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b. Commissioner Reappointments and New Appointment

Mr. Henifin congratulated Mr. Michael Glenn and Mr. Willie Levenston on their recent reappointments to the Commission by the Governor. Commissioner Glenn begins his third full term and Commissioner Levenston begins his second full term. Mr. Henifin announced the Governor has appointed Ms. Molly J. Ward to the Hampton seat vacated by Ms. Templeman. We plan to welcome Ms. Ward at the June 2019 meeting.

c. Service Award

Chair Elofson presented a service award to Ms. Patty Lee, who will mark her 30th year of service with HRSD on May 30. Patty was hired in May 1989 as a Lab Technician at Central Environmental Laboratory and then became a Lab Specialist in October 1990. She was promoted to Chemist in September 1992. She served as the Chemist Manager from June 1996 to June 1998, when this position title changed to Laboratory Manager, the position she still holds today.

She holds a Bachelors of Arts in Biology/Chemistry from Virginia Wesleyan College, a Masters in Civil Engineering from ODU and completed course work for a PhD in Environmental Engineering.

Some accomplishments during her 30 years at HRSD include: the development and implementation of clean metals protocols enabling ultra-low level analytical levels, leading method validation studies and managing the Laboratory Information Management System (LIMS) portion of the Environmental Data Management System Management project.

Patty has represented HRSD on WEF and VWEA committees and a Standard Methods Task Group focused on methods for solids analysis. She currently serves on the Thermo Informatics Customer Advisory Board representing utility LIMS users.

In 2008, she was one of the HRSD recipients of the NACWA President's award for her role in the study titled "*An Examination of Mercury Level at Clean Water Agencies.*"

In addition, she supports her church with various outreach initiatives, serves as a booster for the Virginia Beach 4H Livestock Club and supports local farmers in local and farm to table events.

d. Promotion Announcement

Mr. Henifin introduced Ms. Kassandra Pagan, who was recently promoted to Accounting Manager in the Finance Department. Kassandra earned her Bachelor of



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Science in Business Administration with a major in Accounting at Old Dominion University. Prior to joining HRSD she worked in the private sector, building her skills through progressively more challenging positions. She started her career with HRSD as a Financial Analyst in November, 2009, and has taken on increasing responsibilities in the reporting, general ledger, fixed assets, debt and investments areas. She was a key member of the team that implemented HRSD's Enterprise Resource Planning system, and will be working on streamlining the production of the Comprehensive Annual Financial Report and Annual Budget using new compilation software.

In her new role, Cassandra and her staff will have additional involvement in the development of the annual operating and capital budgets and will work closely with our external auditors on the annual audit of the financial records. We are pleased to have her expertise and experience to meet these challenging areas of the Finance Department's operations.

e. **SWIFT Awards**

The SWIFT Research Center continues to receive accolades from various engineering and contracting groups. Two recently received awards were acknowledged at the May meeting:

1. The Associated Builders and Contractors, Inc. (ABC), Carolinas Chapter awarded the SWIFT Research Center a Merit Award in their Excellence in Construction Award program in the "General Contracting Category: Other/Specialty, \$10 - \$25 Million." As a result of this award, the SWIFT Research Center went on to compete on a national level. We have been notified of national level recognition, details of which will be announced at an upcoming Commission meeting.
2. The Design-Build Institute of America (DBIA) Southeast Region awarded the SWIFT Research Center the Design-Build Excellence Award for the "Best Water Project." As a regional award winner, the SWIFT Research Center will compete for national DBIA recognition later this year.

Attachment #1: [Resolution](#)

Public Comment: None



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2. **CONSENT AGENDA**

Action: Approve the items listed in the Consent Agenda.

Moved: Stephen Rodriguez **Ayes:** 6
Seconded: Maurice Lynch **Nays:** 0

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Awards
 - 1. [External Auditing Services](#) \$262,750
- c. Task Orders
 - 1. [46th Street Diversion Sewer Rehabilitation / Replacement](#) \$932,560
- d. Contract Change Orders
 - 1. [Atlantic Treatment Plant Primary Digester Cleaning](#) \$158,864
- e. Sole Source
 - 1. [Analytical Technology, Inc. Entech Design Filter Media Expansion and Backwash Turbidity Sensor, Replacement Parts and Service](#)
 - 2. [Aqua-Aerobic Systems, Inc. Aqua® Equipment, Replacement Parts and Service](#)
 - 3. [USGI Chemical Feed, Inc. PolyBlend® Skid-Mounted Polymer Feed System, Replacement Parts and Service](#)
 - 4. [Prominent Fluid Controls, Inc. Prominent Polymer Dilution Skid](#)
 - 5. [Prominent Fluid Controls, Inc. Prominent ProMix™ Polymer Mixing System, Parts and Service](#)
 - 6. [Vaughan Co., Inc. Vaughan Chopper Pumps, Motor, Replacement Parts and Service](#)



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- 7. [Huber Technology, Inc. Huber Step Screens® and Replacement Parts](#)
 - 8. [Innovyze, Inc. InfoAsset™ Planner Software](#)
 - 9. [Ovivo USA LLC Ovivo® Influent Screen Replacement Parts and Service](#)
 - 10. [Petersen Resources LLC DBA Petersen Products Co LLC Petersen® Pipe Plug Insertion System and Accessories](#)
 - 11. [ITT Goulds Pumps Goulds Chemical Resistant Pump, Replacement Parts and Service](#)
 - 12. [Seepex, Inc. Seepex Progressive Cavity Pumps, Parts and Service](#)
- f. HRSD Use of Existing Competitively Awarded Contract Vehicle and Contract Awards
- 1. [Microsoft® Surface Pros](#) \$1,481,875
 - 2. [Microsoft® Windows 10 OS Migration](#) \$269,220

Attachment #2: [Consent Agenda](#)

Public Comment: None



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3. WILLIAMSBURG TREATMENT PLANT PRESERVATION OF ATMOSPHERIC SURFACES ON INTERMEDIATE CLARIFIERS #1 AND #2

Action: Approve the rejection of all bids submitted for the Preservation of Atmospheric Surfaces of Intermediate Clarifiers #1 and #2 at the Williamsburg Treatment Plant.

Moved: Willie Levenston **Ayes:** 6
Seconded: Michael Glenn **Nays:** 0

Type of Procurement: Competitive Bid

Bidder	Bid Amount
W W Enrougthy and Son, Inc.	\$1,081,503

HRSD Estimate: \$350,000

Contract Description: This contract is an agreement for the coating and rehabilitation of Intermediate Clarifiers #1 and #2 at the Williamsburg Treatment Plant. The scope of work includes complete removal of the coating system, spot repairs of steel surfaces, re-coating of the tanks and replacement of deteriorated steel angles as needed.

Rejection is recommended due to bids received exceeding all available funds for this project. A new solicitation will not be advertised and project will be reviewed for completion under the upcoming Annual Coating Services Agreement.

Discussion Summary: The Commission discussed previous issues with coatings and warranties. Risk has been mitigated and quality control is better with the hiring of two full-time coatings inspectors. Staff believes the job specifications and estimate are accurate. This work will be included in the upcoming Annual Services Contract for Coatings Services.

Attachment: None

Public Comment: None



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4. **REVISED REVENUE POLICY
COMMISSION ADOPTED POLICY**

Action: Approve the revised Revenue Policy.

Moved:	Stephen Rodriguez	Ayes:	6
Seconded:	Michael Glenn	Nays:	0

Brief: The purpose of the [Revenue Policy](#) is to ensure that there is sufficient revenue to support direct and indirect operating, capital, reserves and current and future debt service costs. The Policy covers areas such as the basis of charges, how charges are determined, how rates are approved, revenue forecasts, collections and an overview of HRSD's Rate Model. It was originally adopted in May 2017.

The [revised policy \(redline changes\)](#) includes clarifications and definitions. There were minor wordsmith changes since the April version. The following key changes were presented at the February 26 and March 26 Commission Workshops:

- The Facility charge waiver for residential septic tanks was clarified to be for single family residential properties.
- The Financial Forecast should target financial metrics, across the twenty-year period, that are consistent with rating agency metrics for a strong, double-A rated credit.
- Flat Rate accounts are based on the winter average (January, February, March) water consumption, which is 8.3 CCF based on the most recent analysis of water meter data.
- Non-permitted commercial facilities will be charged based on surcharge categories and assigned average concentrations using sampling data for groups of businesses that produce similar goods or services using the North American Industry Classification System (NAICS).
- The minimum charge will be based on Operations' Department labor costs and the 10-year rolling average number of accounts

Attachment #3: [Revenue Policy and Revised Policy \(redline changes\)](#)

Public Comment: None



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5. FISCAL YEAR-2020 (JULY 1, 2019 – JUNE 30, 2020) BUDGETS

Actions:

- a. Approve the [FY-2020 to FY-2039 Financial Forecast](#)
- b. Approve the [Operating Budget for FY-2020](#), which includes the Operating, Debt Service and Transfer Appropriations, and authorize distribution of the Budget in accordance with the Trust Agreement.
- c. Approve the [Capital Budget](#) for FY-2020
- d. Approve the Capital Improvement Program for FY-2020 to FY-2029 ([Summary Capital Improvement Program](#))
- e. Approve the [Rate Schedule](#) to be effective July 1, 2019 subject to the requirements of the Enabling Act.

Moved: Stephen Rodriguez

Ayes: 6

Seconded: Willie Levenston

Nays: 0

Brief: The annual budgeting process includes updating the 20-year Financial Forecast and preparing the Operating Budget (which includes the operating, debt service and transfer appropriations), the Capital Budget and the Capital Improvement Program (CIP) as well as the corresponding Rate Schedule to support these budgets. The Commission is required to approve an annual budget in sufficient time to ensure the proposed rates, fees and charges are published in a newspaper of general circulation within the District for four consecutive weeks.

Budget workshops to review components of the budget were held after the regular Commission meetings on February 26 and March 26. The Finance Committee (comprised of Commissioners Rodriguez and Lynch) and several other commissioners participated in the February 28 CIP review meeting and detailed budget presentation on April 12. The Finance Committee reported to the Commission at the April 24, 2018 meeting.

The Capital Budget is \$215 million and represents the first year of the \$2.8 billion ten-year CIP. Projects in the CIP are individually presented to the Commission for full project funding authorization specific to each project at the time the first dollar is spent. Changes to the CIP, which may be required by changing conditions, are presented to the Commission as amendments. The CIP will be available on the HRSD website upon Commission approval.

The Financial Forecast model was updated to project major expense drivers, such as construction costs, inflation, operating cost increases, and borrowing costs and the revenue requirements needed to ensure financial sustainability.



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The Rate Schedule contains the rates necessary to generate sufficient revenue to cover expenses and reserve requirements for the next fiscal year. HRSD's Rate Model (the Model) uses a cost accounting process to allocate all operating costs to volume and each of four specific pollutants: Biochemical Oxygen Demand (BOD), total suspended solids, phosphorus and nitrogen. The Model designates each line item cost as fixed or variable and uses engineering criteria to allocate the variable costs to each of the four pollutants. Once the operating costs have been allocated, the Model derives rates for volume (\$/CCF) and high strength surcharges (\$/pound); the latter equate to HRSD's marginal or incremental cost attributable to treating each pollutant in excess of the amount present in typical domestic wastewater. The result is that the Model calculates rates sufficient to recover expenses. To meet the requirements of the Financial Forecast, the FY-2020 wastewater charge will increase from \$5.37 per 100 cubic feet to \$5.86 per 100 cubic feet. The current average residential customer (as measured by a 5/8-inch meter) uses approximately 5.6 CCF of water per month, resulting in an average monthly increase of \$2.75 (approximately \$0.09 per day). Our charges for wastewater treatment remain reasonable, with the average residential customer paying about \$1.08 per day to ensure future generations will inherit clean waterways and be able to keep them clean.

Rates to provide wastewater services to the Middle Peninsula communities include both the cost of the treatment and the collection systems. Middle Peninsula residents pay the HRSD regional treatment rate, the weighted average sewer collection system rate for the metro area, plus the capital costs (Capital Recovery Rate) of the collection systems, if required. The capital cost component generally includes the amortized cost incurred by HRSD when the systems were acquired.

As discussed at the March 26 Commission work session, staff is recommending that we eliminate our stop-loss health insurance coverage. Stop-loss coverage applies when a member's medical costs exceed the stop-loss limit, which is \$250,000 for FY2019. Any amount above \$250,000 would be reimbursed. Since HRSD maintains a significant cash reserve, the consequence of high dollar health related claims is low. When comparing the insurance premiums paid versus reimbursements received since FY2012, when HRSD first obtained stop-loss insurance, the potential savings with this strategy would have been over \$1.6 million. Although there may be years where the reimbursements could exceed the premium in the future, HRSD should save money with this strategy in the long run.

Discussion Summary: Commissioner Rodriguez thanked staff for their well-organized work and outstanding presentations on this year's budget documents.

Attachment #4: [Annual Budget](#)

Public Comment: None



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6. **SUBORDINATE TRUST AGREEMENT
EXCLUSION OF CERTAIN LOCALITY IMPROVEMENTS FROM CALCULATION OF
OPERATING EXPENSES RESOLUTION**

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

Moved: Willie Levenston **Ayes:** 6
Seconded: Maurice Lynch **Nays:** 0

Brief: When staff prepares the Fiscal Year-2019 Comprehensive Annual Financial Report (CAFR), there will have been work performed on two on-going locality improvement projects with an estimated total project cost of \$2,990,700. A portion of this amount will be expended in FY-2019 and needs to be excluded from Operating Expenses as defined in the Subordinate Trust Agreement. The remaining amount is expected to be expended each year through FY-2022. By excluding these projects from Operating Expenses, staff can calculate the Debt Service Coverage Ratio on an adjusted basis as opposed to GAAP basis to ensure our subordinate debt covenants are met per our Financial Policies and Trust Agreements.

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

An excerpt from the Subordinate Trust agreement is provided below:

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

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

Attachment #5: [Resolution](#)

Public Comment: None



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7. **TAX EXEMPT BOND PROCEEDS EXPENDITURE FOR FISCAL YEAR (FY) 2020 - 2021 REIMBURSEMENT RESOLUTION**

Action: Approve Reimbursement Resolution.

Moved:	Michael Glenn	Ayes:	6
Seconded:	Willie Levenston	Nays:	0

Brief: Federal tax law requires that a government officially declare its intent to “reimburse” itself for capital expenditures occurring prior to the availability of tax-exempt debt proceeds used to eventually finance the improvements. The origin of this regulation is to avoid potential abuse of arbitrage motivated reimbursement transactions, whereby entities attempt to profit from price imbalances particularly due to the tax-exempt nature of municipal bonds.

The [reimbursement resolution](#) amount of \$107,500,000 is based on the FY 2020-2029 Capital Improvement Program less amounts that HRSD intends to pay with cash and is a reasonable estimation of the maximum amount of debt proceeds that could be subject to reimbursement. The expenditures to be reimbursed cannot be more than sixty days prior to the date of the resolution.

In FY-2020, staff is planning to initially use cash to fund Virginia Clean Water Revolving Loan Fund (VCWRLF) projects, while we await invoice approval from the Department of Environmental Quality for reimbursement. When we receive these tax-exempt proceeds, we will reimburse our cash balance.

Discussion Summary: Staff explained the maximum reimbursement allowed is 50 percent of the FY-2020 Budget.

Attachment #6: [Reimbursement Resolution](#)

Public Comment: None



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8. **WATER INFRASTRUCTURE FINANCE AND INNOVATION ACT (WIFIA)
LETTER OF INTEREST (LOI) SUBMISSION FOR SWIFT PROGRAM FUNDING**

Action: Approve a resolution authorizing the General Manager to submit a WIFIA Letter of Interest to fund the SWIFT Program.

Moved:	Stephen Rodriguez	Ayes:	6
Seconded:	Willie Levenston	Nays:	<u>0</u>

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

The estimated gross interest savings, over market rate bonds, using a combination of WIFIA funds and Virginia Clean Water Revolving Loans (VCWRLF) is approximately \$360 million. The additional benefits include the ability to extend the debt to 35 years and significant flexibility as there is no requirement to use 100 percent of the approved amount and there is no prepayment penalty.

The attached [resolution](#) will authorize the General Manager to submit HRSD’s Letter of Interest for the SWIFT Program prior to the July 5, 2019 deadline. The U.S. EPA typically takes three to four months to review the letter of interest and determine which projects will receive invitations to apply. If the SWIFT Program is selected and invited to apply, the completed application and non-refundable \$100,000 application/loan fee are due within one-year of invitation. The Resolution was reviewed by local counsel.

Staff provided a briefing at the meeting.

Discussion Summary: The WIFIA loan amount is limited to 49 percent of eligible project costs. There is no specific maximum dollar value for each loan. According to the [FAQs](#) on the WIFIA program website, “EPA is limited in the total amount of credit assistance it can provide through the appropriation in two ways. First, EPA must set aside a portion of its appropriations for each loan to cover anticipated losses. EPA cannot lend more than this appropriated funding will cover. Second, the appropriation includes a maximum total amount of lending that EPA may undertake with the appropriated funding. It is unlikely that a single request for credit assistance would exceed the appropriated controls on EPA’s lending.” If HRSD’s project is awarded the WIFIA funding, staff will apply for the remainder of the funding from the VCWRLF.

Attachment #7: [Resolution and Presentation](#)
Public Comment: None



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9. **SWIFT PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) RESEARCH BRIEFING**

Action: No action required.

Brief: Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFAS have been widely discussed in the media and amongst national regulatory agencies due to concerns regarding PFAS contamination in groundwater and drinking water and its potential health implications. PFAS are included in the broad suite of contaminant monitoring occurring at the SWIFT Research Center and is the subject of focused research to better understand PFAS removal through the SWIFT treatment process. This briefing provided an overview of HRSD's historical approach to PFAS management and its current and upcoming research.

Discussion Summary: Staff reviewed health concerns of using common products that contain PFAS; the different compounds within PFAS, HRSD's Pretreatment and Pollution Prevention (P3) regulation of discharges from commercial customers; protection of biological processes at the treatment plants as well as potential pass-through toxicity in receiving water bodies; Aqueous Film Forming Foam (AFFF) impacts on treatment; protection of indirect potable reuse; and groundwater monitoring at the SWIFT Research Center; PFAS toxicology research; and Water Research Foundation grant collaboration.

Attachment# 8: [Presentation](#)

Public Comment: None



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10. **MOBILE WORK FORCE SOFTWARE, HARDWARE, IMPLEMENTATION AND SUPPORT
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$1,200,000.

Moved:	Willie Levenston	Ayes:	6
Seconded:	Michael Glenn	Nays:	0

CIP Project: GN016900

Project Description This project will procure Mobile Work Force (MWF) software and implementation services that will allow HRSD Customer Care Center Account Investigators (AIs) to perform collections related field activities and complete work through the use of mobile devices (laptops, tablets, phones, etc.) in the field. The software will provide AIs workload routes, turn by turn driving instructions, Automatic Vehicle Location (AVL) tracking and remote completion of field activities. The in-house dispatchers will be able to build and manage routes and have visual reference of AIs whereabouts in the field via AVL tracking. The product will have reporting analytics and is expected to be fully integrated with the Oracle Customer Care and Billing system.

Funding Description: The CIP lists the total estimated cost for this project as \$1,925,000 including contingency. Since that time contracts have been awarded to Oracle America, Inc. through a competitive negotiation process (Commission approved in December 2018) totaling \$1,026,288 inclusive of five years of licensing and support (hardware and software).

After award of the contracts in December 2018, staff determined this work was inadvertently classified under an Operating Budget account code when it should have been executed under the CIP as GN016900. This Commission action will correct this situation. The total requested includes a contingency of \$173,712, slightly below the original CIP contingency of \$175,000. The CIP will be updated to reflect the new total of \$1,200,000.

Attachment: None

Public Comment: None



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11. **HUXLEY PLACE TO MIDDLE GROUND BOULEVARD INTERCEPTOR FORCE MAIN EXTENSION-ADDITIONAL APPROPRIATION, CONTRACT AWARD AND TASK ORDER**

Actions:

- a. **Appropriate additional funding in the amount of \$2,685,885.**
- b. **Award a contract to BASIC Construction Company, LLC in the amount of \$3,943,409.**
- c. **Approve a task order with Rummel, Klepper & Kahl, LLP (RK&K) in the amount of \$455,654.**

Moved: Stephen Rodriguez **Ayes:** 6
Seconded: Elizabeth Taraski **Nays:** 0

CIP Project: JR012100

Budget	\$2,500,000
Previous Expenditures and Encumbrances	(\$ 392,481)
Available Balance	\$2,107,519
Proposed Contract Award to BASIC	(\$3,943,409)
Proposed Task Order to RK&K	(\$455,654)
Proposed Contingency	(\$394,341)
Project Shortage/Requested Additional Funding	(\$2,685,885)
Revised Total Project Authorized Funding	\$5,185,885

Type of Procurement: Competitive Bid

Bidder	Bid Amount
BASIC Construction Company LLC	\$3,943,409
T.A. Sheets General Contractors Inc.	\$4,350,010
Garney Companies, Inc.	\$4,673,991
S J Louis Construction Inc.	\$4,768,185
Tidewater Utility Construction Inc.	\$5,338,000
Gaston Brothers Utilities, LLC	\$5,981,280
Engineer's Estimate:	\$3,627,382

Contract Status:	Amount
Original Contract with RK&K	\$52,206
Total Value of Previous Task Orders	\$302,413
Requested Task Order	\$455,654
Total Value of All Task Orders	\$758,067
Revised Contract Value	\$810,273
Engineering Services as % of Construction	21%



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Contract Description: In accordance with HRSD's competitive sealed bidding procedures, the Engineering Department advertised and solicited bids directly from potential bidders. Six bids were received and evaluated based upon the requirements in the invitation for bid. BASIC Construction Company is the apparent low bidder with a bid amount of \$3,943,409.

Project Description: This project will involve the installation of approximately 2,420 linear feet of new 36-inch force main from the intersection of Carnegie Drive and Huxley Place to the Middle Ground-City Center Interconnect Force Main west of the CSX railroad tracks. This extension will allow for abandonment of the 36-inch reinforced concrete pipe from the intersection of Maxwell Lane and Route 60 to the intersection of Huxley Place and Carnegie Drive (approximately 4,900 linear feet abandoned). This project will be partially funded through the Commonwealth of Virginia Clean Water Revolving Loan Fund. This project is included in the Inflow and Infiltration Abatement Rehabilitation – Phase I, which is part of the Federal Consent Decree to address sanitary sewer overflows in the region.

This project also includes the City of Newport News gravity system improvements with 562 linear feet of replacement of 10-inch gravity sewer pipe, 1,141 linear feet of gravity sewer CIPP liner, 36 replacement laterals and cleanouts, and rehabilitation of 9 sanitary sewer manholes. Surface restoration includes 64,600 square feet of pavement milling and overlay. This portion of the work will be done under a Cost Sharing Agreement with the City of Newport News which was approved at the January 2019 Commission Meeting. Construction of the city improvements are included in this project.

Task Order Description: This task order will provide construction phase services for this project. A fee of \$455,654 was negotiated with Rummel, Klepper & Kahl, LLC and was based upon anticipated construction administration and inspection hours required for this effort. This cost for construction phase service is roughly 11.5 percent of the total construction cost and is within the range of comparable projects.

Funding Description and Analysis of Cost: The total cost estimate for this project is approximately \$5.2 million. The estimate includes construction costs of \$3,943,409, engineering services costs of \$810,273, and a 10 percent contingency of \$394,341. The contingency amount is to accommodate any potential unforeseen conditions. The original CIP did not anticipate the cost for easements, design changes, and the City of Newport News work. This project will require additional funding of \$ 2,685,885 to execute the construction phase.

<u>Schedule:</u>	Construction	June 2019
	Project Completion	July 2020

Attachment: None

Public Comment: None



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12. **MIDDLESEX INTERCEPTOR SYSTEM PROGRAM PHASE II – URBANNA TO MATHEWS TRANSMISSION FORCE MAIN INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$30,992,000.

Moved: Maurice Lynch **Ayes:** 6
Seconded: Michael Glenn **Nays:** 0

CIP Project: MP013700

Project Description: This project includes the construction of a 3.2 mile force main from Urbanna to Cook's Corner in addition to a 13 mile force main along Route 33 in Middlesex County from Cook's Corner to the Mathews Transmission Force Main (TFM). This creates the backbone of the "Middlesex Force Main" solution and includes a horizontal direction drill (HDD) under the Piankatank River. This interceptor system will convey wastewater from Middlesex County to the York River Treatment Plant (YRTP) and be able to decommission both the Urbanna Treatment Plant and Central Middlesex Treatment Plant. The proposed system consists of pump stations, potential storage, and a force main.

This project will also involve provisions for connection of the Topping Service Area near the intersection of Route 33 and Route 3 and for connection of the Deltaville Service Area near Hartfield along General Puller Highway. Pump stations will include Urbanna Treatment Plant Pump Station, Central Middlesex Treatment Plant Pump Station, and two Middlesex Force Main Interim Booster Stations. Additional design considerations may necessitate additional conveyance pump stations, off-line storage vessels, and improvements to the existing Mathews Transmission Force Main pump stations. These items are not currently included in this CIP cost estimate.

Analysis of Cost: The estimated total project cost is \$30,992,000. The estimated project cost is based on a construction cost estimate of \$24,041,000 combined with an engineering services estimate of \$2,499,000 and an 18.5 percent contingency allowance of \$4,452,000. Engineering services for an initial alignment study will be provided by Jacobs. A Request for Proposal will be advertised September 2019 for preliminary engineering, design and construction phase services.

Schedule:	PrePlanning	June 2019
	PER	January 2020
	Design	January 2021
	Bid	March 2022
	Construction	July 2022
	Project Completion	July 2024

Attachment: None

Public Comment: None



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13. **NANSEMOND TREATMENT PLANT SECONDARY CLARIFIER INLET REPLACEMENT PHASE I PASSAVANT HYDROGRAV® ADAPT VARIABLE CLARIFIER INLET INITIAL APPROPRIATION, SOLE SOURCE AND CONTRACT AWARD (>\$200,000)**

Actions:

- a. **Appropriate total project funding in the amount of \$907,000.**
- b. **Approve Centrisys Corporation as the provider of installation services of the Passavant hydrograv® Adapt Variable Clarifier Inlet for use at the Nansemond Treatment Plant.**
- c. **Award a contract to Centrisys Corporation in the amount of \$782,222.**

<u>Moved:</u>	Michael Glenn	<u>Ayes:</u>	6
<u>Seconded:</u>	Maurice Lynch	<u>Nays:</u>	0

CIP Project: NP014200

Contract to Centrisys	\$782,222
Contingency (10%)	\$ 78,222
In-House Materials and Supplies	<u>\$ 46,556</u>
Total Project Funding	\$907,000

Sole Source Justification: Support of a special program in which the product or service has unique characteristics essential to the needs of the program.

Details: Services include design, installation and onsite construction supervision of a Passavant hydrograv® adapt variable system for Secondary Clarifier No. 5 at the Nansemond Treatment Plant (NTP). The hydrograv system and design was previously approved for sole source in April 2018 to Hydrograv GmbH being the sole proprietary manufacturer of this technology. An agreement was developed with Hydrograv GmbH naming Centrisys Corporation as the primary contractor to lead the overall installation of the system with Hydrograv GmbH as the design lead, Aqseptance Group as the fabrication lead and Crowder Construction Company as the installation subcontractor. As our contract is with Centrisys for installation and their agreement with Hydrograv includes exclusive installation services, HRSD requires Sole Source approval of Centrisys for installation of Passavant hydrograv® Adapt systems at HRSD facilities.

Type of Procurement: Sole Source



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Contract Description: This contract is for design, installation and onsite construction supervision of a Passavant hydrograv[®] Adapt system for Secondary Clarifier No. 5 at the Nansemond Treatment Plant (NTP). The new installation will also involve replacement of the clarifier drive assembly and bearing. The hydrograv system and design was previously approved for sole source in April 2018 to Hydrograv GmbH being the sole proprietary manufacturer of this technology. That approval included services for overall design, fabrication, delivery and installation oversight.

Project Description: This project will involve design and installation of a Passavant hydrograv[®] Adapt System on a single secondary clarifier at Nansemond Treatment Plant. This is a variable height inlet structure designed to significantly decrease clarifier effluent turbidity and maintain low turbidity during high flow events. This is achieved by feeding the secondary clarifier within the solids blanket during dry weather conditions, and lifting the inlet structure during wet weather conditions to avoid disrupting the solids blanket. Following installation, a demonstration test of the technology will be performed in parallel with an existing unit. If the new clarifier inlet technology meets performance expectations, the remaining clarifiers at Nansemond will be upgraded, and the SWIFT Research Center (SWIFTRC) will be modified to bypass the sedimentation process. The SWIFTRC will then be tested in a “direct filtration” mode to evaluate unit filter run volumes and filter effluent turbidity.

Funding Description: Funding in the amount of \$782,222 will accommodate design, fabrication and installation services for the new equipment. A 10 percent contingency to the contract price is being proposed as part of this approval to accommodate any unexpected needs that arise during installation. HRSD is completing a portion of the electrical and instrumentation work associated with the project, so an allowance for equipment and materials is also included in the overall budget of \$907,000.

Analysis of Cost: With this being the first US-based installation, there are few projects to use as a comparison. There are a number of changes to the original design (German style clarifiers) that were required to accommodate a center drive clarifier. HRSD elected to have the drive assembly and bearing replaced as part of the effort because of the complexity of retaining the existing equipment and impact on the hydrograv system design. Both of these items have increased the overall cost; however, through direct negotiations, it has been determined that Centrisys Corporation has provided HRSD with fair and reasonable pricing.

