for FY 2020 as deferred outflows of resources related to the OPEB plans resulting from HRSD’s contributions subsequent to the measurement date which will be recognized as a reduction of the net OPEB Liability in the Fiscal Year ending June 30, 2022 and 2021, respectively. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the OPEB plans will be recognized in HRSD’s OPEB expense in future reporting periods as follows:

| (in thousands) | 2021 | 2020 |
|----------------------|--------------------|-------------------|
| Years ended June 30, | | |
| 2021 | \$ - | \$ (872) |
| 2022 | (2,647) | (871) |
| 2023 | (2,431) | (654) |
| 2024 | (2,359) | (581) |
| 2025 | (2,328) | (551) |
| 2026 | (295) | - |
| Thereafter | (520) | (2,123) |
| | <u>\$ (10,580)</u> | <u>\$ (5,652)</u> |

Actuarial Methods and Assumptions

The total RHP OPEB liabilities were based on actuarial valuations as of June 30, 2020 and 2019, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement dates of June 30, 2021 and 2020.

Year Ended June 30, 2021:

| | |
|---------------------------------------|---|
| Inflation | 2.5 percent |
| Salary increases, including inflation | 2.5 percent |
| Investment rate of return | 6.0 percent, net of investment expenses, including inflation* |

Mortality rates for the RHP are as follows:

| | |
|-------------------|---|
| Healthy Retirees | Pub-2010 General Retirees Headcount-weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |
| Disabled Retirees | Pub-2010 General Disabled Retirees Headcount-Weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |
| Active Retirees | Pub-20210 General Employees Headcount-Weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |

Year Ended June 30, 2020:

| | |
|---------------------------------------|---|
| Inflation | 2.5 percent |
| Salary increases, including inflation | 2.5 percent |
| Investment rate of return | 6.0 percent, net of investment expenses, including inflation* |

Mortality rates for the RHP are as follows:

| | |
|-------------------|---|
| Healthy Retirees | Pub-2010 General Retirees Headcount-weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |
| Disabled Retirees | Pub-2010 General Disabled Retirees Headcount-Weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |
| Active Retirees | Pub-20210 General Employees Headcount-Weighted Mortality Projected with Fully Generational MP2019 Mortality Improvement Scale. |

The total GLI and HIC OPEB liabilities were based on actuarial valuations as of June 30, 2019, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2020:

Year Ended June 30, 2020:

| | |
|---|--|
| Inflation | 2.5 percent |
| Salary increases, including inflation * | 3.5 percent - 5.35 percent |
| Investment rate of return | 6.75 percent, net of investment expenses, including inflation* |

Mortality tables and assumptions for GLI and HIC are as follows:

| | |
|-------------------|---|
| Pre-Retirement: | RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with Scale BB to 2020; males 95% of rates; females 105% of rates. |
| Post-Retirement: | RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with Scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90. |
| Post-Disablement: | RP-2014 Disability Life Mortality Table projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates. |

NOTES TO THE FINANCIAL STATEMENTS

Year Ended June 30, 2019:

| | |
|--|--|
| Inflation | 2.5 percent |
| Salary increases, including inflation * | 3.5 percent - 5.35 percent |
| Investment rate of return | 6.75 percent, net of investment expenses, including inflation* |
| Mortality tables and assumptions for GLI and HIC are as follows: | |

| | |
|-------------------|---|
| Pre-Retirement: | RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with Scale BB to 2020; males 95% of rates; females 105% of rates. |
| Post-Retirement: | RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with Scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90. |
| Post-Disablement: | RP-2014 Disability Life Mortality Table projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates. |

* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 6.75%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 6.75% to simplify preparation of the OPEB liabilities.

The actuarial assumptions used in the June 30, 2018 valuation was based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

| | |
|-------------------------|---|
| Retirement Rates | Lowered retirement rates at older ages and extended final retirement age from 70 to 75. |
| Withdrawal Rates | Adjusted terminations rates to better fit experience at each age and service year |
| Disability Rates | Lowered disability rates |
| Salary Scale | No change |
| Line of Duty Disability | Increased rate from 14% to 15% |
| Discount Rate | Decrease rate from 7.00% to 6.75% |

Mortality rates are as follows:

| | |
|---|--|
| Pre-retirement, post-retirement healthy, and disabled | Updated to a more current mortality table - RP2014 projected to 2020 |
|---|--|

Long-Term Expected Rate of Return

The long-term expected rate of return on RHP investments was determined using an economic building block approach that projects economic and corporate profit growth and takes into consideration the fundamental factors driving long-term real economic growth, our expectation for inflation, productivity, and labor force growth. The returns presented here are geometric return projections based on long-term capital market assumptions. The asset target allocations are governed by its formal investment policy. The best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Year Ended June 30, 2021

| <u>Asset Class (Strategy)</u> | <u>Target Allocation</u> | <u>Arithmetic Long-Term Expected Rate of Return</u> | <u>Weighted Average Long-Term Expected Rate of Return</u> |
|---------------------------------------|--------------------------|---|---|
| Domestic Equity | 39.00% | 7.50% | 2.93% |
| International Developed Equity | 15.00% | 7.60% | 1.14% |
| International Emerging Markets Equity | 6.00% | 7.90% | 0.47% |
| Core Fixed | 20.00% | 3.80% | 0.76% |
| Investment Grade Corporate Debt | 10.00% | 4.20% | 0.42% |
| Emerging Markets Debt | 5.00% | 6.10% | 0.31% |
| High Yield | 5.00% | 6.00% | 0.30% |
| Total | <u>100.00%</u> | | <u>6.33%</u> |
| | | Inflation | 2.50% |
| | | * Expected arithmetic nominal return | <u>8.83%</u> |

* The above allocation provides a one-year return of 8.83%. However, one-year returns do not take into account the volatility present in each of the asset classes so a rate of 6.0% is used.

Year Ended June 30, 2020

| <u>Asset Class (Strategy)</u> | <u>Target Allocation</u> | <u>Arithmetic Long-Term Expected Rate of Return</u> | <u>Weighted Average Long-Term Expected Rate of Return</u> |
|---------------------------------------|--------------------------|---|---|
| Domestic Equity | 39.00% | 7.40% | 2.89% |
| International Developed Equity | 15.00% | 7.30% | 1.10% |
| International Emerging Markets Equity | 6.00% | 7.40% | 0.44% |
| Core Fixed | 20.00% | 4.90% | 0.98% |
| Investment Grade Corporate Debt | 10.00% | 5.80% | 0.58% |
| Emerging Markets Debt | 5.00% | 6.50% | 0.33% |
| High Yield | 5.00% | 6.40% | 0.32% |
| Total | <u>100.00%</u> | | <u>6.64%</u> |
| | | Inflation | 2.50% |
| | | * Expected arithmetic nominal return | <u>9.14%</u> |

* The above allocation provides a one-year return of 9.14%. However, one-year returns do not take into account the volatility present in each of the asset classes so a rate of 6.0% is used.

NOTES TO THE FINANCIAL STATEMENTS

The long-term expected rate of return on the GLI and HIC investments was determined using a lognormal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of GLI and HIC’s investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

| <u>Asset Class (Strategy)</u> | <u>Target Allocation</u> | <u>Arithmetic Long-Term Expected Rate of Return</u> | <u>Weighted Average Long-Term Expected Rate of Return</u> |
|--------------------------------------|--------------------------|---|---|
| Public Equity | 34.00% | 4.65% | 1.58% |
| Fixed Income | 15.00% | 0.46% | 0.07% |
| Credit Strategies | 14.00% | 5.38% | 0.75% |
| Real Assets | 14.00% | 5.01% | 0.70% |
| Private Equity | 14.00% | 8.34% | 1.17% |
| MAPS - Multi-Asset Public Strategies | 6.00% | 3.04% | 0.18% |
| PIP-Private Investment Partnership | 3.00% | 6.49% | 0.19% |
| Total | 100.00% | | 4.64% |
| | | Inflation | 2.50% |
| | | * Expected arithmetic nominal return | 7.14% |

*The above allocation provides a one-year return of 7.14%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 7.11%, including expected inflation of 2.50%. On October 10, 2019, the VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation. More recent capital market assumptions compiled for the FY2020 actuarial valuations, provide a median return of 6.81%.

Discount Rates

The discount rate used to measure the total OPEB liability for the RHP, as of June 30, 2020, was 6.0%. The projection of cash flows used to determine the discount rate assumes that HRSD contributions will be made in accordance with the funding plan established by an independent actuarial review.

The discount rate used to measure the total GLI and HIC OPEB liability was 6.75%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made per the VRS guidance and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2020, the rate contributed by the entity for the GLI and HIC OPEB will be subject to the portion of the VRS Board certified rates that are funded by the Virginia General Assembly which was 100% of the actuarially determined contribution rate. From July 1, 2020 on, employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the GLI and HIC OPEB’s fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total GLI and HIC OPEB liability.

Change in Net OPEB Liability

HRSD's net RHP OPEB liability was measured as of June 30, 2021 using a June 30, 2020 valuation, which has been rolled forward to the June 30, 2021 measurement date.

| RHP | Total RHP OPEB Liability (a) | Plan Fiduciary Net Position (b) | Net RHP OPEB Liability (a) - (b) |
|---|------------------------------------|---------------------------------------|--|
| (in thousands) | | | |
| RHP OPEB Liability Balances at June 30, 2019 | \$ 65,693 | \$ 52,025 | \$ 13,668 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 1,345 | - | 1,345 |
| Interest | 3,883 | - | 3,883 |
| Changes of assumptions | (518) | - | (518) |
| Difference between expected and actual experience | (7,074) | - | (7,074) |
| Contributions - employer | - | 2,730 | (2,730) |
| Net investment income | - | 3,343 | (3,343) |
| Benefit payments, including refunds of employee contributions | (1,186) | (1,186) | - |
| Net changes | (3,550) | 4,887 | (8,437) |
| RHP OPEB Liability Balances at June 30, 2020 | \$ 62,143 | \$ 56,912 | \$ 5,231 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 1,333 | - | 1,333 |
| Interest | 3,672 | - | 3,672 |
| Difference between expected and actual experience | 2,930 | - | 2,930 |
| Contributions - employer | - | 1,963 | (1,963) |
| Net investment income | - | 14,216 | (14,216) |
| Benefit payments, including refunds of employee contributions | (1,425) | (1,425) | - |
| Net changes | 6,510 | 14,754 | (8,244) |
| RHP OPEB Liability Balances at June 30, 2021 | \$ 68,653 | \$ 71,666 | \$ (3,013) |

The net GLI OPEB liability represents the program's total OPEB liability determined in accordance with GAAP, less the associated fiduciary net position. As of the measurement dates of June 30, 2021 and 2020, net OPEB liability amounts for the GLI Program are as follows:

GLI

| (in thousands) | 2021 | 2020 |
|-----------------------------|---------------------|---------------------|
| Total GLI OPEB Liability | \$ 3,523,937 | \$ 3,390,238 |
| Plan Fiduciary Net Position | 1,855,102 | 1,762,972 |
| Net GLI OPEB Liability | <u>\$ 1,668,835</u> | <u>\$ 1,627,266</u> |

| | | |
|--|--------|--------|
| Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability: | 52.64% | 52.00% |
|--|--------|--------|

The total GLI OPEB liability is calculated by the VRS's actuary, and each plan's fiduciary net position is reported in the VRS's financial statements. The net GLI OPEB liability is disclosed in accordance with the requirements of GAAP in the VRS's notes to the financial statements and required supplementary information.

NOTES TO THE FINANCIAL STATEMENTS

HRSD's net HIC OPEB liability was measured as of June 30, 2020. The total HIC OPEB liability was determined by an actuarial valuation performed as of June 30, 2019, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2020.

| HIC (in thousands) | Total HIC OPEB Liability (a) | Plan Fiduciary Net Position (b) | Net HIC OPEB Liability (a) - (b) |
|---|------------------------------------|---------------------------------------|--|
| HIC OPEB Liability Balances at June 30, 2018 | \$ 1,981 | \$ 886 | \$ 1,095 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 26 | - | 26 |
| Interest | 134 | - | 134 |
| Changes of assumptions | 50 | - | 50 |
| Difference between expected and actual experience | 26 | - | 26 |
| Contributions - employer | - | 108 | (108) |
| Net investment income | - | 56 | (56) |
| Benefit payments, including refunds of employee contributions | (124) | (124) | - |
| Administrative expense | - | (1) | 1 |
| Net changes | 112 | 39 | 73 |
| HIC OPEB Liability Balances at June 30, 2019 | \$ 2,093 | \$ 925 | \$ 1,168 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 28 | - | 28 |
| Interest | 137 | - | 137 |
| Difference between expected and actual experience | 16 | - | 16 |
| Contributions - employer | - | 111 | (111) |
| Net investment income | - | 18 | (18) |
| Benefit payments, including refunds of employee contributions | (129) | (129) | - |
| Administrative expense | - | (2) | 2 |
| Net changes | 52 | (2) | 54 |
| HIC OPEB Liability Balances at June 30, 2020 | \$ 2,145 | \$ 923 | \$ 1,222 |

Sensitivity of the Net OPEB Liabilities to Changes in the Discount Rate and Healthcare Cost Trend Rate

The following table presents the net RHP OPEB liability if it is calculated using a discount rate that is one percentage point lower (5.00%) or one percentage point higher (7.00%) than the current discount rate:

| <u>RHP Discount Rate</u> | 1% Decrease (5.00%) | Current Discount Rate (6.0%) | 1% Increase (7.00%) |
|---|------------------------|---------------------------------|------------------------|
| Net RHP OPEB Liability/(Asset) (in thousands) | | | |
| Year ended June 30, 2021 | \$ 8,875 | \$ (3,013) | \$ (12,481) |
| Year ended June 30, 2020 | 16,184 | 5,231 | (3,471) |

The following table presents the net RHP OPEB liability if it is calculated using a healthcare cost trend rate that is one percentage point lower (3.00%) or one percentage point higher (5.00%) than the current healthcare cost trend rate:

| <u>RHP Ultimate Trend</u> | 1% Decrease (3.00%) | Healthcare Cost Trend Rate (4.00%) | 1% Increase (5.00%) |
|---|------------------------|--|------------------------|
| Net RHP OPEB Liability/(Asset) (in thousands) | | | |
| Year ended June 30, 2021 | \$ (13,883) | \$ (3,013) | \$ 11,009 |
| Year ended June 30, 2020 | (4,764) | 5,231 | 18,151 |

The following presents the net GLI OPEB liability using the discount rate of 6.75%, as well as what the net GLI OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

| <u>GLI Discount Rate</u> | 1% Decrease (5.75%) | Current Discount Rate (6.75%) | 1% Increase (7.75%) |
|---------------------------------------|------------------------|----------------------------------|------------------------|
| GLI Net OPEB Liability (in thousands) | | | |
| Year ended June 30, 2021 | \$ 5,663 | \$ 4,308 | \$ 3,207 |
| Year ended June 30, 2020 | 5,603 | 4,265 | 3,180 |

The following presents the net HIC OPEB liability using the discount rate of 6.75%, as well as what the net HIC OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

| <u>HIC Discount Rate</u> | 1% Decrease (5.75%) | Current Discount Rate (6.75%) | 1% Increase (7.75%) |
|---------------------------------------|------------------------|----------------------------------|------------------------|
| HIC Net OPEB Liability (in thousands) | | | |
| Year ended June 30, 2021 | \$ 1,447 | \$ 1,222 | \$ 1,029 |
| Year ended June 30, 2020 | 1,391 | 1,168 | 979 |

GLI Fiduciary Net Position and HIC Plan Data

GLI Fiduciary Net Position and HIC Plan Data is available in the separately issued VRS 2020 and 2019 Comprehensive Annual Financial Reports (Annual Report). A copy of the 2020 VRS Annual Report may be downloaded from the VRS website <http://www.varetire.org/Pdf/Publications/2020-annual-report.pdf>. A copy of the 2019 VRS Annual Report may be downloaded from the VRS website <http://www.varetire.org/Pdf/Publications/2019-annual-report.pdf>. Both files can be received by requesting a copy in writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

NOTES TO THE FINANCIAL STATEMENTS

NOTE 8 – DEFINED BENEFIT PENSION PLANPlan Description

HRSD employees participate in an agent multiple-employer defined benefit pension plan administered by VRS. All full time, salaried permanent employees of HRSD are automatically covered by the Plan upon employment. Members earn one month of service credit for each month they are employed and for which they and their employer pay contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the Code of Virginia, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave and previously refunded service.

VRS administers three different benefit structures for covered employees – Plan 1, Plan 2 and the Hybrid Retirement Plan (HRP). The specific information for each plan is set out below:

- Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 1 if their membership date is before July 1, 2010 and they were vested as of January 1, 2013. Non-hazardous duty members are eligible for an unreduced retirement benefit beginning at age 65 with at least five years of service credit or at age 55 with at least 30 years of service credit. They may retire with a reduced benefit as early as age 55 with at least five years of service credit or age 50 with at least 10 years of service credit.
- Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 2 if their membership date is on or after July 1, 2010, and they were not vested as of January 1, 2013. Non-hazardous duty members are eligible for an unreduced benefit beginning at their normal Social Security retirement age with at least five years of service credit or when the sum of their age and service equals 90. They may retire with a reduced benefit as early as age 60 with at least five years of service credit.
- The Hybrid Retirement Plan (HRP) combines the features of a defined benefit plan and a defined contribution plan. Most members hired on or after January 1, 2014 are in this plan, as well as Plan 1 and Plan 2 members who were eligible and opted into the plan during a special election window from January 1 through April 30, 2014. The employee's retirement benefit is funded through mandatory and voluntary contributions made by the employee and HRSD to both the defined benefit and the defined contribution components of the plan. Non-hazardous duty members are eligible for an unreduced benefit beginning at their normal Social Security retirement age with at least five years of service credit or when the sum of their age and service equals 90. They may retire with a reduced benefit as early as age 60 with at least five years of service credit.

Members in Plan 1 and Plan 2 contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. HRSD makes a separate actuarially determined contribution to VRS for all covered employees. The retirement benefit for members in the HRP is funded through mandatory and voluntary contributions made by the member and HRSD to both the defined benefit and the defined contribution components of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.

Members in Plan 1 and Plan 2 earn creditable service for each month they are employed in a covered position, and vest when they have at least five years (60 months) of creditable service. Members in the HRP earn one month of service credit for each month they are employed in a covered position for the defined benefit component, and service credits are used to determine vesting for the employer contribution portion of the plan. HRP members are always 100% vested in the defined contributions they make, and upon retirement or leaving covered employment are eligible to withdraw employer contributions of 50%, 75%, or 100% after two, three, or four years of service, respectively.

The VRS Basic Benefit for Plan 1 and Plan 2 members, and the defined benefit component for HRP members, is a lifetime monthly benefit based on a retirement multiplier as a percentage of the member's average final compensation multiplied by the member's total service credit. Under Plan 1, average final compensation is the average of the member's 36 consecutive months of highest compensation. Under Plan 2 and the HRP, average final compensation is the average of the member's 60 consecutive months of highest compensation. The retirement multiplier for non-hazardous duty members in Plan 1 is 1.7%; in Plan 2 the multiplier is 1.7% for service earned, purchased or granted prior to January 1, 2013 and 1.65% after that date. The multiplier is 1% for members in the HRP. At retirement, members can elect the Basic Benefit, the Survivor Option, a Partial Lump-Sum Option Payment (PLOP) or the

Advance Pension Option. A retirement reduction factor is applied to the Basic Benefit amount for members electing the Survivor Option, PLOP or Advance Pension Option or those retiring with a reduced benefit.

Retirees are eligible for an annual cost-of-living adjustment (COLA) effective July 1 of the second calendar year of retirement. Under Plan 1, the COLA cannot exceed 5%; under Plan 2 and for the HRP defined benefit component, the COLA cannot exceed 3%. During years of no inflation or deflation there is no COLA adjustment. The VRS also provides death and disability benefits.

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2020 Comprehensive Annual Financial Report (Annual Report). A copy of the 2020 VRS Annual Report may be downloaded from the VRS website at varetire.org/pdf/publications/2020-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

Employees Covered by Benefit Terms

As of the June 30, 2019 and 2018 actuarial valuation dates, the following employees were covered by the benefit terms of the pension plan:

| | 2019 | 2018 |
|--|-------|-------|
| Inactive members or their beneficiaries currently receiving benefits | 398 | 385 |
| Inactive Members | | |
| Vested | 95 | 97 |
| Non-Vested | 154 | 150 |
| Active Elsewhere in VRS | 85 | 78 |
| Total Inactive Members | 334 | 325 |
| Active Members | 809 | 790 |
| Total | 1,541 | 1,500 |

Contributions

The contribution requirement for active employees is governed by Section 51.1-145 of the Code of Virginia, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5% of their compensation toward their retirement. Prior to July 1, 2012, all or part of the 5% member contribution may have been assumed by the employer. Beginning July 1, 2012, new employees were required to pay the 5% member contribution. In addition, for existing employees, employers were required to begin making the employee pay the 5% member contribution. This could be phased in over a period of up to 5 years and the employer is required to provide a salary increase equal to the amount of the increase in the employee-paid member contribution. HRSD's contractually required contribution rate for the year ended June 30, 2021 was 7.06% of covered compensation. This rate is based on actuarially determined rates from actuarial valuations as of June 30, 2019.

These rates, when combined with employee contributions, are expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Employer contributions to the pension plan were \$3,453,000 and \$2,897,000 for the years ended June 30, 2021 and 2020, respectively.

Net Pension Liability

The net pension liability (NPL) is calculated separately for each employer and represents that particular employer's total pension liability determined in accordance with GAAP, less that employer's fiduciary net position. For HRSD, the net pension liability was measured as of June 30, 2020. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2019, rolled forward to the measurement date of June 30, 2020.

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Actuarial Assumptions

The total pension liability as of June 30, 2020 for employees in HRSD's retirement plan was based on actuarial valuations as of June 30, 2019, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2019. The actuarial valuations as of June 30, 2020 use the following assumptions:

| | |
|---------------------------------------|--|
| Inflation | 2.5% |
| Salary increases, including inflation | 3.5% to 5.35% |
| Investment rate of return | 6.75%, net of pension plan investment expenses, including inflation* |
| Cost of living adjustments | 2.25% to 2.50% |

* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed return rate for GAAP purposes of slightly more than the assumed 6.75%. However, since the difference was minimal, and a more conservative 6.75% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 6.75% to simplify preparation of pension liabilities.

The actuarial valuation uses the following mortality assumptions:

- Mortality rates: 15% of deaths are assumed to be service related.
- Pre Retirement, RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with Scale BB to 2020; males 95% of rates; females 105% of rates.
- Post Retirement, RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with Scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.
- Post Disablement, RP-2014 Disability Mortality Rates projected with Scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

The actuarial assumptions used in the June 30, 2019 valuations were based on the results of an actuarial experience study for the period July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

- Mortality rates – Updated to a more current mortality table – RP-2014 projected to 2020.
- Retirement rates – Lowered rates at older ages and changed final retirement from 70 to 75.
- Withdrawal rates – Adjusted rates to better fit experience at each year age and service through 9 years of service.
- Disability rates – Lowered rates.
- Salary scale – No change.
- Line of duty disability – Increase rate from 14% to 15%.
- Discount Rate – Decrease rate from 7% to 6.75 %

Long-Term Expected Rate of Return

The long-term expected rate of return on pension system investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected real rates of return (expected returns, net of pension system investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The asset target allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

| Asset Class (Strategy) | Long-Term Target Asset Allocation | Arithmetic Long-Term Expected Rate of Return | Weighted Average Long-Term Expected Rate of Return * |
|------------------------|--------------------------------------|---|---|
| Public equity | 34.00% | 4.65% | 1.58% |
| Fixed income | 15.00% | 0.46% | 0.07% |
| Credit strategies | 14.00% | 5.38% | 0.75% |
| Real assets | 14.00% | 5.01% | 0.70% |
| Private equity | 14.00% | 8.34% | 1.17% |
| MAPS - Strategies | 6.00% | 3.04% | 0.18% |
| PIP | 3.00% | 6.49% | 0.19% |
| Total | 100.00% | | 4.64% |
| | | Inflation | 2.50% |
| | | * Expected arithmetic nominal return | 7.14% |

* The above allocation provides a one-year return of 7.14%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 7.11%, including expected inflation of 2.50%. On October 10, 2019 the VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation. More recent capital market assumptions compiled for the FY2020 actuarial valuations, provide a median return of 6.81%.

Discount Rate

The discount rate used to measure the total pension liability was 6.75%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS Statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Consistent with the phased-in funding provided by the General Assembly for state and teacher employer contributions; political subdivisions were also provided with an opportunity to use an alternate employer contribution rate. For the year ended June 30, 2020, the alternate rate was the employer contribution rate used in FY 2012 or 100% of the actuarially determined employer contribution rate from the June 30, 2017, actuarial valuations, whichever was greater. From July 1, 2020, on, participating employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

NOTES TO THE FINANCIAL STATEMENTS

Changes in Net Pension Liability

(in thousands)

| | Total Pension Liability (a) | Plan Fiduciary Net Position (b) | Net Pension Liability (a) - (b) |
|---|--------------------------------|------------------------------------|------------------------------------|
| Pension Liability Balances at June 30, 2018 | \$ 227,659 | \$ 207,355 | \$ 20,304 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 3,946 | - | 3,946 |
| Interest | 15,598 | - | 15,598 |
| Changes of assumptions | 7,378 | - | 7,378 |
| Difference between expected and actual experience | 760 | - | 760 |
| Contributions - employer | - | 2,866 | (2,866) |
| Contributions - employee | - | 2,468 | (2,468) |
| Net investment income | - | 13,739 | (13,739) |
| Benefit payments, including refunds of employee contributions | (9,655) | (9,655) | - |
| Administrative expense | - | (137) | 137 |
| Other changes | - | (8) | 8 |
| Net changes | 18,027 | 9,273 | 8,754 |
| Pension Liability Balances at June 30, 2019 | \$ 245,686 | \$ 216,628 | \$ 29,058 |
| Changes for the year - Increase (Decrease): | | | |
| Service cost | 4,229 | - | 4,229 |
| Interest | 16,223 | - | 16,223 |
| Difference between expected and actual experience | (991) | - | (991) |
| Contributions - employer | - | 2,897 | (2,897) |
| Contributions - employee | - | 2,538 | (2,538) |
| Net investment income | - | 4,115 | (4,115) |
| Benefit payments, including refunds of employee contributions | (10,696) | (10,696) | - |
| Administrative expense | - | (142) | 142 |
| Other changes | - | (4) | 4 |
| Net changes | 8,765 | (1,292) | 10,057 |
| Pension Liability Balances at June 30, 2020 | \$ 254,451 | \$ 215,336 | \$ 39,115 |

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

| Pension Discount Rate | 1% Decrease (5.75%) | Current Discount (6.75%) | 1% Increase (7.75%) |
|--------------------------------------|------------------------|-----------------------------|------------------------|
| Net Pension Liability (in thousands) | | | |
| Year ended June 30, 2020 | \$ 72,769 | \$ 39,116 | \$ 11,182 |
| Year ended June 30, 2019 | 62,624 | 29,058 | 2,307 |

Pension Expenses and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

HRSD recognized pension expense of \$6,091,000 and \$3,454,000 for the years ended June 30, 2021 and 2020, respectively. At June 30, 2021 and 2020, HRSD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

| (in thousands) | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|--------------------------------------|-------------------------------------|
| Year ended June 30, 2021: | | |
| Differences between expected and actual experience | \$ 525 | \$ 1,226 |
| Changes of assumptions | 4,149 | 526 |
| Net diff bet projected and actual earnings on program investments | 6,456 | - |
| Employer contributions subsequent to the measurement date | 3,453 | - |
| Total | <u>\$ 14,583</u> | <u>\$ 1,752</u> |
| Year ended June 30, 2020: | | |
| Differences between expected and actual experience | \$ 1,268 | \$ 1,281 |
| Changes of assumptions | 5,764 | 1,388 |
| Net diff bet projected and actual earnings on program investments | - | 1,848 |
| Employer contributions subsequent to the measurement date | 2,897 | - |
| Total | <u>\$ 9,929</u> | <u>\$ 4,517</u> |

HRSD reported \$3,453,000 and \$2,897,000 as of June 30, 2021 and 2020, respectively, as deferred outflows of resources resulting from HRSD's contributions subsequent to the measurement date, which will be recognized as reductions of the Net Pension Liability in the years ended June 30, 2022 and 2021, respectively. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:”)

| (in thousands) | 2021 | 2020 |
|----------------------|-----------------|-----------------|
| Years ended June 30, | | |
| 2021 | \$ - | \$ 625 |
| 2022 | 871 | (974) |
| 2023 | 3,570 | 1,725 |
| 2024 | 2,984 | 1,139 |
| 2025 | 1,953 | - |
| | <u>\$ 9,378</u> | <u>\$ 2,515</u> |

NOTE 9 – LONG-TERM DEBT

HRSD issues revenue bonds for various capital improvements including but not limited to wastewater treatment plants and interceptor system improvements. In addition to HRSD's publicly issued revenue bonds, HRSD is indebted for bond issues payable to the Virginia Resources Authority (VRA) as administrator of the Virginia Water Facilities Fund. HRSD is required to adhere to and is in compliance with the rebate and reporting requirements of the federal regulations pertaining to arbitrage.

In fiscal year 2020, HRSD issued \$205,675,000 in subordinate wastewater revenue bonds, Series 2019A, along with \$66,355,000 in cash to partially refund a total of \$219,721,000 debt for Series 2014A, Series 2016A, Series 2017A and Series 2018A. The transaction resulted in a loss on refunding of \$11,689,000 which will be amortized over 19 years, which is the life of the new debt.

HRSD closed on a 22 year, \$100 million loan, VRA - Group Loan, at 1.15 percent interest from Virginia Clean Water Revolving Loan Fund on June 11, 2020,. This is the first programmatic loan in the history of the program, which

NOTES TO THE FINANCIAL STATEMENTS

funds a number of approved projects that provide substantial water quality benefits as opposed to an individual loan for each project.

HRSD has \$50 million outstanding in subordinate variable rate demand bonds, Series 2016B, to partially finance its capital improvement plan. The bonds bear interest in either a Weekly Period or a Long-term Period, as defined. The bonds were initially issued in a Weekly Interest Period and bear interest at a varying interest rate until, at HRSD's option, they are converted to the Long-term Period. Liquidity to pay the purchase price of the bonds that are tendered and not remarketed is provided by HRSD. Maturities of the principal and interest for these bonds are shown in the following table as if held to maturity. The bonds are subject to optional redemption by HRSD prior to their maturity. Through June 30, 2021, the bonds have been successfully remarketed by the Remarketing Agent. The interest rate for the bonds at June 30, 2021 and 2020 was 0.08% and 1.27%, respectively. The 2021 rate was used to calculate interest maturity amounts shown below.

All bonds are secured by the revenues of HRSD and are payable over the duration of that issue. A summary of activity for the years ended June 30:

| (in thousands) | Balance at | | | | Balance at | | | Balance at | Due within |
|------------------------------|-------------------|-------------------|---------------------|-------------|-------------------|------------------|--------------------|-------------------|------------------|
| | 6/30/19 | Additions | Deductions | Transfer | 6/30/20 | Additions | Deductions | 6/30/20 | One year |
| Series-2019A | \$ - | \$ 205,675 | \$ - | \$ - | \$ 205,675 | \$ - | \$ (2,985) | \$ 202,690 | \$ 3,225 |
| Series-2018A | 62,715 | - | (42,230) | - | 20,485 | - | (1,035) | 19,450 | 1,090 |
| Series-2017A | 83,485 | - | (11,430) | - | 72,055 | - | - | 72,055 | - |
| Series-2016A | 230,970 | - | (134,175) | - | 96,795 | - | (4,160) | 92,635 | 5,875 |
| Series-2016B VR | 50,000 | - | - | - | 50,000 | - | - | 50,000 | 50,000 |
| Series-2014A | 105,845 | - | (41,305) | - | 64,540 | - | (6,080) | 58,460 | 8,070 |
| Series-2012A | 5,770 | - | (2,815) | - | 2,955 | - | (2,955) | - | - |
| Series-2012 | 600 | - | (310) | - | 290 | - | (290) | - | - |
| Series-2011FR | 1,525 | - | (1,525) | - | - | - | - | - | - |
| Series-2009B | 120,140 | - | (3,915) | - | 116,225 | - | (4,040) | 112,185 | 4,170 |
| | | | | | | | | - | - |
| Virginia Resources Authority | | | | | | | | - | - |
| Senior bonds | 80,060 | - | (2,405) | (47,163) | 30,492 | - | (2,467) | 28,025 | 2,531 |
| Subordinate bonds | 84,398 | 29,238 | (8,354) | 47,163 | 152,445 | 35,452 | (8,194) | 179,703 | 10,197 |
| | 825,508 | 234,913 | (248,464) | - | 811,957 | 35,452 | (32,206) | 815,203 | 85,158 |
| Unamortized bond premiums | 66,121 | - | (42,599) | - | 23,522 | - | (3,719) | 19,803 | 3,261 |
| Total | \$ 891,629 | \$ 234,913 | \$ (291,063) | \$ - | \$ 835,479 | \$ 35,452 | \$ (35,925) | \$ 835,006 | \$ 88,419 |

Senior bonds outstanding at June 30, 2021:

| (in thousands) | Issue Amount | Principal Outstanding | | | Interest to Maturity | Interest Rates | Duration of Issue | Final Maturity |
|----------------|--------------|-----------------------|------------------|-------------------|----------------------|----------------|-------------------|-------------------|
| | | Total | Current | Long-Term | | | | |
| Series-2014A | \$ 111,345 | \$ 58,460 | \$ 8,070 | \$ 50,390 | \$ 7,869 | 5.00% | 15 years | July 1, 2025 |
| Series-2009B | 134,725 | 112,185 | 4,170 | 108,015 | 69,577 | 5.01% - 5.87% | 30 years | November 1, 2039 |
| VRA - Metering | 9,989 | 5,824 | 516 | 5,308 | 844 | 2.65% | 20 years | March 1, 2031 |
| VRA - WTP | 5,727 | 3,325 | 303 | 3,022 | 369 | 2.05% | 20 years | March 1, 2031 |
| VRA - NTP | 19,395 | 11,280 | 999 | 10,281 | 1,634 | 2.65% | 20 years | March 1, 2031 |
| VRA - JRTP | 13,431 | 7,596 | 713 | 6,883 | 1,046 | 2.65% | 20 years | September 1, 2030 |
| Total | | \$ 198,670 | \$ 14,771 | \$ 183,899 | \$ 81,339 | | | |

Maturities of senior bond principal and interest as of June 30, 2021:

| (in thousands) | | | |
|----------------|--|-------------------|------------------|
| June 30, | | Principal | Interest |
| 2022 | | \$ 14,771 | \$ 9,778 |
| 2023 | | 18,727 | 9,005 |
| 2024 | | 19,539 | 8,110 |
| 2025 | | 20,408 | 7,156 |
| 2026 | | 20,649 | 6,159 |
| 2027 - 2031 | | 41,500 | 23,555 |
| 2032 - 2036 | | 32,375 | 13,892 |
| 2037 - 2041 | | 30,701 | 3,684 |
| | | <u>\$ 198,670</u> | <u>\$ 81,339</u> |

Subordinate revenue bonds outstanding at June 30, 2021:

| (in thousands) | Issue Amount | Principal Outstanding | | | Interest to Maturity | Interest Rates | Duration of Issue | Final Maturity |
|-------------------------|-----------------|-----------------------|------------------|-------------------|----------------------------|---|----------------------|-------------------|
| | | Total | Current | Long-term | | | | |
| Series-2019A | \$ 205,675 | \$ 202,690 | \$ 3,225 | \$ 199,465 | \$ 57,264 | 1.70% - 2.78% | 20 Years | February 1, 2039 |
| Series-2018A | 63,185 | 19,450 | 1,090 | 18,360 | 6,996 | 5.00% | 15 years | October 1, 2033 |
| Series-2017A | 83,485 | 72,055 | - | 72,055 | 42,766 | 3.50% - 5.00% | 26 years | October 1, 2043 |
| Series-2016A | 246,845 | 92,635 | 5,875 | 86,760 | 31,888 | 3.00% - 5.00% | 20 years | August 1, 2036 |
| VRA - BH Odor | 2,380 | 81 | 81 | - | 1 | 3.50% | 20 years | September 1, 2021 |
| VRA - York River Reuse | 2,476 | 228 | 152 | 76 | 4 | 1.70% | 20 years | September 1, 2022 |
| VRA - AB Aeration | 1,759 | 172 | 114 | 58 | 3 | 1.70% | 20 years | October 1, 2022 |
| VRA - Ches-Eliz Off Gas | 1,070 | 140 | 69 | 71 | 7 | 3.75% | 20 years | March 1, 2023 |
| VRA - AB Generator | 1,235 | 374 | 72 | 302 | 21 | 2.00% | 20 years | April 1, 2026 |
| VRA - Atlantic Expan | 7,340 | 2,650 | 419 | 2,231 | 184 | 2.10% | 20 years | February 1, 2027 |
| VRA - Ches-Eliz Expan | 40,330 | 14,487 | 2,290 | 12,197 | 1,008 | 2.10% | 20 years | June 1, 2027 |
| VRA - Williamsburg PS | 1,605 | 622 | 90 | 532 | 47 | 2.10% | 20 years | July 1, 2027 |
| VRA - York River Expan | 29,683 | 17,273 | 1,525 | 15,748 | 2,572 | 2.72% | 20 years | March 1, 2031 |
| VRA - Rodman | 1,096 | 996 | 36 | 960 | 268 | 2.25% | 25 years | June 1, 2043 |
| VRA - Atlantic | 6,318 | 4,240 | 307 | 3,933 | 696 | 2.51% | 20 years | February 1, 2033 |
| VRA - Ferguson | 866 | 795 | 29 | 766 | 247 | 2.70% | 25 years | March 1, 2042 |
| VRA - Lucas | 2,949 | 2,772 | 88 | 2,684 | 955 | 2.65% | 27 years | October 1, 2044 |
| VRA - BHTP Switchgear | 7,619 | 7,619 | 371 | 7,248 | 1,340 | 1.85% | 20 years | December 1, 2040 |
| VRA - Orcutt Ave | - | 7,701 | 204 | 7,497 | 3,885 | 2.85% | 30 years | February 1, 2049 |
| VRA - TP Dewatering | - | 1,997 | 160 | 1,837 | 149 | 1.20% | 20 years | October 1, 2040 |
| VRA - Deep Creek IFM | 4,989 | 4,989 | 229 | 4,760 | 621 | 1.20% | 20 years | December 1, 2040 |
| VRA - Huxley | - | 3,220 | 179 | 3,041 | 471 | 1.20% | 20 years | August 1, 2040 |
| VRA - Group Loan | - | 15,803 | - | 15,803 | 633 | 1.15% | 22 years | March 1, 2042 |
| VRA - ABTP | 50,000 | 32,215 | 2,511 | 29,704 | 4,110 | 2.05% | 20 years | September 1, 2032 |
| VRA - ATP | - | 56,836 | 883 | 55,953 | 18,178 | 2.25% | 30 years | March 1, 2046 |
| VRA - BHTP | 7,584 | 4,493 | 388 | 4,105 | 524 | 2.05% | 20 years | September 1, 2031 |
| Total Fixed Rate Bonds | | 566,533 | 20,387 | 546,146 | 174,838 | | | |
| | | | | | | Variable (0.08% at June 30, 2021) | | |
| Series-2016B VR | 50,000 | 50,000 | 50,000 | - | 1,062 | | 30 years | August 1, 2046 |
| Total | | <u>\$ 616,533</u> | <u>\$ 70,387</u> | <u>\$ 546,146</u> | <u>\$ 175,900</u> | | | |

The VRA bonds that do not show an issue amount have not closed as of June 30, 2021, therefore, the principal amounts reflected represent draws through that date. The total eligible loan amount on these Subordinate VRA bonds is \$173,348,000, of which \$87,672,385 is available at June 30, 2021.

NOTES TO THE FINANCIAL STATEMENTS

Maturities of subordinate bond principal and interest as of June 30, 2021:

| (in thousands) | | Principal | Interest |
|----------------|--|-------------------|-------------------|
| June 30, | | | |
| 2022 | | \$ 70,387 | \$ 16,111 |
| 2023 | | 20,886 | 15,936 |
| 2024 | | 23,528 | 15,195 |
| 2025 | | 24,110 | 14,609 |
| 2026 | | 24,584 | 14,009 |
| 2027 - 2031 | | 168,610 | 56,496 |
| 2032 - 2036 | | 162,674 | 30,945 |
| 2037 - 2041 | | 90,229 | 10,300 |
| 2042 - 2046 | | 31,130 | 2,259 |
| 2047 - 2051 | | 395 | 40 |
| | | <u>\$ 616,533</u> | <u>\$ 175,900</u> |

HRSD defeased certain revenue bonds by placing the proceeds of new bonds in an irrevocable trust to provide for all future debt service payments on the old bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the fund's financial statements. At June 30, 2021, the following defeased bonds from advance refunding are still outstanding:

| Defeased In | Original Issue | Amount | Redemption |
|-------------|----------------|-----------------------|------------|
| 2017 | Series 2012A | \$ 26,241,969 | 07/01/22 |
| 2017 | Series 2016A | 8,446,740 | 08/01/26 |
| 2019 | Series 2014A | 41,181,609 | 07/01/24 |
| 2019 | Series 2016A | 28,504,380 | 08/01/26 |
| 2019 | Series 2016A | 131,891,081 | 08/01/26 |
| 2019 | Series 2017A | 13,946,850 | 10/01/27 |
| 2019 | Series 2018A | 14,105,476 | 10/01/27 |
| 2019 | Series 2018A | 36,741,484 | 10/01/27 |
| | | <u>\$ 301,059,589</u> | |

NOTE 10 – NET POSITION

Restricted Portion of Net Position

Restricted for debt service. HRSD's Trust Agreement requires that funds be set aside for its revenue bond debt service. At June 30, 2021 and 2020, \$ 30,455,000 and \$ 28,155,000 , respectively, were contained in the unrestricted net position.

Unrestricted Portion of Net Position

Reserved for Improvement. HRSD's Master Trust Agreement requires a reserve for improvements. There is no specific funding mechanism established by the Trust Agreement. At June 30, 2021 and 2020, \$186,000 and \$267,000, respectively, was contained in the unrestricted net position. HRSD was in compliance with all funding requirements of this reserve during the fiscal years ended June 30, 2021 and 2020.

Reserved for Construction. A reserve for the construction program is based on funds designated by HRSD's Commission for such purposes. At June 30, 2021 and 2020, \$6,034,000 and \$22,210,000, respectively, was contained in the unrestricted net position.

NOTE 11 - RISK MANAGEMENT

HRSD is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; employee dishonesty; injuries to employees; and natural disasters. HRSD purchases commercial insurance for specific types of coverage including property, liability, auto, crime, public officials and workers' compensation. There were no significant reductions in insurance coverage from the prior year. Claim settlements and judgments not covered by commercial insurance are covered by operating resources. The amount of settlements did not exceed insurance coverage for each of the past three years. Claim expenditures and liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated.

HRSD has a self-insured health, dental and vision care benefits program for all employees. Claims processing and payments for all health care claims are made through third-party administrators. HRSD uses the information provided by the third-party administrators and a health care benefits consultant to aid in the determination of self-insurance reserves.

| (in thousands) | Beginning of Fiscal Year | Estimated Claims Incurred | Claims Paid | End of Fiscal Year |
|----------------|-----------------------------|------------------------------|-------------|-----------------------|
| 2020 | \$ 4,290 | \$ 12,079 | \$ (11,848) | 4,521 |
| 2021 | 4,521 | 14,116 | (13,860) | 4,777 |

NOTE 12 – COMMITMENTS AND CONTINGENCIESConsent Decree

On December 19, 2014, the Commonwealth of Virginia entered into a long-term State Consent Agreement (the "2014 Consent Agreement") with 14 of the localities that HRSD serves. The 2014 Consent Agreement requires the localities to perform long-term management, operations and maintenance of their sewer systems in support of HRSD's efforts to provide long-term regional wet weather wastewater capacity. HRSD is not a party to the 2014 Consent Agreement. Instead, HRSD's obligation to provide regional wet weather sewer capacity is now solely imposed through its federal consent decree (the "Consent Decree"). HRSD entered into the Consent Decree with the Commonwealth and the United States Environmental Protection Agency ("EPA").

The Consent Decree was entered by the federal district court for the Eastern District of Virginia (the "District Court") on February 23, 2010. The Consent Decree has been amended four times, most recently on February 21, 2017 (the "Amended Consent Decree").

The Amended Consent Decree has two major operative requirements. First, it requires HRSD to develop a Regional Wet Weather Management Plan ("RWWMP") to control capacity-related sewer overflows within the 14 localities. However, through the third and fourth amendments, HRSD has now assumed responsibility for planning (in consultation with the 14 affected localities), designing, funding, and implementing the controls in both the localities' systems and the HRSD system that will be contained in the approved RWWMP. Through this approach, HRSD estimates the regional ratepayers will achieve significantly reduced program costs than if each locality sought to address peak wet weather wastewater flows on its own. To facilitate these regional cost savings, the Amended Consent Decree extended the RWWMP submission deadline to October 1, 2017. To further facilitate this approach, the 14 affected localities entered into a Memorandum of Agreement with HRSD in 2014 in which they agreed to (1) cooperate with HRSD, (2) facilitate the construction of and accept ownership of any improvements which HRSD may need to construct in the localities' systems, and (3) maintain the integrity of their systems to industry standards.

The Amended Consent Decree also requires HRSD to implement a total of 45 projects from its ten-year CIP. These 45 projects total approximately \$306 million. Accordingly, HRSD has timely and fully satisfied the requirement of the Amended Consent Decree to implement these 45 early action projects.

The Amended Consent Decree authorizes HRSD to submit the RWWMP as part of an Integrated Management Plan ("IMP"). HRSD intends to use the IMP approach to facilitate the timing and financing of both its RWWMP and its SWIFT Program. The SWIFT Program will assist the Commonwealth to meet its Chesapeake Bay nutrient reduction commitments and save HRSD's 14 localities approximately \$1 to \$2 billion in avoided Chesapeake Bay-related stormwater control costs.

HRSD has agreed to a fifth amendment to its ongoing federal consent decree with the United States Environmental Protection Agency ("USEPA") and the Commonwealth of Virginia ("Commonwealth"). The fifth amendment is expected to be lodged with the federal court in late 2020 and entered by the court in early 2021. The fifth amendment

NOTES TO THE FINANCIAL STATEMENTS

includes a schedule for wastewater system improvements that accommodates the SWIFT program. That schedule requires that HRSD implement \$200 million worth of sewer overflow control projects between 2020 and 2030 and then another \$200 million in sewer overflow control projects between 2030 and 2040. These two sets of projects reflect further priority system improvements that HRSD is to implement along with the Project. The fifth amendment gives HRSD until 2032 to complete the SWIFT program. Finally, the fifth amendment provides that if HRSD does not fully implement the Project or delays full implementation past 2032 then EPA can require HRSD to accelerate some or all of the second group (\$200 million worth) of sewer overflow control projects to offset the avoided investment in the SWIFT program.

Litigation

In 2018, oystermen leasing oyster beds in the Nansemond River filed a petition for declaratory judgment against the City of Suffolk and HRSD alleging that they had intentionally designed and operated their storm water system (Suffolk) and sanitary sewers (both) to discharge contaminants onto the oystermen's oyster beds (leased from the Virginia Marine Resources Commission), resulting in condemnation of their oysters by the Virginia Department of Health. In September 2019, the Suffolk Circuit Court granted demurrers filed by Suffolk and the Borrower and dismissed the oystermen's petition. On May 18, 2020, the Supreme Court of Virginia agreed to hear the oystermen's appeal. On December 10, 2020, the Virginia Supreme Court affirmed the lower court decision dismissing the petition.

Capital Commitments

HRSD has a major capital improvement and expansion program funded through the issuance of debt and its own resources. As of June 30, 2021, HRSD has outstanding commitments for contracts in progress of approximately \$582,703,000.

NOTE 13 – FAIR VALUE MEASUREMENTS

HRSD categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets. Level 2 inputs are significant other observable inputs. Level 3 inputs are significant unobservable inputs.

Debt securities reported as investments are classified in Level 2 of the fair value hierarchy and are valued using the following approaches:

- U.S. Treasury securities are valued using quoted prices for identical or similar securities.
- All other investments are valued based on matrix pricing using observable data of securities with similar attributes.

Investments reported as cash and cash equivalents are not included of the fair value hierarchy and are valued using the following:

- The Virginia Investment Pool Trust Fund (the "Trust" or "VIP") is an Internal Revenue Code Section 115 governmental trust fund created under the Joint Exercise of Powers statute of the Commonwealth of Virginia to provide political subdivisions with an investment vehicle to pool their funds and to invest such funds into two or more investment portfolios under the direction and daily supervision of a professional fund manager. The Trust was established and created by the City of Chesapeake, Virginia, and the City of Roanoke, Virginia (the "Founding Participants") and operates under the Trust Agreement as amended September 23, 2016. All deposits to VIP initially go into the Stable NAV Liquidity Pool, which serves both as a liquidity pool and as a sweep account for the 1-3 Year High Quality Bond Fund. HRSD's total investment in VIP is \$65,054,000 (valued at amortized cost) in the 1-3 Year High Quality Bond Fund and \$108,890,000 in the Stable NAV Liquidity Pool as of June 30, 2021.

HRSD OPEB Trust Investments

The HRSD OPEB Trust has investments in mutual funds, cash, and cash equivalents on deposit with its trustee, U.S. Bank. HRSD categorizes its fair value measurements within the fair value hierarchy consistent with the approach described above.

Balance at June 30, 2021

(in thousands)

Investments by Fair Value Level

| | Fair Value | Level 1 | Level 2 | Level 3 |
|---------------------------------------|------------------|------------------|------------------|-----------------|
| Mutual Funds - Equity | \$ 45,798 | \$ 31,062 | \$ 14,736 | \$ - |
| Mutual Funds - Fixed Income | 22,058 | 2,096 | 19,962 | - |
| Miscellaneous | 1,081 | - | 1,081 | - |
| Other Income | 2,632 | - | - | 2,632 |
| Total Investments by Fair Value Level | <u>\$ 71,569</u> | <u>\$ 33,158</u> | <u>\$ 35,779</u> | <u>\$ 2,632</u> |

Cash Equivalents Measured at Net Asset Value

| | |
|--------------------------------------|-----------|
| First American Government Obligation | <u>97</u> |
|--------------------------------------|-----------|

Fiduciary Net Position of HRSD's OPEB

| | |
|--------------------------|------------------|
| Plan as of June 30, 2021 | <u>\$ 71,666</u> |
|--------------------------|------------------|

Balance at June 30, 2020

(in thousands)

Investments by Fair Value Level

| | Fair Value | Level 1 | Level 2 | Level 3 |
|---------------------------------------|------------------|-----------------|------------------|-----------------|
| Mutual Funds - Equity | \$ 31,251 | \$ 2,630 | \$ 28,648 | \$ - |
| Mutual Funds - Fixed Income | 19,428 | - | 19,428 | - |
| Other Income | 1,175 | - | - | 1,175 |
| Total Investments by Fair Value Level | <u>\$ 51,854</u> | <u>\$ 2,630</u> | <u>\$ 48,076</u> | <u>\$ 1,175</u> |

Cash Equivalents Measured at Net Asset Value

| | |
|--------------------------------------|------------|
| First American Government Obligation | <u>171</u> |
|--------------------------------------|------------|

Fiduciary Net Position of HRSD's OPEB

| | |
|--------------------------|------------------|
| Plan as of June 30, 2020 | <u>\$ 52,025</u> |
|--------------------------|------------------|

Additional information about HRSD's OPEB Plan is in Notes 3 and 7.

NOTE 14 - FIDUCIARY ACTIVITIES

As discussed in Note 2, under New Accounting Pronouncement, HRSD adopted GASB Statement No. 84, Fiduciary Activities, (the Statement) effective July 1, 2020. In accordance with the requirements of this Statement, HRSD has prepared fiduciary fund financial statements for the fiscal years ended June 30, 2021 and 2020. The statements include information on one of HRSD's three postemployment benefits other than pensions (other postemployment benefits, or OPEB) plans, and information on funds held by HRSD to apply toward customer accounts.

Retiree Health Plan

Detailed information related to HRSD's Retiree Health Plan (RHP) is included in Notes 2, 3, 7 and 13 and in the Required Supplementary Information section of the Comprehensive Annual Financial Report. The RHP meets the requirements of GASB 84 for inclusion in the fiduciary fund financial statements. HRSD's other two OPEB plans are administered by VRS so do not qualify for inclusion. The RHP has total assets of \$71.7 million, which is restricted to providing postretirement benefits for plan participants.

Coronavirus Aid, Relief, and Economic Securities Act

In response to the COVID-19 pandemic disaster, the United States federal government enacted the Coronavirus Aid, Relief, and Economic Securities Act of 2020 ("CARES Act") to provide funding for numerous programs to address the COVID-19 pandemic disaster, providing assistance to states, local, territorial, and tribal governments for direct impacts of the COVID-19 pandemic disaster through the establishment of the Coronavirus Relief Fund (CRF). Consistent with the CARES Act, the Commonwealth of Virginia established a COVID-19 Utility Relief Program (Program) to provide direct assistance to utility customers with accounts over 30 days in arrears.

NOTES TO THE FINANCIAL STATEMENTS

During the fiscal year ended June 30, 2021, HRSD received federal CARES Act funds in the amount of \$9.1 million. The City of Norfolk and James City Service Authority (the partner localities) served as pass-through agents for funds distributed through the Commonwealth of Virginia's State Corporation Commission. As of June 30, 2021, HRSD applied \$7.5 million to the accounts of customers who qualified for relief under the terms of the Program. If all the HRSD CRF Funds are not expended to assist utility customers by any applicable deadline under the Program such that HRSD is obligated to return unexpended funds to the Commonwealth, HRSD and the partner localities shall coordinate to accomplish the return of such funds in a timely manner in accordance with the CRF Rules.

NOTE 15 - SUBSEQUENT EVENTS

The Water Infrastructure Finance and Innovation Act (WIFIA) program, managed by the Environmental Protection Agency (EPA), accelerates investment in our nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. WIFIA loans allow borrowers to lock-in a rate equivalent to the US Treasury rate plus one basis point at closing. HRSD submitted a Letter of Interest in 2019 and was approved to apply for the SWIFT program. Due to the long duration of the SWIFT program, a Master Financing Agreement (MFA) was required to allow for multiple loans (tranches). Each tranche will be a group of projects that have met environmental requirements. On September 28, 2020, HRSD executed an MFA that outlines the terms and conditions of the loans and caps the amount borrowed at \$1.048 billion. In addition, HRSD closed on the first tranche, which was \$225 million for approximately 34 years at a rate of 1.42 percent. In September 2020 HRSD closed on the first tranche, which was \$225 million for approximately 34 years at a rate of 1.42 percent. In September 2021 HRSD closed on the second tranche, which was \$477 million for approximately 34 years at a rate of 1.95 percent.

The background features a series of overlapping, semi-transparent geometric shapes in shades of blue and green, creating a sense of depth and movement. A prominent blue banner with a white border is positioned horizontally across the middle of the image. The text on the banner is white and bold, with the word 'Information' in a smaller font size and enclosed in parentheses.

**Required Supplementary
Information** (Unaudited)



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**SCHEDULE OF CHANGES IN
NET PENSION LIABILITY AND RELATED RATIOS**

| (in thousands) | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Total pension liability | | | | | | | |
| Service cost | \$ 4,229 | \$ 3,946 | \$ 3,825 | \$ 4,145 | \$ 4,025 | \$ 4,115 | \$ 3,943 |
| Interest | 16,223 | 15,598 | 14,953 | 14,750 | 13,872 | 13,559 | 12,906 |
| Changes in assumptions | - | 7,378 | - | (3,975) | - | - | - |
| Differences between expected and actual experience | (991) | 760 | (101) | (3,175) | 2,980 | (4,910) | - |
| Benefit payments, including refunds of employee contributions | (10,696) | (9,655) | (9,250) | (8,475) | (8,161) | (8,446) | (6,607) |
| Net change in total pension liability | 8,765 | 18,027 | 9,427 | 3,270 | 12,716 | 4,318 | 10,242 |
| Total pension liability - beginning | 245,686 | 227,659 | 218,232 | 214,962 | 202,246 | 197,928 | 187,686 |
| Total pension liability - ending (a) | \$ 254,451 | \$ 245,686 | \$ 227,659 | \$ 218,232 | \$ 214,962 | \$ 202,246 | \$ 197,928 |
| Plan fiduciary net position | | | | | | | |
| Contributions - employer | \$ 2,897 | \$ 2,866 | \$ 3,710 | \$ 3,609 | \$ 4,083 | \$ 4,099 | \$ 4,114 |
| Contributions - employee | 2,538 | 2,468 | 2,424 | 2,351 | 2,286 | 2,314 | 2,267 |
| Net investment income | 4,115 | 13,739 | 14,451 | 21,526 | 3,062 | 7,807 | 23,313 |
| Benefit payments, including refunds of employee contributions | (10,696) | (9,655) | (9,250) | (8,475) | (8,161) | (8,446) | (6,607) |
| Administrative expense | (142) | (137) | (125) | (124) | (109) | (107) | (125) |
| Other | - | (8) | (12) | (19) | (1) | (2) | 1 |
| Net change in plan fiduciary net position | (1,288) | 9,273 | 11,198 | 18,868 | 1,160 | 5,665 | 22,963 |
| Plan fiduciary net position - beginning | 216,628 | 207,355 | 196,157 | 177,289 | 176,129 | 170,464 | 147,501 |
| Plan fiduciary net position - ending (b) | \$ 215,340 | \$ 216,628 | \$ 207,355 | \$ 196,157 | \$ 177,289 | \$ 176,129 | \$ 170,464 |
| Net pension liability - ending (a) - (b) | \$ 39,111 | \$ 29,058 | \$ 20,304 | \$ 22,075 | \$ 37,673 | \$ 26,117 | \$ 27,465 |
| Plan fiduciary net position as a percentage of the total pension liability (b)/(a) | 84.63% | 88.17% | 91.08% | 89.88% | 82.47% | 87.09% | 86.12% |
| Covered payroll (c) | \$ 53,085 | \$ 51,336 | \$ 50,874 | \$ 49,286 | \$ 47,838 | \$ 47,674 | \$ 46,096 |
| Net pension liability as a percentage of the covered payroll ((a)-(b))/(c) | 73.68% | 56.60% | 39.91% | 44.79% | 78.75% | 54.78% | 59.58% |

This schedule is presented to show information for 10 years. However, until a full ten-year trend is compiled, HRSD will present information for those years for which information is available.

**SCHEDULE OF EMPLOYER PENSION CONTRIBUTIONS
FOR THE YEARS ENDED JUNE 30, 2012 THROUGH 2021**

| Date | Contractually Required Contribution | Contribution in Relation to Contractually Required Contribution | Contribution Deficiency (Excess) | Employer's Covered Payroll | Contributions as a % of Covered Payroll |
|------|---|---|--|-------------------------------|--|
| 2021 | \$ 3,453,000 | \$ 3,453,000 | \$ - | \$ 54,107,000 | 6.38% |
| 2020 | 2,897,000 | 2,897,000 | - | 53,085,000 | 5.46% |
| 2019 | 2,866,000 | 2,866,000 | - | 51,336,000 | 5.58% |
| 2018 | 3,635,000 | 3,635,000 | - | 50,874,000 | 7.15% |
| 2017 | 4,326,000 | 4,326,000 | - | 49,286,000 | 8.78% |
| 2016 | 4,222,000 | 4,222,000 | - | 47,838,000 | 8.83% |
| 2015 | 4,207,000 | 4,207,000 | - | 47,674,000 | 8.82% |
| 2014 | 4,107,000 | 4,107,000 | - | 46,096,000 | 8.91% |
| 2013 | 4,075,000 | 4,075,000 | - | 45,044,000 | 9.05% |
| 2012 | 4,580,000 | 4,580,000 | - | 42,166,000 | 10.86% |

Notes to Required Supplementary Information For the Year Ended June 30, 2021:

Changes of benefit terms -

There have been no actuarially material changes to the VRS benefit provisions since the prior actuarial valuation.

Changes of assumptions -

The actuarial assumptions used in the June 30, 2018, valuation were based on the results of an actuarial experience study for the period from July 1, 2012, through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

| | |
|---|---|
| Mortality Rates (Pre-retirement, post-retirement healthy, and disabled) | Updated to a more current mortality table - RP-2014 projected to 2020 |
| Retirement Rates | Lowered rates at older ages and changed final retirement from 70 to 75 retirement |
| Withdrawal Rates | Adjusted rates to better fit experience at each year age and service through 9 years of service |
| Disability Rates | Lowered rates |
| Salary Scale | No change |
| Line of Duty Disability | Increase rate from 14% to 15% |
| Discount Rate | Decreased rate from 7.00% to 6.75% |

Information pertaining to Pensions can be found in Notes 2 and 8 to the financial statements.

**SCHEDULE OF CHANGES IN
NET RHP OPEB LIABILITY AND RELATED RATIOS**

(in thousands)

| | 2021 | 2020 | 2019 | 2018 | 2017 |
|--|-------------------|------------------|------------------|------------------|------------------|
| Total OPEB liability | | | | | |
| Service cost | \$ 1,333 | \$ 1,345 | \$ 1,300 | \$ 1,260 | \$ 1,188 |
| Interest | 3,672 | 3,883 | 3,571 | 3,391 | 3,208 |
| Changes in assumptions | - | (518) | (1,607) | - | - |
| Differences between expected and actual experience | 2,930 | (7,074) | 3,302 | - | - |
| Benefit payments, including refunds of employee contributions | (1,425) | (1,186) | (1,149) | (1,791) | (892) |
| Net change in total OPEB liability | 6,510 | (3,550) | 5,417 | 2,860 | 3,504 |
| Total OPEB liability - beginning | 62,143 | 65,693 | 60,276 | 57,416 | 53,913 |
| Total OPEB liability - ending (a) | \$ 68,653 | \$ 62,143 | \$ 65,693 | \$ 60,276 | \$ 57,417 |
| Plan fiduciary net position | | | | | |
| Contributions - employer | \$ 1,963 | \$ 2,730 | \$ 2,993 | \$ 2,729 | \$ 2,558 |
| Contributions - retirees | - | - | - | 303 | - |
| Net investment income | 14,216 | 3,343 | 3,078 | 3,450 | 3,957 |
| Benefit payments, including refunds of employee contributions | (1,425) | (1,186) | (1,149) | (1,791) | (892) |
| Administrative expense | - | - | - | (114) | (495) |
| Net change in plan fiduciary net position | 14,754 | 4,887 | 4,922 | 4,577 | 5,128 |
| Plan fiduciary net position - beginning | 56,912 | 52,025 | 47,103 | 42,526 | 37,398 |
| Plan fiduciary net position - ending (b) | \$ 71,666 | \$ 56,912 | \$ 52,025 | \$ 47,103 | \$ 42,526 |
| Net OPEB liability - ending (a) - (b) | \$ (3,013) | \$ 5,231 | \$ 13,668 | \$ 13,173 | \$ 14,891 |
| Plan fiduciary net position as a percentage of the total OPEB liability (b)/(a) | 104.39% | 91.58% | 79.19% | 78.15% | 74.07% |
| Covered payroll (c) | \$ 55,731 | \$ 54,799 | \$ 52,070 | \$ 50,874 | \$ 49,286 |
| Net OPEB liability as a percentage of the covered payroll ((a)-(b))/(c) | (5.41%) | 9.55% | 26.25% | 25.89% | 30.21% |

This schedule is intended to show information for 10 years. However, until a full ten-year trend is compiled, HRSD will present information for those years for which information is available.

Notes to Required Supplementary Information For the Year Ended June 30, 2021:

| | | |
|-------------------------|---------------|--|
| Benefit changes: | | None |
| Changes of assumptions: | Mortality | Updated to the latest Society of Actuaries (SOA) public sector experience study rates. |
| | Medical Trend | Developed using the SOA Long-Run Medical Cost Trend Model baseline assumption. The prior valuations used the SOA model as updated in November 2016 and included the impact of the Cadillac Tax. The current valuation uses the model as updated in September 2019 and does not include the impact of the Cadillac Tax. |
| Discount rate: | 6/30/2019 | 6.00% |

Unaudited – See accompanying independent auditors' report and notes to required supplementary information

**SCHEDULE OF RHP OPEB CONTRIBUTIONS
FOR THE YEARS ENDED JUNE 30, 2012 THROUGH 2021**

| Date | Actuarially Determined Contribution | Contribution in Relation to the Actuarially Required Contribution | Contribution Deficiency (Excess) | Employer's Covered Payroll | Contributions as a % of Covered Payroll |
|------|-------------------------------------|---|----------------------------------|----------------------------|---|
| 2021 | \$ 1,858,000 | \$ 1,963,000 | \$ (105,000) | \$ 55,731,000 | 3.33% |
| 2020 | 2,730,000 | 2,730,000 | - | 54,799,000 | 4.98% |
| 2019 | 2,993,000 | 2,993,000 | - | 52,070,000 | 5.75% |
| 2018 | 2,729,000 | 2,729,000 | - | 50,874,000 | 5.36% |
| 2017 | 2,558,000 | 2,558,000 | - | 49,286,000 | 5.19% |
| 2016 | 2,178,000 | 2,178,000 | - | 47,838,000 | 4.55% |
| 2015 | 2,177,000 | 2,177,000 | - | 47,674,000 | 4.57% |
| 2014 | 2,244,000 | 2,244,000 | - | 46,096,000 | 4.87% |
| 2013 | 2,102,000 | 2,102,000 | - | 45,032,000 | 4.67% |
| 2012 | 2,231,000 | 2,231,000 | - | 43,213,000 | 5.16% |

| | |
|----------------------------|---|
| Actuarial cost method | Entry age normal |
| Amortization method | Level percent of pay, closed |
| Amortization period | An experience gain/loss base is created each year and amortized over a 15 year period |
| Asset valuation | Smoothed market value with phase-in, using a 5-year smoothing period |
| Assumed rate of inflation | 2.20% |
| Medical cost trend : | |
| Pre Medicare | 5.3%, stable at 5.3% after 3 years and decreasing to 3.6% after 53 years |
| Post Medicare | 5.3%, stable at 5.3% after 3 years and decreasing to 3.4% after 53 years |
| Salary increase rate | 2.50% |
| Investments rate of return | 6.00% |
| Mortality rates: | |
| Healthy | RP-2014 Mortality Table, Fully Generational, Projected with Scale MP-2014 |
| Pre Medicare | 5.3%, stable at 5.3% after 3 years and decreasing to 3.6% after 53 years |

Unaudited – See accompanying independent auditors' report and notes to required supplementary information

**SCHEDULE OF EMPLOYER'S SHARE OF
NET GLI OPEB LIABILITY AND RELATED RATIOS
FOR THE MEASUREMENT DATES OF JUNE 30, 2017 THROUGH 2020**

(in thousands)

| | 2020 | 2019 | 2018 | 2017 |
|---|----------|----------|----------|----------|
| Employer's Proportion of the Net GLI OPEB Liability | 0.25814% | 0.26208% | 0.26214% | 0.26016% |
| Employer's Proportionate Share of the Net GLI OPEB Liability | \$ 4,307 | \$ 4,265 | \$ 3,981 | \$ 3,915 |
| Employer's Covered Payroll | 54,222 | 51,376 | 49,846 | 47,987 |
| Employer's Proportionate Share of the Net GLI OPEB Liability as a Percentage of its Covered Payroll | 7.94% | 8.30% | 7.99% | 8.16% |
| Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability | 52.64% | 52.00% | 51.22% | 48.86% |

This schedule is intended to show information for 10 years. However, until a full ten-year trend is compiled, HRSD will present information for those years for which information is available.

In accordance with GAAP, Net Liability is reported using the measurement date, which is one year prior to the reporting date.

Draft

**SCHEDULE OF EMPLOYER GLI OPEB CONTRIBUTIONS
FOR THE YEARS ENDED JUNE 30, 2012 THROUGH 2021**

| Date | Contractually Required Contribution | Contribution in Relation to Contractually Required Contribution | Contribution Deficiency (Excess) | Employer's Covered Payroll | Contributions as a % of Covered Payroll |
|------|--|--|-------------------------------------|-------------------------------|--|
| 2021 | \$ 293,000 | \$ 293,000 | \$ - | \$ 54,222,000 | 0.54% |
| 2020 | 276,000 | 276,000 | - | 53,126,000 | 0.52% |
| 2019 | 267,000 | 267,000 | - | 51,376,000 | 0.52% |
| 2018 | 259,000 | 259,000 | - | 49,846,000 | 0.52% |
| 2017 | 250,000 | 250,000 | - | 47,987,000 | 0.52% |
| 2016 | 246,000 | 223,000 | 23,000 | 46,417,000 | 0.53% |
| 2015 | 244,000 | 221,000 | 23,000 | 46,082,000 | 0.53% |
| 2014 | 240,000 | 217,000 | 23,000 | 45,283,000 | 0.53% |
| 2013 | 238,000 | 215,000 | 23,000 | 44,839,000 | 0.53% |
| 2012 | 183,000 | 117,000 | 66,000 | 41,681,000 | 0.44% |

Notes to Required Supplementary Information For the Year Ended June 30, 2021:

Changes of benefit terms -

There have been no actuarially material changes to the VRS benefit provisions.

Changes of assumptions -

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

| | |
|---|---|
| Mortality Rates (Pre-retirement, post-retirement healthy, and disabled) | Updated to a more current mortality table - RP-2014 projected to 2020 |
| Retirement Rates | Lowered retirement rates at older ages and extended final retirement age from 70 to 75. |
| Withdrawal Rates | Adjusted termination rates to better fit experience at each age and service year |
| Disability Rates | Lowered disability rates |
| Salary Scale | No change |
| Line of Duty Disability | Increased rate from 14 to 15% |
| Discount Rate | Decreased rate from 7.00% to 6.75% |

Information pertaining to OPEB can be found in Notes 2 and 7 to the financial statements.

**SCHEDULE OF CHANGES IN
NET HIC OPEB LIABILITY AND RELATED RATIOS**

(in thousands)

| | 2020 | 2019 | 2018 | 2017 |
|--|-----------|-----------|-----------|-----------|
| Total OPEB liability | | | | |
| Service cost | \$ 28 | \$ 26 | \$ 26 | \$ 27 |
| Interest | 137 | 134 | 130 | 129 |
| Changes in assumptions | - | 50 | - | (22) |
| Differences between expected and actual experience | 16 | 26 | 27 | - |
| Benefit payments, including refunds of employee contributions | (129) | (124) | (133) | (94) |
| Net change in total OPEB liability | 52 | 112 | 50 | 40 |
| Total OPEB liability - beginning | 2,093 | 1,981 | 1,931 | 1,891 |
| Total OPEB liability - ending (a) | \$ 2,145 | \$ 2,093 | \$ 1,981 | \$ 1,931 |
| Plan fiduciary net position | | | | |
| Contributions - employer | \$ 111 | \$ 108 | \$ 95 | \$ 91 |
| Net investment income | 18 | 56 | 60 | 90 |
| Benefit payments, including refunds of employee contributions | (129) | (124) | (133) | (94) |
| Administrative expense | (2) | (1) | (1) | (1) |
| Other | - | - | (5) | 4 |
| Net change in plan fiduciary net position | (2) | 39 | 16 | 90 |
| Plan fiduciary net position - beginning | 925 | 886 | 870 | 780 |
| Plan fiduciary net position - ending (b) | \$ 923 | \$ 925 | \$ 886 | \$ 870 |
| Net OPEB liability - ending (a) - (b) | \$ 1,222 | \$ 1,168 | \$ 1,095 | \$ 1,061 |
| Plan fiduciary net position as a percentage of the total OPEB liability (b)/(a) | 43.03% | 44.19% | 44.72% | 45.05% |
| Covered payroll (c) | \$ 54,107 | \$ 51,336 | \$ 49,821 | \$ 47,987 |
| Net OPEB liability as a percentage of the covered payroll ((a)-(b))/(c) | 2.26% | 2.28% | 2.20% | 2.21% |

This schedule is intended to show information for 10 years. However, until a full ten-year trend is compiled, HRSD will present information for those years for which information is available.

**SCHEDULE OF EMPLOYER HIC OPEB CONTRIBUTIONS
FOR THE YEARS ENDED JUNE 30, 2012 THROUGH 2021**

| Date | Contractually Required Contribution | Contribution in Relation to Contractually Required Contribution | Contribution Deficiency (Excess) | Employer's Covered Payroll | Contributions as a % of Covered Payroll |
|------|--|--|-------------------------------------|-------------------------------|--|
| 2021 | \$ 114,000 | \$ 114,000 | \$ - | \$ 54,107,000 | 0.21% |
| 2020 | 111,000 | 111,000 | - | 53,085,000 | 0.21% |
| 2019 | 108,000 | 108,000 | - | 51,336,000 | 0.21% |
| 2018 | 95,000 | 95,000 | - | 49,821,000 | 0.19% |
| 2017 | 91,000 | 91,000 | - | 47,987,000 | 0.19% |
| 2016 | 74,000 | 74,000 | - | 46,417,000 | 0.16% |
| 2015 | 74,000 | 74,000 | - | 46,076,000 | 0.16% |
| 2014 | 86,000 | 86,000 | - | 45,283,000 | 0.19% |
| 2013 | 85,000 | 85,000 | - | 44,835,000 | 0.19% |
| 2012 | 100,000 | 100,000 | - | 41,634,000 | 0.24% |

Notes to Required Supplementary Information For the Year Ended June 30, 2021:

Changes of benefit terms -

There have been no actuarially material changes to the VRS benefit provisions since the prior actuarial valuation.

Changes of assumptions -

The actuarial assumptions used in the June 30, 2018, valuation were based on the results of an actuarial experience study for the period from July 1, 2012, through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

| | |
|---|---|
| Mortality Rates (Pre-retirement, post-retirement healthy, and disabled) | Updated to a more current mortality table - RP-2014 projected to 2020 |
| Retirement Rates | Lowered retirement rates at older ages and extended final retirement age from 70 to 75. |
| Withdrawal Rates | Adjusted termination rates to better fit experience at each age and service year |
| Disability Rates | Lowered disability rates |
| Salary Scale | No change |
| Line of Duty Disability | Increased rate from 14 to 15% |
| Discount Rate | Decreased rate from 7.00% to 6.75% |

Information pertaining to OPEB can be found in Notes 2 and 7 to the financial statements.

The image features a white background with several overlapping, semi-transparent geometric shapes. On the left, there are four blue trapezoidal shapes of increasing height from left to right. On the right, there are four green trapezoidal shapes of increasing height from right to left. A solid blue horizontal banner is positioned across the middle of the image, containing the text 'Statistical Section' in a large, bold, white sans-serif font, with '(Unaudited)' in a smaller, white sans-serif font directly below it. The banner overlaps the blue shapes on the left and the green shapes on the right.

Statistical Section

(Unaudited)



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INDEX TO STATISTICAL SECTION

COMPREHENSIVE ANNUAL FINANCIAL REPORT / HAMPTON ROADS SANITATION DISTRICT

This section of HRSD's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures and required supplementary information says about HRSD's overall financial health.

| Contents | Page |
|---|-------------|
| Demographic and Economic Information | 73 |
| This schedule offers demographic and economic indicators to help the reader understand the environment within which HRSD's financial activities take place and to help make comparisons over time and with other governments. | |
| Financial Trends | 74 |
| These schedules contain trend information to help the reader understand how HRSD's financial performance and well-being have changed over time. | |
| Debt Capacity | 77 |
| This schedule presents information to help the reader assess the affordability of HRSD's current levels of outstanding debt and HRSD's ability to issue additional debt in the future. | |
| Revenue Capacity | 78 |
| These schedules contain information to help the reader assess the factors affecting HRSD's ability to generate revenue from rate payers. | |
| Operating Information | 80 |
| These schedules contain information about the HRSD's operations and resources to help the reader understand how the HRSD's financial information relates to the services HRSD provides and the activities it performs. | |

Sources: Unless otherwise noted the information in these schedules is derived from the comprehensive annual financial reports and accounting records for the relevant year.

Unaudited – See accompanying independent auditors' report



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DEMOGRAPHIC AND OTHER MISCELLANEOUS STATISTICS

June 30, 2021

| Date of Incorporation - 1940 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Area in Square Miles (1) | 4,998 | 3,087 | 3,087 | 3,087 | 3,087 | 2,808 | 2,808 | 2,808 | 2,808 | 2,808 |
| Present Service Area in Square Miles (1) | 766 | 758 | 758 | 758 | 758 | 672 | 672 | 672 | 672 | 672 |
| Treatment Plants (Major) | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| Plant Capacity (Millions of Gallons per Day) | | | | | | | | | | |
| Army Base Plant, Norfolk | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Atlantic Plant, Virginia Beach | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 | 54.0 |
| Boat Harbor Plant, Newport News | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Chesapeake-Elizabeth Plant, Virginia Beach | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| James River Plant, Newport News | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Nansemond Plant, Suffolk | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| Virginia Initiative Plant, Norfolk | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Williamsburg Plant, James City County | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| York River Plant, York County | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Total Treatment Plants (Major) Capacity | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 | 248.5 |
| Small Communities Treatment Plants | 7 | 7 | 7 | 7 | 5 | 4 | 4 | 4 | 4 | 5 |
| Small Communities Plant Capacity (Millions of Gallons per Day) | | | | | | | | | | |
| Central Middlesex, Middlesex County | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.030 |
| King William Plant, King William County | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| Lawnes Point, Isle of Wight County (2) | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | - | - | - | - | - |
| Mathews Plant, Mathews County (3) | - | - | - | - | - | - | - | - | - | 0.100 |
| Surry County (4) | 0.065 | 0.065 | 0.065 | 0.065 | - | - | - | - | - | - |
| Town of Surry (4) | 0.060 | 0.060 | 0.060 | 0.060 | - | - | - | - | - | - |
| Urbanna Plant, Middlesex County | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| West Point Plant, King William County | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 | 0.600 |
| Total Small Communities Treatment Plants Capacity | 1.000 | 1.000 | 1.000 | 1.000 | 0.875 | 0.825 | 0.825 | 0.830 | 0.830 | 0.930 |
| Miles of Interceptor Systems | 540 | 541 | 541 | 542 | 540 | 536 | 532 | 531 | 531 | 532 |
| Interceptor Pump Stations | 90 | 88 | 87 | 88 | 89 | 88 | 83 | 83 | 83 | 83 |
| Small Communities Pump Stations | 42 | 42 | 41 | 34 | 38 | 33 | 33 | 33 | 29 | 29 |
| Maintenance Facilities | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Number of Service Connections (in thousands) | 481 | 478 | 476 | 473 | 470 | 467 | 465 | 462 | 460 | 458 |
| Daily Average Treatment in Millions of Gallons | 154 | 141 | 153 | 145 | 153 | 155 | 152 | 154 | 158 | 147 |
| Bond Rating: Moody's | Aa1 | Aa1 | Aa1 | Aa1 | Aa2 | Aa2 | Aa2 | Aa2 | Aa2 | Aa2 |
| Subordinate Long-term | Aa1 | Aa1 | Aa2 | Aa2 | - | - | - | - | - | - |
| Bond Rating: Standard & Poor's | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AAA | AAA | AAA |
| Subordinate Long-term | AA+ | AA+ | AA+ | AA | AA | AA | AA | AA+ | AA+ | AA+ |
| Subordinate Short-term | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ | A-1+ |
| Bond Rating: Fitch | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ | AA+ |
| Subordinate Long-term | AA | AA | AA | AA | AA | AA | AA | AA | AA | AA |
| Subordinate Short-term | F1+ | F1+ | F1+ | F1+ | F1+ | F1+ | F1+ | F1+ | F1+ | F1+ |

(1) HRSD added additional service areas in the counties of Isle of Wight and Surry during the year ended June 30, 2017 and the Eastern Shore of Virginia during the year ended June 30, 2021.

(2) Lawnes Point was acquired during the year ended June 30, 2017.

(3) The Mathews Treatment Plant has been closed. Wastewater from the area is now handled by the York River Treatment Plant.

(4) The Surry Plants were acquired during the year ended June 30, 2018.

Unaudited – See accompanying independent auditors' report

**SCHEDULE OF OPERATING REVENUES, EXPENSES, NET POSITION BY COMPONENT
AND DEBT SERVICE EXPENDITURES LAST TEN FISCAL YEARS**

(in thousands)

| | 2021 | 2020 | 2019 | 2018 | (adjusted) 2017 |
|---|-------------------|-------------------|-------------------|-------------------|--------------------|
| OPERATING REVENUES | | | | | |
| Wastewater treatment charges | \$ 325,817 | \$ 318,585 | \$ 299,323 | \$ 275,539 | \$ 254,961 |
| Miscellaneous | 3,952 | 3,447 | 3,798 | 3,504 | 3,669 |
| TOTAL OPERATING REVENUES | 329,769 | 322,032 | 303,121 | 279,043 | 258,630 |
| OPERATING EXPENSES | | | | | |
| Wastewater treatment | 132,820 | 122,393 | 117,189 | 116,982 | 113,100 |
| General and administrative | 48,691 | 46,949 | 41,121 | 40,480 | 40,287 |
| Depreciation | 53,278 | 51,383 | 53,225 | 52,349 | 49,311 |
| TOTAL OPERATING EXPENSES | 234,789 | 220,725 | 211,535 | 209,811 | 202,698 |
| OPERATING INCOME | 94,980 | 101,307 | 91,586 | 69,232 | 55,932 |
| NON-OPERATING REVENUES (EXPENSES) | | | | | |
| Wastewater facility charges | 7,379 | 6,444 | 6,662 | 6,673 | 7,511 |
| Investment income | 471 | 5,876 | 8,719 | 3,654 | 2,287 |
| Bond interest subsidy | 2,167 | 2,205 | 2,308 | 2,330 | 2,275 |
| Change in fair value of investments | - | - | - | (1,382) | (1,119) |
| Capital distributions to localities | (376) | - | - | (311) | (138) |
| Bond issuance costs | (682) | (1,290) | (53) | (1,061) | (42) |
| Disposal of capital assets | - | (739) | - | - | - |
| Interest expense | (25,339) | (26,179) | (27,964) | (20,226) | (22,630) |
| NET NON-OPERATING EXPENSES | (16,380) | (13,683) | (10,328) | (10,323) | (11,856) |
| INCOME (LOSS) BEFORE CONTRIBUTIONS | 78,600 | 87,624 | 81,258 | 58,909 | 44,076 |
| CAPITAL CONTRIBUTIONS | | | | | |
| State capital grants | - | - | 2,444 | 2,502 | 7,462 |
| Other capital contributions | 2,317 | 578 | 374 | 2,124 | 1,136 |
| CHANGE IN NET POSITION | \$ 80,917 | \$ 88,202 | \$ 84,076 | \$ 63,535 | \$ 52,674 |
| NET POSITION | | | | | |
| Net Investment in capital assets | \$ 776,253 | \$ 646,505 | \$ 494,779 | \$ 512,398 | \$ 428,670 |
| Restricted for debt service | 30,455 | 28,155 | 28,553 | 27,799 | 22,701 |
| Restricted for debt service reserve fund | - | - | - | - | - |
| Unrestricted | 144,116 | 283,449 | 258,373 | 157,432 | 202,907 |
| TOTAL NET POSITION | \$ 950,824 | \$ 958,109 | \$ 781,705 | \$ 697,629 | \$ 654,278 |
| DEBT SERVICE EXPENDITURES | | | | | |
| Senior debt | \$ 26,085 | \$ 28,595 | \$ 33,592 | \$ 36,488 | \$ 35,837 |
| Subordinate debt | \$ 33,128 | \$ 30,416 | \$ 28,313 | \$ 20,633 | \$ 23,603 |
| Senior Debt Service Coverage (GAAP) | 6.03 | 5.80 | 4.84 | 3.59 | 3.10 |
| Subordinate Debt Service Coverage (GAAP) | 4.75 | 5.46 | 5.74 | 6.36 | 5.09 |
| Total Debt Service Coverage (GAAP) | 2.66 | 2.81 | 2.62 | 2.03 | 1.93 |
| Total Debt (Adjusted Cash Basis) | \$ 59,213 | \$ 59,011 | \$ 61,905 | \$ 57,171 | \$ 57,988 |
| Total Debt Service Coverage (Adjusted Cash Basis) | 2.66 | 2.81 | 2.62 | 2.30 | 2.00 |

Notes:

FY2018 - HRSD implemented GASB Statement 75 effective July 1, 2017, which requires recording net OPEB assets or liabilities and related deferred outflows and inflows of resources.

FY2019 - HRSD implemented GASB Statement 89 effective July 1, 2018, establishes accounting requirements for interest cost incurred before the end of a construction period.

(Continued)

**SCHEDULE OF OPERATING REVENUES, EXPENSES, NET POSITION BY COMPONENT
AND DEBT SERVICE EXPENDITURES LAST TEN FISCAL YEARS**

(in thousands)

| | 2016 | 2015 | (adjusted) 2014 | (adjusted) 2013 | 2012 |
|---|-------------------|-------------------|--------------------|--------------------|-------------------|
| OPERATING REVENUES | | | | | |
| Wastewater treatment charges | \$ 234,020 | \$ 221,626 | \$ 211,538 | \$ 199,318 | \$ 194,817 |
| Miscellaneous | 3,861 | 3,935 | 3,643 | 3,297 | 2,996 |
| TOTAL OPERATING REVENUES | 237,881 | 225,561 | 215,181 | 202,615 | 197,813 |
| OPERATING EXPENSES | | | | | |
| Wastewater treatment | 106,575 | 114,137 | 109,149 | 86,973 | 110,783 |
| General and administrative | 40,026 | 38,678 | 33,012 | 31,410 | 31,163 |
| Depreciation | 45,670 | 41,871 | 42,761 | 45,414 | 41,250 |
| TOTAL OPERATING EXPENSES | 192,271 | 194,686 | 184,922 | 163,797 | 183,196 |
| OPERATING INCOME | 45,610 | 30,875 | 30,259 | 38,818 | 14,617 |
| NON-OPERATING REVENUES (EXPENSES) | | | | | |
| Wastewater facility charges | 6,699 | 7,428 | 6,640 | 5,851 | 6,276 |
| Investment income | 1,563 | 1,695 | 1,872 | 1,705 | 1,681 |
| Bond interest subsidy | 2,399 | 2,444 | 2,364 | 2,602 | 2,602 |
| Change in fair value of investments | 750 | (286) | (422) | (714) | (224) |
| Capital distributions to localities | (3,287) | - | - | - | - |
| Bond issuance costs | (1,713) | (768) | - | (658) | (2,206) |
| Disposal of capital assets | - | - | - | (1,649) | - |
| Interest expense | (21,631) | (22,958) | (25,650) | (24,330) | (22,760) |
| NET NON-OPERATING EXPENSES | (15,220) | (12,445) | (15,196) | (17,193) | (14,631) |
| INCOME (LOSS) BEFORE CONTRIBUTIONS | 30,390 | 18,430 | 15,063 | 21,625 | (14) |
| CAPITAL CONTRIBUTIONS | | | | | |
| State capital grants | 14,389 | 16,519 | 13,888 | 10,172 | 14,806 |
| Other capital contributions | - | 3,000 | - | - | - |
| CHANGE IN NET POSITION | \$ 44,779 | \$ 37,949 | \$ 28,951 | \$ 31,797 | \$ 14,792 |
| NET POSITION | | | | | |
| Net Investment in capital assets | \$ 410,287 | \$ 385,597 | \$ 351,191 | \$ 337,342 | \$ 348,407 |
| Restricted for debt service | 23,798 | 22,070 | 24,064 | 23,843 | 15,736 |
| Restricted for debt service reserve fund | - | 44,118 | 45,207 | - | - |
| Unrestricted | 167,519 | 105,040 | 134,485 | 164,811 | 130,056 |
| TOTAL NET POSITION | \$ 601,604 | \$ 556,825 | \$ 554,947 | \$ 525,996 | \$ 494,199 |
| DEBT SERVICE EXPENDITURES | | | | | |
| Senior debt | \$ 38,198 | \$ 43,842 | \$ 47,331 | \$ 37,574 | \$ 33,023 |
| Subordinate debt | \$ 17,068 | \$ 13,091 | \$ 14,112 | \$ 11,243 | \$ 13,694 |
| Senior Debt Service Coverage (GAAP) | 2.56 | 1.90 | 1.76 | 2.48 | 1.94 |
| Subordinate Debt Service Coverage (GAAP) | 5.72 | 6.36 | 5.92 | 8.27 | 4.67 |
| Total Debt Service Coverage (GAAP) | 1.77 | 1.46 | 1.36 | 1.91 | 1.37 |
| Total Debt (Adjusted Cash Basis) | \$ 54,643 | \$ - | \$ - | \$ - | \$ - |
| Total Debt Service Coverage (Adjusted Cash Basis) | 1.85 | - | - | - | - |

Notes:

- FY2013 - HRSD implemented GASB Statement 65 effective July 1, 2012, which requires expensing bond issuance costs in the year incurred.
- HRSD adjusted the financial records to include inventory assets.
- FY2014 - HRSD implemented GASB Statements 68 and 71 effective July 1, 2014, which requires recording net pension assets or liabilities and related deferred outflows and inflows of resources.
- FY2016 - HRSD is showing Debt Service Coverage on both a GAAP basis and an Adjusted Cash basis to account for distributions to localities in accordance with its Amended Subordinate Trust Agreement Section 705(a) enacted in March 2016.

**OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES
FOR OPERATIONS - LAST TEN FISCAL YEARS**

(in thousands)

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|---------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Personal Services | \$ 60,250 | \$ 59,666 | \$ 56,336 | \$ 55,160 | \$ 53,401 | \$ 51,801 | \$ 52,357 | \$ 50,538 | \$ 49,361 | \$ 47,319 |
| Fringe Benefits | 23,879 | 21,417 | 18,235 | 20,275 | 19,106 | 17,974 | 18,249 | 20,170 | 20,039 | 17,800 |
| Repairs and Maintenance (1) | 21,583 | 17,419 | 13,786 | 16,763 | 19,933 | 22,824 | 31,451 | 22,320 | 23,075 | 26,057 |
| Materials and Supplies | 11,413 | 9,364 | 9,314 | 8,865 | 8,310 | 7,843 | 4,343 | 5,764 | 5,700 | 6,143 |
| Transportation | 1,100 | 1,194 | 1,423 | 1,271 | 1,386 | 1,537 | 1,297 | 1,417 | 1,376 | 1,319 |
| Utilities | 12,947 | 12,584 | 12,749 | 11,968 | 11,523 | 11,249 | 10,503 | 11,126 | 12,295 | 12,027 |
| Chemical Purchases | 8,719 | 8,760 | 8,746 | 8,750 | 8,020 | 7,512 | 7,119 | 7,752 | 7,892 | 8,587 |
| Contractual Services | 37,278 | 33,748 | 32,123 | 30,165 | 26,977 | 21,573 | 15,127 | 14,222 | 13,993 | 12,312 |
| Miscellaneous Expense | 2,685 | 2,953 | 2,622 | 2,509 | 2,329 | 1,842 | 2,880 | 1,274 | 1,172 | 1,324 |
| General (2) | 2,033 | 2,237 | 2,976 | 1,736 | 2,402 | 2,446 | 9,489 | 7,578 | 6,487 | 6,852 |
| Subtotal, Expense before Depreciation | 181,887 | 169,342 | 158,310 | 157,462 | 153,387 | 146,601 | 152,815 | 142,161 | 141,390 | 139,740 |
| Depreciation | 53,278 | 51,383 | 53,225 | 52,349 | 49,311 | 45,670 | 41,871 | 42,761 | 45,414 | 41,250 |
| Total Operating Expenses | \$ 235,165 | \$ 220,725 | \$ 211,535 | \$ 209,811 | \$ 202,698 | \$ 192,271 | \$ 194,686 | \$ 184,922 | \$ 186,804 | \$ 180,990 |

(1) Includes Capital Improvement Program items expensed

(2) Includes bad debt expense

Unaudited – See accompanying independent auditors' report

RATIOS OF OUTSTANDING DEBT BY TYPE
June 30, 2021

(in thousands)

| As of June 30, | No. Of Service Connections | Senior Revenue Bonds | Subordinate Revenue Bonds | Total Outstanding Debt | Debt Per Service Connection |
|-------------------|----------------------------------|----------------------------|---------------------------------|------------------------------|-----------------------------------|
| 2021 | 481,000 | \$ 202,486 | \$ 632,520 | \$ 835,006 | \$ 1,736 |
| 2020 | 478,000 | 219,776 | 615,703 | 835,479 | 1,748 |
| 2019 | 476,000 | 326,531 | 565,098 | 891,629 | 1,873 |
| 2018 | 473,000 | 349,313 | 542,129 | 891,442 | 1,885 |
| 2017 | 470,000 | 458,255 | 388,529 | 846,784 | 1,802 |
| 2016 | 467,000 | 476,734 | 402,560 | 879,294 | 1,883 |
| 2015 | 465,000 | 649,202 | 99,195 | 748,397 | 1,609 |
| 2014 | 462,000 | 656,503 | 109,850 | 766,353 | 1,659 |
| 2013 | 460,000 | 670,272 | 120,231 | 790,503 | 1,718 |
| 2012 | 458,000 | 510,951 | 128,335 | 639,286 | 1,396 |

Note: Unamortized bond premiums are included in both senior and subordinate revenue bonds.

**RATE SCHEDULE
WASTEWATER TREATMENT CHARGES
LAST TEN FISCAL YEARS**

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|
| Residential - Metered | | | | | | | | | | |
| Per CCF * (single step) | \$ 5.86 | \$ 5.86 | \$ 5.37 | \$ 4.92 | \$ 4.51 | \$ 4.13 | \$ 3.83 | \$ 3.55 | \$ 3.29 | \$ 3.05 |
| Minimum Charges | | | | | | | | | | |
| Per day | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Residential - Unmetered per 30-day period | | | | | | | | | | |
| Flat rate accounts | 48.64 | 48.64 | 34.91 | 31.98 | 29.32 | 26.32 | 26.32 | 26.32 | 26.32 | 24.40 |
| Non-Residential - Special Category | | | | | | | | | | |
| Biochemical Oxygen Demand (BOD) | | | | | | | | | | |
| Excess over 282 mg/liter | | | | | | | | | | |
| Per mg/liter per CCF | 0.000129 | 0.000129 | 0.000104 | 0.000091 | 0.000206 | 0.000485 | 0.000612 | 0.001558 | 0.002451 | - |
| Per Hundred Pounds | - | - | - | - | - | - | - | - | - | 46.77 |
| Total Suspended Solids (TSS) | | | | | | | | | | |
| Excess over 261 mg/liter | | | | | | | | | | |
| Per mg/liter per CCF | 0.000630 | 0.000630 | 0.000592 | 0.000520 | 0.000454 | 0.000448 | 0.000417 | 0.001244 | 0.00 | - |
| Per Hundred Pounds | - | - | - | - | - | - | - | - | - | 36.70 |
| Total Phosphorus (TP) | | | | | | | | | | |
| Excess over 6 mg/liter | | | | | | | | | | |
| Per mg/liter per CCF | 0.009871 | 0.009871 | 0.009535 | 0.011569 | 0.011642 | 0.004361 | 0.004344 | 0.011714 | 0.01 | - |
| Per Hundred Pounds | - | - | - | - | - | - | - | - | - | 300.57 |
| Total Kjeldahl Nitrogen (TKN) | | | | | | | | | | |
| Excess over 47 mg/liter | | | | | | | | | | |
| Per mg/liter per CCF | 0.003378 | 0.003378 | 0.003595 | 0.003156 | 0.001660 | 0.000917 | 0.000756 | 0.001752 | 0.00 | - |
| Per Hundred Pounds | - | - | - | - | - | - | - | - | - | 74.51 |
| Unusual wastes not covered by this schedule may be assigned a special rate. | | | | | | | | | | |
| Septic Tank Waste | | | | | | | | | | |
| Per gallon | 0.1717 | 0.1717 | 0.1697 | 0.1300 | 0.1366 | 0.1362 | 0.1267 | 0.1258 | 0.1146 | - |
| Per each 500 gallons or part thereof | - | - | - | - | - | - | - | - | - | 48.57 |
| *CCF = 100 Cubic Feet (Approx. 748 gallons) | | | | | | | | | | |
| Note: Rates can be adjusted by the Commission. | | | | | | | | | | |

Unaudited – See accompanying independent auditors' report

**RATE SCHEDULE
WASTEWATER FACILITY CHARGES
LAST TEN FISCAL YEARS**

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|
| Residential | \$ 1,905 | \$ 1,905 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 |
| Commercial/Industrial | | | | | | | | | | |
| Volume based facility charges: | | | | | | | | | | |
| 5/8" Meter | \$ 1,905 | \$ 1,905 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 | \$ 1,895 |
| 3/4" Meter | 4,210 | 4,210 | 4,830 | 4,830 | 4,830 | 4,830 | 4,830 | 4,830 | 4,510 | 2,885 |
| 1" Meter | 7,410 | 7,410 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 7,630 | 5,370 |
| 1 1/2" Meter | 16,645 | 16,645 | 17,260 | 17,260 | 17,260 | 17,260 | 17,260 | 17,260 | 16,130 | 13,035 |
| 2" Meter | 30,505 | 30,505 | 30,510 | 30,510 | 30,510 | 29,420 | 29,420 | 29,420 | 27,490 | 24,420 |
| 3" Meter | 73,810 | 73,810 | 70,800 | 70,800 | 70,800 | 67,350 | 63,600 | 62,270 | 58,180 | 59,140 |
| 4" Meter | 138,445 | 138,445 | 128,660 | 128,660 | 128,660 | 122,400 | 115,580 | 106,060 | 99,110 | 110,860 |
| 6" Meter | 336,960 | 336,960 | 298,610 | 298,610 | 298,610 | 284,070 | 268,250 | 224,650 | 209,920 | 268,675 |
| 8" Meter | 634,710 | 634,710 | 542,680 | 542,680 | 542,680 | 516,260 | 487,510 | 382,670 | 357,580 | 503,350 |
| 10" Meter | 1,038,525 | 1,038,525 | 862,550 | 862,550 | 862,550 | 820,560 | 774,860 | 587,820 | 540,610 | 819,310 |
| 12" Meter | 1,554,120 | 1,554,120 | 1,259,520 | 1,259,520 | 1,259,520 | 1,198,210 | 1,131,490 | - | - | - |
| 14" Meter | 2,186,505 | 2,186,505 | 1,734,700 | 1,734,700 | 1,734,700 | 1,650,250 | 1,558,360 | - | - | - |
| 16" Meter | 2,940,135 | 2,940,135 | 2,289,010 | 2,289,010 | 2,289,010 | 2,177,580 | 2,056,330 | - | - | - |
| Strength based facility charges: (per permitted pound) | | | | | | | | | | |
| Biochemical Oxygen Demand (BOD) Excess over 250 mg/liter | - | - | - | - | - | - | \$ 728 | \$ 987 | \$ 928 | - |
| Total Suspended Solids (TSS) Excess over 250 mg/liter | - | - | - | - | - | - | 424 | 624 | 587 | - |
| Total Phosphorus (TP) Excess over 6 mg/liter | - | - | - | - | - | - | 8,420 | 5,846 | 5,502 | - |
| Total Kjeldahl Nitrogen (TKN) Excess over 35 mg/liter | - | - | - | - | - | - | 3,812 | 1,313 | 1,235 | - |

Notes:

One charge per connection.

HRSD eliminated strength based facility charges effective 7/1/2015.

Unaudited – See accompanying independent auditors' report

TREATMENT PLANT OPERATING SUMMARY
LAST TEN FISCAL YEARS
(Average Quantity per Day)

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | | | | | | | | | | |
| Flow (MGD) | 154.4 | 140.9 | 152.6 | 145.2 | 152.9 | 155.1 | 152.2 | 154.0 | 157.9 | 147.1 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 269.1 | 252.4 | 281.9 | 285.1 | 288.2 | 282.5 | 286.0 | 288.6 | 274.4 | 254.6 |
| TSS | 215.4 | 226.2 | 211.4 | 215.8 | 215.9 | 228.8 | 198.6 | 204.7 | 198.1 | 200.3 |
| TP | 6.5 | 6.6 | 6.6 | 6.8 | 7.0 | 6.9 | 8.6 | 6.8 | 6.6 | 6.7 |
| TKN | 46.7 | 47.0 | 47.6 | 47.2 | 46.4 | 45.7 | 45.8 | 47.9 | 48.9 | 48.3 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 9.2 | 8.0 | 8.2 | 7.5 | 8.9 | 9.8 | 9.9 | 9.6 | 9.3 | 7.5 |
| TSS | 9.0 | 7.1 | 7.4 | 6.7 | 9.4 | 9.3 | 8.9 | 9.1 | 9.3 | 10.5 |
| TP | 0.7 | 0.7 | 0.8 | 0.7 | 0.9 | 0.9 | 1.0 | 1.1 | 1.0 | 1.1 |
| TKN | 8.1 | 8.4 | 8.5 | 7.3 | 7.7 | 8.0 | 9.8 | 11.2 | 12.0 | 10.1 |
| Army Base Plant | | | | | | | | | | |
| Flow (MGD) | 11.1 | 10.4 | 11.1 | 10.0 | 9.5 | 9.6 | 9.9 | 10.7 | 11.8 | 10.2 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 16.6 | 16.0 | 16.6 | 16.3 | 13.2 | 13.3 | 16.4 | 19.0 | 18.5 | 17.4 |
| TSS | 19.0 | 16.9 | 13.9 | 14.0 | 11.7 | 13.3 | 12.5 | 14.2 | 14.4 | 13.7 |
| TP | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 |
| TKN | 3.2 | 3.3 | 3.3 | 3.1 | 2.7 | 2.7 | 2.9 | 3.5 | 3.7 | 3.5 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.6 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.8 | 0.8 | 0.8 | 0.9 |
| TSS | 0.9 | 0.3 | 0.4 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 0.9 | 0.8 |
| TP | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| TKN | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 2.1 | 2.6 | 2.8 | 2.5 |
| Atlantic Plant | | | | | | | | | | |
| Flow (MGD) | 27.4 | 24.5 | 28.1 | 26.1 | 28.2 | 27.2 | 30.9 | 25.7 | 26.7 | 29.0 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 58.5 | 49.3 | 58.2 | 56.7 | 53.2 | 55.6 | 66.6 | 52.7 | 51.3 | 56.0 |
| TSS | 39.6 | 35.5 | 39.3 | 36.6 | 38.7 | 38.5 | 42.9 | 37.3 | 36.4 | 43.8 |
| TP | 1.4 | 1.3 | 1.4 | 1.3 | 1.4 | 1.4 | 1.5 | 1.3 | 1.3 | 1.5 |
| TKN | 11.4 | 10.7 | 11.9 | 11.2 | 11.0 | 10.9 | 11.4 | 10.4 | 10.5 | 11.7 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 2.9 | 3.0 | 2.5 | 2.4 | 2.3 | 2.7 | 3.0 | 2.2 | 2.6 | 2.0 |
| TSS | 2.5 | 1.5 | 1.6 | 1.6 | 1.9 | 1.9 | 2.4 | 2.0 | 1.9 | 1.8 |
| Boat Harbor Plant | | | | | | | | | | |
| Flow (MGD) | 15.2 | 13.6 | 15.8 | 14.2 | 13.9 | 15.6 | 14.4 | 14.9 | 15.5 | 13.6 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 20.0 | 18.4 | 20.6 | 19.2 | 17.4 | 18.3 | 20.0 | 19.2 | 19.3 | 19.9 |
| TSS | 16.1 | 16.0 | 18.0 | 16.6 | 15.7 | 18.1 | 16.3 | 16.7 | 16.0 | 16.9 |
| TP | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.5 |
| TKN | 3.8 | 4.0 | 4.2 | 3.9 | 3.8 | 3.8 | 3.6 | 3.7 | 3.7 | 3.7 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 1.0 | 0.6 | 0.9 | 0.6 | 0.6 | 1.0 | 0.7 | 0.7 | 0.7 | 0.6 |
| TSS | 1.0 | 0.8 | 1.0 | 0.7 | 0.7 | 0.9 | 0.6 | 0.8 | 0.8 | 0.9 |
| TP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| TKN | 2.1 | 2.0 | 2.5 | 1.3 | 1.2 | 1.8 | 2.2 | 2.4 | 2.9 | 3.0 |

Unaudited – See accompanying independent auditors' report

TREATMENT PLANT OPERATING SUMMARY
LAST TEN FISCAL YEARS
(Average Quantity per Day)

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|
| Chesapeake-Elizabeth Plant | | | | | | | | | | |
| Flow (MGD) | 16.8 | 17.4 | 17.6 | 18.7 | 18.0 | 16.3 | 19.1 | 18.4 | 15.2 | 16.3 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 30.5 | 38.1 | 37.2 | 35.4 | 35.2 | 30.2 | 38.7 | 32.1 | 24.8 | 30.1 |
| TSS | 23.0 | 24.6 | 26.8 | 26.6 | 26.1 | 22.9 | 26.6 | 25.1 | 21.0 | 22.6 |
| TP | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 2.7 | 0.8 | 0.8 | 0.7 | 0.7 |
| TKN | 6.1 | 6.9 | 6.8 | 6.6 | 6.4 | 5.1 | 6.7 | 6.4 | 5.4 | 6.1 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 2.5 | 2.2 | 2.0 | 2.8 | 2.3 | 2.0 | 2.5 | 2.2 | 1.5 | 1.8 |
| TSS | 1.9 | 2.0 | 1.9 | 3.2 | 2.3 | 1.8 | 1.9 | 2.1 | 1.8 | 1.9 |
| TP | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 |
| TKN | 3.9 | 4.4 | 4.1 | 4.5 | 4.1 | 3.6 | 4.5 | 4.2 | 3.2 | 3.9 |
| James River Plant | | | | | | | | | | |
| Flow (MGD) | 14.7 | 12.4 | 13.9 | 13.0 | 12.3 | 13.2 | 12.7 | 13.6 | 14.3 | 12.9 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 23.1 | 24.0 | 25.8 | 26.8 | 25.5 | 24.4 | 25.7 | 27.5 | 25.5 | 25.3 |
| TSS | 18.1 | 17.4 | 18.7 | 19.3 | 17.4 | 17.8 | 18.0 | 19.4 | 19.2 | 19.0 |
| TP | 0.6 | 0.5 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 |
| TKN | 5.0 | 4.7 | 4.7 | 4.8 | 4.3 | 4.2 | 4.0 | 4.2 | 4.4 | 4.4 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.5 | 0.5 | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 | 0.5 | 0.7 | 0.7 |
| TSS | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.6 | 0.8 | 0.8 |
| TP | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| TKN | 0.5 | 0.5 | 0.3 | 0.4 | 0.5 | 0.4 | 0.4 | 0.2 | 0.6 | 0.5 |
| Nansemond Plant | | | | | | | | | | |
| Flow (MGD) | 17.4 | 15.9 | 16.9 | 17.5 | 18.8 | 18.5 | 16.6 | 16.9 | 17.1 | 16.2 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 33.8 | 32.5 | 33.0 | 31.9 | 40.7 | 35.8 | 28.5 | 29.0 | 27.0 | 23.7 |
| TSS | 36.0 | 46.5 | 37.2 | 33.4 | 40.3 | 38.4 | 21.9 | 23.1 | 22.9 | 22.6 |
| TP | 0.9 | 1.0 | 1.0 | 1.2 | 1.5 | 1.5 | 1.1 | 1.1 | 1.1 | 1.0 |
| TKN | 6.8 | 6.9 | 6.7 | 7.1 | 7.4 | 7.0 | 5.6 | 5.8 | 5.9 | 6.0 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.7 | 0.8 | 0.9 | 0.6 | 0.6 |
| TSS | 0.8 | 0.6 | 0.8 | 0.7 | 0.8 | 0.9 | 0.9 | 1.1 | 0.8 | 0.9 |
| TP | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| TKN | 0.4 | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.5 | 0.3 | 0.3 |
| Virginia Initiative Plant | | | | | | | | | | |
| Flow (MGD) | 29.1 | 26.2 | 27.6 | 26.7 | 30.9 | 31.7 | 30.5 | 30.7 | 31.9 | 29.8 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 39.4 | 37.0 | 40.4 | 47.5 | 50.1 | 50.4 | 47.5 | 45.8 | 45.8 | 42.3 |
| TSS | 31.5 | 35.4 | 23.2 | 30.0 | 31.3 | 32.0 | 30.2 | 30.6 | 31.6 | 32.3 |
| TP | 1.0 | 1.1 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 |
| TKN | 6.7 | 7.1 | 6.8 | 7.0 | 7.3 | 7.4 | 7.1 | 7.4 | 7.5 | 7.6 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.6 | 0.5 | 0.6 | 0.8 | 1.2 | 1.7 | 1.9 | 1.4 | 0.9 | 0.8 |
| TSS | 0.7 | 1.0 | 0.7 | 0.7 | 1.4 | 1.9 | 1.6 | 1.7 | 1.4 | 1.5 |
| TP | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 |
| TKN | 0.4 | 0.3 | 0.4 | 0.6 | 0.4 | 0.7 | 0.8 | 0.6 | 0.5 | 0.5 |

Unaudited – See accompanying independent auditors' report

**TREATMENT PLANT OPERATING SUMMARY
LAST TEN FISCAL YEARS
(Average Quantity per Day)**

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|
| Williamsburg Plant | | | | | | | | | | |
| Flow (MGD) | 9.0 | 8.6 | 7.7 | 8.0 | 8.6 | 8.4 | 9.2 | 8.9 | 9.1 | 8.6 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 32.5 | 33.4 | 32.6 | 36.1 | 33.2 | 34.7 | 40.4 | 37.7 | 33.5 | 37.5 |
| TSS | 18.0 | 21.2 | 24.1 | 19.1 | 27.9 | 16.2 | 19.9 | 16.8 | 16.7 | 19.0 |
| TP | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.5 | 0.6 |
| TKN | 3.7 | 3.6 | 3.5 | 3.3 | 3.6 | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.4 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| TSS | 0.6 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.6 | 0.3 |
| TP | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| TKN | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 |
| York River Plant | | | | | | | | | | |
| Flow (MGD) | 13.9 | 13.2 | 12.6 | 12.6 | 12.7 | 12.6 | 13.2 | 13.3 | 11.2 | 10.8 |
| Influent (1,000 lbs.) | | | | | | | | | | |
| BOD | 14.6 | 15.8 | 16.8 | 16.7 | 16.3 | 18.2 | 17.9 | 17.2 | 13.3 | 15.5 |
| TSS | 14.1 | 15.4 | 15.0 | 15.1 | 16.7 | 16.9 | 16.4 | 15.7 | 14.1 | 14.3 |
| TP | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| TKN | 3.8 | 3.7 | 3.6 | 3.6 | 3.5 | 3.5 | 3.6 | 3.5 | 3.2 | 3.6 |
| Effluent (1,000 lbs.) | | | | | | | | | | |
| BOD | 0.2 | 0.5 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.2 | 0.5 |
| TSS | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.3 |
| TP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| TKN | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.1 | 0.1 |

Unaudited – See accompanying independent auditors' report

**TEN LARGEST CUSTOMERS
CURRENT YEAR AND NINE YEARS AGO**

(in thousands)

| Customer | Type | 2021 | | 2012 | |
|---|----------------------|------------------|--------------|------------------|--------------|
| | | Amount | Percent | Amount | Percent |
| U.S. Navy - Norfolk Naval Base | Military Facility | \$ 17,292 | 5.3% | \$ 4,823 | 2.5% |
| Smithfield Foods | Meat Processor | 4,253 | 1.3% | 3,389 | 1.8% |
| Anheuser - Busch, Inc. | Brewery | 3,533 | 1.1% | 5,499 | 2.8% |
| Huntington Ingalls Industries (formerly Northrop Grumman Newport News/ Newport News Shipbuilding and Drydock) | Shipbuilding | 2,528 | 0.8% | - | - |
| Norfolk Redevelopment & Housing Authority | Housing Authority | 2,152 | 0.7% | 1,432 | 0.7% |
| Norfolk Naval Shipyard | Military Ship Repair | 2,148 | 0.7% | - | - |
| U.S. Air Force - Langley Air Force Base | Military Facility | 1,995 | 0.6% | 975 | 0.5% |
| U.S. Navy - Little Creek Amphibious Base | Military Facility | 1,934 | 0.6% | 1,068 | 0.6% |
| Oceana Naval Air Station / Dam Neck | Military Facility | 1,846 | 0.6% | - | - |
| U.S. Army - Fort Eustis | Military Facility | 1,752 | 0.5% | 1,004 | 0.5% |
| City of Norfolk | Municipality | - | - | 1,899 | 1.0% |
| City of Virginia Beach | Municipality | - | - | 873 | 0.5% |
| Sentara | Healthcare | - | - | 620 | 0.3% |
| Total | | \$ 39,433 | 12.2% | \$ 21,582 | 11.2% |

Unaudited – See accompanying independent auditors' report

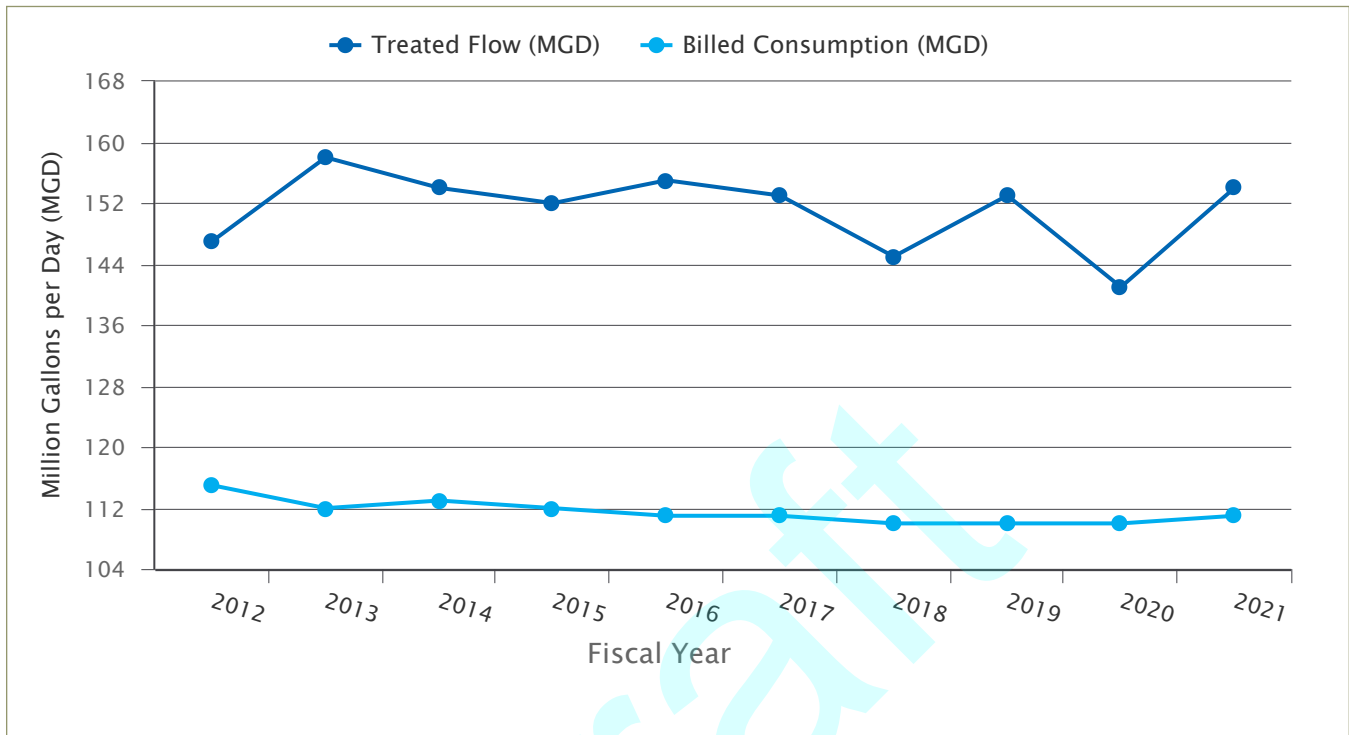
**WASTEWATER TREATMENT CHARGES
TEN LARGEST EMPLOYERS
CURRENT YEAR AND NINE YEARS AGO**

| <u>Employer</u> | <u>Type</u> | 2021 | | | 2012 | | |
|--|-------------------------|---------------------|------|--------------------------------|---------------------|------|--------------------------------|
| | | Number of Employees | Rank | Percent of Regional Employment | Number of Employees | Rank | Percent of Regional Employment |
| Naval Station Norfolk | Military Facility | 77,000 | 1 | 8.1% | 67,000 | 1 | 7.1% |
| Joint Expeditionary Base Little Creek - Fort Story | Military Facility | 25,000 | 2 | 2.6% | 22,000 | 2 | 2.3% |
| Huntington Ingalls Industries | Shipbuilding and Repair | 24,000 | 3 | 2.5% | 19,000 | 3 | 2.0% |
| Sentara Healthcare | Health Care Network | 22,000 | 4 | 2.3% | 17,000 | 5 | 1.8% |
| Oceana Naval Air Station | Military Facility | 19,000 | 5 | 2.0% | 19,000 | 3 | 2.0% |
| Joint Base Langley-Eustis | Military Facility | 19,000 | 5 | 2.0% | 13,000 | 6 | 1.4% |
| Norfolk Naval Shipyard | Military Ship Repair | 12,000 | 7 | 1.3% | 11,000 | 7 | 1.2% |
| Naval Support Activity/ Naval Medical Center | Military Facility | 11,000 | 8 | 1.2% | 9,000 | 9 | 1.0% |
| Virginia Beach Public Schools | Public Schools | 11,000 | 8 | 1.2% | 10,000 | 8 | 1.1% |
| Riverside Health System | Health Care Network | 8,000 | 10 | 0.8% | 6,500 | 10 | 0.7% |
| Total | | 228,000 | | 24.0% | 193,500 | | 20.6% |

Sources:

Hampton Roads Economic Development Alliance
 Hampton Roads Statistical Digest
 Hampton Roads Business
 Confirmation with employers

COMPARISON OF TREATED FLOW TO BILLED FLOW LAST TEN FISCAL YEARS



| Year ended June 30, | Treated Flow (MGD) | Billed Consumption (MGD) |
|----------------------------|---------------------------|---------------------------------|
| 2012 | 147 | 115 |
| 2013 | 158 | 112 |
| 2014 | 154 | 113 |
| 2015 | 152 | 112 |
| 2016 | 155 | 111 |
| 2017 | 153 | 111 |
| 2018 | 145 | 110 |
| 2019 | 153 | 110 |
| 2020 | 141 | 110 |
| 2021 | 154 | 111 |

Unaudited – See accompanying independent auditors' report

**NUMBER OF EMPLOYEES BY IDENTIFIABLE ACTIVITY
LAST TEN FISCAL YEARS**

| | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| General Management | | | | | | | | | | |
| General Manager | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 4 |
| Support Staff | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total General Management | 2 | 2 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 5 |
| Communications | | | | | | | | | | |
| Communications | 1 | 1 | 1 | 1 | - | - | - | - | - | - |
| Support Staff | 2 | 2 | 2 | 1 | - | - | - | - | - | - |
| Total Communications | 3 | 3 | 3 | 2 | - | - | - | - | - | - |
| Talent Management | | | | | | | | | | |
| Human Resources | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 |
| Safety | 4 | 3 | 3 | 3 | 3 | 3 | - | - | - | - |
| Training | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Support Staff | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 |
| Total Talent Management | 17 | 16 | 16 | 15 | 15 | 14 | 10 | 10 | 10 | 10 |
| Finance | | | | | | | | | | |
| Accounting & Finance | 15 | 12 | 12 | 11 | 10 | 10 | 10 | 10 | 10 | 10 |
| Customer Care Center | 71 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 68 | 69 |
| Procurement | 11 | 10 | 10 | 10 | 10 | 10 | 9 | 9 | 9 | 7 |
| Support Staff | 5 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| Total Finance | 102 | 102 | 102 | 101 | 100 | 99 | 91 | 91 | 90 | 89 |
| Information Technology | | | | | | | | | | |
| Information Technology | 48 | 48 | 43 | 48 | 47 | 45 | 39 | 35 | 35 | 33 |
| Support Staff | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 |
| Total Information Technology | 50 | 50 | 45 | 50 | 48 | 46 | 40 | 36 | 36 | 35 |
| Operations | | | | | | | | | | |
| Army Base Treatment Plant | 32 | 34 | 34 | 34 | 34 | 31 | 32 | 32 | 32 | 32 |
| Atlantic Base Treatment Plant | 37 | 35 | 35 | 35 | 35 | 32 | 33 | 33 | 33 | 32 |
| Boat Harbor Treatment Plant | 32 | 35 | 35 | 35 | 35 | 32 | 33 | 33 | 33 | 33 |
| Chesapeake-Elizabeth Treatment Plant | 31 | 32 | 32 | 32 | 32 | 31 | 32 | 32 | 32 | 32 |
| Interceptor System Maintenance | 121 | 119 | 119 | 118 | 117 | 115 | 120 | 120 | 120 | 121 |
| James River Treatment Plant | 24 | 22 | 22 | 22 | 22 | 20 | 21 | 21 | 21 | 21 |
| Maintenance Shops | 85 | 74 | 73 | 71 | 70 | 83 | 86 | 86 | 86 | 86 |
| Nansemond Treatment Plant | 35 | 32 | 32 | 32 | 32 | 30 | 31 | 31 | 31 | 30 |
| Virginia Initiative Plant | 32 | 34 | 34 | 33 | 33 | 30 | 31 | 31 | 31 | 31 |
| Williamsburg Treatment Plant | 28 | 29 | 29 | 29 | 29 | 28 | 29 | 29 | 29 | 31 |
| York River Treatment Plant | 23 | 24 | 24 | 24 | 24 | 22 | 23 | 23 | 23 | 23 |
| Small Communities Division | 23 | 23 | 23 | 23 | 23 | 21 | 17 | 17 | 17 | 17 |
| Support Staff | 23 | 23 | 23 | 23 | 23 | 24 | 25 | 25 | 25 | 24 |
| Total - Operations | 526 | 516 | 515 | 511 | 509 | 499 | 513 | 513 | 513 | 513 |
| Engineering | | | | | | | | | | |
| Design and Construction | 31 | 31 | 30 | 26 | 25 | 25 | 21 | 19 | 19 | 17 |
| Support Staff | 13 | 13 | 13 | 13 | 14 | 14 | 14 | 14 | 14 | 14 |
| Total Engineering | 44 | 44 | 43 | 39 | 39 | 39 | 35 | 33 | 33 | 31 |
| Water Quality | | | | | | | | | | |
| Pretreatment & Pollution Prevention | 27 | 28 | 27 | 27 | 26 | 26 | 25 | 24 | 24 | 24 |
| Technical Services | 36 | 34 | 31 | 31 | 29 | 28 | 25 | 23 | 21 | 21 |
| Laboratory | 50 | 47 | 47 | 46 | 45 | 42 | 40 | 38 | 38 | 38 |
| Support Staff | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 3 |
| Total Water Quality | 118 | 114 | 110 | 109 | 106 | 102 | 96 | 91 | 89 | 86 |
| Total Employees | 862 | 847 | 836 | 830 | 821 | 803 | 789 | 778 | 775 | 769 |

Unaudited – See accompanying independent auditors' report

The image features a white background with several overlapping, semi-transparent geometric shapes. On the left, there are four blue trapezoidal shapes of increasing height from left to right. On the right, there are four green trapezoidal shapes of increasing height from right to left. A solid blue horizontal banner is positioned across the middle of the image, containing white text. The text is arranged in two lines: the first line is 'Other Supplemental' and the second line is 'Section (Unaudited)'.