<u>Schedule:</u>	Design	July 2019
	Construction	September 2019
	Project Completion	March 2020

Attachment: None

Public Comment: None



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14. **PROVIDENCE ROAD OFF-LINE STORAGE FACILITY
APPROVAL OF FIXED PRICE FOR COMPREHENSIVE AGREEMENT AND TASK
ORDER (>200,000)**

Actions:

- a. **Approve a Fixed Price of \$31,131,583 for the Comprehensive Agreement with Crowder Construction Company.**
- b. **Approve a task order with Kimley-Horn and Associates in the amount of \$216,800.**

Moved: Willie Levenston **Ayes:** 6
Seconded: Stephen Rodriguez **Nays:** 0

CIP Project: CE011826

Budget	\$32,009,324
Previous Expenditures and Encumbrances	(\$30,509,323)
Available Balance	\$1,500,001

Contract Status:	Amount
Contract Cost Limit (CCL) with Crowder Construction Company	\$29,953,000
Added cost for contract changes	\$478,583
Owner Contingency	\$700,000
Total Fixed Price	\$31,131,583

Original Contract with Kimley-Horn and Associates	\$287,600
Total Value of Previous Task Orders	\$267,054
Requested Task Order	\$216,800
Total Value of All Task Orders	\$771,454
Revised Contract Value	\$771,454
Engineering Services as % of Construction	3%

Project Description: This project will construct a 5.2 million gallon storage tank in Virginia Beach's Woodstock Community Park, which is in the vicinity of the existing Providence Road Pressure Reducing Station (PRS). The tank will be utilized during wet weather and must be substantially complete by June 2021. A Contractor-Engineer Design-Build Team will deliver this project for HRSD. A skate park on top of the tank and improvements to the existing Woodstock Community Park are also included in this project. The City of Virginia Beach will reimburse HRSD for the planned park improvements. HRSD will negotiate a long-term lease with the City for use of the park property. The project is needed to provide reliable capacity and maintain HRSD pressure policy when flow is diverted in support of the Chesapeake-



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Elizabeth Plant closure and for the ultimate Regional Wet Weather Management Plan (RWWMP). This project was part of the Chesapeake-Elizabeth offline solution set developed by HRSD, CDM Smith, and Brown & Caldwell assuming a 2-year level of service.

Fixed Price Description: This project is being procured through the Design-Build Delivery process. On August 28, 2018, the Commission approved a Comprehensive Agreement with Crowder Construction Company with a Construction Cost Limit (CCL) of \$29,953,000. Having completed a 60 percent design and conducted detailed negotiations with all the regulatory agencies that must approve this project, a fixed price (previously referred to as a Guaranteed Maximum Price) has been negotiated with the Design-Build Team. Some of the more significant increases in cost from the concept to the 60 percent design include:

1. utility alignment revision,
2. addition of submarine doors between basins and side exits from the tank for safe passage and ingress/egress,
3. architectural safety fence/handrail system around the tank roof,
4. purchase of nutrient credits,
5. installation of a new grinder pump station for the park and
6. playground equipment.

HRSD and Crowder have also negotiated many cost saving items. Additionally, a green roof and decorative concrete is planned on a portion of the tank accessible to the public which will be included in the contract as an owner allowance. This gives HRSD the flexibility to modify the design if needed to focus on items that are critical to the tank function.

	HRSD	City of Virginia Beach	Owner Contingency	Total
CCL - August 28, 2018	\$28,283,000	\$1,670,000		\$29,953,000
Fixed Price - May 28, 2019	\$28,497,995	\$1,933,588	\$700,000	\$31,131,583
Difference	\$214,995	\$263,588		\$1,178,583

Task Order Description: This task order will provide design and submittal review services, attendance at progress and specific milestone meetings and assistance with facility commissioning.

Analysis of Cost: The fixed price proposal was prepared by Crowder Construction Company and reviewed with HRSD. A breakdown of the costs was provided. In addition, the costs were compared to the 30 percent design included within the Design-Build RFP (ACE Class 3 estimate) and HRSD determined the 13 percent increase to be within a reasonable level of estimating error. Staff agrees and recommends the Comprehensive Agreement be amended to include the new fixed price. The cost for the task order is based on an estimation of hours to fulfill the owner advisor scope of work and hourly rates that are in line with previous task orders.



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Schedule: Design September 2018
 Construction June 2019
 Project Completion April 2021

Attachment: None

Public Comment: None



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15. **PROVIDENCE ROAD OFF-LINE STORAGE FACILITY
DEED OF EASEMENT AND AGREEMENT**

Actions:

- a. **Accept the terms and conditions of the Deed of Easement with the City of Virginia Beach.**
- b. **Authorize the General Manager to execute same and related acquisition documents in accordance with those terms and conditions substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary and as approved by counsel.**
- c. **Approve the terms and conditions of the agreement with the City of Virginia Beach for the construction of and reimbursement of design and construction costs associated with improvements to the City's Woodstock Park and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.**

Moved: Stephen Rodriguez
Seconded: Willie Levenston

Ayes: 6
Nays: 0

CIP Project: CE011826

Project Description: This project is to construct a 5.2 million gallon storage tank in Virginia Beach's Woodstock Community Park, which is in the vicinity of the existing Providence Road Pressure Reducing Station (PRS). The tank will be utilized during wet weather and must be substantially complete by June 2021. A Contractor-Engineer Design-Build Team will deliver this project for HRSD. A skate park on top of the tank and improvements to the existing Woodstock Community Park are also included in this project. The City of Virginia Beach will reimburse HRSD for the planned park improvements. HRSD will negotiate a long-term easement with the City for use of the park property. The project is needed to provide reliable capacity and maintain HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth plant closure and for the ultimate Regional Wet Weather Management Plan (RWWMP). This project was part of the Chesapeake-Elizabeth offline solution set developed by HRSD, CDM Smith, and Brown & Caldwell assuming a 2-year level of service.



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Funding Description: The City of Virginia Beach will contribute a maximum amount of \$2,000,000 for the design and construction of the City Elements. The existing project budget reflects the cost of the City Elements and the City will reimburse HRSD at project completion.

Agreement Description: The draft [Deed of Easement](#) and [Intergovernmental Agreement](#) are attached. The final documents will be reviewed by HRSD staff and legal counsel before execution.

Analysis of Cost: HRSD will replace the existing skate park in exchange for a forty-year easement in Woodstock Park.

Attachment #9: [Deed of Easement and Intergovernmental Agreement](#)

Public Comment: None



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16. **SMALL COMMUNITIES COLLECTION SYSTEM REHABILITATION PHASE II
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$613,000.

Moved:	Maurice Lynch	Ayes:	6
Seconded:	Michael Glenn	Nays:	0

CIP Project: MP013010

Project Description: This project will construct the replacement and/or rehabilitation of seven declared prompt repairs, as identified in the Preliminary Engineering Report written under MP013000. Design for this work was completed under MP013000. This project will construct repairs at 2nd Street, 2nd Street Alley, two separate areas along Cypress Avenue, Mockingbird Court, Oak Lane, and 20th Street.

Funding Description: The estimated total project cost is \$613,000. The estimated project cost is based on a construction cost estimate of \$484,800 combined with engineering services estimate of \$82,000 and an 18 percent contingency allowance of \$86,500. Engineering services will be provided by Whitman, Requardt & Associates, LLP and includes construction phase services only.

Schedule:	Bid	June 2019
	Construction	August 2019
	Project Completion	February 2020

Attachment: None

Public Comment: None



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17. **SMITHFIELD INTERIM PRESSURE REDUCING STATION (PRS) AGREEMENT**

Actions: Approve the terms and conditions of the Agreement with Isle of Wight County for reimbursement of construction, field engineering, inspection services, and design services associated with the Smithfield Interim Pressure Reducing Station and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

Moved: Stephen Rodriguez **Ayes:** 6
Seconded: Elizabeth Taraski **Nays:** 0

CIP Project: NP014300

Budget	\$1,460,000
Previous Expenditures and Encumbrances	(\$10,567)
Available Balance	\$1,449,433
Construction Bid Award (TA Sheets)	(\$616,900)
Field Engineering and Inspection Services (ATCS)	(\$92,904)
Design (AMT)	(\$8,180)
Revised Total Project Available Balance	\$731,449

Project Description: This project is to acquire the site and easements, perform the design, and construct a new Interim Pressure Reducing Station (PRS) along the Smithfield Interceptor Force Main in the town of Smithfield on Turner Drive to provide the Town of Smithfield much needed system pressure relief.

System pressures in the Smithfield Interceptor Force Main routinely exceed the ability for some of the Town of Smithfield pump stations to adequately pump into the HRSD force main. The Town of Smithfield has seen detrimental effects from the high system pressures resulting in routine pump seal failures and the purchase of emergency diesel pumps to avoid overflows in this system. The original design parameters HRSD provided to the Town of Smithfield are routinely exceeded.

On May 5, bids for Turner Drive Turning Lane Improvements, a VDOT project administered by Isle of Wight County closed. HRSD and Isle of Wight County worked together to include a bid alternate for HRSD’s work related to the construction of two 18-inch ductile iron force mains to service the new Smithfield Interim Pressure Reducing Station which will be located just outside the limits of this VDOT project. The lowest bid received for this project is from TA Sheets General Contractors, Inc. and construction will begin in June.



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The PRS will consist of one electric 8-inch variable frequency drive pump and an 8-inch critically silenced diesel backup pump along with necessary piping. A mainline check valve, pump controls, flow and pressure metering, and SCADA controls will also be included with this project. This project will also include funds for replacement of pumps at Smithfield's Wellington Circle and Rising Star Pump Stations.

Agreement Description: The [attached agreement](#) between HRSD and Isle of Wight County provides for the design, construction, field engineering, and inspection services of the two 18-inch ductile iron force mains and required apparatuses for the new Smithfield Interim Pressure Reducing Station to be constructed just outside of the limits of this roadway project. HRSD will pay Isle of Wight County upon approval of the Agreement for the services outlined above. This Agreement has been reviewed by HRSD legal counsel and Isle of Wight County legal counsel.

Analysis of Cost: The construction services were competitively bid and three bids were received. HRSD's bid amendment compared well with HRSD's estimated cost for the work. ATCS will provide field engineering and inspection in accordance with their annual services contract with Isle of Wight County.

Schedule:	PER	January 2019
	Design	February 2019
	Bid	April 2019
	Construction	June 2019
	Project Completion	May 2020

Attachment #10: [Agreement](#)

Public Comment: None



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18. **SURRY HYDRAULIC IMPROVEMENTS AND INTERCEPTOR FORCE MAIN EASEMENT ACQUISITION**

Actions:

- a. **Approve the purchase of a 93,262 square foot easement in accordance with the terms and conditions of the Utility Easement Agreement and Deed of Easement between Beverley Davin (Landowner) and HRSD for \$100,000. (Tax Map: 27A-1-48).**
- b. **Authorize the General Manager to execute the same, substantially as presented, together with such changes, modifications, and deletions as the General Manager may deem necessary.**

<u>Moved:</u>	Willie Levenston	<u>Ayes:</u>	6
<u>Seconded:</u>	Maurice Lynch	<u>Nays:</u>	0

CIP Project: SU010200

Budget:	\$10,000,000
Previous Expenditures and Encumbrances:	<u>(\$8,979,705)</u>
Available Balance:	\$ 1,020,295

Project Description: This project will include a pump station, two force mains, an equalization tank, electrical, instrumentation and controls, generator, maintenance building, and the closure and demolition of the Town of Surry Treatment Plant. The flow will then be conveyed to the County of Surry Treatment Plant. The acquisition of the 50 foot easement on Mrs. Davin’s Property will be used for force main installation.

Necessary upgrades to the County of Surry Treatment Plant to accommodate the flow will be accomplished under the existing project Surry Treatment Plant Infrastructure Improvements (CIP SU010100). HRSD is under a consent order with the state to close the Town of Surry Treatment Plant and this work must be completed by November 2020.

Agreement Description: The attached [Utility Easement Agreement](#) and [Deed of Easement](#) were reviewed by HRSD staff and legal counsel. An [acquisition plat](#) and [facilities orientation maps](#) are also provided for clarification purposes.



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Analysis of Cost: The cost for the easement is based upon a negotiated settlement with the property owner. Additionally, HRSD staff also considered the costs that would be incurred to install the force main along an alternate path which would affect 10 additional property owners. This route was deemed to be not only significantly more cost effective but far less intrusive.

Attachment #11: [Utility Easement Agreement, Deed of Easement, Acquisition Plat and Facilities Orientation Maps](#)

Public Comment: None



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19. **SURRY MARINA FORCE MAIN AND FACILITY TRANSFER
COST SHARING AGREEMENT**

Action: Accept the terms and conditions of an agreement for cost sharing of the Surry Marina Force Main with the County of Surry, Virginia and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

Moved: Maurice Lynch **Ayes:** 6
Seconded: Willie Levenston **Nays:** 0

CIP Project: SU010200

Project Description: HRSD is constructing its Surry Hydraulic Improvements and Interceptor Force Main Project to comply with the Department of Environmental Quality (DEQ) Consent Order requirements. The County had planned to construct a sewer force main running parallel to Route 31 and connecting the Surry Marina to the sanitary sewer collection system located in the Town of Surry. A pump station at the marina and force main along Marina Drive was constructed by the County.

HRSD and the County agree it is in the best interest of both parties for HRSD to assume ownership and operation of those facilities and to share in the cost to extend the sanitary sewer collection system serving the Town of Surry to the Marina. Exhibit A shows the proposed force main and existing facilities to be transferred.

Agreement Description: The [attached agreement](#) between HRSD and the County of Surry describes the terms of the cost sharing for the Marina Force Main portion of the HRSD CIP project as well as the facility and property transfers for the existing Marina sewer infrastructure. The agreement has been reviewed by HRSD legal counsel.

Analysis of Cost: The estimated cost of the extension to the Marina force main was provided by HRSD's design-build team and is the basis of the cost sharing agreement.

Discussion Summary: Connections to the force main will be approved in accordance with the County's development plan.

Attachment #12: [Agreement](#)

Public Comment: None



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20. **HAMPTON ROADS REGIONAL WATER QUALITY MONITORING PROGRAM
LETTER OF AGREEMENT**

Action: Approve the terms and conditions of the letter of agreement with the Hampton Roads Planning District Commission (HRPDC) for the Hampton Roads Regional Water Quality Monitoring Program and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

Moved:	Michael Glenn	Ayes:	6
Seconded:	Maurice Lynch	Nays:	0

Brief: The Hampton Roads Planning District Commission (HRPDC) has requested that HRSD provide stormwater monitoring services in support of the continuation of a [regional study](#) that HRSD has participated in since 2014. The 2014 study was accomplished under a 5-year agreement that expires on June 30, 2019.

The objective of the continuation of this work is to monitor the 12-station network to characterize sediment and nutrient loadings from the major types of urban land-uses in Hampton Roads. Actual measured sediment and nutrient loads will be continue to be compared to existing computer model loadings and allocations to improve the accuracy of the Coastal Plain model that is linked to the Chesapeake Bay Nutrient and Sediment Total Maximum Daily Load (TMDL) models. HRSD's primary role will be to collect and analyze stormwater samples based on a work plan with a duration of at least five years.

Start-up costs were covered in the original term of this agreement. The annual costs cover all HRSD labor, materials and transportation to support this on-going monitoring work and are built into the Water Quality departmental operating budget. HRSD will be reimbursed by HRPDC through the Municipal Assistance Program for all costs incurred by HRSD associated with the study in accordance with the [letter of agreement](#). The HRPDC will maintain a Memorandum of Agreement (MOA) with each of the six localities participating in this study.

Attachment #13: [Regional Study and Letter of Agreement](#)

Public Comment: None



COMMISSION MEETING MINUTES
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21. **RESCHEDULE COMMISSION MEETING DATE – SEPTEMBER 2019**

Action: Approve changing the date of the regularly scheduled September 24, 2019 Commission meeting to Monday, September 30, 2019.

Moved:	Willie Levenston	Ayes:	6
Seconded:	Elizabeth Taraksi	Nays:	0

Brief: Formal action is required to change a regularly scheduled Commission meeting date. This date will accommodate staff and Commission participation in the Water Environment Federation Technical Exhibition and Conference. The Commission meeting time and location would remain as scheduled.

Attachment: None

Public Comment: None

22. **OPERATIONS & NOMINATIONS (O&N) COMMITTEE APPOINTMENT**

Action: The Chair appointed Willie Levenston (Committee Chair) and Michael Glenn to the O&N Committee to recommend nominations for Chair and Vice-Chair of the Commission for the coming year.

Brief: The Commission is required by the Enabling Act to elect a chair and vice-chair each year. The election of officers is normally held in June, and the new officers assume their duties in July.

The Chair customarily appoints an O&N Committee to nominate Commission officers for the coming year. The Committee will also review the HRSD Commission Governance Guidelines, Remote Participation and Ethics policies. Commissioners Levenston, Glenn and Templeman served on the committee last year.

The Committee will hold its first meeting following adjournment of the May 28 Commission meeting.

Attachment: None

Public Comment: None

23. **UNFINISHED BUSINESS – None**

24. **NEW BUSINESS – None**

25. **COMMISSIONER COMMENTS – None**



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26. **PUBLIC COMMENTS NOT RELATED TO AGENDA – None**

27. **INFORMATIONAL ITEMS**

Action: No action required.

Brief: The items listed below were presented for information.

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

Attachment #14: [Informational Items](#)

Public Comment: None

28. **ANNOUNCEMENTS**

- The O&N Committee will meet after adjournment of this meeting.
- The United Way Campaign Finale will be held on Tuesday, June 4, 2019 at the Virginia Beach Convention Center (registration at 11:30 start at noon)
- The Annual Pretreatment and Pollution Prevention Awards will be held on Thursday, June 6, 2019 at the Hampton Roads Convention Center (registration at 11:30 start at noon)

Next Commission Meeting Date: June 25, 2019 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

Meeting Adjourned: 10:26 a.m.

SUBMITTED:

Jennifer L. Cascio

Jennifer L. Cascio
Secretary

APPROVED:

Frederick N. Elofson

Frederick N. Elofson, CPA
Chair

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #1

AGENDA ITEM 1. – Awards and Recognition – Commendation Resolution



RESOLUTION

Commending the Service of Commissioner Ann W. Templeman

WHEREAS, Ann W. Templeman was appointed to the HRSD Commission on January 25, 2017, and served with distinction until May 2019;

WHEREAS, she brought to this position invaluable insights developed during a successful career with an investor-owned utility and as a lifelong resident of Hampton Roads;

WHEREAS, she provided leadership and guidance from her unique perspective on matters such as rate setting, customer communications and public education;

WHEREAS, she was an outstanding ambassador for HRSD, communicating the value of infrastructure investment during construction of the Bridge Street Pump Station project, disrupting her immediate neighborhood throughout most of her Commission tenure;

WHEREAS, she gave unselfishly of her time, devoting many hours learning about HRSD operations and the wastewater utility industry, participating in multiple briefings and tours of HRSD facilities and attending national conferences;


WHEREAS, she was unwavering in her dedication to the environment, the Hampton Roads Region and the Commonwealth of Virginia; and

WHEREAS, she discharged her duties with diligence, earning the respect of her colleagues and the HRSD staff; now, therefore, be it

RESOLVED by the HRSD Commission that it hereby commend Ann W. Templeman for her outstanding service as a Commissioner and, be it

RESOLVED FURTHER, that the Secretary of the HRSD Commission prepare a copy of this resolution for presentation to Ann W. Templeman as an expression of the Commission's appreciation, esteem and best wishes.

Adopted by the HRSD Commission on the twenty-eighth day of May, 2019.


Frederick N. Elofson, CPA
HRSD Commission Chair



HRSD COMMISSION MEETING MINUTES
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ATTACHMENT #2

AGENDA ITEM 2. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – May 28, 2019

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

Recommended Action: Award a contract for external auditing services to Cherry Bekaert, LLP in the estimated amount of \$49,500 for year one with four years annual renewal options and an estimated cumulative value in the amount of \$262,750.

Type of Procurement: Competitive Negotiation

Proposers	Technical Points	Recommended Selection Ranking
Cherry Bekaert, LLP	90	1
KPMG, LLP	86	2
PBMares, LLP	77	3
RSM, LLP	76	4
Clifton Larson Allen, LLP	76	5

HRSD Estimate:

\$420,433

Contract Description: This contract is an agreement for professional external auditing services for HRSD. A Public Notice was issued on March 6, 2019. Five firms submitted proposals on March 21, 2019 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, interviewed and technically ranked.

The proposal submitted by Cherry Bekaert, LLP was ranked by technical points to be the highest qualified. Cherry Bekaert was very thorough in their response and clarifications, highlighting their preparedness and attention to HRSD's needs. Cherry Bekaert currently serves a large part of Virginia and have ensured the transition between auditors will be smooth and streamlined.

Analysis of Cost: Cumulative value reflects the full annual amounts over five years at negotiated fixed percent increases. The labor rates were determined to be fair and reasonable compared to similar and current contracted rates resulting in an 18 percent costs savings.

CONSENT AGENDA ITEM 2.c.1. – May 28, 2019

Subject: 46th Street Diversion Sewer Rehabilitation/Replacement
Task Order (>\$200,000)

Recommended Action: Approve a task order with O'Brien & Gere Engineers, Inc. (OBG) in the amount of \$932,560.

CIP Project: BH014600

Budget	\$11,470,682
Previous Expenditures and Encumbrances	(\$309,746)
Available Balance	\$11,160,936

Contract Status:	Amount
Original Contract with OBG	\$307,740
Total Value of Previous Task Orders	\$0
Requested Task Order	\$932,560
Total Value of All Task Orders	\$932,560
Revised Contract Value	\$1,240,300
Engineering Services as % of Construction	13%

Project Description: This project involves the rehabilitation of approximately 3,100 linear feet of gravity sewer main ranging from 18 to 24 inches along with associated manholes. The project also includes the installation of approximately 3,200 linear feet of gravity sewer ranging from 12 to 18 inches along with 380 linear feet of 6-inch force main and a new lift station in Newport News. This project is included in the Inflow and Infiltration Abatement Rehabilitation – Phase II, which is part of the Federal Consent Decree to address sanitary sewer overflows in the region.

Task Order Description: This task order will provide design and pre-construction phase services to rehabilitate, replace, and install new gravity sewer pipe, manholes, lift station, and force main to address system conditional issues and to separate public and private flows.

Analysis of Cost: The cost for this task order was negotiated between OBG and HRSD. The task order consists of \$714,770 for design and pre-construction phase services and \$217,790 for additional services. A current construction cost estimate for this project is \$9,900,000 and the ratio of Engineering Services to Construction cost is approximately 13 percent.

<u>Schedule:</u>	Design	June	2019
	Bid	February	2020
	Construction	June	2020
	Closeout	February	2022

CONSENT AGENDA ITEM 2.d.1. – May 28, 2019

Subject: Atlantic Treatment Plant Primary Digester Cleaning
Contract Change Order (>25% or \$50,000)

Recommended Action: Approve a change order with Synagro-WWT Inc. in the amount of \$158,864.

Contract Status:	Amount	Cumulative % of Contract
Original Contract with Synagro-WWT Inc.	\$125,492	
Total Value of Previous Change Orders	\$0	%
Requested Change Order No. 1	\$158,864	
Total Value of All Change Orders	\$158,864	126.59%
Revised Contract Value	\$284,356	

Time (Additional Calendar Days)		0
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Project Description: Services include all labor, materials, equipment and supervision to clean, dewater and haul an estimated 350 tons of digested residuals from primary digester number 1 to a disposal location on plant site.

Change Order Description: This change order includes additional funds required to match final amount of residuals removed from digester number 1. This increase covers approximately 600 tons of additional digested residuals.

CONSENT AGENDA ITEM 2.e.1. – May 28, 2019

Subject: Analytical Technology, Inc.
Entech Design Filter Media Expansion and Backwash Turbidity Sensor,
Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Analytical Technology, Inc. as the provider of the Entech Design filter media expansion and backwash turbidity sensor, replacement parts and service for use at the SWIFT Research Center.

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
- Only known source

Details: Product includes purchase of an Entech Design filter media expansion and backwash turbidity sensor. The SWIFT Research Center bio filters are regularly backwashed to remove accumulated solids and biofilm. This filter media expansion and backwash turbidity sensor measures both the biofilter media surface level during backwashing (expansion) and the turbidity of the backwash water. This is the only sensor known on the market that allows for optimization of backwash flow rates and times, maximizing filtered water production efficiency and ensuring media loss from the filter during backwashing is minimized.

Sherwood Logan and Associates Inc. is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.e.2. – May 28, 2019

Subject: Aqua-Aerobic Systems, Inc.
Aqua® Equipment, Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Aqua® brand Equipment, Replacement Parts and Service for use in Small Communities.

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
- Only known source

Details: Product includes the purchase of various replacement parts for the AquaSBR® Sequencing Batch Reactor and Tertiary Filter. Replacement parts include, but not limited to, decanters, mixers, valve actuators, wear strips, backwash pump and shoes all necessary for the biological treatment process. All parts are easily accessible and the decant system ensures optimum quality effluent withdrawal.

Aqua-Aerobic Systems, Inc. provided all original Aqua® equipment. These are critical inventory replacement parts needed to quickly and efficiently make repairs to the SBR without risk of damage to the equipment or violation of manufacturer warranties.

Aqua-Aerobic Systems, Inc. is the proprietary manufacturer and RITCHIE Environmental Solutions LLC is the only current authorized distributor for Virginia.

The Commission previously approved limited sole source authority for Aqua® Equipment, Replacement Parts and Service. This action supersedes previous actions and expands the scope to cover Small Communities.

CONSENT AGENDA ITEM 2.e.3. – May 28, 2019

Subject: USGI Chemical Feed, Inc.
PolyBlend® Skid-Mounted Polymer Feed System, Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve USGI Chemical Feed, Inc. as the provider of the PolyBlend® Skid-Mounted Polymer Feed System, Replacement Parts and Service for use at Chesapeake Elizabeth Treatment Plant.

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
- Only known source

Details: Product includes purchase of a USGI PolyBlend® Skid-Mounted Polymer Feed System for the Chesapeake Elizabeth Treatment Plant (CETP). The system provides liquid polymer solution to the dewatering centrifuge for biosolids thickening and dewatering.

CETP currently has two systems in place for the dewatering process in the solids handling building. The first system was purchased in 2005 through a competitive solicitation and the second system, which is the failing system to be replaced, was built by CETP utilizing small purchase methods. This purchase is to replace the failing system to match existing lineup and avoid associated costs with reconfiguration.

Heyward Incorporated of Virginia Inc. is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.e.4. – May 28, 2019

Subject: Prominent Fluid controls, Inc.
Prominent Polymer Dilution Skid
Sole Source (>\$10,000)

Recommended Action: Approve Prominent Fluid Controls, Inc. as the provider of a Prominent Polymer Dilution Skid for use at the Nansmond Treatment Plant.

CIP Project: NP013700

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
- Only known source

Details: The Nansmond Treatment Plant Struvite Recovery Facility Improvements project will include implementation of the WASSTRIP™ process at the Nansmond Treatment Plant. Currently, the Nansmond Treatment Plant uses centrifuges to dewater digested solids. In order to achieve acceptable dewatering performance, a diluted polymer solution is added to these solids upstream of the centrifuges. Through some pilot testing completed one to two years ago, the plant determined that dewatering performance could be optimized if they used a high-intensity mixer to perform the polymer dilution and instruments to dial in the desired polymer concentration. The plant performed this pilot with a polymer dilution skid provided by Heyward and manufactured by Prominent. Following the pilot, the plant purchased a skid from the same manufacturer or vendor through a competitive process.

With the WASSTRIP™ process being implemented, staff will receive two new centrifuges serving the purpose of dewatering solids before digestion. The polymer dosed to these solids could be different from the polymer currently dosed to the digested solids. Therefore, the polymer handling systems dedicated to the two different solids streams will be completely separate from each other; however, they will be located in the same room.

If the plant does not receive Prominent Polymer Dilution Skids with the Nansemond Treatment Plant Struvite Recovery Facility Improvements project, the skids/controls for the digested solids and undigested solids streams would be different enough that the parts are not interchangeable. Operator training would also have to be tailored to the two different skids. It is important to note that dewatering is one of the most critical processes at the plant and also one of the most complicated. Interfacing with the controls, hands-on adjustments, and maintenance are all regular activities. These activities can be simplified and the best way to do that is to limit the complexity in the polymer room by keeping with one polymer dilution equipment manufacturer.

This sole source request is for two Prominent Polymer Dilution Skids for the Nansemond Treatment Plant Struvite Recovery Facility Improvements project. Engineering staff will pre-negotiate the price and scope of supply with Heyward, Inc. Heyward, Inc. has provided a preliminary price proposal of \$78,600 for both skids associated with this project. Staff will obtain pricing from previous competitively bid projects as a comparison to ensure HRSD is receiving a fair price.

Heyward Incorporated of Virginia Inc. is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.e.5. – May 28, 2019

Subject: Prominent Fluid Controls, Inc.
ProMix™ Polymer Mixing System, Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Prominent Fluid Controls, Inc. as the provider of the ProMix™ polymer mixing system, parts and service for use at Nansemond Treatment Plant.

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
- Only known source

Details: Product includes purchase of a Prominent Pro Mix™ polymer mixing system. The system uses a progressive cavity pump to dose polymer to a specified concentration based on a non-potable water flow meter. The system then employs a three stage rapid mixer that automates polymer creation ensuring the most effective and efficient polymer blend. The generated polymer mix is used to assist in the generation of dewatered solids for the digester process at the Nansemond Treatment Plant.

The Nansemond Treatment Plant currently owns and operates the exact system purchased through a competitive solicitation in February 2019. This additional unit will be installed within the existing infrastructure, used as backup system and/or rotated in and out of service as operational need dictates.

Heyward Incorporated of Virginia Inc. is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.e.6. – May 28, 2019

Subject: Vaughan Co., Inc.
Vaughan Chopper Pumps, Motor, Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Vaughan Co., Inc. as a provider of the Vaughn Chopper Pump, Motor, Replacement Parts and Service for use at all HRSD facilities.

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
- Only known source

Details: Product includes purchase of a Vaughn Chopper pump, motor and parts. The Vaughn Chopper brand pumps eliminate the need for additional mechanisms to break down larger rags within the primary clarifier making maintenance more cost effective. A second pump was purchased in 2018 through a competitive solicitation. This purchase is for a third and final pump to complete pump replacements within the primary clarifier sludge pumping process at the Nansemond Treatment Plant.

Heyward Incorporated of Virginia Inc. is the only current authorized industrial distributor for Virginia.

The Commission previously approved limited sole source authority for Vaughn Chopper Pump, Motor and Parts. This action supersedes previous actions and expands the scope to cover Service and use at all of HRSD.

CONSENT AGENDA ITEM 2.e.7. – May 28, 2019

Subject: Huber Technology, Inc.
Huber Step Screens[®] and Replacement Parts
Sole Source (>\$10,000)

Recommended Action: Approve Huber Technology, Inc. as the provider of Huber Step Screens[®] and Replacement Parts for use at James River Treatment Plant.