**Other Supplemental
Section (Unaudited)**



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SUMMARY OF PRIMARY BONDED DEBT SERVICE
June 30, 2021

(in thousands)

| As of June 30, | Senior Bonds | | | Subordinate | Total Debt |
|----------------|-------------------|------------------|-------------------|-----------------------|---------------------|
| | Principal | Interest | Debt Service | Bonds Debt Service | |
| 2022 | \$ 14,771 | \$ 9,778 | \$ 24,549 | \$ 86,498 | \$ 111,047 |
| 2023 | 18,727 | 9,005 | 27,732 | 36,822 | 64,554 |
| 2024 | 19,539 | 8,110 | 27,649 | 38,723 | 66,372 |
| 2025 | 20,408 | 7,156 | 27,564 | 38,719 | 66,283 |
| 2026 | 20,649 | 6,159 | 26,808 | 38,593 | 65,401 |
| 2027 | 7,842 | 5,476 | 13,318 | 47,677 | 60,995 |
| 2028 | 8,107 | 5,107 | 13,214 | 44,238 | 57,452 |
| 2029 | 8,383 | 4,725 | 13,108 | 44,181 | 57,289 |
| 2030 | 8,667 | 4,329 | 12,996 | 44,007 | 57,003 |
| 2031 | 8,501 | 3,918 | 12,419 | 45,003 | 57,422 |
| 2032 | 5,995 | 3,523 | 9,518 | 42,925 | 52,443 |
| 2033 | 6,225 | 3,165 | 9,390 | 41,035 | 50,425 |
| 2034 | 6,465 | 2,793 | 9,258 | 38,924 | 48,182 |
| 2035 | 6,715 | 2,406 | 9,121 | 38,268 | 47,389 |
| 2036 | 6,975 | 2,005 | 8,980 | 32,467 | 41,447 |
| 2037 | 7,245 | 1,588 | 8,833 | 32,591 | 41,424 |
| 2038 | 7,525 | 1,155 | 8,680 | 32,291 | 40,971 |
| 2039 | 7,815 | 705 | 8,520 | 17,271 | 25,791 |
| 2040 | 8,116 | 236 | 8,352 | 9,262 | 17,614 |
| 2041 | - | - | - | 9,114 | 9,114 |
| 2042 | - | - | - | 8,956 | 8,956 |
| 2043 | - | - | - | 8,899 | 8,899 |
| 2044 | - | - | - | 8,863 | 8,863 |
| 2045 | - | - | - | 3,568 | 3,568 |
| 2046 | - | - | - | 3,103 | 3,103 |
| Total | \$ 198,670 | \$ 81,339 | \$ 280,009 | \$ 791,998 | \$ 1,072,007 |

Unaudited – See accompanying independent auditors' report

BUDGETARY COMPARISON SCHEDULE
June 30, 2021

(in thousands)

| | <u>Budget</u> | | Actual | Variance under Amended Budget | Percent Variance |
|--|-------------------|-------------------|-------------------|--|---------------------|
| | Adopted | Amended | | | |
| OPERATING BUDGET EXPENSES | | | | | |
| General Management | \$ 466 | \$ 479 | \$ 462 | \$ 17 | 3.5% |
| Communications | 473 | 495 | 403 | 92 | 18.6% |
| Finance | 15,061 | 15,363 | 13,885 | 1,478 | 9.6% |
| Information Technology | 16,719 | 17,968 | 14,891 | 3,077 | 17.1% |
| Talent Management | 2,575 | 2,615 | 2,367 | 248 | 9.5% |
| Operations | 110,546 | 120,865 | 104,832 | 16,033 | 13.3% |
| Engineering | 6,522 | 7,652 | 6,791 | 861 | 11.3% |
| Water Quality | 15,677 | 16,211 | 14,676 | 1,535 | 9.5% |
| General | 7,041 | 8,760 | 8,289 | 471 | 5.4% |
| Debt Service | 62,104 | 61,156 | 59,895 | 1,261 | 2.1% |
| TOTAL | 237,184 | 251,564 | 226,491 | \$ 25,073 | 10.0% |
| Transfer to CIP | 94,953 | 109,339 | | | |
| Transfer to Risk Management | 260 | 260 | | | |
| | <u>\$ 332,397</u> | <u>\$ 361,163</u> | | | |
| Add: | | | | | |
| Unbudgeted Depreciation and Amortization | | | 53,278 | | |
| Unbudgeted Bad Debt Expense | | | 2,033 | | |
| Capital Improvement Program Items Expensed | | | 14,825 | | |
| Less: | | | | | |
| Capitalized Assets | | | 1,567 | | |
| Debt Service | | | 59,895 | | |
| Capital Distributions to Localities | | | 376 | | |
| TOTAL OPERATING EXPENSES | | | <u>\$ 234,789</u> | | |

NOTES TO BUDGETARY COMPARISON SCHEDULE JUNE 30, 2021

BUDGETARY HIGHLIGHTS

HRSD's Commission adopts an Annual Operating Budget that contains the day-to-day operating expenses of the District. The Operating Budget as adopted for FY 2021 was \$229,203,660 and contains personnel costs, fringe benefits, material and supplies, electricity, chemicals, insurance, contractual services, debt service and other miscellaneous expenses. There were several modifications to the Operating Budget during the year to reflect changes in spending patterns. All adjustments to the Annual Budget were from encumbrances carried forward or from transfers within or among departments.

NOTE 1 – BUDGETARY ACCOUNTING AND CONTROL

Budget Preparation

HRSD prepares its Annual Budget under the provisions of its enabling legislation, used to establish rates, fees and other charges, and of Section 3.12 of the Master Trust Indenture, dated December 1, 1993, and the Trust Agreement, dated March 1, 2008. In accordance with those provisions, the following process is used to adopt the Annual Budget.

The process begins in late December with the issuance of the Annual Budget Instructions by the General Manager. Each department completes its Operating and Improvement Budgets by March 1 for the General Manager's review.

The HRSD Commission appoints a Finance Committee consisting of two Commissioners. The two Commissioners meet in early April to review the Budgets, which are presented by staff at the April Commission meeting. HRSD's Commission reviews these budgets at that meeting.

The final Annual Budget, which incorporates the Operating and Capital Budgets, is presented at the May Commission meeting for adoption. The Commission simultaneously adopts the budget and any resulting wastewater rate schedule. All rate adjustments must be publicly advertised four consecutive weeks before they can take effect.

The HRSD Commission approves any budget amendments during the ensuing year.

The 2008 Trust Agreement requires Debt Service Coverage of 1.20 times for senior and 1.00 times for total debt based on maximum annual debt service. The 2008 Subordinate Trust Agreement was amended in 2016 to account for Consent Decree expenses related to Locality wet weather improvements that HRSD will not own and requires total debt service coverage to be 1.2 times on an adjusted cash basis. The HRSD Commission has a policy of providing senior revenue and total revenue bonded debt service coverage ratios of not less than 1.5 and 1.4 times annual debt service on an adjusted cash basis, respectively.

Budget Accounting

The Annual Budget is prepared on a basis of accounting consistent with accounting principles generally accepted in the United States of America. No provision is provided, however, for non-cash items such as depreciation and bad debt expense. The FY 2021 Annual Budget consists of two parts: an operating budget that covers day-to-day operations and a capital budget that identifies all major capital project requirements over the next ten years. All operating budget amounts lapse at year-end. The Commission annually adopts only the first year of the capital budget. HRSD's Commission separately approves all contracts that are awarded under the capital budget.



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**SCHEDULE OF REVENUES, EXPENDITURES AND
DEBT SERVICE FOR OPERATIONS - ACTUAL TO BUDGET
FOR THE FISCAL YEAR ENDED JUNE 30, 2021**

(in thousands)

| | Actual | Amended Budget | Variance Favorable/ (Unfavorable) | Budget Variance Percentage |
|---|-------------------|-------------------|---|----------------------------------|
| OPERATING REVENUES | | | | |
| Wastewater Treatment Charges | \$ 325,817 | \$ 320,035 | \$ 5,782 | 2% |
| Miscellaneous | 3,952 | 1,740 | 2,212 | 127% |
| TOTAL OPERATING REVENUES | 329,769 | 321,775 | 7,994 | 1% |
| CURRENT EXPENDITURES | | | | |
| General Management | 462 | 479 | 17 | 4% |
| Communications | 403 | 495 | 92 | 19% |
| Finance | 13,885 | 15,363 | 1,478 | 10% |
| Information Technology | 14,461 | 17,968 | 3,507 | 20% |
| Talent Management | 2,367 | 2,615 | 248 | 9% |
| Operations | 103,695 | 120,865 | 17,170 | 14% |
| Engineering | 6,791 | 7,652 | 861 | 11% |
| Water Quality | 14,676 | 16,211 | 1,535 | 9% |
| General | 8,289 | 8,760 | 471 | 5% |
| TOTAL CURENT EXPENDITURES | 165,029 | 190,408 | 25,379 | 13% |
| EXCESS OF OPERATING REVENUES OVER EXPENDITURES | 164,740 | 131,367 | 33,373 | 25% |
| NON-OPERATING REVENUES | | | | |
| Wastewater Facility Charge | 7,379 | 6,160 | 1,219 | 20% |
| Interest Income | 471 | 1,510 | (1,039) | (69%) |
| Bond Interest Subsidy | 2,167 | 2,292 | (125) | (5%) |
| TOTAL NON-OPERATING REVENUES | 10,017 | 9,962 | 55 | 1% |
| INCOME BEFORE CAPITAL CONTRIBUTIONS | 174,757 | 141,329 | 33,428 | 24% |
| CAPITAL CONTRIBUTIONS | | | | |
| Other Capital Contributions | 2,317 | - | 2,317 | 100% |
| AMOUNT AVAILABLE FOR DEBT | 177,074 | 141,329 | 35,745 | 25% |
| DEBT EXPENDITURES | | | | |
| Principal & Interest | 59,213 | 60,397 | 1,184 | 2% |
| Cost of Issuance | 682 | 759 | 77 | 10% |
| TOTAL DEBT EXPENDITURES | 59,895 | 61,156 | 1,261 | 2% |
| AMOUNT AVAILABLE TO REINVEST | \$ 117,179 | \$ 80,173 | \$ 37,006 | 46% |

Unaudited – See accompanying independent auditors' report

**OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES
FOR OPERATIONS - ACTUAL TO BUDGET
FOR THE FISCAL YEAR ENDED JUNE 30, 2021**

(in thousands)

| | General Management | Communications | Finance | Information Technology | Talent Management | Operations |
|-----------------------|-----------------------|----------------|-----------|---------------------------|----------------------|------------|
| Personal Services | \$ 361 | \$ 258 | \$ 5,651 | \$ 4,696 | \$ 1,540 | \$ 34,864 |
| Fringe Benefits | 81 | 89 | 2,341 | 1,548 | 588 | 15,129 |
| Materials & Supplies | 2 | 23 | 101 | 801 | 62 | 8,567 |
| Transportation | 6 | 7 | 7 | 8 | 19 | 1,027 |
| Utilities | - | - | 266 | 1,235 | - | 10,981 |
| Chemical Purchases | - | - | - | - | - | 8,719 |
| Contractual Services | 10 | 18 | 5,446 | 5,459 | 18 | 17,514 |
| Major Repairs | - | - | - | 465 | - | 6,297 |
| Capital Assets | - | - | - | 430 | - | 1,137 |
| Miscellaneous Expense | 2 | 8 | 73 | 249 | 140 | 597 |
| | \$ 462 | \$ 403 | \$ 13,885 | \$ 14,891 | \$ 2,367 | \$ 104,832 |

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**OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES
FOR OPERATIONS - ACTUAL TO BUDGET
FOR THE FISCAL YEAR ENDED JUNE 30, 2021**

(in thousands)

| | Engineering | Water Quality | General | Total | Percent of Total | FY2021 Amended Budget | Variance Favorable/ (Unfavorable) |
|--|-----------------|------------------|-----------------|-------------------|---------------------|-----------------------------|---|
| Personal Services | \$ 4,122 | \$ 8,009 | \$ 749 | \$ 60,250 | 27% | \$ 60,960 | \$ 710 |
| Fringe Benefits | 1,478 | 3,302 | (677) | 23,879 | 11% | 25,948 | 2,069 |
| Materials & Supplies | 54 | 1,828 | (25) | 11,413 | 5% | 9,662 | (1,751) |
| Transportation | 14 | 12 | - | 1,100 | 0% | 1,581 | 481 |
| Utilities | - | 1 | 464 | 12,947 | 6% | 13,020 | 73 |
| Chemical Purchases | - | - | - | 8,719 | 4% | 10,500 | 1,781 |
| Contractual Services | 1,061 | 1,149 | 6,603 | 37,278 | 16% | 51,831 | 14,553 |
| Major Repairs | - | (4) | - | 6,758 | 3% | 13,076 | 6,318 |
| Capital Assets | - | - | - | 1,567 | 1% | 867 | (700) |
| Miscellaneous Expense | 62 | 379 | 1,175 | 2,685 | 1% | 2,963 | 278 |
| | <u>\$ 6,791</u> | <u>\$ 14,676</u> | <u>\$ 8,289</u> | <u>\$ 166,596</u> | <u>74%</u> | <u>\$ 190,408</u> | <u>\$ 23,812</u> |
| Debt Service | | | | 59,213 | 26% | 60,397 | 1,184 |
| Cost of Issuance | | | | 682 | 0% | 759 | 77 |
| Total Debt Expenditures | | | | <u>\$ 59,895</u> | <u>26%</u> | <u>\$ 61,156</u> | <u>\$ 1,261</u> |
| Total Department and Debt Expenditures | | | | <u>\$ 226,491</u> | <u>100%</u> | <u>\$ 251,564</u> | <u>\$ 25,073</u> |

Unaudited – See accompanying independent auditors' report

**DEPARTMENT SUMMARY OF EXPENDITURES
ACTUAL TO BUDGET
FOR THE FISCAL YEAR ENDED JUNE 30, 2021**

(in thousands)

| | Actual | Amended Budget | Variance Favorable/ (Unfavorable) |
|-------------------------------|---------------|-------------------|---|
| General Management | | | |
| Personal Services | \$ 361 | \$ 345 | \$ (16) |
| Fringe Benefits | 81 | 84 | 3 |
| Materials & Supplies | 2 | 10 | 8 |
| Transportation | 6 | 7 | 1 |
| Contractual Services | 10 | 12 | 2 |
| Miscellaneous Expense | 2 | 21 | 19 |
| Subtotal | 462 | 479 | 17 |
| Communications | | | |
| Personal Services | \$ 258 | \$ 304 | \$ 46 |
| Fringe Benefits | 89 | 96 | 7 |
| Materials & Supplies | 23 | 50 | 27 |
| Transportation | 7 | 9 | 2 |
| Contractual Services | 18 | 20 | 2 |
| Miscellaneous Expense | 8 | 16 | 8 |
| Subtotal | 403 | 495 | 92 |
| Finance | | | |
| Personal Services | \$ 5,651 | \$ 6,161 | \$ 510 |
| Fringe Benefits | 2,341 | 2,652 | 311 |
| Materials & Supplies | 101 | 72 | (29) |
| Transportation | 7 | 8 | 1 |
| Utilities | 266 | 299 | 33 |
| Contractual Services | 5,446 | 5,915 | 469 |
| Miscellaneous Expense | 73 | 256 | 183 |
| Subtotal | 13,885 | 15,363 | 1,478 |
| Information Technology | | | |
| Personal Services | \$ 4,696 | \$ 4,829 | \$ 133 |
| Fringe Benefits | 1,548 | 1,621 | 73 |
| Materials & Supplies | 801 | 1,054 | 253 |
| Transportation | 8 | 24 | 16 |
| Utilities | 1,235 | 1,383 | 148 |
| Contractual Services | 5,459 | 7,370 | 1,911 |
| Major Repairs | 465 | 1,340 | 875 |
| Capital Assets | 430 | - | (430) |
| Miscellaneous Expense | 249 | 347 | 98 |
| Subtotal | 14,891 | 17,968 | 3,077 |

(Continued)

**DEPARTMENT SUMMARY OF EXPENDITURES
ACTUAL TO BUDGET
FOR THE FISCAL YEAR ENDED JUNE 30, 2021**

(in thousands)

| | Actual | Amended Budget | Variance Favorable/ (Unfavorable) |
|--|-------------------|-------------------|---|
| Talent Management | | | |
| Personal Services | \$ 1,540 | \$ 1,577 | \$ 37 |
| Fringe Benefits | 588 | 632 | 44 |
| Materials & Supplies | 62 | 59 | (3) |
| Transportation | 19 | 29 | 10 |
| Contractual Services | 18 | 69 | 51 |
| Miscellaneous Expense | 140 | 249 | 109 |
| Subtotal | 2,367 | 2,615 | 248 |
| Operations | | | |
| Personal Services | \$ 34,864 | \$ 35,856 | \$ 992 |
| Fringe Benefits | 15,129 | 15,789 | 660 |
| Materials & Supplies | 8,567 | 6,581 | (1,986) |
| Transportation | 1,027 | 1,441 | 414 |
| Utilities | 10,981 | 10,855 | (126) |
| Chemical Purchases | 8,719 | 10,500 | 1,781 |
| Contractual Services | 17,514 | 26,254 | 8,740 |
| Major Repairs | 6,297 | 11,623 | 5,326 |
| Capital Assets | 1,137 | 867 | (270) |
| Miscellaneous Expense | 597 | 1,099 | 502 |
| Subtotal | 104,832 | 120,865 | 16,033 |
| Engineering | | | |
| Personal Services | \$ 4,122 | \$ 4,064 | \$ (58) |
| Fringe Benefits | 1,478 | 1,498 | 20 |
| Materials & Supplies | 54 | 42 | (12) |
| Transportation | 14 | 27 | 13 |
| Contractual Services | 1,061 | 1,809 | 748 |
| Miscellaneous Expense | 62 | 212 | 150 |
| Subtotal | 6,791 | 7,652 | 861 |
| Water Quality | | | |
| Personal Services | \$ 8,009 | \$ 8,324 | \$ 315 |
| Fringe Benefits | 3,302 | 3,347 | 45 |
| Materials & Supplies | 1,828 | 1,768 | (60) |
| Transportation | 12 | 36 | 24 |
| Utilities | 1 | 3 | 2 |
| Contractual Services | 1,149 | 1,978 | 829 |
| Major Repairs | (4) | 113 | 117 |
| Miscellaneous Expense | 379 | 642 | 263 |
| Subtotal | 14,676 | 16,211 | 1,535 |
| General | | | |
| Personal Services | \$ 749 | \$ (500) | \$ (1,249) |
| Fringe Benefits | (677) | 229 | 906 |
| Materials & Supplies | (25) | 26 | 51 |
| Utilities | 464 | 480 | 16 |
| Contractual Services | 6,603 | 8,404 | 1,801 |
| Miscellaneous Expense | 1,175 | 121 | (1,054) |
| Subtotal | 8,289 | 8,760 | 471 |
| TOTAL DEPARTMENTAL EXPENDITURES | \$ 166,596 | \$ 190,408 | \$ 23,812 |

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HRSD

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AGENDA ITEM 4. – October 26,2021

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.

Fiscal year 2021 was the first full fiscal year where all solicitations have been advertised on the Virginia online procurement system, eVa, increasing interest and participation in our solicitations.

A few of the higher value contracts for commodities and services awarded to SWaM businesses this past fiscal year included engineering and construction services; bulk fuel; electrical services, coating services and technology services. The increase of SWaM spend from the previous fiscal year is largely being driven by small and large construction projects.

The following is a comparison of fiscal years 2019 to 2021 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-2019 | FY-2020 | FY-2021 |
| Operating | 16% | 16% | 18% |
| Corporate VISA Card | 7% | 7% | 6% |
| Capital Improvement Program | 24% | 33% | 40% |
| <i>Total</i> | 17% | 28% | 35% |

A [summary](#) of activities and [transaction charts](#) for the period of July 1, 2020 through June 30, 2021 are attached.

**HRSD DIVERSITY PROCUREMENT REPORT
FISCAL YEAR 2021**

| 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 | 6,510 | \$53,948,822 | 1,380 | \$9,718,063 | 21% | 18% |
| CORPORATE VISA CARD | 28,584 | \$15,456,740 | 1,077 | \$980,801 | 4% | 6% |
| CAPITAL IMPROVEMENT PROGRAM | 1,958 | \$209,905,308 | 312 | \$91,107,501 ² | 16% | 43% |
| TOTAL | 37,052 | \$279,310,870 | 2,769 | \$101,806,365 | 7% | 36% |

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

²Includes payments of \$15,221,501 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:

- The Institute for Public Procurement Virtual 2020 Forum
- SWIFT Industry Outreach Day
- Virginia Association of State College and University Purchasing Professionals (VASCUUP®) Virtual Spring SWaMfest

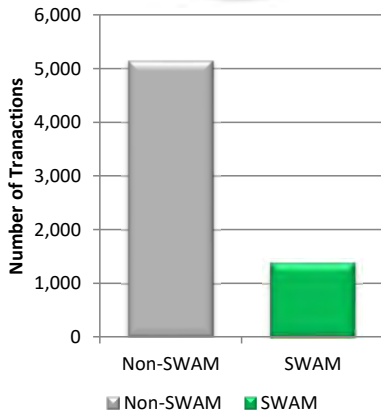
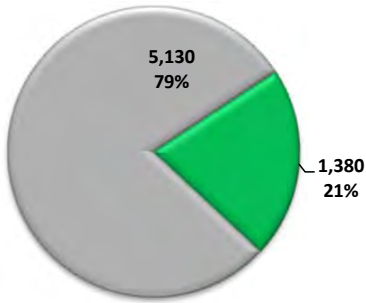
HRSD uses the Virginia Department of Purchases and Supply eProcurement Portal, eVA to advertise HRSD business opportunities to Suppliers, including SWaM businesses that have registered to do business with the Commonwealth of Virginia.

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.

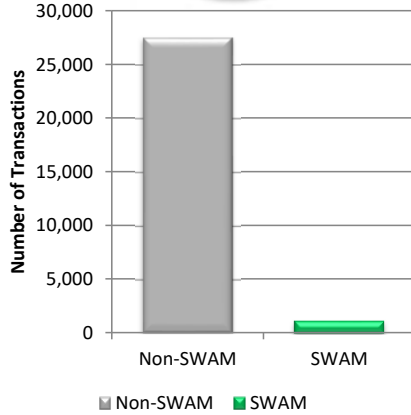
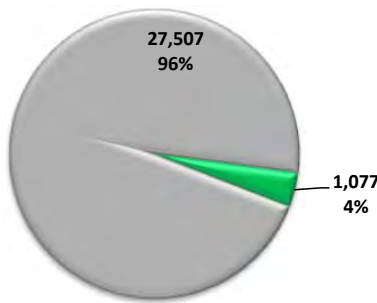
HRSD is a member of the Carolinas-Virginia Minority Supplier Development Council (CVMSDC). The CVMSDC certifies Minority Business Enterprises (MBEs), serves as a resource for corporations and government agencies searching for qualified suppliers, and sponsors networking and outreach events. The CVMSDC also offers training programs and business assistance for MBEs.

FY2021 Transaction Charts

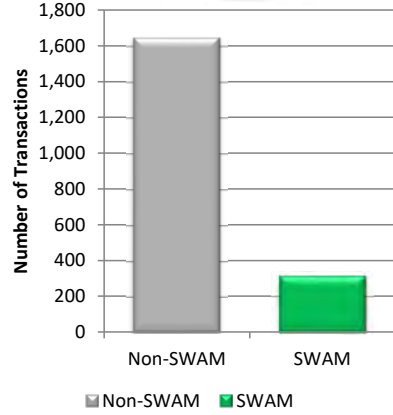
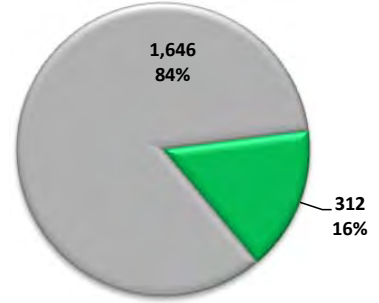
OPERATING



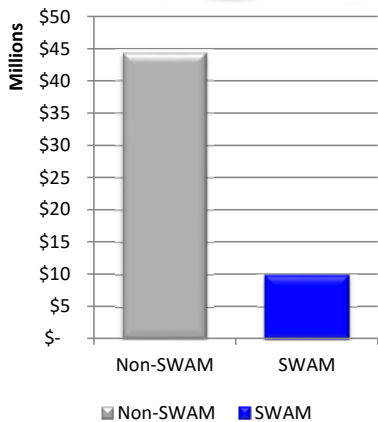
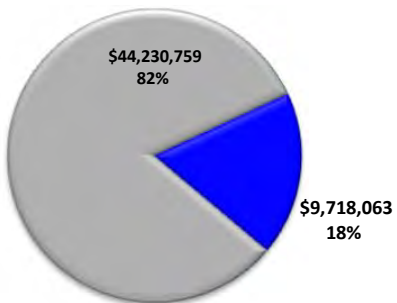
CORPORATE VISA CARD



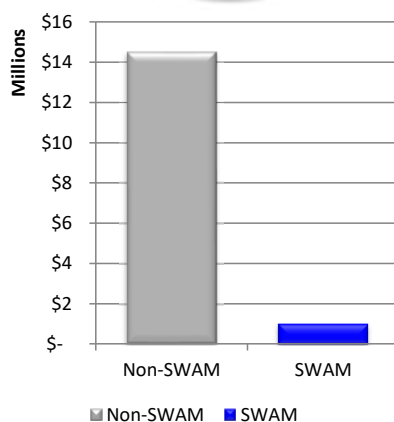
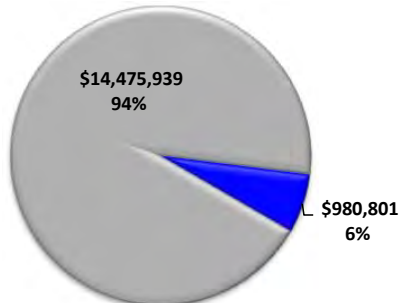
CAPITAL IMPROVEMENT PROGRAM



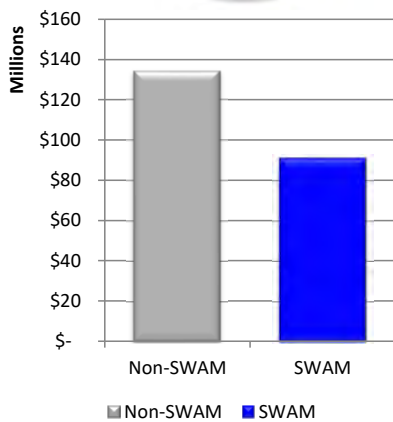
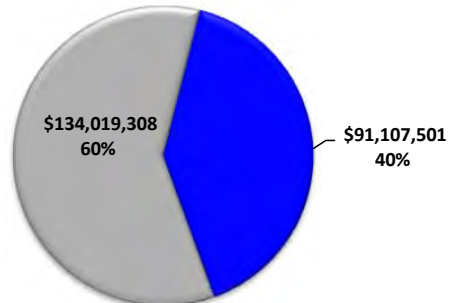
OPERATING



CORPORATE VISA CARD



CAPITAL IMPROVEMENT PROGRAM



AGENDA ITEM 5. – October 26, 2021

Subject: Virginia Clean Water Revolving Loan Fund (VCWRLF) Rate Resets and Amendment to the Master Financing Agreement for the Atlantic Treatment Plant Digester Gas to Energy, Atlantic Treatment Plant, Chesapeake-Elizabeth Treatment Plant, and Colonial Williamsburg Pump Station Projects Resolutions

Recommended Action: Approve the resolutions authorizing the Fourth Amendment to the Master Financing Agreement with the Virginia Resources Authority (VRA) and allonges to four wastewater revenue bonds issued to pay the cost of a certain improvements to the Atlantic Treatment Plant Digester Gas to Energy Project, Colonial Williamsburg Pump Station and Atlantic and Chesapeake-Elizabeth Treatment Plants.

Brief: The Virginia Resources Authority (VRA) allows for a rate reset after five years from loan issuance based on prevailing market rates or if VRA refunds bonds used to fund the loans and then passes the refunding savings on to the borrower(s). HRSD's financial advisor, PFM, identified four loans eligible for a rate reset that would provide significant savings. Since the VRA funded the loans with cash, the rate resets are based on prevailing market rates with one percent floor. The Net Present Value (NPV) savings is approximately \$970,000, not including closing costs. The draft resolutions, allonges and Fourth Amendment to the Master Financing Agreement (linked below) were prepared by bond counsel and reviewed by general counsel. The closing date is scheduled in November with the rate resets effective October 1.

| Project Name | Loan Number | Date Issued | Existing Rate | New Rate |
|---|--------------|-------------------|---------------|----------|
| Atlantic Treatment Plant Digester Gas to Energy Project | C-515449G-02 | March 13, 2012 | 2.51% | 1.15% |
| Atlantic Treatment Plant Project | C-515363-01 | June 22, 2006 | 2.10% | 1.00% |
| Chesapeake-Elizabeth Treatment Plant Project | C-515303-02 | February 26, 2004 | 2.10% | 1.00% |
| Colonial Williamsburg Pump Station Project | C-515364-02 | June 22, 2006 | 2.10% | 1.00% |

Hampton Roads Sanitation District
Resolution of
October 26, 2021

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION AUTHORIZING THE MODIFICATION OF THE WASTEWATER REVENUE BOND ISSUED TO PAY THE COST OF A CERTAIN PROJECT AT THE ATLANTIC TREATMENT PLANT: DIGESTER GAS TO ENERGY PROJECT AND AUTHORIZING THE EXECUTION OF AN AMENDMENT TO THE MASTER FINANCING AGREEMENT WITH THE VIRGINIA RESOURCES AUTHORITY.

Adopted October 26, 2021

ATLANTIC TREATMENT PLANT:
DIGESTER GAS TO ENERGY PROJECT #C-515449G-02

Resolution

RESOLUTION AUTHORIZING THE MODIFICATION OF THE WASTEWATER REVENUE BOND ISSUED TO PAY THE COST OF A CERTAIN PROJECT AT THE ATLANTIC TREATMENT PLANT: DIGESTER GAS TO ENERGY PROJECT AND AUTHORIZING THE EXECUTION OF AN AMENDMENT TO THE MASTER FINANCING AGREEMENT WITH THE VIRGINIA RESOURCES AUTHORITY.

WHEREAS, the Hampton Roads Sanitation District (the “Borrower”) entered into a Trust Agreement with The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor trustee, the “Senior Trustee”), dated as of March 1, 2008, as amended (the “Senior Trust Agreement”), pursuant to which the Borrower may incur Senior Indebtedness, as defined in the Senior Trust Agreement; and

WHEREAS, the Borrower entered into a Trust Agreement with The Bank of New York Mellon Trust Company, N.A., as Trustee (in such capacity, the “Trustee”), dated as of October 1, 2011, as amended (the “Trust Agreement”), to secure such Subordinated Indebtedness; and

WHEREAS, the Hampton Roads Sanitation District Commission (the “Commission”) received an offer from the Virginia Resources Authority (“VRA”), as Administrator of the Virginia Water Facilities Revolving Fund (the “Fund”), to make a loan from the Fund to the Borrower in the amount of up to \$6,318,000 for the purpose of financing a project described in such offer as improvements to the Atlantic Treatment Plant: Digester Gas To Energy Project (“Atlantic Digester Gas to Energy Project”), together with related expenses; and

WHEREAS, the Commission, as the governing body of the Borrower, accepted such offer and closed on such loan from VRA, as Administrator of the Fund, by authorizing and issuing a wastewater revenue bond, dated March 13, 2012, issued for the purpose of financing Capital

Improvement Program Costs (as defined in the Trust Agreement) consisting of improvements to the Borrower's Atlantic Digester Gas to Energy Project, as previously amended (the "Local Bond"), and such Local Bond is payable from the Net Revenues Available for Debt Service (as defined in the Trust Agreement) as a Parity Obligation, as defined in the Trust Agreement, all in conformity with the terms and provisions of the Trust Agreement; and

WHEREAS, the terms of such loan from VRA, as Administrator of the Fund, are governed by the Financing Agreement dated as of March 1, 2012, as amended and restated by the Master Financing Agreement, dated as of February 1, 2016, as amended and supplemented, each between VRA, as Administrator of the Fund, and the Borrower (as so amended and restated, the "Master Financing Agreement"); and

WHEREAS, VRA has offered the Borrower the opportunity to reduce the interest costs on the Local Bond; and

WHEREAS, in connection with the modification of the interest rate on the Local Bond, the lower interest rate thereon is evidenced by the delivery of an allonge to the Local Bond; and

WHEREAS, the Commission, as the governing body of the Borrower, determines that it is in the best interests of the Borrower to authorize the execution and delivery of an allonge with respect to the Local Bond in substantially the form attached as Exhibit A hereto (the "Allonge"), pursuant to which the Cost of Funds (as defined in the Master Financing Agreement) on the Local Bond shall be reduced from 2.51% per annum to 1.15% per annum; and

WHEREAS, in connection with the modification of the Local Bond, VRA has requested the Borrower to amend the Master Financing Agreement pursuant to an amendment in substantially the form attached as Exhibit B hereto (the "Amendment to the Master Financing Agreement"); now, therefore,

BE IT RESOLVED by the Hampton Roads Sanitation District Commission as follows:

Section 1. Authorization of Allonge; Ratification of Local Bond Modified Thereby.

The form, terms and conditions of the Allonge with respect to the Local Bond are hereby approved in all respects, and the Chair or Vice-Chair and the Secretary or any Assistant Secretary of the Commission and the Director of Finance (the “District Representatives”) are hereby authorized and directed to execute, by manual or facsimile signature, and deliver the Allonge, in substantially the form set forth in Exhibit A hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Allonge shall be conclusive evidence of the approval and authorization thereof by the Borrower.

The delivery of any Allonge shall not constitute a modification of any provision of the Local Bond, except with respect to the provisions directly modified thereby, and the other terms and conditions of each Local Bond are hereby ratified.

Section 2. Amendment to the Master Financing Agreement. The form, terms and conditions of the Amendment to the Master Financing Agreement relating to the Local Bond are hereby approved in all respects, and the District Representatives are hereby authorized and directed to execute and deliver the Amendment to the Master Financing Agreement, in substantially the form set forth in Exhibit B hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Amendment to the Master Financing Agreement shall be conclusive evidence of the approval and authorization thereof by the District.

Section 3. Further Actions. The Chair, the Vice-Chair, the Secretary and any Assistant Secretary of the Commission and the General Manager and the Director of Finance of the

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

Section 4. Effectiveness. This Resolution shall take effect immediately upon its adoption.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on October 26, 2021.

Frederick N. Elofson, Chair

EXHIBIT A
FORM OF ALLONGE

ALLONGE DATED NOVEMBER __, 2021, ATTACHED TO
HAMPTON ROADS SANITATION DISTRICT
WASTEWATER REVENUE BOND,
DATED MARCH 13, 2012,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

Pursuant to a resolution of the Hampton Roads Sanitation District Commission (the “Borrower”), adopted on October 26, 2021, the text of the Bond is hereby amended, and this Allonge shall be executed, authenticated and acknowledged, as follows:

(a) The Cost of Funds on this Bond is reduced from 2.51% per annum to 1.15% per annum beginning on October 1, 2021.

(b) The semiannual installment payments of principal and interest due on February 1, 2022 and on each February 1 and August 1 thereafter are changed to \$190,700.00, with the final installment of \$189,506.37 due on February 1, 2033, when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

Except as modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused this Allonge to be signed by the manual signature of the Chair of its Commission and its seal to be impressed hereon and attested by the Secretary of its Commission, as of the date set forth above.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Chair of the Hampton Roads Sanitation
District Commission

[SEAL]

ATTEST:

Secretary of the Hampton Roads
Sanitation District Commission

Atlantic Digester Gas to Energy
Modification

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By _____
Stephanie L. Hamlett
Executive Director

[Signature page to Allonge
Hampton Roads Sanitation District
Wastewater Revenue Bond
Loan No. C-515449G-02]

EXHIBIT B

[FORM OF AMENDMENT TO MASTER FINANCING AGREEMENT]

**FOURTH AMENDMENT TO
MASTER FINANCING AGREEMENT**

dated as of _____ 1, 2021

BETWEEN

VIRGINIA RESOURCES AUTHORITY,

**as Administrator of the
Virginia Water Facilities Revolving Fund**

AND

HAMPTON ROADS SANITATION DISTRICT

Virginia Resources Authority
Virginia Water Facilities Revolving Fund

C-515449G-02 (Atlantic Treatment Plant: Digester Gas to Energy Project)
C-515364-02 (Colonial Williamsburg Pump Station Project)
C-515363-01 (Atlantic Wastewater Treatment Plant Project)
C-515303-02 (Chesapeake-Elizabeth Treatment Plant Project)

FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT

THIS FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT (this “Amendment”) is made as of _____ 1, 2021, between the **VIRGINIA RESOURCES AUTHORITY**, a public body corporate and a political subdivision of the Commonwealth of Virginia (the “Authority”), as Administrator of the **VIRGINIA WATER FACILITIES REVOLVING FUND** (the “Fund”), and the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the “Borrower”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “Commission”).

A. On February 26, 2004 (the “2004 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$40,330,298, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515303-02 2004 Local Bond”), and sold the 2004 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of February 1, 2004, as amended on January 1, 2013 (as amended, the “2004 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

B. On June 22, 2006 (the “2006 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$7,339,600, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515363-01 2006 Local Bond”), and sold the C-515363-01 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515363-01 2006 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

C. On the 2006 Closing Date, the Borrower also issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$1,605,200, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515364-02 2006 Local Bond,” and together with the “C-515363-01 2006 Local Bond,” the “2006 Local Bonds”), and sold the C-515364-02 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515364-02 2006 Financing Agreement,” and together with the C-515363-01 2006 Financing Agreement, the “2006 Financing Agreements”), between the Authority, as Administrator of the Fund, and the Borrower.

D. On March 13, 2012 (the “2012 Closing Date,” and collectively with the 2004 Closing Date and the 2006 Closing Date, the “Closing Dates”), the Borrower issued its Wastewater Revenue Bond, in the maximum principal amount of \$6,318,000, as amended by an Allonge dated January 30, 2020 (as amended, the “C-515449G-02 2012 Local Bond,” and collectively with the C-515303-02 2004 Local Bond and the 2006 Local Bonds, the “Local Bonds”), and sold the 2012 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of March 1, 2012 (the “2012 Financing Agreement,” and collectively with the 2004 Financing Agreement and the 2006 Financing Agreements, the “Financing Agreements”).

E. The Authority and the Borrower previously amended and restated the Financing Agreements with respect to the Local Bonds through the execution and delivery of a Master

Financing Agreement, dated as of February 1, 2016 (as amended and supplemented, the “Master Financing Agreement”), between the Authority and the Borrower.

C. The Authority and the Borrower desire to further amend the Master Financing Agreement with respect to the Local Bonds, as set forth herein.

D. The Authority and the Borrower, with the prior written consent of the Department of Environmental Quality (the “Department”), hereby set forth certain amendments to the Master Financing Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the Authority and the Borrower covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.1 Definitions. The capitalized terms contained in this Amendment shall have the meanings set forth in the Master Financing Agreement except as defined in the recitals above or unless the context otherwise requires.

ARTICLE II

AMENDMENTS TO FINANCING AGREEMENT

Section 2.1 Amendments to Exhibit A-1 of the Master Financing Agreement. Exhibit A-1 of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit A-1.

Section 2.2 Amendments to Exhibit F of the Master Financing Agreement. Exhibit F of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit F.

Section 2.3 Amendments to Exhibit G of the Master Financing Agreement. Exhibit G of the Master Financing Agreement is amended solely with respect to the Local Bonds as set forth in the attached Exhibit G.

ARTICLE III

MISCELLANEOUS

Section 3.1 Successors and Assigns. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 3.2 Applicable Law. This Amendment shall be governed by the laws of the Commonwealth of Virginia.

Section 3.3 Ratification of Financing Agreement. All of the representations and warranties of the Borrower contained in Article II of the Master Financing Agreement are true and correct as of the date hereof with the exception of Exhibit I of the Master Financing Agreement as to which no representations or warranties are made. All terms of the Master Financing Agreement except as amended or modified by the terms of this Amendment are hereby reaffirmed, ratified and confirmed. This Amendment shall not be construed as and is not intended as a novation of the Local Bonds.

Section 3.4 Severability. If any clause, provision or section of this Amendment shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or section shall not affect the remainder of this Amendment which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Amendment. If any agreement or obligation contained in this Amendment is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Authority and the Borrower, as the case may be, only to the extent permitted by law.

Section 3.5 Headings. The headings of the several articles and sections of this Amendment are inserted for convenience only and do not comprise a part of this Amendment.

Section 3.6 Term of Amendment. This Amendment shall be effective upon its execution and delivery, provided that the Local Bonds previously or simultaneously has been executed and delivered. Except as otherwise specified, the Borrower's obligations under the Local Bonds and this Amendment shall expire upon payment in full of the Local Bonds and all other amounts payable by the Borrower under the Master Financing Agreement.

Section 3.7 Counterparts. This Amendment may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

WITNESS the following signatures, all duly authorized.

**VIRGINIA RESOURCES AUTHORITY, as
Administrator of the Virginia Water Facilities
Revolving Fund**

By: _____
Stephanie L. Hamlett, Executive Director

HAMPTON ROADS SANITATION DISTRICT

By: _____
Jay A. Bernas, Director of Finance

The Trustee hereby acknowledges the aforementioned amendments to the Master Financing Agreement.

**U.S. BANK NATIONAL ASSOCIATION, as
Trustee**

By: _____

Title: _____

EXHIBIT A-1
Direct Local Bonds
Hampton Roads Sanitation District

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT F
Senior Bonds, Migrating Senior Bonds and Parity Bonds
Hampton Roads Sanitation District

Senior Bonds.

\$152,640,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 12, 2009

\$111,345,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Refunding Series 2014A, dated November 12, 2014

Migrating Senior Bonds.

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

Parity Bonds.

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016 and January 30, 2020

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016 and January 30, 2020

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$22,680,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2012, dated December 27, 2012

\$246,845,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016A, dated March 17, 2016

\$50,000,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016B, dated April 1, 2016

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$83,485,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2017A, dated December 19, 2017

\$63,185,000 Sanitation District Subordinate Wastewater Revenue Bonds Series 2018A, dated January 23, 2018

\$8,314,638 Sanitation District Subordinate Wastewater Revenue Bond (Boat Harbor Treatment Plant Switchgear and Controls Replacements), dated March 20, 2019

\$8,677,684 Sanitation District Subordinate Wastewater Revenue Bond (Orcutt Avenue and Mercury Boulevard Gravity Sewer Improvements), dated March 20, 2019

\$205,675,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2019A (Federally Taxable), dated October 2, 2019

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT G
Debt Service Schedules
Hampton Roads Sanitation District

| | | |
|---|-------------------------|-----------------------------------|
| Project Number: | C-515303-02 | Original Interest Rate |
| Financing Agreement dated as of: | February 1, 2004 | Interest: 3.00% |
| Final Principal Disbursed: | \$ 40,330,298 | Late Fee: 5.00% |
| Original Interest Rate: | 3.00% | |
| Amendment dated as of: | January 1, 2013 | 2013 Reduced Interest Rate |
| Reduced Interest Rate: | 2.10% | Interest: 2.10% |
| Amendment dated as of: | November 1, 2021 | Late Fee: 5.00% |
| Reduced Interest Rate: | 1.00% | |
| New Rate Effective Date: | October 1, 2021 | 2021 Reduced Interest Rate |
| Principal Payments: | 39 | Interest: 01.00% |
| | | Late Fee: 5.00% |

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | INTEREST PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD | |
|----------------|-----------|---------------------------------|-----------------------|------------------|----------------------|-------------------------------|----------------------|
| 1 | 12/1/2007 | \$ 40,330,298.00 | \$2,790,966.40 | \$ 2,790,966.40 | \$ - | \$ 40,330,298.00 | |
| 2 | 6/1/2008 | 40,330,298.00 | 1,372,654.41 | 604,175.51 | 768,478.90 | 39,561,819.10 | |
| 3 | 12/1/2008 | 39,561,819.10 | 1,373,433.38 | 593,427.30 | 780,006.08 | 38,781,813.02 | |
| 4 | 6/1/2009 | 38,781,813.02 | 1,373,433.35 | 581,727.18 | 791,706.17 | 37,990,106.85 | |
| 5 | 12/1/2009 | 37,990,106.85 | 1,373,433.39 | 569,851.62 | 803,581.77 | 37,186,525.08 | |
| 6 | 6/1/2010 | 37,186,525.08 | 1,373,433.35 | 557,797.86 | 815,635.49 | 36,370,889.59 | |
| 7 | 12/1/2010 | 36,370,889.59 | 1,373,433.35 | 545,563.32 | 827,870.03 | 35,543,019.56 | |
| 8 | 6/1/2011 | 35,543,019.56 | 1,373,433.38 | 533,145.30 | 840,288.08 | 34,702,731.48 | |
| 9 | 12/1/2011 | 34,702,731.48 | 1,373,433.38 | 520,540.98 | 852,892.40 | 33,849,839.08 | |
| 10 | 6/1/2012 | 33,849,839.08 | 1,373,433.38 | 507,747.60 | 865,685.78 | 32,984,153.30 | |
| 11 | 12/1/2012 | 32,984,153.30 | 1,373,433.35 | 494,762.28 | 878,671.07 | 32,105,482.23 | |
| 12 | 6/1/2013 | 32,105,482.23 | 1,291,100.00 | 367,607.77 | 923,492.23 | 31,181,990.00 | |
| 13 | 12/1/2013 | 31,181,990.00 | 1,291,100.00 | 327,410.90 | 963,689.10 | 30,218,300.90 | |
| 14 | 6/1/2014 | 30,218,300.90 | 1,291,100.00 | 317,292.16 | 973,807.84 | 29,244,493.06 | |
| 15 | 12/1/2014 | 29,244,493.06 | 1,291,100.00 | 307,067.18 | 984,032.82 | 28,260,460.24 | |
| 16 | 6/1/2015 | 28,260,460.24 | 1,291,100.00 | 296,734.83 | 994,365.17 | 27,266,095.07 | |
| 17 | 12/1/2015 | 27,266,095.07 | 1,291,100.00 | 286,294.00 | 1,004,806.00 | 26,261,289.07 | |
| 18 | 6/1/2016 | 26,261,289.07 | 1,291,100.00 | 275,743.54 | 1,015,356.46 | 25,245,932.61 | |
| 19 | 12/1/2016 | 25,245,932.61 | 1,291,100.00 | 265,082.29 | 1,026,017.71 | 24,219,914.90 | |
| 20 | 6/1/2017 | 24,219,914.90 | 1,291,100.00 | 254,309.11 | 1,036,790.89 | 23,183,124.01 | |
| 21 | 12/1/2017 | 23,183,124.01 | 1,291,100.00 | 243,422.80 | 1,047,677.20 | 22,135,446.81 | |
| 22 | 6/1/2018 | 22,135,446.81 | 1,291,100.00 | 232,422.19 | 1,058,677.81 | 21,076,769.00 | |
| 23 | 12/1/2018 | 21,076,769.00 | 1,291,100.00 | 221,306.07 | 1,069,793.93 | 20,006,975.07 | |
| 24 | 6/1/2019 | 20,006,975.07 | 1,291,100.00 | 210,073.24 | 1,081,026.76 | 18,925,948.31 | |
| 25 | 12/1/2019 | 18,925,948.31 | 1,291,100.00 | 198,722.46 | 1,092,377.54 | 17,833,570.77 | |
| 26 | 6/1/2020 | 17,833,570.77 | 1,291,100.00 | 187,252.49 | 1,103,847.51 | 16,729,723.26 | |
| 27 | 12/1/2020 | 16,729,723.26 | 1,291,100.00 | 175,662.09 | 1,115,437.91 | 15,614,285.35 | |
| 28 | 6/1/2021 | 15,614,285.35 | 1,291,100.00 | 163,950.00 | 1,127,150.00 | 14,487,135.36 | |
| 29 | 12/1/2021 | 14,487,135.36 | 1,251,400.00 | 125,555.17 | 1,125,844.83 | 13,361,290.53 | |
| 30 | 6/1/2022 | 13,361,290.53 | 1,251,400.00 | 66,806.45 | 1,184,593.55 | 12,176,696.98 | |
| 31 | 12/1/2022 | 12,176,696.98 | 1,251,400.00 | 60,883.48 | 1,190,516.52 | 10,986,180.46 | |
| 32 | 6/1/2023 | 10,986,180.46 | 1,251,400.00 | 54,930.90 | 1,196,469.10 | 9,789,711.36 | |
| 33 | 12/1/2023 | 9,789,711.36 | 1,251,400.00 | 48,948.56 | 1,202,451.44 | 8,587,259.92 | |
| 34 | 6/1/2024 | 8,587,259.92 | 1,251,400.00 | 42,936.30 | 1,208,463.70 | 7,378,796.22 | |
| 35 | 12/1/2024 | 7,378,796.22 | 1,251,400.00 | 36,893.98 | 1,214,506.02 | 6,164,290.20 | |
| 36 | 6/1/2025 | 6,164,290.20 | 1,251,400.00 | 30,821.45 | 1,220,578.55 | 4,943,711.65 | |
| 37 | 12/1/2025 | 4,943,711.65 | 1,251,400.00 | 24,718.56 | 1,226,681.44 | 3,717,030.21 | |
| 38 | 6/1/2026 | 3,717,030.21 | 1,251,400.00 | 18,585.15 | 1,232,814.85 | 2,484,215.36 | |
| 39 | 12/1/2026 | 2,484,215.36 | 1,251,400.00 | 12,421.08 | 1,238,978.92 | 1,245,236.44 | |
| 40 | 6/1/2027 | 1,245,236.44 | 1,251,462.62 | 6,226.18 | 1,245,236.44 | - | |
| | | \$ | \$3,490,083.74 | \$ | 13,159,785.73 | \$ | 40,330,298.00 |

Project Number: C-515363-01
 Financing Agreement dated as of: June 1, 2006
 Final Principal Disbursed: \$ 7,339,600
 Original Cost of Funds: 3.10%
 Amendment dated as of: January 1, 2013
 Reduced Cost of Funds: 2.10%
 Amendment dated as of: November 1, 2021
 Reduced Cost of Funds: 1.00%
 New Rate Effective Date: October 1, 2021
 Principal Payments: 39

Original Cost of Funds

Interest: 3.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2013 Reduced Cost of Funds

Interest: 2.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2021 Reduced Cost of Funds

Interest: 0.90%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2007 | \$ 7,339,600.00 | \$201,813.24 | \$ 201,813.24 | \$ - | \$ 7,339,600.00 |
| 2 | 2/1/2008 | 7,339,600.00 | 252,184.60 | 113,763.78 | 138,420.82 | 7,201,179.18 |
| 3 | 8/1/2008 | 7,201,179.18 | 252,184.64 | 111,618.30 | 140,566.34 | 7,060,612.84 |
| 4 | 2/1/2009 | 7,060,612.84 | 252,184.64 | 109,439.52 | 142,745.12 | 6,917,867.72 |
| 5 | 8/1/2009 | 6,917,867.72 | 252,184.63 | 107,226.96 | 144,957.67 | 6,772,910.05 |
| 6 | 2/1/2010 | 6,772,910.05 | 252,184.59 | 104,980.08 | 147,204.51 | 6,625,705.54 |
| 7 | 8/1/2010 | 6,625,705.54 | 252,184.64 | 102,698.46 | 149,486.18 | 6,476,219.36 |
| 8 | 2/1/2011 | 6,476,219.36 | 252,184.60 | 100,381.38 | 151,803.22 | 6,324,416.14 |
| 9 | 8/1/2011 | 6,324,416.14 | 252,184.65 | 98,028.48 | 154,156.17 | 6,170,259.97 |
| 10 | 2/1/2012 | 6,170,259.97 | 252,184.63 | 95,639.04 | 156,545.59 | 6,013,714.38 |
| 11 | 8/1/2012 | 6,013,714.38 | 252,184.62 | 93,212.58 | 158,972.04 | 5,854,742.34 |
| 12 | 2/1/2013 | 5,854,742.34 | 236,300.00 | 87,170.61 | 149,129.39 | 5,705,612.95 |
| 13 | 8/1/2013 | 5,705,612.95 | 236,300.00 | 59,908.94 | 176,391.06 | 5,529,221.89 |
| 14 | 2/1/2014 | 5,529,221.89 | 236,300.00 | 58,056.83 | 178,243.17 | 5,350,978.72 |
| 15 | 8/1/2014 | 5,350,978.72 | 236,300.00 | 56,185.28 | 180,114.72 | 5,170,864.00 |
| 16 | 2/1/2015 | 5,170,864.00 | 236,300.00 | 54,294.07 | 182,005.93 | 4,988,858.07 |
| 17 | 8/1/2015 | 4,988,858.07 | 236,300.00 | 52,383.01 | 183,916.99 | 4,804,941.08 |
| 18 | 2/1/2016 | 4,804,941.08 | 236,300.00 | 50,451.88 | 185,848.12 | 4,619,092.96 |
| 19 | 8/1/2016 | 4,619,092.96 | 236,300.00 | 48,500.48 | 187,799.52 | 4,431,293.44 |
| 20 | 2/1/2017 | 4,431,293.44 | 236,300.00 | 46,528.58 | 189,771.42 | 4,241,522.02 |
| 21 | 8/1/2017 | 4,241,522.02 | 236,300.00 | 44,535.98 | 191,764.02 | 4,049,758.00 |
| 22 | 2/1/2018 | 4,049,758.00 | 236,300.00 | 42,522.46 | 193,777.54 | 3,855,980.46 |
| 23 | 8/1/2018 | 3,855,980.46 | 236,300.00 | 40,487.79 | 195,812.21 | 3,660,168.25 |
| 24 | 2/1/2019 | 3,660,168.25 | 236,300.00 | 38,431.77 | 197,868.23 | 3,462,300.02 |
| 25 | 8/1/2019 | 3,462,300.02 | 236,300.00 | 36,354.15 | 199,945.85 | 3,262,354.17 |
| 26 | 2/1/2020 | 3,262,354.17 | 236,300.00 | 34,254.72 | 202,045.28 | 3,060,308.89 |
| 27 | 8/1/2020 | 3,060,308.89 | 236,300.00 | 32,133.24 | 204,166.76 | 2,856,142.13 |
| 28 | 2/1/2021 | 2,856,142.13 | 236,300.00 | 29,989.49 | 206,310.51 | 2,649,831.62 |
| 29 | 8/1/2021 | 2,649,831.62 | 236,300.00 | 27,823.23 | 208,476.77 | 2,441,354.80 |
| 30 | 2/1/2022 | 2,441,354.80 | 229,100.00 | 16,682.59 | 212,417.41 | 2,228,937.39 |
| 31 | 8/1/2022 | 2,228,937.39 | 229,100.00 | 11,144.69 | 217,955.31 | 2,010,982.08 |
| 32 | 2/1/2023 | 2,010,982.08 | 229,100.00 | 10,054.91 | 219,045.09 | 1,791,936.99 |
| 33 | 8/1/2023 | 1,791,936.99 | 229,100.00 | 8,959.68 | 220,140.32 | 1,571,796.67 |
| 34 | 2/1/2024 | 1,571,796.67 | 229,100.00 | 7,858.98 | 221,241.02 | 1,350,555.65 |
| 35 | 8/1/2024 | 1,350,555.65 | 229,100.00 | 6,752.78 | 222,347.22 | 1,128,208.43 |
| 36 | 2/1/2025 | 1,128,208.43 | 229,100.00 | 5,641.04 | 223,458.96 | 904,749.47 |
| 37 | 8/1/2025 | 904,749.47 | 229,100.00 | 4,523.75 | 224,576.25 | 680,173.22 |
| 38 | 2/1/2026 | 680,173.22 | 229,100.00 | 3,400.87 | 225,699.13 | 454,474.09 |
| 39 | 8/1/2026 | 454,474.09 | 229,100.00 | 2,272.37 | 226,827.63 | 227,646.46 |
| 40 | 2/1/2027 | 227,646.46 | 228,784.69 | 1,138.23 | 227,646.46 | - |
| | | | \$ 9,496,844.17 | \$ 2,157,244.22 | \$ 7,339,600.00 | |