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
- Only known source

Details: Purchase includes purchase of replacement parts for Huber Step Screens[®] located in the preliminary treatment process of the James River Treatment Plant (JRTP) headworks building. Three Huber Step Screens[®] were installed in 2012 as part of the Integrated Fixed Film Activated Sludge (IFAS) project as a means to remove biological nutrients from JRTP treatment process. The units are currently the only known product to remove very fine particles out of the water and all equipment parts are proprietary.

If these parts are not provided then the screens may malfunction which would cause particles to pass through which could clog our IFAS systems. If that system malfunctions then nitrogen or phosphorus could be released into the waterways and will cause permit issues for HRSD.

Huber Technology, Inc. is the direct manufacturer of this equipment.

CONSENT AGENDA ITEM 2.e.8. – May 28, 2019

Subject: Innovyze, Inc.
InfoAsset™ Planner Software
Sole Source (>\$10,000)

Recommended Action: Approve Innovyze, Inc. as the provider of InfoAsset™ Planner software for use in the Asset Management Division.

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
- Only known source

Details: This product includes the purchase of an InfoAsset™ Planner software solution that provides mapping tools and decision tree matrices. This is a complete ArcGIS-based asset integrity management and capital planning software for water and wastewater networks. The tools available under this software are used to prioritize maintenance and renewal planning using likelihood and consequence of failure criteria for the interceptor system. InfoAsset also provides a means to review pipeline inspection videos, failure records, proximity to other infrastructure, and other features all in one platform.

Innovyze, Inc. is the direct provider of software compatible with HRSD's existing Geographic Information System and historical inspection records. This product is compatible with multiple CCTV products and supports the ArcGIS program.

CONSENT AGENDA ITEM 2.e.9. – May 28, 2018

Subject: Ovivo USA LLC
Ovivo® Influent Screen Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Ovivo USA LLC as the provider of the Ovivo® complete influent screen system replacement parts and service for use at HRSD.

Sole Source Justification:

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

Details: Product includes Ovivo® influent screen system replacement parts. This includes replacement parts for the inlet screening, screw conveyors and waste compactors. System and parts are needed to remove solids, grit and other debris from the influent wastewater at the Army Base Treatment Plant.

Ovivo is the direct manufacturer of this system and parts.

The Commission previously approved limited sole source authority for influent screen replacement parts. This action supersedes previous actions and expands the scope to cover the entire line of components that make up the influent screening system, the associated replacement parts and service.

CONSENT AGENDA ITEM 2.e.10. – May 28, 2019

Subject: Petersen Resources LLC DBA Petersen Products Co LLC
Petersen[®] Pipe Plug Insertion System and Accessories
Sole Source (>\$10,000)

Recommended Action: Approve Petersen Resources LLC DBA Petersen Products Co LLC as the provider of a Petersen[®] Pipe Plug Insertion System and accessories for use at South Shore Interceptors, North Shore Interceptors and Small Communities.

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
- Only known source

Details: Product includes the purchase of a Petersen[®] pipe plug insertion system, plugs and accessories for South Shore Interceptors. This is patented technology solely developed by Petersen Resources. The benefits of having this system in house eliminates the need for outside contractors to install line stops on smaller jobs and/or the use of pump and haul services when trying to isolate areas of HRSD infrastructure.

South Shore Interceptors currently owns one system which consists of a large tower and varying size pipe plugs. This purchase will be for a small and medium size tower, elbow and adapter assemblies and different size pipe plugs ranging from 8 inch to 24 inch. This will allow for the system to be even more useful in smaller (less than 30 inch) pipes and low pressure systems. It is SSOP intention to share the systems and pipe plugs with North Shore Interceptors, Small Communities Division and other work centers as needed for projects at HRSD.

Petersen Resources LLC DBA Petersen Products Co LLC is the direct manufacturer of this product.

CONSENT AGENDA ITEM 2.e.11. – May 28, 2019

Subject: ITT Goulds Pumps
Goulds Chemical Resistant Pumps, Replacement Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve ITT Goulds Pumps as the provider of Goulds Chemical Resistant Pumps, Replacement Parts and Service for use at all HRSD facilities.

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
- Only known source

Details: Product includes the purchase of a Goulds Model NM3196 MTi chemical resistant pump and related parts. This is a replacement pump for use in the scrubber recirculation system at the Nansemond Treatment Plant and must be interchangeable with the same model pumps in service.

Tencarva Machinery Company is the only current authorized industrial distributor for Virginia.

The Commission previously approved limited sole source authority for Goulds Chemical Resistant Pump and Parts. This action supersedes previous actions and expands the scope to cover services and for use at all HRSD.

CONSENT AGENDA ITEM 2.e.12. – May 28, 2019

Subject: Seepex, Inc.
Seepex Progressive Cavity Pumps, Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Seepex, Inc. as the provider of Seepex Progressive Cavity Pumps, Parts and Service for use at Nansemond Treatment Plant.

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
- Only known source

Details: Product includes purchase of Seepex Progressive Cavity pumps for use in the solids thickening process at the Nansemond Treatment Plant. The pumps are used to pump thickened sludge from the Gravity Belt Thickener (GBT) hopper to the digesters. The pumps are custom engineered and fabricated to match flanges on the GBT discharge hoppers. The pumps run at variable speeds based on hopper level and the operational need for the plant to maintain a constant feed to the digester.

Tencarva Machinery Company is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.f.1 – May 28, 2019

Subject: Microsoft® Surface Pros
Use of Existing Competitively Awarded Contract Vehicle and Contract Award (>\$200,000)

Recommended Action(s):

- a. Approve the use of the Fairfax County IT Hardware and Software contract for purchase of Microsoft® Surface Pros to CDW-G in the estimated amount of \$1,481,875.
- b. Award a contract to CDW-G in the amount of \$1,481,875.

Contract Description: This contract is for the purchase of Microsoft® Surface Pro 5LTE and Microsoft® Surface Pro 6 as part of an organization wide hardware upgrade. All hardware will include Windows 10 Professional, MS Business Complete, all associated accessories and a four year warranty.

Fairfax County competitively solicited this cooperative contract solution. HRSD is eligible to use this competitively bid contract.

Analysis of Cost: By utilizing the cooperative contract through Fairfax County, HRSD is receiving over 13 percent cost savings.

CONSENT AGENDA ITEM 2.f.2. – May 28, 2019

Subject: Microsoft® Windows 10 OS Migration
Use of Existing Competitively Awarded Contract Vehicle and Contract
Award (>\$200,000)

Recommended Action(s):

- a. Approve the use of the Fairfax County IT Hardware and Software contract for Microsoft® Windows 10 OS Migration and Training to CDW-G in the estimated amount of \$269,220.
- b. Award a contract to CDW-G in the amount of \$269,220.

Contract Description: This contract is for Windows 10 OS migration engagement services. The entire scope of work will include CDW-G providing the necessary Ivanti licensing package and Invanti, Inc. initiating the migration of HRSD devices and user profiles to Windows 10 operating systems. Services also include knowledge transfer and training.

Fairfax County competitively solicited this cooperative contract solution. HRSD is eligible to use this competitively bid contract.

Analysis of Cost: By utilizing the cooperative contract through Fairfax County, HRSD is receiving over 70 percent in cost savings compared to CDW-G list prices under direct purchase.

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #3

AGENDA ITEM 4. – Revised Revenue Policy

- [Revenue Policy](#)
- [Revised Policy \(redline changes\)](#)

1.0 Purpose and Need

The purpose of this revenue policy is to ensure that there is sufficient revenue to support direct and indirect operating, capital, reserves and current and future debt service costs.

2.0 Definitions

2.1 Domestic Quality Wastewater. Defined in accordance with HRSD's Domestic Wastewater Survey that specifies the primary pollutants and the corresponding concentration levels for domestic wastewater.

2.2 Domestic Quality Wastewater Survey. A sampling evaluation of wastewater to define Domestic Quality Wastewater concentrations of primary pollutants conducted in residential neighborhoods in various localities (cities/counties) served by HRSD.

2.3 Facility Charges. Charges to cover the cost of treatment and conveyance capacity consumed by new connections or redevelopment. Facility charges are applied to any sewer or sewer system discharging into HRSD facilities and any increase to existing service.

2.4 Flat Rate. A constant rate applied to customer accounts in lieu of a metered based bill. The rate is based on the winter average water consumption of existing flat rate accounts as determined periodically.

2.5 Hauled Wastewater. Wastewater transported and discharged to a wastewater treatment plant by conveyance other than pipelines.

2.6 High Strength or Unusual Waste. Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) discharged waste concentrations that exceed those defined as Domestic Quality Wastewater or unusual wastes not covered by the Rate Schedule that may be considered separately and may be assigned a special rate.

2.7 HRSD Charges. Any and all charges or fees billed to customers for wastewater services provide by HRSD.

2.8 HRSD Collection System. All infrastructure conveying flow to the Interceptor System in localities where HRSD owns or operates a collection system.

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- 2.9 HRSD Collection System Charges.** Rates for HRSD Collection System operating and maintenance costs that are in addition to Wastewater Treatment Charges.
- 2.10 HRSD Enabling Act.** The Commonwealth of Virginia 1960 Acts of the Assembly, c. 66 as amended.
- 2.11 HRSD Rate Schedule.** Published listing of rates, fees and charges applicable for specified time frame
- 2.12 Interceptor System.** Larger diameter pipelines conveying flow from the collection system to the Wastewater Treatment Plant.
- 2.13 NAICS Surcharge Categories.** The North American Industry Classification System (NAICS) standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.
- 2.14 Rational Nexus Criteria.** These ensure that there is a reasonable connection between HRSD Charges and the actual cost of operating the wastewater system. These criteria ensure: (1) the charges are not arbitrary, (2) the charges are equitable, and (3) the charges are not discriminatory.
- 2.15 Regional Sanitary Sewer System.** All portions of the individual locality and HRSD wastewater collection and interceptor systems and appurtenances thereto.
- 2.16 Surcharge Rate.** Rates for High Strength or Unusual Wastes to recover costs in direct proportion to volume and pollutant concentrations. Surcharge rates are based on a marginal cost approach for the variable costs associated with the incremental costs to treat High Strength or Unusual Wastes.
- 2.17 Wastewater Treatment Charges.** Charges to convey and treat Domestic Quality Wastewater that are based on billed water consumption, an effluent wastewater meter, or a Flat Rate.
- 2.18 Wastewater Treatment Rate.** Rate per specified unit of measure to recover the costs of conveyance and treatment of Domestic Quality Wastewater.

3.0 Guiding Principles

3.1 General.

- 3.1.1** To the extent feasible, HRSD is a cost recovery enterprise and supports a uniform rate structure for interception and treatment regardless of which wastewater treatment plant treats a customer's wastewater.
- 3.1.2** Wastewater Treatment and Collection Charges shall not be waived. However, payment extensions may be established for the collection of HRSD Charges.
- 3.1.3** All new connections and redevelopment shall pay an equitable share for the treatment and conveyance capacity consumed by their wastewater discharge to the Regional Sanitary Sewer System.
- 3.1.4** All HRSD rates shall be reviewed and revised (if required) at least annually and approved by the Commission. Changes shall be publicly advertised in accordance with HRSD's Enabling Act and posted on HRSD's web site.
- 3.1.5** Surcharge rates are set to recover costs in direct proportion to volume and pollutant concentrations in excess of Domestic Quality Wastewater.
- 3.1.6** Facility Charges ensure that an unfair burden is not placed on existing users that would otherwise pay higher rates to expand the system to accommodate new flows and loads to HRSD's facilities. HRSD uses the Rational Nexus Criteria as one of the guiding principles to derive Facility Charges.
- 3.1.7** HRSD will not depend on temporary revenues such as grants to fund operating costs. One-time temporary revenues or grants should typically be used to fund one-time expenses.
- 3.1.8** Surcharge rates are applied to non-permitted commercial facilities using sampling data for groups of businesses that produce similar goods or services using the North American Industry Classification System (NAICS).

3.2 Basis of Charges.

3.2.1 Wastewater Treatment Charges

- (1) The Wastewater Treatment Rate is derived from the Rate Model, see Appendix A.
- (2) Volumetric Accounts
 - a. Volume of water purchased by the customer (as recorded by a water meter); or,
 - b. Volume of effluent discharged to the sewer system (as recorded by an effluent meter)
- (3) A rate based on facility use and billing period.
- (4) A single family residential Flat Rate as defined herein.
- (5) HRSD treatment plants are designed to treat domestic quality wastewater. Additional charges may be assessed for wastewater with qualities that differ from the current definition of Domestic Quality Wastewater.
- (6) Minimum charges apply to all accounts, except as specified herein.

3.2.2 Facility Charges.

- (1) HRSD shall establish Facility Charges for new connections based upon the size of the water meter serving the new connection. If the locality does not offer a specific meter size, a combination meter is proposed, or another similar scenario exists, the Facility Charge may be based on a calculated meter size using the AWWA M22 Sizing Water Service Lines and Meters manual. Additional special exceptions, including redevelopment provisions, may be outlined in the HRSD Rate Schedule.
- (2) The Facility Charge for each meter size is based on the total net replacement value of all HRSD's assets, HRSD's total hydraulic capacity, and the average water consumption for each meter size.
- (3) HRSD reserves the right to require Facility Charges based upon wastewater that differs from domestic quality wastewater and that consumes loading capacity in excess of capacity consumed by the equivalent volume of Domestic Quality Wastewater.

3.2.3 HRSD Collection System rate - A rate to recover HRSD costs for maintenance and operation of HRSD owned collection systems. The rate shall be based upon the weighted average rate charged by localities within the HRSD service area for collection system operation and maintenance of locality owned collection systems. Localities that do not charge a Locality collection rate will be excluded from this calculation. The weighted average will be based on the latest population estimates provided by the Welden Cooper Center for Public Service or other Commonwealth designated demographics agency. HRSD may establish separate collection system maintenance charges for each locality within the HRSD Collection System where warranted by unique circumstances.

3.2.4 Hauled Wastewater Rate - This rate is based on five individual charges: BOD, TSS, TP, TKN and volume as derived from the HRSD Rate Model, see Appendix A and are not subject to a minimum charge. Since waste haulers do not use the Interceptor System, those costs are excluded from the volume rate.

4.0 **Procedures**

4.1 Determining Costs Used in the HRSD Rate Model, See Appendix A.

4.1.1 The budgeted annual costs shall be used to calculate rates that will be in effect for the budget fiscal year.

4.1.2 Budgeted costs shall be loaded into a comprehensive rate model to allocate costs to applicable categories annually. This model shall allocate costs to volume and each pollutant identified in the most recent Domestic Wastewater Survey.

4.1.3 The Domestic Wastewater Survey shall be updated every five years or more frequently if permit requirements or treatment technology changes warrant revisiting.

4.2 Determining Total Wastewater Volume.

The total volume of wastewater to be billed during a budget year shall be estimated based upon the water consumption trends within the HRSD service area and other information when available.

4.3 Calculating Rates.

4.3.1 The model shall calculate the Wastewater Treatment Rate based on total budgeted cost divided by the estimated volume of wastewater to be billed in the

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fiscal year. The rate shall be expressed in dollars per hundred cubic feet or per 1,000 gallons.

- 4.3.2** The HRSD Rate Model shall calculate the Surcharge Rate for High Strength Waste based on the incremental cost to treat each additional pound of each pollutant in excess of the pounds of pollutants identified for Domestic Quality Wastewater in the most recent HRSD Domestic Quality Wastewater Survey. The rates shall be expressed in dollars per 100 pounds or per milligrams per liter per hundred cubic feet of wastewater.
- 4.3.3** Facility Charges shall be calculated by dividing the replacement cost for all HRSD facilities by HRSD's total hydraulic capacity to obtain the replacement cost per gallon. This replacement cost per gallon shall be multiplied by the estimated flow expected from new connections and redevelopment and expressed in dollars per meter size. The estimated flow is based on the average daily flows for each size water meter using actual historical data from HRSD's meter database and any additional information available.
- 4.3.4** Flat Rate shall be calculated by determining the average water consumption for the months of January, February, and March for all existing flat rate accounts for a 30-day period multiplied by the Wastewater Treatment Rate.
- 4.3.5** Daily Minimum shall be calculated by dividing the total labor costs (not dependent on volume of wastewater conveyed or treated) of the Operations Department by the total number of accounts' ten-year rolling average divided by 365.
- 4.4** Implementation.
 - 4.4.1** All rates shall be approved by the Commission.
 - 4.4.2** Rates shall be advertised for four consecutive weeks in a newspaper of general circulation within the District.

4.5 Financial Forecast.

HRSD will analyze water consumption, regional economic and population data periodically to identify any trends that may impact its long-range financial forecast. HRSD will also analyze and conservatively project major expense drivers, such as construction costs, inflation, operating cost increases, and borrowing costs. The forecast should target financial metrics, across the twenty-year period, that are consistent with rating agency metrics for a strong, double-A rated credit. This approach will ensure the long-range forecast is resilient and maintains HRSD's strong financial framework.

4.6 Collections.

4.6.1 HRSD will monitor all collections to ensure they are equitably administered, timely and accurate. The cost of collections shall not exceed the marginal incremental revenue and it should not be a large percentage of the amount to be collected.

4.6.2 Charges shall be collected for all services rendered unless determined to be uncollectable.

4.6.3 Charges may be assessed for services received but not billed (for any reason) for a period of up to three prior years. The rate in effect in the year treatment services were provided shall be applied. If necessary, at HRSD's sole discretion, billing adjustments and/or payment plans may be established for payment of delayed billing or unbilled previous service.

4.6.4 Past due charges for services received and billed shall be pursued for up to 10-years after write-off.

4.6.5 If a customer has past due charges on any account for services received, and establishes a new account within HRSD's service area, customer will be subject to the past due charges being transferred to their active account, and collection will be pursued.

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5.0 Responsibility and Authority

- 5.1 The General Manager shall ensure the Commission reviews all rates annually as part of the annual budget process.
- 5.2 Rates may only be changed with an affirmative vote of a majority of the Commission at a legally noticed public meeting of the Commission.
- 5.3 The General Manager shall ensure any rate revisions are advertised and published in accordance with the HRSD Enabling Act.
- 5.4 The Director of Finance will present an updated Financial Forecast to the Commission and manage the update to the Rate Model on an annual basis.

Approved:  _____ 5/28/19
Frederick N. Elofson Date
Commission Chair

Attest:  _____ 5/28/19
Jennifer L. Cascio Date
Commission Secretary

COMMISSION ADOPTED POLICY
Revenue Policy
Appendix A – Rate Model Summary



Adopted: May 23, 2017

Revised: May 28, 2019

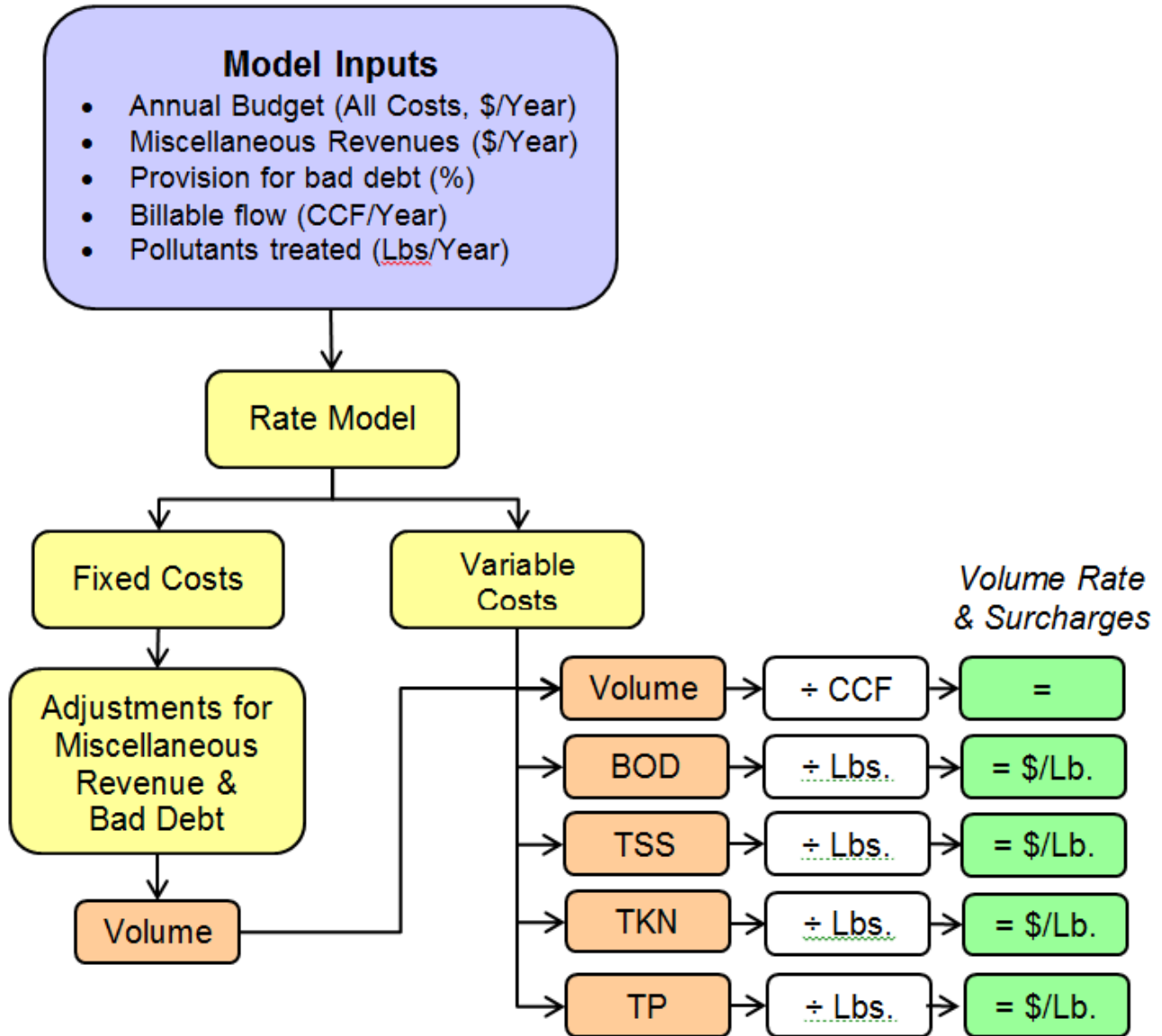
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1.0 HRSD's Rate Model Summary

HRSD's Rate Model uses a cost accounting process to allocate all operating costs to volume and each of four specific pollutants. The model designates each line item cost as fixed or variable. Fixed costs are those that are not influenced, in the short run, by volume or the quantity of pollutants in the wastewater being treated. These include for example, personnel costs, office, administrative, customer service, billing and collection expenses, and debt service. Conversely, variable costs are those that are affected by the volume and the amount of pollutants present; these include treatment plant expenditures for chemicals, electricity, fuel, and solids disposal. The rate model uses engineering criteria to allocate the variable costs to each of the four pollutants. Once the operating costs have been allocated, the model deducts miscellaneous revenues, includes a provision for bad debt, and derives rates for volume (\$/CCF) and high strength surcharges (\$/pound); the latter equates to HRSD's marginal or incremental cost attributable to treating each pollutant in excess of the amount present in typical domestic wastewater and is also presented as the equivalent \$ per mg/l per 100 CF to facilitate calculation by customers. Net fixed costs and the variable costs to treat the four pollutants present in typical domestic sewage are recovered via the volume rate and surcharges.



2.0 Rate Model Schematic



1.0 Purpose and Need

The purpose of this revenue policy is to ensure that there is sufficient revenue to support direct and indirect operating, capital, reserves and current and future debt service costs.

2.0 Definitions

2.1 Domestic Quality Wastewater. Defined in accordance with HRSD's Domestic Wastewater Survey that specifies the primary pollutants ~~through sampling~~ and the corresponding concentration ~~limits~~ *levels* for domestic wastewater.

~~2.1.2.2~~ **Domestic Quality Wastewater Survey.** *A sampling evaluation of wastewater to define Domestic Quality Wastewater concentrations of primary pollutants conducted in residential neighborhoods in various localities (cities/counties) served by HRSD.*

~~2.2.3~~ **Facility Charges.** Charges to cover the cost of treatment and conveyance capacity consumed by new ~~development~~ *connections* or redevelopment. Facility charges are applied to any sewer or sewer system discharging into HRSD facilities and any increase to existing service.

2.4 Flat Rate. *A constant rate applied to customer accounts in lieu of a metered based bill. The rate is based on the winter average water consumption of existing flat rate accounts as determined periodically.*

~~2.3.2.5~~ **Hauled Wastewater.** Wastewater transported *and discharged* to a wastewater treatment plant ~~and discharged that is subject to a fee~~ *by conveyance other than pipelines.*

~~2.4.2.6~~ **High Strength or Unusual Waste.** Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) discharged waste ~~requiring a Surcharge Rate when~~ concentrations *that exceed the published levels in the Rate Schedule* ~~those defined as Domestic Quality Wastewater~~ or unusual wastes not covered by the Rate Schedule that may be considered separately and may be assigned a special rate.

~~2.5.2.7~~ **HRSD Charges.** Any and all charges or fees billed to customers for wastewater services provide by HRSD.

~~2.6.2.8~~ **HRSD Collection System.** All infrastructure conveying flow ~~from homes, businesses and industries~~ to the Interceptor System in localities where HRSD owns or operates a collection system.

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Revenue Policy



Adopted: May 23, 2017

Revised: ~~N/A~~ May 28, 2019

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2.9 *HRSD Collection System Charges. Rates for HRSD Collection System operating and maintenance costs that are in addition to Wastewater Treatment Charges.*

2.7.2.10 **HRSD Enabling Act.** The Commonwealth of Virginia 1960 Acts of the Assembly, c. 66 as amended.

2.11 *HRSD Rate Schedule. Published listing of rates, fees and charges applicable for specified time frame*

2.8.2.12 **Interceptor System.** ~~Large~~ *Larger diameter* pipelines conveying flow from the ~~Collection System~~ *collection system* to the Wastewater Treatment Plant.

2.13 NAICS Surcharge Categories. *The North American Industry Classification System (NAICS) standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.*

2.92.14 Rational Nexus Criteria. ~~This ensures~~ *These ensure* that there is a reasonable connection between HRSD Charges and the actual cost of operating the wastewater system. These criteria ensure: (1) the charges are not arbitrary, (2) the charges are equitable, and (3) the charges are not discriminatory.

2.102.15 Regional Sanitary Sewer System. All portions of the individual locality and HRSD wastewater collection and ~~transmission~~ *interceptor* systems and appurtenances thereto.

2.112.16 Surcharge Rate. Rates for ~~high-strength-wastes~~ *High Strength or Unusual Wastes* to recover costs in direct proportion to volume and pollutant concentrations. ~~Since the majority of HRSD's costs are fixed,~~ *surcharge* *Surcharge* rates are based on a marginal cost approach for the variable costs associated with the incremental costs to treat High Strength *or Unusual* Wastes.

2.122.17 Wastewater Treatment Charges. Charges to convey and treat Domestic Quality Wastewater that are based on billed water consumption, an effluent wastewater meter, or a ~~flat rate~~ *Flat Rate*.

2.18 Wastewater Treatment Rate. *Rate per specified unit of measure to recover the costs of conveyance and treatment of Domestic Quality Wastewater.*

3.0 Guiding Principles

3.1 General.

- 3.1.1 To the extent feasible, HRSD is a cost recovery enterprise and supports a uniform rate structure for interception and treatment regardless of which wastewater treatment plant treats a customer's wastewater.
- 3.1.2 Wastewater Treatment and Collection Charges shall not be waived. However, payment extensions may be established for the collection of HRSD Charges.
- 3.1.3 All new connections *and redevelopment* shall pay an equitable share for the treatment and conveyance capacity consumed by their wastewater discharge to the Regional Sanitary Sewer System.
- 3.1.4 All *HRSD* rates shall be reviewed and revised (if required) *at least* annually and approved by the Commission ~~as part of the annual budget process~~. Changes shall be ~~publically~~ *publicly* advertised in accordance with HRSD's Enabling Act ~~as well as and~~ posted on ~~the HRSD~~ *HRSD's* web site.
- 3.1.5 Surcharge rates ~~for high strength wastes~~ are set to recover costs in direct proportion to volume and pollutant concentrations. ~~Since the majority of HRSD's costs are fixed, surcharge rates are based on a marginal cost approach for the variable costs associated with the incremental costs to treat high strength wastes.~~ *in excess of Domestic Quality Wastewater.*
- 3.1.6 ~~Facility Charges are an up-front charge proportional to the cost of treatment and conveyance capacity consumed by each new user. This charge ensures~~ *Facility Charges ensure* that an unfair burden is not placed on existing users that would otherwise pay higher rates to expand the system to accommodate new ~~growth.~~ *flows and loads to HRSD's facilities.* HRSD uses the Rational Nexus Criteria ~~as one of the guiding principles~~ to derive ~~facility charges~~ *Facility Charges*.
- 3.1.7 HRSD will ~~avoid dependence~~ *not depend* on temporary revenues such as grants to fund operating costs. One-time temporary revenues or grants should typically be used to fund ~~capital projects~~ *one-time expenses*.
- 3.1.8 *Surcharge rates are applied to non-permitted commercial facilities using sampling data for groups of businesses that produce similar goods or services using the North American Industry Classification System (NAICS).*

3.2 Basis of Charges.

3.2.1 Wastewater Treatment Charges ~~– HRSD shall establish rates based on~~

- (1) *The Wastewater Treatment Rate is derived from the wastewater quality and one of the following factors: Rate Model, see Appendix A.*
- (2) *Volumetric Accounts*
 - a. Volume of water purchased by the customer (as recorded by a water meter); *or,*
 - b. Volume of effluent discharged to the sewer system (as recorded by an effluent meter)
- ~~(2)~~(3) A rate based on facility use and billing period.
- ~~(3)~~(4) A single family residential ~~flat rate~~ *Flat Rate as defined herein.*
- ~~(4)~~(5) HRSD treatment plants are designed to treat domestic quality wastewater. Additional charges may be assessed for wastewater with qualities that differ from the current definition of Domestic Quality Wastewater.
- ~~(5)~~(6) Minimum charges apply to all accounts, except as specified herein.

~~3.2.1~~3.2.2 Facility Charges.