Project Number: C-515364-02
Financing Agreement dated as of: June 1, 2006
Final Principal Disbursed: \$ 1,605,199.20
Original Cost of Funds: 3.10%
Amendment dated as of: January 1, 2013
Reduced Cost of Funds: 2.10%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.00%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Original Cost of Funds
Interest: 3.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2013 Reduced Cost of Funds
Interest: 2.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2021 Reduced Cost of Funds
Interest: 0.90%
Admin. Fee: 0.10%
Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 1/1/2008 | \$ 1,605,199.20 | \$40,785.83 | \$ 40,785.83 | \$ - | \$ 1,605,199.20 |
| 2 | 7/1/2008 | 1,605,199.20 | 53,071.45 | 22,798.26 | 30,273.19 | 1,574,926.01 |
| 3 | 1/1/2009 | 1,574,926.01 | 55,285.78 | 24,543.36 | 30,742.42 | 1,544,183.59 |
| 4 | 7/1/2009 | 1,544,183.59 | 55,153.77 | 23,934.84 | 31,218.93 | 1,512,964.66 |
| 5 | 1/1/2010 | 1,512,964.66 | 55,153.79 | 23,450.94 | 31,702.85 | 1,481,261.81 |
| 6 | 7/1/2010 | 1,481,261.81 | 55,153.76 | 22,959.54 | 32,194.22 | 1,449,067.59 |
| 7 | 1/1/2011 | 1,449,067.59 | 55,153.73 | 22,460.52 | 32,693.21 | 1,416,374.38 |
| 8 | 7/1/2011 | 1,416,374.38 | 55,153.77 | 21,953.82 | 33,199.95 | 1,383,174.43 |
| 9 | 1/1/2012 | 1,383,174.43 | 55,153.75 | 21,439.20 | 33,714.55 | 1,349,459.88 |
| 10 | 7/1/2012 | 1,349,459.88 | 55,153.73 | 20,916.60 | 34,237.13 | 1,315,222.75 |
| 11 | 1/1/2013 | 1,315,222.75 | 55,153.77 | 20,385.96 | 34,767.81 | 1,280,454.94 |
| 12 | 7/1/2013 | 1,280,454.94 | 51,500.00 | 13,729.33 | 37,770.67 | 1,242,684.27 |
| 13 | 1/1/2014 | 1,242,684.27 | 51,500.00 | 13,048.18 | 38,451.82 | 1,204,232.45 |
| 14 | 7/1/2014 | 1,204,232.45 | 51,500.00 | 12,644.44 | 38,855.56 | 1,165,376.89 |
| 15 | 1/1/2015 | 1,165,376.89 | 51,500.00 | 12,236.46 | 39,263.54 | 1,126,113.35 |
| 16 | 7/1/2015 | 1,126,113.35 | 51,500.00 | 11,824.19 | 39,675.81 | 1,086,437.54 |
| 17 | 1/1/2016 | 1,086,437.54 | 51,500.00 | 11,407.59 | 40,092.41 | 1,046,345.13 |
| 18 | 7/1/2016 | 1,046,345.13 | 51,500.00 | 10,986.62 | 40,513.38 | 1,005,831.75 |
| 19 | 1/1/2017 | 1,005,831.75 | 51,500.00 | 10,561.23 | 40,938.77 | 964,892.98 |
| 20 | 7/1/2017 | 964,892.98 | 51,500.00 | 10,131.38 | 41,368.62 | 923,524.36 |
| 21 | 1/1/2018 | 923,524.36 | 51,500.00 | 9,697.01 | 41,802.99 | 881,721.37 |
| 22 | 7/1/2018 | 881,721.37 | 51,500.00 | 9,258.07 | 42,241.93 | 839,479.44 |
| 23 | 1/1/2019 | 839,479.44 | 51,500.00 | 8,814.53 | 42,685.47 | 796,793.97 |
| 24 | 7/1/2019 | 796,793.97 | 51,500.00 | 8,366.34 | 43,133.66 | 753,660.31 |
| 25 | 1/1/2020 | 753,660.31 | 51,500.00 | 7,913.43 | 43,586.57 | 710,073.74 |
| 26 | 7/1/2020 | 710,073.74 | 51,500.00 | 7,455.77 | 44,044.23 | 666,029.51 |
| 27 | 1/1/2021 | 666,029.51 | 51,500.00 | 6,993.31 | 44,506.69 | 621,522.82 |
| 28 | 7/1/2021 | 621,522.82 | 51,500.00 | 6,525.99 | 44,974.01 | 576,548.82 |
| 29 | 1/1/2022 | 576,548.82 | 49,800.00 | 4,468.25 | 45,331.75 | 531,217.07 |
| 30 | 7/1/2022 | 531,217.07 | 49,800.00 | 2,656.09 | 47,143.91 | 484,073.16 |
| 31 | 1/1/2023 | 484,073.16 | 49,800.00 | 2,420.37 | 47,379.63 | 436,693.53 |
| 32 | 7/1/2023 | 436,693.53 | 49,800.00 | 2,183.47 | 47,616.53 | 389,077.00 |
| 33 | 1/1/2024 | 389,077.00 | 49,800.00 | 1,945.39 | 47,854.61 | 341,222.39 |
| 34 | 7/1/2024 | 341,222.39 | 49,800.00 | 1,706.11 | 48,093.89 | 293,128.50 |
| 35 | 1/1/2025 | 293,128.50 | 49,800.00 | 1,465.64 | 48,334.36 | 244,794.14 |
| 36 | 7/1/2025 | 244,794.14 | 49,800.00 | 1,223.97 | 48,576.03 | 196,218.11 |
| 37 | 1/1/2026 | 196,218.11 | 49,800.00 | 981.09 | 48,818.91 | 147,399.20 |
| 38 | 7/1/2026 | 147,399.20 | 49,800.00 | 737.00 | 49,063.00 | 98,336.20 |
| 39 | 1/1/2027 | 98,336.20 | 49,800.00 | 491.68 | 49,308.32 | 49,027.88 |
| 40 | 7/1/2027 | 49,027.88 | 49,273.02 | 245.14 | 49,027.88 | - |
| | | | \$ 2,062,946.15 | \$ 457,746.94 | \$ 1,605,199.20 | |

Project Number: C-515449G-02
Financing Agreement Dated as of: March 1, 2012
Final Principal Disbursed: \$ 6,318,000
Original Cost of Funds: 2.51%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.15%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Cost of Funds
 Interest: 2.31%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

2021 Reduced Cost of Funds
 Interest: 0.95%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2013 | \$ 6,318,000.00 | \$99,183.28 | \$ 99,183.28 | \$ - | \$ 6,318,000.00 |
| 2 | 2/1/2014 | 6,318,000.00 | 205,900.00 | 76,996.06 | 128,903.94 | 6,189,096.06 |
| 3 | 8/1/2014 | 6,189,096.06 | 205,900.00 | 77,673.18 | 128,226.82 | 6,060,869.24 |
| 4 | 2/1/2015 | 6,060,869.24 | 205,900.00 | 76,063.92 | 129,836.08 | 5,931,033.16 |
| 5 | 8/1/2015 | 5,931,033.16 | 205,900.00 | 74,434.44 | 131,465.56 | 5,799,567.60 |
| 6 | 2/1/2016 | 5,799,567.60 | 205,900.00 | 72,784.56 | 133,115.44 | 5,666,452.16 |
| 7 | 8/1/2016 | 5,666,452.16 | 205,900.00 | 71,113.98 | 134,786.02 | 5,531,666.14 |
| 8 | 2/1/2017 | 5,531,666.14 | 205,900.00 | 69,422.40 | 136,477.60 | 5,395,188.54 |
| 9 | 8/1/2017 | 5,395,188.54 | 205,900.00 | 67,709.64 | 138,190.36 | 5,256,998.18 |
| 10 | 2/1/2018 | 5,256,998.18 | 205,900.00 | 65,975.34 | 139,924.66 | 5,117,073.52 |
| 11 | 8/1/2018 | 5,117,073.52 | 205,900.00 | 64,219.26 | 141,680.74 | 4,975,392.78 |
| 12 | 2/1/2019 | 4,975,392.78 | 205,900.00 | 62,441.16 | 143,458.84 | 4,831,933.94 |
| 13 | 8/1/2019 | 4,831,933.94 | 205,900.00 | 60,640.80 | 145,259.20 | 4,686,674.74 |
| 14 | 2/1/2020 | 4,686,674.74 | 205,900.00 | 58,817.76 | 147,082.24 | 4,539,592.50 |
| 15 | 8/1/2020 | 4,539,592.50 | 205,900.00 | 56,971.86 | 148,928.14 | 4,390,664.36 |
| 16 | 2/1/2021 | 4,390,664.36 | 205,900.00 | 55,102.86 | 150,797.14 | 4,239,867.22 |
| 17 | 8/1/2021 | 4,239,867.22 | 205,900.00 | 53,210.34 | 152,689.66 | 4,087,177.58 |
| 18 | 2/1/2022 | 4,087,177.58 | 190,700.00 | 32,765.54 | 157,934.46 | 3,929,243.12 |
| 19 | 8/1/2022 | 3,929,243.12 | 190,700.00 | 22,593.15 | 168,106.85 | 3,761,136.27 |
| 20 | 2/1/2023 | 3,761,136.27 | 190,700.00 | 21,626.53 | 169,073.47 | 3,592,062.80 |
| 21 | 8/1/2023 | 3,592,062.80 | 190,700.00 | 20,654.36 | 170,045.64 | 3,422,017.16 |
| 22 | 2/1/2024 | 3,422,017.16 | 190,700.00 | 19,676.60 | 171,023.40 | 3,250,993.76 |
| 23 | 8/1/2024 | 3,250,993.76 | 190,700.00 | 18,693.21 | 172,006.79 | 3,078,986.97 |
| 24 | 2/1/2025 | 3,078,986.97 | 190,700.00 | 17,704.18 | 172,995.82 | 2,905,991.15 |
| 25 | 8/1/2025 | 2,905,991.15 | 190,700.00 | 16,709.45 | 173,990.55 | 2,732,000.60 |
| 26 | 2/1/2026 | 2,732,000.60 | 190,700.00 | 15,709.00 | 174,991.00 | 2,557,009.60 |
| 27 | 8/1/2026 | 2,557,009.60 | 190,700.00 | 14,702.81 | 175,997.19 | 2,381,012.41 |
| 28 | 2/1/2027 | 2,381,012.41 | 190,700.00 | 13,690.82 | 177,009.18 | 2,204,003.23 |
| 29 | 8/1/2027 | 2,204,003.23 | 190,700.00 | 12,673.02 | 178,026.98 | 2,025,976.25 |
| 30 | 2/1/2028 | 2,025,976.25 | 190,700.00 | 11,649.36 | 179,050.64 | 1,846,925.61 |
| 31 | 8/1/2028 | 1,846,925.61 | 190,700.00 | 10,619.82 | 180,080.18 | 1,666,845.43 |
| 32 | 2/1/2029 | 1,666,845.43 | 190,700.00 | 9,584.36 | 181,115.64 | 1,485,729.79 |
| 33 | 8/1/2029 | 1,485,729.79 | 190,700.00 | 8,542.95 | 182,157.05 | 1,303,572.74 |
| 34 | 2/1/2030 | 1,303,572.74 | 190,700.00 | 7,495.54 | 183,204.46 | 1,120,368.28 |
| 35 | 8/1/2030 | 1,120,368.28 | 190,700.00 | 6,442.12 | 184,257.88 | 936,110.40 |
| 36 | 2/1/2031 | 936,110.40 | 190,700.00 | 5,382.63 | 185,317.37 | 750,793.03 |
| 37 | 8/1/2031 | 750,793.03 | 190,700.00 | 4,317.06 | 186,382.94 | 564,410.09 |
| 38 | 2/1/2032 | 564,410.09 | 190,700.00 | 3,245.36 | 187,454.64 | 376,955.45 |
| 39 | 8/1/2032 | 376,955.45 | 190,700.00 | 2,167.49 | 188,532.51 | 188,422.94 |
| 40 | 2/1/2033 | 188,422.94 | 189,506.37 | 1,083.43 | 188,422.94 | - |
| | | | \$ 7,778,489.65 | \$ 1,460,489.63 | \$ 6,318,000.00 | |

Hampton Roads Sanitation District
Resolution of
October 26, 2021

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION AUTHORIZING THE MODIFICATION OF THE WASTEWATER REVENUE BOND ISSUED TO PAY THE COST OF A CERTAIN PROJECT AT THE ATLANTIC TREATMENT PLANT AND AUTHORIZING THE EXECUTION OF AN AMENDMENT TO THE MASTER FINANCING AGREEMENT WITH THE VIRGINIA RESOURCES AUTHORITY.

Adopted October 26, 2021

ATLANTIC TREATMENT PLANT PROJECT
#C-515363-01

Resolution

**RESOLUTION AUTHORIZING THE MODIFICATION OF
THE WASTEWATER REVENUE BOND ISSUED TO PAY
THE COST OF A CERTAIN PROJECT AT THE
ATLANTIC TREATMENT PLANT AND AUTHORIZING
THE EXECUTION OF AN AMENDMENT TO THE
MASTER FINANCING AGREEMENT WITH THE
VIRGINIA RESOURCES AUTHORITY.**

WHEREAS, the Hampton Roads Sanitation District (the “Borrower”) entered into a Trust Agreement with The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor trustee, the “Senior Trustee”), dated as of March 1, 2008, as amended (the “Senior Trust Agreement”), pursuant to which the Borrower may incur Subordinated Indebtedness, as defined in the Senior Trust Agreement; and

WHEREAS, the Borrower entered into a Trust Agreement with The Bank of New York Mellon Trust Company, N.A., as Trustee (in such capacity, the “Trustee”), dated as of October 1, 2011, as amended (the “Trust Agreement”), to secure such Subordinated Indebtedness; and

WHEREAS, the Hampton Roads Sanitation District Commission (the “Commission”) received an offer from the Virginia Resources Authority (“VRA”), as Administrator of the Virginia Water Facilities Revolving Fund (the “Fund”), to make a loan from the Fund to the Borrower in the amount of up to \$7,339,600 for the purpose of financing a project described in such offer as improvements to the Atlantic Treatment Plant (“Atlantic Treatment Plant Project”), together with related expenses; and

WHEREAS, the Commission, as the governing body of the Borrower, accepted such offer and closed on such loan from VRA, as Administrator of the Fund, by authorizing and issuing a wastewater revenue bond, dated June 22, 2006, issued for the purpose of financing Capital Improvement Program Costs (as defined in the Trust Agreement) consisting of improvements to

the Borrower's Atlantic Treatment Plant, as previously amended (the "Local Bond"), and such Local Bond is payable from the Net Revenues Available for Debt Service (as defined in the Trust Agreement) as a Parity Obligation, as defined in the Trust Agreement, all in conformity with the terms and provisions of the Trust Agreement; and

WHEREAS, the terms of such loan from VRA, as Administrator of the Fund, are governed by the Financing Agreement, dated as of June 1, 2006, as amended and restated by the Master Financing Agreement, dated as of February 1, 2016, as amended and supplemented, each between VRA, as Administrator of the Fund, and the Borrower (as so amended and restated, the "Master Financing Agreement"); and

WHEREAS, VRA has offered the Borrower the opportunity to reduce the interest costs on the Local Bond; and

WHEREAS, in connection with the modification of the interest rate on the Local Bond, the lower interest rate thereon is evidenced by the delivery of an allonge to the Local Bond; and

WHEREAS, the Commission, as the governing body of the Borrower, determines that it is in the best interests of the Borrower to authorize the execution and delivery of an allonge with respect to the Local Bond in substantially the form attached as Exhibit A hereto (the "Allonge"), pursuant to which the Cost of Funds (as defined in the Master Financing Agreement) on the Local Bond shall be reduced from 2.10% per annum to 1.00% per annum; and

WHEREAS, in connection with the modification of the Local Bond, VRA has requested the Borrower to amend the Master Financing Agreement pursuant to an amendment in substantially the form attached as Exhibit B hereto (the "Amendment to the Master Financing Agreement"); now, therefore,

BE IT RESOLVED by the Hampton Roads Sanitation District Commission as follows:

Section 1. Authorization of Allonge; Ratification of Local Bond Modified Thereby.

The form, terms and conditions of the Allonge with respect to the Local Bond are hereby approved in all respects, and the Chair or Vice-Chair and the Secretary or any Assistant Secretary of the Commission and the Director of Finance (the “District Representatives”) are hereby authorized and directed to execute, by manual or facsimile signature, and deliver the Allonge, in substantially the form set forth in Exhibit A hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Allonge shall be conclusive evidence of the approval and authorization thereof by the Borrower.

The delivery of any Allonge shall not constitute a modification of any provision of the Local Bond, except with respect to the provisions directly modified thereby, and the other terms and conditions of each Local Bond are hereby ratified.

Section 2. Amendment to the Master Financing Agreement. The form, terms and conditions of the Amendment to the Master Financing Agreement relating to the Local Bond are hereby approved in all respects, and the District Representatives are hereby authorized and directed to execute and deliver the Amendment to the Master Financing Agreement, in substantially the form set forth in Exhibit B hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Amendment to the Master Financing Agreement shall be conclusive evidence of the approval and authorization thereof by the District.

Section 3. Further Actions. The Chair, the Vice-Chair, the Secretary and any Assistant Secretary of the Commission and the General Manager and the Director of Finance of the Borrower, each of whom may act, are authorized and directed (without limitation except as may

be expressly set forth therein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effect the transactions contemplated by this Resolution.

Section 4. Effectiveness. This Resolution shall take effect immediately upon its adoption.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on October 26, 2021.

Frederick N. Elofson, Chair

EXHIBIT A
FORM OF ALLONGE

ALLONGE DATED NOVEMBER __, 2021, ATTACHED TO
HAMPTON ROADS SANITATION DISTRICT
SUBORDINATE PLEDGE SEWER REVENUE BOND,
DATED JUNE 22, 2006,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

Pursuant to a resolution of the Hampton Roads Sanitation District Commission (the “Borrower”), adopted on October 26, 2021, the text of the Bond is hereby amended, and this Allonge shall be executed, authenticated and acknowledged, as follows:

(a) The Cost of Funds on this Bond is reduced from 2.10% per annum to 1.00% per annum beginning on October 1, 2021.

(b) The semiannual installment payments of principal and interest due on February 1, 2022 and on each February 1 and August 1 thereafter are changed to \$229,100.00, with the final installment of \$228,784.69 due on February 1, 2027, when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

Except as modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused this Allonge to be signed by the manual signature of the Chair of its Commission and its seal to be impressed hereon and attested by the Secretary of its Commission, as of the date set forth above.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Chair of the Hampton Roads Sanitation
District Commission

[SEAL]

ATTEST:

Secretary of the Hampton Roads
Sanitation District Commission

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond
Loan No. C-515363-01]

Atlantic Treatment Plant Project
Modification

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By _____
Stephanie L. Hamlett
Executive Director

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond
Loan No. C-515363-01]

EXHIBIT B

[FORM OF AMENDMENT TO MASTER FINANCING AGREEMENT]

**FOURTH AMENDMENT TO
MASTER FINANCING AGREEMENT**

dated as of _____ 1, 2021

BETWEEN

VIRGINIA RESOURCES AUTHORITY,

**as Administrator of the
Virginia Water Facilities Revolving Fund**

AND

HAMPTON ROADS SANITATION DISTRICT

Virginia Resources Authority
Virginia Water Facilities Revolving Fund

C-515449G-02 (Atlantic Treatment Plant: Digester Gas to Energy Project)
C-515364-02 (Colonial Williamsburg Pump Station Project)
C-515363-01 (Atlantic Wastewater Treatment Plant Project)
C-515303-02 (Chesapeake-Elizabeth Treatment Plant Project)

FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT

THIS FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT (this “Amendment”) is made as of _____ 1, 2021, between the **VIRGINIA RESOURCES AUTHORITY**, a public body corporate and a political subdivision of the Commonwealth of Virginia (the “Authority”), as Administrator of the **VIRGINIA WATER FACILITIES REVOLVING FUND** (the “Fund”), and the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the “Borrower”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “Commission”).

A. On February 26, 2004 (the “2004 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$40,330,298, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515303-02 2004 Local Bond”), and sold the 2004 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of February 1, 2004, as amended on January 1, 2013 (as amended, the “2004 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

B. On June 22, 2006 (the “2006 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$7,339,600, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515363-01 2006 Local Bond”), and sold the C-515363-01 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515363-01 2006 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

C. On the 2006 Closing Date, the Borrower also issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$1,605,200, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515364-02 2006 Local Bond,” and together with the “C-515363-01 2006 Local Bond,” the “2006 Local Bonds”), and sold the C-515364-02 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515364-02 2006 Financing Agreement,” and together with the C-515363-01 2006 Financing Agreement, the “2006 Financing Agreements”), between the Authority, as Administrator of the Fund, and the Borrower.

D. On March 13, 2012 (the “2012 Closing Date,” and collectively with the 2004 Closing Date and the 2006 Closing Date, the “Closing Dates”), the Borrower issued its Wastewater Revenue Bond, in the maximum principal amount of \$6,318,000, as amended by an Allonge dated January 30, 2020 (as amended, the “C-515449G-02 2012 Local Bond,” and collectively with the C-515303-02 2004 Local Bond and the 2006 Local Bonds, the “Local Bonds”), and sold the 2012 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of March 1, 2012 (the “2012 Financing Agreement,” and collectively with the 2004 Financing Agreement and the 2006 Financing Agreements, the “Financing Agreements”).

E. The Authority and the Borrower previously amended and restated the Financing Agreements with respect to the Local Bonds through the execution and delivery of a Master

Financing Agreement, dated as of February 1, 2016 (as amended and supplemented, the “Master Financing Agreement”), between the Authority and the Borrower.

C. The Authority and the Borrower desire to further amend the Master Financing Agreement with respect to the Local Bonds, as set forth herein.

D. The Authority and the Borrower, with the prior written consent of the Department of Environmental Quality (the “Department”), hereby set forth certain amendments to the Master Financing Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the Authority and the Borrower covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.1 Definitions. The capitalized terms contained in this Amendment shall have the meanings set forth in the Master Financing Agreement except as defined in the recitals above or unless the context otherwise requires.

ARTICLE II

AMENDMENTS TO FINANCING AGREEMENT

Section 2.1 Amendments to Exhibit A-1 of the Master Financing Agreement. Exhibit A-1 of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit A-1.

Section 2.2 Amendments to Exhibit F of the Master Financing Agreement. Exhibit F of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit F.

Section 2.3 Amendments to Exhibit G of the Master Financing Agreement. Exhibit G of the Master Financing Agreement is amended solely with respect to the Local Bonds as set forth in the attached Exhibit G.

ARTICLE III

MISCELLANEOUS

Section 3.1 Successors and Assigns. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 3.2 Applicable Law. This Amendment shall be governed by the laws of the Commonwealth of Virginia.

Section 3.3 Ratification of Financing Agreement. All of the representations and warranties of the Borrower contained in Article II of the Master Financing Agreement are true and correct as of the date hereof with the exception of Exhibit I of the Master Financing Agreement as to which no representations or warranties are made. All terms of the Master Financing Agreement except as amended or modified by the terms of this Amendment are hereby reaffirmed, ratified and confirmed. This Amendment shall not be construed as and is not intended as a novation of the Local Bonds.

Section 3.4 Severability. If any clause, provision or section of this Amendment shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or section shall not affect the remainder of this Amendment which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Amendment. If any agreement or obligation contained in this Amendment is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Authority and the Borrower, as the case may be, only to the extent permitted by law.

Section 3.5 Headings. The headings of the several articles and sections of this Amendment are inserted for convenience only and do not comprise a part of this Amendment.

Section 3.6 Term of Amendment. This Amendment shall be effective upon its execution and delivery, provided that the Local Bonds previously or simultaneously has been executed and delivered. Except as otherwise specified, the Borrower's obligations under the Local Bonds and this Amendment shall expire upon payment in full of the Local Bonds and all other amounts payable by the Borrower under the Master Financing Agreement.

Section 3.7 Counterparts. This Amendment may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

WITNESS the following signatures, all duly authorized.

**VIRGINIA RESOURCES AUTHORITY, as
Administrator of the Virginia Water Facilities
Revolving Fund**

By: _____
Stephanie L. Hamlett, Executive Director

HAMPTON ROADS SANITATION DISTRICT

By: _____
Jay A. Bernas, Director of Finance

The Trustee hereby acknowledges the aforementioned amendments to the Master Financing Agreement.

**U.S. BANK NATIONAL ASSOCIATION, as
Trustee**

By: _____

Title: _____

EXHIBIT A-1
Direct Local Bonds
Hampton Roads Sanitation District

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT F
Senior Bonds, Migrating Senior Bonds and Parity Bonds
Hampton Roads Sanitation District

Senior Bonds.

\$152,640,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 12, 2009

\$111,345,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Refunding Series 2014A, dated November 12, 2014

Migrating Senior Bonds.

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

Parity Bonds.

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016 and January 30, 2020

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016 and January 30, 2020

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$22,680,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2012, dated December 27, 2012

\$246,845,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016A, dated March 17, 2016

\$50,000,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016B, dated April 1, 2016

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$83,485,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2017A, dated December 19, 2017

\$63,185,000 Sanitation District Subordinate Wastewater Revenue Bonds Series 2018A, dated January 23, 2018

\$8,314,638 Sanitation District Subordinate Wastewater Revenue Bond (Boat Harbor Treatment Plant Switchgear and Controls Replacements), dated March 20, 2019

\$8,677,684 Sanitation District Subordinate Wastewater Revenue Bond (Orcutt Avenue and Mercury Boulevard Gravity Sewer Improvements), dated March 20, 2019

\$205,675,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2019A (Federally Taxable), dated October 2, 2019

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT G
Debt Service Schedules
Hampton Roads Sanitation District

| | | |
|---|-------------------------|-----------------------------------|
| Project Number: | C-515303-02 | Original Interest Rate |
| Financing Agreement dated as of: | February 1, 2004 | Interest: 3.00% |
| Final Principal Disbursed: | \$ 40,330,298 | Late Fee: 5.00% |
| Original Interest Rate: | 3.00% | |
| Amendment dated as of: | January 1, 2013 | 2013 Reduced Interest Rate |
| Reduced Interest Rate: | 2.10% | Interest: 2.10% |
| Amendment dated as of: | November 1, 2021 | Late Fee: 5.00% |
| Reduced Interest Rate: | 1.00% | |
| New Rate Effective Date: | October 1, 2021 | 2021 Reduced Interest Rate |
| Principal Payments: | 39 | Interest: 01.00% |
| | | Late Fee: 5.00% |

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | INTEREST PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD | |
|----------------|-----------|---------------------------------|-----------------------|------------------|----------------------|-------------------------------|----------------------|
| 1 | 12/1/2007 | \$ 40,330,298.00 | \$2,790,966.40 | \$ 2,790,966.40 | \$ - | \$ 40,330,298.00 | |
| 2 | 6/1/2008 | 40,330,298.00 | 1,372,654.41 | 604,175.51 | 768,478.90 | 39,561,819.10 | |
| 3 | 12/1/2008 | 39,561,819.10 | 1,373,433.38 | 593,427.30 | 780,006.08 | 38,781,813.02 | |
| 4 | 6/1/2009 | 38,781,813.02 | 1,373,433.35 | 581,727.18 | 791,706.17 | 37,990,106.85 | |
| 5 | 12/1/2009 | 37,990,106.85 | 1,373,433.39 | 569,851.62 | 803,581.77 | 37,186,525.08 | |
| 6 | 6/1/2010 | 37,186,525.08 | 1,373,433.35 | 557,797.86 | 815,635.49 | 36,370,889.59 | |
| 7 | 12/1/2010 | 36,370,889.59 | 1,373,433.35 | 545,563.32 | 827,870.03 | 35,543,019.56 | |
| 8 | 6/1/2011 | 35,543,019.56 | 1,373,433.38 | 533,145.30 | 840,288.08 | 34,702,731.48 | |
| 9 | 12/1/2011 | 34,702,731.48 | 1,373,433.38 | 520,540.98 | 852,892.40 | 33,849,839.08 | |
| 10 | 6/1/2012 | 33,849,839.08 | 1,373,433.38 | 507,747.60 | 865,685.78 | 32,984,153.30 | |
| 11 | 12/1/2012 | 32,984,153.30 | 1,373,433.35 | 494,762.28 | 878,671.07 | 32,105,482.23 | |
| 12 | 6/1/2013 | 32,105,482.23 | 1,291,100.00 | 367,607.77 | 923,492.23 | 31,181,990.00 | |
| 13 | 12/1/2013 | 31,181,990.00 | 1,291,100.00 | 327,410.90 | 963,689.10 | 30,218,300.90 | |
| 14 | 6/1/2014 | 30,218,300.90 | 1,291,100.00 | 317,292.16 | 973,807.84 | 29,244,493.06 | |
| 15 | 12/1/2014 | 29,244,493.06 | 1,291,100.00 | 307,067.18 | 984,032.82 | 28,260,460.24 | |
| 16 | 6/1/2015 | 28,260,460.24 | 1,291,100.00 | 296,734.83 | 994,365.17 | 27,266,095.07 | |
| 17 | 12/1/2015 | 27,266,095.07 | 1,291,100.00 | 286,294.00 | 1,004,806.00 | 26,261,289.07 | |
| 18 | 6/1/2016 | 26,261,289.07 | 1,291,100.00 | 275,743.54 | 1,015,356.46 | 25,245,932.61 | |
| 19 | 12/1/2016 | 25,245,932.61 | 1,291,100.00 | 265,082.29 | 1,026,017.71 | 24,219,914.90 | |
| 20 | 6/1/2017 | 24,219,914.90 | 1,291,100.00 | 254,309.11 | 1,036,790.89 | 23,183,124.01 | |
| 21 | 12/1/2017 | 23,183,124.01 | 1,291,100.00 | 243,422.80 | 1,047,677.20 | 22,135,446.81 | |
| 22 | 6/1/2018 | 22,135,446.81 | 1,291,100.00 | 232,422.19 | 1,058,677.81 | 21,076,769.00 | |
| 23 | 12/1/2018 | 21,076,769.00 | 1,291,100.00 | 221,306.07 | 1,069,793.93 | 20,006,975.07 | |
| 24 | 6/1/2019 | 20,006,975.07 | 1,291,100.00 | 210,073.24 | 1,081,026.76 | 18,925,948.31 | |
| 25 | 12/1/2019 | 18,925,948.31 | 1,291,100.00 | 198,722.46 | 1,092,377.54 | 17,833,570.77 | |
| 26 | 6/1/2020 | 17,833,570.77 | 1,291,100.00 | 187,252.49 | 1,103,847.51 | 16,729,723.26 | |
| 27 | 12/1/2020 | 16,729,723.26 | 1,291,100.00 | 175,662.09 | 1,115,437.91 | 15,614,285.35 | |
| 28 | 6/1/2021 | 15,614,285.35 | 1,291,100.00 | 163,950.00 | 1,127,150.00 | 14,487,135.36 | |
| 29 | 12/1/2021 | 14,487,135.36 | 1,251,400.00 | 125,555.17 | 1,125,844.83 | 13,361,290.53 | |
| 30 | 6/1/2022 | 13,361,290.53 | 1,251,400.00 | 66,806.45 | 1,184,593.55 | 12,176,696.98 | |
| 31 | 12/1/2022 | 12,176,696.98 | 1,251,400.00 | 60,883.48 | 1,190,516.52 | 10,986,180.46 | |
| 32 | 6/1/2023 | 10,986,180.46 | 1,251,400.00 | 54,930.90 | 1,196,469.10 | 9,789,711.36 | |
| 33 | 12/1/2023 | 9,789,711.36 | 1,251,400.00 | 48,948.56 | 1,202,451.44 | 8,587,259.92 | |
| 34 | 6/1/2024 | 8,587,259.92 | 1,251,400.00 | 42,936.30 | 1,208,463.70 | 7,378,796.22 | |
| 35 | 12/1/2024 | 7,378,796.22 | 1,251,400.00 | 36,893.98 | 1,214,506.02 | 6,164,290.20 | |
| 36 | 6/1/2025 | 6,164,290.20 | 1,251,400.00 | 30,821.45 | 1,220,578.55 | 4,943,711.65 | |
| 37 | 12/1/2025 | 4,943,711.65 | 1,251,400.00 | 24,718.56 | 1,226,681.44 | 3,717,030.21 | |
| 38 | 6/1/2026 | 3,717,030.21 | 1,251,400.00 | 18,585.15 | 1,232,814.85 | 2,484,215.36 | |
| 39 | 12/1/2026 | 2,484,215.36 | 1,251,400.00 | 12,421.08 | 1,238,978.92 | 1,245,236.44 | |
| 40 | 6/1/2027 | 1,245,236.44 | 1,251,462.62 | 6,226.18 | 1,245,236.44 | - | |
| | | \$ | \$3,490,083.74 | \$ | 13,159,785.73 | \$ | 40,330,298.00 |

Project Number: C-515363-01
 Financing Agreement dated as of: June 1, 2006
 Final Principal Disbursed: \$ 7,339,600
 Original Cost of Funds: 3.10%
 Amendment dated as of: January 1, 2013
 Reduced Cost of Funds: 2.10%
 Amendment dated as of: November 1, 2021
 Reduced Cost of Funds: 1.00%
 New Rate Effective Date: October 1, 2021
 Principal Payments: 39

Original Cost of Funds

Interest: 3.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2013 Reduced Cost of Funds

Interest: 2.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2021 Reduced Cost of Funds

Interest: 0.90%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2007 | \$ 7,339,600.00 | \$201,813.24 | \$ 201,813.24 | \$ - | \$ 7,339,600.00 |
| 2 | 2/1/2008 | 7,339,600.00 | 252,184.60 | 113,763.78 | 138,420.82 | 7,201,179.18 |
| 3 | 8/1/2008 | 7,201,179.18 | 252,184.64 | 111,618.30 | 140,566.34 | 7,060,612.84 |
| 4 | 2/1/2009 | 7,060,612.84 | 252,184.64 | 109,439.52 | 142,745.12 | 6,917,867.72 |
| 5 | 8/1/2009 | 6,917,867.72 | 252,184.63 | 107,226.96 | 144,957.67 | 6,772,910.05 |
| 6 | 2/1/2010 | 6,772,910.05 | 252,184.59 | 104,980.08 | 147,204.51 | 6,625,705.54 |
| 7 | 8/1/2010 | 6,625,705.54 | 252,184.64 | 102,698.46 | 149,486.18 | 6,476,219.36 |
| 8 | 2/1/2011 | 6,476,219.36 | 252,184.60 | 100,381.38 | 151,803.22 | 6,324,416.14 |
| 9 | 8/1/2011 | 6,324,416.14 | 252,184.65 | 98,028.48 | 154,156.17 | 6,170,259.97 |
| 10 | 2/1/2012 | 6,170,259.97 | 252,184.63 | 95,639.04 | 156,545.59 | 6,013,714.38 |
| 11 | 8/1/2012 | 6,013,714.38 | 252,184.62 | 93,212.58 | 158,972.04 | 5,854,742.34 |
| 12 | 2/1/2013 | 5,854,742.34 | 236,300.00 | 87,170.61 | 149,129.39 | 5,705,612.95 |
| 13 | 8/1/2013 | 5,705,612.95 | 236,300.00 | 59,908.94 | 176,391.06 | 5,529,221.89 |
| 14 | 2/1/2014 | 5,529,221.89 | 236,300.00 | 58,056.83 | 178,243.17 | 5,350,978.72 |
| 15 | 8/1/2014 | 5,350,978.72 | 236,300.00 | 56,185.28 | 180,114.72 | 5,170,864.00 |
| 16 | 2/1/2015 | 5,170,864.00 | 236,300.00 | 54,294.07 | 182,005.93 | 4,988,858.07 |
| 17 | 8/1/2015 | 4,988,858.07 | 236,300.00 | 52,383.01 | 183,916.99 | 4,804,941.08 |
| 18 | 2/1/2016 | 4,804,941.08 | 236,300.00 | 50,451.88 | 185,848.12 | 4,619,092.96 |
| 19 | 8/1/2016 | 4,619,092.96 | 236,300.00 | 48,500.48 | 187,799.52 | 4,431,293.44 |
| 20 | 2/1/2017 | 4,431,293.44 | 236,300.00 | 46,528.58 | 189,771.42 | 4,241,522.02 |
| 21 | 8/1/2017 | 4,241,522.02 | 236,300.00 | 44,535.98 | 191,764.02 | 4,049,758.00 |
| 22 | 2/1/2018 | 4,049,758.00 | 236,300.00 | 42,522.46 | 193,777.54 | 3,855,980.46 |
| 23 | 8/1/2018 | 3,855,980.46 | 236,300.00 | 40,487.79 | 195,812.21 | 3,660,168.25 |
| 24 | 2/1/2019 | 3,660,168.25 | 236,300.00 | 38,431.77 | 197,868.23 | 3,462,300.02 |
| 25 | 8/1/2019 | 3,462,300.02 | 236,300.00 | 36,354.15 | 199,945.85 | 3,262,354.17 |
| 26 | 2/1/2020 | 3,262,354.17 | 236,300.00 | 34,254.72 | 202,045.28 | 3,060,308.89 |
| 27 | 8/1/2020 | 3,060,308.89 | 236,300.00 | 32,133.24 | 204,166.76 | 2,856,142.13 |
| 28 | 2/1/2021 | 2,856,142.13 | 236,300.00 | 29,989.49 | 206,310.51 | 2,649,831.62 |
| 29 | 8/1/2021 | 2,649,831.62 | 236,300.00 | 27,823.23 | 208,476.77 | 2,441,354.80 |
| 30 | 2/1/2022 | 2,441,354.80 | 229,100.00 | 16,682.59 | 212,417.41 | 2,228,937.39 |
| 31 | 8/1/2022 | 2,228,937.39 | 229,100.00 | 11,144.69 | 217,955.31 | 2,010,982.08 |
| 32 | 2/1/2023 | 2,010,982.08 | 229,100.00 | 10,054.91 | 219,045.09 | 1,791,936.99 |
| 33 | 8/1/2023 | 1,791,936.99 | 229,100.00 | 8,959.68 | 220,140.32 | 1,571,796.67 |
| 34 | 2/1/2024 | 1,571,796.67 | 229,100.00 | 7,858.98 | 221,241.02 | 1,350,555.65 |
| 35 | 8/1/2024 | 1,350,555.65 | 229,100.00 | 6,752.78 | 222,347.22 | 1,128,208.43 |
| 36 | 2/1/2025 | 1,128,208.43 | 229,100.00 | 5,641.04 | 223,458.96 | 904,749.47 |
| 37 | 8/1/2025 | 904,749.47 | 229,100.00 | 4,523.75 | 224,576.25 | 680,173.22 |
| 38 | 2/1/2026 | 680,173.22 | 229,100.00 | 3,400.87 | 225,699.13 | 454,474.09 |
| 39 | 8/1/2026 | 454,474.09 | 229,100.00 | 2,272.37 | 226,827.63 | 227,646.46 |
| 40 | 2/1/2027 | 227,646.46 | 228,784.69 | 1,138.23 | 227,646.46 | - |
| | | | \$ 9,496,844.17 | \$ 2,157,244.22 | \$ 7,339,600.00 | |

Project Number: C-515364-02
Financing Agreement dated as of: June 1, 2006
Final Principal Disbursed: \$ 1,605,199.20
Original Cost of Funds: 3.10%
Amendment dated as of: January 1, 2013
Reduced Cost of Funds: 2.10%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.00%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Original Cost of Funds
Interest: 3.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2013 Reduced Cost of Funds
Interest: 2.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2021 Reduced Cost of Funds
Interest: 0.90%
Admin. Fee: 0.10%
Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 1/1/2008 | \$ 1,605,199.20 | \$40,785.83 | \$ 40,785.83 | \$ - | \$ 1,605,199.20 |
| 2 | 7/1/2008 | 1,605,199.20 | 53,071.45 | 22,798.26 | 30,273.19 | 1,574,926.01 |
| 3 | 1/1/2009 | 1,574,926.01 | 55,285.78 | 24,543.36 | 30,742.42 | 1,544,183.59 |
| 4 | 7/1/2009 | 1,544,183.59 | 55,153.77 | 23,934.84 | 31,218.93 | 1,512,964.66 |
| 5 | 1/1/2010 | 1,512,964.66 | 55,153.79 | 23,450.94 | 31,702.85 | 1,481,261.81 |
| 6 | 7/1/2010 | 1,481,261.81 | 55,153.76 | 22,959.54 | 32,194.22 | 1,449,067.59 |
| 7 | 1/1/2011 | 1,449,067.59 | 55,153.73 | 22,460.52 | 32,693.21 | 1,416,374.38 |
| 8 | 7/1/2011 | 1,416,374.38 | 55,153.77 | 21,953.82 | 33,199.95 | 1,383,174.43 |
| 9 | 1/1/2012 | 1,383,174.43 | 55,153.75 | 21,439.20 | 33,714.55 | 1,349,459.88 |
| 10 | 7/1/2012 | 1,349,459.88 | 55,153.73 | 20,916.60 | 34,237.13 | 1,315,222.75 |
| 11 | 1/1/2013 | 1,315,222.75 | 55,153.77 | 20,385.96 | 34,767.81 | 1,280,454.94 |
| 12 | 7/1/2013 | 1,280,454.94 | 51,500.00 | 13,729.33 | 37,770.67 | 1,242,684.27 |
| 13 | 1/1/2014 | 1,242,684.27 | 51,500.00 | 13,048.18 | 38,451.82 | 1,204,232.45 |
| 14 | 7/1/2014 | 1,204,232.45 | 51,500.00 | 12,644.44 | 38,855.56 | 1,165,376.89 |
| 15 | 1/1/2015 | 1,165,376.89 | 51,500.00 | 12,236.46 | 39,263.54 | 1,126,113.35 |
| 16 | 7/1/2015 | 1,126,113.35 | 51,500.00 | 11,824.19 | 39,675.81 | 1,086,437.54 |
| 17 | 1/1/2016 | 1,086,437.54 | 51,500.00 | 11,407.59 | 40,092.41 | 1,046,345.13 |
| 18 | 7/1/2016 | 1,046,345.13 | 51,500.00 | 10,986.62 | 40,513.38 | 1,005,831.75 |
| 19 | 1/1/2017 | 1,005,831.75 | 51,500.00 | 10,561.23 | 40,938.77 | 964,892.98 |
| 20 | 7/1/2017 | 964,892.98 | 51,500.00 | 10,131.38 | 41,368.62 | 923,524.36 |
| 21 | 1/1/2018 | 923,524.36 | 51,500.00 | 9,697.01 | 41,802.99 | 881,721.37 |
| 22 | 7/1/2018 | 881,721.37 | 51,500.00 | 9,258.07 | 42,241.93 | 839,479.44 |
| 23 | 1/1/2019 | 839,479.44 | 51,500.00 | 8,814.53 | 42,685.47 | 796,793.97 |
| 24 | 7/1/2019 | 796,793.97 | 51,500.00 | 8,366.34 | 43,133.66 | 753,660.31 |
| 25 | 1/1/2020 | 753,660.31 | 51,500.00 | 7,913.43 | 43,586.57 | 710,073.74 |
| 26 | 7/1/2020 | 710,073.74 | 51,500.00 | 7,455.77 | 44,044.23 | 666,029.51 |
| 27 | 1/1/2021 | 666,029.51 | 51,500.00 | 6,993.31 | 44,506.69 | 621,522.82 |
| 28 | 7/1/2021 | 621,522.82 | 51,500.00 | 6,525.99 | 44,974.01 | 576,548.82 |
| 29 | 1/1/2022 | 576,548.82 | 49,800.00 | 4,468.25 | 45,331.75 | 531,217.07 |
| 30 | 7/1/2022 | 531,217.07 | 49,800.00 | 2,656.09 | 47,143.91 | 484,073.16 |
| 31 | 1/1/2023 | 484,073.16 | 49,800.00 | 2,420.37 | 47,379.63 | 436,693.53 |
| 32 | 7/1/2023 | 436,693.53 | 49,800.00 | 2,183.47 | 47,616.53 | 389,077.00 |
| 33 | 1/1/2024 | 389,077.00 | 49,800.00 | 1,945.39 | 47,854.61 | 341,222.39 |
| 34 | 7/1/2024 | 341,222.39 | 49,800.00 | 1,706.11 | 48,093.89 | 293,128.50 |
| 35 | 1/1/2025 | 293,128.50 | 49,800.00 | 1,465.64 | 48,334.36 | 244,794.14 |
| 36 | 7/1/2025 | 244,794.14 | 49,800.00 | 1,223.97 | 48,576.03 | 196,218.11 |
| 37 | 1/1/2026 | 196,218.11 | 49,800.00 | 981.09 | 48,818.91 | 147,399.20 |
| 38 | 7/1/2026 | 147,399.20 | 49,800.00 | 737.00 | 49,063.00 | 98,336.20 |
| 39 | 1/1/2027 | 98,336.20 | 49,800.00 | 491.68 | 49,308.32 | 49,027.88 |
| 40 | 7/1/2027 | 49,027.88 | 49,273.02 | 245.14 | 49,027.88 | - |
| | | | \$ 2,062,946.15 | \$ 457,746.94 | \$ 1,605,199.20 | |

Project Number: C-515449G-02
Financing Agreement Dated as of: March 1, 2012
Final Principal Disbursed: \$ 6,318,000
Original Cost of Funds: 2.51%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.15%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Cost of Funds
 Interest: 2.31%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

2021 Reduced Cost of Funds
 Interest: 0.95%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2013 | \$ 6,318,000.00 | \$99,183.28 | \$ 99,183.28 | \$ - | \$ 6,318,000.00 |
| 2 | 2/1/2014 | 6,318,000.00 | 205,900.00 | 76,996.06 | 128,903.94 | 6,189,096.06 |
| 3 | 8/1/2014 | 6,189,096.06 | 205,900.00 | 77,673.18 | 128,226.82 | 6,060,869.24 |
| 4 | 2/1/2015 | 6,060,869.24 | 205,900.00 | 76,063.92 | 129,836.08 | 5,931,033.16 |
| 5 | 8/1/2015 | 5,931,033.16 | 205,900.00 | 74,434.44 | 131,465.56 | 5,799,567.60 |
| 6 | 2/1/2016 | 5,799,567.60 | 205,900.00 | 72,784.56 | 133,115.44 | 5,666,452.16 |
| 7 | 8/1/2016 | 5,666,452.16 | 205,900.00 | 71,113.98 | 134,786.02 | 5,531,666.14 |
| 8 | 2/1/2017 | 5,531,666.14 | 205,900.00 | 69,422.40 | 136,477.60 | 5,395,188.54 |
| 9 | 8/1/2017 | 5,395,188.54 | 205,900.00 | 67,709.64 | 138,190.36 | 5,256,998.18 |
| 10 | 2/1/2018 | 5,256,998.18 | 205,900.00 | 65,975.34 | 139,924.66 | 5,117,073.52 |
| 11 | 8/1/2018 | 5,117,073.52 | 205,900.00 | 64,219.26 | 141,680.74 | 4,975,392.78 |
| 12 | 2/1/2019 | 4,975,392.78 | 205,900.00 | 62,441.16 | 143,458.84 | 4,831,933.94 |
| 13 | 8/1/2019 | 4,831,933.94 | 205,900.00 | 60,640.80 | 145,259.20 | 4,686,674.74 |
| 14 | 2/1/2020 | 4,686,674.74 | 205,900.00 | 58,817.76 | 147,082.24 | 4,539,592.50 |
| 15 | 8/1/2020 | 4,539,592.50 | 205,900.00 | 56,971.86 | 148,928.14 | 4,390,664.36 |
| 16 | 2/1/2021 | 4,390,664.36 | 205,900.00 | 55,102.86 | 150,797.14 | 4,239,867.22 |
| 17 | 8/1/2021 | 4,239,867.22 | 205,900.00 | 53,210.34 | 152,689.66 | 4,087,177.58 |
| 18 | 2/1/2022 | 4,087,177.58 | 190,700.00 | 32,765.54 | 157,934.46 | 3,929,243.12 |
| 19 | 8/1/2022 | 3,929,243.12 | 190,700.00 | 22,593.15 | 168,106.85 | 3,761,136.27 |
| 20 | 2/1/2023 | 3,761,136.27 | 190,700.00 | 21,626.53 | 169,073.47 | 3,592,062.80 |
| 21 | 8/1/2023 | 3,592,062.80 | 190,700.00 | 20,654.36 | 170,045.64 | 3,422,017.16 |
| 22 | 2/1/2024 | 3,422,017.16 | 190,700.00 | 19,676.60 | 171,023.40 | 3,250,993.76 |
| 23 | 8/1/2024 | 3,250,993.76 | 190,700.00 | 18,693.21 | 172,006.79 | 3,078,986.97 |
| 24 | 2/1/2025 | 3,078,986.97 | 190,700.00 | 17,704.18 | 172,995.82 | 2,905,991.15 |
| 25 | 8/1/2025 | 2,905,991.15 | 190,700.00 | 16,709.45 | 173,990.55 | 2,732,000.60 |
| 26 | 2/1/2026 | 2,732,000.60 | 190,700.00 | 15,709.00 | 174,991.00 | 2,557,009.60 |
| 27 | 8/1/2026 | 2,557,009.60 | 190,700.00 | 14,702.81 | 175,997.19 | 2,381,012.41 |
| 28 | 2/1/2027 | 2,381,012.41 | 190,700.00 | 13,690.82 | 177,009.18 | 2,204,003.23 |
| 29 | 8/1/2027 | 2,204,003.23 | 190,700.00 | 12,673.02 | 178,026.98 | 2,025,976.25 |
| 30 | 2/1/2028 | 2,025,976.25 | 190,700.00 | 11,649.36 | 179,050.64 | 1,846,925.61 |
| 31 | 8/1/2028 | 1,846,925.61 | 190,700.00 | 10,619.82 | 180,080.18 | 1,666,845.43 |
| 32 | 2/1/2029 | 1,666,845.43 | 190,700.00 | 9,584.36 | 181,115.64 | 1,485,729.79 |
| 33 | 8/1/2029 | 1,485,729.79 | 190,700.00 | 8,542.95 | 182,157.05 | 1,303,572.74 |
| 34 | 2/1/2030 | 1,303,572.74 | 190,700.00 | 7,495.54 | 183,204.46 | 1,120,368.28 |
| 35 | 8/1/2030 | 1,120,368.28 | 190,700.00 | 6,442.12 | 184,257.88 | 936,110.40 |
| 36 | 2/1/2031 | 936,110.40 | 190,700.00 | 5,382.63 | 185,317.37 | 750,793.03 |
| 37 | 8/1/2031 | 750,793.03 | 190,700.00 | 4,317.06 | 186,382.94 | 564,410.09 |
| 38 | 2/1/2032 | 564,410.09 | 190,700.00 | 3,245.36 | 187,454.64 | 376,955.45 |
| 39 | 8/1/2032 | 376,955.45 | 190,700.00 | 2,167.49 | 188,532.51 | 188,422.94 |
| 40 | 2/1/2033 | 188,422.94 | 189,506.37 | 1,083.43 | 188,422.94 | - |
| | | | \$ 7,778,489.65 | \$ 1,460,489.63 | \$ 6,318,000.00 | |

Hampton Roads Sanitation District
Resolution of
October 26, 2021

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION AUTHORIZING THE MODIFICATION OF THE
WASTEWATER REVENUE BOND ISSUED TO PAY THE
COST OF A CERTAIN PROJECT AT THE CHESAPEAKE-
ELIZABETH TREATMENT PLANT AND AUTHORIZING
THE EXECUTION OF AN AMENDMENT TO THE MASTER
FINANCING AGREEMENT WITH THE VIRGINIA
RESOURCES AUTHORITY.

Adopted October 26, 2021

CHESAPEAKE-ELIZABETH TREATMENT PLANT PROJECT
#C-515303-02

Resolution

**RESOLUTION AUTHORIZING THE MODIFICATION OF
THE WASTEWATER REVENUE BOND ISSUED TO PAY
THE COST OF A CERTAIN PROJECT AT THE
CHESAPEAKE-ELIZABETH TREATMENT PLANT AND
AUTHORIZING THE EXECUTION OF AN AMENDMENT
TO THE MASTER FINANCING AGREEMENT WITH THE
VIRGINIA RESOURCES AUTHORITY.**

WHEREAS, the Hampton Roads Sanitation District (the “Borrower”) entered into a Trust Agreement with The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor trustee, the “Senior Trustee”), dated as of March 1, 2008, as amended (the “Senior Trust Agreement”), pursuant to which the Borrower may incur Subordinated Indebtedness, as defined in the Senior Trust Agreement; and

WHEREAS, the Borrower entered into a Trust Agreement with The Bank of New York Mellon Trust Company, N.A., as Trustee (in such capacity, the “Trustee”), dated as of October 1, 2011, as amended (the “Trust Agreement”), to secure such Subordinated Indebtedness; and

WHEREAS, the Hampton Roads Sanitation District Commission (the “Commission”) received an offer from the Virginia Resources Authority (“VRA”), as Administrator of the Virginia Water Facilities Revolving Fund (the “Fund”), to make a loan from the Fund to the Borrower in the amount of up to \$40,330,298 for the purpose of financing a project described in such offer as improvements to the Chesapeake-Elizabeth Treatment Plant (“Chesapeake-Elizabeth Treatment Plant Project”), together with related expenses; and

WHEREAS, the Commission, as the governing body of the Borrower, accepted such offer and closed on such loan from VRA, as Administrator of the Fund, by authorizing and issuing a wastewater revenue bond, dated February 26, 2004, issued for the purpose of financing Capital Improvement Program Costs (as defined in the Trust Agreement) consisting of improvements to

Chesapeake-Elizabeth Treatment Plant Project
Modification

the Borrower's Chesapeake-Elizabeth Treatment Plant Project, as previously amended (the "Local Bond"), and such Local Bond is payable from the Net Revenues Available for Debt Service (as defined in the Trust Agreement) as a Parity Obligation, as defined in the Trust Agreement, all in conformity with the terms and provisions of the Trust Agreement; and

WHEREAS, the terms of such loan from VRA, as Administrator of the Fund, are governed by the Financing Agreement dated as of February 1, 2004, as amended and restated by the Master Financing Agreement, dated as of February 1, 2016, as amended and supplemented, each between VRA, as Administrator of the Fund, and the Borrower (as so amended and restated, the "Master Financing Agreement"); and

WHEREAS, VRA has offered the Borrower the opportunity to reduce the interest costs on the Local Bond; and

WHEREAS, in connection with the modification of the interest rate on the Local Bond, the lower interest rate thereon is evidenced by the delivery of an allonge to the Local Bond; and

WHEREAS, the Commission, as the governing body of the Borrower, determines that it is in the best interests of the Borrower to authorize the execution and delivery of an allonge with respect to the Local Bond in substantially the form attached as Exhibit A hereto (the "Allonge"), pursuant to which the Cost of Funds (as defined in the Master Financing Agreement) on the Local Bond shall be reduced from 2.10% per annum to 1.00% per annum; and

WHEREAS, in connection with the modification of the Local Bond, VRA has requested the Borrower to amend the Master Financing Agreement pursuant to an amendment in substantially the form attached as Exhibit B hereto (the "Amendment to the Master Financing Agreement"); now, therefore,

BE IT RESOLVED by the Hampton Roads Sanitation District Commission as follows:

Section 1. Authorization of Allonge; Ratification of Local Bond Modified Thereby.

The form, terms and conditions of the Allonge with respect to the Local Bond are hereby approved in all respects, and the Chair or Vice-Chair and the Secretary or any Assistant Secretary of the Commission and the Director of Finance (the “District Representatives”) are hereby authorized and directed to execute, by manual or facsimile signature, and deliver the Allonge, in substantially the form set forth in Exhibit A hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Allonge shall be conclusive evidence of the approval and authorization thereof by the Borrower.

The delivery of any Allonge shall not constitute a modification of any provision of the Local Bond, except with respect to the provisions directly modified thereby, and the other terms and conditions of each Local Bond are hereby ratified.

Section 2. Amendment to the Master Financing Agreement. The form, terms and conditions of the Amendment to the Master Financing Agreement relating to the Local Bond are hereby approved in all respects, and the District Representatives are hereby authorized and directed to execute and deliver the Amendment to the Master Financing Agreement, in substantially the form set forth in Exhibit B hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Amendment to the Master Financing Agreement shall be conclusive evidence of the approval and authorization thereof by the District.

Section 3. Further Actions. The Chair, the Vice-Chair, the Secretary and any Assistant Secretary of the Commission and the General Manager and the Director of Finance of the Borrower, each of whom may act, are authorized and directed (without limitation except as may

be expressly set forth therein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effect the transactions contemplated by this Resolution.

Section 4. Effectiveness. This Resolution shall take effect immediately upon its adoption.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on October 26, 2021.

Frederick N. Elofson, Chair

EXHIBIT A
FORM OF ALLONGE

ALLONGE DATED NOVEMBER __, 2021, ATTACHED TO
HAMPTON ROADS SANITATION DISTRICT
SUBORDINATE PLEDGE SEWER REVENUE BOND,
DATED FEBRUARY 26, 2004,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

Pursuant to a resolution of the Hampton Roads Sanitation District Commission (the “Borrower”), adopted on October 26, 2021, the text of the Bond is hereby amended, and this Allonge shall be executed, authenticated and acknowledged, as follows:

(a) The Cost of Funds on this Bond is reduced from 2.10% per annum to 1.00% per annum beginning on October 1, 2021.

(b) The semiannual installment payments of principal and interest due on December 1, 2021 and on each June 1 and December 1 thereafter are changed to \$1,251,400.00, with the final installment of \$1,251,462.62 due on June 1, 2027, when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

Except as modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

Chesapeake-Elizabeth Treatment Plant Project
Modification

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused this Allonge to be signed by the manual signature of the Chair of its Commission and its seal to be impressed hereon and attested by the Secretary of its Commission, as of the date set forth above.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Chair of the Hampton Roads Sanitation
District Commission

[SEAL]

ATTEST:

Secretary of the Hampton Roads
Sanitation District Commission

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond/Loan No. C-515303-02]

Chesapeake-Elizabeth Treatment Plant Project
Modification

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By _____
Stephanie L. Hamlett
Executive Director

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond
Loan No. C-515303-02]

EXHIBIT B

[FORM OF AMENDMENT TO MASTER FINANCING AGREEMENT]

**FOURTH AMENDMENT TO
MASTER FINANCING AGREEMENT**

dated as of _____ 1, 2021

BETWEEN

VIRGINIA RESOURCES AUTHORITY,

**as Administrator of the
Virginia Water Facilities Revolving Fund**

AND

HAMPTON ROADS SANITATION DISTRICT

Virginia Resources Authority
Virginia Water Facilities Revolving Fund

C-515449G-02 (Atlantic Treatment Plant: Digester Gas to Energy Project)
C-515364-02 (Colonial Williamsburg Pump Station Project)
C-515363-01 (Atlantic Wastewater Treatment Plant Project)
C-515303-02 (Chesapeake-Elizabeth Treatment Plant Project)

FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT

THIS FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT (this “Amendment”) is made as of _____ 1, 2021, between the **VIRGINIA RESOURCES AUTHORITY**, a public body corporate and a political subdivision of the Commonwealth of Virginia (the “Authority”), as Administrator of the **VIRGINIA WATER FACILITIES REVOLVING FUND** (the “Fund”), and the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the “Borrower”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “Commission”).

A. On February 26, 2004 (the “2004 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$40,330,298, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515303-02 2004 Local Bond”), and sold the 2004 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of February 1, 2004, as amended on January 1, 2013 (as amended, the “2004 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

B. On June 22, 2006 (the “2006 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$7,339,600, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515363-01 2006 Local Bond”), and sold the C-515363-01 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515363-01 2006 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

C. On the 2006 Closing Date, the Borrower also issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$1,605,200, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515364-02 2006 Local Bond,” and together with the “C-515363-01 2006 Local Bond,” the “2006 Local Bonds”), and sold the C-515364-02 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515364-02 2006 Financing Agreement,” and together with the C-515363-01 2006 Financing Agreement, the “2006 Financing Agreements”), between the Authority, as Administrator of the Fund, and the Borrower.

D. On March 13, 2012 (the “2012 Closing Date,” and collectively with the 2004 Closing Date and the 2006 Closing Date, the “Closing Dates”), the Borrower issued its Wastewater Revenue Bond, in the maximum principal amount of \$6,318,000, as amended by an Allonge dated January 30, 2020 (as amended, the “C-515449G-02 2012 Local Bond,” and collectively with the C-515303-02 2004 Local Bond and the 2006 Local Bonds, the “Local Bonds”), and sold the 2012 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of March 1, 2012 (the “2012 Financing Agreement,” and collectively with the 2004 Financing Agreement and the 2006 Financing Agreements, the “Financing Agreements”).

E. The Authority and the Borrower previously amended and restated the Financing Agreements with respect to the Local Bonds through the execution and delivery of a Master

Financing Agreement, dated as of February 1, 2016 (as amended and supplemented, the “Master Financing Agreement”), between the Authority and the Borrower.

C. The Authority and the Borrower desire to further amend the Master Financing Agreement with respect to the Local Bonds, as set forth herein.

D. The Authority and the Borrower, with the prior written consent of the Department of Environmental Quality (the “Department”), hereby set forth certain amendments to the Master Financing Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the Authority and the Borrower covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.1 Definitions. The capitalized terms contained in this Amendment shall have the meanings set forth in the Master Financing Agreement except as defined in the recitals above or unless the context otherwise requires.

ARTICLE II

AMENDMENTS TO FINANCING AGREEMENT

Section 2.1 Amendments to Exhibit A-1 of the Master Financing Agreement. Exhibit A-1 of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit A-1.

Section 2.2 Amendments to Exhibit F of the Master Financing Agreement. Exhibit F of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit F.

Section 2.3 Amendments to Exhibit G of the Master Financing Agreement. Exhibit G of the Master Financing Agreement is amended solely with respect to the Local Bonds as set forth in the attached Exhibit G.

ARTICLE III

MISCELLANEOUS

Section 3.1 Successors and Assigns. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 3.2 Applicable Law. This Amendment shall be governed by the laws of the Commonwealth of Virginia.

Section 3.3 Ratification of Financing Agreement. All of the representations and warranties of the Borrower contained in Article II of the Master Financing Agreement are true and correct as of the date hereof with the exception of Exhibit I of the Master Financing Agreement as to which no representations or warranties are made. All terms of the Master Financing Agreement except as amended or modified by the terms of this Amendment are hereby reaffirmed, ratified and confirmed. This Amendment shall not be construed as and is not intended as a novation of the Local Bonds.

Section 3.4 Severability. If any clause, provision or section of this Amendment shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or section shall not affect the remainder of this Amendment which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Amendment. If any agreement or obligation contained in this Amendment is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Authority and the Borrower, as the case may be, only to the extent permitted by law.

Section 3.5 Headings. The headings of the several articles and sections of this Amendment are inserted for convenience only and do not comprise a part of this Amendment.

Section 3.6 Term of Amendment. This Amendment shall be effective upon its execution and delivery, provided that the Local Bonds previously or simultaneously has been executed and delivered. Except as otherwise specified, the Borrower's obligations under the Local Bonds and this Amendment shall expire upon payment in full of the Local Bonds and all other amounts payable by the Borrower under the Master Financing Agreement.

Section 3.7 Counterparts. This Amendment may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

WITNESS the following signatures, all duly authorized.

**VIRGINIA RESOURCES AUTHORITY, as
Administrator of the Virginia Water Facilities
Revolving Fund**

By: _____
Stephanie L. Hamlett, Executive Director

HAMPTON ROADS SANITATION DISTRICT

By: _____
Jay A. Bernas, Director of Finance

The Trustee hereby acknowledges the aforementioned amendments to the Master Financing Agreement.

**U.S. BANK NATIONAL ASSOCIATION, as
Trustee**

By: _____

Title: _____

EXHIBIT A-1
Direct Local Bonds
Hampton Roads Sanitation District

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT F
Senior Bonds, Migrating Senior Bonds and Parity Bonds
Hampton Roads Sanitation District

Senior Bonds.

\$152,640,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 12, 2009

\$111,345,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Refunding Series 2014A, dated November 12, 2014

Migrating Senior Bonds.

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

Parity Bonds.

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016 and January 30, 2020

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016 and January 30, 2020

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$22,680,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2012, dated December 27, 2012

\$246,845,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016A, dated March 17, 2016

\$50,000,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016B, dated April 1, 2016

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$83,485,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2017A, dated December 19, 2017

\$63,185,000 Sanitation District Subordinate Wastewater Revenue Bonds Series 2018A, dated January 23, 2018

\$8,314,638 Sanitation District Subordinate Wastewater Revenue Bond (Boat Harbor Treatment Plant Switchgear and Controls Replacements), dated March 20, 2019

\$8,677,684 Sanitation District Subordinate Wastewater Revenue Bond (Orcutt Avenue and Mercury Boulevard Gravity Sewer Improvements), dated March 20, 2019

\$205,675,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2019A (Federally Taxable), dated October 2, 2019

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT G
Debt Service Schedules
Hampton Roads Sanitation District

| | | |
|---|-------------------------|-----------------------------------|
| Project Number: | C-515303-02 | Original Interest Rate |
| Financing Agreement dated as of: | February 1, 2004 | Interest: 3.00% |
| Final Principal Disbursed: | \$ 40,330,298 | Late Fee: 5.00% |
| Original Interest Rate: | 3.00% | |
| Amendment dated as of: | January 1, 2013 | 2013 Reduced Interest Rate |
| Reduced Interest Rate: | 2.10% | Interest: 2.10% |
| Amendment dated as of: | November 1, 2021 | Late Fee: 5.00% |
| Reduced Interest Rate: | 1.00% | |
| New Rate Effective Date: | October 1, 2021 | 2021 Reduced Interest Rate |
| Principal Payments: | 39 | Interest: 01.00% |
| | | Late Fee: 5.00% |

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | INTEREST PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD | |
|----------------|-----------|---------------------------------|-----------------------|------------------|----------------------|-------------------------------|----------------------|
| 1 | 12/1/2007 | \$ 40,330,298.00 | \$2,790,966.40 | \$ 2,790,966.40 | \$ - | \$ 40,330,298.00 | |
| 2 | 6/1/2008 | 40,330,298.00 | 1,372,654.41 | 604,175.51 | 768,478.90 | 39,561,819.10 | |
| 3 | 12/1/2008 | 39,561,819.10 | 1,373,433.38 | 593,427.30 | 780,006.08 | 38,781,813.02 | |
| 4 | 6/1/2009 | 38,781,813.02 | 1,373,433.35 | 581,727.18 | 791,706.17 | 37,990,106.85 | |
| 5 | 12/1/2009 | 37,990,106.85 | 1,373,433.39 | 569,851.62 | 803,581.77 | 37,186,525.08 | |
| 6 | 6/1/2010 | 37,186,525.08 | 1,373,433.35 | 557,797.86 | 815,635.49 | 36,370,889.59 | |
| 7 | 12/1/2010 | 36,370,889.59 | 1,373,433.35 | 545,563.32 | 827,870.03 | 35,543,019.56 | |
| 8 | 6/1/2011 | 35,543,019.56 | 1,373,433.38 | 533,145.30 | 840,288.08 | 34,702,731.48 | |
| 9 | 12/1/2011 | 34,702,731.48 | 1,373,433.38 | 520,540.98 | 852,892.40 | 33,849,839.08 | |
| 10 | 6/1/2012 | 33,849,839.08 | 1,373,433.38 | 507,747.60 | 865,685.78 | 32,984,153.30 | |
| 11 | 12/1/2012 | 32,984,153.30 | 1,373,433.35 | 494,762.28 | 878,671.07 | 32,105,482.23 | |
| 12 | 6/1/2013 | 32,105,482.23 | 1,291,100.00 | 367,607.77 | 923,492.23 | 31,181,990.00 | |
| 13 | 12/1/2013 | 31,181,990.00 | 1,291,100.00 | 327,410.90 | 963,689.10 | 30,218,300.90 | |
| 14 | 6/1/2014 | 30,218,300.90 | 1,291,100.00 | 317,292.16 | 973,807.84 | 29,244,493.06 | |
| 15 | 12/1/2014 | 29,244,493.06 | 1,291,100.00 | 307,067.18 | 984,032.82 | 28,260,460.24 | |
| 16 | 6/1/2015 | 28,260,460.24 | 1,291,100.00 | 296,734.83 | 994,365.17 | 27,266,095.07 | |
| 17 | 12/1/2015 | 27,266,095.07 | 1,291,100.00 | 286,294.00 | 1,004,806.00 | 26,261,289.07 | |
| 18 | 6/1/2016 | 26,261,289.07 | 1,291,100.00 | 275,743.54 | 1,015,356.46 | 25,245,932.61 | |
| 19 | 12/1/2016 | 25,245,932.61 | 1,291,100.00 | 265,082.29 | 1,026,017.71 | 24,219,914.90 | |
| 20 | 6/1/2017 | 24,219,914.90 | 1,291,100.00 | 254,309.11 | 1,036,790.89 | 23,183,124.01 | |
| 21 | 12/1/2017 | 23,183,124.01 | 1,291,100.00 | 243,422.80 | 1,047,677.20 | 22,135,446.81 | |
| 22 | 6/1/2018 | 22,135,446.81 | 1,291,100.00 | 232,422.19 | 1,058,677.81 | 21,076,769.00 | |
| 23 | 12/1/2018 | 21,076,769.00 | 1,291,100.00 | 221,306.07 | 1,069,793.93 | 20,006,975.07 | |
| 24 | 6/1/2019 | 20,006,975.07 | 1,291,100.00 | 210,073.24 | 1,081,026.76 | 18,925,948.31 | |
| 25 | 12/1/2019 | 18,925,948.31 | 1,291,100.00 | 198,722.46 | 1,092,377.54 | 17,833,570.77 | |
| 26 | 6/1/2020 | 17,833,570.77 | 1,291,100.00 | 187,252.49 | 1,103,847.51 | 16,729,723.26 | |
| 27 | 12/1/2020 | 16,729,723.26 | 1,291,100.00 | 175,662.09 | 1,115,437.91 | 15,614,285.35 | |
| 28 | 6/1/2021 | 15,614,285.35 | 1,291,100.00 | 163,950.00 | 1,127,150.00 | 14,487,135.36 | |
| 29 | 12/1/2021 | 14,487,135.36 | 1,251,400.00 | 125,555.17 | 1,125,844.83 | 13,361,290.53 | |
| 30 | 6/1/2022 | 13,361,290.53 | 1,251,400.00 | 66,806.45 | 1,184,593.55 | 12,176,696.98 | |
| 31 | 12/1/2022 | 12,176,696.98 | 1,251,400.00 | 60,883.48 | 1,190,516.52 | 10,986,180.46 | |
| 32 | 6/1/2023 | 10,986,180.46 | 1,251,400.00 | 54,930.90 | 1,196,469.10 | 9,789,711.36 | |
| 33 | 12/1/2023 | 9,789,711.36 | 1,251,400.00 | 48,948.56 | 1,202,451.44 | 8,587,259.92 | |
| 34 | 6/1/2024 | 8,587,259.92 | 1,251,400.00 | 42,936.30 | 1,208,463.70 | 7,378,796.22 | |
| 35 | 12/1/2024 | 7,378,796.22 | 1,251,400.00 | 36,893.98 | 1,214,506.02 | 6,164,290.20 | |
| 36 | 6/1/2025 | 6,164,290.20 | 1,251,400.00 | 30,821.45 | 1,220,578.55 | 4,943,711.65 | |
| 37 | 12/1/2025 | 4,943,711.65 | 1,251,400.00 | 24,718.56 | 1,226,681.44 | 3,717,030.21 | |
| 38 | 6/1/2026 | 3,717,030.21 | 1,251,400.00 | 18,585.15 | 1,232,814.85 | 2,484,215.36 | |
| 39 | 12/1/2026 | 2,484,215.36 | 1,251,400.00 | 12,421.08 | 1,238,978.92 | 1,245,236.44 | |
| 40 | 6/1/2027 | 1,245,236.44 | 1,251,462.62 | 6,226.18 | 1,245,236.44 | - | |
| | | \$ | \$3,490,083.74 | \$ | 13,159,785.73 | \$ | 40,330,298.00 |

Project Number: C-515363-01
 Financing Agreement dated as of: June 1, 2006
 Final Principal Disbursed: \$ 7,339,600
 Original Cost of Funds: 3.10%
 Amendment dated as of: January 1, 2013
 Reduced Cost of Funds: 2.10%
 Amendment dated as of: November 1, 2021
 Reduced Cost of Funds: 1.00%
 New Rate Effective Date: October 1, 2021
 Principal Payments: 39

Original Cost of Funds

Interest: 3.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2013 Reduced Cost of Funds

Interest: 2.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2021 Reduced Cost of Funds

Interest: 0.90%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2007 | \$ 7,339,600.00 | \$201,813.24 | \$ 201,813.24 | \$ - | \$ 7,339,600.00 |
| 2 | 2/1/2008 | 7,339,600.00 | 252,184.60 | 113,763.78 | 138,420.82 | 7,201,179.18 |
| 3 | 8/1/2008 | 7,201,179.18 | 252,184.64 | 111,618.30 | 140,566.34 | 7,060,612.84 |
| 4 | 2/1/2009 | 7,060,612.84 | 252,184.64 | 109,439.52 | 142,745.12 | 6,917,867.72 |
| 5 | 8/1/2009 | 6,917,867.72 | 252,184.63 | 107,226.96 | 144,957.67 | 6,772,910.05 |
| 6 | 2/1/2010 | 6,772,910.05 | 252,184.59 | 104,980.08 | 147,204.51 | 6,625,705.54 |
| 7 | 8/1/2010 | 6,625,705.54 | 252,184.64 | 102,698.46 | 149,486.18 | 6,476,219.36 |
| 8 | 2/1/2011 | 6,476,219.36 | 252,184.60 | 100,381.38 | 151,803.22 | 6,324,416.14 |
| 9 | 8/1/2011 | 6,324,416.14 | 252,184.65 | 98,028.48 | 154,156.17 | 6,170,259.97 |
| 10 | 2/1/2012 | 6,170,259.97 | 252,184.63 | 95,639.04 | 156,545.59 | 6,013,714.38 |
| 11 | 8/1/2012 | 6,013,714.38 | 252,184.62 | 93,212.58 | 158,972.04 | 5,854,742.34 |
| 12 | 2/1/2013 | 5,854,742.34 | 236,300.00 | 87,170.61 | 149,129.39 | 5,705,612.95 |
| 13 | 8/1/2013 | 5,705,612.95 | 236,300.00 | 59,908.94 | 176,391.06 | 5,529,221.89 |
| 14 | 2/1/2014 | 5,529,221.89 | 236,300.00 | 58,056.83 | 178,243.17 | 5,350,978.72 |
| 15 | 8/1/2014 | 5,350,978.72 | 236,300.00 | 56,185.28 | 180,114.72 | 5,170,864.00 |
| 16 | 2/1/2015 | 5,170,864.00 | 236,300.00 | 54,294.07 | 182,005.93 | 4,988,858.07 |
| 17 | 8/1/2015 | 4,988,858.07 | 236,300.00 | 52,383.01 | 183,916.99 | 4,804,941.08 |
| 18 | 2/1/2016 | 4,804,941.08 | 236,300.00 | 50,451.88 | 185,848.12 | 4,619,092.96 |
| 19 | 8/1/2016 | 4,619,092.96 | 236,300.00 | 48,500.48 | 187,799.52 | 4,431,293.44 |
| 20 | 2/1/2017 | 4,431,293.44 | 236,300.00 | 46,528.58 | 189,771.42 | 4,241,522.02 |
| 21 | 8/1/2017 | 4,241,522.02 | 236,300.00 | 44,535.98 | 191,764.02 | 4,049,758.00 |
| 22 | 2/1/2018 | 4,049,758.00 | 236,300.00 | 42,522.46 | 193,777.54 | 3,855,980.46 |
| 23 | 8/1/2018 | 3,855,980.46 | 236,300.00 | 40,487.79 | 195,812.21 | 3,660,168.25 |
| 24 | 2/1/2019 | 3,660,168.25 | 236,300.00 | 38,431.77 | 197,868.23 | 3,462,300.02 |
| 25 | 8/1/2019 | 3,462,300.02 | 236,300.00 | 36,354.15 | 199,945.85 | 3,262,354.17 |
| 26 | 2/1/2020 | 3,262,354.17 | 236,300.00 | 34,254.72 | 202,045.28 | 3,060,308.89 |
| 27 | 8/1/2020 | 3,060,308.89 | 236,300.00 | 32,133.24 | 204,166.76 | 2,856,142.13 |
| 28 | 2/1/2021 | 2,856,142.13 | 236,300.00 | 29,989.49 | 206,310.51 | 2,649,831.62 |
| 29 | 8/1/2021 | 2,649,831.62 | 236,300.00 | 27,823.23 | 208,476.77 | 2,441,354.80 |
| 30 | 2/1/2022 | 2,441,354.80 | 229,100.00 | 16,682.59 | 212,417.41 | 2,228,937.39 |
| 31 | 8/1/2022 | 2,228,937.39 | 229,100.00 | 11,144.69 | 217,955.31 | 2,010,982.08 |
| 32 | 2/1/2023 | 2,010,982.08 | 229,100.00 | 10,054.91 | 219,045.09 | 1,791,936.99 |
| 33 | 8/1/2023 | 1,791,936.99 | 229,100.00 | 8,959.68 | 220,140.32 | 1,571,796.67 |
| 34 | 2/1/2024 | 1,571,796.67 | 229,100.00 | 7,858.98 | 221,241.02 | 1,350,555.65 |
| 35 | 8/1/2024 | 1,350,555.65 | 229,100.00 | 6,752.78 | 222,347.22 | 1,128,208.43 |
| 36 | 2/1/2025 | 1,128,208.43 | 229,100.00 | 5,641.04 | 223,458.96 | 904,749.47 |
| 37 | 8/1/2025 | 904,749.47 | 229,100.00 | 4,523.75 | 224,576.25 | 680,173.22 |
| 38 | 2/1/2026 | 680,173.22 | 229,100.00 | 3,400.87 | 225,699.13 | 454,474.09 |
| 39 | 8/1/2026 | 454,474.09 | 229,100.00 | 2,272.37 | 226,827.63 | 227,646.46 |
| 40 | 2/1/2027 | 227,646.46 | 228,784.69 | 1,138.23 | 227,646.46 | - |
| | | | \$ 9,496,844.17 | \$ 2,157,244.22 | \$ 7,339,600.00 | |

Project Number: C-515364-02
Financing Agreement dated as of: June 1, 2006
Final Principal Disbursed: \$ 1,605,199.20
Original Cost of Funds: 3.10%
Amendment dated as of: January 1, 2013
Reduced Cost of Funds: 2.10%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.00%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Original Cost of Funds
Interest: 3.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2013 Reduced Cost of Funds
Interest: 2.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2021 Reduced Cost of Funds
Interest: 0.90%
Admin. Fee: 0.10%
Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 1/1/2008 | \$ 1,605,199.20 | \$40,785.83 | \$ 40,785.83 | \$ - | \$ 1,605,199.20 |
| 2 | 7/1/2008 | 1,605,199.20 | 53,071.45 | 22,798.26 | 30,273.19 | 1,574,926.01 |
| 3 | 1/1/2009 | 1,574,926.01 | 55,285.78 | 24,543.36 | 30,742.42 | 1,544,183.59 |
| 4 | 7/1/2009 | 1,544,183.59 | 55,153.77 | 23,934.84 | 31,218.93 | 1,512,964.66 |
| 5 | 1/1/2010 | 1,512,964.66 | 55,153.79 | 23,450.94 | 31,702.85 | 1,481,261.81 |
| 6 | 7/1/2010 | 1,481,261.81 | 55,153.76 | 22,959.54 | 32,194.22 | 1,449,067.59 |
| 7 | 1/1/2011 | 1,449,067.59 | 55,153.73 | 22,460.52 | 32,693.21 | 1,416,374.38 |
| 8 | 7/1/2011 | 1,416,374.38 | 55,153.77 | 21,953.82 | 33,199.95 | 1,383,174.43 |
| 9 | 1/1/2012 | 1,383,174.43 | 55,153.75 | 21,439.20 | 33,714.55 | 1,349,459.88 |
| 10 | 7/1/2012 | 1,349,459.88 | 55,153.73 | 20,916.60 | 34,237.13 | 1,315,222.75 |
| 11 | 1/1/2013 | 1,315,222.75 | 55,153.77 | 20,385.96 | 34,767.81 | 1,280,454.94 |
| 12 | 7/1/2013 | 1,280,454.94 | 51,500.00 | 13,729.33 | 37,770.67 | 1,242,684.27 |
| 13 | 1/1/2014 | 1,242,684.27 | 51,500.00 | 13,048.18 | 38,451.82 | 1,204,232.45 |
| 14 | 7/1/2014 | 1,204,232.45 | 51,500.00 | 12,644.44 | 38,855.56 | 1,165,376.89 |
| 15 | 1/1/2015 | 1,165,376.89 | 51,500.00 | 12,236.46 | 39,263.54 | 1,126,113.35 |
| 16 | 7/1/2015 | 1,126,113.35 | 51,500.00 | 11,824.19 | 39,675.81 | 1,086,437.54 |
| 17 | 1/1/2016 | 1,086,437.54 | 51,500.00 | 11,407.59 | 40,092.41 | 1,046,345.13 |
| 18 | 7/1/2016 | 1,046,345.13 | 51,500.00 | 10,986.62 | 40,513.38 | 1,005,831.75 |
| 19 | 1/1/2017 | 1,005,831.75 | 51,500.00 | 10,561.23 | 40,938.77 | 964,892.98 |
| 20 | 7/1/2017 | 964,892.98 | 51,500.00 | 10,131.38 | 41,368.62 | 923,524.36 |
| 21 | 1/1/2018 | 923,524.36 | 51,500.00 | 9,697.01 | 41,802.99 | 881,721.37 |
| 22 | 7/1/2018 | 881,721.37 | 51,500.00 | 9,258.07 | 42,241.93 | 839,479.44 |
| 23 | 1/1/2019 | 839,479.44 | 51,500.00 | 8,814.53 | 42,685.47 | 796,793.97 |
| 24 | 7/1/2019 | 796,793.97 | 51,500.00 | 8,366.34 | 43,133.66 | 753,660.31 |
| 25 | 1/1/2020 | 753,660.31 | 51,500.00 | 7,913.43 | 43,586.57 | 710,073.74 |
| 26 | 7/1/2020 | 710,073.74 | 51,500.00 | 7,455.77 | 44,044.23 | 666,029.51 |
| 27 | 1/1/2021 | 666,029.51 | 51,500.00 | 6,993.31 | 44,506.69 | 621,522.82 |
| 28 | 7/1/2021 | 621,522.82 | 51,500.00 | 6,525.99 | 44,974.01 | 576,548.82 |
| 29 | 1/1/2022 | 576,548.82 | 49,800.00 | 4,468.25 | 45,331.75 | 531,217.07 |
| 30 | 7/1/2022 | 531,217.07 | 49,800.00 | 2,656.09 | 47,143.91 | 484,073.16 |
| 31 | 1/1/2023 | 484,073.16 | 49,800.00 | 2,420.37 | 47,379.63 | 436,693.53 |
| 32 | 7/1/2023 | 436,693.53 | 49,800.00 | 2,183.47 | 47,616.53 | 389,077.00 |
| 33 | 1/1/2024 | 389,077.00 | 49,800.00 | 1,945.39 | 47,854.61 | 341,222.39 |
| 34 | 7/1/2024 | 341,222.39 | 49,800.00 | 1,706.11 | 48,093.89 | 293,128.50 |
| 35 | 1/1/2025 | 293,128.50 | 49,800.00 | 1,465.64 | 48,334.36 | 244,794.14 |
| 36 | 7/1/2025 | 244,794.14 | 49,800.00 | 1,223.97 | 48,576.03 | 196,218.11 |
| 37 | 1/1/2026 | 196,218.11 | 49,800.00 | 981.09 | 48,818.91 | 147,399.20 |
| 38 | 7/1/2026 | 147,399.20 | 49,800.00 | 737.00 | 49,063.00 | 98,336.20 |
| 39 | 1/1/2027 | 98,336.20 | 49,800.00 | 491.68 | 49,308.32 | 49,027.88 |
| 40 | 7/1/2027 | 49,027.88 | 49,273.02 | 245.14 | 49,027.88 | - |
| | | | \$ 2,062,946.15 | \$ 457,746.94 | \$ 1,605,199.20 | |

Project Number: C-515449G-02
Financing Agreement Dated as of: March 1, 2012
Final Principal Disbursed: \$ 6,318,000
Original Cost of Funds: 2.51%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.15%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Cost of Funds
 Interest: 2.31%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

2021 Reduced Cost of Funds
 Interest: 0.95%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2013 | \$ 6,318,000.00 | \$99,183.28 | \$ 99,183.28 | \$ - | \$ 6,318,000.00 |
| 2 | 2/1/2014 | 6,318,000.00 | 205,900.00 | 76,996.06 | 128,903.94 | 6,189,096.06 |
| 3 | 8/1/2014 | 6,189,096.06 | 205,900.00 | 77,673.18 | 128,226.82 | 6,060,869.24 |
| 4 | 2/1/2015 | 6,060,869.24 | 205,900.00 | 76,063.92 | 129,836.08 | 5,931,033.16 |
| 5 | 8/1/2015 | 5,931,033.16 | 205,900.00 | 74,434.44 | 131,465.56 | 5,799,567.60 |
| 6 | 2/1/2016 | 5,799,567.60 | 205,900.00 | 72,784.56 | 133,115.44 | 5,666,452.16 |
| 7 | 8/1/2016 | 5,666,452.16 | 205,900.00 | 71,113.98 | 134,786.02 | 5,531,666.14 |
| 8 | 2/1/2017 | 5,531,666.14 | 205,900.00 | 69,422.40 | 136,477.60 | 5,395,188.54 |
| 9 | 8/1/2017 | 5,395,188.54 | 205,900.00 | 67,709.64 | 138,190.36 | 5,256,998.18 |
| 10 | 2/1/2018 | 5,256,998.18 | 205,900.00 | 65,975.34 | 139,924.66 | 5,117,073.52 |
| 11 | 8/1/2018 | 5,117,073.52 | 205,900.00 | 64,219.26 | 141,680.74 | 4,975,392.78 |
| 12 | 2/1/2019 | 4,975,392.78 | 205,900.00 | 62,441.16 | 143,458.84 | 4,831,933.94 |
| 13 | 8/1/2019 | 4,831,933.94 | 205,900.00 | 60,640.80 | 145,259.20 | 4,686,674.74 |
| 14 | 2/1/2020 | 4,686,674.74 | 205,900.00 | 58,817.76 | 147,082.24 | 4,539,592.50 |
| 15 | 8/1/2020 | 4,539,592.50 | 205,900.00 | 56,971.86 | 148,928.14 | 4,390,664.36 |
| 16 | 2/1/2021 | 4,390,664.36 | 205,900.00 | 55,102.86 | 150,797.14 | 4,239,867.22 |
| 17 | 8/1/2021 | 4,239,867.22 | 205,900.00 | 53,210.34 | 152,689.66 | 4,087,177.58 |
| 18 | 2/1/2022 | 4,087,177.58 | 190,700.00 | 32,765.54 | 157,934.46 | 3,929,243.12 |
| 19 | 8/1/2022 | 3,929,243.12 | 190,700.00 | 22,593.15 | 168,106.85 | 3,761,136.27 |
| 20 | 2/1/2023 | 3,761,136.27 | 190,700.00 | 21,626.53 | 169,073.47 | 3,592,062.80 |
| 21 | 8/1/2023 | 3,592,062.80 | 190,700.00 | 20,654.36 | 170,045.64 | 3,422,017.16 |
| 22 | 2/1/2024 | 3,422,017.16 | 190,700.00 | 19,676.60 | 171,023.40 | 3,250,993.76 |
| 23 | 8/1/2024 | 3,250,993.76 | 190,700.00 | 18,693.21 | 172,006.79 | 3,078,986.97 |
| 24 | 2/1/2025 | 3,078,986.97 | 190,700.00 | 17,704.18 | 172,995.82 | 2,905,991.15 |
| 25 | 8/1/2025 | 2,905,991.15 | 190,700.00 | 16,709.45 | 173,990.55 | 2,732,000.60 |
| 26 | 2/1/2026 | 2,732,000.60 | 190,700.00 | 15,709.00 | 174,991.00 | 2,557,009.60 |
| 27 | 8/1/2026 | 2,557,009.60 | 190,700.00 | 14,702.81 | 175,997.19 | 2,381,012.41 |
| 28 | 2/1/2027 | 2,381,012.41 | 190,700.00 | 13,690.82 | 177,009.18 | 2,204,003.23 |
| 29 | 8/1/2027 | 2,204,003.23 | 190,700.00 | 12,673.02 | 178,026.98 | 2,025,976.25 |
| 30 | 2/1/2028 | 2,025,976.25 | 190,700.00 | 11,649.36 | 179,050.64 | 1,846,925.61 |
| 31 | 8/1/2028 | 1,846,925.61 | 190,700.00 | 10,619.82 | 180,080.18 | 1,666,845.43 |
| 32 | 2/1/2029 | 1,666,845.43 | 190,700.00 | 9,584.36 | 181,115.64 | 1,485,729.79 |
| 33 | 8/1/2029 | 1,485,729.79 | 190,700.00 | 8,542.95 | 182,157.05 | 1,303,572.74 |
| 34 | 2/1/2030 | 1,303,572.74 | 190,700.00 | 7,495.54 | 183,204.46 | 1,120,368.28 |
| 35 | 8/1/2030 | 1,120,368.28 | 190,700.00 | 6,442.12 | 184,257.88 | 936,110.40 |
| 36 | 2/1/2031 | 936,110.40 | 190,700.00 | 5,382.63 | 185,317.37 | 750,793.03 |
| 37 | 8/1/2031 | 750,793.03 | 190,700.00 | 4,317.06 | 186,382.94 | 564,410.09 |
| 38 | 2/1/2032 | 564,410.09 | 190,700.00 | 3,245.36 | 187,454.64 | 376,955.45 |
| 39 | 8/1/2032 | 376,955.45 | 190,700.00 | 2,167.49 | 188,532.51 | 188,422.94 |
| 40 | 2/1/2033 | 188,422.94 | 189,506.37 | 1,083.43 | 188,422.94 | - |
| | | | \$ 7,778,489.65 | \$ 1,460,489.63 | \$ 6,318,000.00 | |

Hampton Roads Sanitation District
Resolution of
October 26, 2021

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION AUTHORIZING THE MODIFICATION OF THE WASTEWATER REVENUE BOND ISSUED TO PAY THE COST OF A CERTAIN PROJECT AT THE COLONIAL WILLIAMSBURG PUMP STATION AND AUTHORIZING THE EXECUTION OF AN AMENDMENT TO THE MASTER FINANCING AGREEMENT WITH THE VIRGINIA RESOURCES AUTHORITY.

Adopted October 26, 2021

COLONIAL WILLIAMSBURG PUMP STATION PROJECT
#C-515364-02

Resolution

**RESOLUTION AUTHORIZING THE MODIFICATION OF
THE WASTEWATER REVENUE BOND ISSUED TO PAY
THE COST OF A CERTAIN PROJECT AT THE
COLONIAL WILLIAMSBURG PUMP STATION AND
AUTHORIZING THE EXECUTION OF AN AMENDMENT
TO THE MASTER FINANCING AGREEMENT WITH THE
VIRGINIA RESOURCES AUTHORITY.**

WHEREAS, the Hampton Roads Sanitation District (the “Borrower”) entered into a Trust Agreement with The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor trustee, the “Senior Trustee”), dated as of March 1, 2008, as amended (the “Senior Trust Agreement”), pursuant to which the Borrower may incur Subordinated Indebtedness, as defined in the Senior Trust Agreement; and

WHEREAS, the Borrower entered into a Trust Agreement with The Bank of New York Mellon Trust Company, N.A., as Trustee (in such capacity, the “Trustee”), dated as of October 1, 2011, as amended (the “Trust Agreement”), to secure such Subordinated Indebtedness; and

WHEREAS, the Hampton Roads Sanitation District Commission (the “Commission”) received an offer from the Virginia Resources Authority (“VRA”), as Administrator of the Virginia Water Facilities Revolving Fund (the “Fund”), to make a loan from the Fund to the Borrower in the amount of up to \$1,605,200 for the purpose of financing a project described in such offer as improvements to the Colonial Williamsburg Pump Station (“Colonial Williamsburg Pump Station Project”), together with related expenses; and

WHEREAS, the Commission, as the governing body of the Borrower, accepted such offer and closed on such loan from VRA, as Administrator of the Fund, by authorizing and issuing a wastewater revenue bond, dated June 22, 2006, issued for the purpose of financing Capital Improvement Program Costs (as defined in the Trust Agreement) consisting of improvements to

Colonial Williamsburg Pump Station Project
Modification

the Borrower's Colonial Williamsburg Pump Station Project, as previously amended (the "Local Bond"), and such Local Bond is payable from the Net Revenues Available for Debt Service (as defined in the Trust Agreement) as a Parity Obligation, as defined in the Trust Agreement, all in conformity with the terms and provisions of the Trust Agreement; and

WHEREAS, the terms of such loan from VRA, as Administrator of the Fund, are governed by the Financing Agreement, dated as of June 1, 2006, as amended and restated by the Master Financing Agreement, dated as of February 1, 2016, as amended and supplemented, each between VRA, as Administrator of the Fund, and the Borrower (as so amended and restated, the "Master Financing Agreement"); and

WHEREAS, VRA has offered the Borrower the opportunity to reduce the interest costs on the Local Bond; and

WHEREAS, in connection with the modification of the interest rate on the Local Bond, the lower interest rate thereon is evidenced by the delivery of an allonge to the Local Bond; and

WHEREAS, the Commission, as the governing body of the Borrower, determines that it is in the best interests of the Borrower to authorize the execution and delivery of an allonge with respect to the Local Bond in substantially the form attached as Exhibit A hereto (the "Allonge"), pursuant to which the Cost of Funds (as defined in the Master Financing Agreement) on the Local Bond shall be reduced from 2.10% per annum to 1.00% per annum; and

WHEREAS, in connection with the modification of the Local Bond, VRA has requested the Borrower to amend the Master Financing Agreement pursuant to an amendment in substantially the form attached as Exhibit B hereto (the "Amendment to the Master Financing Agreement"); now, therefore,

BE IT RESOLVED by the Hampton Roads Sanitation District Commission as follows:

Section 1. Authorization of Allonge; Ratification of Local Bond Modified Thereby.

The form, terms and conditions of the Allonge with respect to the Local Bond are hereby approved in all respects, and the Chair or Vice-Chair and the Secretary or any Assistant Secretary of the Commission and the Director of Finance (the “District Representatives”) are hereby authorized and directed to execute, by manual or facsimile signature, and deliver the Allonge, in substantially the form set forth in Exhibit A hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Allonge shall be conclusive evidence of the approval and authorization thereof by the Borrower.

The delivery of any Allonge shall not constitute a modification of any provision of the Local Bond, except with respect to the provisions directly modified thereby, and the other terms and conditions of each Local Bond are hereby ratified.

Section 2. Amendment to the Master Financing Agreement. The form, terms and conditions of the Amendment to the Master Financing Agreement relating to the Local Bond are hereby approved in all respects, and the District Representatives are hereby authorized and directed to execute and deliver the Amendment to the Master Financing Agreement, in substantially the form set forth in Exhibit B hereto, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery of the Amendment to the Master Financing Agreement shall be conclusive evidence of the approval and authorization thereof by the District.

Section 3. Further Actions. The Chair, the Vice-Chair, the Secretary and any Assistant Secretary of the Commission and the General Manager and the Director of Finance of the Borrower, each of whom may act, are authorized and directed (without limitation except as may

be expressly set forth therein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effect the transactions contemplated by this Resolution.

Section 4. Effectiveness. This Resolution shall take effect immediately upon its adoption.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on October 26, 2021.

Frederick N. Elofson, Chair

EXHIBIT A
FORM OF ALLONGE

ALLONGE DATED NOVEMBER __, 2021, ATTACHED TO
HAMPTON ROADS SANITATION DISTRICT
SUBORDINATE PLEDGE SEWER REVENUE BOND,
DATED JUNE 22, 2006,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

Pursuant to a resolution of the Hampton Roads Sanitation District Commission (the “Borrower”), adopted on October 26, 2021, the text of the Bond is hereby amended, and this Allonge shall be executed, authenticated and acknowledged, as follows:

(a) The Cost of Funds on this Bond is reduced from 2.10% per annum to 1.00% per annum beginning on October 1, 2021.

(b) The semiannual installment payments of principal and interest due on January 1, 2022 and on each January 1 and July 1 thereafter are changed to \$49,800.00, with the final installment of \$49,273.02 due on July 1, 2027, when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

Except as modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

Colonial Williamsburg Pump Station Project
Modification

IN WITNESS WHEREOF, the Hampton Roads Sanitation District has caused this Allonge to be signed by the manual signature of the Chair of its Commission and its seal to be impressed hereon and attested by the Secretary of its Commission, as of the date set forth above.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Chair of the Hampton Roads Sanitation
District Commission

[SEAL]

ATTEST:

Secretary of the Hampton Roads
Sanitation District Commission

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond
Loan No. C-515364-02]

Colonial Williamsburg Pump Station Project
Modification

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By _____
Stephanie L. Hamlett
Executive Director

[Signature page to Allonge
Hampton Roads Sanitation District
Subordinate Pledge Sewer Revenue Bond
Loan No. C-515364-02]

EXHIBIT B

[FORM OF AMENDMENT TO MASTER FINANCING AGREEMENT]

**FOURTH AMENDMENT TO
MASTER FINANCING AGREEMENT**

dated as of _____ 1, 2021

BETWEEN

VIRGINIA RESOURCES AUTHORITY,

**as Administrator of the
Virginia Water Facilities Revolving Fund**

AND

HAMPTON ROADS SANITATION DISTRICT

Virginia Resources Authority
Virginia Water Facilities Revolving Fund

C-515449G-02 (Atlantic Treatment Plant: Digester Gas to Energy Project)
C-515364-02 (Colonial Williamsburg Pump Station Project)
C-515363-01 (Atlantic Wastewater Treatment Plant Project)
C-515303-02 (Chesapeake-Elizabeth Treatment Plant Project)

FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT

THIS FOURTH AMENDMENT TO MASTER FINANCING AGREEMENT (this “Amendment”) is made as of _____ 1, 2021, between the **VIRGINIA RESOURCES AUTHORITY**, a public body corporate and a political subdivision of the Commonwealth of Virginia (the “Authority”), as Administrator of the **VIRGINIA WATER FACILITIES REVOLVING FUND** (the “Fund”), and the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the “Borrower”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “Commission”).

A. On February 26, 2004 (the “2004 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$40,330,298, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515303-02 2004 Local Bond”), and sold the 2004 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of February 1, 2004, as amended on January 1, 2013 (as amended, the “2004 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

B. On June 22, 2006 (the “2006 Closing Date”), the Borrower issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$7,339,600, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515363-01 2006 Local Bond”), and sold the C-515363-01 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515363-01 2006 Financing Agreement”), between the Authority, as Administrator of the Fund, and the Borrower.

C. On the 2006 Closing Date, the Borrower also issued its Subordinate Pledge Sewer Revenue Bond, in the maximum principal amount of \$1,605,200, as amended by an Allonge dated January 9, 2013 (as amended, the “C-515364-02 2006 Local Bond,” and together with the “C-515363-01 2006 Local Bond,” the “2006 Local Bonds”), and sold the C-515364-02 2006 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of June 1, 2006, as amended on January 1, 2013 (as amended, the “C-515364-02 2006 Financing Agreement,” and together with the C-515363-01 2006 Financing Agreement, the “2006 Financing Agreements”), between the Authority, as Administrator of the Fund, and the Borrower.

D. On March 13, 2012 (the “2012 Closing Date,” and collectively with the 2004 Closing Date and the 2006 Closing Date, the “Closing Dates”), the Borrower issued its Wastewater Revenue Bond, in the maximum principal amount of \$6,318,000, as amended by an Allonge dated January 30, 2020 (as amended, the “C-515449G-02 2012 Local Bond,” and collectively with the C-515303-02 2004 Local Bond and the 2006 Local Bonds, the “Local Bonds”), and sold the 2012 Local Bond to the Authority, pursuant to a Financing Agreement, dated as of March 1, 2012 (the “2012 Financing Agreement,” and collectively with the 2004 Financing Agreement and the 2006 Financing Agreements, the “Financing Agreements”).

E. The Authority and the Borrower previously amended and restated the Financing Agreements with respect to the Local Bonds through the execution and delivery of a Master

Financing Agreement, dated as of February 1, 2016 (as amended and supplemented, the “Master Financing Agreement”), between the Authority and the Borrower.

C. The Authority and the Borrower desire to further amend the Master Financing Agreement with respect to the Local Bonds, as set forth herein.

D. The Authority and the Borrower, with the prior written consent of the Department of Environmental Quality (the “Department”), hereby set forth certain amendments to the Master Financing Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the Authority and the Borrower covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.1 Definitions. The capitalized terms contained in this Amendment shall have the meanings set forth in the Master Financing Agreement except as defined in the recitals above or unless the context otherwise requires.

ARTICLE II

AMENDMENTS TO FINANCING AGREEMENT

Section 2.1 Amendments to Exhibit A-1 of the Master Financing Agreement. Exhibit A-1 of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit A-1.

Section 2.2 Amendments to Exhibit F of the Master Financing Agreement. Exhibit F of the Master Financing Agreement is amended and restated as set forth in the attached Exhibit F.

Section 2.3 Amendments to Exhibit G of the Master Financing Agreement. Exhibit G of the Master Financing Agreement is amended solely with respect to the Local Bonds as set forth in the attached Exhibit G.

ARTICLE III

MISCELLANEOUS

Section 3.1 Successors and Assigns. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 3.2 Applicable Law. This Amendment shall be governed by the laws of the Commonwealth of Virginia.

Section 3.3 Ratification of Financing Agreement. All of the representations and warranties of the Borrower contained in Article II of the Master Financing Agreement are true and correct as of the date hereof with the exception of Exhibit I of the Master Financing Agreement as to which no representations or warranties are made. All terms of the Master Financing Agreement except as amended or modified by the terms of this Amendment are hereby reaffirmed, ratified and confirmed. This Amendment shall not be construed as and is not intended as a novation of the Local Bonds.

Section 3.4 Severability. If any clause, provision or section of this Amendment shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or section shall not affect the remainder of this Amendment which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Amendment. If any agreement or obligation contained in this Amendment is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Authority and the Borrower, as the case may be, only to the extent permitted by law.

Section 3.5 Headings. The headings of the several articles and sections of this Amendment are inserted for convenience only and do not comprise a part of this Amendment.

Section 3.6 Term of Amendment. This Amendment shall be effective upon its execution and delivery, provided that the Local Bonds previously or simultaneously has been executed and delivered. Except as otherwise specified, the Borrower's obligations under the Local Bonds and this Amendment shall expire upon payment in full of the Local Bonds and all other amounts payable by the Borrower under the Master Financing Agreement.

Section 3.7 Counterparts. This Amendment may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

WITNESS the following signatures, all duly authorized.

**VIRGINIA RESOURCES AUTHORITY, as
Administrator of the Virginia Water Facilities
Revolving Fund**

By: _____
Stephanie L. Hamlett, Executive Director

HAMPTON ROADS SANITATION DISTRICT

By: _____
Jay A. Bernas, Director of Finance

The Trustee hereby acknowledges the aforementioned amendments to the Master Financing Agreement.

**U.S. BANK NATIONAL ASSOCIATION, as
Trustee**

By: _____

Title: _____

EXHIBIT A-1
Direct Local Bonds
Hampton Roads Sanitation District

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT F
Senior Bonds, Migrating Senior Bonds and Parity Bonds
Hampton Roads Sanitation District

Senior Bonds.

\$152,640,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 12, 2009

\$111,345,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Refunding Series 2014A, dated November 12, 2014

Migrating Senior Bonds.

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

Parity Bonds.

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

\$40,330,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013 **and _____, 2021**

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013 **and _____, 2021**

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016 and January 30, 2020

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016 and January 30, 2020

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project), as amended on January 30, 2020 **and _____, 2021**

\$22,680,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2012, dated December 27, 2012

\$246,845,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016A, dated March 17, 2016

\$50,000,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016B, dated April 1, 2016

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

\$3,205,554 Sanitation District Subordinate Wastewater Revenue Bond (Lucas Creek Interceptor Project), dated October 26, 2017

\$1,095,595 Sanitation District Subordinate Wastewater Revenue Bond (Rodman Avenue Pump Station Project), dated November 29, 2017

\$83,485,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2017A, dated December 19, 2017

\$63,185,000 Sanitation District Subordinate Wastewater Revenue Bonds Series 2018A, dated January 23, 2018

\$8,314,638 Sanitation District Subordinate Wastewater Revenue Bond (Boat Harbor Treatment Plant Switchgear and Controls Replacements), dated March 20, 2019

\$8,677,684 Sanitation District Subordinate Wastewater Revenue Bond (Orcutt Avenue and Mercury Boulevard Gravity Sewer Improvements), dated March 20, 2019

\$205,675,000 Sanitation District Subordinate Wastewater Revenue Bonds Refunding Series 2019A (Federally Taxable), dated October 2, 2019

\$4,989,671 Sanitation District Subordinate Wastewater Revenue Bond (Deep Creek Project), dated November 21, 2019

\$3,896,616 Sanitation District Subordinate Wastewater Revenue Bond (Huxley – Middle Ground Project), dated November 21, 2019

\$3,500,000 Sanitation District Subordinate Wastewater Revenue Bond (Treatment Plant Project), dated November 21, 2019

EXHIBIT G
Debt Service Schedules
Hampton Roads Sanitation District

| | | |
|---|-------------------------|-----------------------------------|
| Project Number: | C-515303-02 | Original Interest Rate |
| Financing Agreement dated as of: | February 1, 2004 | Interest: 3.00% |
| Final Principal Disbursed: | \$ 40,330,298 | Late Fee: 5.00% |
| Original Interest Rate: | 3.00% | |
| Amendment dated as of: | January 1, 2013 | 2013 Reduced Interest Rate |
| Reduced Interest Rate: | 2.10% | Interest: 2.10% |
| Amendment dated as of: | November 1, 2021 | Late Fee: 5.00% |
| Reduced Interest Rate: | 1.00% | |
| New Rate Effective Date: | October 1, 2021 | 2021 Reduced Interest Rate |
| Principal Payments: | 39 | Interest: 01.00% |
| | | Late Fee: 5.00% |

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | INTEREST PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD | |
|----------------|-----------|---------------------------------|-----------------------|------------------|----------------------|-------------------------------|----------------------|
| 1 | 12/1/2007 | \$ 40,330,298.00 | \$2,790,966.40 | \$ 2,790,966.40 | \$ - | \$ 40,330,298.00 | |
| 2 | 6/1/2008 | 40,330,298.00 | 1,372,654.41 | 604,175.51 | 768,478.90 | 39,561,819.10 | |
| 3 | 12/1/2008 | 39,561,819.10 | 1,373,433.38 | 593,427.30 | 780,006.08 | 38,781,813.02 | |
| 4 | 6/1/2009 | 38,781,813.02 | 1,373,433.35 | 581,727.18 | 791,706.17 | 37,990,106.85 | |
| 5 | 12/1/2009 | 37,990,106.85 | 1,373,433.39 | 569,851.62 | 803,581.77 | 37,186,525.08 | |
| 6 | 6/1/2010 | 37,186,525.08 | 1,373,433.35 | 557,797.86 | 815,635.49 | 36,370,889.59 | |
| 7 | 12/1/2010 | 36,370,889.59 | 1,373,433.35 | 545,563.32 | 827,870.03 | 35,543,019.56 | |
| 8 | 6/1/2011 | 35,543,019.56 | 1,373,433.38 | 533,145.30 | 840,288.08 | 34,702,731.48 | |
| 9 | 12/1/2011 | 34,702,731.48 | 1,373,433.38 | 520,540.98 | 852,892.40 | 33,849,839.08 | |
| 10 | 6/1/2012 | 33,849,839.08 | 1,373,433.38 | 507,747.60 | 865,685.78 | 32,984,153.30 | |
| 11 | 12/1/2012 | 32,984,153.30 | 1,373,433.35 | 494,762.28 | 878,671.07 | 32,105,482.23 | |
| 12 | 6/1/2013 | 32,105,482.23 | 1,291,100.00 | 367,607.77 | 923,492.23 | 31,181,990.00 | |
| 13 | 12/1/2013 | 31,181,990.00 | 1,291,100.00 | 327,410.90 | 963,689.10 | 30,218,300.90 | |
| 14 | 6/1/2014 | 30,218,300.90 | 1,291,100.00 | 317,292.16 | 973,807.84 | 29,244,493.06 | |
| 15 | 12/1/2014 | 29,244,493.06 | 1,291,100.00 | 307,067.18 | 984,032.82 | 28,260,460.24 | |
| 16 | 6/1/2015 | 28,260,460.24 | 1,291,100.00 | 296,734.83 | 994,365.17 | 27,266,095.07 | |
| 17 | 12/1/2015 | 27,266,095.07 | 1,291,100.00 | 286,294.00 | 1,004,806.00 | 26,261,289.07 | |
| 18 | 6/1/2016 | 26,261,289.07 | 1,291,100.00 | 275,743.54 | 1,015,356.46 | 25,245,932.61 | |
| 19 | 12/1/2016 | 25,245,932.61 | 1,291,100.00 | 265,082.29 | 1,026,017.71 | 24,219,914.90 | |
| 20 | 6/1/2017 | 24,219,914.90 | 1,291,100.00 | 254,309.11 | 1,036,790.89 | 23,183,124.01 | |
| 21 | 12/1/2017 | 23,183,124.01 | 1,291,100.00 | 243,422.80 | 1,047,677.20 | 22,135,446.81 | |
| 22 | 6/1/2018 | 22,135,446.81 | 1,291,100.00 | 232,422.19 | 1,058,677.81 | 21,076,769.00 | |
| 23 | 12/1/2018 | 21,076,769.00 | 1,291,100.00 | 221,306.07 | 1,069,793.93 | 20,006,975.07 | |
| 24 | 6/1/2019 | 20,006,975.07 | 1,291,100.00 | 210,073.24 | 1,081,026.76 | 18,925,948.31 | |
| 25 | 12/1/2019 | 18,925,948.31 | 1,291,100.00 | 198,722.46 | 1,092,377.54 | 17,833,570.77 | |
| 26 | 6/1/2020 | 17,833,570.77 | 1,291,100.00 | 187,252.49 | 1,103,847.51 | 16,729,723.26 | |
| 27 | 12/1/2020 | 16,729,723.26 | 1,291,100.00 | 175,662.09 | 1,115,437.91 | 15,614,285.35 | |
| 28 | 6/1/2021 | 15,614,285.35 | 1,291,100.00 | 163,950.00 | 1,127,150.00 | 14,487,135.36 | |
| 29 | 12/1/2021 | 14,487,135.36 | 1,251,400.00 | 125,555.17 | 1,125,844.83 | 13,361,290.53 | |
| 30 | 6/1/2022 | 13,361,290.53 | 1,251,400.00 | 66,806.45 | 1,184,593.55 | 12,176,696.98 | |
| 31 | 12/1/2022 | 12,176,696.98 | 1,251,400.00 | 60,883.48 | 1,190,516.52 | 10,986,180.46 | |
| 32 | 6/1/2023 | 10,986,180.46 | 1,251,400.00 | 54,930.90 | 1,196,469.10 | 9,789,711.36 | |
| 33 | 12/1/2023 | 9,789,711.36 | 1,251,400.00 | 48,948.56 | 1,202,451.44 | 8,587,259.92 | |
| 34 | 6/1/2024 | 8,587,259.92 | 1,251,400.00 | 42,936.30 | 1,208,463.70 | 7,378,796.22 | |
| 35 | 12/1/2024 | 7,378,796.22 | 1,251,400.00 | 36,893.98 | 1,214,506.02 | 6,164,290.20 | |
| 36 | 6/1/2025 | 6,164,290.20 | 1,251,400.00 | 30,821.45 | 1,220,578.55 | 4,943,711.65 | |
| 37 | 12/1/2025 | 4,943,711.65 | 1,251,400.00 | 24,718.56 | 1,226,681.44 | 3,717,030.21 | |
| 38 | 6/1/2026 | 3,717,030.21 | 1,251,400.00 | 18,585.15 | 1,232,814.85 | 2,484,215.36 | |
| 39 | 12/1/2026 | 2,484,215.36 | 1,251,400.00 | 12,421.08 | 1,238,978.92 | 1,245,236.44 | |
| 40 | 6/1/2027 | 1,245,236.44 | 1,251,462.62 | 6,226.18 | 1,245,236.44 | - | |
| | | \$ | \$3,490,083.74 | \$ | 13,159,785.73 | \$ | 40,330,298.00 |

Project Number: C-515363-01
 Financing Agreement dated as of: June 1, 2006
 Final Principal Disbursed: \$ 7,339,600
 Original Cost of Funds: 3.10%
 Amendment dated as of: January 1, 2013
 Reduced Cost of Funds: 2.10%
 Amendment dated as of: November 1, 2021
 Reduced Cost of Funds: 1.00%
 New Rate Effective Date: October 1, 2021
 Principal Payments: 39

Original Cost of Funds

Interest: 3.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2013 Reduced Cost of Funds

Interest: 2.00%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

2021 Reduced Cost of Funds

Interest: 0.90%
 Admin. Fee: 0.10%
 Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2007 | \$ 7,339,600.00 | \$201,813.24 | \$ 201,813.24 | \$ - | \$ 7,339,600.00 |
| 2 | 2/1/2008 | 7,339,600.00 | 252,184.60 | 113,763.78 | 138,420.82 | 7,201,179.18 |
| 3 | 8/1/2008 | 7,201,179.18 | 252,184.64 | 111,618.30 | 140,566.34 | 7,060,612.84 |
| 4 | 2/1/2009 | 7,060,612.84 | 252,184.64 | 109,439.52 | 142,745.12 | 6,917,867.72 |
| 5 | 8/1/2009 | 6,917,867.72 | 252,184.63 | 107,226.96 | 144,957.67 | 6,772,910.05 |
| 6 | 2/1/2010 | 6,772,910.05 | 252,184.59 | 104,980.08 | 147,204.51 | 6,625,705.54 |
| 7 | 8/1/2010 | 6,625,705.54 | 252,184.64 | 102,698.46 | 149,486.18 | 6,476,219.36 |
| 8 | 2/1/2011 | 6,476,219.36 | 252,184.60 | 100,381.38 | 151,803.22 | 6,324,416.14 |
| 9 | 8/1/2011 | 6,324,416.14 | 252,184.65 | 98,028.48 | 154,156.17 | 6,170,259.97 |
| 10 | 2/1/2012 | 6,170,259.97 | 252,184.63 | 95,639.04 | 156,545.59 | 6,013,714.38 |
| 11 | 8/1/2012 | 6,013,714.38 | 252,184.62 | 93,212.58 | 158,972.04 | 5,854,742.34 |
| 12 | 2/1/2013 | 5,854,742.34 | 236,300.00 | 87,170.61 | 149,129.39 | 5,705,612.95 |
| 13 | 8/1/2013 | 5,705,612.95 | 236,300.00 | 59,908.94 | 176,391.06 | 5,529,221.89 |
| 14 | 2/1/2014 | 5,529,221.89 | 236,300.00 | 58,056.83 | 178,243.17 | 5,350,978.72 |
| 15 | 8/1/2014 | 5,350,978.72 | 236,300.00 | 56,185.28 | 180,114.72 | 5,170,864.00 |
| 16 | 2/1/2015 | 5,170,864.00 | 236,300.00 | 54,294.07 | 182,005.93 | 4,988,858.07 |
| 17 | 8/1/2015 | 4,988,858.07 | 236,300.00 | 52,383.01 | 183,916.99 | 4,804,941.08 |
| 18 | 2/1/2016 | 4,804,941.08 | 236,300.00 | 50,451.88 | 185,848.12 | 4,619,092.96 |
| 19 | 8/1/2016 | 4,619,092.96 | 236,300.00 | 48,500.48 | 187,799.52 | 4,431,293.44 |
| 20 | 2/1/2017 | 4,431,293.44 | 236,300.00 | 46,528.58 | 189,771.42 | 4,241,522.02 |
| 21 | 8/1/2017 | 4,241,522.02 | 236,300.00 | 44,535.98 | 191,764.02 | 4,049,758.00 |
| 22 | 2/1/2018 | 4,049,758.00 | 236,300.00 | 42,522.46 | 193,777.54 | 3,855,980.46 |
| 23 | 8/1/2018 | 3,855,980.46 | 236,300.00 | 40,487.79 | 195,812.21 | 3,660,168.25 |
| 24 | 2/1/2019 | 3,660,168.25 | 236,300.00 | 38,431.77 | 197,868.23 | 3,462,300.02 |
| 25 | 8/1/2019 | 3,462,300.02 | 236,300.00 | 36,354.15 | 199,945.85 | 3,262,354.17 |
| 26 | 2/1/2020 | 3,262,354.17 | 236,300.00 | 34,254.72 | 202,045.28 | 3,060,308.89 |
| 27 | 8/1/2020 | 3,060,308.89 | 236,300.00 | 32,133.24 | 204,166.76 | 2,856,142.13 |
| 28 | 2/1/2021 | 2,856,142.13 | 236,300.00 | 29,989.49 | 206,310.51 | 2,649,831.62 |
| 29 | 8/1/2021 | 2,649,831.62 | 236,300.00 | 27,823.23 | 208,476.77 | 2,441,354.80 |
| 30 | 2/1/2022 | 2,441,354.80 | 229,100.00 | 16,682.59 | 212,417.41 | 2,228,937.39 |
| 31 | 8/1/2022 | 2,228,937.39 | 229,100.00 | 11,144.69 | 217,955.31 | 2,010,982.08 |
| 32 | 2/1/2023 | 2,010,982.08 | 229,100.00 | 10,054.91 | 219,045.09 | 1,791,936.99 |
| 33 | 8/1/2023 | 1,791,936.99 | 229,100.00 | 8,959.68 | 220,140.32 | 1,571,796.67 |
| 34 | 2/1/2024 | 1,571,796.67 | 229,100.00 | 7,858.98 | 221,241.02 | 1,350,555.65 |
| 35 | 8/1/2024 | 1,350,555.65 | 229,100.00 | 6,752.78 | 222,347.22 | 1,128,208.43 |
| 36 | 2/1/2025 | 1,128,208.43 | 229,100.00 | 5,641.04 | 223,458.96 | 904,749.47 |
| 37 | 8/1/2025 | 904,749.47 | 229,100.00 | 4,523.75 | 224,576.25 | 680,173.22 |
| 38 | 2/1/2026 | 680,173.22 | 229,100.00 | 3,400.87 | 225,699.13 | 454,474.09 |
| 39 | 8/1/2026 | 454,474.09 | 229,100.00 | 2,272.37 | 226,827.63 | 227,646.46 |
| 40 | 2/1/2027 | 227,646.46 | 228,784.69 | 1,138.23 | 227,646.46 | - |
| | | | \$ 9,496,844.17 | \$ 2,157,244.22 | \$ 7,339,600.00 | |

Project Number: C-515364-02
Financing Agreement dated as of: June 1, 2006
Final Principal Disbursed: \$ 1,605,199.20
Original Cost of Funds: 3.10%
Amendment dated as of: January 1, 2013
Reduced Cost of Funds: 2.10%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.00%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Original Cost of Funds
Interest: 3.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2013 Reduced Cost of Funds
Interest: 2.00%
Admin. Fee: 0.10%
Late Fee: 2.50%

2021 Reduced Cost of Funds
Interest: 0.90%
Admin. Fee: 0.10%
Late Fee: 2.50%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 1/1/2008 | \$ 1,605,199.20 | \$40,785.83 | \$ 40,785.83 | \$ - | \$ 1,605,199.20 |
| 2 | 7/1/2008 | 1,605,199.20 | 53,071.45 | 22,798.26 | 30,273.19 | 1,574,926.01 |
| 3 | 1/1/2009 | 1,574,926.01 | 55,285.78 | 24,543.36 | 30,742.42 | 1,544,183.59 |
| 4 | 7/1/2009 | 1,544,183.59 | 55,153.77 | 23,934.84 | 31,218.93 | 1,512,964.66 |
| 5 | 1/1/2010 | 1,512,964.66 | 55,153.79 | 23,450.94 | 31,702.85 | 1,481,261.81 |
| 6 | 7/1/2010 | 1,481,261.81 | 55,153.76 | 22,959.54 | 32,194.22 | 1,449,067.59 |
| 7 | 1/1/2011 | 1,449,067.59 | 55,153.73 | 22,460.52 | 32,693.21 | 1,416,374.38 |
| 8 | 7/1/2011 | 1,416,374.38 | 55,153.77 | 21,953.82 | 33,199.95 | 1,383,174.43 |
| 9 | 1/1/2012 | 1,383,174.43 | 55,153.75 | 21,439.20 | 33,714.55 | 1,349,459.88 |
| 10 | 7/1/2012 | 1,349,459.88 | 55,153.73 | 20,916.60 | 34,237.13 | 1,315,222.75 |
| 11 | 1/1/2013 | 1,315,222.75 | 55,153.77 | 20,385.96 | 34,767.81 | 1,280,454.94 |
| 12 | 7/1/2013 | 1,280,454.94 | 51,500.00 | 13,729.33 | 37,770.67 | 1,242,684.27 |
| 13 | 1/1/2014 | 1,242,684.27 | 51,500.00 | 13,048.18 | 38,451.82 | 1,204,232.45 |
| 14 | 7/1/2014 | 1,204,232.45 | 51,500.00 | 12,644.44 | 38,855.56 | 1,165,376.89 |
| 15 | 1/1/2015 | 1,165,376.89 | 51,500.00 | 12,236.46 | 39,263.54 | 1,126,113.35 |
| 16 | 7/1/2015 | 1,126,113.35 | 51,500.00 | 11,824.19 | 39,675.81 | 1,086,437.54 |
| 17 | 1/1/2016 | 1,086,437.54 | 51,500.00 | 11,407.59 | 40,092.41 | 1,046,345.13 |
| 18 | 7/1/2016 | 1,046,345.13 | 51,500.00 | 10,986.62 | 40,513.38 | 1,005,831.75 |
| 19 | 1/1/2017 | 1,005,831.75 | 51,500.00 | 10,561.23 | 40,938.77 | 964,892.98 |
| 20 | 7/1/2017 | 964,892.98 | 51,500.00 | 10,131.38 | 41,368.62 | 923,524.36 |
| 21 | 1/1/2018 | 923,524.36 | 51,500.00 | 9,697.01 | 41,802.99 | 881,721.37 |
| 22 | 7/1/2018 | 881,721.37 | 51,500.00 | 9,258.07 | 42,241.93 | 839,479.44 |
| 23 | 1/1/2019 | 839,479.44 | 51,500.00 | 8,814.53 | 42,685.47 | 796,793.97 |
| 24 | 7/1/2019 | 796,793.97 | 51,500.00 | 8,366.34 | 43,133.66 | 753,660.31 |
| 25 | 1/1/2020 | 753,660.31 | 51,500.00 | 7,913.43 | 43,586.57 | 710,073.74 |
| 26 | 7/1/2020 | 710,073.74 | 51,500.00 | 7,455.77 | 44,044.23 | 666,029.51 |
| 27 | 1/1/2021 | 666,029.51 | 51,500.00 | 6,993.31 | 44,506.69 | 621,522.82 |
| 28 | 7/1/2021 | 621,522.82 | 51,500.00 | 6,525.99 | 44,974.01 | 576,548.82 |
| 29 | 1/1/2022 | 576,548.82 | 49,800.00 | 4,468.25 | 45,331.75 | 531,217.07 |
| 30 | 7/1/2022 | 531,217.07 | 49,800.00 | 2,656.09 | 47,143.91 | 484,073.16 |
| 31 | 1/1/2023 | 484,073.16 | 49,800.00 | 2,420.37 | 47,379.63 | 436,693.53 |
| 32 | 7/1/2023 | 436,693.53 | 49,800.00 | 2,183.47 | 47,616.53 | 389,077.00 |
| 33 | 1/1/2024 | 389,077.00 | 49,800.00 | 1,945.39 | 47,854.61 | 341,222.39 |
| 34 | 7/1/2024 | 341,222.39 | 49,800.00 | 1,706.11 | 48,093.89 | 293,128.50 |
| 35 | 1/1/2025 | 293,128.50 | 49,800.00 | 1,465.64 | 48,334.36 | 244,794.14 |
| 36 | 7/1/2025 | 244,794.14 | 49,800.00 | 1,223.97 | 48,576.03 | 196,218.11 |
| 37 | 1/1/2026 | 196,218.11 | 49,800.00 | 981.09 | 48,818.91 | 147,399.20 |
| 38 | 7/1/2026 | 147,399.20 | 49,800.00 | 737.00 | 49,063.00 | 98,336.20 |
| 39 | 1/1/2027 | 98,336.20 | 49,800.00 | 491.68 | 49,308.32 | 49,027.88 |
| 40 | 7/1/2027 | 49,027.88 | 49,273.02 | 245.14 | 49,027.88 | - |
| | | | \$ 2,062,946.15 | \$ 457,746.94 | \$ 1,605,199.20 | |

Project Number: C-515449G-02
Financing Agreement Dated as of: March 1, 2012
Final Principal Disbursed: \$ 6,318,000
Original Cost of Funds: 2.51%
Amendment dated as of: November 1, 2021
Reduced Cost of Funds: 1.15%
New Rate Effective Date: October 1, 2021
Principal Payments: 39

Cost of Funds
 Interest: 2.31%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

2021 Reduced Cost of Funds
 Interest: 0.95%
 Admin. Fee: 0.20%
 Late Fee: 5.00%

| PAYMENT NUMBER | DATE DUE | LOAN BALANCE AT START OF PERIOD | PAYMENT DUE | COST OF FUNDS PORTION | PRINCIPAL PORTION | LOAN BALANCE AT END OF PERIOD |
|----------------|----------|---------------------------------|-----------------|-----------------------|-------------------|-------------------------------|
| 1 | 8/1/2013 | \$ 6,318,000.00 | \$99,183.28 | \$ 99,183.28 | \$ - | \$ 6,318,000.00 |
| 2 | 2/1/2014 | 6,318,000.00 | 205,900.00 | 76,996.06 | 128,903.94 | 6,189,096.06 |
| 3 | 8/1/2014 | 6,189,096.06 | 205,900.00 | 77,673.18 | 128,226.82 | 6,060,869.24 |
| 4 | 2/1/2015 | 6,060,869.24 | 205,900.00 | 76,063.92 | 129,836.08 | 5,931,033.16 |
| 5 | 8/1/2015 | 5,931,033.16 | 205,900.00 | 74,434.44 | 131,465.56 | 5,799,567.60 |
| 6 | 2/1/2016 | 5,799,567.60 | 205,900.00 | 72,784.56 | 133,115.44 | 5,666,452.16 |
| 7 | 8/1/2016 | 5,666,452.16 | 205,900.00 | 71,113.98 | 134,786.02 | 5,531,666.14 |
| 8 | 2/1/2017 | 5,531,666.14 | 205,900.00 | 69,422.40 | 136,477.60 | 5,395,188.54 |
| 9 | 8/1/2017 | 5,395,188.54 | 205,900.00 | 67,709.64 | 138,190.36 | 5,256,998.18 |
| 10 | 2/1/2018 | 5,256,998.18 | 205,900.00 | 65,975.34 | 139,924.66 | 5,117,073.52 |
| 11 | 8/1/2018 | 5,117,073.52 | 205,900.00 | 64,219.26 | 141,680.74 | 4,975,392.78 |
| 12 | 2/1/2019 | 4,975,392.78 | 205,900.00 | 62,441.16 | 143,458.84 | 4,831,933.94 |
| 13 | 8/1/2019 | 4,831,933.94 | 205,900.00 | 60,640.80 | 145,259.20 | 4,686,674.74 |
| 14 | 2/1/2020 | 4,686,674.74 | 205,900.00 | 58,817.76 | 147,082.24 | 4,539,592.50 |
| 15 | 8/1/2020 | 4,539,592.50 | 205,900.00 | 56,971.86 | 148,928.14 | 4,390,664.36 |
| 16 | 2/1/2021 | 4,390,664.36 | 205,900.00 | 55,102.86 | 150,797.14 | 4,239,867.22 |
| 17 | 8/1/2021 | 4,239,867.22 | 205,900.00 | 53,210.34 | 152,689.66 | 4,087,177.58 |
| 18 | 2/1/2022 | 4,087,177.58 | 190,700.00 | 32,765.54 | 157,934.46 | 3,929,243.12 |
| 19 | 8/1/2022 | 3,929,243.12 | 190,700.00 | 22,593.15 | 168,106.85 | 3,761,136.27 |
| 20 | 2/1/2023 | 3,761,136.27 | 190,700.00 | 21,626.53 | 169,073.47 | 3,592,062.80 |
| 21 | 8/1/2023 | 3,592,062.80 | 190,700.00 | 20,654.36 | 170,045.64 | 3,422,017.16 |
| 22 | 2/1/2024 | 3,422,017.16 | 190,700.00 | 19,676.60 | 171,023.40 | 3,250,993.76 |
| 23 | 8/1/2024 | 3,250,993.76 | 190,700.00 | 18,693.21 | 172,006.79 | 3,078,986.97 |
| 24 | 2/1/2025 | 3,078,986.97 | 190,700.00 | 17,704.18 | 172,995.82 | 2,905,991.15 |
| 25 | 8/1/2025 | 2,905,991.15 | 190,700.00 | 16,709.45 | 173,990.55 | 2,732,000.60 |
| 26 | 2/1/2026 | 2,732,000.60 | 190,700.00 | 15,709.00 | 174,991.00 | 2,557,009.60 |
| 27 | 8/1/2026 | 2,557,009.60 | 190,700.00 | 14,702.81 | 175,997.19 | 2,381,012.41 |
| 28 | 2/1/2027 | 2,381,012.41 | 190,700.00 | 13,690.82 | 177,009.18 | 2,204,003.23 |
| 29 | 8/1/2027 | 2,204,003.23 | 190,700.00 | 12,673.02 | 178,026.98 | 2,025,976.25 |
| 30 | 2/1/2028 | 2,025,976.25 | 190,700.00 | 11,649.36 | 179,050.64 | 1,846,925.61 |
| 31 | 8/1/2028 | 1,846,925.61 | 190,700.00 | 10,619.82 | 180,080.18 | 1,666,845.43 |
| 32 | 2/1/2029 | 1,666,845.43 | 190,700.00 | 9,584.36 | 181,115.64 | 1,485,729.79 |
| 33 | 8/1/2029 | 1,485,729.79 | 190,700.00 | 8,542.95 | 182,157.05 | 1,303,572.74 |
| 34 | 2/1/2030 | 1,303,572.74 | 190,700.00 | 7,495.54 | 183,204.46 | 1,120,368.28 |
| 35 | 8/1/2030 | 1,120,368.28 | 190,700.00 | 6,442.12 | 184,257.88 | 936,110.40 |
| 36 | 2/1/2031 | 936,110.40 | 190,700.00 | 5,382.63 | 185,317.37 | 750,793.03 |
| 37 | 8/1/2031 | 750,793.03 | 190,700.00 | 4,317.06 | 186,382.94 | 564,410.09 |
| 38 | 2/1/2032 | 564,410.09 | 190,700.00 | 3,245.36 | 187,454.64 | 376,955.45 |
| 39 | 8/1/2032 | 376,955.45 | 190,700.00 | 2,167.49 | 188,532.51 | 188,422.94 |
| 40 | 2/1/2033 | 188,422.94 | 189,506.37 | 1,083.43 | 188,422.94 | - |
| | | | \$ 7,778,489.65 | \$ 1,460,489.63 | \$ 6,318,000.00 | |

AGENDA ITEM 6. – October 26, 2021

Subject: Atlantic Treatment Plant Electrical Workspace Renovation
Initial Appropriation

Recommended Action: Appropriate total project funding in the amount of \$611,950.