- (1) HRSD shall establish Facility Charges for new connections based upon the size of the water meter serving the new connection. If the ~~Locality~~ *locality* does not offer a specific meter size, a combination meter is proposed, or ~~other~~ *another* similar scenario *exists*, the Facility Charge may be based on a calculated meter size using the AWWA M22 Sizing Water Service Lines and Meters manual. Additional special exceptions, *including redevelopment provisions*, may be outlined in the HRSD ~~rate schedule~~ *Rate Schedule*.
- (2) The Facility Charge for each meter size is based on the ~~unit volume rate, which is the~~ total net replacement value of all HRSD's assets ~~divided by,~~ HRSD's total hydraulic capacity, ~~times~~ *and* the average water consumption for each meter size.
- (3) HRSD reserves the right to ~~establish facility charges for new connections~~ *require Facility Charges* based upon wastewater that differs

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from domestic quality wastewater and that consumes loading capacity in excess of capacity consumed by the equivalent volume of Domestic Quality Wastewater.

3.2.3.2.3 HRSD Collection System ~~Maintenance Charges~~ *rate - A rate to recover HRSD may establish separate collection system costs for maintenance charges for each Locality and operation of HRSD owned collection systems. The rate shall be based upon the weighted average rate charged by localities within the HRSD Collection System. A weighted average cost of HRSD Locality collection rates will be used to develop the service area for collection system operation and maintenance of locality owned collection rate annually systems.* Localities that do not charge a Locality collection rate will be excluded from this calculation. The weighted average will be based on the latest population estimates provided by the Welden Cooper Center for Public Service or other Commonwealth designated demographics agency. *HRSD may establish separate collection system maintenance charges for each locality within the HRSD Collection System where warranted by unique circumstances.*

3.2.3.2.4 Hauled Wastewater ~~Charges are~~ *Rate - This rate is based on a common charge across all plants five individual charges: BOD, TSS, TP, TKN and volume as derived from the HRSD rate model Rate Model, see Appendix A and are not subject to a minimum charge. Since waste haulers do not use the Interceptor System, those costs are excluded from the volume rate.*

4.0 Procedures

4.1 Determining Costs *Used in the HRSD Rate Model, See Appendix A.*

4.1.1 The budgeted annual costs shall be used to calculate rates that will be in effect for the budget fiscal year.

4.1.2 Budgeted costs shall be loaded into a comprehensive rate model to allocate costs to applicable categories annually ~~(see Appendix A).~~ *The. This model shall allocate costs to volume and each pollutant identified in the current HRSD most recent Domestic Wastewater Survey.*

4.1.3 *The Domestic Wastewater Survey shall be updated every five years or more frequently if permit requirements or treatment technology changes warrant revisiting.*

4.2 Determining Total Wastewater Volume.

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The total volume of wastewater to be billed during a budget year shall be estimated based upon the water consumption trends within the HRSD service area *and other information when available*.

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4.3 Calculating Rates.

4.3.1 The model shall calculate ~~a wastewater treatment rate~~ *the Wastewater Treatment Rate* based on total budgeted cost divided by the estimated volume of wastewater to be billed in the fiscal year. The rate shall be expressed in dollars per hundred cubic feet or per 1,000 gallons.

4.3.2 The ~~model~~ *HRSD Rate Model* shall calculate *the Surcharge Rate for High Strength Waste based on* the incremental cost to treat each additional pound of each pollutant in excess of the pounds of pollutants identified for Domestic Quality Wastewater in the ~~current~~ *most recent* HRSD Domestic *Quality* Wastewater Survey. The rates shall be expressed in dollars per 100 pounds or per milligrams per liter per hundred cubic feet of wastewater.

4.3.3 ~~The new connection charges~~ *Facility Charges* shall be calculated by dividing the replacement cost for all HRSD facilities by HRSD's total hydraulic capacity to obtain the replacement cost per gallon. This replacement cost per gallon shall be multiplied by the estimated flow expected from new connections and *redevelopment and* expressed in dollars per meter size. ~~The~~ *The estimated flow is based on the* average daily flows for each size water meter ~~shall be determined~~ using actual historical data from HRSD's meter database *and any additional information available.*

4.3.4 Flat Rate ~~Accounts are for single family residential accounts with water meters 1" and smaller that do not have a water meter or that use a significant amount of water that is not discharged to~~ *shall be calculated by determining the sanitary sewer.* ~~The Flat Rate is based on~~ average ~~residential~~ water consumption for *the months of January, February, and March for all existing flat rate accounts for* a 30-day period ~~times multiplied by the prevailing~~ Wastewater Treatment Rate. ~~The General Manager or Director~~

4.3.4.3.5 *Daily Minimum shall be calculated by dividing the total labor costs (not dependent on volume of Finance may approve a flat rate account for water meters greater than 1" if the requestor provides sufficient evidence that there is a significant portion wastewater conveyed or treated) of water that is not discharged into the sanitary sewer system relative to the Operations Department by the total number of accounts' ten-year rolling average residential water consumption divided by 365.*

~~4.3.5~~ ~~The minimum charge for all accounts will be specified in the Rate Schedule.~~

4.4 Implementation.

COMMISSION ADOPTED POLICY
Revenue Policy



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4.4.1 All rates shall be approved by the Commission ~~as part of the annual budget process.~~

4.4.2 Rates shall be advertised for four consecutive weeks in a newspaper of general circulation within the District.

4.5 Financial Forecast.

HRSD will analyze water consumption, regional economic and population data periodically to identify any trends that may impact ~~the long-range financial forecast. Based on this analysis, a conservative approach will be used to project revenues in the long-range financial forecast~~ *its long-range financial forecast. HRSD will also analyze and conservatively project major expense drivers, such as construction costs, inflation, operating cost increases, and borrowing costs. The forecast should target financial metrics, across the twenty-year period, that are consistent with rating agency metrics for a strong, double-A rated credit. This approach will ensure the long-range forecast is resilient and maintains HRSD's strong financial framework.*

4.6 Collections.

4.6.1 HRSD will monitor all collections to ensure they are equitably administered, timely and accurate. The cost of collections shall not exceed the marginal incremental revenue and it should not be a large percentage of the amount to be collected.

4.6.2 *Charges shall be collected for all services rendered unless determined to be uncollectable.*

4.6.3 *Charges may be assessed for services received but not billed (for any reason) for a period of up to three prior years. The rate in effect in the year treatment services were provided shall be applied. If necessary, at HRSD's sole discretion, billing adjustments and/or payment plans may be established for payment of delayed billing or unbilled previous service.*

4.6.4 *Past due charges for services received and billed shall be pursued for up to 10-years after write-off.*

4.6.5 *If a customer has past due charges on any account for services received, and establishes a new account within HRSD's service area, customer will be subject to the past due charges being transferred to their active account, and collection will be pursued.*

COMMISSION ADOPTED POLICY
Revenue Policy



Adopted: May 23, 2017

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5.0 Responsibility and Authority

- 5.1 The General Manager shall ensure the Commission reviews all rates annually as part of the annual budget process.
- 5.2 Rates may only be changed with an affirmative vote of a majority of the Commission at a legally noticed public meeting of the Commission.
- 5.3 The General Manager shall ensure any rate revisions are advertised and published in accordance with the HRSD Enabling Act.
- 5.4 The Director of Finance will present an updated Financial Forecast to the Commission and manage the update to the Rate Model on an annual basis.

Approved:

Frederick N. Elofson
Commission Chair

Date

Attest:

Jennifer L. Cascio
Commission Secretary

Date

COMMISSION ADOPTED POLICY
DRAFT Revenue Policy
Appendix A – Rate Model Summary



Adopted: May 23, 2017

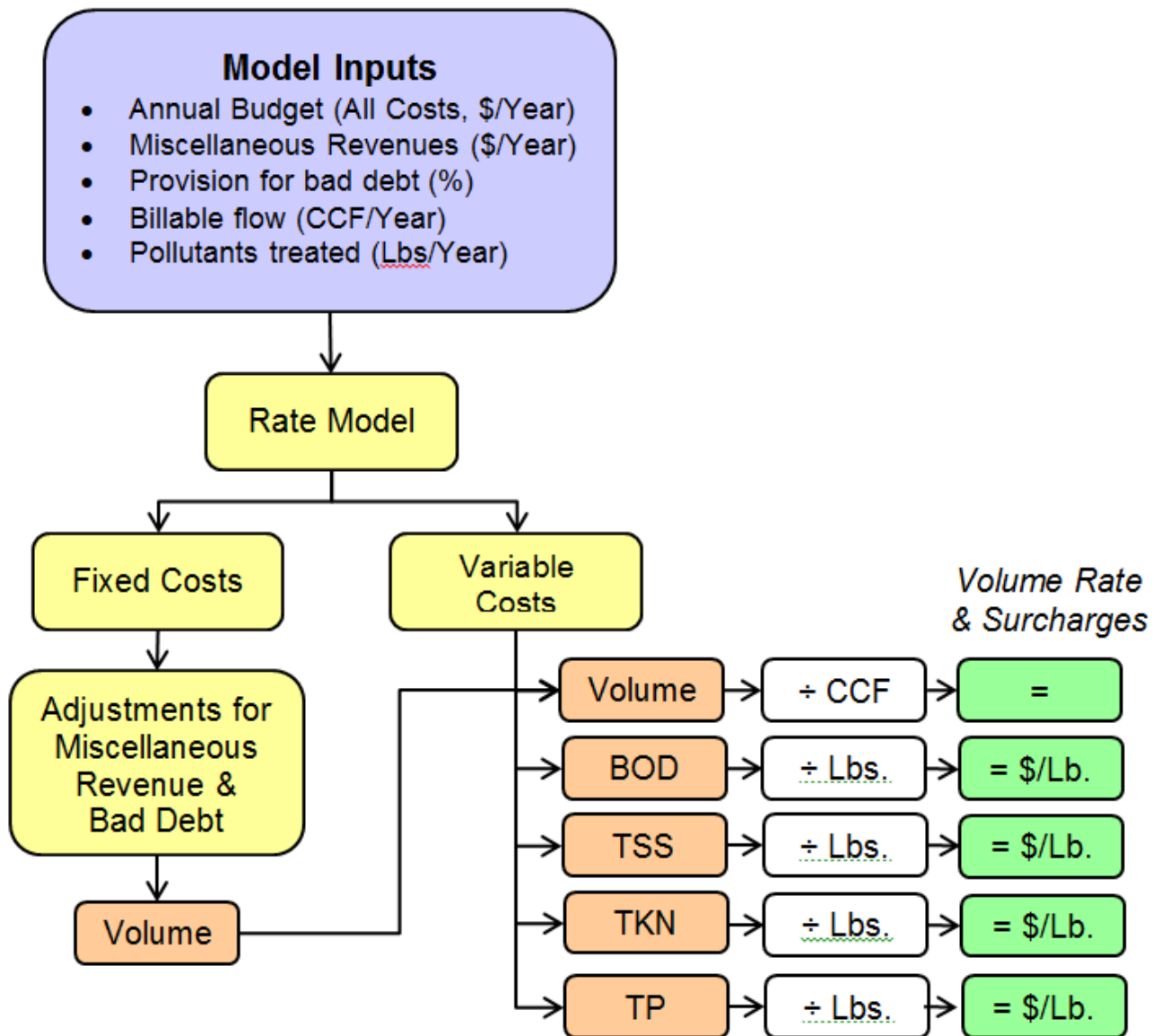
Revised: ~~N/A~~ May 28, 2019

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1.0 HRSD's Rate Model Summary

HRSD's ~~rate model~~ *Rate Model* uses a cost accounting process to allocate all operating costs to volume and each of four specific pollutants. The model designates each line item cost as fixed or variable. Fixed costs are those that are not influenced, in the short run, by volume or the quantity of pollutants in the wastewater being treated. These include for example, personnel costs, office, administrative, customer service, billing and collection expenses, and debt service. Conversely, variable costs are those that are affected by the volume and the amount of pollutants present; these include treatment plant expenditures for chemicals, electricity, fuel, and solids disposal. The rate model uses engineering criteria to allocate the variable costs to each of the four pollutants. Once the operating costs have been allocated, the model deducts miscellaneous revenues, includes a provision for bad debt, and derives rates for volume (\$/CCF) and high strength surcharges (\$/pound); the latter equates to HRSD's marginal or incremental cost attributable to treating each pollutant in excess of the amount present in typical domestic wastewater and is also presented as the equivalent \$ per mg/l per 100 CF to facilitate calculation by customers. Net fixed costs and the variable costs to treat the four pollutants present in typical domestic sewage are recovered via the volume rate and surcharges.

2.0 Rate Model Schematic



HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #4

AGENDA ITEM 5. – Fiscal Year-2020 (July 1, 2019 – June 30, 2020) Budgets



Annual Budget

Fiscal Year 2020
(July 1, 2019 - June 30, 2020)



HRSD Annual Budget For
Fiscal Year 2020
(July 1, 2019 – June 30, 2020)

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Introduction



General Manager's Introduction

The voters of Virginia took the bold step in 1940 to address pollution in the Hampton Roads by approving a referendum creating the Hampton Roads Sanitation District (HRSD). That public approval capped a 15-year grassroots campaign that began when the shell-fishing beds in the Hampton Roads were closed by the Virginia Department of Health. At the time, over 30 million gallons of untreated sewage was being dumped into the waters of the Hampton Roads each day. It would take the United States Congress another 32 years to tackle the issue of water pollution on a national scale, finally passing the Clean Water Act in 1972.

Over the past 79 years, HRSD has developed into one of the premier wastewater treatment organizations in the nation. With 18 treatment facilities capable of treating 249 million gallons of wastewater each day, HRSD has eliminated the discharge of untreated sewage into the waters of Hampton Roads from the homes and businesses within our region. However, there is more work to be done to further improve water quality as well as preserve our 79-year investment in wastewater infrastructure.

The Governor-appointed, eight-member HRSD Commission approved this Fiscal Year 2020 budget at its regular meeting on May 28, 2019. The Commission and the HRSD staff worked diligently to balance our focus on stewardship of our ratepayers' hard earned dollars with our mission of stewardship of the waters of the Hampton Roads. The cost of wastewater treatment continues to rise here, as it does across the nation. However, wastewater treatment is still a bargain in Hampton Roads, with the typical household paying about \$1 per day for this essential service, protecting public health and our treasured local waterways.

Federal Mandates Drive HRSD Spending

The regional sewer system, although never designed to handle storm water, fills with rainwater runoff, ground water and tidal water during larger storms. At times, the regional system fills beyond capacity and overflows onto local streets. While these occasional overflows have minimal impact on water quality, the U.S. Environmental Protection Agency has made minimizing these types of events a national priority, and HRSD is under a Federal mandate to invest nearly \$2 billion (equaling more than \$4,200 per HRSD customer account) to further reduce the number and volume of overflows from the regional sewer system. In response to this mandate, HRSD is working throughout the region, in partnership with the local governments we serve, to minimize the impact of storm events on the regional sewer system and the waterways we value so greatly.

The Federally mandated requirement to reduce the amount of nutrients that HRSD's treatment plants discharge into the Chesapeake Bay has also required a significant investment in infrastructure and process improvements. The investments by HRSD along with all of Virginia's wastewater treatment plants in the Bay watershed have resulted in Virginia meeting the 2025 goal for nutrient reductions from wastewater treatment plants a full seven years ahead of the 2025 target date ([Chesapeake Bay Foundation's 2017 Virginia Midpoint Assessment](#)). Unfortunately, the agricultural and stormwater required reductions in Virginia are lagging behind, and Virginia is looking to require further expensive reductions from wastewater treatment facilities to compensate for the lack of progress with these other major nutrient sources.

Pursing Innovative Solutions to Reduce Costs and Protect Water Quality

HRSD continues to lead international research efforts to reduce the cost of removing nutrients from wastewater. HRSD's research work is leveraged through partnerships with leading universities and other

innovative wastewater utilities throughout the world. Putting the knowledge gained into practice has already yielded a significant return on our investment by reducing operational costs for nutrient removal as well as minimizing the capital investment required to construct new systems. A recent estimate of the value of this research found that implementation of these practices has kept energy and chemical costs from rising nearly \$40 million over the past 10 years.

Throughout HRSD's history, changing regulations have required development and implementation of innovative solutions to meet new standards to protect and restore the quality of the waters of Hampton Roads. Treatment processes have progressed from primary, to secondary, to our current advanced nutrient removal processes. Each regulatory change has required significant investment in new treatment processes. Under current regulations, the treated water HRSD discharges to area waterways is nearly clean enough to drink and substantially cleaner than the waterways themselves. With the addition of a few more treatment processes, HRSD can produce water that exceeds drinking water standards, likely to be the ultimate regulatory mandate at some point in the future.

With the various water-related challenges facing Hampton Roads and the Commonwealth, it appears there could be significant benefit from HRSD investing in additional treatment processes to treat water to meet drinking water standards as soon as possible, even before that becomes a regulatory requirement. The challenges of restoring the Chesapeake Bay, the depletion of our groundwater reserves, the impact of sea level rise and the threat of salt-water contamination of coastal groundwater may all be addressed with HRSD's Sustainable Water Initiative for Tomorrow (SWIFT). The concept is for HRSD to treat water to meet drinking water standards and use it to recharge the groundwater aquifer, providing a sustainable source of groundwater, slowing the rate of land subsidence due to over withdrawal of the groundwater, blocking salt water intrusion with a pressurized fresh water barrier and practically eliminating HRSD nutrient discharges to the York, James and Elizabeth Rivers. The benefits of SWIFT are significant and are needed immediately.

Financing a Sustainable Water Future

HRSD is pursuing SWIFT with a goal of obtaining required approvals to construct full-scale facilities beginning in 2020. The SWIFT Research Center began operations in May 2018 and has already recharged the aquifer with over 100 million gallons of SWIFT Water, wastewater treated to meet drinking water standards. HRSD is committed to full scale implementation of this initiative only if it can be accomplished within the financial framework laid out in the Financial Forecast as presented in this budget. In a rare bipartisan move, Congress passed [H.R. 7279](#) in December 2018 and signed by the President in January 2019, amending the Federal Water Pollution Control Act ***“to provide for an integrated planning process, to promote green infrastructure, and for other purposes.”*** This new law codifies the integrated planning process HRSD has already been using to prioritize our investments in clean water mandates. Integrated planning provides the ability to defer many of the proposed capital improvements related to reducing system overflows until after SWIFT is complete. HRSD remains committed to eliminating system overflows; however, the impact of those transient events on local water quality is minimal and the benefits nearly unperceivable. In contrast, the positive impact SWIFT will have on local waterways, eastern Virginia and the entire Chesapeake Bay is significant, will be immediately evident and critical to sustaining the vitality and prosperity of Hampton Roads and all of eastern Virginia for generations to come.

Reducing overflows from the regional sewer system and reducing the amount of nutrients discharged by our treatment plants are both driven by regulations with which HRSD must comply. These regulatory mandates consume over 80 percent of the \$2.8 billion 10-year Capital Improvement Plan. It is within that portion of our capital improvement plan that we will reprioritize mandated projects to allow construction of SWIFT, to achieve significantly more environmental benefits without influencing our Financial Forecast.

HRSD finances its capital projects by issuing bonds and using cash on hand. Over the past 10 years, the annual investment in capital projects (debt payments and cash funded) has grown from less than 38 percent of HRSD's total revenue to more than 50 percent with the Fiscal Year 2020 budget. HRSD is investing in the regional wastewater infrastructure to ensure we leave a fully functional system to the next generation. While HRSD continues to focus on making the right investments in Hampton Roads, across the nation the need for investment in all infrastructure continues to grow. The [American Society of Civil Engineers' 2017 Infrastructure Report Card](#) graded the current state of wastewater infrastructure at a D+. [The US Water Alliance's Report, The Economic Benefits of Investing in Water Infrastructure](#), estimates the unmet wastewater investment at over \$82 billion per year. The report highlights the lack of adequate federal investment in wastewater infrastructure, showing the drop in federal investment from 63 percent in 1977 to less than 9 percent in 2016. State, regional and local governments have had to fill that funding gap, passing on significant rate increases as utilities must price service to recover full costs. In Fiscal Year 2020, despite the lack of federal funding and HRSD's significant commitment to maintaining the appropriate level of investment in wastewater infrastructure in Hampton Roads, our average residential customers will see their monthly bills increase by less than 10 cents per day.

The Community's Role

Our ratepayers can help control their costs by helping us control ours. Ensuring storm water runoff from downspouts, area drains and sump pumps is not directed to the sanitary sewer system, and ensuring privately owned service piping is well maintained and leak free will reduce the amount of water in the sewer system. This ultimately lowers our costs to pump and treat the region's wastewater. Collecting fats, oils and grease in a container for disposal in the trash, as opposed to pouring them down the drain, reduces wastewater system maintenance and operating costs. Proper disposal of unused medications (and other substances) prevents them from reaching our treatment plants, which are not designed for removal of such substances. Our ratepayers can make a difference by not flushing unused medications down the sink or the toilet. Every flush counts.

As we reflect on 79 years of protecting public health and the waters of Hampton Roads, we remember the mandate so boldly declared by those environmentally concerned Virginians in 1940. It was their foresight that allows us to enjoy the waters of Hampton Roads today. It will take our continued innovation, investment and foresight to ensure future generations will inherit clean waterways and be able to keep them clean.

Sincerely,

A handwritten signature in black ink, appearing to read "Ted Henifin", followed by a long horizontal flourish.

Ted Henifin, P.E.
General Manager

Principal Officials

May 28, 2019

COMMISSIONERS

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, PE
Director of Engineering

James J. Pletl, PhD
Director of Water Quality

Leila Rice, APR
Director of Communications

COUNSEL

Kellam, Pickrell, Cox & Anderson, PC
General Counsel

Jones, Blechman, Woltz & Kelly, PC
Associate Counsel

AquaLaw, PLC
Special Counsel

Norton Rose Fulbright US, LLP
Bond Counsel

Key Facts

Service Area and Operations

Date Established	November 5, 1940
Communities Served	18 communities encompassing 3,087 square miles HRSD is a political subdivision of the Commonwealth of Virginia, created for the specific purpose of water pollution abatement in Hampton Roads by providing a system of interceptor mains and wastewater treatment plants.
Population Served	About 1.7 million, nearly one-fifth of Virginia's population, reside in HRSD's service area.

Operation and Facilities

No. of Positions (FY-2020)	847
Miles of Interceptor Systems	542 Miles
Wastewater Treated	145 million gallons per day average
Wastewater Capacity	249 million gallons per day average

Financial Information

Bond Ratings

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	Aa2	n/a

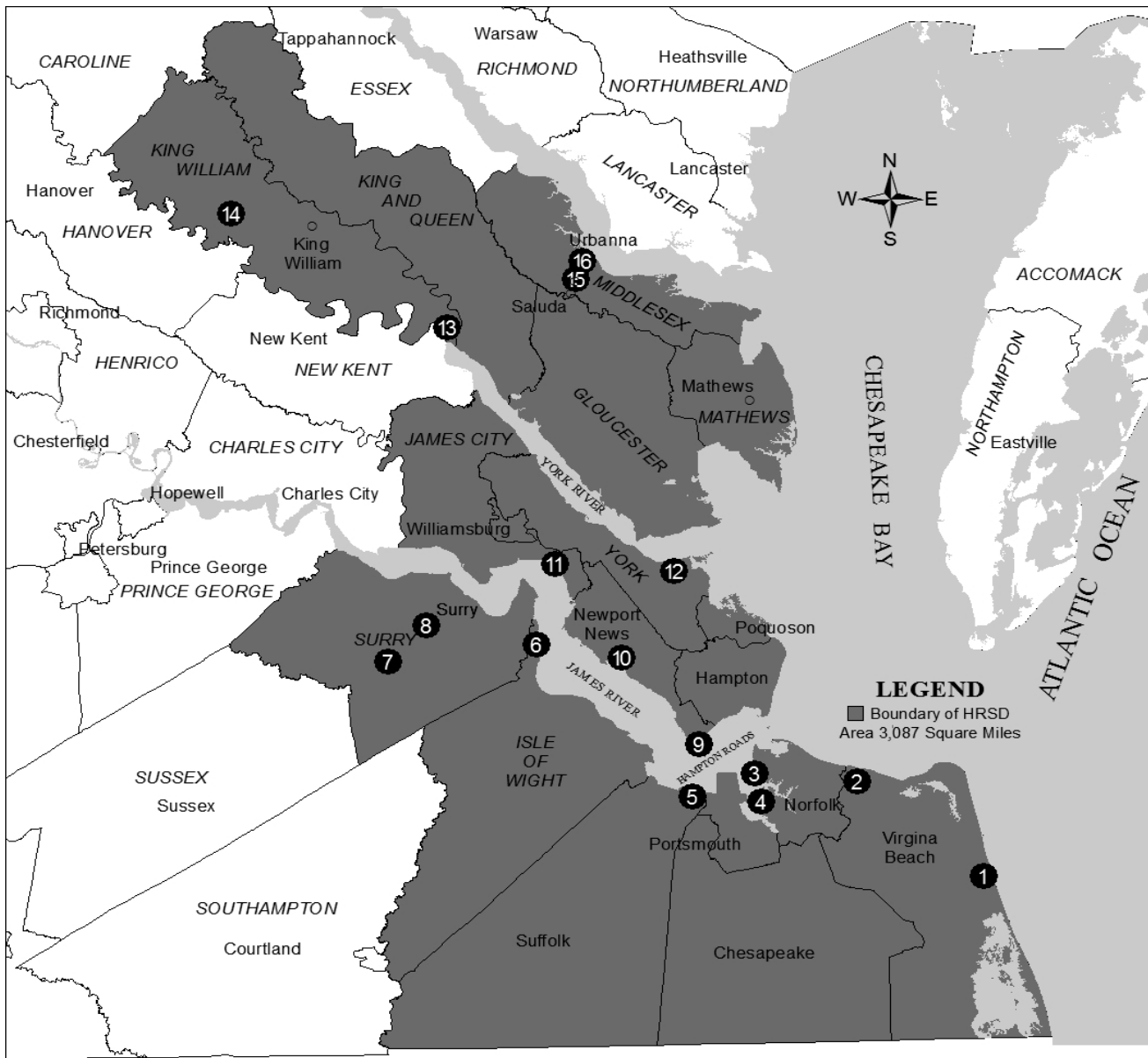
Operating Budget (FY-2020)	\$337,805,000
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HRSD Service Area

A Political Subdivision of the Commonwealth of Virginia

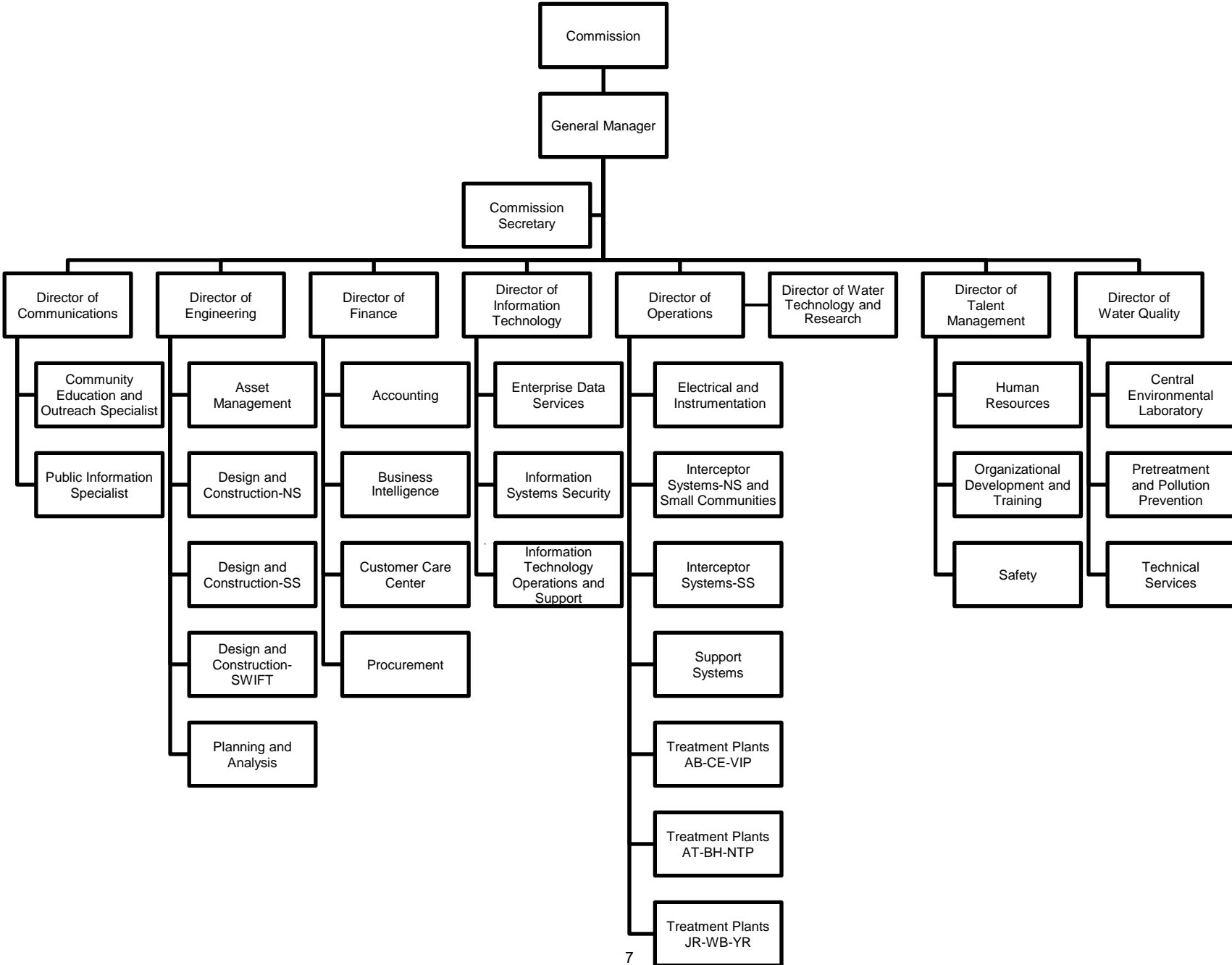
Facilities include the following:

- | | | |
|---|---|--|
| <ol style="list-style-type: none"> 1. Atlantic, Virginia Beach 2. Chesapeake-Elizabeth, Va. Beach 3. Army Base, Norfolk 4. Virginia Initiative, Norfolk 5. Nansemond, Suffolk 6. Lawnes Point, Smithfield 7. County of Surry 8. Town of Surry | <ol style="list-style-type: none"> 9. Boat Harbor, Newport News 10. James River, Newport News 11. Williamsburg, James City County 12. York River, York County 13. West Point, King William County 14. King William, King William County 15. Central Middlesex, Middlesex County 16. Urbanna, Middlesex County | <p style="text-align: center;">Serving the Cities of
Chesapeake, Hampton,
Newport News, Norfolk,
Poquoson, Portsmouth, Suffolk,
Virginia Beach, Williamsburg and the
Counties of Gloucester,
Isle of Wight, James City,
King and Queen, King William,
Mathews, Middlesex, Surry* and York
*Excluding the Town of Claremont</p> |
|---|---|--|



HRSD Organization Chart

July 1, 2019



History of HRSD

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 staffs.

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 2017.

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 every HRSD treatment plant during calendar year 2017. The major treatment plants received the following awards in recognition of their outstanding permit compliance status: Atlantic—Gold, Boat Harbor—Platinum (16 consecutive years), Chesapeake-Elizabeth—Silver, James River—Gold, Nansemond—Platinum (16 consecutive years), Virginia Initiative Plant—Platinum (22 consecutive years), Williamsburg—Platinum (23 consecutive years) and York River—Platinum (10 consecutive years). Three treatment plants in the Small Communities Division, Central Middlesex, King William and Urbanna, earned Silver Awards while West Point received a Gold Award.

Highlighting 2018, HRSD's SWIFT (Sustainable Water Initiative for Tomorrow) Program was awarded the U.S. Water Prize for the public sector by the U.S. Water Alliance. HRSD's other honors received in 2018 include the NACWA National Achievement Award - Workforce Development Award for the HRSD Apprenticeship Program and the NACWA National Achievement Award - Operations & Environmental Performance Award for the HRSD Pump Station Architectural Guidelines. HRSD also earned a National Award from the American Council of Engineering Companies (ACEC) for the HRSD Norchester Pump Station. And, HRSD was recognized by the Elizabeth River Project as a Sustained Distinguished Performance Model Level River Stars Business.

Rate Schedules

WASTEWATER TREATMENT RATE SCHEDULE

<u>Service</u>		<u>FY-2020</u>	<u>FY-2019</u>
Flow (monthly basis)			
Per CCF *		\$ 5.86	\$ 5.37
Minimum charge (per day)		0.30	0.30
Surcharge, per milligrams/liter per CCF	<u>In Excess of</u>		
Biochemical Oxygen Demand (BOD)	282 mg/L	\$ 0.000129	\$ 0.000104
Total Suspended Solids (TSS)	261 mg/L	0.000630	0.000592
Total Phosphorus (TP)	6 mg/L	0.009871	0.009535
Total Kjeldahl Nitrogen (TKN)	47 mg/L	0.003378	0.003595
Surcharge, per 100 pounds			
BOD	282 mg/L	\$ 2.07	\$ 1.67
TSS	261 mg/L	10.08	9.49
TP	6 mg/L	158.12	152.74
TKN	47 mg/L	54.11	57.59
Septic, per gallon		\$ 0.1717	\$ 0.1697
Residential flat rate (per 30-day period)		\$ 48.64	\$ 34.91

* CCF = 100 Cubic Feet (approximately 748 gallons)

VOLUME BASED FACILITY RATE SCHEDULE

<u>Meter Size</u>	<u>FY-2020</u>	<u>FY-2019</u>
5/8 Inch	\$ 1,905	\$ 1,895
3/4 Inch	4,210	4,830
1 Inch	7,410	8,170
1 1/2 Inch	16,645	17,260
2 Inch	30,505	30,510
3 Inch	73,810	70,800
4 Inch	138,445	128,660
6 Inch	336,960	298,610
8 Inch	634,710	542,680
10 Inch	1,038,525	862,550
12 Inch	1,554,120	1,259,520
14 Inch	2,186,505	1,734,700
16 Inch	2,940,135	2,289,010

SMALL COMMUNITIES RATE SCHEDULE

	<u>FY-2020</u>	<u>FY-2019</u>
Flow (monthly basis)		
Per 1,000 gallons		
King William	\$ 13.82	\$ 13.25
Mathews	13.43	12.71
Surry	13.43	12.71
Urbanna	15.48	14.84
West Point	15.71	14.95
Residential flat rate (per 30-day period)		
King William	\$ 55.28	\$ 53.00
Mathews	53.72	50.84
Surry	53.72	50.84
Urbanna	61.92	59.36
West Point	62.84	59.80

FEES

	<u>FY-2020</u>	<u>FY-2019</u>
Damaged lock	\$ 100	\$ 100
Service restoration	100	100
Meter reading (customer-owned meter)	75	75
Inaccessible meter	50	50
Access card replacement	25	25
Returned payments	25	25
Delinquency service trip	15	15
Account documentation	10	10
Deduction meter	2	2

Reader's Guide to the Annual Budget

PURPOSE

The Annual Budget is an instrument that sets HRSD's budgetary policy and authorization to raise revenues and spend funds each fiscal year. The development of the Annual Budget is guided by HRSD's mission and vision statements:

- HRSD's mission is to protect public health and the waters of Hampton Roads by treating wastewater effectively.
- HRSD's vision is future generations will inherit clean waterways and be able to keep them clean.

ANNUAL BUDGET OVERVIEW

HRSD's Annual Budget contains the following sections:

Financial Forecast

This section provides a high level, 20-year forecast of projected retail rate increases, operating revenues and expenses, capital improvements and related funding sources, amounts contributed to and fiscal year-end balances of cash and investment reserves, and selected financial ratios that help to measure the financial health of HRSD.

The forecast is an inflationary based model where trends from past fiscal years and proposed operating budgets are used to forecast future operating needs. Transfers to reserves and to the Capital budget are forecast to be in amounts that are not less than parameters established within HRSD's Financial Policy. Debt service for permanent financings are generally forecast to have a maximum term of 30 years at an interest rate that approximates 20-year average fixed rates for HRSD. Interim, or construction, financings' interest rates are based on a 10-year historical average.

Operating Budget

The Operating Budget represents the authorization by the HRSD Commission to spend funds directly related to operating and maintaining HRSD's programs and assets during the fiscal year. This section includes each department's annual operating budgets. Those expenses that are not attributable to a specific department are assigned to "General Expenses." Transfers represent authorization to transfer revenues raised from operations to either the Capital Budget or to various reserves established in HRSD's Financial Policy. The Operating Budget Summary provides the budget by department and major object code classification. Department Budgets and General Expenses, Debt Service and Transfers detail budget expenditures by major object code classification. The number of full-time positions authorized for the fiscal year is provided by department.

Capital Budget

The Capital Budget represents a plan of specific, major capital improvements over a period of ten fiscal years. The Capital Budget is not an approval or appropriation of funds for individual projects. There is no authorization or funding for individual projects until the Commission acts on the specific project. The Commission formally authorizes spending for individual projects throughout a fiscal year and generally upon project initiation.

The Summary Schedule details the funding sources for capital improvements as well as planned expenditures.

A formal, detailed, Capital Improvement Program with more specific project information is available at <https://www.hrsd.com/cip>.

HRSD's budget authorizations, capital improvement plans, user rate setting practices and other significant financial practices are guided by HRSD's Financial Policy. The Financial Policy and Revenue Policy are available at <https://www.hrsd.com/finance>.

HRSD's Rate Schedule is available at <https://www.hrsd.com/finance>.

BUDGETARY PROCESS

HRSD prepares its Annual Budget under the provisions of its enabling legislation and its 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 Budget by March 1 for the General Manager's review.

The HRSD Commission appoints a Finance Committee which typically consists of two Commissioners. The committee meets in early April to review the budgets. The Commission reviews these budgets during its April 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 changes. All rate adjustments must be publically advertised four consecutive weeks before they can take effect.

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

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. Appropriations

lapse at the end of the fiscal year. Valid, outstanding encumbrances (those for which performance under a contract is expected in the next year) are re-appropriated without further approval by the Commission and become part of the subsequent year's budget.

The Capital Budget represents a ten-year plan. Funds for the Capital Budget are adopted 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.

Glossary of Financial Terms

Appropriation: An authorization granted by the Commission to incur obligations for specific purposes. Appropriations are usually limited to amount, purpose and time.

Basis of Accounting: HRSD's financial statements report the financial position and results of operations of HRSD in accordance with generally accepted accounting principles in the United States of America (GAAP).

Bond Ratings: A grade given to bonds that represents a measure of their credit quality. Private independent rating services such as Standard & Poor's, Moody's and Fitch provide these evaluations of a bond issuer's financial strength, or its the ability to pay a bond's principal and interest in a timely fashion.

Capital Improvement Program (CIP): Ten-year plan for major non-recurring facility, infrastructure, or acquisition expenditures that expand or improve HRSD and/or community assets. Projects included in the CIP include physical descriptions, implementation schedules, year of expenditure cost and funding source estimates, and an indication of HRSD Commission priorities and community benefits

Centum Cubic Feet (CCF): Typical unit in which industrial-consumption of natural gas or water is measured; each CCF being 100 cubic-feet.

CIP Percent Cash Funded: Percent of each year's capital improvement plan funded with cash through transfers from operations. HRSD's Financial Policy requires that at least 15 percent of each year's planned capital improvements be funded with cash. This ratio indicates the amount of capital improvements that are not leveraged.

Days Cash on Hand: Measured by current and non-current cash and investments, plus any restricted cash and investments, if available for general system purposes, divided by operating and maintenance expenses less depreciation, divided by 365. This calculation will exclude accrued debt service for the next fiscal year and all funds in the Risk Reserve and Renewal and Replacement Reserve.

Debt Service: Amount of money necessary to pay principal and interest on bonds outstanding.

Debt Service as a Percent of Revenues: Total revenues divided by total debt service. This ratio measures the debt service burden compared to total revenues.

Risk Management Reserve: HRSD maintains a self-insurance program for some of its risk exposures. HRSD'S Financial Policy requires HRSD to maintain a Risk Management Reserve as of the end of the fiscal year of not less than 25 percent of projected annual self-insured claims costs for known, retained risks.

Senior Debt Service Coverage: Current-year revenues available for debt service divided by current-year senior lien debt service. This ratio indicates the financial margin to meet current senior lien debt service with current revenues available. HRSD's Financial Policy requires that Senior Debt Service Coverage will not be less than 1.5 times senior lien debt service. When

calculating compliance with this coverage requirement, HRSD may make reasonable adjustments to the net revenues as presented on a basis consistent with generally accepted accounting principles. HRSD's Senior Trust Agreement requires Senior Debt Service Coverage, which is determined by dividing the Income Available for Debt Service by the Maximum Annual Debt Service, will not be less than 1.2 times.

Total Debt Service (Adjusted): Calculated in accordance with HRSD's Subordinate Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service. In such calculation, funds spent on Locality Assets may be excluded from the calculation of Net Revenues under the circumstances described within the definitions of Net Revenues and Operating Expenses. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).

Total Debt Service Coverage Ratio (GAAP): Calculated in accordance with HRSD's Senior Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service. In such calculation, funds spent on Locality Assets are considered an expense. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).

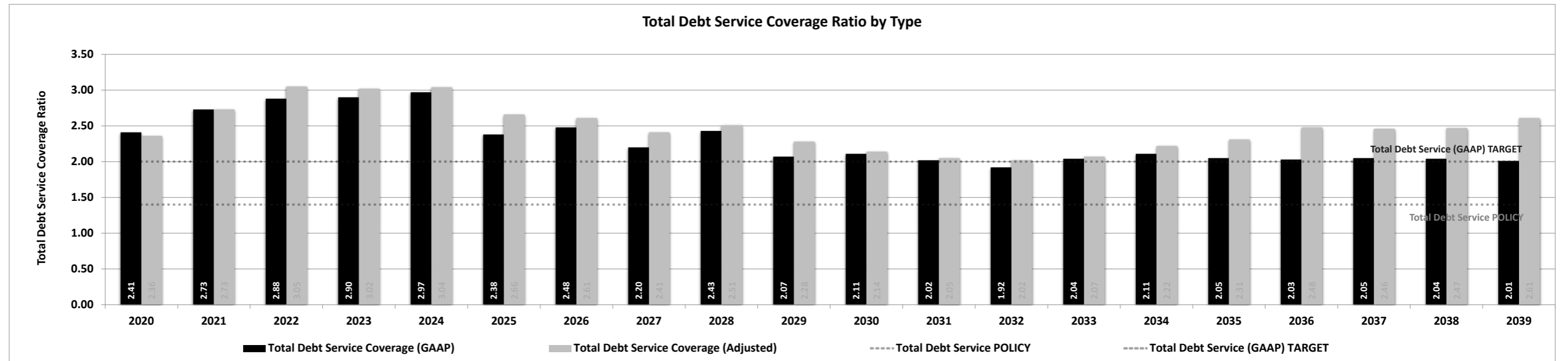
Trust Agreement: The formal agreement between bond holders, acting through a trustee, and HRSD.

Unrestricted Cash: Unrestricted cash and investments at fiscal year-end that are not earmarked for another purpose.

A photograph of a water treatment facility featuring several large, circular concrete tanks. In the foreground, a concrete weir structure is visible, with water cascading over it. The tanks are filled with clear blue water. A metal railing is visible in the background, and the overall scene is brightly lit. A semi-transparent teal graphic overlay is present on the left side of the image.

Financial Forecast

Financial Forecast (in thousands)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Operating Budget Forecast																				
Projected Annual Water Consumption Decline		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Wastewater Rate Increase	9.1%	9.0%	9.1%	9.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	3.5%	3.5%
Revenues																				
Operating Revenues	\$ 324,650	\$ 349,347	\$ 376,115	\$ 404,884	\$ 427,953	\$ 452,536	\$ 478,582	\$ 506,039	\$ 530,455	\$ 555,786	\$ 582,476	\$ 610,475	\$ 639,736	\$ 670,677	\$ 703,238	\$ 737,360	\$ 772,988	\$ 810,510	\$ 829,961	\$ 850,256
Non-operating Revenues	13,155	13,422	13,518	13,699	13,714	13,914	14,709	14,871	15,193	15,103	15,575	15,895	15,963	17,226	17,117	17,628	18,372	19,341	19,422	19,725
Total Revenues	337,805	362,768	389,633	418,584	441,667	466,450	493,291	520,910	545,648	570,890	598,051	626,370	655,699	687,903	720,355	754,989	791,360	829,851	849,383	869,981
Expenses																				
Salaries	57,346	59,560	61,859	64,247	66,726	69,302	71,977	74,755	77,641	80,638	83,057	85,549	88,115	90,759	93,482	96,286	99,175	102,150	105,214	108,371
Benefits	24,217	25,330	26,485	27,680	28,930	30,237	31,604	33,034	34,529	36,093	37,578	39,127	40,745	42,435	44,199	46,042	47,967	49,978	52,078	54,273
Materials & Supplies	8,129	8,457	8,799	9,154	9,524	9,909	10,309	10,725	11,159	11,610	12,079	12,441	12,814	13,199	13,595	14,002	14,422	14,855	15,301	15,760
Transportation	1,579	1,623	1,668	1,715	1,763	1,812	1,862	1,914	1,968	2,022	2,079	2,141	2,206	2,272	2,340	2,410	2,482	2,557	2,634	2,713
Utilities	12,726	13,083	13,451	13,829	14,217	14,615	15,023	15,441	15,869	16,307	16,755	17,213	17,681	18,159	18,647	19,145	19,653	20,171	20,700	21,239
Chemical Purchases	10,715	11,044	11,383	11,732	12,092	12,464	12,846	13,241	13,647	14,066	14,498	14,933	15,381	15,842	16,317	16,807	17,311	17,831	18,365	18,916
Contractual Services	34,471	36,195	38,005	39,905	41,900	43,995	46,195	48,504	50,930	53,476	56,150	57,834	59,570	61,357	63,197	65,093	67,046	69,057	71,129	73,263
Miscellaneous Expenses	6,824	7,029	7,240	7,457	7,681	7,911	8,148	8,393	8,645	8,904	9,171	9,446	9,730	10,021	10,322	10,632	10,951	11,279	11,618	11,966
Major Repairs and Replacements	9,001	9,272	9,550	9,836	10,131	10,435	10,748	11,071	11,403	11,745	12,097	12,460	12,834	13,219	13,616	14,024	14,445	14,878	15,324	15,784
Capital Acquisitions	302	311	320	330	339	350	360	371	382	394	405	417	430	443	456	470	484	498	513	529
Total Operating Appropriations from Budget	165,309	171,903	174,157	181,154	195,380	213,421	232,603	241,986	251,759	261,938	296,798	306,418	344,657	356,726	368,421	380,509	393,005	405,923	419,277	433,084
Debt Service																				
Debt Service	63,895	64,316	66,690	75,386	77,231	92,744	95,259	113,274	112,486	133,158	134,812	152,568	146,697	155,036	152,495	157,013	155,085	168,488	169,830	164,619
Transfer to Capital Improvement Plan (PAYGO)	108,341	120,240	138,931	158,717	158,197	125,260	155,359	149,095	181,149	152,950	149,503	160,368	109,313	175,813	174,162	182,661	199,280	246,781	242,512	233,621
Transfer to General Reserve (Unrestricted Cash)	-	6,306	9,663	3,129	10,651	34,806	9,839	16,312	-	22,576	16,655	6,721	54,720	-	24,933	34,444	43,608	8,258	17,343	38,215
Transfer to Risk Management Reserve	260	4	192	198	208	219	230	242	254	267	281	296	311	327	344	362	381	401	421	443
Total Appropriations	\$ 337,805	\$ 362,768	\$ 389,633	\$ 418,584	\$ 441,667	\$ 466,450	\$ 493,291	\$ 520,910	\$ 545,648	\$ 570,890	\$ 598,051	\$ 626,370	\$ 655,699	\$ 687,903	\$ 720,355	\$ 754,989	\$ 791,360	\$ 829,851	\$ 849,383	\$ 869,981
Capital Improvement Budget Forecast																				
Beginning Capital Reserves	\$ 76,631	\$ 648	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sources of Funds																				
Debt funded (Revenue Bonds and Interim Financing)	-	63,654	87,069	141,283	141,803	174,740	144,641	175,905	193,851	97,050	100,497	59,632	90,687	24,187	50,838	102,339	135,720	103,219	107,488	76,379
Virginia Clean Water Revolving Loan Fund	30,246	3,218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hampton Roads Sanitation District - Cash	108,341	120,240	138,931	158,717	158,197	125,260	155,359	149,095	181,149	152,950	149,503	160,368	109,313	175,813	174,162	182,661	199,280	246,781	242,512	233,621
Reimbursements	430	5,241	4,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Resources	215,648	193,000	230,000	300,000	300,000	300,000	300,000	325,000	375,000	250,000	250,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000	310,000
Uses of Funds - Capital Expenditures																				
Uses of Funds - Capital Expenditures	215,000	193,000	230,000	300,000	300,000	300,000	300,000	325,000	375,000	250,000	250,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000	310,000
Ending Capital Resources	\$ 648	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reserves Balance Forecast																				
Days Cash on Hand	361 days	365 days	365 days	365 days	365 days	365 days	365 days	365 days	367 days	365 days	365 days	365 days	365 days	367 days	365 days	365 days	365 days	365 days	365 days	365 days
Unrestricted Cash	\$ 175,230	\$ 181,536	\$ 191,199	\$ 194,327	\$ 204,979	\$ 239,784	\$ 249,624	\$ 265,936	\$ 265,936	\$ 288,512	\$ 305,167	\$ 311,888	\$ 366,608	\$ 366,608	\$ 391,541	\$ 425,985	\$ 469,593	\$ 477,851	\$ 495,194	\$ 533,409
Risk Reserve	3,613	3,617	3,808	4,007	4,215	4,434	4,664	4,906	5,160	5,428	5,709	6,005	6,316	6,644	6,988	7,350	7,731	8,132	8,553	8,997
Total Reserves Balance	\$ 178,843	\$ 185,153	\$ 195,007	\$ 198,334	\$ 209,193	\$ 244,218	\$ 254,287	\$ 270,842	\$ 271,096	\$ 293,940	\$ 310,877	\$ 317,893	\$ 372,924	\$ 373,251	\$ 398,529	\$ 433,335	\$ 477,324	\$ 485,983	\$ 503,747	\$ 542,405
Financial Ratios Forecast																				
Total Debt Service Coverage (GAAP)	2.41	2.73	2.88	2.90	2.97	2.38	2.48	2.20	2.43	2.07	2.11	2.02	1.92	2.04	2.11	2.05	2.03	2.05	2.04	2.01
Total Debt Service Coverage (Adjusted)	2.36	2.73	3.05	3.02	3.04	2.66	2.61	2.41	2.51	2.28	2.14	2.05	2.02	2.07	2.22	2.31	2.48	2.46	2.47	2.61
CIP % Cash Funded (current year contributions)	50%	62%	60%	53%	53%	42%	52%	46%	48%	61%	60%	73%	55%	88%	77%	64%	59%	71%	69%	75%
Debt Service as a % of Total Revenues	19%	18%	17%	18%	18%	20%	20%	22%	21%	23%	23%	24%	23%	23%	21%	21%	20%	20%	20%	19%



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Operating Budget

Operating Budget

	FY-2020	Adopted FY-2019	Increase/ (Decrease)	Percent Change
Operating Revenues				
Wastewater Treatment Charges	\$ 323,395,000	\$ 297,062,000	\$ 26,333,000	9%
Miscellaneous	1,255,000	1,405,000	(150,000)	(11%)
Total Operating Revenue	324,650,000	298,467,000	26,183,000	9%
Non-Operating Revenues				
Wastewater Facility Charges	6,160,000	6,075,000	85,000	1%
Investment Earnings	4,000,000	2,500,000	1,500,000	60%
Build America Bond Subsidy	2,400,000	2,400,000	-	0%
Other	595,000	820,000	(225,000)	(27%)
Total Non-Operating Revenues	13,155,000	11,795,000	1,360,000	12%
Total Revenues	\$ 337,805,000	\$ 310,262,000	\$ 27,543,000	9%
Operating Appropriations				
General Management	\$ 460,252	\$ 624,583	\$ (164,331)	(26%)
Communications	444,116	423,764	20,352	5%
Finance	14,566,681	13,884,533	682,148	5%
Information Technology	15,854,415	15,089,692	764,723	5%
Talent Management	2,515,281	2,293,202	222,079	10%
Operations	103,821,085	98,842,274	4,978,811	5%
Engineering	7,689,862	7,903,702	(213,840)	(3%)
Water Quality	14,778,034	14,913,423	(135,389)	(1%)
General Expenses	5,529,093	5,761,766	(232,673)	(4%)
Total Operating Appropriations	165,658,819	159,736,939	5,921,880	4%
Appropriations for Debt Service and Transfers				
Debt Service	63,544,841	62,811,000	733,841	1%
Transfer to Capital Improvement Program (CIP)	108,341,340	87,475,061	20,866,279	24%
Transfer to Risk Management Reserve	260,000	239,000	21,000	9%
Total Appropriations for Debt Service and Transfers	172,146,181	150,525,061	21,621,120	14%
Total Appropriations	\$ 337,805,000	\$ 310,262,000	\$ 27,543,000	9%

Operating Budget Summary

	General Management	Communications	Finance	Information Technology	Talent Management	Operations	Engineering	Water Quality	General Expenses
Personal Services	\$ 332,938	\$ 237,112	\$ 6,066,008	\$ 4,428,545	\$ 1,531,227	\$ 34,501,596	\$ 3,983,260	\$ 7,815,545	\$ (1,550,006)
Fringe Benefits	80,814	88,004	2,630,381	1,554,295	615,845	15,418,203	1,479,398	3,199,333	(849,700)
Materials & Supplies	10,000	45,000	70,780	1,250,050	58,500	5,256,561	24,130	1,395,500	18,000
Transportation	7,000	11,500	11,850	22,200	28,100	1,447,280	20,470	30,406	-
Utilities	-	-	282,000	1,180,500	-	10,755,360	-	2,700	505,000
Chemical Purchases	-	-	-	-	-	10,714,718	-	-	-
Contractual Services	9,000	33,000	5,236,464	6,502,100	48,000	15,996,648	1,998,816	1,696,700	7,157,799
Major Repairs	-	-	-	651,000	-	8,330,479	-	20,000	-
Capital Assets	-	-	-	-	-	301,600	-	-	-
Miscellaneous Expense	20,500	29,500	269,198	265,725	233,609	1,098,640	183,788	617,850	248,000
Operating Appropriations	\$ 460,252	\$ 444,116	\$ 14,566,681	\$ 15,854,415	\$ 2,515,281	\$ 103,821,085	\$ 7,689,862	\$ 14,778,034	\$ 5,529,093

Full-time Positions:

Current	2	3	102	45	16	515	43	110
Changes	-	-	-	5	-	1	1	4
Budgeted	2	3	102	50	16	516	44	114

Operating Budget Summary

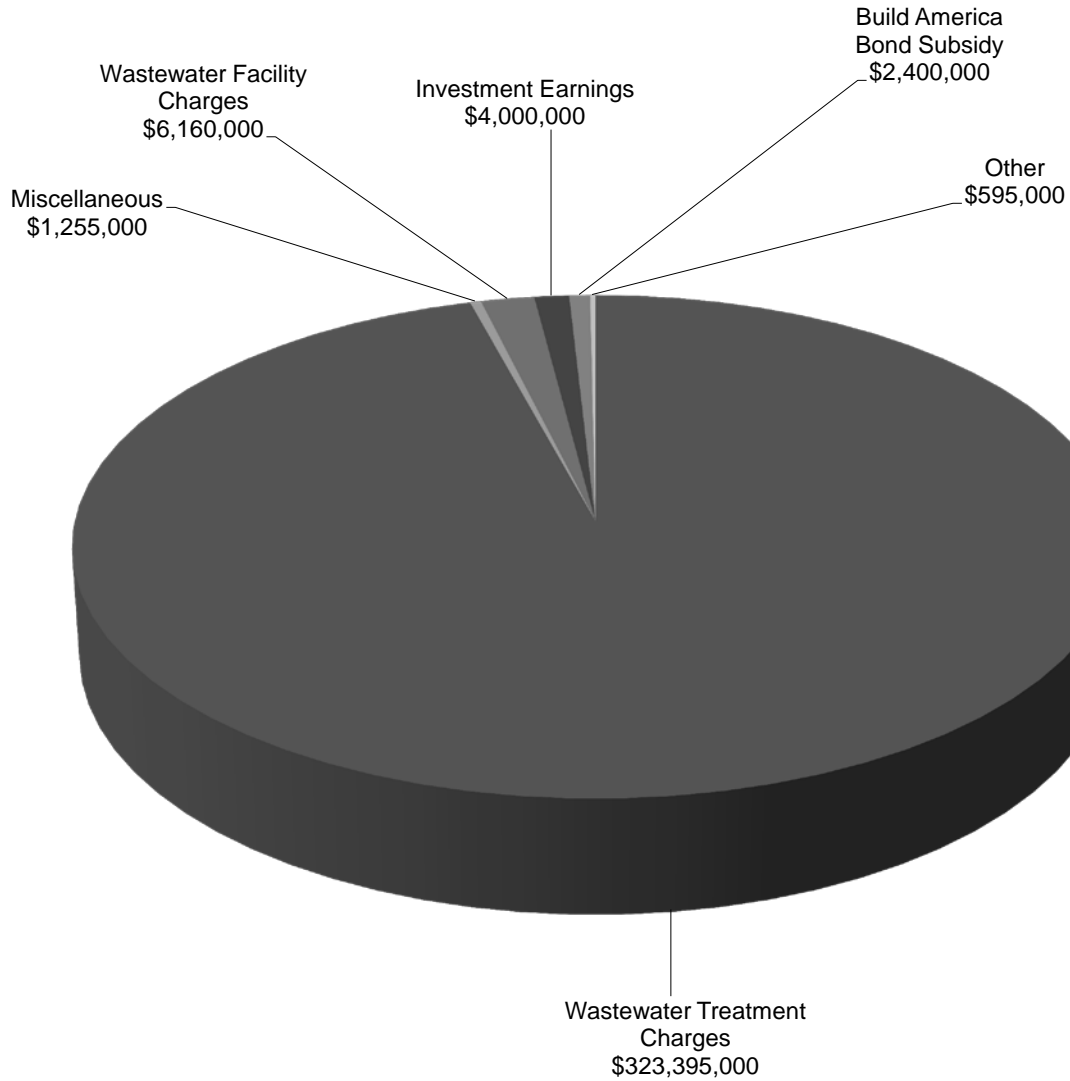
	FY-2020	Percent of Budget	FY-2019 Budget	Increase/ Decrease	Percent Inc/(Dec)
Personal Services	\$ 57,346,225	17.0%	\$ 55,331,885	\$ 2,014,340	4%
Fringe Benefits	24,216,573	7.2%	24,296,169	(79,596)	(0%)
Materials & Supplies	8,128,521	2.4%	7,190,245	938,276	13%
Transportation	1,578,806	0.5%	1,444,741	134,065	9%
Utilities	12,725,560	3.8%	12,245,138	480,422	4%
Chemical Purchases	10,714,718	3.2%	10,703,626	11,092	0%
Contractual Services	38,678,527	11.4%	37,363,437	1,315,090	4%
Major Repairs	9,001,479	2.7%	7,832,425	1,169,054	15%
Capital Assets	301,600	0.1%	601,500	(299,900)	(50%)
Miscellaneous Expense	2,966,810	0.9%	2,727,773	239,037	9%
Operating Appropriations	<u>165,658,819</u>	49.0%	<u>159,736,939</u>	5,921,880	4%
Debt Service Costs	63,544,841	18.8%	62,811,000	733,841	1%
Transfer to Capital Improvement Program (CIP)	108,341,340	32.1%	87,475,061	20,866,279	24%
Transfer to Risk Management	260,000	0.1%	239,000	21,000	9%
Appropriations for Debt Service and Transfers	<u>172,146,181</u>	51.0%	<u>150,525,061</u>	21,621,120	14%
	<u>\$ 337,805,000</u>	100.0%	<u>\$ 310,262,000</u>	<u>\$ 27,543,000</u>	9%

Full-time Positions:

Current	836
Changes	11
Budgeted	847

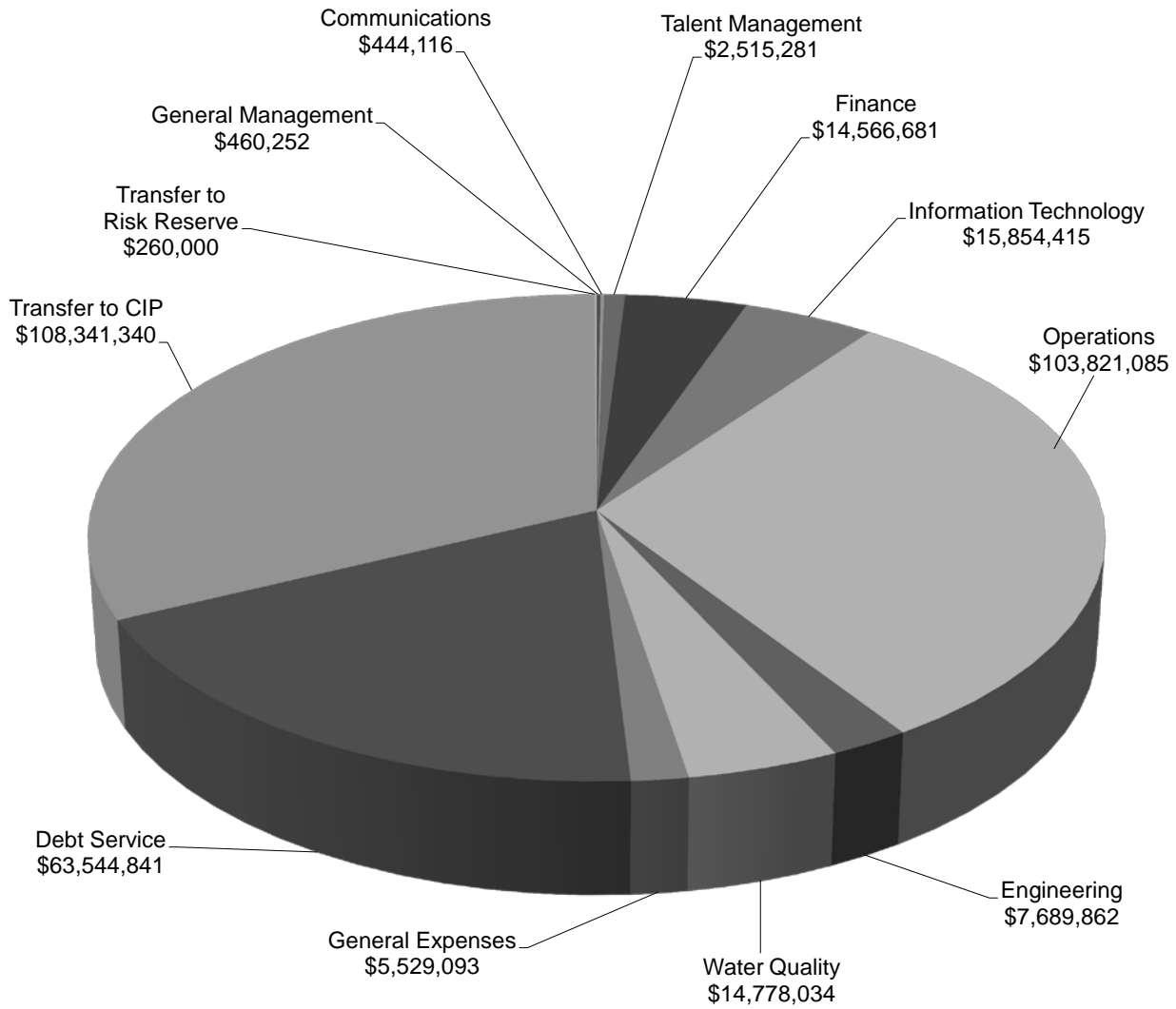
Operating Budget Charts

Revenues and Transfers In
\$337,805,000



Operating Budget Charts

Expenses and Transfers Out \$337,805,000



General Management Department

The General Manager supervises the department directors and the Commission Secretary. The Commission Secretary provides administrative support to the General Manager as well as the HRSD Commission.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 332,938	\$ 427,748	\$ (94,810)	(22%)
Fringe Benefits	80,814	122,835	(42,021)	(34%)
Material & Supplies	10,000	10,000	-	0%
Transportation	7,000	14,000	(7,000)	(50%)
Contractual Services	9,000	20,000	(11,000)	(55%)
Miscellaneous	20,500	30,000	(9,500)	(32%)
Total	\$ 460,252	\$ 624,583	\$ (164,331)	(26%)

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
General Manager		1		1		1
Special Assistant for Compliance Assurance	12	1	(1)	0		0
Commission Secretary	6	1		1		1
Total		3	(1)	2	0	2

Communications Department

The Communications Department supports HRSD's mission and vision through public outreach, community engagement, educational programming and environmental and locality partnerships. The department manages internal and external communications and branding through numerous channels - including publications, traditional media, social media and web, graphic design, speaking engagements, tours, and special events.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 237,112	\$ 247,062	\$ (9,950)	(4%)
Fringe Benefits	88,004	101,402	(13,398)	(13%)
Material & Supplies	45,000	45,000	-	0%
Transportation	11,500	13,800	(2,300)	(17%)
Contractual Services	33,000	-	33,000	0%
Miscellaneous	29,500	16,500	13,000	79%
Total	\$ 444,116	\$ 423,764	\$ 20,352	5%

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Communications	12	1		1		1
Community Relations Liason	6	1	(1)	0		0
Public Information Specialist	6	0	1	1		1
Community Educator	3	1		1		1
Total		3	0	3	0	3

Finance Department

The Finance Department is responsible for HRSD's general financial and business functions, including financial reporting, investment portfolio, debt and risk management and customer billing. The Accounting and Finance Division handles fiscal affairs such as preparing statements, budgets, management reports and payroll. The Business Intelligence Division is the functional lead for the Enterprise Resource Process system. The Capital Program Management Division coordinates the development of the annual Capital Improvement Program. The Customer Care Center Division handles billing, payments, collections, maintenance of customer accounts and liaison with HRSD's customers. The Procurement Division is responsible for purchasing, renting, leasing or otherwise acquiring goods, professional and non-professional services, and certain construction services, managing supplier relationships and disposing of surplus property.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 6,066,008	\$ 5,965,582	\$ 100,426	2%
Fringe Benefits	2,630,381	2,526,249	104,132	4%
Material & Supplies	70,780	86,610	(15,830)	(18%)
Transportation	11,850	14,250	(2,400)	(17%)
Utilities	282,000	271,430	10,570	4%
Contractual Services	5,236,464	4,781,891	454,573	10%
Miscellaneous	269,198	238,521	30,677	13%
Total	\$ 14,566,681	\$ 13,884,533	\$ 682,148	5%

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Finance	12	1		1		1
Chief of Accounting & Finance	11	1		1		1
Chief of Customer Care Center	11	1		1		1
Chief of Procurement	11	1		1		1
Accounting Manager	9	2	1	3		3
Capital Program Manager	9	0	1	1		1
Customer Care Manager	9	4		4		4
Business Analyst	8	3		3		3
Financial Analyst	8	2		2		2
Procurement Analyst	8	2		2		2
Customer Care Supervisor	7	4		4		4
Delinquency Management Analyst	7	0		0	1	1
Accounts Payable Supervisor	6	1		1		1
Accounts Receivable Specialist	6	2		2		2
Payroll Specialist	6	1		1		1
ProCard & Contract Administrator	6	1		1		1
Procurement Specialist	6	4		4		4
Accounting Coordinator	4	1		1		1
Accounts Receivable Technician	4	3		3		3
CIP Coordinator	4	0	1	1		1
Customer Care Administrative Coordinator	4	1		1		1
Customer Care Coordinator	4	4		4		4
Procurement Coordinator	4	0		0	1	1
Account Investigator	3	13	(2)	11		11
Accounts Payable Associate	3	3		3		3
Customer Care Account Representative	3	41		41	(1)	40
Procurement Administrative Assistant	3	3		3	(1)	2
Mail Processing Clerk	2	2		2		2
Total		101	1	102	0	102

Information Technology Department

The Information Technology (IT) Department is responsible for HRSD's computer systems, communication systems, network infrastructure, cellular communications, cyber security, and data management functions. Staff also provides guidance and assistance in the identification and implementation of new technologies, enhancing both organizational efficiency and efficacy. The Enterprise Data Services Division is responsible for application integration and support, data management, and systems analysis and support. The Information Systems and Security Division is responsible for ensuring the safety, integrity, and availability of all HRSD information systems and business data. The Information Technology Operations Division supports departments in achieving their goals and objectives, providing the requisite hardware, software, storage, and network connectivity, to meet business and operational requirements.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 4,428,545	\$ 4,427,273	\$ 1,272	0%
Fringe Benefits	1,554,295	1,607,569	(53,274)	(3%)
Material & Supplies	1,250,050	851,000	399,050	47%
Transportation	22,200	16,200	6,000	37%
Utilities	1,180,500	1,224,000	(43,500)	(4%)
Contractual Services	6,502,100	6,541,000	(38,900)	(1%)
Major Repairs	651,000	192,000	459,000	239%
Miscellaneous	265,725	230,650	35,075	15%
Total	\$ 15,854,415	\$ 15,089,692	\$ 764,723	5%

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Information Technology	12	1		1		1
Chief Information Security Officer	11	0		0	1	1
Chief of Enterprise Data Services	11	1		1		1
Chief of IT Operations & Support	11	1		1		1
Database Administrator	9	3		3		3
Enterprise Architect	9	3		3		3
Industrial Automation Manager	9	1	(1)	0		0
IT Systems Security Manager	9	0		0	1	1
Oracle Developer	9	2		2		2
Programming Development Manager	9	1		1		1
Senior Systems Engineer	9	6		6	1	7
Systems Analysis Manager	9	1		1		1
Industrial Automation Programmer	8	5	(5)	0		0
Senior Programmer Analyst	8	6		6	2	8
Senior Systems Analyst	8	3		3		3
SharePoint Web Developer	8	1		1		1
Unix Systems Administrator	8	2		2		2
IT HelpDesk Supervisor	7	1		1		1
Desktop Support Analyst	6	6		6		6
Systems Analyst	6	1		1		1
Web Portal Programmer	5	1		1		1
IT Administrative Coordinator	4	1		1		1
Telecommunications Support Coordinator	4	1		1		1
Computer Operator	3	3		3		3
Total		51	(6)	45	5	50

Talent Management Department

The Talent Management Department attracts new talent, develops talent and retains existing talent. The Human Resources Division maintains employee records, handles employee recruiting and orientation, administers employee benefits. The Organizational Development and Training (ODT) Division oversees training and the apprenticeship program. The Safety Division monitors risk and works to ensure employee safety.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 1,531,227	\$ 1,366,058	\$ 165,169	12%
Fringe Benefits	615,845	544,900	70,945	13%
Material & Supplies	58,500	68,100	(9,600)	(14%)
Transportation	28,100	27,600	500	2%
Contractual Services	48,000	53,200	(5,200)	(10%)
Miscellaneous	233,609	233,344	265	0%
Total	\$ 2,515,281	\$ 2,293,202	\$ 222,079	10%

Positions

	Grade	Adopted 2019	FY- Adjustments	Final 2019	FY- Adjustments	FY-2020
Director of Talent Management	12	1		1		1
ODT Manager	10	1		1		1
Human Resources Manager	9	1		1		1
Safety Manager	9	1		1		1
Human Resources Business Analyst	8	1		1		1
Human Resources Business Partner	8	0	3	3		3
Industrial Hygienist	8	2		2		2
Training Superintendent	8	1		1		1
Human Resources Specialist	7	3	(3)	0		0
ODT Resource Specialist	6	1		1		1
Safety Technician	5	0		0	1	1
Human Resources Coordinator	4	2		2		2
ODT Coordinator	4	1		1		1
Safety Coordinator	4	1		1	(1)	0
Total		16	0	16	0	16

Operations Department

The Operations Department is responsible for operating and maintaining all of HRSD's treatment plants, pump stations, pipelines, buildings and equipment. HRSD provides wastewater treatment services for over 1.7 million people in 18 cities and counties in Hampton Roads. The department also includes the Director of Water Technology and Research researching new technology with a focus on rapid deployment of innovative solutions. Services are delivered through seven divisions. There are three major treatment plant divisions (each with three treatment plants). Services to small communities that are in the HRSD service area are provided by the Small Communities Division (SCD) – Middle Peninsula which operates four smaller treatment plants and all the associated sewer collection systems for four counties on the Middle Peninsula, including the Town of West Point. The Small Communities Division – Surry includes the operation of two treatment plants and the associated sewer collection systems in the County of Surry. The Electrical and Instrumentation Division supports the electrical and instrumentation maintenance and construction needs of all HRSD facilities as well as programming industrial controls and automation at HRSD facilities. The two Interceptor Divisions operate and maintain over 500 miles of interceptor pipelines and over 100 pump stations ensuring wastewater is conveyed to each treatment plant. The Support Systems Division is responsible for the maintenance for the HRSD fleet, all buildings, operates two carpentry shops and a full service machine shop. The department is also responsible for energy management and research to find innovative, cost effective ways of managing our energy consumption more effectively.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 34,501,596	\$ 33,328,889	\$ 1,172,707	4%
Fringe Benefits	15,418,203	14,828,080	590,123	4%
Material & Supplies	5,256,561	4,631,734	624,827	13%
Transportation	1,447,280	1,305,080	142,200	11%
Utilities	10,755,360	10,247,264	508,096	5%
Chemical Purchases	10,714,718	10,703,626	11,092	0%
Contractual Services	15,996,648	14,737,567	1,259,081	9%
Major Repairs	8,330,479	7,540,425	790,054	10%
Capital Assets	301,600	546,500	(244,900)	(45%)
Miscellaneous	1,098,640	973,109	125,531	13%
Total	\$ 103,821,085	\$ 98,842,274	\$ 4,978,811	5%

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Operations	12	1		1		1
Director of Water Technology and Research	12	1		1		1
Chief of Electrical & Energy Management	11	1	(1)	0		0
Chief of Electrical & Instrumentation Division	11	0	1	1		1
Chief of Interceptor Operations	11	1		1		1
Chief of NS Interceptors & SCD	11	1		1		1
Chief of Process Engineering & Research	11	1		1		1
Chief of Treatment	11	3		3		3
Energy Manager	11	0	1	1		1
Treatment Process Engineer 2	10	3		3		3
Electrical Manager	9	2	(1)	1		1
Industrial Automation Manager	9	0	1	1		1
Instrumentation Manager	9	1		1		1
Interceptor Engineer	9	2		2		2
Plant Manager	9	1		1		1
Project Manager	9	2		2		2
Support Systems Manager	9	1		1		1
SWIFT Project Manager	9	1		1		1
Systems Manager	9	2		2		2
Treatment Process Engineer 1	9	1		1		1
Automotive Superintendent	8	1		1		1
Condition Assessment Superintendent	8	1		1		1
Electrical & Instrumentation Supervisor	8	4		4		4
Electrical Superintendent	8	1		1		1
Facility Superintendent	8	1		1		1
Industrial Automation Programmer	8	0	5	5		5
Interceptor Superintendent	8	2		2		2
Plant Superintendent	8	18		18		18
Chief Foreman	7	2		2		2
Chief Maintenance Management	7	2		2		2
Chief System Operator	7	2		2		2
Coating, Concrete and Roofing Chief Inspector	7	1		1		1

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Electrical & Instrumentation Process Specialist	7	1		1		1
Electrical & Instrumentation Specialist	7	59		59	2	61
Lead Operator	7	32	(1)	31	1	32
Operations Support Specialist	7	1		1		1
Automotive Foreman	6	2		2		2
Coatings Inspector	6	2		2		2
Condition Assessment Supervisor	6	1		1		1
Engineering Assistant	6	4		4		4
Interceptor Foreman	6	7		7		7
Interceptor Systems Supervisor	6	2		2		2
Machinist Foreman	6	1		1		1
Maintenance Planner	6	3		3		3
Pump Station Supervisor	6	2		2		2
Automotive Technician	5	5		5		5
Carpenter	5	4		4		4
Condition Assessment Technician	5	2		2	(2)	0
Equipment Technician	5	3		3		3
Facility Maintenance Technician	5	2		2		2
Interceptor Technician	5	30		30		30
Machinist	5	2		2		2
Maintenance Operator	5	65	2	67	1	68
Plant Operator	5	74	2	76		76
Heavy Equipment Operator I	4	19		19		19
Materials Operations Coordinator	4	2		2		2
Operations Admin Coordinator	4	1		1		1
Operations Coordinator	4	2		2		2
Automotive Administrative Assistant	3	1		1		1
Support Systems Admin Assistant	3	1		1	(1)	0
Utility Administrative Assistant	3	1		1		1
SCADA Administrative Assistant	3	1		1		1
Interceptor Assistant	2	28		28		28
Maintenance Operations Assistant	2	52	(4)	48		48
Plant Clerk	2	9		9		9
Facility Assistant	1	2		2		2
Custodian	1	4		4		4
<i>Subtotal - Operations</i>		487	5	492	1	493
Small Communities						
Systems Manager	9	1		1		1
Systems Superintendent	8	1		1		1
Systems Chief Foreman	7	1		1		1
Systems Lead Operator	7	3		3		3
Systems Foreman	6	0	1	1		1
Systems Operator	5	11	(1)	10		10
Administrative Coordinator	4	1		1		1
Heavy Equipment Operator I	4	1		1		1
Maintenance Operations Assistant	2	3		3		3
SCD Lab Assistant	2	1		1		1
<i>Subtotal - Small Communities</i>		23	0	23	0	23
Total		510	5	515	1	516

Engineering Department

The Engineering Department is responsible for facility planning, design and construction and related support. The Asset Management Division is responsible for the Computerized Maintenance Management System (CMMS) to manage asset information to inform all maintenance, replacement and capital planning decisions. The Design and Construction Divisions deliver capital projects in a manner consistent with HRSD's quality standards. The Planning and Analysis Division manages the Capital Improvement Program (CIP), Hydraulic Modeling, Geographic Information System (GIS), Data Analysis and Records Management System and plans the capital infrastructure required to meet the region's future wastewater needs. The department is also responsible for all property and land acquisition to meet the needs of HRSD.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 3,983,260	\$ 3,786,920	\$ 196,340	5%
Fringe Benefits	1,479,398	1,431,145	48,253	3%
Material & Supplies	24,130	28,201	(4,071)	(14%)
Transportation	20,470	14,905	5,565	37%
Contractual Services	1,998,816	2,484,557	(485,741)	(20%)
Miscellaneous	183,788	157,974	25,814	16%
Total	\$ 7,689,862	\$ 7,903,702	\$ (213,840)	(3%)

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Engineering	12	1		1		1
Chief of Asset Management	11	1		1		1
Chief of Design & Construction	11	2		2		2
Chief of Design & Construction - SWIFT	11	1		1		1
Chief of Planning & Analysis	11	1		1		1
Capital Program Manager	9	1	(1)	0		0
Condition Assessment Manager	9	2		2		2
Data Analysis Manager	9	1		1		1
GIS Manager	9	1		1		1
Hydraulic Analysis Manager	9	4		4		4
Project Manager	9	9		9		9
Asset Management Specialist	8	0	1	1		1
Real Estate Manager	8	1	1	2		2
CMMS Analyst	7	1		1	1	2
Data Analyst	7	4		4	1	5
Engineering Specialist	7	2		2		2
GIS Analyst	7	2		2		2
Contract Specialist	6	3		3		3
GIS CAD Technician	5	2		2		2
CIP Coordinator	4	1	(1)	0		0
Administrative Coordinator	4	1		1		1
CMMS Administrative Assistant	3	1		1	(1)	0
Engineering Clerk	2	1		1		1
Total		43	0	43	1	44

Water Quality Department

The Water Quality (WQ) Department's mission is to provide quality environmental services to support HRSD and its partners. This department helps ensure compliance with HRSD environmental permits and leads regulatory advocacy through the work of three divisions. The Central Environmental Laboratory (CEL) Division uses the Environmental Data Management System (EDMS) and other tools to provide analytical support for numerous monitoring, research and regulatory purposes. The Pretreatment and Pollution Prevention (P3) Division monitors wastewater conveyed to treatment plants using the Pretreatment Information Management System (PIMS) and other tools, and implements its Industrial Wastewater Discharge Regulations to protect treatment plant staff, facilities and processes. The Technical Services Division (TSD) is responsible for a number of activities including environmental monitoring, specialized sampling, treatment process and research studies, the Municipal Assistance Program (MAP) to assist localities, as well as all reporting required by HRSD permits.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 7,815,545	\$ 7,582,353	\$ 233,192	3%
Fringe Benefits	3,199,333	3,018,989	180,344	6%
Material & Supplies	1,395,500	1,439,600	(44,100)	(3%)
Transportation	30,406	38,906	(8,500)	(22%)
Utilities	2,700	2,700	-	0%
Contractual Services	1,696,700	2,117,200	(420,500)	(20%)
Major Repairs	20,000	100,000	(80,000)	(80%)
Capital Assets	-	55,000	(55,000)	(100%)
Miscellaneous	617,850	558,675	59,175	11%
Total	\$ 14,778,034	\$ 14,913,423	\$ (135,389)	(1%)

Positions

	Grade	Adopted FY-2019	Adjustments	Final FY-2019	Adjustments	FY-2020
Director of Water Quality	12	1		1		1
Chief of Lab	11	1		1		1
Chief of P3	11	1		1		1
Chief of TSD	11	1		1		1
Environmental Scientist	9	7		7		7
Lab Manager	9	4		4		4
Lab Quality Assurance Manager	9	1		1		1
P3 Manager	9	4		4		4
WQ/Ops Quality Assurance Manager	9	0		0	1	1
Lab EDMS Administrator	8	1		1		1
Lab Operations Manager	8	1		1		1
Lab Supervising Chemist	8	11	1	12		12
P3 Supervising Specialist	8	3		3		3
TSD Operations Manager	8	1		1		1
TSD Supervising Specialist	8	3		3		3
P3 Administrative Supervising Specialist	7	1		1		1
Lab EDMS Analyst	6	1		1		1
Lab Quality Assurance Specialist	6	1		1		1
Lab Specialist	6	14		14		14
P3 PIMS Analyst	6	1		1		1
P3 Specialist	6	3		3		3
TSD Specialist	6	9		9	2	11
WQ Specialist	6	1		1		1
Lab Data Technician	5	1		1		1
Lab Technician	5	5		5		5
P3 Technician	5	11		11		11
Lab Data Coordinator	4	1		1		1
P3 Administrative Coordinator	4	1		1		1
TSD Operations Coordinator	4	1		1		1
WQ Administrative Coordinator	4	1		1		1
P3 Administrative Assistant	3	2		2		2
TSD Investigator	3	7		7	1	8
Lab Assistant	2	7		7		7
TSD Assistant	2	1		1		1
Total		109	1	110	4	114

General Expenses, Debt Service and Transfers

General Expenses includes operating expenditures not assigned to any specific HRSD Department. Debt Service includes payments on bonds issued by HRSD and through the Virginia Clean Water Revolving Loan Fund (VCWRLF). Transfers Are made to fund the Capital Improvement Program (CIP) and the Risk Management reserve. The costs incurred to issue bonds are included in General Expenses - Miscellaneous.

Expenditure Budget

	FY-2020 Budget	FY-2019 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ (1,550,006)	\$ (1,800,000)	\$ 249,994	(14%)
Fringe Benefits	(849,700)	115,000	(964,700)	(839%)
Material & Supplies	18,000	30,000	(12,000)	(40%)
Utilities	505,000	499,744	5,256	1%
Contractual Services	7,157,799	6,628,022	529,777	8%
Miscellaneous	248,000	289,000	(41,000)	(14%)
Total General Expenses	\$ 5,529,093	\$ 5,761,766	\$ (232,673)	(4%)
Publically Sold Bonds - Principal	17,985,000	16,740,000	\$ 1,245,000	7%
Publically Sold Bonds - Interest	30,926,523	32,110,000	(1,183,477)	(4%)
VCWRLF Bonds	14,633,318	13,961,000	672,318	5%
<i>Subtotal - Debt Service</i>	<i>63,544,841</i>	<i>62,811,000</i>	<i>733,841</i>	<i>1%</i>
Transfer to CIP	108,341,340	87,475,061	20,866,279	24%
Transfer to Risk Management	260,000	239,000	21,000	9%
<i>Subtotal - Transfers</i>	<i>108,601,340</i>	<i>87,714,061</i>	<i>20,887,279</i>	<i>24%</i>
Total Debt Service and Transfers	\$ 172,146,181	\$ 150,525,061	\$ 21,621,120	14%

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Capital Budget



Capital Budget

HRSD prepares a Capital Improvement Program (CIP) each year for the capital projects currently underway or proposed for the future. The first year of the CIP is authorized as the Capital Budget for FY-2019 in the amount of \$134 million. The remaining years (FY-2020 to FY-2028) include all known projects planned for these years; however, approval of the plan does not authorize the Capital Budgets for those years. Each year's Capital Budget will be approved during the budget process for the specific year.

The ten-year Capital Improvement Program for FY-2019 to FY-2028 highlights the anticipated cost of each project and the fiscal year(s) in which the work is expected to occur. All costs listed in the CIP are stated in current year dollars and total approximately \$2.54 billion.

The bond component of the plan may include one or all of the following:

- Interim or construction financings
- Federally subsidized borrowing programs administered by the Virginia Resource Authority
- HRSD Revenue Bonds or Notes

The grant component represents funds estimated to be received from a federal or state agency for specific projects. Other reimbursements, if any, include amounts paid by other parties who may participate in a project.

Capital Budget

CIP Budget Forecast (in thousands)	Total FY-2020				
	to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Beginning Capital Reserves	\$ 77,279	\$ 76,631	\$ 648	\$ -	\$ -
Bonds	1,245,128	-	65,442	88,954	143,301
VCWRLF	33,464	30,246	3,218	-	-
Cash	1,423,106	108,341	118,451	137,046	156,699
Grants and Other Reimbursements	9,671	430	5,241	4,000	-
Total Capital Resources	2,788,648	215,648	193,000	230,000	300,000
Capital Expenditures	2,788,000	215,000	193,000	230,000	300,000
Ending Capital Reserves	\$ 648	\$ 648	\$ -	\$ -	\$ -

Capital Expenditures (in thousands)	Total FY-2020				
	to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Administration	\$ 34,738	\$ 19,338	\$ 5,566	\$ 3,793	\$ 3,153
Army Base	28,873	-	-	1,607	5,024
Atlantic	62,590	16,503	10,518	10,208	4,135
Boat Harbor	255,957	23,339	28,740	15,236	16,639
Chesapeake-Elizabeth	127,841	58,726	42,923	9,338	3,805
James River	146,238	8,670	11,918	38,929	32,520
Middle Peninsula	57,733	10,702	3,244	1,611	18,788
Nansemond	309,980	20,775	25,226	7,057	10,802
Surry	7,195	6,224	971	-	-
Virginia Initiative Plant	123,900	5,980	11,219	28,900	38,557
Williamsburg	21,033	8,486	9,799	1,923	824
York River	18,337	2,810	2,664	1,951	4,014
General	1,291,043	32,606	33,714	96,567	141,641
Future Improvements	185,426	841	2,715	1,929	5,811
Subtotal	2,670,882	215,000	189,216	219,048	285,714
Contingency	117,118	-	3,784	10,952	14,286
Total Expenditures	\$ 2,788,000	\$ 215,000	\$ 193,000	\$ 230,000	\$ 300,000

Capital Budget

CIP Budget Forecast (in thousands)

	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Beginning Capital Reserves	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bonds	143,926	176,524	146,761	178,176	199,107	102,937
VCWRLF	-	-	-	-	-	-
Cash	156,074	123,476	153,239	146,824	175,893	147,063
Grants and Other Reimbursements	-	-	-	-	-	-
Total Capital Resources	300,000	300,000	300,000	325,000	375,000	250,000
Capital Expenditures	300,000	300,000	300,000	325,000	375,000	250,000
Ending Capital Reserves	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Capital Expenditures (in thousands)

	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Administration	\$ 2,890	\$ -	\$ -	\$ -	\$ -	\$ -
Army Base	14,142	3,459	198	964	2,758	721
Atlantic	3,746	2,259	521	1,098	6,804	6,798
Boat Harbor	26,460	32,835	34,610	37,196	28,210	12,690
Chesapeake-Elizabeth	3,086	3,384	3,276	2,086	1,217	-
James River	32,520	21,681	-	-	-	-
Middle Peninsula	22,107	1,281	-	-	-	-
Nansemond	42,077	68,400	73,073	30,626	13,430	18,514
Surry	-	-	-	-	-	-
Virginia Initiative Plant	22,824	7,108	4,867	4,446	-	-
Williamsburg	-	-	-	-	-	-
York River	1,905	1,601	2,394	998	-	-
General	107,743	131,137	138,694	193,460	255,304	160,176
Future Improvements	6,214	12,569	28,082	38,650	49,419	39,195
Subtotal	285,714	285,714	285,714	309,524	357,143	238,095
Contingency	14,286	14,286	14,286	15,476	17,857	11,905
Total Expenditures	\$ 300,000	\$ 300,000	\$ 300,000	\$ 325,000	\$ 375,000	\$ 250,000