CIP Project: AT014800

Project Description: This project will renovate the 1984 Atlantic Treatment Plant Administration building to provide adequate office and shop space for Electrical and Instrumentation (E&I) staff. The existing E&I office space is located within Headworks' Building pipe gallery process area, which is inadequate for office space and renovation efforts. The renovation will provide a shop area, locker room, men's restroom, women's restrooms, lunch/meeting room, and offices. These renovations will provide working space for five permanent and two satellite workstations for E&I staff, in accordance with HRSD's office space standards.

Funding Description: The total project cost estimate of \$611,950 includes approximately \$488,950 in construction phase costs, \$25,000 in closeout phase costs, and \$98,000 of project contingency and is based on a Class 5 CIP-prioritization level cost estimate prepared by HRSD.

| | | |
|-------------------------|--------------------|---------------|
| <u>Schedule:</u> | Construction | November 2021 |
| | Project Completion | April 2022 |

AGENDA ITEM 7. – October 26, 2021

Subject: Berkley Trunk Sewer Section M Emergency Gravity Sewer Replacement
Additional Appropriation

Recommended Action: Appropriate additional funding in the amount of \$20,800.

CIP Project: VP019500

| | |
|---|------------------|
| Budget | \$750,000 |
| Previous Expenditures and Encumbrances | (\$700,000) |
| Available Balance | \$50,000 |
| Proposed Task Order to Brown and Caldwell | (\$59,000) |
| Proposed Contingency | (\$11,800) |
| Project Shortage/Requested Additional Funding | (\$20,800) |
| Revised Total Project Authorized Funding | <u>\$770,800</u> |

Project Description: On May 20, 2021, staff reported a deep sinkhole at the State Street Pump Station. The sinkhole had undermined a large concrete slab that supports piping and appurtenances from a 12-inch bypass pump. After further investigation, a CCTV contractor found the cause of the sinkhole: the 30-inch ductile iron gravity sewer pipeline running under the concrete slab had collapsed. While flow was still getting to the station, a large amount of sand and grit was also being deposited into the station wet well. This project is to replace and line the 30-inch influent sewer and replace all necessary undermined concrete pads.

Funding Description and Analysis of Cost: An initial fee estimate written by Brown and Caldwell was \$60,000 to provide engineering and construction services related to rehabilitation of the gravity sewer and manholes for this project. Work is almost complete, and the project requires additional funding due to an extended construction period. Bridgeman Civil was pulled from this project to assist with other HRSD projects extending the timeline of completion. A task order has been negotiated with Brown and Caldwell to continue providing contract administration and inspection services through project closeout. The negotiated amount for this work is \$59,000 and exceeds the balance available for this CIP project. This request also includes an \$11,800 contingency to accommodate any additional unforeseen conditions.

Schedule: Project Completion November 2021

AGENDA ITEM 8. – October 26, 2021

Subject: Coliseum Pressure Reducing Station (PRS) Off-Line Storage Tank Odor Control Upgrades
New CIP and Initial Appropriation

Recommended Actions:

- a. Approve a new CIP project (**YR01470**) for the Coliseum PRS Off-Line Storage Tank Odor Control Upgrade Improvements.
- b. Appropriate total project funding in the amount of \$1,000,000.

CIP Project: YR01470

Project Description: This project is a new out-of-cycle CIP project to provide enhanced odor control upgrades to the Coliseum PRS Off-Line Storage Tank facility.

Approximately two years ago, Operations Department staff changed the use of the facility to help equalize the diurnal flow going to the York River Treatment Plant (YRTP). The original design of the facility, however, anticipated only occasional use to help manage wet-weather collection system capacity. Helping to equalize the diurnal flows at YRTP has been extremely successful resulting in process improvements, enhanced treatment results, and significant cost savings.

The daily use of this facility, however, can result in odors that exceed the capability of the odor control system to mitigate.

This project will create a two-stage odor control system, by adding a biological-scrubber ahead of the existing activated carbon odor control equipment. The project budget includes design and construction costs and is anticipated to be completed in 2022. Staff believes that over a relatively short time period, chemical cost savings resulting from the diurnal flow equalization at the YRTP will more than pay for this project.

Funding Description: The total cost for this project is estimated at \$1,000,000 based on a Class 5 cost estimate and a 25 percent contingency included in the requested appropriation.

Task Order Description: This task order will provide engineering and construction phase services to gather odor control data information, design improvements, and to procure a contractor to install the new facilities. Engineering services will be provided by Rummel, Klepper and Kahl, LLP through HRSD's existing Professional Services Agreement for Interceptor Systems Projects.

Analysis of Cost: The cost for this task order is based on an estimation of equipment and construction costs to complete the work. The estimated costs for engineering services are anticipated to be less than \$200,000.

| | | |
|-------------------------|--------------|---------------|
| <u>Schedule:</u> | PER | November 2021 |
| | Design | December 2021 |
| | Construction | April 2022 |
| | Completion | October 2022 |

AGENDA ITEM 9. – October 26, 2021

Subject: Colley Avenue Pump Station Pump Replacement
Initial Appropriation

Recommended Action: Appropriate total project funding in the amount of \$800,000.

CIP Project: VP019000

Project Description: This project will replace the existing extended shaft pumps at the Colley Avenue Pump Station with new constant speed dry pit submersible pumps. Architectural upgrades will also be made to help the station blend with the surrounding area.

Funding Description: The total project cost estimate of \$800,000 includes approximately \$10,000 in pre-planning phase, \$15,000 in preliminary engineering report (PER) phase services, \$45,000 in design phase services, \$580,000 in construction phase costs, and \$150,000 of project contingency and is based on a Class 5 CIP-prioritization level cost estimate prepared by HRSD. Engineering services will be completed by Gannett Fleming under the General Engineering Services annual services contract and the cost for the pre-planning and PER is below the \$200,000 Commission approval threshold.

| | | |
|-------------------------|--------------------|---------------|
| <u>Schedule:</u> | PER | November 2021 |
| | Design | June 2022 |
| | Bid | January 2023 |
| | Construction | May 2023 |
| | Project Completion | January 2024 |

AGENDA ITEM 10. – October 26, 2021

Subject: James River Recharge Wells (Off Site)
New CIP and Initial Appropriation

Recommended Actions:

- a. Approve a new CIP project (GN016362) for the James River Recharge Wells (Off Site).
- b. Appropriate total project funding in the amount of \$47,334,000.

CIP Project: GN016362

Project Description: James River Recharge Wells (Off Site) will provide for the construction of seven off site recharge wells and two sets of nested monitoring wells associated with SWIFT at the James River Treatment Plant (JRTP). The project scope includes services for the development, logging, testing, and conditioning of wells and well site development. The scope does not include the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

A total of 10 Managed Aquifer Recharge (MAR) wells and two sets of nested monitoring wells are required to recharge the aquifer with SWIFT Water from the James River SWIFT Facility. All MAR and monitoring wells were designed under the initial James River Recharge Wells (On Site) project (GN016361). As the duration of acquiring the property and easements needed to install the MAR and monitoring wells located outside the boundary of JRTP (off site) steadily increased, the risk of significant subsequent schedule conflicts increased. The construction of only the three on site MAR wells were advertised under GN016361 to mitigate the potential schedule risk and minimize potential site conflicts with the James River SWIFT Design-Build team.

This project includes the bid phase services and construction of the remaining seven MAR wells and two sets of nested monitoring wells located outside of the JRTP property within easements and property currently under procurement from the City of Newport News. This separation of well construction procurement activities also has facilitated inclusion of these activities in separate funding packages under both Virginia Clean Water Revolving Loan Fund (VCWRLF) and Water Infrastructure Finance and Innovation Act (WIFIA).

Earth Data Incorporated was awarded the SWIFT Recharge and Monitoring Well Services Program contract in August 2020 to perform recharge and monitoring well design and construction support services for the SWIFT Well program. Earth Data Incorporated has already provided the design services for all James River Recharge Wells under GN016361. They will provide construction administration and inspection services on each of the James River Recharge Wells projects for On Site and Off Site.

Funding Description: The total cost for this project is estimated to be \$47,334,000. This estimate is based on bid and construction phase scopes of service and associated fees from Earth Data Incorporated, an estimate of project construction costs based on the recent bid, and a 10 percent project contingency.

| | | |
|-------------------------|--------------------|------------|
| <u>Schedule:</u> | Bid | March 2022 |
| | Construction | May 2022 |
| | Project Completion | May 2025 |

AGENDA ITEM 11. – October 26, 2021

Subject: James River Recharge Wells (On Site)
Contract Award (>\$200,000) and Task Order (>\$200,000)

Recommended Actions:

- a. Award a contract to A.C. Schultes of Maryland, Inc. in the amount of \$14,841,500.
- b. Approve a task order with Earth Data Incorporated in the amount of \$1,853,595.

CIP Project: GN016361

| | |
|--|---------------|
| Budget | \$32,445,599 |
| Previous Expenditures and Encumbrances | (\$1,171,326) |
| Available Balance | \$31,274,273 |

Type of Procurement: Competitive Bid

| Bidder | Bid Amount |
|---------------------------------|--------------|
| A.C. Schultes of Maryland, Inc. | \$14,841,500 |

Engineer Estimate: \$11,486,423

| Contract Status: | Amount |
|--|-------------|
| Original Contract with Earth Data Incorporated | \$157,418 |
| Total Value of Previous Task Orders | \$1,010,571 |
| Requested Task Order | \$1,853,595 |
| Total Value of All Task Orders | \$2,864,166 |
| Revised Contract Value | \$3,021,584 |
| Engineering Services as % of Construction | 12% |

Project Description: James River Recharge Wells (On Site) project will provide for the construction of three recharge wells located within the James River Treatment Plant (JRTP) property; services for the site preparation, borehole drilling and well installation, development, logging, testing, and conditioning of aquifer associated with SWIFT at the James River Treatment Plant.

A total of 10 Managed Aquifer Recharge (MAR) wells and two sets of nested monitoring wells are required to recharge the aquifer with SWIFT Water from the James River SWIFT Facility. All MAR and monitoring wells are being designed under this project. It is important for well installation and testing to begin prior to the Design-Builder's construction activities to minimize schedule risks and risks associated with potential site conflicts. However, access to the property located outside the boundary of JRTP (off site), which will support MAR wells and monitoring wells, has not yet been finalized. Therefore, to mitigate the well related risks within the property owned by HRSD, the bid package advertised under this project only includes construction of the three on site MAR wells. The remaining MAR and monitoring wells are proposed to be constructed under a separate project, James River Recharge Wells (Off Site) (GN016362).

Contract Description and Analysis of Cost: This contract is for the installation and testing of three MAR wells located within the JRTP property. In accordance with HRSD's competitive sealed bidding procedures, the Engineering Department advertised and solicited bids directly from potential bidders.

The project was advertisement on August 1, 2021, and one bid was received on September 8, 2021. The design engineer, Earth Data Incorporated, evaluated the bid based upon the requirements in the invitation of bid and recommends award to the responsive and responsible, bidder A.C. Schultes of Maryland, Inc. (A.C. Schultes) in the amount of \$14,841,500.

Only one bid was received for the project and was 29 percent higher than the Class 1 Engineer's Opinion of Probable Construction Cost (EOPCC) of \$11,486,423. The bid price was potentially influenced by the following factors:

- Overall volatile market conditions – Impacts of the COVID-19 pandemic on the global supply chain, material costs, and work force are well documented and are likely reflected in A.C. Schultes' bid price. The EOPCC was updated up to the time of advertising to reflect the supply information available in July. However, steel product unit prices in the bid are greater than the EOPCC estimates with longer lead times are noted as well.
- Aggressive completion schedule – Post bid opening feedback from potential, interested drillers revealed a universal concern over the aggressive completion schedule. The schedule requires two large drilling rigs and four crews to complete. Given the potential for liquidated damages for not meeting the schedule, it is possible the contractor added a portion of the potential cost to mitigate financial risk.
- Lack of Mid-Atlantic region drilling contractors – A lack of “local” competition could have both influenced A.C. Schultes' higher bid pricing and discouraged outside drillers from submitting a bid.
- Active drilling projects in Texas, Florida, and other regions - The major out-of-state drillers reported robust activity in their home states, making mobilizing to Virginia for the three on site MAR well project less attractive. A significant amount of outreach was performed to promote the SWIFT program and this project prior to the bid advertisement. In response, the project team received a favorable and interested response from the drilling community. However, the feedback provided after the bid was opened noted that this project was too small to solicit bids.

Task Order Description and Analysis of Cost: This task order will provide construction administration and construction inspection services for the project. Also included are engineering services specific to recharge well installation, such as geophysical logging conducted on the open boreholes, flow logging and camera surveys conducted on completed wells, interpreting the geology and geophysical properties of the boreholes, finalizing well design, monitoring the development (i.e., removing drilling fluids and preparing the well for service), hydraulic withdrawal testing and evaluation of the completed wells, and inspecting the aquifer conditioning process and testing for each well. The cost for this task order is based on a detailed estimate of labor hours and direct costs required to execute the negotiated scope of work. The total hours budgeted are appropriate for the services described. The fee for this scope is 12 percent of the cost to construct (bid price). This task order will be issued as an Amendment to the Professional Services Agreement with Earth Data Incorporated for the SWIFT Recharge and Monitoring Well Services Program. The rates and proposed subconsultant fees are consistent with the rate structure within the Agreement, as approved for FY-2022.

| | | |
|-------------------------|--------------------|--------------|
| <u>Schedule:</u> | Construction | October 2021 |
| | Project Completion | August 2022 |

AGENDA ITEM 12. – October 26, 2021

Subject: James River Treatment Plant Automation Improvements Phase I
New CIP and Initial Appropriation

Recommended Actions:

- a. Approve a new CIP project (JR013610) for the James River Treatment Plant Automation Improvements Phase I.
- b. Appropriate total project funding in the amount of \$2,353,000.

CIP Project: JR013610

Project Description: This project will provide for automation and control of the James River Treatment Plant's preliminary treatment, solids thickening, anaerobic digestion, odor control and related systems. The preliminary treatment and solids handling sections of the plant exist now with minimal automation, and to allow the plant operator to best manage the future facility as a whole, the distributed control system must be enhanced for consistency with the Advanced Nutrient Removal Improvements and SWIFT projects. This project was originally approved under JR013600 but is proposed to be split into two separate projects JR013610 and JR013620. JR013620 will be delayed until FY-2024 to avoid any potential conflicts during construction of the James River Treatment Plant SWIFT project.

Funding Description: The total cost for this project is estimated to be \$2,353,000 based on a Class 5 cost estimate. The cost estimate includes \$202,000 for Engineering Services, \$1,608,000 for Construction, and \$543,000 for project contingency. Preliminary engineering services will be completed by Hazen and Sawyer, P.C. under the General Engineering Annual Services contract.

| | | |
|-------------------------|--------------------|----------------|
| <u>Schedule:</u> | PER | November 2021 |
| | Design | January 2022 |
| | Pre-Construction | June 2022 |
| | Construction | September 2022 |
| | Project Completion | June 2023 |

AGENDA ITEM 13. – October 26, 2021

Subject: Middlesex Interceptor System Program Phase III (Deltaville)
New CIP and Initial Appropriation

Recommended Actions:

- a. Approve a new CIP project (MP013810) for the Middlesex Interceptor System Program Phase III (Deltaville).
- b. Appropriate total project funding in the amount of \$2,520,000.

CIP Project: MP013810

Project Description: This project includes the design and construction of approximately 20,500 linear feet of 6-inch High Density Poly Ethylene (HDPE) force main interceptor to serve the Deltaville service area in Middlesex County. The HRSD funded portion of the Deltaville interceptor will be approximately 20,500 linear feet traversing from Twiggs Ferry Road - Stampers Bay Road intersection north to General Puller Highway and terminating at the Parsons Lane intersection. The force main will be connecting to the proposed Middlesex Regional Interceptor System slated to be completed in 2024. This project was originally approved under MP013800 but is proposed to be split into two separate CIP projects MP013810 and MP013820. MP013820 will be presented to Commission for approval once the County of Middlesex provides HRSD an authorization to proceed with this project.

Funding Description: The total cost for this project is estimated at \$2,520,000 based on a Class 5 cost estimate and a ten percent contingency included in the requested appropriation. The cost estimate includes \$330,000 for Engineering Services, \$1,939,000 for Construction, and \$251,000 for project contingency. HRSD will be using the HRSD's existing Professional Services Agreement for Interceptor Systems Services. Engineering services will be provided by RK&K to include preliminary engineering, design and construction phase services. This cost for the Preliminary Engineering Report (PER) is below the \$200,000 commission approval threshold.

| | | |
|-------------------------|------------------|--------------|
| <u>Schedule:</u> | PER | October 2021 |
| | Design | May 2022 |
| | Pre-Construction | May 2023 |
| | Construction | August 2023 |
| | Closeout | August 2024 |

AGENDA ITEM 14. - October 26, 2021

Subject: City of Norfolk Wastewater Pump Station No. 57 (WPS #57)
Facility Transfer Agreement

Recommended Action: Accept the transfer of ownership of City of Norfolk Pump Station No. 57 (WPS #57) facility to HRSD and authorize General Manager to execute the Facility Transfer Agreement, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

CIP Project: VP015400

Project Description: Early in 2019, HRSD approached the City with a proposition to explore the feasibility of transferring city property and the sewer facilities and appurtenances encompassing existing City of Norfolk Sewer Pump Station #57 (WPS#57). The parcel and the existing pump station facility considered for transfer are located at 3000 Birch Street, in the Estabrook area of the City of Norfolk. This facility is a terminal pump station and receives sewer flow from four upstream city pump stations. It was during the early stages of an HRSD preliminary engineering effort and as part of the CIP project VP015400 – Lafayette Norview-Estabrook Pump Stations Replacements, when it was determined by staff that it would be very beneficial to include this facility as part of the overall system hydraulic evaluation. The WPS#57 city facility shares the same manifold force main interceptor along with three HRSD terminal pump stations. The overall objective was to ensure all four terminal stations were designed in a manner that they will be operating in harmony without competing with one another during inclement weather conditions. In recent years, several sanitary sewer overflow (SSO) events occurred due to inefficient and competing operational mode between HRSD and City terminal stations.

In accordance with the HRSD [Facility Transfer Commission Adopted Policy](#), “in certain circumstances, it may be in the best interest of HRSD, localities, private owners, and the Commonwealth to transfer ownership of sanitary sewer facilities.

HRSD staff recommends WPS#57 should be transferred from the City to HRSD to improve system operation and efficiency; thus, providing higher level of service to our mutual customers/citizens in this area of City of Norfolk. The city property and the sewer facilities will be transferred to HRSD at no cost although HRSD will be making some small improvements to the upstream City gravity sewer system.

Agreement Description: The attached [Facility Transfer Agreement](#) has been reviewed by HRSD legal counsel.



1.0 Purpose and Need

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

2.0 Definitions

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

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

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

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

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

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

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

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

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

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

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

3.0 Guiding Principles

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

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

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

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

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

4.0 Procedures

4.1 Transfer of Facilities to HRSD

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

4.1.1 Requirements

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

4.1.2 General Criteria

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

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

4.1.3 Real Property and Easement Criteria

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

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

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

4.1.4 Transfer of Entire Sanitary Sewer Systems

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

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

4.1.5 Transfer of New Facilities

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

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

4.1.6 Transfer of Portions of Existing Sanitary Sewer Systems

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

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



4.1.7 Collection Rates

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

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

4.2 Transfer of HRSD Facilities

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

5.0 Responsibility and Authority

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

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

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

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

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

**HAMPTON ROADS SANITATION DISTRICT AND CITY OF NORFOLK
FACILITY TRANSFER AGREEMENT
FOR WASTEWATER PUMP STATION No. 57 FACILITIES**

THIS AGREEMENT (“Agreement”), between the CITY OF NORFOLK (“CITY”) and the HAMPTON ROADS SANITATION DISTRICT (“HRSD”), entered this _____ day of _____, 2021, collectively referred to as the “Parties”.

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

WHEREAS, CITY currently owns certain real property located at 3000 Birch Street, (legal description: GPIN 1448462342) in the Estabrook area of the City of Norfolk, VA, and as shown in Exhibit A and hereafter refer to as PROPERTY;

WHEREAS, the CITY owns, operates, and maintains a terminal pump station, a permanent bypass pump and appurtenances known as Wastewater Pump Station No. 57 Facility (“WPS #57”), and as shown in Exhibit B1;

WHEREAS, the CITY owns, operates, and maintains approximately 35 LF of 24-inch PVC C900 gravity sewer influent and a sewer manhole (SMH-J12-00032) upstream from the pump station well, and as shown in Exhibit B2;

WHEREAS, the CITY owns, operates and maintains approximately 265 LF of 12-inch DI force main which conveys wastewater from WPS #57 to HRSD’s regional interceptor system (SF-069) located at the intersection of Birch Street and Robin Hood Road, and as shown in Exhibit B2;

WHEREAS, all existing CITY wastewater infrastructure described herein and in Exhibits B1 and B2 are hereafter referred to as FACILITIES;

WHEREAS, HRSD is currently pursuing, independent of this agreement, a subdivision of the PROPERTY and the acquisition of ownership of a certain portion of the Property as shown in Exhibit C (NEW PARCEL, 0.174 ac);

WHEREAS, HRSD is currently pursuing independently from this agreement a permanent 30-ft ingress/egress as shown in Exhibit C;

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

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

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

I. OWNERSHIP TRANSFER DESCRIPTION

A. CITY agrees to the following:

1. CITY will convey the NEW PARCEL and FACILITIES described herein and in Exhibits B1, B2 and C to HRSD in fee simple by Special Warranty Deed in "as is" condition and assign all its rights, title, and interest in their entirety in accordance with the terms and conditions of this Agreement.
2. CITY agrees that on the date of conveyance, the title shall be marketable and free and clear of all liens and encumbrances that would have a materially adverse effect. However, the real estate property may be subject to easements and restrictions then of record which do not materially affect the use of the PROPERTY;
3. CITY will convey an ingress/egress easement to HRSD which will be located adjacent to and along the northern property line of the NEW PARCEL;
4. CITY shall maintain ownership of all existing infrastructure in the collection system for WPS #57 upstream from sewer manhole SMH-J12-00032. HRSD will agree to grant the CITY at no cost required utility easements for any portion of the CITY infrastructure located within the NEW PARCEL.
5. CITY agrees to provide HRSD available record drawings and condition assessment CCTV records for all FACILITIES.

B. HRSD agrees to the following:

1. HRSD acknowledges that the CITY has made no representations or warranties whatsoever regarding the PROPERTY, except for Special Warranty of Title;
2. HRSD agrees that it has inspected and is thoroughly familiar with the PROPERTY and is acquiring the NEW PARCEL and FACILITIES in its "as is" condition;
3. HRSD understands and agrees that the CITY has not made and makes no representations or warranties of any kind with respect to the condition of the NEW PARCEL and FACILITIES, or its fitness, suitability or acceptability for

any particular use or purpose, and the CITY shall not be liable for any latent or patent defects therein;

4. HRSD agrees to rehabilitate the upstream sewer manhole (Facility ID # J12-00032) and replace the influent gravity sewer at a depth to facilitate future upstream CITY gravity collection infrastructure improvements;
5. HRSD agrees to afford the CITY the right to salvage any or all components of the FACILITIES which are planned for replacement and/or removal. Components shall include but not limited to the existing bypass pump, interior pumps, valves, electrical components, and appurtenances. City will be responsible for the removal and transfer of all salvaged components. Removal of such components shall be implemented upon coordination with HRSD staff, and the pump station facility is on a bypass mode of operation for the FACILITIES improvements.

II. ROLES AND RESPONSIBILITIES

A. CITY agrees to the following:

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

B. HRSD agrees to the following:

1. HRSD will perform a title examination to ascertain the condition of the title of the NEW PARCEL being conveyed and obtain owner's title insurance on the property to be effective on the date of conveyance;
2. HRSD will pay all costs of ownership of the FACILITIES, accept operational responsibilities, and pay the costs of operation of the FACILITIES at the date of conveyance;
3. HRSD will replace the existing sign on the existing WPS #57 structure with a new sign to indicate ownership by HRSD and an emergency contact telephone number within five business days after the date of conveyance.

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

1. It shall be a condition precedent to HRSD's acceptance of the FACILITIES and NEW PARCEL, that HRSD is able to obtain owner's title insurance on the FACILITIES and NEW PARCEL through a company authorized to do business in the Commonwealth of Virginia at normal and typical rates.
2. Possession of the NEW PARCEL will be given to HRSD at closing.

3. HRSD agrees to pay the expenses of preparing the deed and all other fees and costs charged in connection with the transfer of the NEW PARCEL and the recordation of the deed.
4. CITY and HRSD agree that the attorney or title insurance company ("Title Company") selected by HRSD shall act as the settlement agent ("Settlement Agent") at HRSD's expense. The Settlement Agent shall prepare the settlement statement, update and record the deed, collect and disburse settlement funds in accordance with this Agreement and the settlement statement, and file any required state and federal tax forms or other certifications.
5. FEASIBILITY PERIOD: HRSD shall have ninety (90) days from the date this Agreement is executed by all parties in which to complete their assessment of the NEW PARCEL, including title examination and environmental assessment.
6. CONDITIONS: HRSD's obligations are expressly conditioned upon receipt of a satisfactory title commitment during Feasibility Period. It being understood that the CITY is under no obligation whatsoever to expend any funds to satisfy this condition. If this condition cannot be met during the Feasibility Period, HRSD may unilaterally terminate this Agreement.
7. CLOSING: The Closing will be made at the offices of the Settlement Agent or such other location as the parties may agree, within thirty (30) days after expiration of the Feasibility Period, or as soon thereafter as settlement documents can be prepared and any title issues can be resolved. If, for any reason, HRSD fails to effectuate settlement and Closing on the NEW PARCEL before the expiration of one (1) year from the date this Agreement is fully executed, this Agreement shall immediately terminate unless extended at the sole discretion of the CITY.
8. CITY and HRSD agree to execute all documentation and take all necessary actions to effectuate this Agreement. Upon execution of this Agreement, HRSD and its agents, employees, engineers, and surveyors shall have access to the NEW PARCEL and FACILITIES in accordance with Section III of this Agreement.
9. The intention is to transact the conveyance of NEW PARCEL and FACILITIES as shown in Exhibits B1, B2 & C of this Agreement as soon as possible and before construction. The exact date of conveyance is to be mutually agreeable to both parties.
10. BROKERAGE OR AGENT'S FEES: Neither the CITY nor HRSD are represented by a real estate broker, agent, or finder in this transaction. No fees or commissions are or will be due from or payable by the CITY as a

result of this transaction. CITY shall have no obligation whatsoever to pay any brokerage or agent's fees or commissions, nor shall the CITY have any obligation whatsoever to see that any such fees or commissions are paid. HRSD and CITY agree to indemnify and hold each other harmless from and against any claim for broker, agent or finder fees or commissions.

III. GENERAL PROVISIONS

- A. Right of Entry: HRSD shall have the right to enter onto the WPS #57 facility and NEW PARCEL, and all infrastructure therein for the purpose of making surveys, obtaining data, measurements and design data to ascertain such engineering data as may be necessary for the purposes of design, perform environmental tests, and soil tests provided such testing does not materially interfere with CITY's use of the facility and property and further provided that said tests shall not be so exercised as to cause material damage to said facility and property. All such testing is to be at the risk and expense of HRSD. In connection with this right to enter upon the facility and property, HRSD agrees (i) to restore the facility and property to its prior condition after the performance of any such survey or other investigation and (ii) to indemnify, defend and hold CITY harmless from and against all costs, losses, damages, and expenses, including reasonable attorneys' fees, arising out of the activities of HRSD and/or its employees, agents and representatives on the facility and property. CITY has the right to be present during any entry upon the facility and property by HRSD.

- B. CITY has the right to enter WPS#57 facility and NEW PARCEL upon notification to HRSD to remove and transfer any components the CITY wishes to salvage. HRSD shall not be held liable to any injuries to CITY staff or equipment damage caused during the salvage operation.

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

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

With Copies to:

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

And

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

- D. Entire Agreement: This Agreement, and any exhibits or attachments made hereto, represent the full agreement and understanding of the parties hereto, there being no additional agreements written, oral or otherwise. This Agreement may be amended only by a writing signed by both parties.
- E. Authority: CITY and HRSD both warrant that they have permission and authority derived under their respective corporate Charters and Enabling Acts to execute and undertake this Agreement and that all necessary actions of the Norfolk CITY Council to allow execution of this Agreement have been completed, and that all necessary Resolutions and actions of the Commission of HRSD to allow execution of this Agreement have been completed. This Agreement shall apply to, and be binding upon both Parties, their elected officials, officers, agents, employees, successors, and assigns.
- F. Compliance with Law: Each party warrants that it has complied with all aspects of applicable federal, state, and local law in entering this Agreement and further warrants that it shall comply with all applicable federal, state, and local laws in the performance of this Agreement.
- G. No Violation: The execution of this Agreement by the parties will not violate any covenant, condition, or contract to which the parties hereto are subject at the time of execution.
- H. Post-Execution Impact on Title: Upon execution of this Agreement, CITY shall not take any action with respect to the FACILITIES, NEW PARCEL or both that would impact or affect the quality of title that will be conveyed to HRSD in accordance with Section I of this Agreement, with the exception of exercise of the CITY's powers of eminent domain.
- I. Governing Law; Venue: This Agreement shall be deemed to be a Virginia Contract and shall be governed as to all matters whether of validity, interpretations, obligations, performance or otherwise exclusively by the laws of

the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with such laws. Regardless of where actually delivered and accepted, this contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia. Venue shall be in the courts of the City of Norfolk.

- J. Enforcement: The failure of either party to enforce the terms of this Agreement shall not be considered a waiver as to the enforceability of such terms. If any provision of this Agreement is found to be unenforceable, the remainder of this Agreement shall remain in full force and effect.
- K. Survival: This Agreement shall survive settlement and conveyance of title and shall terminate only upon the written agreement of both Parties.
- L. Force Majeure: No Party shall be responsible for its failure to fulfill an obligation pursuant to this Agreement to the extent that such failure is due to acts of God; labor strikes; war or terrorism; epidemics/pandemics; the actions of a third party; the actions of another Party; lockouts; or other events not reasonably within the control of the Party claiming force majeure. A Party experiencing a force majeure event that prevents fulfillment of a material obligation hereunder shall (a) give the other Party prompt written notice describing the particulars of the event; (b) suspend performance only to the extent and for the duration that is reasonably required by the force majeure event; (c) use reasonable efforts to overcome or mitigate the effects of such occurrence; and (d) promptly resume performance of the affected obligation if and when such Party is able to do so.
- M. Counterparts: This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original as against any Party whose signature appears thereon, and all of which shall together constitute one and the same instrument.
- N. Binding Effect: This Agreement shall inure to the benefit of the Parties and shall, to the maximum extent permitted by law, be binding on the Parties and their successors and assigns.
- O. Reservation: Except as expressly provided herein, nothing in this Agreement shall be construed to limit or otherwise affect the authority, rights, or responsibilities of the Parties.

IN WITNESS WHEREOF, the CITY of Norfolk has caused this AGREEMENT to be signed by the CITY Manager pursuant to the Resolution adopted by the CITY Council on _____, 2021.

CITY OF NORFOLK

By: _____

Attest: _____

Name: _____

Name: _____

COMMONWEALTH OF VIRGINIA
CITY OF NORFOLK, to-wit:

The foregoing instrument was acknowledged before me this ____ day of _____, 2021, by _____, CITY Manager of the CITY of Norfolk and _____, who is CITY Clerk of the CITY of Norfolk.

Notary Public

Notary#: _____

My Commission expires: _____

APPROVED AS TO CONTENT:

APPROVED AS TO FORM AND
CORRECTNESS:

Director, Department of Utilities

CITY Attorney's Office

IN WITNESS WHEREOF, the Hampton Roads Sanitation District Commission has caused this AGREEMENT to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on October 26, 2021.

HAMPTON ROADS SANITATION DISTRICT

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

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

The foregoing instrument was acknowledged before me this ____ day of _____, 2021, by Edward G. Henifin, P.E., General Manager of Hampton Roads Sanitation District. He is personally known to me.

Notary Public

Notary#: _____

My Commission expires: _____

Exhibit A: Property

3000 Birch Road, Norfolk VA, 23513 (legal description: GPIN 1439396461 Estabrook Subdivision)

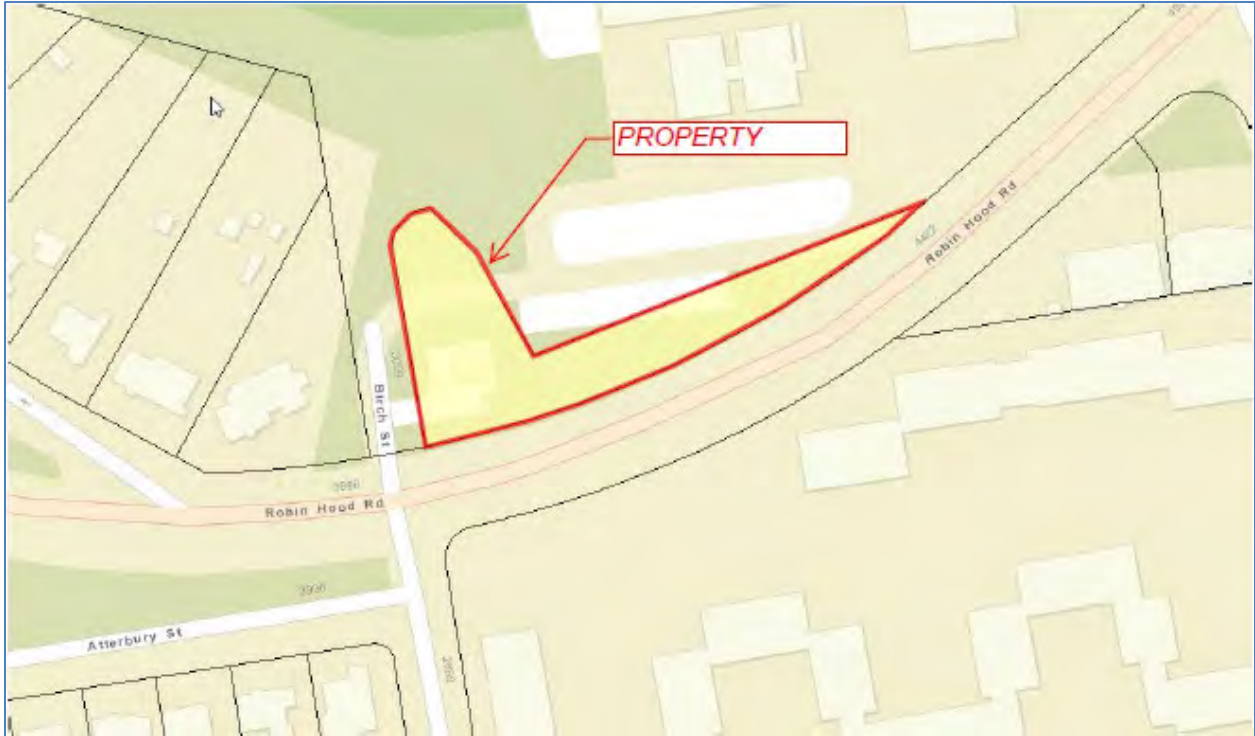


Exhibit B1: Facilities

Wastewater Pump Station No. 57 Facility ("WPS #57")



Exhibit B2: Facilities

Sewer manhole #J12-00032, 35 LF of 24-inch PVC C-900 gravity main, and 265 LF of 12-inch DI Force Main.

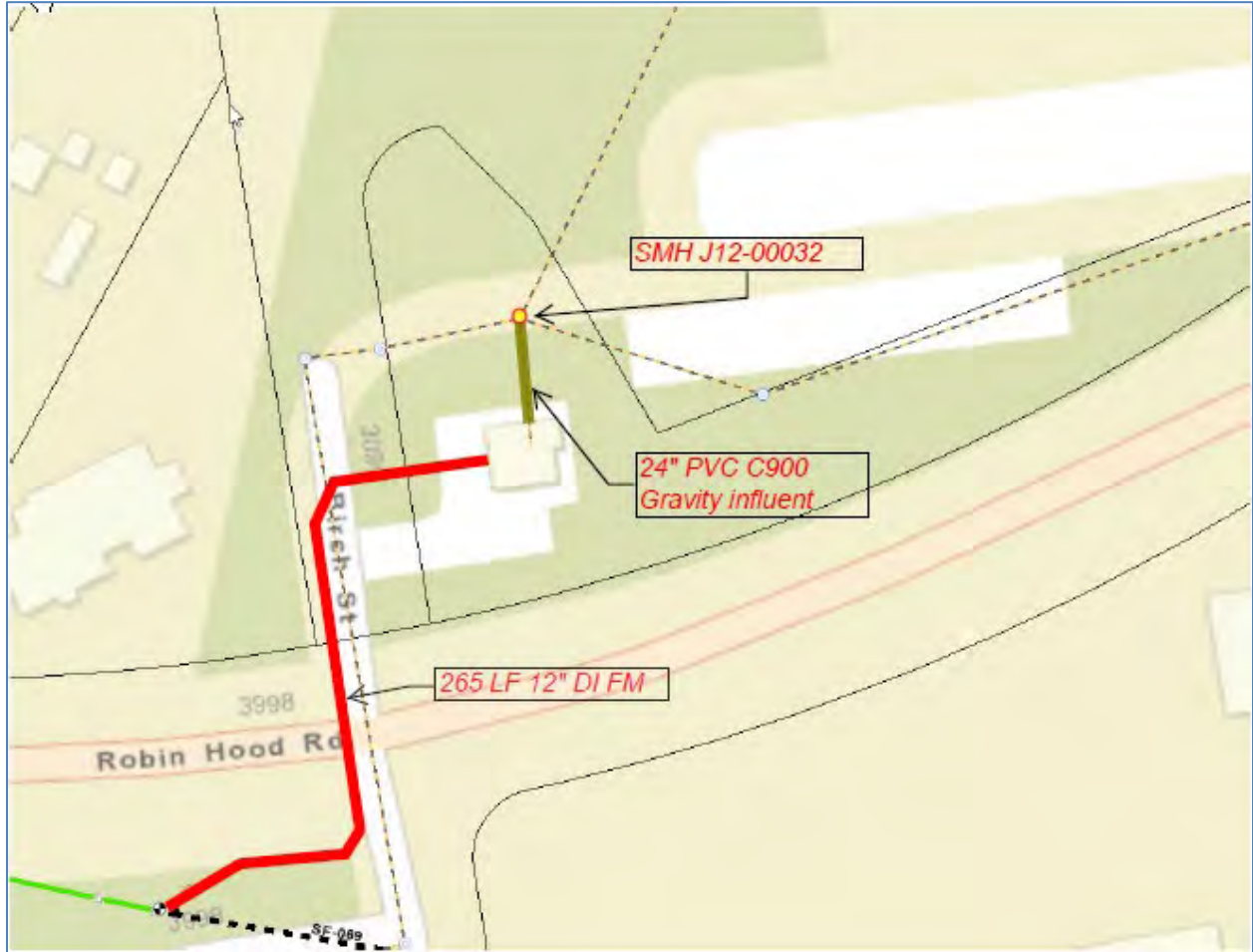
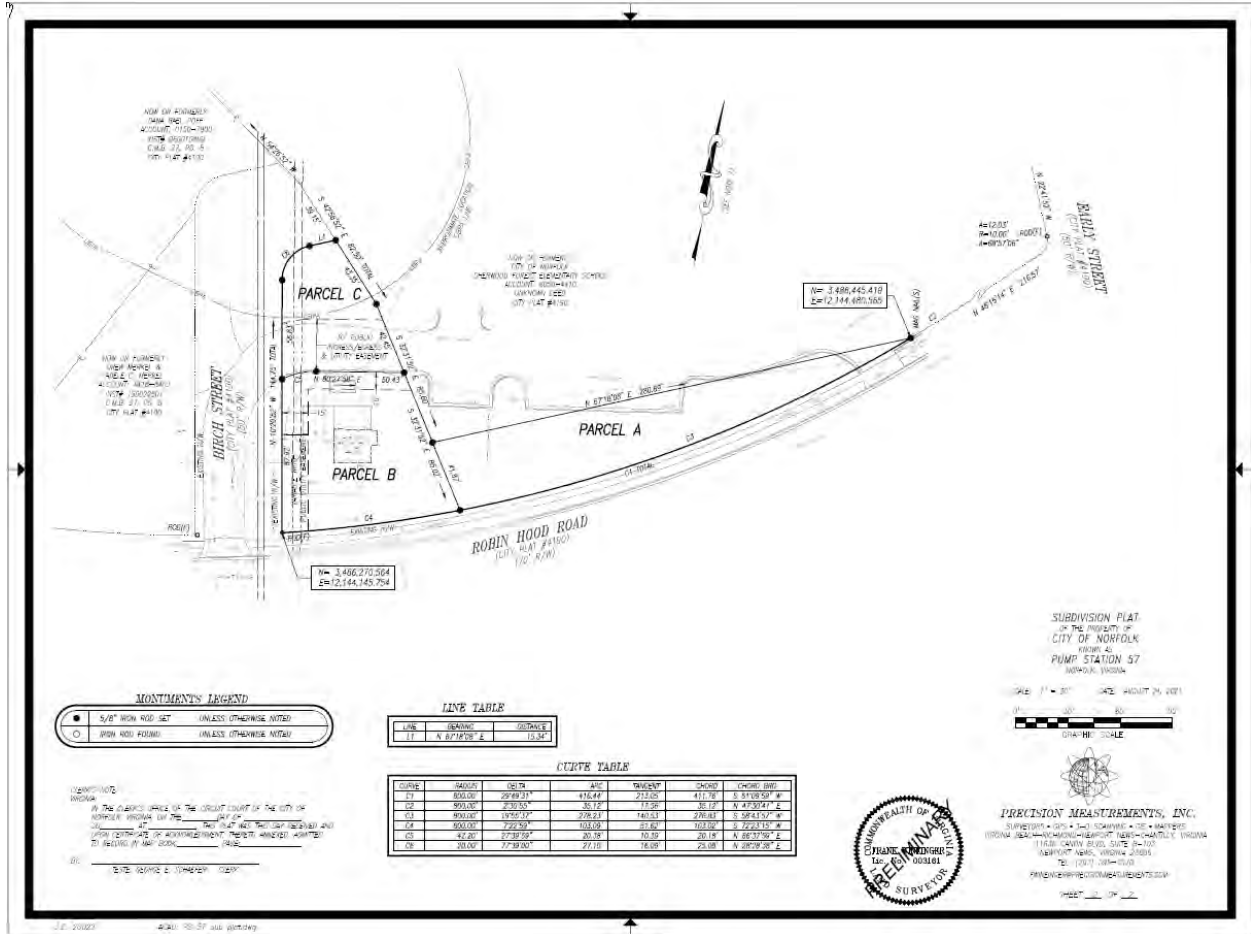


Exhibit C: NEW PARCEL (Preliminary Sub-division Plat)



AGENDA ITEM 15. – October 26, 2021

Subject: Northern Accomack Wastewater Conveyance, Treatment, and Disposal Study
New CIP, Initial Appropriation and Task Order (>\$200,000)

Recommended Actions:

- a. Approve a new CIP project (ES010400) for the Northern Accomack Wastewater Conveyance, Treatment, and Disposal Study
- b. Appropriate total project funding in the amount of \$450,000.
- c. Approve a task order with HDR Engineering, Inc. in the amount of \$213,645.

CIP Project: ES010400

| Contract Status: | Amount |
|-------------------------------------|---------------|
| Original Contract with HDR | \$0 |
| Total Value of Previous Task Orders | \$0 |
| Requested Task Order | \$213,645 |
| Revised Contract Value | \$213,645 |

Project Description: Accomack and Northampton Counties were added to the HRSD service territory in October 2020. A regional initiative to provide centralized wastewater treatment to southern Accomack County and Northern Northampton County is underway. Accomack County and the Town of Chincoteague have requested HRSD investigate wastewater solutions for northern Accomack County.

Funding Description: The total cost for the studies is estimated at \$450,000 based on an estimation of hours and rates to complete the work and a \$20,000 contingency included in the requested appropriation.

Task Order Description: This task order will evaluate strategies to address both short-term and long-term wastewater treatment, and disposal needs for northern Accomack County. The study will consider wastewater treatment demand, capacity constraints at existing facilities, disposal alternatives for treated effluent, environmental impacts, and permitting. Further studies are anticipated but the scope and cost for these efforts will be determined later once the work is better defined.

Analysis of Cost: The cost for this task order is based on an estimation of hours and rates to complete the first study. The rates in the proposal align with the Professional Service Agreement for General Engineering Services with the firm.

Schedule: Data Collection November 2021
Completion July 2022

AGENDA ITEM 16. – October 26, 2021

Subject: Virginia Initiative Plant Motor Control Center Replacements
Initial Appropriation and Task Order (>\$200,000)

Recommended Actions:

- a. Appropriate total project funding in the amount of \$2,500,000.
- b. Approve a task order with HDR Engineering, Inc. in the amount of \$351,432.

CIP Project: VP019200

| Contract Status: | Amount |
|---|---------------|
| Original Contract with HDR | \$0 |
| Total Value of Previous Task Orders | \$0 |
| Requested Task Order | \$351,432 |
| Revised Contract Value | \$351,432 |
| Engineering Services as % of Construction | 20.1% |

Project Description: This project will design and construct replacement motor control centers located in the incinerator building. The equipment was installed in the 1970’s and has reached the end of its useful life. The project also includes the design and replacement of switchgear and motor control centers located in the blower building. This equipment was installed in the 1980’s and has reached the end of its useful life. Currently, only one power feeder exists from the blower switchgear to the generator building which is connected to Bus A. The project will include a new power feeder connection to Bus B for better reliability to the generator building through a new automatic transfer switch (ATS). Two (2) 2000 kVA transformers will replace the existing 1500 kVA transformers to provide additional capacity to accommodate future equipment.

Funding Description: The total cost for this project is estimated at \$2,500,000 based on a cost estimate developed by HRSD staff and a 20 percent contingency included in the requested appropriation.

Task Order Description: This task order will provide services for design improvements and to assist with contractor procurement.

Analysis of Cost: The cost for this task order is based on an estimation of hours and rates to complete the work. The rates in the proposal align with the Professional Service Agreement for General Engineering Services with the firm.

| | | |
|-------------------------|--------------------|---------------|
| <u>Schedule:</u> | Design | November 2021 |
| | Bid | October 2022 |
| | Construction | December 2022 |
| | Project Completion | July 2024 |

AGENDA ITEM 17. – October 26, 2021

Subject: Disposition of Real Property
3851 Monticello Avenue, James City County, VA

Recommended Actions:

- a. Declare that the HRSD-owned real property located in at 3851 Monticello Avenue in James City County, Virginia, is no longer necessary or useful for the purposes of the Commission.
- b. Accept the terms and conditions of the conveyance Deed with Main Street Homes of VA, Inc., for 3851 Monticello Avenue, HRSD-owned property in James City County, Virginia (Parcel ID: 3740100013) 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.

Project Description: HRSD currently owns a .52-acre vacant lot located in James City County, Virginia that was purchased in 2001 with the intent to construct a pump station. HRSD staff has determined that there is no longer a need for a pump station in this area. This lot is zoned for residential attached housing and is adjacent to 14.56 acres of land owned by Main Street Homes of VA, Inc., who is developing a residential townhome subdivision and has expressed interest in purchasing the property from HRSD. Staff evaluated options and determined the sale to the adjacent landowner was the best option based on surrounding land use.

Additionally, HRSD counsel have indicated that this parcel does not fall within the parameters of VA § 25.1-108 as it was not acquired through condemnation.

Agreement Description: The attached conveyance [Deed](#) was reviewed by counsel and Facilities [orientation maps](#) are also provided for clarification purposes.

Analysis of Cost: Main Street Homes of VA, Inc. has agreed to pay the FY-2021 County assessed value of \$39,300, plus the cost of a new survey plat.

650744

PREPARED BY AND RETURN TO:
Conway H. Sheild, III VSB: 06893
Jones, Blechman, Woltz & Kelly, P.C.
701 Town Center Drive, Suite 800
Newport News, Va. 23606

PARCEL ID: 3740100013

TAX EXEMPTION PURSUANT TO VA CODE: §58.1-811(C)(4)

Consideration: \$0
Assessed Value: \$39,300.00

DEED

THIS DEED, made this ____ day of September, 2021, by and between **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia, party of the first part, hereinafter known as **GRANTOR**, and, **MAIN STREET HOMES OF VA, INC.**, a Virginia corporation, party of the second part, whose mailing address is P.O. Box 461, Midlothian, Virginia, 23113, hereinafter known as **GRANTEE**.

WITNESSETH:

That for and in consideration of the sum of TEN AND 00/100 (\$10.00) DOLLARS and other good and valuable consideration, receipt of which is hereby acknowledged, the said **GRANTOR** does hereby grant and convey with GENERAL WARRANTY AND COVENANTS OF TITLE, unto the said **GRANTEE**, its successors and assigns, the following described property, to wit:

All that certain lot, piece or parcel of land situate, lying and being in Powhatan District, James City County, Virginia, known and designated as "HRSD UTILITY LOT" as shown on a certain plat entitled "PLAT OF SUBDIVISION HRSD UTILITY LOT PROPERTY OF POWHATAN CROSSING INC., POWHATAN DISTRICT, JAMES CITY COUNTY, VIRGINIA" dated March 16, 2001 made by AES Consulting Engineers which said plat is duly recorded in Plat Book 020, Page 000519 in the Clerk's Office of the Circuit Court for the City of Williamsburg and the County of James City, to which reference is here made.

Subject to restrictions, covenants, conditions and easements of record.

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

WITNESS the following signature and seal all as of the day and year first above written.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Edward G. Henifin

Its: _____
General Manager

STATE/Commonwealth of VIRGINIA
CITY/COUNTY OF _____, to wit:

The foregoing instrument was acknowledged before me this _____ day September 2021, by _____.

Notary Public

{Notary Seal Required}

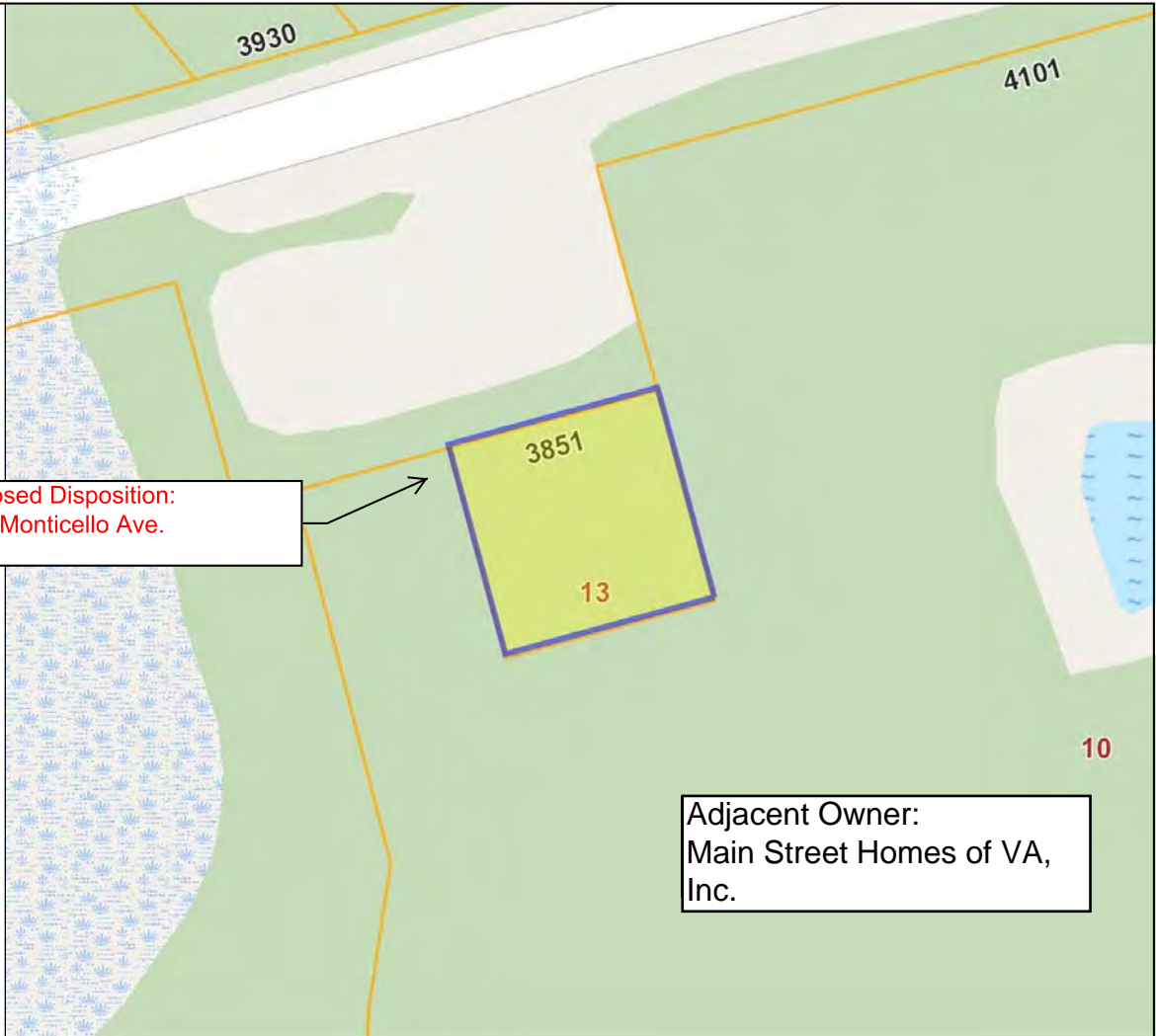
My commission expires: _____

Notary Public Registration No.:



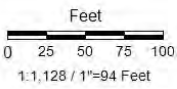
Legend

□ Parcels



Proposed Disposition:
3851 Monticello Ave.

Adjacent Owner:
Main Street Homes of VA,
Inc.



Title: Parcels

Date: 9/20/2021

DISCLAIMER: This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information, and data obtained from various sources, and James City County is not responsible for its accuracy or how current it may be.

AGENDA ITEM 18. – October 26, 2021

Subject: COVID-19 Wastewater Surveillance Study Update

Recommended Action: No action is required.

Brief: Staff will present the latest data and status of the COVID-19 surveillance work.

AGENDA ITEM 19. – October 26, 2021

Subject: Capital Improvement Program (CIP)
Quarterly 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 20. – September 28, 2021

Subject: Executive Search Committee Report

Recommended Action: Receive the Executive Search Committee's Report on recruitment efforts for General Manager.

Brief: Commissioners Levenston (committee chair), Rodriguez and Taraski met on September 28, 2021 to review the draft of the recruitment brochure. Commissioner Levenston will provide an update to the full Commission at its regular meeting on September 28, 2021.

AGENDA ITEM 21. – October 26, 2021

Subject: Unfinished Business

AGENDA ITEM 22. – October 26, 2021

Subject: New Business

AGENDA ITEM 23. – October 26, 2021

Subject: Commissioner Comments

AGENDA ITEM 24. – October 26, 2021

Subject: Public Comments Not Related to Agenda

AGENDA ITEM 25. – October 26, 2021

Subject: Informational Items

Recommended Action: No action is required.

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

- a. Management Reports
 - (1) [General Manager](#)
 - (2) [Communications](#)
 - (3) [Engineering](#)
 - (4) [Finance](#)
 - (5) [Information Technology](#)
 - (6) [Operations](#)
 - (7) [Talent Management](#)
 - (8) [Water Quality](#)
 - (9) [Report of Internal Audit Activities](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Effluent and Air Summaries with Items of Interest](#)



October 17, 2021

Re: General Manager's Report

Dear Commissioners:

COVID continues to consume significant resources -- addressing policy changes, performing contact tracing, and providing regular updates to staff to name a few. While we reached a vaccination rate of 77 percent through voluntary efforts, we have implemented a new policy requiring everyone to be fully vaccinated by December 1, 2021. The Talent Management staff is working through the many requests for religious or medical exemptions to this requirement. While I certainly would not want anyone to lose their job over this issue, it is likely we will have some people choose not to get vaccinated, and without an approved exemption, will be dismissed in December. The next complication will be if and how to accommodate anyone that does receive an approved exemption, keeping in mind it is our job to protect the safety and health of all employees. The senior leadership team has worked through various contingencies, and we are prepared to maintain operations even if we do lose some people.

The other challenge presented is with our contractors and vendors who also need to be fully vaccinated to work at our facilities with our staff. As you are aware, there are already labor shortages and supply chain disruptions, and the vaccination requirement may create more challenges in the short term. As with the potential loss of some of our own employees, we are prepared to address these potential disruptions.

These are challenging times. I feel this issue has damaged our organizational culture and it will take time to restore the cooperative and supportive culture we had nurtured over the past decade or more.

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

- A. **Treatment Compliance and System Operations:** All plants met permit and there were no issues in the interception systems.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
 - 1. A meeting to review Onancock ownership status
 - 2. The lunch and learn on PdNA
 - 3. A meeting to plan the public open house for the Tabb Pressure Reducing Station (PRS) and Storage Project

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



4. A meeting to review cost share and funding related to Norfolk Pump Station 27
5. The welcome session to introduce our new Wellness Specialist
6. A meeting to review issues with a proposed site for the Boat Harbor pumping station and storage tank
7. The architectural review of the proposed new Lucas Creek Pump Station

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

1. A call with the Secretary of Natural Resources
2. A meeting of the nominations committee for VirginiaForever
3. A meeting of the joint association Utility of the Future Today recognition program task force
4. The Aspen-Nicholas virtual water roundtable (invite only)
5. A meeting of the US Water Alliance's Value of Water Coalition
6. The Tabb PRS and Storage Facility public open house
7. The Water Infrastructure Finance and Innovation Act (WIFIA) check presentation
8. A meeting coordinated by the Tidewater Community College Real Estate Trust with staff from Senator Warner's and Senator Kaine's staffs
9. The quarterly meeting of the VirginiaForever executive board
10. A meeting with Newport News city staff on proposed location of the Boat Harbor pumping station
11. A meeting with the other panelists and WateReuse staff to prepare for a congressional briefing focused on reuse east of the Mississippi
12. The US Water Alliance's One Water Council
13. Presented HRSD and SWIFT to the Gloucester Garden Club
14. A meeting of the Elizabeth River Projects' development committee
15. An Eastern Shore update with community leaders
16. The quarterly membership meeting for the Virginia Association of Municipal Water Agencies (VAMWA)
17. Served as a panelist for the WateReuse congressional briefing

D. **Consent Decree Update:**

- No change. Still awaiting final signatures from the agencies.
- Negotiations over stipulated penalties for calendar year 2020 and the January 2021 spill in Newport News continue.

We will have a closed session to evaluate my annual performance (one last time) at the end of the October meeting. I will send my self-evaluation via separate email by the end of the week

The leadership and support you provide are the keys to our success as an organization. Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth, and the environment. **I look forward to seeing you in person in NEWPORT NEWS on Tuesday, October 26, 2021.**

Respectfully submitted,

Ted Henifin, P.E.
General Manager

TO: General Manager
 FROM: Director of Communications
 SUBJECT: Monthly Report for September 2021
 DATE: October 7, 2021





A. Publicity and Promotion

HRSD and/or SWIFT were mentioned or featured in 14 news stories or media mentions on topics that included:

1. HRSD receives \$477 million infrastructure EPA loan
2. Middle Peninsula Sewer Expansion
3. Ransomware attacks wreaking havoc on US cities and agencies

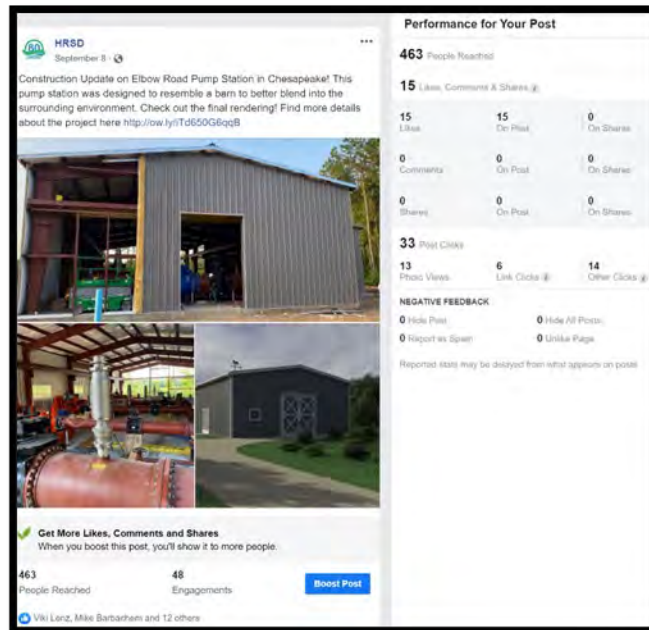
B. Social Media and Online Engagement

1. Metrics

| Social Media Metrics September 2021 | | | | |
|---|--|--|---|---|
| METRIC |  FACEBOOK |  LINKEDIN |  TWITTER |  YOUTUBE |
| Number of Posts *number of published posts | 17 | 9 | 13 | 1:59 average view duration |
| Number of Followers/Likes *total number of fans | 1,622 | 5,26 | 574 | 237 |
| Engagement *sum of reactions comments and shares | 157 | 6 | 18 | 576 unique viewers |
| Traffic *total clicks on links posted | 67 | 16 | 125 | 3.5% click-through |

2. Top posts on Facebook, Twitter, and YouTube

a. Top Facebook post



b. Top Tweet



c. Top YouTube Videos

- (1) [The Wastewater Treatment Process](#) (436 views)
- (2) [What is Asset Management? HRSD Celebrates Infrastructure Week | United for Infrastructure](#) (83 views)
- (3) [Tabb Pressure Reducing Station](#) (37 views)
- (4) [SWIFT Research Center: What is the Potomac Aquifer?](#) (34 views)

(5) [HRSD Atlantic Treatment Plant Cambi Tour](#) (28 views)

3. Impressions and Visits

- a. Facebook: 6,702 page impressions, 4,188 post impressions reaching 5,283 users and Facebook engagement of 157 (140 reactions 5 shares and 12 comments)
- b. Twitter: 6,892 tweet impressions; 695 profile visits and 10 mentions
- c. HRSD.com/SWIFTVA.com: 1,005 page visits
- d. LinkedIn Impressions: 870 page impressions and 0 post impressions
- e. YouTube: 766 views
- f. Next Door unique impressions: 9,714 post views from 13 targeted neighborhood postings
- g. Blog Posts: 0
- h. Construction Project Page Visits – 1,192 total visits (not including direct visits from home page, broken down as follows:
 - (1) 769 visits to individual pages
 - (2) 423 to the status page

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

- 1. News Releases: 1
- 2. Traffic Advisories: 4
- 3. Construction Notices and or notices to neighbors: 6
- 4. Advertisements: 0
- 5. Project Notices: 9 (via door hangings and/or mailing reaching approximately 696 residents)
- 6. Project/Community Meetings: 1
- 7. New Project Web Pages: 0
- 8. New Project Videos: 0

D. Special Projects and Highlights

1. Director and staff participated in the Tabb PRS Open House held at Tabb High School. The event was well-attended with approximately 60 attendees from the nearby community.
2. Director and staff attended the WIFIA check presentation ceremony at Boat Harbor Treatment Plant.

E. Internal Communications

1. Director participated in the following internal meetings and events:
 - a. Coordination meeting with operations staff to finalize details for WIFIA check presentation event
 - b. Architectural review meetings
 - c. Quarterly MOM meeting
 - d. Discharge Monitoring Report (DMR), SWIFT Quality Steering Team (QST) and QST meetings
 - e. Project progress meetings
2. Director conducted biweekly communications department status meetings and weekly one-on-one and team check-in meetings.
3. Staff attended project progress meetings and presentation and outreach development meetings with various project managers.

F. Metrics

1. Educational and Outreach Activities (all virtual unless otherwise noted): 3
 - a. Self-guided SWIFT Virtual Tours – 48 views (analytics specify number of times the “Take a Tour” button was selected)
 - b. 09/22/2021 – Amazing Aquifer Lesson Plan: 37 people reached; 4 clicks; 9 reactions, comments and shares
 - c. 09/30/2021 – Water Education Curriculum: 160 people reached; 4 clicks; 3 reactions, comments and shares
2. Number of Community Partners: 0
3. Additional Activities Coordinated by Communications Department: 0
 - a. 09/10/2021 Supplied Materials for City of Newport News Employee Appreciation Picnic

4. Monthly Metrics Summary

| Item # | Strategic Planning Measure | Unit | September 2021 |
|---------------|--|--------------|-----------------------|
| M-1.4a | Total Training Hours per Full Time Employee (3) - Current Month | Hours / #FTE | 5 |
| M-1.4b | Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date | Hours / #FTE | 9.5 |
| M-5.2 | Educational and Outreach Events | Number | 0 |
| M-5.3 | Number of Community Partners | Number | 0 |

Respectfully,

Leila Rice, APR
Director of Communications

TO: General Manager
FROM: Director of Engineering
SUBJECT: Engineering Monthly Report for September 2021
DATE: October 12, 2021

A. General

1. Capital Improvement Program (CIP) spending for the second month of Fiscal Year (FY) 2022 was below the planned spending target.

CIP Spending (\$M):

| | Current Period | FYTD |
|--------|----------------|-------|
| Actual | 12.49 | 19.33 |
| Plan | 23.00 | 42.60 |

2. Members of the Engineering Department were actively involved in the recent WaterJAM Conference held September 13-16. This conference is a partnership between the state American Water Works Association and the Virginia Water Environment Association (VWEA). Members of the Engineering Department assisted with conference planning and presented and/or co-authored numerous technical papers. The conference was held in person which allowed for face-to-face interactions with COVID-19 protocols in place. HRSD's leadership at this conference is an excellent way to stay current on technical issues, share our knowledge with the industry and give back to the profession.

B. Asset Management Division

1. Staff members are working with the GIS Section and the IT Department to establish a web-based GIS map that includes 3-D models of new pump stations and treatment facilities. This integration is known as GeoBIM since it allows for the use of GIS mapping information with Building Information Modeling (BIM) data. All linear and vertical assets will be consolidated into a single platform that includes attribute data and hyperlinks to relevant documents. The ultimate vision is to integrate this tool and have the GeoBIM linking to other HRSD documents. This is a step forward for implementing a "Digital Twin" for our portfolio of assets. The concept of a Digital Twin is a new concept that uses a computer program that takes real-world data about a physical object or system as inputs and produces as outputs predictions or simulations of how that physical object or system will be affected by those inputs. This is a similar concept to our treatment plant process model which is used to forecast treatment capabilities prior to building expensive improvements.
2. The Asset Management Plan (AMP) is nearing completion as the work conducted by our consultant support team is almost completed. The final steps needed to complete the implementation effort include condition assessment and criticality scoring of certain treatment plant assets and the review of the AMP dashboard. A presentation will be made at the October Commission Meeting highlighting the AMP implementation effort over the past four years.

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

1. The design efforts associated with the Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II project are nearing completion. We have finally negotiated terms with Hampton University to abandon the existing pipeline and acquire needed easements for the new construction effort. This is a large project which involves the installation of 6,800 linear feet of new 24-inch diameter force main around Hampton University. The project also includes a long and difficult directional drill crossing of the Hampton River and a tunneling effort underneath Interstate 64. This project will be advertised for construction in the coming months.
2. The Elbow Road Pressure Reducing Station construction is nearing completion. Work on the interior of the building continues, although weather and other delays have pushed the substantial completion date to January 2022. This new facility will provide for the reliable capacity within the interceptor system and maintain the HRSD pressure policy in sections of both Chesapeake and Virginia Beach.
3. Efforts continue as the Project Team nears completion of the design for the James River Advanced Nutrient Reduction Improvements and SWIFT Facilities. Ongoing efforts include design review workshops, review of design with regulatory agencies and Partnering efforts. This project is being delivered using a Design-Build procedure in which the Designer and Contractor are working as a single team to deliver the project. A final cost estimate (stipulated price) will be provided in the coming months and if acceptable, will allow for construction to begin. This is HRSD's single largest CIP project ever planned and the coordination needed to meet all requirements is very challenging.

D. Planning & Analysis Division

1. Staff continues developing a plan to consider sewer needs to serve Northern Accomack County on the Eastern Shore. There are several small sewer treatment facilities in this area which could be better served. Discussions with stakeholders have been held and a draft scope of work has been requested from HRSD's General Engineering Services firm to prepare the report. A new CIP project will be proposed and submitted to the Commission for authorization at the October Meeting.
2. Staff continues preparing the Climate Change Planning Study to consider the impacts of sea level rise and recurrent flooding on HRSD's facilities. The initial study looks promising and an additional scope of work is under review to increase the number of HRSD facilities to be considered. This study is critical to ensuring we design and construct new facilities that can withstand the future impacts of climate change in Hampton Roads.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 8
 - a. 08/14/2021 – Participated in a podcast entitled, “Straight Flush” during the One Water discussion co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).

- b. 08/15/2021 – Presented a technical paper entitled, “All Hands On Deck – Stopping the Spill and Emergency Replacement of the 60-inch PCCP Headworks Effluent Pipe at the York River Treatment Plant,” during the WaterJAM Conference co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).
 - c. 08/15/2021 – Presented a technical paper entitled, “Closing Two Wastewater Treatment Plants by Diverting Flows Through 20-Miles of Force Main,” during the WaterJAM Conference co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).
 - d. 08/15/2021 – Presented a technical paper entitled, “Strategically Employing Construction Management and Traditional Delivery Methods to Deliver \$50 Million in Pump Station Work,” during the WaterJAM Conference co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).
 - e. 08/15/2021 – Presented a technical paper entitled, “Wastewater Conveyance and a Wicked Skate Park Design - How a Design-Build Project Brought Together Multiple Owners, Designers and Constructors,” during the WaterJAM Conference co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).
 - f. 08/15/2021 – Presented a technical paper entitled, “A Balancing Act -The Boat Harbor Outlet Sewer Improvements Project,” during the WaterJAM Conference co-sponsored by the Virginia Water Environment Association (VWEA) and the Virginia American Water Works Association (VA AWWA).
 - g. 08/21/2021 – Discussed HRSD’s Capital Improvement Program at the Hampton Roads Utility and Heavy Contractors Association (HRUHCA) Engineer’s Night Event.
 - h. 08/28/2021 – Participated in an outreach effort with HRSD’s SWIFT Program Management Team at the Norfolk Botanical Gardens.
2. Number of Community Partners: 4
- a. VWEA
 - b. VA AWWA
 - c. HRUHCA
 - d. Norfolk Botanical Gardens
3. Number of Research Partners: 0

4. Monthly Metrics Summary:

| Item # | Strategic Planning Measure | Unit | September 2021 |
|---------------|---|--------------|-----------------------|
| M-1.4a | Total Training Hours per Full Time Employee (45) - Current Month | Hours / #FTE | 5.70 |
| M-1.4b | Total Training Hours per Full Time Employee (45) - Cumulative Fiscal Year-to-Date | Hours / #FTE | 9.50 |
| M-5.2 | Educational and Outreach Events | Number | 8 |
| M-5.3 | Number of Community Partners | Number | 4 |
| M-5.4 | Number of Research Partners | Number | 0 |

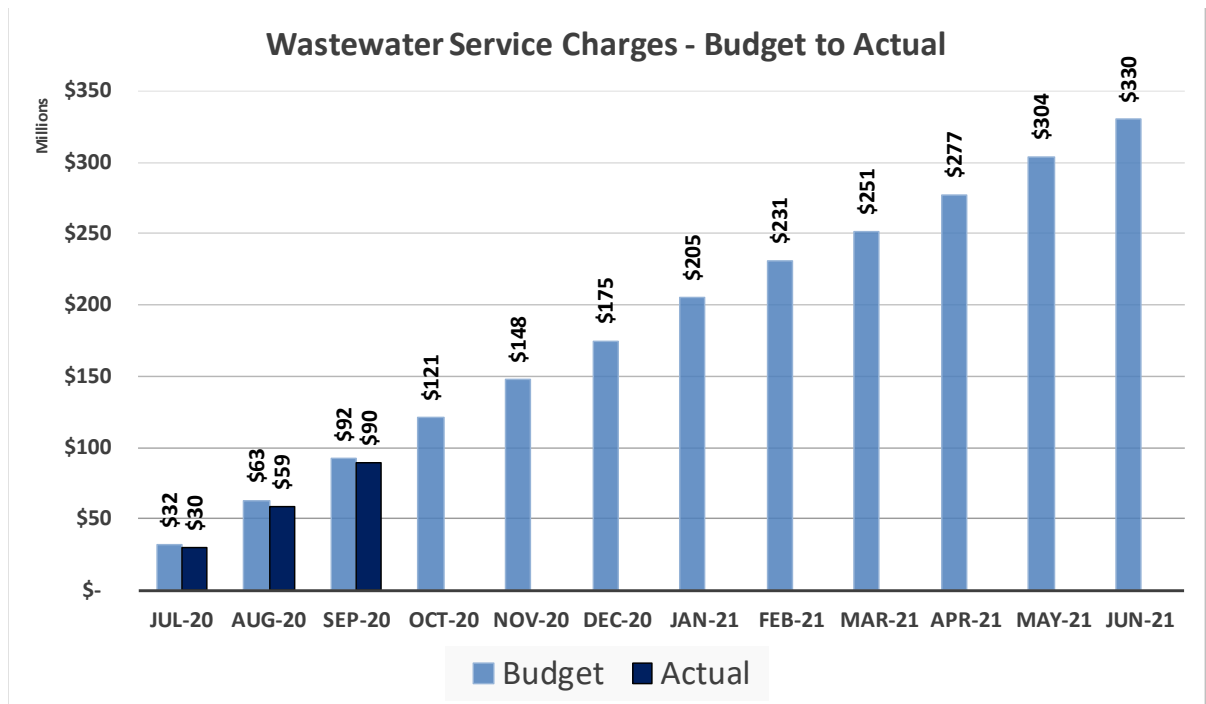
Bruce W. Husselbee, Ph.D., P.E.

Bruce W. Husselbee, PhD, P.E.

TO: General Manager
 FROM: Director of Finance
 SUBJECT: Monthly Report for September 2021
 DATE: October 13, 2021

A. General

- The Year-To-Date (YTD) Wastewater Revenues appear to be above target (27 percent actual vs 25 percent target), but this is based on a linear distribution of the budget (i.e. $\$336\text{M}/12 = \28M per month). The reality is that water consumption is historically higher than average between July and October, which makes our revenues appear to be above budget. The largest component of this revenue source, Wastewater Service Charges, is actually down when seasonality is incorporated into the budget projection. The graph below shows the revised budget target specifically for Wastewater Service Charges, which is the largest component of Wastewater Revenues, using historical seasonal trends. At the end of September, Wastewater Service Charges are approximately \$2M lower than budget. Facility Charges are starting out slowly as materials and labor constraints are starting to impact new construction activity. The Hampton Roads Planning District Commission reports that new single-family permits were down in August compared to 2019 and 2020. Interest Income will continue to lag until the Federal Reserve starts raising rates, which is projected in 2023. Personal services and fringe benefit expenses are slightly above budget at 26 percent and 25 percent, respectively, with each of these expenses consistent with the prior year. Most other operating expenses are below budget, generally consistent with the prior year. Major repairs expenses are significantly lower than budget at this time since many purchases during Fiscal Year-2022 have related to prior year encumbrances. Debt service is recorded based on actual year to date payments, currently at 40 percent of budget, and we anticipate it being near budget at year end.



2. On September 9, 2021, HRSD closed on \$477 million of our \$1.05 billion Water Infrastructure Finance and Innovation (WIFIA) loan. This second tranche of the loan was locked in at 1.95 percent which brings our weighted average rate on \$700 million to 1.78 percent for 34 years. Combined with clean water revolving loan funds, our ratepayers will save over \$500 million over the life of the loan compared to market rates.
3. On September 30, approximately all of the \$8.7 million in Municipal Utility Relief was applied to over 33,000 COVID-19 impacted customers. HRSD is applying for another round of relief as \$120 million is available to utilities. The amount awarded should be released some time this winter as allocations are made.
4. Call Center interactions are starting to increase as letters started going out in August regarding our collections' process resuming. With water shut-offs resuming in November, we expect call volumes to continue to increase. With the second round of Municipal Utility Relief on the horizon and the optional pay plans available, we will only shut-off as a last resort.
5. Jay Bernas was re-elected to the \$2.0 billion Virginia Investment Pool's Board of Trustees. The Board of Trustees is composed of participating local Treasurers and chief investment officers elected by 140 participating political subdivisions.

B. Interim Financial Report

1. Operating Budget for the Period Ended September 30, 2021

| | Amended Budget | Current YTD | Current YTD as % of Budget (25% Budget to Date) | Prior YTD as % of Prior Year Budget |
|---|-----------------------|-----------------------|---|---|
| Operating Revenues | | | | |
| Wastewater | \$ 336,455,000 | \$ 91,359,913 | 27% | 27% |
| Surcharge | 1,600,000 | 379,870 | 24% | 29% |
| Indirect Discharge | 3,200,000 | 791,379 | 25% | 25% |
| Fees | 3,020,000 | 34,422 | 1% | 16% |
| Municipal Assistance | 700,000 | 188,885 | 27% | 23% |
| Miscellaneous | 1,285,000 | 91,375 | 7% | 39% |
| Total Operating Revenue | 346,260,000 | 92,845,844 | 27% | 27% |
| Non Operating Revenues | | | | |
| Facility Charge | 7,320,000 | 1,611,980 | 22% | 36% |
| Interest Income | 1,210,000 | 72,969 | 6% | 17% |
| Build America Bond Subsidy | 2,095,000 | - | 0% | 0% |
| Other | 610,000 | 385,013 | 63% | 26% |
| Total Non Operating Revenue | 11,235,000 | 2,069,962 | 18% | 25% |
| Total Revenues | 357,495,000 | 94,915,806 | 27% | 27% |
| Transfers from Reserves | 17,346,624 | 4,336,656 | 25% | 75% |
| Total Revenues and Transfers | \$ 374,841,624 | \$ 99,252,462 | 26% | 31% |
| Operating Expenses | | | | |
| Personal Services | \$ 62,776,055 | \$ 16,331,473 | 26% | 26% |
| Fringe Benefits | 25,173,707 | 6,372,150 | 25% | 25% |
| Materials & Supplies | 9,509,735 | 1,679,140 | 18% | 18% |
| Transportation | 1,555,282 | 360,189 | 23% | 14% |
| Utilities | 12,350,061 | 2,740,544 | 22% | 20% |
| Chemical Purchases | 9,249,441 | 1,965,207 | 21% | 18% |
| Contractual Services | 55,345,089 | 8,508,724 | 15% | 16% |
| Major Repairs | 16,056,857 | 1,791,959 | 11% | 10% |
| Capital Assets | 655,963 | 205,653 | 31% | 17% |
| Miscellaneous Expense | 3,137,304 | 725,727 | 23% | 24% |
| Total Operating Expenses | 195,809,494 | 40,680,766 | 21% | 21% |
| Debt Service and Transfers | | | | |
| Debt Service | 64,308,209 | 25,820,368 | 40% | 36% |
| Transfer to CIP | 114,463,921 | 33,615,980 | 29% | 35% |
| Transfer to Risk management | 260,000 | 65,001 | 25% | 25% |
| Total Debt Service and Transfers | 179,032,130 | 59,501,349 | 33% | 35% |
| Total Expenses and Transfers | \$ 374,841,624 | \$ 100,182,115 | 27% | 28% |

2. Notes to Interim Financial Report

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

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

Transfers represent certain budgetary policy designations as follows:

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

3. Reserves and Capital Resources (Cash and Investments Activity) for the Period Ended September 30, 2021

| HRSD - RESERVE AND CAPITAL ACTIVITY | | | | | | | September 30, 2021 | |
|---|-----------------|--------------|--------------|---------------|-------------------|---------------|--------------------|--|
| | General Reserve | | | | | Capital | | |
| | General | CARES - HRSD | CARES - JCSA | Debt Service | Risk Mgmt Reserve | Paygo | Debt Proceeds | |
| | Unrestricted | Restricted | Restricted | Restricted | Unrestricted | Unrestricted | Restricted | |
| Beginning - July 1, 2021 | \$ 182,380,923 | \$ 1,373,428 | \$ 168,124 | \$ 30,454,700 | \$ 4,019,543 | \$ 6,033,913 | \$ - | |
| Current Year Sources of Funds | | | | | | | | |
| Current Receipts | 89,454,972 | 49,659 | | | | | | |
| Line of Credit | | | | | | | 18,422,172 | |
| VRA Draws | | | | | | 33,464,207 | | |
| CARES Transfer In | 1,142,022 | | | | | | | |
| Days Cash on Hand Transfer In | | | | | | | | |
| Transfers In | - | | | | 65,001 | 33,615,980 | | |
| Sources of Funds | 90,596,994 | 49,659 | - | - | 65,001 | 67,080,187 | 18,422,172 | |
| Total Funds Available | \$ 272,977,917 | \$ 1,423,087 | \$ 168,124 | \$ 30,454,700 | \$ 4,084,544 | \$ 73,114,100 | \$ 18,422,172 | |
| Current Year Uses of Funds | | | | | | | | |
| Cash Disbursements | 72,541,726 | | | | | 42,266,147 | 18,422,172 | |
| CARES Transfer Out | | 1,422,182 | 67,300 | | | | | |
| Days Cash on Hand Transfer Out | - | | | | | | | |
| Transfers Out | 33,680,981 | | | | | | | |
| Uses of Funds | 106,222,707 | 1,422,182 | 67,300 | - | - | 42,266,147 | 18,422,172 | |
| End of Period - September 30, 2021 | \$ 166,755,210 | \$ 905 | \$ 100,824 | \$ 30,454,700 | \$ 4,084,544 | \$ 30,847,953 | \$ - | |
| Unrestricted Funds | \$ 201,687,707 | | | | | | | |

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended September 30, 2021

HRSD - PROJECT ANALYSIS September 30, 2021

| Classification/ Treatment Service Area | Appropriated Funds | Expenditures prior to 7/1/2021 | Expenditures Year to Date FY2022 | Total Project Expenditures | Encumbrances | Available Funds |
|--|-------------------------|--------------------------------------|--|----------------------------------|-----------------------|-------------------------|
| Administration | 47,227,240 | 27,658,581 | 1,276,637 | 28,935,218 | 660,101 | 17,631,921 |
| Army Base | 163,448,800 | 123,537,916 | 410,045 | 123,947,961 | 1,450,963 | 38,049,876 |
| Atlantic | 142,582,683 | 82,877,498 | 341,011 | 83,218,509 | 5,783,882 | 53,580,292 |
| Boat Harbor | 288,504,388 | 52,827,281 | 2,169,231 | 54,996,512 | 8,875,174 | 224,632,702 |
| Ches-Eliz | 166,407,309 | 105,212,456 | 7,079,481 | 112,291,937 | 11,442,798 | 42,672,574 |
| Eastern Shore | 17,643,040 | 68,570 | 19,672 | 88,242 | 15,981,780 | 1,573,018 |
| James River | 313,262,591 | 49,601,157 | 4,725,233 | 54,326,390 | 210,735,847 | 48,200,354 |
| Middle Peninsula | 93,177,822 | 13,511,974 | 1,725,217 | 15,237,191 | 6,656,286 | 71,284,345 |
| Nansemond | 355,543,533 | 41,212,618 | 2,536,819 | 43,749,437 | 6,800,302 | 304,993,794 |
| Surry | 55,505,027 | 26,875,712 | 6,967,410 | 33,843,122 | 7,811,634 | 13,850,271 |
| VIP | 304,952,874 | 183,421,754 | 1,827,707 | 185,249,461 | 6,720,724 | 112,982,689 |
| Williamsburg | 39,061,010 | 27,900,712 | 787,538 | 28,688,250 | 6,237,574 | 4,135,186 |
| York River | 81,379,847 | 30,364,487 | 1,058,818 | 31,423,305 | 2,442,556 | 47,513,986 |
| General | 792,099,019 | 213,776,988 | 10,936,055 | 224,713,043 | 280,733,207 | 286,652,769 |
| | \$ 2,860,795,183 | \$ 978,847,704 | \$ 41,860,874 | \$ 1,020,708,578 | \$ 572,332,828 | \$ 1,267,753,777 |

5. Debt Management Overview

HRSD - Debt Outstanding (\$000's) September 30, 2021

| | Principal August 2021 | Principal Payments | Principal Draws | Principal Sept 2021 | Interest Payments |
|-----------------------|--------------------------|--------------------|------------------|------------------------|----------------------|
| Fixed Rate | | | | | |
| Senior | 190,600 | (1,258) | - | 189,342 | (361) |
| Subordinate | 580,950 | (2,404) | 12,556 | 591,102 | (1,268) |
| Variable Rate | | | | | |
| Subordinate | 50,000 | - | - | 50,000 | - |
| Line of Credit | 33,721 | - | - | 33,721 | (11) |
| Total | \$ 855,271 | \$ (3,662) | \$ 12,556 | \$ 864,165 | \$ (1,640) |

HRSD- Series 2016VR Bond Analysis October 1, 2021

| | SIFMA Index | HRSD | Spread to SIFMA |
|----------------|-------------|-------|--------------------|
| Maximum | 4.71% | 4.95% | 0.24% |
| Average | 0.36% | 0.50% | 0.14% |
| Minimum | 0.01% | 0.01% | 0.00% |
| As of 10/01/21 | 0.05% | 0.05% | 0.00% |

* Since October 20, 2011 HRSD has averaged 50 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended September 30, 2021

HRSD - UNRESTRICTED CASH

September 30, 2021

Can be used for any purpose since it is not earmarked for a specific use and is extremely liquid

| | | Days Cash on Hand | Adjusted Days Cash on Hand |
|-----------------------------------|-----------------------|-------------------|----------------------------|
| Total Unrestricted Cash | \$ 201,687,707 | | 376 |
| Risk Management Reserve | \$ (4,084,544) | (8) | 368 |
| Capital (PAYGO only) | \$ (30,847,953) | (57) | 311 |
| Adjusted Days Cash on Hand | \$ 166,755,209 | | 311 |

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, 2021

| Primary Source | Beginning Market Value | YTD Contributions | YTD Withdrawals | YTD Income Earned | Ending Market Value | Allocation of Funds | Credit Quality | Current Mo Avg Yield |
|--------------------------------|------------------------|-----------------------|-----------------------|-------------------|-----------------------|---------------------|----------------|----------------------|
| | July 1, 2021 | | | | September 30, 2021 | | | |
| BAML Corp Disbursement Account | 30,017,420 | 158,412,799 | 177,444,058 | 10,766 | 10,996,927 | 7.1% | N/A | 0.55% |
| VIP Stable NAV Liquidity Pool | 108,890,465 | 50,000,000 | 15,000,000 | 19,839 | 143,910,304 | 92.9% | AAAm | 0.07% |
| Total Primary Source | \$ 138,907,885 | \$ 208,412,799 | \$ 192,444,058 | \$ 30,605 | \$ 154,907,231 | 100.0% | | |

| Secondary Source | Beginning Market Value | YTD Contributions | YTD Withdrawals | YTD Income Earned & Realized G/L | Ending Market Value | LTD Mkt Adj | Yield to Maturity at Market |
|-------------------------------------|------------------------|-------------------|-----------------|----------------------------------|----------------------|----------------------|-----------------------------|
| | July 1, 2021 | | | | September 30, 2021 | Ending Cost | |
| VIP 1-3 Year High Quality Bond Fund | 65,054,203 | - | 3,283 | 77,215 | 65,085,629 | 63,473,475 | 1,612,154 |
| Total Secondary Source | \$ 65,054,203 | \$ - | \$ 3,283 | \$ 77,215 | \$ 65,085,629 | \$ 63,473,475 | \$ 1,612,154 |

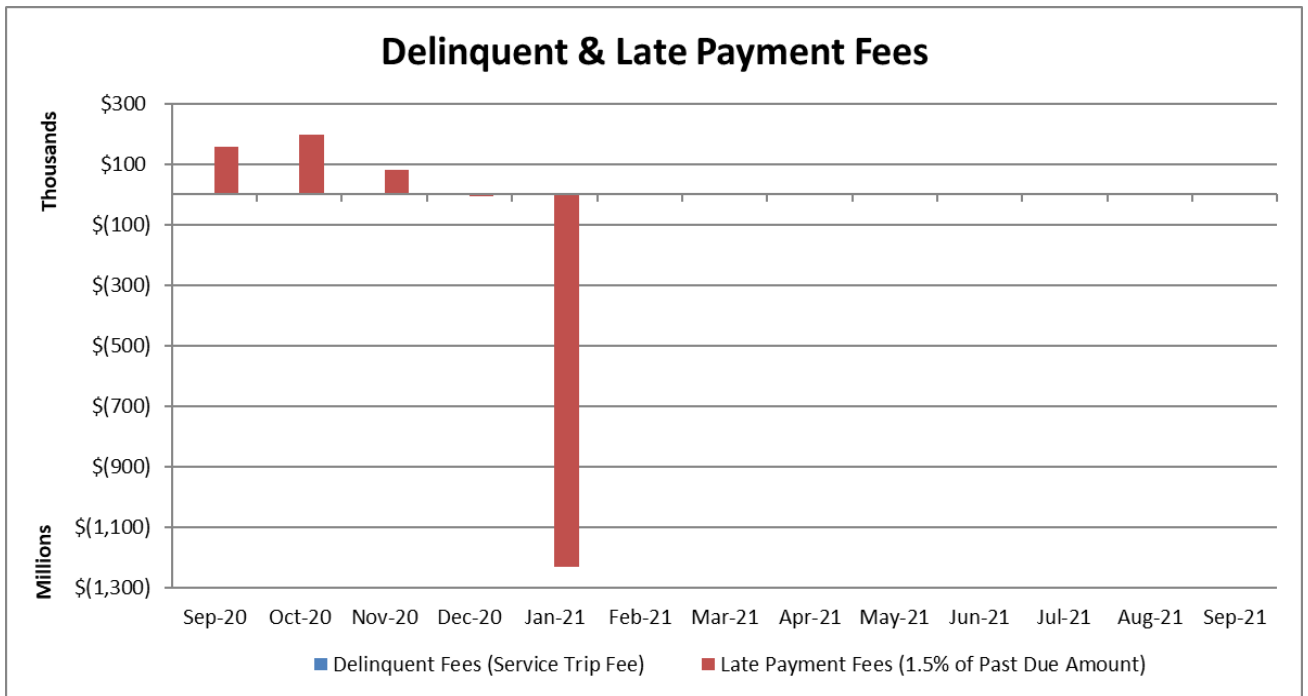
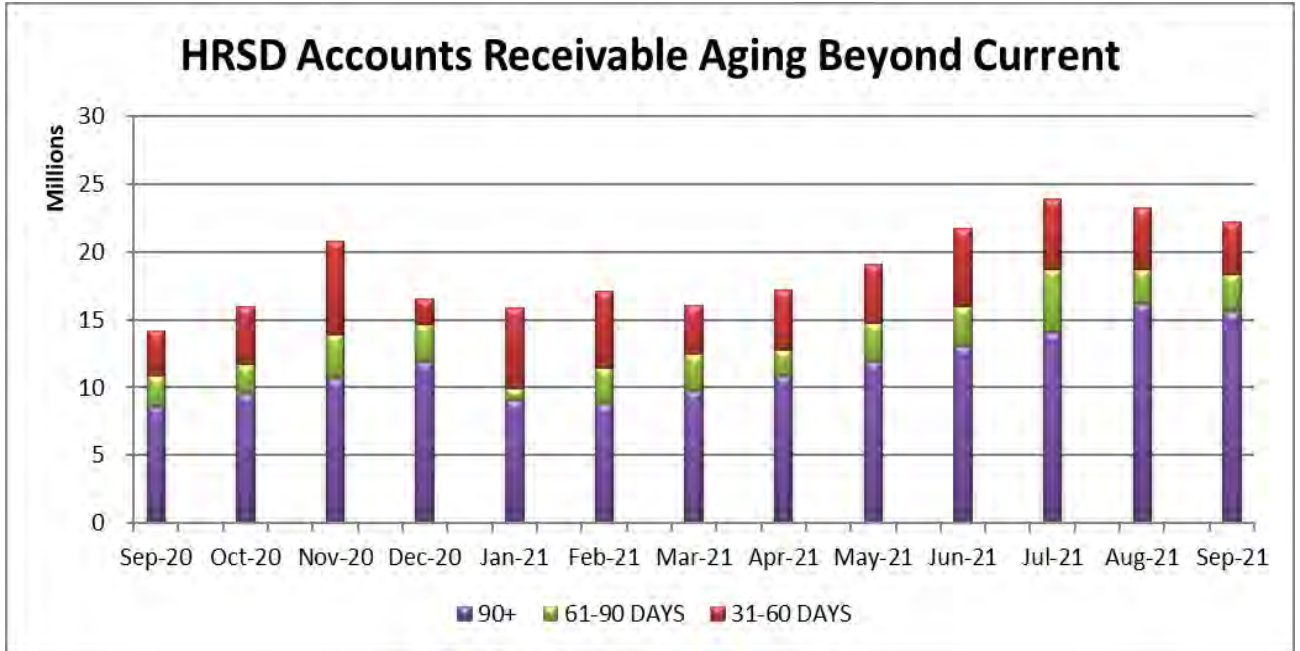
| | Total | Fund Alloc |
|------------------------|-----------------------|---------------|
| Total Primary Source | \$ 154,907,231 | 70.4% |
| Total Secondary Source | \$ 65,085,629 | 29.6% |
| TOTAL SOURCES | \$ 219,992,860 | 100.0% |

7. Summary of Billed Consumption

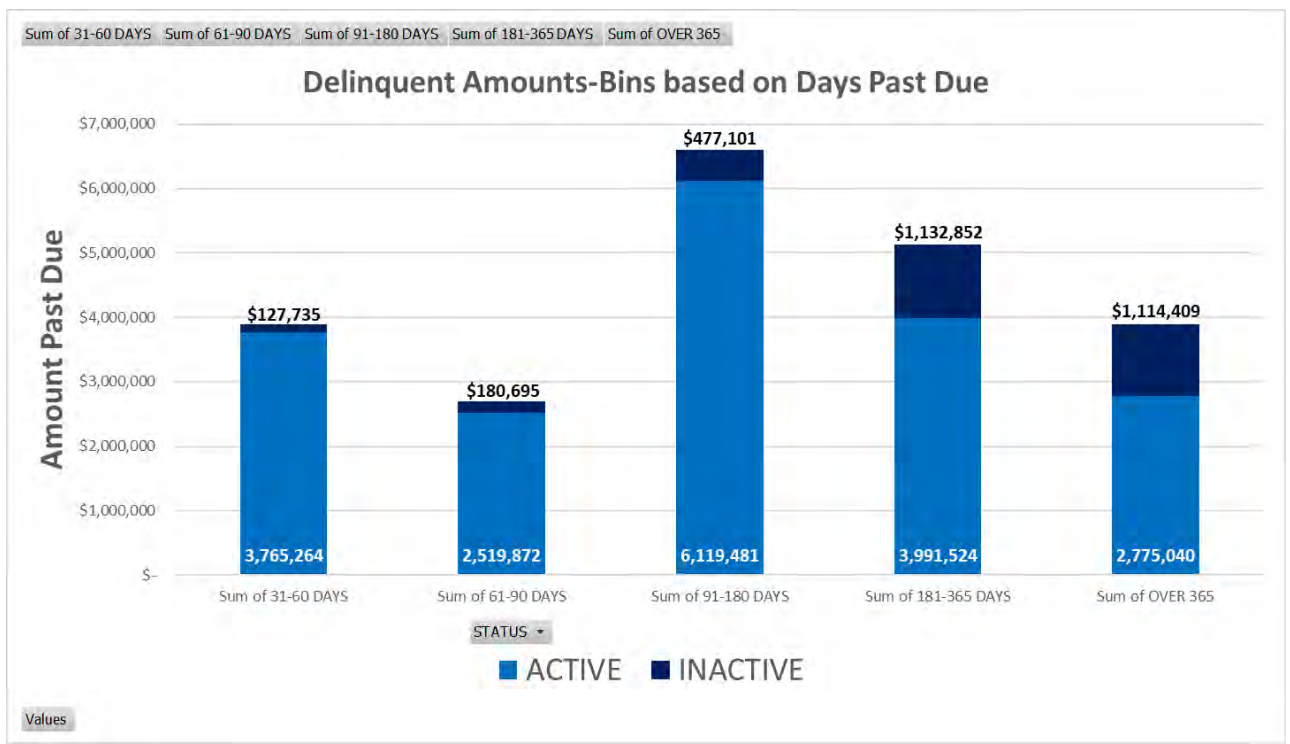
| Summary of Billed Consumption (,000s ccf) | | | | | | | |
|---|-----------------------------------|--------------------------|--------------|--------------------------|--------------|---------------------------|---------------------|
| Month | FY2022 Cumulative Budget Estimate | FY2022 Cumulative Actual | % Difference | | % Difference | | % Difference |
| | | | From Budget | Cumulative FY2021 Actual | From FY2021 | Cumulative 3 Year Average | From 3 Year Average |
| July | 5,015 | 4,976 | -0.8% | 4,751 | 4.7% | 5,006 | -0.6% |
| Aug | 9,883 | 9,517 | -3.7% | 9,459 | 0.6% | 9,866 | -3.5% |
| Sept | 14,413 | 14,346 | -0.5% | 14,335 | 0.1% | 14,303 | 0.3% |
| Oct | 18,892 | - | N/A | 18,863 | N/A | 18,931 | N/A |
| Nov | 23,125 | - | N/A | 21,192 | N/A | 22,474 | N/A |
| Dec | 27,336 | - | N/A | 27,614 | N/A | 27,458 | N/A |
| Jan | 32,088 | - | N/A | 32,478 | N/A | 32,116 | N/A |
| Feb | 36,182 | - | N/A | 36,068 | N/A | 36,110 | N/A |
| March | 39,309 | - | N/A | 41,018 | N/A | 40,340 | N/A |
| Apr | 43,360 | - | N/A | 45,116 | N/A | 44,540 | N/A |
| May | 47,508 | - | N/A | 49,256 | N/A | 48,716 | N/A |
| June | 51,620 | - | N/A | 54,195 | N/A | 53,202 | N/A |

C. Customer Care Center

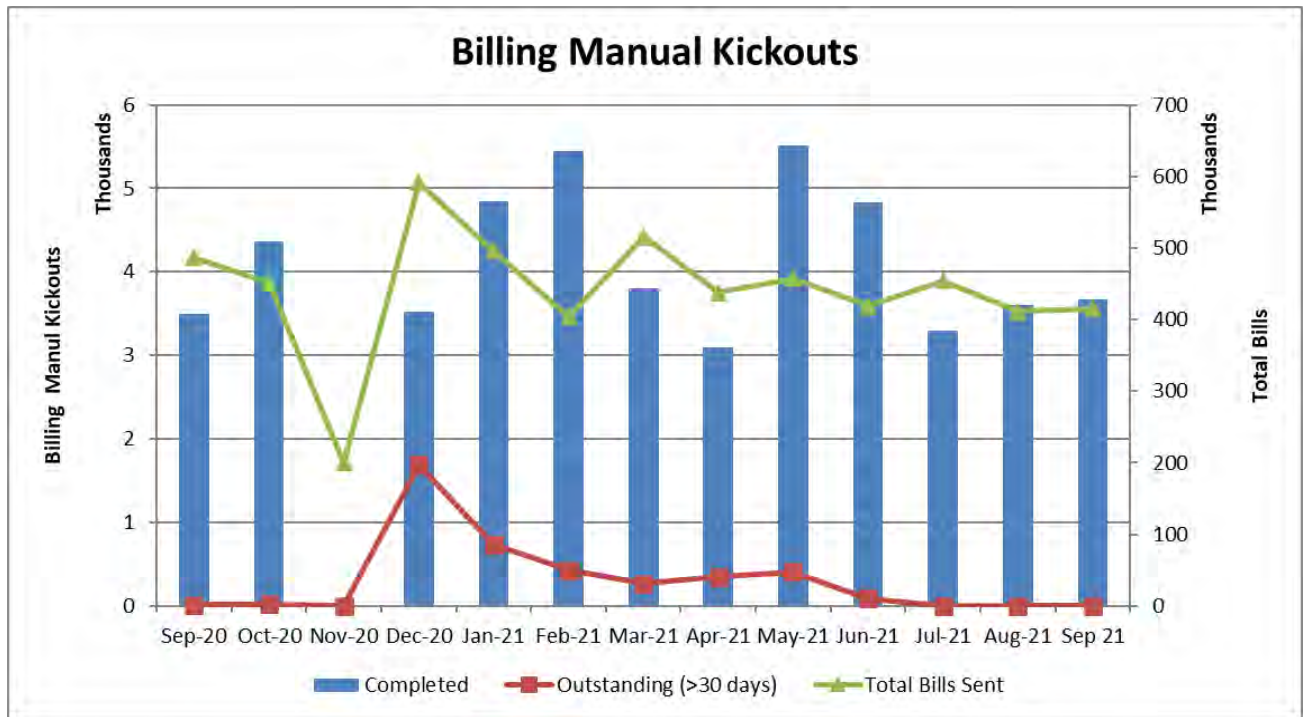
1. Accounts Receivable Overview



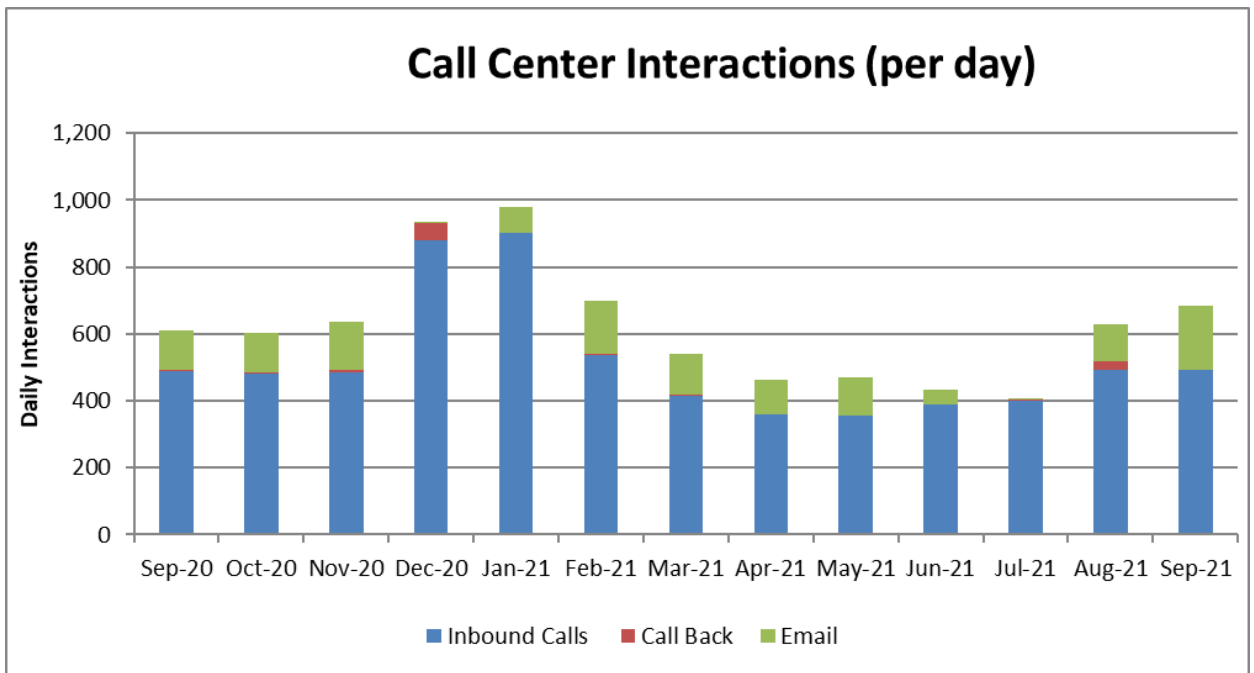
Apr 20-Sep 21 Field Activity was suspended late March 2020 in response to COVID-19.



2. Customer Care Center Statistics



November data not available due to Ransomware attack



| Customer Interaction Statistics | Apr | May | Jun | Jul | Aug | Sep |
|---------------------------------|-----|-----|-----|-----|-----|-----|
| Calls Answered within 3 minutes | 98% | 98% | 98% | 96% | 65% | 94% |
| Average Wait Time (seconds) | 20 | 16 | 16 | 30 | 433 | 57 |
| Calls Abandoned | 3% | 2% | 3% | 4% | 23% | 6% |

D. Procurement Statistics

| ProCard Fraud | External Fraud Transactions * | Comments |
|---------------|-------------------------------|----------|
| July | 0 | |
| August | 0 | |
| September | 0 | |
| Total | 0 | |

***External Fraud:** Fraud from outside HRSD (i.e.: a lost or stolen card, phishing, or identity theft)

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Community Partners: 0
3. Monthly Metrics

| Item # | Strategic Planning Measure | Unit | September 2021 |
|---------------|--|--|-----------------------|
| M-1.4a | Training During Work Hours Per Full Time Employee (102) – Current Month | Hours / #FTE | 0.88 |
| M-1.4b | Total Training During Work Hours Per Full Time Employee (102) – Cumulative Fiscal Year-to-Date | Hours / #FTE | 4.80 |
| M-5.2 | Educational and Outreach Events | Number | 0 |
| M-5.3 | Number of Community Partners | Number | 0 |
| | Wastewater Revenue | Percentage of budgeted | 108% |
| | General Reserves | Percentage of Operating Budget less Depreciation | 101% |
| | Liquidity | Days Cash on Hand | 376 Days |
| | Accounts Receivable (HRSD) | Dollars | \$43,353,339 |
| | Aging Accounts Receivable | Percentage of receivables greater than 90 days | 36% |

4. Annual Metrics

| Item # | Strategic Planning Measure | Unit | FY-2021 |
|--------|----------------------------|---|---------|
| M-2.4 | Infrastructure Investment | Percentage of Total Cost of Infrastructure | * |
| M-4.3 | Labor Cost/MGD | Personal Services + Fringe Benefits/365/5-Year Average Daily Flow | * |
| M-4.4 | Affordability | 6.5 CCF Monthly Charge/Median Household Income ¹ | * |
| M-4.5 | Operating Cost/MGD | Total Operating Expense /365/5-Year Average Daily Flow | * |
| | Billed Flow | Percentage of Total Treated | * |
| | Senior Debt Coverage | Cash Reserves/ Senior Annual Debt Service | * |
| | Total Debt Coverage | | * |

* These metrics will be reported upon completion of the annual financial statements.

Respectfully,
Jay A. Bernas
 Jay A. Bernas, P.E.
 Director of Finance

¹ Median Household Income is based on the American Community Survey (US Census) for Hampton Roads

TO: General Manager
 FROM: Director of Operations
 SUBJECT: Operations Report for September 2021
 DATE: October 19, 2021

A. Energy Management (EEM)

- In September of 2017, the Commission adopted a goal to reduce our greenhouse gas (GHG) emissions to 30 percent of the 2005 levels in accordance with the international Paris Accord agreement. The three main contributors to HRSD's GHGs are mobile sources (fleet), stationary sources (incinerators and generators) and purchased electricity.

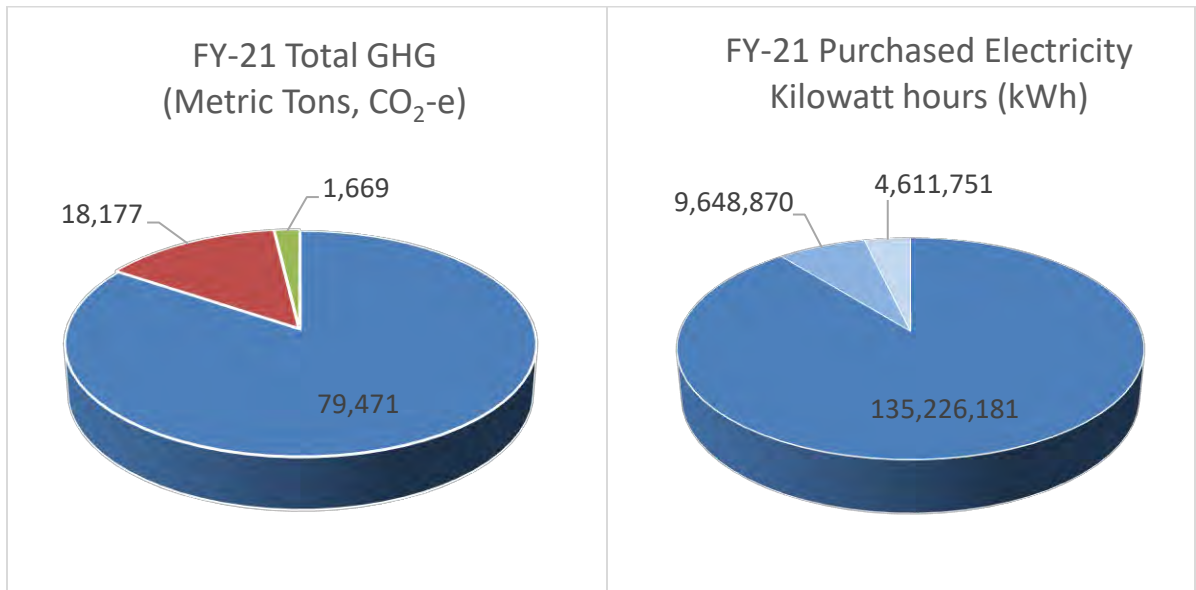


Figure 1 - GHG
 Purchased Electricity 80%
 Stationary Combustion 18%
 Mobile Combustion 2%

Figure 2 - Kilowatt Hours
 Treatment 91%
 Interceptor Systems 6%
 Misc. loads & Office Buildings 3%

The annual update for Fiscal Year (FY) 2021 shows a 13 percent increase in GHGs. Stationary combustion increased 40 percent and purchased electricity increased four percent. Mobile combustion did not change.

One of the primary reasons for the increase in stationary combustion (natural gas use) was the unexpected, long-term closure of the Williamsburg Treatment Plant (WBTP) Fats, Oils and Grease (FOG) receiving facility. Normally, the WBTP uses FOG to fuel its incinerator; with the closure of the receiving facility, staff had to use natural gas as an alternative incinerator fuel source. The ongoing shutdown of the receiving facility will require the continued use of natural gas to fuel the incinerator until the FOG facility is restored, hopefully, by the end of calendar year 2021.

In addition, natural gas was also used to fuel the boiler for the Thermal Hydrolysis Process (THP) start-up effort and to allow staff to make improvements to the methane gas cleaning unit at the Atlantic Treatment Plant (ATP).

Purchased electricity kilowatt-hours (kWh), (illustrated in Figure 2) continues to represent the majority (80 percent) of total GHG contributions (Figure 1) and the treatment facilities continue to use the majority of purchased electricity (91 percent, Figure 2). Consumption by the Treatment and Interceptor Systems Divisions increased four percent and six percent, respectively. Both were offset by office buildings and miscellaneous consumptions, which decreased 14 percent. Despite this offset, electrical consumption overall increased four percent in FY 2021.

The increase in electricity consumption is partially attributable to higher-than-normal rainfall in the fall of 2020 and winter of 2021. Given the region's low and flat topography, excess flow in the system results in higher pumping and energy costs.

In addition, the Combined Heat and Power (CHP) engines (which offset purchased electricity consumption at the ATP) were offline for approximately one year. Staff took the engines out of service to allow improvements to be made to the methane gas cleaning unit. Once improvements were made, the gas was then used to power the THP boiler. Once the Chesapeake-Elizabeth Treatment Plant (CETP) closes and the flow is fully diverted to the ATP, staff anticipates there will be enough flow to run the CHP engines and the THP boilers.

2. HRSD continues to purchase green power from Dominion Energy Virginia (DEV) to help offset our power consumption and meet the 2005 GHG reduction goals. (DEV green power is produced or purchased by DEV and transported through the power grid to our facilities.) We will spend approximately \$231,300 next year (.0045/kWh) to purchase 51.4 million kWh to offset our GHG emissions. Despite an increase in the cost per kWh this year, buying green power continues to be an attractive way to meet HRSD's policy objectives.

B. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. There were two odor complaints, and nine system alarms this month. The system alarms were fully resolved by NS Operations staff.
 - (1) Staff resolved one odor complaint caused by automatic venting operation in Williamsburg.
 - (2) Staff continues to equalize diurnal flows at the York River Treatment Plant (YRTP) by using the Coliseum Pressure Reducing Station (PRS) and Off-Line Storage Tank. That frequent use resulted in a breakthrough odor event that penetrated the odor control carbon scrubber system. The facility was originally design for intermittent wet-weather response and not daily use. With the more frequent use of this facility, the carbon odor scrubber unit reaches breakthrough conditions more rapidly. To help mitigate this, staff will be proposing a capital improvement project to install a bio-scrubber to create a 2-stage odor control system.

Staff believes the operational cost savings of equalizing the diurnal flows at the YRTP is significant and creates a less than one-year payback for this additional odor control facility.

2. South Shore (SS) Interceptor Systems

- a. On September 16, a resident called about a depression in the street near the Atlantic PRS in Virginia Beach. Staff filled the low area with a temporary asphalt patch and notified a contractor of the issue for a permanent repair.
- b. Staff operated system valves to assist the Portsmouth Coast Guard Base with a force main meter replacement. Staff also operated system valves to assist the City of Chesapeake in relocating a force main serving a city pump station near Saber Drive.

C. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. A contractor continues working on recoating the primary clarifier #3.
- b. Staff are still dealing with intermittent increased salinity in the influent flow and are working with the Navy to identify and isolate the source of the saltwater intrusion.

2. Atlantic Treatment Plant (ATP)

- a. Contractors installed a new cover and blowers on digester #5. This digester is now fully functional and is currently in use.
- b. Staff cleared and cleaned the North pad for the placement and storage of the class "A" solids from the new thermal hydrolysis process (THP).
- c. A new methane gas conditioning skid was placed in service. The plan is to operate the THP steam boiler with Methane as its fuel source, eliminating the need for natural gas. This provides a beneficial reuse of the methane gas that comes from the digesters.