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Administration						
AD012100	Asset Management Implementation	\$ 803	\$ 803	\$ -	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ 14,730	\$ 13,597	\$ 1,133	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ 1,978	\$ 58	\$ 1,280	\$ 640	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ 1,727	\$ 1,727	\$ -	\$ -	\$ -
AD012500	Cybersecurity Practice & Procedure Initiative	\$ 15,500	\$ 3,153	\$ 3,153	\$ 3,153	\$ 3,153
	Subtotal	\$ 34,738	\$ 19,338	\$ 5,566	\$ 3,793	\$ 3,153
Army Base						
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 22,339	\$ -	\$ -	\$ 1,607	\$ 4,832
AB010500	Section W Force Main Replacement	\$ 2,090	\$ -	\$ -	\$ -	\$ 192
AB011800	Army Base to VIP Transmission Force Main	\$ 4,443	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 28,873	\$ -	\$ -	\$ 1,607	\$ 5,024
Atlantic						
AT011520	Shipps Corner Pressure Reducing Station Modifications	\$ 1,458	\$ 9	\$ 107	\$ 671	\$ 671
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 4,444	\$ -	\$ -	\$ 63	\$ 228
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ 1,151	\$ 1,116	\$ 35	\$ -	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ 6,386	\$ 1,373	\$ 1,900	\$ 3,113	\$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ 3,227	\$ 228	\$ 784	\$ 2,216	\$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 5,460	\$ -	\$ 334	\$ 296	\$ 3,220
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 258	\$ -	\$ -	\$ -	\$ 17
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ 10,479	\$ 10,158	\$ 321	\$ -	\$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ 156	\$ 110	\$ 46	\$ -	\$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	\$ 1,208	\$ 1,208	\$ -	\$ -	\$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	\$ 1,069	\$ 675	\$ 394	\$ -	\$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	\$ 12,072	\$ 1,627	\$ 6,597	\$ 3,849	\$ -
AT014301	Atlantic Service Area I/I Reduction Phase I (CHES)	\$ 10,651	\$ -	\$ -	\$ -	\$ -
AT014302	Atlantic Service Area I/I Reduction Phase II (CHES)	\$ 4,478	\$ -	\$ -	\$ -	\$ -
AT014303	Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)	\$ 91	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 62,590	\$ 16,503	\$ 10,518	\$ 10,208	\$ 4,135
Boat Harbor						
BH013020	Willard Avenue Pump Station Replacement	\$ 7,060	\$ 916	\$ 4,333	\$ 1,811	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3,600	\$ -	\$ 231	\$ 839	\$ 2,528
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 10,485	\$ 3,148	\$ 5,168	\$ 2,168	\$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 2,014	\$ -	\$ 16	\$ 585	\$ 1,414
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	\$ 7,562	\$ 652	\$ 4,358	\$ 2,552	\$ -
BH014700	Boat Harbor Outlet Sewer Improvements	\$ 5,663	\$ 4,151	\$ 1,512	\$ -	\$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	\$ 1,938	\$ 1,450	\$ 488	\$ -	\$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ 3,728	\$ 428	\$ 2,326	\$ 974	\$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ 4,850	\$ 4,850	\$ -	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ 2,868	\$ 108	\$ 182	\$ 778	\$ 1,800
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ 6,420	\$ 4,521	\$ 1,899	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ 1,887	\$ -	\$ -	\$ -	\$ -
BH015600	Hampton Trunk A and B Replacement-Jefferson Avenue to Walnut Avenue	\$ 9,643	\$ 991	\$ 6,101	\$ 2,552	\$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 148,413	\$ 2,125	\$ 2,125	\$ 2,125	\$ 10,091
BH015801	14th Street Offline Storage (BH-HPP-01A)	\$ 14,566	\$ -	\$ -	\$ 853	\$ 808
BH015802	Claremont Pump Station Upgrade (BH-HPP-01B)	\$ 10,745	\$ -	\$ -	\$ -	\$ -
BH015803	Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)	\$ 14,515	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 255,957	\$ 23,339	\$ 28,740	\$ 15,236	\$ 16,639
Note:	Fats, Oils, and Grease (FOG), Virginia Department of Transportation (VDOT) Interceptor Force Main (IFM) In Flow/Infiltration (I/I) Virginia Initiative Plant (VIP)					

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Administration							
AD012100	Asset Management Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012500	Cybersecurity Practice & Procedure Initiative	\$ 2,890	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 2,890	\$ -	\$ -	\$ -	\$ -	\$ -
Army Base							
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 13,629	\$ 2,271	\$ -	\$ -	\$ -	\$ -
AB010500	Section W Force Main Replacement	\$ 513	\$ 1,187	\$ 198	\$ -	\$ -	\$ -
AB011800	Army Base to VIP Transmission Force Main	\$ -	\$ -	\$ -	\$ 964	\$ 2,758	\$ 721
	Subtotal	\$ 14,142	\$ 3,459	\$ 198	\$ 964	\$ 2,758	\$ 721
Atlantic							
AT011520	Shippo Corner Pressure Reducing Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 2,097	\$ 2,057	\$ -	\$ -	\$ -	\$ -
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 1,610	\$ -	\$ -	\$ -	\$ -	\$ -
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 39	\$ 202	\$ -	\$ -	\$ -	\$ -
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014301	Atlantic Service Area I/I Reduction Phase I (CHES)	\$ -	\$ -	\$ 521	\$ 1,098	\$ 5,687	\$ 3,345
AT014302	Atlantic Service Area I/I Reduction Phase II (CHES)	\$ -	\$ -	\$ -	\$ -	\$ 1,098	\$ 3,380
AT014303	Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)	\$ -	\$ -	\$ -	\$ -	\$ 19	\$ 73
	Subtotal	\$ 3,746	\$ 2,259	\$ 521	\$ 1,098	\$ 6,804	\$ 6,798
Boat Harbor							
BH013020	Willard Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3	\$ -	\$ -	\$ -	\$ -	\$ -
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014700	Boat Harbor Outlet Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ 82	\$ 1,124	\$ 680	\$ -	\$ -	\$ -
BH015600	Hampton Trunk A and B Replacement-Jefferson Avenue to Walnut Avenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 17,736	\$ 25,381	\$ 25,381	\$ 25,381	\$ 25,381	\$ 12,690
BH015801	14th Street Offline Storage (BH-HPP-01A)	\$ 8,114	\$ 4,792	\$ -	\$ -	\$ -	\$ -
BH015802	Claremont Pump Station Upgrade (BH-HPP-01B)	\$ 526	\$ 738	\$ 6,154	\$ 3,327	\$ -	\$ -
BH015803	Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)	\$ -	\$ 801	\$ 2,395	\$ 8,489	\$ 2,830	\$ -
	Subtotal	\$ 26,460	\$ 32,835	\$ 34,610	\$ 37,196	\$ 28,210	\$ 12,690
Note:	Fats, Oils, and Grease (FOG), Virginia Department of Transportation (VDOT) Interceptor Force Main (IFM) In Flow/Infiltration (I/I) Virginia Initiative Plant (VIP)						

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Chesapeake-Elizabeth						
CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$ 3,411	\$ 3,411	\$ -	\$ -	\$ -
CE010520	Newtown Road Interceptor Force Main Relocation	\$ 2,042	\$ 28	\$ 2,014	\$ -	\$ -
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ 1,425	\$ -	\$ -	\$ 509	\$ 916
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 1,789	\$ -	\$ 21	\$ 134	\$ 643
CE011700	Western Trunk Force Main Replacement	\$ 1,653	\$ 1,653	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 11,082	\$ -	\$ -	\$ 200	\$ 2,016
CE011821	Elbow Road Pressure Reducing Station	\$ 5,743	\$ 3,210	\$ 2,533	\$ -	\$ -
CE011822	Providence Road PRS Upgrades and Interconnect Force Main	\$ 10,899	\$ 7,693	\$ 3,206	\$ -	\$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	\$ 21,029	\$ 8,629	\$ 9,918	\$ 2,482	\$ -
CE011825	Salem Road Interconnect Force Main	\$ 1,080	\$ 1,080	\$ -	\$ -	\$ -
CE011826	Providence Road Off-Line Storage Facility	\$ 26,929	\$ 16,306	\$ 10,624	\$ -	\$ -
CE011827	Atlantic PRS Reliability Modifications	\$ 9,637	\$ 4,288	\$ 5,349	\$ -	\$ -
CE011828	Kempsville PRS Reliability Modifications	\$ 4,187	\$ 2,992	\$ 1,194	\$ -	\$ -
CE011829	Laskin Road PRS Reliability Modifications	\$ 2,173	\$ 2,173	\$ -	\$ -	\$ -
CE011830	Little Creek Pump Station Modifications	\$ 580	\$ 580	\$ -	\$ -	\$ -
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	\$ 1,789	\$ -	\$ -	\$ 1,789	\$ -
CE011840	Oceana Off-Line Storage Facility	\$ 14,245	\$ 2,093	\$ 8,061	\$ 4,091	\$ -
CE012100	Witchduck Road Interceptor Force Main Improvements	\$ 3,558	\$ -	\$ 3	\$ 133	\$ 230
CE012200	Pine Tree PRS Reliability Modifications	\$ 4,590	\$ 4,590	\$ -	\$ -	\$ -
	Subtotal	\$ 127,841	\$ 58,726	\$ 42,923	\$ 9,338	\$ 3,805
James River						
JR010600	Lucas Creek Pump Station Upgrade	\$ 6,347	\$ 133	\$ 303	\$ 5,912	\$ -
JR011300	Patrick Henry Pump Station Interconnection Force Main	\$ 1,267	\$ 903	\$ 365	\$ -	\$ -
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ 11,134	\$ 3,235	\$ 6,762	\$ 1,137	\$ -
JR012100	Huxley to Middle Ground Force Main Extension	\$ 3,528	\$ 3,252	\$ 276	\$ -	\$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ 1,187	\$ 91	\$ 457	\$ 638	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 2,025	\$ 820	\$ 1,205	\$ -	\$ -
JR013400	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 120,750	\$ 237	\$ 2,550	\$ 31,242	\$ 32,520
	Subtotal	\$ 146,238	\$ 8,670	\$ 11,918	\$ 38,929	\$ 32,520
Middle Peninsula						
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 30	\$ 30	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ 3,380	\$ 2,295	\$ 1,085	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ 241	\$ 241	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ 2,126	\$ 1,818	\$ 308	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ 779	\$ 779	\$ -	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ 63	\$ 63	\$ -	\$ -	\$ -
MP013010	Small Communities Collection System Rehabilitation Phase II	\$ 351	\$ 351	\$ -	\$ -	\$ -
MP013020	Small Communities Collection System Rehabilitation Phase III	\$ 527	\$ 261	\$ 265	\$ -	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ 1,192	\$ 1,192	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 13,927	\$ 178	\$ 483	\$ 432	\$ 6,405
MP013500	Middlesex Collection System-Cooks Corner	\$ 1,248	\$ 1,246	\$ 3	\$ -	\$ -
MP013600	Middlesex Interceptor Force Main Phase I-Cooks Corner	\$ 1,647	\$ 1,644	\$ 3	\$ -	\$ -
MP013700	Middlesex Interceptor System Program Phase II-Urbanna to Mathews Transmission Force Main	\$ 26,540	\$ 334	\$ 1,097	\$ 1,043	\$ 12,021
MP013800	Middlesex Interceptor System Program Phase III	\$ 5,413	\$ -	\$ -	\$ 136	\$ 363
MP013900	Urbanna Wastewater Treatment Plant Reliability Improvements	\$ 270	\$ 270	\$ -	\$ -	\$ -
	Subtotal	\$ 57,733	\$ 10,702	\$ 3,244	\$ 1,611	\$ 18,788
Note:	Pressure Reducing Station (PRS) Supervisory Control and Data Acquisition (SCADA)					

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Chesapeake-Elizabeth							
CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE010520	Newtown Road Interceptor Force Main Relocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 991	\$ -	\$ -	\$ -	\$ -	\$ -
CE011700	Western Trunk Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 1,391	\$ 2,086	\$ 2,086	\$ 2,086	\$ 1,217	\$ -
CE011821	Elbow Road Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011822	Providence Road PRS Upgrades and Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011825	Salem Road Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011826	Providence Road Off-Line Storage Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011827	Atlantic PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011828	Kempsville PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011829	Laskin Road PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011830	Little Creek Pump Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011840	Oceana Off-Line Storage Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE012100	Witchduck Road Interceptor Force Main Improvements	\$ 704	\$ 1,298	\$ 1,190	\$ -	\$ -	\$ -
CE012200	Pine Tree PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 3,086	\$ 3,384	\$ 3,276	\$ 2,086	\$ 1,217	\$ -
James River							
JR010600	Lucas Creek Pump Station Upgrade	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR011300	Patrick Henry Pump Station Interconnection Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR012100	Huxley to Middle Ground Force Main Extension	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013400	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 32,520	\$ 21,681	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 32,520	\$ 21,681	\$ -	\$ -	\$ -	\$ -
Middle Peninsula							
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013010	Small Communities Collection System Rehabilitation Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013020	Small Communities Collection System Rehabilitation Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 6,405	\$ 25	\$ -	\$ -	\$ -	\$ -
MP013500	Middlesex Collection System-Cooks Corner	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013600	Middlesex Interceptor Force Main Phase I-Cooks Corner	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013700	Middlesex Interceptor System Program Phase II-Urbanna to Mathews Transmission Force Main	\$ 12,021	\$ 25	\$ -	\$ -	\$ -	\$ -
MP013800	Middlesex Interceptor System Program Phase III	\$ 3,682	\$ 1,231	\$ -	\$ -	\$ -	\$ -
MP013900	Urbanna Wastewater Treatment Plant Reliability Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 22,107	\$ 1,281	\$ -	\$ -	\$ -	\$ -
Note:	Pressure Reducing Station (PRS) Supervisory Control and Data Acquisition (SCADA)						

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Nansemond						
NP010620	Suffolk Pump Station Replacement	\$ 16,108	\$ 1,084	\$ 9,183	\$ 5,841	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ 1,282	\$ 856	\$ 426	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 2,788	\$ -	\$ -	\$ 161	\$ 161
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ 1,565	\$ 1,180	\$ 385	\$ -	\$ -
NP012600	Deep Creek Interceptor Force Main Replacement	\$ 4,207	\$ 3,521	\$ 687	\$ -	\$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	\$ 2,081	\$ 471	\$ 471	\$ 471	\$ 471
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ 2,210	\$ 1,770	\$ 440	\$ -	\$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ 4,503	\$ 2,666	\$ 1,837	\$ -	\$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ 1,632	\$ 996	\$ 635	\$ -	\$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ 9,563	\$ 4,808	\$ 4,755	\$ -	\$ -
NP013810	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph I	\$ 833	\$ 833	\$ -	\$ -	\$ -
NP013820	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph II	\$ 219,712	\$ -	\$ 4,155	\$ 584	\$ 10,170
NP013901	Nansemond Service Area I/I Reduction Phase II (CHES)	\$ 11,256	\$ -	\$ -	\$ -	\$ -
NP013902	Nansemond Service Area I/I Reduction Phase III (CHES)	\$ 8,580	\$ -	\$ -	\$ -	\$ -
NP014000	Wilroy Pressure Reducing Station and Offline Storage (NP-HPP-03)	\$ 15,930	\$ -	\$ -	\$ -	\$ -
NP014100	Nansemond Treatment Plant Shoreline Improvements Phase II	\$ 2,890	\$ -	\$ -	\$ -	\$ -
NP014200	Nansemond Treatment Plant Secondary Clarifier Inlet Replacement Phase I	\$ 690	\$ 463	\$ 227	\$ -	\$ -
NP014300	Smithfield Interim Pressure Reducing Station	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -
NP014400	Nansemond Treatment Plant Influent Screen Replacement	\$ 2,950	\$ 925	\$ 2,025	\$ -	\$ -
	Subtotal	\$ 309,980	\$ 20,775	\$ 25,226	\$ 7,057	\$ 10,802
Surry						
SU010000	Town of Surry Pump Station and Discharge Force Main	\$ 1,158	\$ 1,158	\$ -	\$ -	\$ -
SU010100	Surry County Treatment Plant Infrastructure Improvements	\$ 3,044	\$ 2,073	\$ 971	\$ -	\$ -
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	\$ 2,993	\$ 2,993	\$ -	\$ -	\$ -
	Subtotal	\$ 7,195	\$ 6,224	\$ 971	\$ -	\$ -
Virginia Initiative Plant						
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 1,420	\$ 73	\$ 81	\$ 128	\$ 758
VP014010	Ferebee Avenue Pump Station Replacement	\$ 5,914	\$ 334	\$ -	\$ -	\$ 2,790
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 8,472	\$ 544	\$ -	\$ 3,115	\$ 3,398
VP014700	Ingleside Road Pump Station Replacement	\$ 3,106	\$ 136	\$ 67	\$ 67	\$ 688
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 1,029	\$ -	\$ -	\$ 103	\$ 926
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 13,663	\$ 289	\$ 386	\$ 2,652	\$ 5,954
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 15,473	\$ 825	\$ 1,384	\$ 4,188	\$ 4,188
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ 602	\$ 602	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 2,023	\$ 38	\$ 104	\$ 1,305	\$ 576
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 2,486	\$ 91	\$ 59	\$ 290	\$ 1,534
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 2,534	\$ -	\$ -	\$ 49	\$ 211
VP018000	Park Avenue Pump Station Replacement	\$ 6,740	\$ 677	\$ 4,042	\$ 2,021	\$ -
VP018200	Effingham Interceptor Vault Removal	\$ 814	\$ 471	\$ 343	\$ -	\$ -
VP018301	VIP Service Area I/I Reduction Phase I (PORTS)	\$ 12,843	\$ 570	\$ 1,692	\$ 5,510	\$ 5,054
VP018302	Portsmouth Pump Station Upgrades (VIP-HPP-04B)	\$ 10,138	\$ -	\$ -	\$ -	\$ -
VP018303	VIP Service Area I/I Reduction Phase III (PORTS)	\$ 9,266	\$ 541	\$ 1,180	\$ 4,906	\$ 2,638
VP018304	Camden Avenue Pump Station Upgrades (VIP-HPP-04D)	\$ 5,276	\$ -	\$ -	\$ 223	\$ 244
VP018305	Camden Avenue Gravity Improvements (VIP-HPP-04E)	\$ 2,524	\$ -	\$ -	\$ -	\$ 171
VP018400	State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)	\$ 18,430	\$ 638	\$ 878	\$ 4,343	\$ 9,428
VP018500	Elizabeth River Crossing Reliability Improvements	\$ 1,150	\$ 150	\$ 1,000	\$ -	\$ -
	Subtotal	\$ 123,900	\$ 5,980	\$ 11,219	\$ 28,900	\$ 38,557
Williamsburg						
WB012200	North Trunk Force Main Part B Replacement	\$ 475	\$ 475	\$ -	\$ -	\$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	\$ 15,193	\$ 6,216	\$ 8,277	\$ 700	\$ -
WB012500	Lodge Road Pump Station Upgrades	\$ 1,516	\$ 8	\$ 156	\$ 528	\$ 824
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	\$ 2,420	\$ 1,453	\$ 967	\$ -	\$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ 309	\$ 309	\$ -	\$ -	\$ -
WB012900	Williamsburg Treatment Plant Administration Building Renovation	\$ 1,120	\$ 25	\$ 399	\$ 696	\$ -
	Subtotal	\$ 21,033	\$ 8,486	\$ 9,799	\$ 1,923	\$ 824

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Nansemond							
NP010620	Suffolk Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 2,466	\$ -	\$ -	\$ -	\$ -	\$ -
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP012600	Deep Creek Interceptor Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	\$ 196	\$ -	\$ -	\$ -	\$ -	\$ -
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013810	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013820	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph II	\$ 39,414	\$ 67,937	\$ 72,124	\$ 24,239	\$ 1,089	\$ -
NP013901	Nansemond Service Area I/I Reduction Phase II (CHES)	\$ -	\$ -	\$ -	\$ 1,495	\$ 2,142	\$ 7,620
NP013902	Nansemond Service Area I/I Reduction Phase III (CHES)	\$ -	\$ -	\$ -	\$ 820	\$ 1,606	\$ 6,154
NP014000	Wilroy Pressure Reducing Station and Offline Storage (NP-HPP-03)	\$ -	\$ 463	\$ 949	\$ 3,871	\$ 7,985	\$ 2,662
NP014100	Nansemond Treatment Plant Shoreline Improvements Phase II	\$ -	\$ -	\$ -	\$ 201	\$ 609	\$ 2,079
NP014200	Nansemond Treatment Plant Secondary Clarifier Inlet Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP014300	Smithfield Interim Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP014400	Nansemond Treatment Plant Influent Screen Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 42,077	\$ 68,400	\$ 73,073	\$ 30,626	\$ 13,430	\$ 18,514
Surry							
SU010000	Town of Surry Pump Station and Discharge Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SU010100	Surry County Treatment Plant Infrastructure Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Virginia Initiative Plant							
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 379	\$ -	\$ -	\$ -	\$ -	\$ -
VP014010	Ferebee Avenue Pump Station Replacement	\$ 2,790	\$ -	\$ -	\$ -	\$ -	\$ -
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 1,416	\$ -	\$ -	\$ -	\$ -	\$ -
VP014700	Ingleside Road Pump Station Replacement	\$ 1,611	\$ 537	\$ -	\$ -	\$ -	\$ -
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 4,382	\$ -	\$ -	\$ -	\$ -	\$ -
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 4,188	\$ 698	\$ -	\$ -	\$ -	\$ -
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 511	\$ -	\$ -	\$ -	\$ -	\$ -
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 1,067	\$ 1,207	\$ -	\$ -	\$ -	\$ -
VP018000	Park Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018200	Effingham Interceptor Vault Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018301	VIP Service Area I/I Reduction Phase I (PORTS)	\$ 17	\$ -	\$ -	\$ -	\$ -	\$ -
VP018302	Portsmouth Pump Station Upgrades (VIP-HPP-04B)	\$ 111	\$ 714	\$ 4,867	\$ 4,446	\$ -	\$ -
VP018303	VIP Service Area I/I Reduction Phase III (PORTS)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018304	Camden Avenue Pump Station Upgrades (VIP-HPP-04D)	\$ 2,279	\$ 2,530	\$ -	\$ -	\$ -	\$ -
VP018305	Camden Avenue Gravity Improvements (VIP-HPP-04E)	\$ 930	\$ 1,423	\$ -	\$ -	\$ -	\$ -
VP018400	State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)	\$ 3,143	\$ -	\$ -	\$ -	\$ -	\$ -
VP018500	Elizabeth River Crossing Reliability Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 22,824	\$ 7,108	\$ 4,867	\$ 4,446	\$ -	\$ -
Williamsburg							
WB012200	North Trunk Force Main Part B Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012500	Lodge Road Pump Station Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012900	Williamsburg Treatment Plant Administration Building Renovation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
York River						
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 3,122	\$ -	\$ -	\$ 227	\$ 1,501
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 4,255	\$ 68	\$ 332	\$ 1,398	\$ 2,454
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 5,592	\$ -	\$ -	\$ 32	\$ 58
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ 1,019	\$ 235	\$ 784	\$ -	\$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ 430	\$ 430	\$ -	\$ -	\$ -
YR013710	York River Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ 2,000	\$ 1,900	\$ 100	\$ -	\$ -
YR013900	York River System Isolation Valve Installation and Replacement	\$ 1,919	\$ 177	\$ 1,448	\$ 294	\$ -
	Subtotal	\$ 18,337	\$ 2,810	\$ 2,664	\$ 1,951	\$ 4,014
General						
GN010730	Horizontal Valve Replacement Phase III	\$ 1,082	\$ 457	\$ 625	\$ -	\$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ 5,264	\$ 2,632	\$ 2,632	\$ -	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ 3,834	\$ 2,700	\$ 1,134	\$ -	\$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	\$ 515	\$ 515	\$ -	\$ -	\$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 600	\$ 600	\$ -	\$ -	\$ -
GN013300	Treatment Plant Grease Handling Facilities	\$ 8,832	\$ 2,031	\$ 4,527	\$ 2,274	\$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	\$ 4,539	\$ 229	\$ 220	\$ 2,551	\$ 1,538
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 754	\$ -	\$ 38	\$ 67	\$ 243
GN015300	Interceptor System Valve Improvements Phase I	\$ 2,594	\$ 161	\$ 555	\$ 1,408	\$ 469
GN015400	South Shore Aerial Crossing Improvements	\$ 268	\$ 4	\$ 15	\$ 11	\$ 141
GN015800	North Shore Automated Diversion Facilities	\$ 1,338	\$ 803	\$ 535	\$ -	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ 71	\$ 71	\$ -	\$ -	\$ -
GN016310	Integrated Planning of SWIFT	\$ 7,664	\$ 2,002	\$ 1,941	\$ 1,941	\$ 1,780
GN016311	Outfall Dispersion Modeling for Full Scale SWIFT	\$ 1,181	\$ 306	\$ 350	\$ 175	\$ 350
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 67,665	\$ 3,204	\$ 4,321	\$ 5,842	\$ 10,052
GN016330	Well Services for SWIFT	\$ 1,157	\$ 1,157	\$ -	\$ -	\$ -
GN016341	VIP SWIFT Land Acquisition	\$ 15,000	\$ -	\$ -	\$ -	\$ 15,000
GN016342	Williamsburg SWIFT Land Acquisition	\$ 868	\$ 868	\$ -	\$ -	\$ -
GN016343	James River SWIFT Land Acquisition	\$ 3,310	\$ 3,310	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 105,905	\$ 230	\$ 7,284	\$ 45,686	\$ 46,671
GN016351	Williamsburg Recharge Wells	\$ 10,300	\$ 76	\$ 392	\$ 7,458	\$ 2,374
GN016360	James River SWIFT Facility	\$ 151,871	\$ 3,170	\$ 1,157	\$ 12,242	\$ 43,694
GN016361	James River Recharge Wells	\$ 10,780	\$ -	\$ -	\$ 299	\$ 554
GN016370	York River SWIFT Facility	\$ 136,960	\$ -	\$ -	\$ -	\$ -
GN016371	York River Recharge Wells	\$ 13,940	\$ -	\$ -	\$ -	\$ -
GN016380	Nansemond SWIFT Facility	\$ 282,991	\$ -	\$ -	\$ 5,553	\$ 740
GN016381	Nansemond Recharge Wells	\$ 24,630	\$ -	\$ -	\$ -	\$ -
GN016390	VIP SWIFT Facility	\$ 287,187	\$ -	\$ -	\$ -	\$ 6,966
GN016391	VIP Recharge Wells	\$ 37,503	\$ -	\$ -	\$ -	\$ -
GN016392	VIP SWIFT Site Work	\$ 38,185	\$ -	\$ -	\$ -	\$ 187
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ 2,828	\$ 2,828	\$ -	\$ -	\$ -
GN016500	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ 597	\$ 597	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ 309	\$ 309	\$ -	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ 2,569	\$ 469	\$ 2,100	\$ -	\$ -
GN016800	Fleet Management (FY19)	\$ -	\$ -	\$ -	\$ -	\$ -
GN016900	Mobile Workforce Implementation	\$ 515	\$ 515	\$ -	\$ -	\$ -
GN017100	Climate Change Planning	\$ 3,000	\$ 1,375	\$ 1,500	\$ 125	\$ -
GN017200	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements Phase II	\$ 9,005	\$ 750	\$ 2,458	\$ 4,050	\$ 1,748
GN017300	Treatment Plant Dewatering Replacement Program	\$ 24,500	\$ -	\$ -	\$ 3,500	\$ 7,000
GN017400	Treatment Plant Dewatering Replacement Phase III	\$ 3,500	\$ -	\$ 735	\$ 2,074	\$ 691
GN017500	Fleet Management Program	\$ 16,195	\$ -	\$ 1,193	\$ 1,312	\$ 1,443
GN017600	Fleet Management (FY20)	\$ 1,237	\$ 1,237	\$ -	\$ -	\$ -
	Subtotal	\$ 1,291,043	\$ 32,606	\$ 33,714	\$ 96,567	\$ 141,641
Future Improvements						
IP010800	Regional Wet Weather Improvements	\$ 29,750	\$ 52	\$ 225	\$ 1,425	\$ 2,201
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 155,676	\$ 789	\$ 2,490	\$ 503	\$ 3,610
	Subtotal	\$ 185,426	\$ 841	\$ 2,715	\$ 1,929	\$ 5,811
	CIP TOTALS	\$ 2,670,882	\$ 215,000	\$ 189,216	\$ 219,048	\$ 285,714
Note:	James River Treatment Plant (JR) Nansemond Treatment Plant (NTP)					

FY-2020 to FY-2029 Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
York River							
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 1,393	\$ -	\$ -	\$ -	\$ -	\$ -
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 3	\$ -	\$ -	\$ -	\$ -	\$ -
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 509	\$ 1,601	\$ 2,394	\$ 998	\$ -	\$ -
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013710	York River Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013900	York River System Isolation Valve Installation and Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 1,905	\$ 1,601	\$ 2,394	\$ 998	\$ -	\$ -
General							
GN010730	Horizontal Valve Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN013300	Treatment Plant Grease Handling Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 406	\$ -	\$ -	\$ -	\$ -	\$ -
GN015300	Interceptor System Valve Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN015400	South Shore Aerial Crossing Improvements	\$ 97	\$ -	\$ -	\$ -	\$ -	\$ -
GN015800	North Shore Automated Diversion Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016310	Integrated Planning of SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016311	Outfall Dispersion Modeling for Full Scale SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 11,049	\$ 10,756	\$ 8,527	\$ 3,021	\$ 3,132	\$ 7,760
GN016330	Well Services for SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016341	VIP SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016342	Williamsburg SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016343	James River SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 5,560	\$ 473	\$ -	\$ -	\$ -	\$ -
GN016351	Williamsburg Recharge Wells	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016360	James River SWIFT Facility	\$ 58,633	\$ 25,499	\$ 7,476	\$ -	\$ -	\$ -
GN016361	James River Recharge Wells	\$ 8,722	\$ 1,205	\$ -	\$ -	\$ -	\$ -
GN016370	York River SWIFT Facility	\$ 2,986	\$ 3,538	\$ 14,804	\$ 47,951	\$ 52,263	\$ 15,418
GN016371	York River Recharge Wells	\$ -	\$ -	\$ 386	\$ 2,193	\$ 10,905	\$ 456
GN016380	Nansemond SWIFT Facility	\$ 14,158	\$ 64,403	\$ 55,216	\$ 61,291	\$ 66,409	\$ 15,221
GN016381	Nansemond Recharge Wells	\$ -	\$ 469	\$ 702	\$ 13,088	\$ 10,194	\$ 177
GN016390	VIP SWIFT Facility	\$ 308	\$ 11,412	\$ 20,564	\$ 62,375	\$ 96,163	\$ 89,398
GN016391	VIP Recharge Wells	\$ -	\$ -	\$ -	\$ 1,399	\$ 10,414	\$ 25,690
GN016392	VIP SWIFT Site Work	\$ 735	\$ 8,136	\$ 29,099	\$ 28	\$ -	\$ -
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016500	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016800	Fleet Management (FY19)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016900	Mobile Workforce Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017100	Climate Change Planning	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017200	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017300	Treatment Plant Dewatering Replacement Program	\$ 3,500	\$ 3,500	\$ -	\$ -	\$ 3,500	\$ 3,500
GN017400	Treatment Plant Dewatering Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017500	Fleet Management Program	\$ 1,587	\$ 1,746	\$ 1,921	\$ 2,113	\$ 2,324	\$ 2,556
GN017600	Fleet Management (FY20)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 107,743	\$ 131,137	\$ 138,694	\$ 193,460	\$ 255,304	\$ 160,176
Future Improvements							
IP010800	Regional Wet Weather Improvements	\$ 2,268	\$ 2,063	\$ 3,126	\$ 5,651	\$ 5,769	\$ 6,970
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 3,946	\$ 10,507	\$ 24,956	\$ 32,999	\$ 43,650	\$ 32,226
	Subtotal	\$ 6,214	\$ 12,569	\$ 28,082	\$ 38,650	\$ 49,419	\$ 39,195
	CIP TOTALS	\$ 285,714	\$ 285,714	\$ 285,714	\$ 309,524	\$ 357,143	\$ 238,095
Note:	James River Treatment Plant (JR) Nansemond Treatment Plant (NTP)						

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HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #5

AGENDA ITEM 6. – Subordinate Trust Agreement Exclusion of Certain Locality Improvements from Calculation of Operating Expenses Resolution

Hampton Roads Sanitation District
Resolution of
May 28, 2019

HAMPTON ROADS SANITATION DISTRICT COMMISSION

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

Adopted May 28, 2019

RESOLUTION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Section 4. Further Actions. The Chairman of the Commission, Vice Chairman of the Commission, the General Manager of the District and the Director of Finance of the District (each, a “Delegate”), any of whom may act, are each authorized and directed (without limitation except as may be expressly set forth herein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effectuate the actions contemplated by this Resolution.