3. Boat Harbor Treatment Plant (BHTP)

- a. An odor control drain line backed up causing a loss of air flow. The odor control system was shut down for seven hours while the staff replaced a large vertical section of the drain line that was restricted by a struvite-like substance.
- b. Staff hosted a Water Infrastructure Finance and Innovation Act (WIFIA) event at the treatment plant on September 10 related to the closure of the BHTP.

4. Chesapeake-Elizabeth Treatment Plant (CETP)

The final flow diversion to the ATP was delayed and is now anticipated to be around November 30, 2021.

5. James River Treatment Plant (JRTP)

- a. A contractor completed construction of fiberglass walls and installing air diffusers in reactor #5 of IFAS tank #8 for the testing of nutrient removal improvements. Fixed media modules will be mounted within the oxygen controlled walled area to promote growth of the annamox bacteria.
- b. The #4 primary clarifier was taken out of service and a contractor removed scum.

6. Nansemond Treatment Plant (NTP)

- a. On September 14, staff discovered a broken non-potable water (NPW) line on the side of aeration tank #3. The line is in an unused area between the aeration tanks and was not immediately discovered. The total quantity spilled to the ground/soil was 28,500 gallons with zero gallons recovered.
- b. On September 15, while draining an aeration tank, the nitrogen recycle pumps caused the flowrate to increase through the plant overflowing the final effluent channel spilling 5,000 gallons of final effluent with zero gallons recovered.
- c. Staff drained aeration tank #7 to clean and prepare for contractors to install the Big Bubble mixers. This is the third of four tanks to have the mixers installed. This project will allow for a lower dissolved oxygen setpoint to be reached in the aeration tanks, while still maintaining adequate mixing, which will increase efficiency of nutrient removal. This project should also result in a reduction of both chemical and energy costs.
- d. On September 29, contractors completed the replacement of a section of the solids handling drain line. A section of ductile iron pipe was replaced with high density polyethylene pipe. Because of the pipe's discharge location being partially submerged, divers were hired to install a plug while contractors replaced the pipe.
- e. Sustainable Water Initiative For Tomorrow (SWIFT) Research Center (RC)
 - (1) The total volume of SWIFT recharge into the Potomac aquifer for the month of September was 13.6 million gallons (mg) (63 percent recharge time based on 500 gpm).
 - (2) The recharge flow rate setpoint remained at 500 gpm. The recharge water level looks very stable, and no further changes were needed during this month.
 - (3) Staff finished the upgrades on the phosphoric acid system. To better understand the impact of feeding phosphoric acid to avoid nutrient limitations, only two out of the four biofilters (BAFs), will be fed phosphoric acid. Modifications on piping and programming are complete.
 - (4) Contractors completed installation of the new in-line mixer to be able to feed propane gas into two of the BAFs; however, the mixer was drawing

more amperage than expected and it was determined to be undersized. The mixer will be replaced by the vendor.

- (5) On September 27, the granular activated carbon (GAC) on vessel #1 was replaced with new media. At the current flow rate this new media should last at least one year.

7. Virginia Initiative Plant (VIP)

- a. On September 29 staff discovered a leak coming from the void space between the south wall of anaerobic/anoxic tank #4 and the north wall of the versatile bioreactor #1. Staff contained the leak and pumped it back to the plant process drain system. Approximately 1,050 gallons of the leak could not be contained before reaching the storm drain. Although contained, the leak is still active as the staff continues to isolate tanks and search for its source.
- b. Staff completed rehabilitation work on one primary clarifier and placed it in service, then removed another primary clarifier from service for repairs.
- c. Staff returned one secondary clarifier to service following repairs to the sweep arm structure and removed another secondary clarifier from service for coating repairs.
- d. Contractors completed rehabilitation work on the Nitrification Enhancement Facility clarifier.

8. Williamsburg Treatment Plant (WBTP)

- a. Dewatered solids were transported to a compost facility and the BHTP for incineration when the #1 incinerator was shut down because of an accumulation of slag. After removal of the slag and inspection of the incinerator, it was discovered that repairs were needed to the brick work on #2 and #3 hearths, the rake arm teeth and castable material in the hearths. Based on the length of time to complete these repairs, staff determined it was better to focus efforts on repairs to the #2 incinerator which was already off-line for scheduled maintenance. Dewatered solids from Williamsburg will continue to be sent to other plants for incineration or to a contracted compost facility until repairs on the #2 incinerator are complete.
- b. A contractor completed the #2 centrifuge rebuild.
- c. Staff cleared the shop, restrooms, locker rooms, and office spaces of all equipment and materials on the north side of the administration building in preparation for building renovations starting in October. Staff will use the south side of the building until the north side renovations and building expansion are complete some time next summer.
- d. The discharge of Fats, Oils and Grease (FOG) by haulers, for the most part, remained suspended while contractors performed repairs to the FOG system.

9. York River Treatment Plant (YRTP)

- a. Staff installed piping, actuators, and air supply equipment in aeration tanks #1 and #2.
- b. A contractor completed concrete repairs on the bottom of #2 secondary clarifier.

10. Incinerator Operations Events Summary

- a. Total Hydrocarbon (THC) monthly averages (not to exceed 100 parts per million) were met by all five treatment plants with incinerators with a THC continuous emissions monitoring (CEM) valid data captured of greater than 92 percent.
- b. There were two deviations from the required 129 SSI rule minimum operating parameters and five minor bypass events (<60 minute).

D. Small Communities (SC)

1. Middle Peninsula Communities Treatment and Collections

a. West Point Treatment Plant (WPTP) and Collections

Startup and training on the mobile dewatering unit occurred this month; though the cake product was quite good, there are punch list items that need to be addressed.

b. Urbanna Treatment Plant (UBTP) and Collections

Staff modified the large bubble mixers to reduce discharge tubing to accommodate the lower water level in the equalization basins. Corrective maintenance work was done on both the positive displacement RAS/WAS pumps to change out the internal rubber discs and add additional supports to piping to reduce vibration from the pumps.

c. King William Treatment Plant and Collections

Staff repaired a broken slide rail assembly at the Central Crossing Pump Station which improved pumping capacity.

d. Mathews System

Staff responded to an odor complaint on September 21 and discovered that a malfunctioning vacuum valve in a collection pit was causing sewage to remain within the gravity lateral causing odors to come out of the residents washing machine discharge. Staff repaired the valve and evacuated the sewer lines. In addition, staff cleaned all above ground wet well/equalization tanks along the transmission force main this month.

2. Small Communities – Surry Systems

Town of Surry

- a. The Supervisory Control and Data Acquisition (SCADA) system Factory Acceptance Testing was completed for the Industrial Park Pump Station and Storage Tank. Site testing will be completed when the contractor completes the on-site construction.
- b. The grinder pump station at 230 Park Avenue in Dendron failed. Staff from the Sussex Service Authority replaced the pump. No spill occurred.

3. Eastern Shore

a. Onancock Treatment Plant (OTP)

- (1) Staff conducted training for four Onan employees and one HRSD employee hired in September. Staff continues working with Onancock employees to develop Arc Flash evaluations and confined space programs, and to evaluate existing equipment and a hurricane plan.
- (2) A contractor installed conduit for a fiber line on plant grounds.
- (3) Staff installed two hardened doors in the existing laboratory to create a hurricane ride out area.

b. Nassawadox Riverside Treatment Plant (NRTP)

Staff installed a flow meter to measure the aeration influent flow and a new surface aerator variable frequency drive for the surface aerator.

F. Electrical & Instrumentation (E&I)

1. Staff completed the Process Treatment Unit (PTU) upgrade at ATP. The system has been operationally tested and staff are currently “seeding” the system in preparation for normal operation.
2. Staff completed DCS programming for new Dissolved Oxygen (DO) control for six aeration tanks at ATP, which will provide for improved DO control.
3. Staff continues to work with contractors to complete the Providence Road Offline Storage Facility (PROLSF) project in preparation for the CETP closure. A system function test was conducted to assess the storage tank’s remote fill, drain, and wash down operating modes. The test identified a few issues, such as adjusting ultrasonic level sensors, that are being resolved by the contractors.
4. Staff designed and built an Aeration Flow Control System for the Riverside Treatment Plant in Nassawadox. The controlled flow rate will potentially allow for a reduction in the number of in-service aeration tanks in the future, going from two to one.
5. Staff installed a Variable Frequency Drive (VFD) control panel for an equalization tank mixer motor at Nassawadox Treatment Plant on the Eastern Shore.\

The controller will vary the mixer speed to assist with treatment process optimization. They also replaced a defective VFD for a mixer located in the south aeration tank.

G. Water Technology and Research

Chris Wilson is continuing to support routine treatment plant process optimization efforts in collaboration with the treatment process engineers and treatment plant staff, most notably at Chesapeake-Elizabeth Treatment Plant, Virginia Initiative Plant, and Nansemond Treatment Plant. He continues to serve as the lead process engineer for Operations on all solids process-related capital projects and initiatives, including improvements to dewatering systems, Atlantic Treatment Plant NutriGreen™ biosolids management, Army Base Treatment Plant MHI retirement, solids process upgrades at Nansemond Treatment Plant in advance of Boat Harbor Treatment Plant offline, and longer-range solids management planning. Chris is also in close support of the design development for SWIFT full-scale implementation program (FSIP) projects at James River and Nansemond Treatment plants. Bob Jones and Andy Nelson are fully dedicated to SWIFT FSIP projects at James River and Nansemond/Boat Harbor Treatment Plants, respectively. Bob continues to serve as the lead interface between HRSD Operations, the James River Engineering project manager and Design Build Delivery Team conveying information from the design-build team to HRSD staff and conveying HRSD's preferences and acceptable design features to the project manager and Design Build Team. Andy is similarly continuing to support design development and contractor selection for projects associated with Nansemond Treatment Plant expansion and Boat Harbor Treatment Plant Offline FSIP projects.

I. Strategic Measurement Data

1. Education and Outreach Events: 10

- a. 09/02/2021 – Staff met with Colonial Pipeline staff to collaborate and discuss location of their assets
- b. 09/09/2021 – Hosted a group visiting from Charlotte Water to see several HRSD facilities – Charles Bott
- c. 09/09/2021 – THP tour for Charlotte Water – Dana Gonzalez
- d. 09/10/2021 – WIFIA Event
- e. 09/15/2021 – WaterJAM Conference, Podium Presentation – Anand Patel
- f. 09/15/2021 - WaterJAM Conference, Podium Presentation – Kester McCullough
- g. 09/15/2021 - WaterJAM Conference, Podium Presentation – Kayla Baughs
- h. 09/16/2021 – Three plant tours for WaterJAM attendees – Christel Dyer, Dana Gonzalez, Todd McGovern, Dave Ewing, James Elder
- d. 09/16/2021 – Staff met with Old Dominion University students to tour the Monroe Avenue Pump Station in Norfolk
- e. 09/29/2021 – WEF InFLOW STEM path program presentation on Water Reuse – Germano Salazar-Benites

2. Community Partners: 4

- a. Chesapeake Bay Foundation-Oyster Cage Maintenance at BHTP for Oyster Garden Project
- b. DOE Jefferson Lab
- c. Old Dominion University (ODU)
- d. United Way Williamsburg House

3. Monthly Metrics

| Item # | Strategic Planning Measure | Unit | September 2021 |
|---------------|---|--|-----------------------|
| M-1.4a | Training During Work Hours per Full Time Employee (FTE) (526) – Current Month | Hours / FTE | 2.35 |
| M-1.4b | Total Training During Work Hours per FTE (526) – Cumulative Year-to-Date | Hours / FTE | 8.71 |
| M-2.3a | Planned Maintenance Total Maintenance Hours | Total Recorded Maintenance Labor Hours | 30,374.70 |
| M-2.3b | Planned Maintenance – Preventive and Condition Based | percent of Total Maintenance Hours | 57.21% |
| M-2.3c | Planned Maintenance - Corrective Maintenance | percent of Total Maintenance Hours | 16.90 % |
| M-2.3d | Planned Maintenance - Projects | percent of Total Maintenance Hours | 26.48% |
| M- 4.1a | Energy Use: Treatment *reported for September 2021 | kWh/MG | 2,531 |
| M-4.1b | Energy Use: Pump Stations *reported for September 2021 | kWh/MG | 176 |
| M-4.1c | Energy Use: Office Building *reported for September 2021 | kWh/MG | 119 |
| M-5.2 | Educational and Outreach Events | Number | 10 |
| M-5.3 | Number of Community Partners | Number | 4 |

4. Annual Metrics

| Item # | Strategic Planning Measure | Unit | FY-2021 |
|---------------|--|---|----------------|
| M-2.3a | Planned Maintenance Total Maintenance Hours | Total Recorded Maintenance Labor Hours(average) | 28,722 |
| M-2.3b | Planned Maintenance – Preventive and Condition Based | percent of Total Maintenance Hours (average) | 62.94 % |
| M-2.3c | Planned Maintenance-Corrective Maintenance | percent of Total Maintenance Hours (average) | 16.89 % |
| M-2.3d | Planned Maintenance-Projects | percent of Total Maintenance Hours (average) | 20.17 % |
| M-3.6 | Alternate Energy | Total kWh | 58,044,110 |
| M- 4.1a | Energy Use: Treatment | kWh/MG | 2459 |
| M-4.1b | Energy Use: Pump Stations | kWh/MG | 170 |
| M-4.1c | Energy Use: Office Building | kWh/MG | 82 |

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager

FROM: Director of Talent Management (TM)

SUBJECT: Monthly Report for September 2021

DATE: October 13, 2021

A. Talent Management Executive Summary

1. Recruitment Summary

| | |
|---|----|
| New Recruitment Campaigns | 11 |
| Job Offers Accepted – Internal Selections | 9 |
| Job Offers Accepted – External Selections | 15 |
| Average Days to Fill Position | 82 |

2. The following were performed in response to the COVID-19 pandemic:

- a. Continued addressing and monitoring suspected COVID-19 cases and potential exposures based on Virginia Department of Health (VDH) guidelines:

| Description | September 2021 | Total (March 2020 – September 2021) |
|---|----------------|-------------------------------------|
| Quarantines due to illness or direct exposure (household or external) | 6 | 352 |
| Work Related Quarantines | 0 | 54 |
| Personal Travel Quarantines | 1 | 55 |
| Confirmed Employee COVID-19 Cases | 9 | 91 |
| Work Related COVID-19 Cases | 0 | 2 |
| Contractor COVID-19 Cases on Work Sites* | 0 | 11 |
| Vaccine Acknowledgements | 15 | 681 |

*No direct exposure to HRSD employees

- b. The Human Resources (HR) Business Analyst continued generating weekly Employee Vaccine Acknowledgement reports for Data Analysts to update the Vaccine Status Dashboard. HRSD's current vaccination rate is 80%.
- c. HR staff clarified Vaccination Policy requirements for several employees.
- d. Staff continued review of Virginia Occupational Safety and Health Administration (VOSHA) Final Permanent Standard for COVID-19 amendments to incorporate changes into *HRSD's Infectious Disease Preparedness and Response Plan*.
3. HR staff met with the Operations Quality Steering Team (QST) to discuss recruitment data, processes, current issues, and recommendations for improvement. An HR/Operations workgroup was formed to plan and implement recommendations.

4. Compensation and Benefits:

- a. Planning continued preparing for an upcoming HRSD Compensation study in accordance with the Commission Adopted Compensation policy.
- b. Salary and benefit information was provided for the following:
 - (1) Denver Metro Water Recovery compensation study
 - (2) Mercer Compensation Planning Pulse Survey
 - (3) Chesapeake Bay Bridge Tunnel compensation study
- c. HR staff worked with the benefit consultant on annual renewal of the Retiree Supplemental Health Plan.

7. Wellness Program

a. Participation

| Year Nine Participation Activities | Unit | September 2021 | Year to Date (March 2021–February 2022) |
|---|-------------|-----------------------|--|
| Biometric Screenings | Number | 8 | 203 |
| Preventive Health Exams | Number | 8 | 180 |
| Preventive Health Assessments | Number | 31 | 123 |
| Online Health Improvement Programs | Number | 42 | 124 |
| Web-MD Online Health Tracking | Number | 46 | 257 |
| Challenges: <i>N/A</i> | Number | 0 | 249 |
| Fit-Bit Promotion | Number | 7 | 35 |

- b. Ten virtual *Wellness Welcome and Review* meetings were held to introduce new Wellness Specialist, Maureen Longbottom, and to review program requirements.
- c. A virtual *Breathing Matters* presentation was held with 59 participants attending.
- d. HRSD and Optima staff participated in a quarterly review meeting to discuss program updates and upcoming events.
- e. HR and Wellness staff attended a quarterly meeting with Omada, the Diabetes Prevention Program provider, to plan upcoming promotions.
- f. Employees and spouses were notified that on-site biometric screening will not be held due to COVID-19. Information regarding options for completing biometric screenings to meet Wellness Program requirements was distributed.

9. Worked with Hicks Carter Hicks, the OD&T consultant:
 - a. The Supervisory Knowledge and Information Program (SKIP) continued.
 - b. Conducted a Division Leaders Forum on *Psychological Safety*.
 - c. Completed development of a Virtual Coaching program. Eight participants have enrolled in the new program.
 - d. Worked with HRSD Leadership on several Diversity Equity and Inclusion (DE&I) strategies and planned the DE&I Council kick-off meeting.
 - e. Completed development of a *Time Mastery Coach/Mentor Program*. Six participants have enrolled in the pilot.
 - f. Continued work with the Customer Care Division to curate online learning paths and integration of available Corporate Training courses.
 - g. Worked with Electrical & Instrumentation (E&I) staff on a team-building initiative.
10. The Facilitator team conducted the final Leadership and Management Academy (LAMA) workshop, *Beyond Diversity: Fostering an Inclusive and Equitable Work Environment*. In October, participants will finalize work on their capstone project, *Employee Burnout*, and prepare a presentation for the QST meeting and graduation in November.
11. The quarterly Apprenticeship Committee met to discuss the following:
 - (1) Apprenticeship Manual updates
 - (2) Academic year status
 - (3) Curriculum changes
 - (4) Student Success Skills Program
 - (5) Apprentice Mentoring Program
 - (6) Graduation Events
12. Staff began developing an external leadership development and networking opportunities catalogue.
13. Mishaps and Work-Related Injuries Status to Date (OSHA Recordable)

| | <u>2020</u> | <u>2021</u> |
|--|-------------|-------------|
| Mishaps | 32 | 26 |
| Lost Time Mishaps | 8 | 9 |
| <i>Numbers subject to change pending HR review of each case.</i> | | |

14. A Safety Notice on *Contractor Excavations* was developed and distributed.

13. Safety Division Monthly Activities

| | |
|--|-----|
| Safety Training Classes | 17 |
| Work Center Safety Inspections | 7 |
| Reported Accident Investigations | 1 |
| Construction Site Safety Evaluations | 16 |
| Contractor Safety Briefings | 3 |
| Hot Work Permits Issued | 2 |
| Confined Space Permits Issued/Reviewed | 180 |
| Industrial Hygiene Monitoring Events | 4 |

14. Staff participated in the following external activities:

- a. Virginia Water Environment Association (VWEA)/ Virginia AWWA Diversity Equity and Inclusion (DE&I) Task Force Monthly Meeting
- b. VWEA Continuing Education and Development Committee
- c. Quarterly Former Nansemond Ordinance Depot (FNOD) meeting
- d. City of Suffolk Local Emergency Planning Commission (LEPC) monthly meeting.
- e. A meeting with the Virginia Department of Labor Registered Apprentice representative regarding development of a pre-apprenticeship program.

B. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: (1)

Hampton Roads Society of Human Resources Management (HR-SHRM): *HR's Got Talent Awards Ceremony*. Inda Ratcliff, HR Business Partner, was the *HR-SHRM 2021 Winner of Excellence in Employee Relations*. The following staff received recognition as nominees: HR Division Team and Brenda Matesig, HR Manager, for *Most Valuable HR Professionals during COVID-19*; Dorissa Pitts-Paige, HR Business Partner, for *HR Diversity, Equity and Inclusion Champion for Life*; and Cheryl Young, OD&T Manager, for *Excellence in Training and Development*.

2. Community Partners: (1)

HR-SHRM

3. Monthly Metrics

| Item # | Strategic Planning Measure | Unit | September 2021 |
|---------------|---|---------------------------|-----------------------|
| M-1.1a | Employee Turnover Rate (Total) | Percentage | 0.74% |
| M-1.1b | Employee Turnover - Service Retirements | Percentage | 0.12% |
| M-1.4a | Total Training Hours Per Full Time Employee (17) | Total Training Hours/ FTE | 0.68 |
| M-1.4b | Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date | Hours / FTE | 10.5 |
| M-5.2 | Educational and Outreach Events | Number | 1 |
| M-5.3 | Community Partners | Number | 1 |

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for September 2021
DATE: October 13, 2021

A. General

Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.

B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy (SEA) Group reported the following activities for the month of September:
 - Updated the organization on the status of the Waterway Trash Collector at the Boat Harbor Treatment Plant, which is operational and nearing completion.
 - Engaged with employees through the bimonthly Sustainable Spotlight to report results of past cleanup events and to recruit new SEA team members.
 - Developed the second annual Bingo Challenge Cleanup event. A redesigned bingo card will hopefully increase participation and expand on last year's results.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

1. HRSD provided sampling and analytical services to the City of Franklin, the City of Fredericksburg, Frederick County, Hanover County, Northumberland County, Spotsylvania County, Westmoreland County, and the Town of Lawrenceville to support monitoring required for their respective Virginia Pollution Discharge Elimination System (VPDES) permits.
2. The [Municipal Assistance Billed Reimbursements](#) per service collected between July 1 and September 30, 2021, are attached.
3. The [Municipal Assistance Invoice Summary](#) for the third quarter of the 2021 calendar year is attached.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Community Partners: 2
 - American Red Cross
 - Hampton Roads Planning District Commission

3. Odor Complaints: 3

- On September 3, North Shore Operations (NS Ops) received a complaint of odors at Busch Gardens near a force main auto-bleed piece of equipment. Auto-bleed equipment relieves gas pressure from the force main by venting gas when pressures are too high. This gas is quite often odorous and at times can rise to the level of creating a nuisance. In this case, interceptor operators simply closed the offending auto-bleed equipment, ending any further odors and complaints.
- On September 21, Small Communities Division (SCD) received a complaint of odors, responded, and determined a valve controller on a vacuum valve pit (Valve Pit D11/11261 Buckley Hall Rd, Matthews, Virginia) was malfunctioning and generating odors. The controller was fixed and placed back into service evacuating the pit and ending the odor event.
- On September 23, Communications forwarded a complaint of odors coming from the Coliseum pressure reducing station and raw wastewater storage tank. NS Ops and Technical Services Division responded and discovered that the carbon media of the odor control units was exhausted resulting in H₂S and odors from them. NS Ops replaced the media in unit # 1 and then placed it into service ending the odor event. These units were originally designed for Coliseum as an offline wet weather storage facility and as such performed well including a long carbon media life (> 3+ years). The transition of the storage tank from wet weather to a raw water holding tank has drastically increased sulfide loadings on the carbon, reducing media life to three to six months. An engineering project is being proposed for the design of additional odor control at Coliseum; this will most likely include the addition of a biotower in front of the carbon units. The biotower followed by carbon control approach is similar to that at Bridge Street pump station. This would significantly reduce sulfide loadings to the carbon units and, in turn, effectively convert those units to odor polishing service. Until this project is completed NS Ops will need to continue to procure and replace the carbon media at Coliseum often.

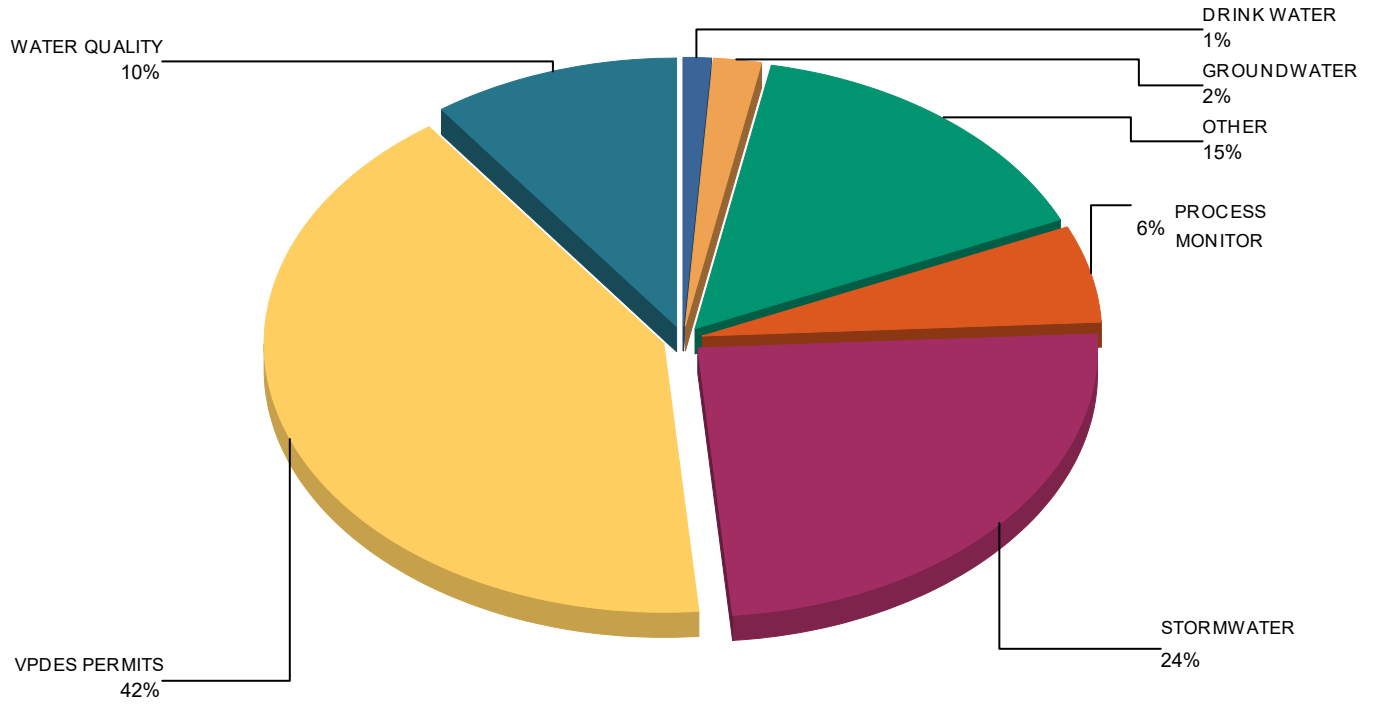
4. Monthly Metrics

| Item # | Strategic Planning Measure | Unit | September 2021 |
|--------|--|--|----------------|
| M-1.4a | Training During Work Hours Per Full Time Employee (119) (Current Month) | Total Hours / # FTE | 4.18 |
| M-1.4b | Total Training During Work Hours Per Full Time Employee (119) (Cumulative Fiscal Year-to-Date) | Total Hours / # FTE | 11.3 |
| M-2.5 | North Shore/South Shore Capacity Related Overflows | # within Level of Service | 0 |
| M-3.1 | Permit Compliance | # of Exceedances: # of Permitted Parameters | 1:15,220 |
| M-3.2 | Odor Complaints | # | 3 |
| M-3.4 | Pollutant Removal | Total Pounds Removed | 49,456,507 |
| M-3.5 | Pollutant Discharge | % Pounds Discharged/ Pounds Permitted | 13% |
| M-5.2 | Educational and Outreach Events | # | 0 |
| M-5.3 | Community Partners | # | 2 |
| | Average Daily Flow | Total MGD for all Treatment Plants | 128.99 |
| | Pretreatment Related System Issues | # | 0 |

Respectfully submitted,
James Platt, PhD
 Director of Water Quality

Municipal Assistance Billed Reimbursements per Service From 07/01/2021 to 09/30/2021

Attachment 1



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

Municipal Assistance Invoice Summary

From 7/1/2021 - 9/30/2021

| Municipality | Reimbursements |
|-------------------------------------|----------------------------|
| Accomack County | \$3,703.79 |
| Buckingham County | \$806.22 |
| Chesapeake Public Works | \$952.72 |
| City of Chesapeake | \$2,370.12 |
| City of Emporia | \$205.53 |
| City of Franklin | \$1,810.32 |
| City of Fredericksburg | \$12,501.98 |
| City of Hampton | \$7,193.47 |
| City of Newport News | \$1,215.00 |
| City of Norfolk | \$6,200.00 |
| City of Portsmouth | \$7,130.05 |
| City of Suffolk | \$7,751.01 |
| City of Virginia Beach | \$5,838.92 |
| Fort Eustis | \$1,140.92 |
| HRPDC | \$45,826.14 |
| Hanover County | \$21,916.57 |
| Hopewell RWTF | \$4,944.70 |
| James City County Service Authority | \$1,140.75 |
| New Kent County | \$11,024.43 |
| Northampton County WWTP | \$1,778.34 |
| Northumberland Co. - Callao WWTP | \$2,482.84 |
| Prince William County | \$6,603.07 |
| South Central Wastewater Authority | \$5,263.55 |
| Spotsylvania County | \$1,640.69 |
| St Brides Corr Ctr WWTP | \$3,105.12 |
| Stafford County | \$90.26 |
| Town of Cape Charles | \$9,602.08 |
| Town of Lawrenceville | \$1,691.55 |
| Town of Round Hill | \$134.04 |
| Virginia Department of Health | \$12,377.89 |
| Westmoreland County | \$1,759.68 |
| Totals: | <u>\$190,201.75</u> |



The following Internal Audit Status document has been prepared by SC&H for the HRSD Commission. Below is a summary of projects in process, upcoming audits, and the status of current management action plan monitoring.

I. Projects in Process

WIFIA Compliance

- **Tasks Completed (September 2021)**
 - Provided draft summary memo for feedback
 - Provided finalized summary memo

Emergency Repairs

- **Tasks Completed (September 2021)**
 - Received testing documentation
 - Conducted testing
 - Disseminated follow-up questions and additional documentation requests
 - Met with Procurement to discuss additional documentation requests
- **Upcoming Tasks (October 2021)**
 - Finalize testing
 - Update and refine report

Model 3 Billing

- **Tasks Completed (September 2021)**
 - Conducted entrance meeting
 - Reviewed initial documentation
 - Conducted process walkthroughs
 - Began audit program development
- **Upcoming Tasks (October 2021)**
 - Perform audit program validation meeting
 - Begin fieldwork tests

Unifier/ERP Integration

- **Tasks Completed (September 2021)**
 - Conducted entrance meeting
 - Reviewed initial documentation
 - Held process understanding meetings
 - Began planning documentation development
- **Upcoming Tasks (October 2021)**
 - Perform audit program validation meeting
 - Begin fieldwork tests

Business Continuity and Disaster Recovery

- **Tasks Completed (September 2021)**
 - Finalized internal audit



II. Management Action Plan Monitoring

SC&H is performing on-going management action plan (MAP) monitoring for internal audits previously conducted for HRSD. SC&H begins MAP follow-up approximately one year following the completion of each audit and will assess bi-annually.

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

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

| Audit | Report Date | Next Follow-up | Recommendations | | |
|---------------------------------------|-------------|----------------|-----------------|------|-------|
| | | | Closed | Open | Total |
| D&C: CIP Project Management | 5/11/16 | Closed | 13 | 0 | 13 |
| Biosolids Recycling | 10/8/16 | November 2021 | 7 | 1 | 8 |
| HR Benefits | 11/22/16 | Closed | 15 | 0 | 15 |
| Inventory | 4/20/17 | Closed | 5 | 0 | 5 |
| Procurement/ProCard | 8/23/17 | November 2021 | 8 | 3 | 11 |
| Engineering Procurement | 4/20/18 | Closed | 8 | 0 | 8 |
| Corporate Governance: Ethics Function | 3/21/18 | Closed | 5 | 0 | 5 |
| Treatment Plant Operations | 10/15/18 | July 2022 | 5 | 4 | 9 |
| Customer Care Division | 7/26/19 | December 2022 | 2 | 2 | 4 |
| Safety Division | 9/12/19 | February 2022 | 0 | 3 | 3 |
| Permitting | 2/4/20 | Closed | 2 | 0 | 2 |
| Payroll | 3/27/20 | Closed | 3 | 0 | 3 |
| Pollution Source Control | 6/2/20 | January 2022 | 3 | 5 | 8 |
| SWIFT Program | 2/24/2021 | February 2022 | 0 | 12 | 12 |
| Fleet Services | 2/24/2021 | February 2022 | 0 | 17 | 17 |
| Succession Planning | 6/4/2021 | July 2022 | 0 | 4 | 4 |
| Totals | | | 76 | 51 | 127 |

| Annual Metrics | | | | | | | | | | | | | | | |
|----------------|--|---|--------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Item | Strategic Planning Measure | Unit | Target | FY-10 | FY-11 | FY-12 | FY-13 | FY-14 | FY-15 | FY-16 | FY-17 | FY-18 | FY-19 | FY-20 | FY-21 |
| M-1.1a | Employee Turnover Rate (Total) | Percentage | < 8% | 5.63% | 4.09% | 6.64% | 7.62% | 8.22% | 9.97% | 6.75% | 6.66% | 9.99% | 6.63% | 6.78% | 6.31% |
| M-1.1b | Employee Turnover Rate within Probationary Period | | 0% | | 2.22% | 8.16% | 14.58% | 9.68% | 0.66% | 0.13% | 0.90% | 1.01% | 2.10% | 3.08% | 5.44% |
| M-1.2 | Internal Employee Promotion Eligible | Percentage | 100% | | 59% | 80% | 70% | 71% | 64% | 69% | 68% | 85% | 85% | 63% | 78% |
| M-1.3 | Average Time to Fill a Position | Calendar Days | < 30 | | 70 | 60 | 52 | 43.76 | 51 | 56 | 67 | 67 | 66 | 60 | 95 |
| M-1.4 | Training Hours per Employee - cumulative fiscal year-to-date | Hours | > 40 | | 30.0 | 43.8 | 37.5 | 35.9 | 42.8 | 49.0 | 48.4 | 41.1 | 40.9 | 39.3 | 28.2 |
| M-1.5a | Safety OSHA 300 Incidence Rate Total Cases | # per 100 Employees | < 3.5 | 6.57 | 6.15 | 5.8 | 11.2 | 5.07 | 3.87 | 7 | 5.5 | 5.7 | 4.1 | 4.8 | 4.1 |
| M-1.5b | Safety OSHA 300 Incidence Rate Cases with Days Away | # per 100 Employees | < 1.1 | 0.74 | 1.13 | 1.33 | 0.96 | 1.4 | 0.82 | 1.9 | 1 | 1.1 | 0.8 | 1.34 | 1.3 |
| M-1.5c | Safety OSHA 300 Incidence Rate Cases with Restriction, etc. | # per 100 Employees | < 0.8 | 3.72 | 4.27 | 2.55 | 4.5 | 2 | 1.76 | 3.6 | 2.8 | 2.8 | 1.8 | 1.6 | 4.1 |
| M-2.1 | CIP Delivery - Budget | Percentage | | | 113% | 96% | 124% | 149% | 160% | 151% | 156% | 160% | 170% | 170% | 123% |
| M-2.2 | CIP Delivery - Schedule | Percentage | | | 169% | 169% | 161% | 150% | 190% | 172% | 173% | 167% | 159% | 159% | 155% |
| M-2.3a | Total Maintenance Hours | Total Available Mtc Labor Hours Monthly Avg | | | 16,495 | 22,347 | 27,615 | 30,863 | 35,431 | 34,168 | 28,786 | 28,372 | 31,887 | 29,596 | 28,722 |
| M-2.3b | Planned Maintenance | Percentage of Total Mtc Hours Monthly Avg | | | 20% | 27% | 70% | 73% | 48% | 41% | 43% | 44% | 59% | 59% | 62% |
| M-2.3c | Corrective Maintenance | Percentage of Total Mtc Hours Monthly Avg | | | 63% | 51% | 12% | 10% | 18% | 25% | 25% | 24% | 18% | 19% | 16% |
| M-2.3d | Projects | Percentage of Total Mtc Hours Monthly Avg | | | 18% | 22% | 20% | 18% | 32% | 34% | 32% | 32% | 27% | 25% | 22% |
| M-2.4 | Infrastructure Investment | Percentage of Total Cost of Infrastructure | 2% | | 8.18% | 6% | 6% | 4% | 7% | 7% | 5% | 5% | 4 | 5% | * |
| M-3.3 | Carbon Footprint | Tons per MG Annual Total | | | 1.61 | 1.57 | 1.47 | 1.46 | 1.44 | 1.45 | 1.58 | 1.66 | 1.58 | 1.7 | 1.75 |
| M-3.6 | Alternate Energy (Incl. Green Energy as of FY19) | Total KWH | | | 0 | 0 | 0 | 5,911,289 | 6,123,399 | 6,555,096 | 6,052,142 | 5,862,256 | 47,375,940 | 56,473,800 | 58,044,110 |
| M-4.1a | Energy Use: Treatment | kWh/MG Monthly Avg | | | 2,473 | 2,571 | 2,229 | 2,189 | 2,176 | 2,205 | 2,294 | 2,395 | 2,277 | 2,408 | 2,459 |
| M-4.1b | Energy Use: Pump Stations | kWh/MG Monthly Avg | | | 197 | 173 | 152 | 159 | 168 | 163 | 173 | 170 | 181 | 174 | 170 |
| M-4.1c | Energy Use: Office Buildings | kWh/MG Monthly Avg | | | 84 | 77 | 102 | 96 | 104 | 97 | 104 | 104 | 95 | 102 | 82 |
| M-4.2 | R&D Budget | Percentage of Total Revenue | > 0.5% | | 1.0% | 1.4% | 1.0% | 1.3% | 1.0% | 0.8% | 1.3% | 1.4% | 1.8% | 1.3% | 1.4% |
| M-4.3 | Total Labor Cost/MGD | Personal Services + Fringe Benefits/365/5-Year Average Daily Flow | | \$1,028 | \$1,095 | \$1,174 | \$1,232 | \$1,249 | \$1,279 | \$1,246 | \$1,285 | \$1,423 | \$1,348 | \$1,487 | * |
| M-4.4 | Affordability | 8 CCF Monthly Charge/ Median Household Income | < 0.5% | | 0.48% | 0.48% | 0.41% | 0.43% | 0.53% | 0.55% | 0.59% | 0.60% | 0.64% | 0.71% | * |
| M-4.5 | Total Operating Cost/MGD | Total Operating Expense/ 365/5-Year Average Daily Flow | | \$2,741 | \$2,970 | \$3,262 | \$3,316 | \$3,305 | \$3,526 | \$3,434 | \$3,592 | \$3,959 | \$3,823 | \$4,048 | * |
| M-5.1 | Name Recognition | Percentage (Survey Result) | 100% | 67% | 71% | N/A | 62% | N/A | 60% | N/A | N/A | 53% | N/A | 53% | N/A |
| M-5.4 | Value of Research | Percentage - Total Value/HRSD Investment | | | 129% | 235% | 177% | 149% | 181% | 178% | 143% | 114% | 117% | 143% | 138% |
| M-5.5 | Number of Research Partners | Annual Total Number | | | 42 | 36 | 31 | 33 | 28 | 35 | 15 | 20 | 26 | 32 | 27 |
| | Rolling 5 Year Average Daily Flow | MGD | | 157.8 | 155.3 | 152 | 154.36 | 155.2 | 151.51 | 153.09 | 154.24 | 152.8 | 152.23 | 149.84 | 149.72 |
| | Rainfall | Annual Total Inches | | 66.9 | 44.21 | 56.21 | 46.65 | 46.52 | 51.95 | 54.14 | 66.66 | 49.24 | 53.1 | 48.49 | 54.04 |
| | Billed Flow | Annual Percentage of Total Treated | | 71.9% | 82.6% | 78% | 71% | 73% | 74% | 72% | 73% | 76% | 72% | 78% | * |
| | Senior Debt Coverage | Net Revenue/Senior Annual Debt Service | > 1.5 | 2.51% | 2.30% | 2.07% | 1.88% | 1.72% | 1.90% | 2.56% | 3.10% | 3.59% | 4.84% | 5.80% | * |
| | Total Debt Coverage | Net Revenue/Total Annual Debt | >1.4 | 1.67% | 1.67% | 1.46% | 1.45% | 1.32% | 1.46% | 1.77% | 1.93% | 2.03% | 2.62% | 2.81% | * |

*to be reported

| Monthly Updated Metrics | | | | | | | | | | | | | | | | FY-22 | FY-22 |
|-------------------------|--|--|------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Item | Strategic Planning Measure | Unit | Target | FY-10 | FY-11 | FY-12 | FY-13 | FY-14 | FY-15 | FY-16 | FY-17 | FY-18 | FY-19 | FY-20 | FY-21 | Aug-21 | Sep-21 |
| | Average Daily Flow | MGD at the Plants | < 249 | | 136 | 146.5 | 158.7 | 156.3 | 153.5 | 155.8 | 153.5 | 145.8 | 152.7 | 141.5 | 155.3 | 144.5 | 129.0 |
| | Industrial Waste Related System Issues | Number | 0 | | 3 | 6 | 6 | 6 | 2 | 4 | 7 | 4 | 7 | 1 | 2 | 0 | 0 |
| | Wastewater Revenue | Percentage of budgeted | 100% | | 97% | 96% | 98% | 107% | 102% | 104% | 103% | 103% | 104% | 104% | 106% | 106% | 108% |
| | General Reserves | | | | | | | | | | | | | | | | |
| | Accounts Receivable (HRSD) | Percentage of Operating and Improvement Budget | 75% - 100% | | 72% | 82% | 84% | 92% | 94% | 95% | 104% | 112% | 117% | 119% | 108% | 99% | 101% |
| | Dollars (Monthly Avg) | | | | \$17,013,784 | \$17,359,488 | \$18,795,475 | \$20,524,316 | \$20,758,439 | \$22,444,273 | \$22,572,788 | \$22,243,447 | \$23,900,803 | \$23,335,100 | \$34,060,154 | \$41,271,806 | \$43,353,339 |
| | Aging Accounts Receivable | Percentage of receivables greater than 90 days | | | 21% | 20% | 18% | 19% | 21% | 20% | 18% | 18% | 17% | 18% | 29% | 39% | 36% |
| M-2.5 | Capacity Related Overflows | Number within Level of Service | 0 | | 25 | 1 | 30 | 5 | 11 | 16 | 6 | 10 | 5 | 2 | 25 | 0 | 0 |
| M-3.1 | Permit Compliance | # of Exceedances to # of Permitted Parameters | 0 | | 12:55,045 | 1:51995 | 2:52491 | 1:52491 | 2:52491 | 2:52,491 | 9:53236 | 9:58338 | 2:60879 | 9:60879 | 23:60879 | 1:10147 | 1:15220 |
| M-3.2 | Odor Complaints | Number | 0 | | 6 | 2 | 7 | 11 | 5 | 9 | 7 | 6 | 9 | 15 | 31 | 1 | 3 |
| M-3.4 | Pollutant Removal (total) | Total Pounds Removed | | | 178,163,629 | 171,247,526 | 176,102,248 | 185,677,185 | 180,168,546 | 193,247,790 | 189,765,922 | 190,536,910 | 187,612,572 | 182,759,003 | 183,123,855 | 33,573,630 | 49,456,507 |
| M-3.5 | Pollutant Discharge (% of permitted) | Pounds Discharged/Pounds Removed | < 40% | | 25% | 22% | 25% | 22% | 22% | 20% | 22% | 17% | 17% | 17% | 18% | 13% | 13% |
| M-5.2 | Educational and Outreach Events | Number | | | 302 | 184 | 238 | 322 | 334 | 443 | 502 | 432 | 367 | 256 | 145 | 63 | 69 |
| M-5.3 | Number of Community Partners | Number | | | 280 | 289 | 286 | 297 | 321 | 354 | 345 | 381 | 293 | 230 | 128 | 7 | 11 |

EFFLUENT SUMMARY FOR SEPTEMBER 2021

| PLANT | FLOW mgd | % of Design | BOD mg/l | TSS mg/l | FC #/UBI | ENTERO #/UBI | TP mg/l | TP CY Avg | TN mg/l | TN CY Avg | CONTACT TANK EX |
|-----------------|---------------|----------------|-------------|-------------|-------------|-----------------|------------|--------------|------------|--------------|--------------------|
| ARMY BASE | 8.36 | 46% | 1 | 3.2 | 2 | 1 | 0.94 | 0.63 | 2.9 | 4.1 | 3 |
| ATLANTIC | 28.62 | 53% | 12 | 8.4 | 5 | 1 | NA | NA | NA | NA | 12 |
| BOAT HARBOR | 11.20 | 45% | 7 | 5.6 | 32 | 2 | 1.0 | 0.47 | 27 | 19 | 6 |
| CENT. MIDDLESEX | 0.005 | 19% | <2 | <1.0 | <1 | <1 | NA | NA | NA | NA | NA |
| CHES-ELIZ | 10.43 | 43% | 11 | 7.8 | 4 | 3 | 0.54 | 0.85 | 22 | 28 | 6 |
| JAMES RIVER | 12.58 | 63% | 3 | 2.0 | 2 | 1 | 0.29 | 0.34 | 5.0 | 5.9 | 7 |
| KING WILLIAM | 0.072 | 72% | <2 | <1.0 | NA | 1 | 0.33 | 0.067 | 1.0 | 2.1 | NA |
| NANSEMOND | 15.46 | 52% | 3 | 2.7 | 2 | 2 | 0.75 | 0.70 | 3.8 | 4.2 | 2 |
| NASSAWADOX | 0.010 | 10% | <2 | 7.7 | 1 | 1 | 1.0 | NA | 20 | NA | NA |
| SURRY, COUNTY | 0.040 | 62% | 4 | 2.8 | NA | 4 | NA | NA | NA | NA | 0 |
| SURRY, TOWN | 0.030 | 50% | 5 | 16 | NA | 11 | NA | NA | NA | NA | NA |
| URBANNA | 0.050 | 50% | 2 | 6.7 | 2 | 2 | 1.4 | 1.7 | 7.4 | 10 | NA |
| VIP | 23.45 | 59% | 3 | 1.5 | 2 | <1 | 1.1 | 0.51 | 4.0 | 3.4 | 1 |
| WEST POINT | 0.313 | 52% | 17 | 6.2 | 1 | 2 | 3.8 | 2.9 | 17 | 15 | 0 |
| WILLIAMSBURG | 7.95 | 35% | 4 | 3.4 | 4 | 14 | 1.1 | 0.73 | 2.0 | 3.5 | 10 |
| YORK RIVER | 10.42 | 69% | 3 | 1.3 | 1 | 4 | 0.24 | 0.23 | 4.9 | 5.2 | 1 |
| | <u>128.99</u> | | | | | | | | | | |

| | |
|--------------------|------------------|
| | % of Capacity |
| North Shore | 51% |
| South Shore | 52% |
| Small Communities* | 28% |

| | Tributary Summary | | | | | |
|--------------------|------------------------------|-------------|------|--------------------------------|-------------|------|
| | <u>Annual Total Nitrogen</u> | | | <u>Annual Total Phosphorus</u> | | |
| | Discharged | Operational | | Discharged | Operational | |
| | YTD | Projection | CY21 | YTD | Projection | CY21 |
| Tributaries | % | Lbs | % | % | Lbs | % |
| James River | 49% | 3,190,931 | 70% | 47% | 251,071 | 79% |
| York River | 60% | 237,473 | 82% | 50% | 15,085 | 78% |
| Rappahannock | 44% | NA | NA | 25% | NA | NA |

Permit Exceedances: Total Possible Exceedances, FY22 to Date: 1:15,220
Pounds of Pollutants Removed in FY22 to Date: 49,456,507
Pollutant Lbs Discharged/Permitted Discharge FY22 to Date: 13%

| | Rainfall (inch) | | |
|--------------------|------------------------|--------------|--------------------|
| | <u>North</u> | <u>South</u> | <u>Small</u> |
| | <u>Shore</u> | <u>Shore</u> | <u>Communities</u> |
| | <u>(PHF)</u> | <u>(ORF)</u> | <u>(FYJ)</u> |
| Month | 2.96" | 2.99" | 2.66" |
| Normal for Month | 5.39" | 5.92" | 4.42" |
| Year to Date Total | 44.30" | 33.46" | 41.73" |
| Normal for YTD | 40.82" | 39.71" | 38.46" |

*Small Communities includes Eastern Shore

AIR EMISSIONS SUMMARY FOR SEPTEMBER 2021

| MHI PLANT | No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters | | | | | | | | Part 503e Limits | | |
|--------------|--|--|--------------------------------------|----------------------------------|------------------------------------|-------------------------------------|----------------------------|----------------------------|-------------------------|------------------|-----------------------------------|
| | Temp 12 hr ave (F) | Venturi(s) PD 12 hr ave (in. WC) | Precooler Flow 12 hr ave (GPM) | Spray Flow 12 hr ave (GPM) | Venturi Flow 12 hr ave (GPM) | Tray/PBs Flow 12 hr ave (GPM) | Scrubber pH 3 hr ave | Any Bypass Stack Use | THC Mo. Ave (PPM) | THC DC (%) | BZ Temp Daily Ave Days >Max |
| ARMY BASE | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 50 | 100 | 0 |
| BOAT HARBOR | 0 | 0 | 0 | n/a | 0 | 0 | 0 | 2 | 5 | 95 | 0 |
| CHES-ELIZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 99 | 0 |
| VIP | 0 | 0 | 0 | n/a | 0 | 0 | 0 | 0 | 23 | 98 | 0 |
| WILLIAMSBURG | 1 | 0 | 0 | n/a | 0 | 0 | 0 | 2 | 44 | 92 | 0 |

ALL OPERATIONS

| | |
|------------------------------------|---|
| DEQ Reportable Air Incidents: | 0 |
| DEQ Request for Corrective Action: | 0 |
| DEQ Warning Letter: | 0 |
| DEQ Notice of Violation: | 0 |
| Other Air Permit Deviations: | 0 |
| Odor Complaints Received: | 3 |
| HRSD Odor Scrubber H2S Exceptions: | 2 |

Items of Interest – September 2021

MULTIPLE HEARTH INCINERATION (MHI)

Total Hydrocarbon (THC) monthly averages (not to exceed 100 ppm) were met by all five MHI plants (Army Base, Boat Harbor, Chesapeake-Elizabeth, Virginia Initiative, and Williamsburg) with a THC continuous emissions monitoring (CEM) valid data captured of greater than 92%.

The MHIs had two deviations from the required 129 SSI rule minimum operating parameters and nine minor bypass events (<60 minute).

AIR PERMITS and ODOR CONTROL

HRSD received three odor complaints and two hydrogen sulfide (H₂S) plant odor wet scrubber exceptions in September.

September 3, North Shore Operations (NS Ops) received a complaint of odors at Busch Gardens near an forcemain auto-bleed. Auto-bleeds relieve gas pressure from the forcemain by venting gas when pressures are too high. This gas is quite often odorous and at times can rise to the level of creating a nuisance. In this case, interceptor operators simply closed the offending auto-bleed ending any further odors and complaints.

September 21, Small Communities Division (SCD) received a complaint of odors, responded, and determined a valve controller on a vacuum valve pit (Valve Pit D11/11261 Buckley Hall Rd, Matthews, Virginia) was malfunctioning and generating odors. The controller was fixed and placed back into service evacuating the pit ending the odor event.

September 23, Communications received a complaint of odors coming from the Coliseum pressure reducing station and raw wastewater storage tank. NS Ops and TSD responded wherein the carbon media of the odor control units was exhausted resulting in H₂S and odors from them. NS Ops replaced the media in unit # 1 and then placed it into service ending the odor event. These units were originally designed for Coliseum as an offline wet weather storage facility and as such performed well including a long carbon media life (> 3+ years). The transition of the storage tank from wet weather to a raw water holding tank has drastically increased sulfide loadings on the carbon reducing media life to three to six months. An engineering project is being proposed for the design of additional odor control at Coliseum. Most likely the addition of a biotower in front of the carbon units. The biotower followed by carbon control technique is similar to that at Bridge Street pump station. This would significantly reduce sulfide loadings to the carbon units and, in turn, effectively making them for just residual H₂S and odor polishing. Until this project is completed NS Ops will need to continue to procure and replace the carbon media at Coliseum often.

TREATMENT

DEQ was notified of the following reportable events:

Nansemond

On September 14, a broken Non-Potable Water (NPW) line on the side of Aeration tank #3 was located. This line is in an empty area between two tanks and was not discovered immediately. An outside contractor had recently mowed the area and may have inadvertently broken the line. Plant staff secured the NPW cut off valve and will repair the damaged section of the line. Approximately 28,500 gallons of NPW soaked into the ground and was not recoverable.

While draining an aeration tank for a maintenance repair on September 15, the nitrate recycle pumps had to be used to drain the tank faster than planned. The pump configuration caused an unexpected flowrate increase through the plant which overflowed the final effluent channel. The final effluent holding pond influent valve was opened to relieve flow off the effluent channel. Approximately 5,000 gallons of fully treated final effluent soaked into the ground and was not recoverable.

Virginia-Initiative

VIP staff detected a tank leak on the south side of the aeration tank influent channel on September 29th. Approximately 1,050 gallons of mixed liquor were not contained and entered the storm drain leading to Elizabeth River. The leak is still active at approximately 15 gpm. The location of the tank leak is between the anaerobic/anoxic (A/A) tanks and the new versatile bioreactor, in a space that is confined to a 4-inch gap between the tanks. Staff manipulated valves and systematically installed a series of stop logs in an effort to isolate the tanks and channels. Two primary clarifiers and A/A tanks were taken out of service. The south primary influent channel and the south A/A tank influent channel were also taken out of service. As of Oct 8th, the plant is back to a normal treatment configuration. Staff is working on a plan to install stop logs to isolate the leaking aeration influent channel and access the situation for repairs.

SYSTEM

There were no reportable events during the month of September.

2021 Metals, Ammonia, and TKN

| | | Limit | Jan | Feb | Mar | Apr | May | Jun | July | Aug | Sep | Oct | Nov | Dec |
|-------------------|---------|------------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-----|-----|-----|
| Central Middlesex | Ammonia | 0.56 | | | | | | | 0.03 | NA | NA | | | |
| | TKN | 3.0 | | | | | | | 0.60 | NA | NA | | | |
| King William | Zinc | * | | | | | | | 39 | NA | NA | | | |
| | TKN | 3.0 | | | | | | | <0.50 | 0.09 | <0.50 | | | |
| | Cadmium | 2.0 | | | | | | | <0.50 | <0.50 | <0.50 | | | |
| Nassawadox | Copper | 23 | | | | | | | 9.1 | 9.8 | 9.5 | | | |
| Riverside | Nickel | 38 | | | | | | | <10 | <10 | <10 | | | |
| | Zinc | 150 | | | | | | | <50 | <50 | <50 | | | |
| | Ammonia | 1.7 | | | | | | | <0.10 | <0.10 | <0.10 | | | |
| | Copper | 5.9 | | | | | | | 4.0 | 4.0 | 4.0 | | | |
| Surry County | Zinc | 56 | | | | | | | 19 | 21 | 30 | | | |
| | Ammonia | 0.77 | NA | NA | NA | NA | NA | | <0.10 | <0.10 | <0.10 | | NA | NA |
| | TKN | 3.0 | | | | | | | <0.50 | NA | <0.50 | NA | | NA |
| | Copper | 12 | | | | | | | 4.0 | 4.0 | 3.0 | | | |
| Town of Surry | Zinc | 39 | | | | | | | 13 | 22 | 13 | | | |
| | Ammonia | 4.5 | | | | | | | 0.16 | <0.10 | <0.10 | | | |
| | TKN | 6.7 | | | | | | | 1.6 | 2.0 | 1.9 | | | |
| Urbanna | Ammonia | 3.83, 9.08 | | | | | | | 0.13 | 0.13 | 0.19 | | | |

*No limit. Treatment objective 53 ug/L

2021 MONTHLY FLOW AVERAGES

| | JAN | FEB | MAR | APRIL | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | YR AVG | FY AVG |
|-------------------|--------------|--------------|--------------|--------------|--------|--------|--------|--------|--------|-----|-----|-----|--------|--------|
| Army Base | 12.50 | 16.33 | 9.51 | 8.30 | 7.50 | 8.51 | 9.06 | 8.92 | 8.36 | | | | 9.89 | 8.78 |
| Atlantic | 26.17 | 30.15 | 26.78 | 30.65 | 28.66 | 32.11 | 29.08 | 30.34 | 28.62 | | | | 29.17 | 29.34 |
| Boat Harbor | 15.39 | 24.61 | 15.55 | 13.06 | 10.70 | 11.40 | 10.62 | 11.27 | 11.20 | | | | 13.76 | 11.03 |
| C.Middlesex | 0.009 | 0.010 | 0.008 | 0.010 | 0.010 | 0.013 | 0.010 | 0.009 | 0.005 | | | | 0.009 | 0.008 |
| Ches-Eliz | 19.57 | 24.32 | 16.75 | 10.79 | 9.75 | 11.00 | 12.93 | 13.35 | 10.43 | | | | 14.32 | 12.24 |
| James River | 15.72 | 20.76 | 15.42 | 14.14 | 11.60 | 12.19 | 12.34 | 14.37 | 12.58 | | | | 14.35 | 13.09 |
| King William | 0.067 | 0.070 | 0.071 | 0.077 | 0.070 | 0.068 | 0.069 | 0.070 | 0.072 | | | | 0.070 | 0.070 |
| Lawnes Point | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | | | 0.000 | 0.000 |
| Nansemond | 18.99 | 22.52 | 17.66 | 16.64 | 14.62 | 17.31 | 16.49 | 18.40 | 15.46 | | | | 17.57 | 16.78 |
| Nassawadox | | | | | | | 0.015 | 0.012 | 0.010 | | | | 0.012 | 0.012 |
| Surry, County | 0.054 | 0.073 | 0.051 | 0.046 | 0.038 | 0.046 | 0.046 | 0.048 | 0.040 | | | | 0.049 | 0.045 |
| Surry, Town | 0.080 | 0.106 | 0.072 | 0.078 | 0.044 | 0.052 | 0.047 | 0.038 | 0.030 | | | | 0.061 | 0.038 |
| Urbanna | 0.064 | 0.058 | 0.049 | 0.050 | 0.054 | 0.060 | 0.064 | 0.058 | 0.050 | | | | 0.056 | 0.057 |
| VIP | 31.75 | 44.41 | 29.39 | 26.90 | 22.34 | 26.20 | 23.04 | 26.60 | 23.45 | | | | 28.23 | 24.36 |
| West Point | 0.710 | 0.958 | 0.737 | 0.536 | 0.351 | 0.416 | 0.469 | 0.440 | 0.313 | | | | 0.548 | 0.407 |
| Williamsburg | 8.65 | 10.73 | 9.16 | 8.49 | 7.54 | 8.84 | 9.00 | 9.13 | 7.95 | | | | 8.83 | 8.69 |
| York River | 15.60 | 19.40 | 14.75 | 13.30 | 10.68 | 10.89 | 10.61 | 11.44 | 10.42 | | | | 13.01 | 10.82 |
| North Shore | 55.36 | 75.50 | 54.88 | 48.98 | 40.53 | 43.32 | 42.56 | 46.21 | 42.15 | | | | 49.94 | 43.64 |
| South Shore | 108.98 | 137.72 | 100.10 | 93.28 | 82.86 | 95.14 | 90.60 | 97.61 | 86.33 | | | | 99.18 | 91.51 |
| Small Communities | 0.98 | 1.28 | 0.99 | 0.80 | 0.57 | 0.65 | 0.72 | 0.68 | 0.52 | | | | 0.80 | 0.64 |
| TOTAL | 165.32 | 214.50 | 155.96 | 143.06 | 123.96 | 139.11 | 133.88 | 144.50 | 128.99 | | | | 149.92 | 135.79 |

Bold values indicate monthly plant flow average >95% of permitted design flow

AGENDA ITEM 26. – October 26, 2021

Subject: Closed Meeting

Recommended Action: In accordance with Section 2.2-3712A of the Code of Virginia, a motion is needed that we go into a closed meeting for discussion of the performance of a specific employee of a public body as provided for in Section 2.2-3711A1:

Brief: Discussion of performance of specific public officers, appointees or employees of any public body; and evaluation of performance where such evaluation will necessarily involve discussion of the performance of specific individuals.

AGENDA ITEM 27. – October 26, 2021

Subject: Reconvened Meeting

Recommended Action: Pursuant to Section 2.2-3712.D of the Code of Virginia, we will now have a roll call vote to certify that to the best of each Commission member's knowledge: (i) only public business matters lawfully exempted from open meeting requirements under this chapter, and (ii) only such public business matters as were identified in the motion by which the closed meeting was convened were heard, discussed or considered. Any Commissioner who believes there was a departure from these two requirements shall so state prior to the vote, indicating the substance of the departure.