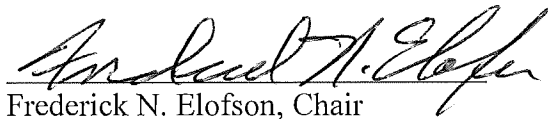
Section 5. Delegates’ Certificate. Each Delegate may execute a Certificate or Certificates evidencing the determinations made or other actions carried out pursuant to the authority granted in this Resolution, and any such Certificate shall be conclusive evidence of the actions or determinations as stated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

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

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

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on May 28, 2019.


Frederick N. Elofson, Chair

LOCALITY IMPROVEMENTS

CE011830: Little Creek Pump Station Modifications

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

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

Approximate Project Cost: \$834,000

CE011835: Virginia Beach City Pump Station Upgrades, Phase V

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

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

Approximate Project Cost: \$2,156,700

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #6

AGENDA ITEM 7. – Tax Exempt Bond Proceeds Expenditure for Fiscal Year (FY)
2020 – 2021 Reimbursement Resolution

Hampton Roads Sanitation District
Resolution of
May 28, 2019

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION OF THE HAMPTON ROADS SANITATION DISTRICT COMMISSION OF
HAMPTON ROADS SANITATION DISTRICT DECLARING ITS INTENTION TO
REIMBURSE ITSELF FROM THE PROCEEDS OF ONE OR MORE TAX-EXEMPT
FINANCINGS FOR CERTAIN EXPENDITURES MADE OR TO BE MADE IN
CONNECTION WITH THE ACQUISITION, CONSTRUCTION OR EQUIPPING OF
CERTAIN CAPITAL IMPROVEMENTS

Adopted May 28, 2019

RESOLUTION OF THE HAMPTON ROADS SANITATION DISTRICT COMMISSION OF
HAMPTON ROADS SANITATION DISTRICT DECLARING ITS INTENTION TO
REIMBURSE ITSELF FROM THE PROCEEDS OF ONE OR MORE TAX-EXEMPT
FINANCINGS FOR CERTAIN EXPENDITURES MADE OR TO BE MADE IN
CONNECTION WITH THE ACQUISITION, CONSTRUCTION OR EQUIPPING OF
CERTAIN CAPITAL IMPROVEMENTS

WHEREAS, Hampton Roads Sanitation District (the “District”) is a political subdivision organized and existing under the laws of the Commonwealth of Virginia; and

WHEREAS, the District prepares a Capital Improvement Program (“CIP”) each year for capital projects currently underway and proposed to be undertaken over the next 10 years and a draft CIP is reviewed by the Hampton Roads Sanitation District Commission (the “Commission”) in late March or early April with a final CIP typically adopted in May; and

WHEREAS, in connection with the preparation of the annual CIP, the District prepares annual cash flow projections, setting forth the cash flow needs for capital projects and funding sources for such projects broken down into categories of (a) cash from the District’s operation of its facilities, (b) loans from the Virginia Clean Water Revolving Loan Program (such loans, “Clean Water Revolving Fund Loans”), which is administered by the Virginia Resources Authority (“VRA”), and (c) amounts expected to be raised from the issuance of bonds or other obligations (which, for purposes hereof, may include draws from the District’s Credit Agreement by and between the District and Bank of America, N.A., dated as of October, 30, 2015, as heretofore or hereinafter amended); and

WHEREAS, the District has paid, beginning on a date no more than 60 days prior to the date hereof, and will pay, on and after the date hereof, certain expenditures (the “Expenditures”) in connection with the acquisition, construction and/or equipping of the Capital projects for FY2020 and FY2021, as listed in the District’s FY2020 – FY2029 CIP, which was adopted on the date hereof, and attached as Exhibit A hereto (the “Projects”); and

WHEREAS, the Commission has determined that those moneys previously advanced no more than 60 days prior to the date hereof and to be advanced on and after the date hereof to pay the Expenditures are available only for a temporary period and it is necessary to reimburse the District for the Expenditures from the proceeds of the Clean Water Revolving Fund Loans, or one or more issues of tax-exempt bonds (the “Bonds”);

NOW, THEREFORE, THE HAMPTON ROADS SANITATION DISTRICT COMMISSION DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The Commission hereby declares the District’s intent to reimburse the District with the proceeds of the Bonds or Clean Water Revolving Fund Loans for the Expenditures with respect to the Projects made no more than 60 days prior to the date hereof. The District reasonably expects on the date hereof that it will reimburse the Expenditures with the proceeds of the Bonds or Clean Water Revolving Fund Loans.

Section 2. Each Expenditure was and will be (a) of a type properly chargeable to capital account under general federal income tax principles (determined in each case as of the date of the Expenditure), (b) a cost of issuance with respect to the Clean Water Revolving Fund Loans or the Bonds, (c) an extraordinary nonrecurring item that is not customarily payable from current revenues, or (d) a grant to a party that is not related to or an agent of the District so long as such grant does not impose any obligation or condition (directly or indirectly) to repay any amount to or for the benefit of the District.

Section 3. The maximum principal amount of the Clean Water Revolving Fund Loans and Bonds expected to be issued for the Projects is \$107,500,000.

Section 4. The District will make a reimbursement allocation, which is a written allocation by the District that evidences the District's use of proceeds of the Clean Water Revolving Fund Loans or the Bonds to reimburse an Expenditure, no later than 18 months after the later of the date on which the Expenditure is paid or the related Projects are placed in service or abandoned, but in no event more than three years after the date on which the Expenditure is paid. The District recognizes that exceptions are available for certain "preliminary expenditures," costs of issuance, certain *de minimis* amounts, and expenditures for construction projects of at least five years.

Section 5. This resolution shall take effect immediately upon its passage.

[End of Resolution]

PASSED AND ADOPTED this 28th day of May, 2019.

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

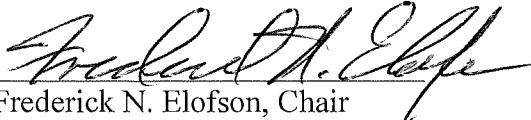

Frederick N. Elofson, Chair

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Administration						
AD012100	Asset Management Implementation	\$ 803	\$ 803	\$ -	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ 14,730	\$ 13,597	\$ 1,133	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ 1,978	\$ 58	\$ 1,280	\$ 640	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ 1,727	\$ 1,727	\$ -	\$ -	\$ -
AD012500	Cybersecurity Practice & Procedure Initiative	\$ 15,500	\$ 3,153	\$ 3,153	\$ 3,153	\$ 3,153
	Subtotal	\$ 34,738	\$ 19,338	\$ 5,566	\$ 3,793	\$ 3,153
Army Base						
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 22,339	\$ -	\$ -	\$ 1,607	\$ 4,832
AB010500	Section W Force Main Replacement	\$ 2,090	\$ -	\$ -	\$ -	\$ 192
AB011800	Army Base to VIP Transmission Force Main	\$ 4,443	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 28,873	\$ -	\$ -	\$ 1,607	\$ 5,024
Atlantic						
AT011520	Shippo Corner Pressure Reducing Station Modifications	\$ 1,458	\$ 9	\$ 107	\$ 671	\$ 671
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 4,444	\$ -	\$ -	\$ 63	\$ 228
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ 1,151	\$ 1,116	\$ 35	\$ -	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ 6,386	\$ 1,373	\$ 1,900	\$ 3,113	\$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ 3,227	\$ 228	\$ 784	\$ 2,216	\$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 5,460	\$ -	\$ 334	\$ 296	\$ 3,220
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 258	\$ -	\$ -	\$ -	\$ 17
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ 10,479	\$ 10,158	\$ 321	\$ -	\$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ 156	\$ 110	\$ 46	\$ -	\$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	\$ 1,208	\$ 1,208	\$ -	\$ -	\$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	\$ 1,069	\$ 675	\$ 394	\$ -	\$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	\$ 12,072	\$ 1,627	\$ 6,597	\$ 3,849	\$ -
AT014301	Atlantic Service Area I/I Reduction Phase I (CHES)	\$ 10,651	\$ -	\$ -	\$ -	\$ -
AT014302	Atlantic Service Area I/I Reduction Phase II (CHES)	\$ 4,478	\$ -	\$ -	\$ -	\$ -
AT014303	Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)	\$ 91	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 62,590	\$ 16,503	\$ 10,518	\$ 10,208	\$ 4,135
Boat Harbor						
BH013020	Willard Avenue Pump Station Replacement	\$ 7,060	\$ 916	\$ 4,333	\$ 1,811	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3,600	\$ -	\$ 231	\$ 839	\$ 2,528
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 10,485	\$ 3,148	\$ 5,168	\$ 2,168	\$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 2,014	\$ -	\$ 16	\$ 585	\$ 1,414
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	\$ 7,562	\$ 652	\$ 4,358	\$ 2,552	\$ -
BH014700	Boat Harbor Outlet Sewer Improvements	\$ 5,663	\$ 4,151	\$ 1,512	\$ -	\$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	\$ 1,938	\$ 1,450	\$ 488	\$ -	\$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ 3,728	\$ 428	\$ 2,326	\$ 974	\$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ 4,850	\$ 4,850	\$ -	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ 2,868	\$ 108	\$ 182	\$ 778	\$ 1,800
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ 6,420	\$ 4,521	\$ 1,899	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ 1,887	\$ -	\$ -	\$ -	\$ -
BH015600	Hampton Trunk A and B Replacement-Jefferson Avenue to Walnut Avenue	\$ 9,643	\$ 991	\$ 6,101	\$ 2,552	\$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 148,413	\$ 2,125	\$ 2,125	\$ 2,125	\$ 10,091
BH015801	14th Street Offline Storage (BH-HPP-01A)	\$ 14,566	\$ -	\$ -	\$ 853	\$ 808
BH015802	Claremont Pump Station Upgrade (BH-HPP-01B)	\$ 10,745	\$ -	\$ -	\$ -	\$ -
BH015803	Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)	\$ 14,515	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 255,957	\$ 23,339	\$ 28,740	\$ 15,236	\$ 16,639
Note:	Fats, Oils, and Grease (FOG), Virginia Department of Transportation (VDOT) Interceptor Force Main (IFM) In Flow/Infiltration (I/I)					

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Administration							
AD012100	Asset Management Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012500	Cybersecurity Practice & Procedure Initiative	\$ 2,890	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 2,890	\$ -	\$ -	\$ -	\$ -	\$ -
Army Base							
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 13,629	\$ 2,271	\$ -	\$ -	\$ -	\$ -
AB010500	Section W Force Main Replacement	\$ 513	\$ 1,187	\$ 198	\$ -	\$ -	\$ -
AB011800	Army Base to VIP Transmission Force Main	\$ -	\$ -	\$ -	\$ 964	\$ 2,758	\$ 721
	Subtotal	\$ 14,142	\$ 3,459	\$ 198	\$ 964	\$ 2,758	\$ 721
Atlantic							
AT011520	Shippo Corner Pressure Reducing Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 2,097	\$ 2,057	\$ -	\$ -	\$ -	\$ -
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 1,610	\$ -	\$ -	\$ -	\$ -	\$ -
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 39	\$ 202	\$ -	\$ -	\$ -	\$ -
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT014301	Atlantic Service Area I/I Reduction Phase I (CHES)	\$ -	\$ -	\$ 521	\$ 1,098	\$ 5,687	\$ 3,345
AT014302	Atlantic Service Area I/I Reduction Phase II (CHES)	\$ -	\$ -	\$ -	\$ -	\$ 1,098	\$ 3,380
AT014303	Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)	\$ -	\$ -	\$ -	\$ -	\$ 19	\$ 73
	Subtotal	\$ 3,746	\$ 2,259	\$ 521	\$ 1,098	\$ 6,804	\$ 6,798
Boat Harbor							
BH013020	Willard Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3	\$ -	\$ -	\$ -	\$ -	\$ -
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014700	Boat Harbor Outlet Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ 82	\$ 1,124	\$ 680	\$ -	\$ -	\$ -
BH015600	Hampton Trunk A and B Replacement-Jefferson Avenue to Walnut Avenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 17,736	\$ 25,381	\$ 25,381	\$ 25,381	\$ 25,381	\$ 12,690
BH015801	14th Street Offline Storage (BH-HPP-01A)	\$ 8,114	\$ 4,792	\$ -	\$ -	\$ -	\$ -
BH015802	Claremont Pump Station Upgrade (BH-HPP-01B)	\$ 526	\$ 738	\$ 6,154	\$ 3,327	\$ -	\$ -
BH015803	Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)	\$ -	\$ 801	\$ 2,395	\$ 8,489	\$ 2,830	\$ -
	Subtotal	\$ 26,460	\$ 32,835	\$ 34,610	\$ 37,196	\$ 28,210	\$ 12,690
Fats, Oils, and Grease (FOG), Virginia Department of Transportation (VDOT) Interceptor Force Main (IFM) In Flow/Infiltration (I/I)							
Note:							

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Chesapeake-Elizabeth						
CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$ 3,411	\$ 3,411	\$ -	\$ -	\$ -
CE010520	Newtown Road Interceptor Force Main Relocation	\$ 2,042	\$ 28	\$ 2,014	\$ -	\$ -
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ 1,425	\$ -	\$ -	\$ 509	\$ 916
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 1,789	\$ -	\$ 21	\$ 134	\$ 643
CE011700	Western Trunk Force Main Replacement	\$ 1,653	\$ 1,653	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 11,082	\$ -	\$ -	\$ 200	\$ 2,016
CE011821	Elbow Road Pressure Reducing Station	\$ 5,743	\$ 3,210	\$ 2,533	\$ -	\$ -
CE011822	Providence Road PRS Upgrades and Interconnect Force Main	\$ 10,899	\$ 7,693	\$ 3,206	\$ -	\$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	\$ 21,029	\$ 8,629	\$ 9,918	\$ 2,482	\$ -
CE011825	Salem Road Interconnect Force Main	\$ 1,080	\$ 1,080	\$ -	\$ -	\$ -
CE011826	Providence Road Off-Line Storage Facility	\$ 26,929	\$ 16,306	\$ 10,624	\$ -	\$ -
CE011827	Atlantic PRS Reliability Modifications	\$ 9,637	\$ 4,288	\$ 5,349	\$ -	\$ -
CE011828	Kempsville PRS Reliability Modifications	\$ 4,187	\$ 2,992	\$ 1,194	\$ -	\$ -
CE011829	Laskin Road PRS Reliability Modifications	\$ 2,173	\$ 2,173	\$ -	\$ -	\$ -
CE011830	Little Creek Pump Station Modifications	\$ 580	\$ 580	\$ -	\$ -	\$ -
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	\$ 1,789	\$ -	\$ -	\$ 1,789	\$ -
CE011840	Oceana Off-Line Storage Facility	\$ 14,245	\$ 2,093	\$ 8,061	\$ 4,091	\$ -
CE012100	Witchduck Road Interceptor Force Main Improvements	\$ 3,558	\$ -	\$ 3	\$ 133	\$ 230
CE012200	Pine Tree PRS Reliability Modifications	\$ 4,590	\$ 4,590	\$ -	\$ -	\$ -
	Subtotal	\$ 127,841	\$ 58,726	\$ 42,923	\$ 9,338	\$ 3,805
James River						
JR010600	Lucas Creek Pump Station Upgrade	\$ 6,347	\$ 133	\$ 303	\$ 5,912	\$ -
JR011300	Patrick Henry Pump Station Interconnection Force Main	\$ 1,267	\$ 903	\$ 365	\$ -	\$ -
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ 11,134	\$ 3,235	\$ 6,762	\$ 1,137	\$ -
JR012100	Huxley to Middle Ground Force Main Extension	\$ 3,528	\$ 3,252	\$ 276	\$ -	\$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ 1,187	\$ 91	\$ 457	\$ 638	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 2,025	\$ 820	\$ 1,205	\$ -	\$ -
JR013400	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 120,750	\$ 237	\$ 2,550	\$ 31,242	\$ 32,520
	Subtotal	\$ 146,238	\$ 8,670	\$ 11,918	\$ 38,929	\$ 32,520
Middle Peninsula						
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 30	\$ 30	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ 3,380	\$ 2,295	\$ 1,085	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ 241	\$ 241	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ 2,126	\$ 1,818	\$ 308	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ 779	\$ 779	\$ -	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ 63	\$ 63	\$ -	\$ -	\$ -
MP013010	Small Communities Collection System Rehabilitation Phase II	\$ 351	\$ 351	\$ -	\$ -	\$ -
MP013020	Small Communities Collection System Rehabilitation Phase III	\$ 527	\$ 261	\$ 265	\$ -	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ 1,192	\$ 1,192	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 13,927	\$ 178	\$ 483	\$ 432	\$ 6,405
MP013500	Middlesex Collection System-Cooks Corner	\$ 1,248	\$ 1,246	\$ 3	\$ -	\$ -
MP013600	Middlesex Interceptor Force Main Phase I-Cooks Corner	\$ 1,647	\$ 1,644	\$ 3	\$ -	\$ -
MP013700	Middlesex Interceptor System Program Phase II-Urbanna to Mathews Transmission Force Main	\$ 26,540	\$ 334	\$ 1,097	\$ 1,043	\$ 12,021
MP013800	Middlesex Interceptor System Program Phase III	\$ 5,413	\$ -	\$ -	\$ 136	\$ 363
MP013900	Urbanna Wastewater Treatment Plant Reliability Improvements	\$ 270	\$ 270	\$ -	\$ -	\$ -
	Subtotal	\$ 57,733	\$ 10,702	\$ 3,244	\$ 1,611	\$ 18,788
Note:	Pressure Reducing Station (PRS)					

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Chesapeake-Elizabeth							
CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE010520	Newtown Road Interceptor Force Main Relocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 991	\$ -	\$ -	\$ -	\$ -	\$ -
CE011700	Western Trunk Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 1,391	\$ 2,086	\$ 2,086	\$ 2,086	\$ 1,217	\$ -
CE011821	Elbow Road Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011822	Providence Road PRS Upgrades and Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011825	Salem Road Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011826	Providence Road Off-Line Storage Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011827	Atlantic PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011828	Kempsville PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011829	Laskin Road PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011830	Little Creek Pump Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011840	Oceana Off-Line Storage Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE012100	Witchduck Road Interceptor Force Main Improvements	\$ 704	\$ 1,298	\$ 1,190	\$ -	\$ -	\$ -
CE012200	Pine Tree PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 3,086	\$ 3,384	\$ 3,276	\$ 2,086	\$ 1,217	\$ -
James River							
JR010600	Lucas Creek Pump Station Upgrade	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR011300	Patrick Henry Pump Station Interconnection Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR012100	Huxley to Middle Ground Force Main Extension	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013400	James River Treatment Plant Advanced Nutrient Reduction Improvements	\$ 32,520	\$ 21,681	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 32,520	\$ 21,681	\$ -	\$ -	\$ -	\$ -
Middle Peninsula							
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013010	Small Communities Collection System Rehabilitation Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013020	Small Communities Collection System Rehabilitation Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 6,405	\$ 25	\$ -	\$ -	\$ -	\$ -
MP013500	Middlesex Collection System-Cooks Corner	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013600	Middlesex Interceptor Force Main Phase I-Cooks Corner	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013700	Middlesex Interceptor System Program Phase II-Urbanna to Mathews Transmission Force Main	\$ 12,021	\$ 25	\$ -	\$ -	\$ -	\$ -
MP013800	Middlesex Interceptor System Program Phase III	\$ 3,682	\$ 1,231	\$ -	\$ -	\$ -	\$ -
MP013900	Urbanna Wastewater Treatment Plant Reliability Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 22,107	\$ 1,281	\$ -	\$ -	\$ -	\$ -
Note:	Pressure Reducing Station (PRS)						

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
Nansemond						
NP010620	Suffolk Pump Station Replacement	\$ 16,108	\$ 1,084	\$ 9,183	\$ 5,841	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ 1,282	\$ 856	\$ 426	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 2,788	\$ -	\$ -	\$ 161	\$ 161
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ 1,565	\$ 1,180	\$ 385	\$ -	\$ -
NP012600	Deep Creek Interceptor Force Main Replacement	\$ 4,207	\$ 3,521	\$ 687	\$ -	\$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	\$ 2,081	\$ 471	\$ 471	\$ 471	\$ 471
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ 2,210	\$ 1,770	\$ 440	\$ -	\$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ 4,503	\$ 2,666	\$ 1,837	\$ -	\$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ 1,632	\$ 996	\$ 635	\$ -	\$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ 9,563	\$ 4,808	\$ 4,755	\$ -	\$ -
NP013810	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph I	\$ 833	\$ 833	\$ -	\$ -	\$ -
NP013820	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph II	\$ 219,712	\$ -	\$ 4,155	\$ 584	\$ 10,170
NP013901	Nansemond Service Area I/I Reduction Phase II (CHES)	\$ 11,256	\$ -	\$ -	\$ -	\$ -
NP013902	Nansemond Service Area I/I Reduction Phase III (CHES)	\$ 8,580	\$ -	\$ -	\$ -	\$ -
NP014000	Wilroy Pressure Reducing Station and Offline Storage (NP-HPP-03)	\$ 15,930	\$ -	\$ -	\$ -	\$ -
NP014100	Nansemond Treatment Plant Shoreline Improvements Phase II	\$ 2,890	\$ -	\$ -	\$ -	\$ -
NP014200	Nansemond Treatment Plant Secondary Clarifier Inlet Replacement Phase I	\$ 690	\$ 463	\$ 227	\$ -	\$ -
NP014300	Smithfield Interim Pressure Reducing Station	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -
NP014400	Nansemond Treatment Plant Influent Screen Replacement	\$ 2,950	\$ 925	\$ 2,025	\$ -	\$ -
	Subtotal	\$ 309,980	\$ 20,775	\$ 25,226	\$ 7,057	\$ 10,802
Surry						
SU010000	Town of Surry Pump Station and Discharge Force Main	\$ 1,158	\$ 1,158	\$ -	\$ -	\$ -
SU010100	Surry County Treatment Plant Infrastructure Improvements	\$ 3,044	\$ 2,073	\$ 971	\$ -	\$ -
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	\$ 2,993	\$ 2,993	\$ -	\$ -	\$ -
	Subtotal	\$ 7,195	\$ 6,224	\$ 971	\$ -	\$ -
Virginia Initiative Plant						
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 1,420	\$ 73	\$ 81	\$ 128	\$ 758
VP014010	Ferebee Avenue Pump Station Replacement	\$ 5,914	\$ 334	\$ -	\$ -	\$ 2,790
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 8,472	\$ 544	\$ -	\$ 3,115	\$ 3,398
VP014700	Ingleside Road Pump Station Replacement	\$ 3,106	\$ 136	\$ 67	\$ 67	\$ 688
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 1,029	\$ -	\$ -	\$ 103	\$ 926
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 13,663	\$ 289	\$ 386	\$ 2,652	\$ 5,954
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 15,473	\$ 825	\$ 1,384	\$ 4,188	\$ 4,188
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ 602	\$ 602	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 2,023	\$ 38	\$ 104	\$ 1,305	\$ 576
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 2,486	\$ 91	\$ 59	\$ 290	\$ 1,534
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 2,534	\$ -	\$ -	\$ 49	\$ 211
VP018000	Park Avenue Pump Station Replacement	\$ 6,740	\$ 677	\$ 4,042	\$ 2,021	\$ -
VP018200	Effingham Interceptor Vault Removal	\$ 814	\$ 471	\$ 343	\$ -	\$ -
VP018301	VIP Service Area I/I Reduction Phase I (PORTS)	\$ 12,843	\$ 570	\$ 1,692	\$ 5,510	\$ 5,054
VP018302	Portsmouth Pump Station Upgrades (VIP-HPP-04B)	\$ 10,138	\$ -	\$ -	\$ -	\$ -
VP018303	VIP Service Area I/I Reduction Phase III (PORTS)	\$ 9,266	\$ 541	\$ 1,180	\$ 4,906	\$ 2,638
VP018304	Camden Avenue Pump Station Upgrades (VIP-HPP-04D)	\$ 5,276	\$ -	\$ -	\$ 223	\$ 244
VP018305	Camden Avenue Gravity Improvements (VIP-HPP-04E)	\$ 2,524	\$ -	\$ -	\$ -	\$ 171
VP018400	State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)	\$ 18,430	\$ 638	\$ 878	\$ 4,343	\$ 9,428
VP018500	Elizabeth River Crossing Reliability Improvements	\$ 1,150	\$ 150	\$ 1,000	\$ -	\$ -
	Subtotal	\$ 123,900	\$ 5,980	\$ 11,219	\$ 28,900	\$ 38,557
Williamsburg						
WB012200	North Trunk Force Main Part B Replacement	\$ 475	\$ 475	\$ -	\$ -	\$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	\$ 15,193	\$ 6,216	\$ 8,277	\$ 700	\$ -
WB012500	Lodge Road Pump Station Upgrades	\$ 1,516	\$ 8	\$ 156	\$ 528	\$ 824
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	\$ 2,420	\$ 1,453	\$ 967	\$ -	\$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ 309	\$ 309	\$ -	\$ -	\$ -
WB012900	Williamsburg Treatment Plant Administration Building Renovation	\$ 1,120	\$ 25	\$ 399	\$ 696	\$ -
	Subtotal	\$ 21,033	\$ 8,486	\$ 9,799	\$ 1,923	\$ 824

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
Nansemond							
NP010620	Suffolk Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 2,466	\$ -	\$ -	\$ -	\$ -	\$ -
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP012600	Deep Creek Interceptor Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	\$ 196	\$ -	\$ -	\$ -	\$ -	\$ -
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013810	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP013820	Nansemond Treatment Plant Advanced Nutrient Reduction Improvements Ph II	\$ 39,414	\$ 67,937	\$ 72,124	\$ 24,239	\$ 1,089	\$ -
NP013901	Nansemond Service Area I/I Reduction Phase II (CHES)	\$ -	\$ -	\$ -	\$ 1,495	\$ 2,142	\$ 7,620
NP013902	Nansemond Service Area I/I Reduction Phase III (CHES)	\$ -	\$ -	\$ -	\$ 820	\$ 1,606	\$ 6,154
NP014000	Wilroy Pressure Reducing Station and Offline Storage (NP-HPP-03)	\$ -	\$ 463	\$ 949	\$ 3,871	\$ 7,985	\$ 2,662
NP014100	Nansemond Treatment Plant Shoreline Improvements Phase II	\$ -	\$ -	\$ -	\$ 201	\$ 609	\$ 2,079
NP014200	Nansemond Treatment Plant Secondary Clarifier Inlet Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP014300	Smithfield Interim Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP014400	Nansemond Treatment Plant Influent Screen Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 42,077	\$ 68,400	\$ 73,073	\$ 30,626	\$ 13,430	\$ 18,514
Surry							
SU010000	Town of Surry Pump Station and Discharge Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SU010100	Surry County Treatment Plant Infrastructure Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Virginia Initiative Plant							
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 379	\$ -	\$ -	\$ -	\$ -	\$ -
VP014010	Ferebee Avenue Pump Station Replacement	\$ 2,790	\$ -	\$ -	\$ -	\$ -	\$ -
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 1,416	\$ -	\$ -	\$ -	\$ -	\$ -
VP014700	Ingleside Road Pump Station Replacement	\$ 1,611	\$ 537	\$ -	\$ -	\$ -	\$ -
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 4,382	\$ -	\$ -	\$ -	\$ -	\$ -
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 4,188	\$ 698	\$ -	\$ -	\$ -	\$ -
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 511	\$ -	\$ -	\$ -	\$ -	\$ -
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 1,067	\$ 1,207	\$ -	\$ -	\$ -	\$ -
VP018000	Park Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018200	Effingham Interceptor Vault Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018301	VIP Service Area I/I Reduction Phase I (PORTS)	\$ 17	\$ -	\$ -	\$ -	\$ -	\$ -
VP018302	Portsmouth Pump Station Upgrades (VIP-HPP-04B)	\$ 111	\$ 714	\$ 4,867	\$ 4,446	\$ -	\$ -
VP018303	VIP Service Area I/I Reduction Phase III (PORTS)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018304	Camden Avenue Pump Station Upgrades (VIP-HPP-04D)	\$ 2,279	\$ 2,530	\$ -	\$ -	\$ -	\$ -
VP018305	Camden Avenue Gravity Improvements (VIP-HPP-04E)	\$ 930	\$ 1,423	\$ -	\$ -	\$ -	\$ -
VP018400	State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)	\$ 3,143	\$ -	\$ -	\$ -	\$ -	\$ -
VP018500	Elizabeth River Crossing Reliability Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 22,824	\$ 7,108	\$ 4,867	\$ 4,446	\$ -	\$ -
Williamsburg							
WB012200	North Trunk Force Main Part B Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012500	Lodge Road Pump Station Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012900	Williamsburg Treatment Plant Administration Building Renovation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	Total FY-2020 to FY-2029	FY-2020	FY-2021	FY-2022	FY-2023
York River						
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 3,122	\$ -	\$ -	\$ 227	\$ 1,501
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 4,255	\$ 68	\$ 332	\$ 1,398	\$ 2,454
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 5,592	\$ -	\$ -	\$ 32	\$ 58
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ 1,019	\$ 235	\$ 784	\$ -	\$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ 430	\$ 430	\$ -	\$ -	\$ -
YR013710	York River Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ 2,000	\$ 1,900	\$ 100	\$ -	\$ -
YR013900	York River System Isolation Valve Installation and Replacement	\$ 1,919	\$ 177	\$ 1,448	\$ 294	\$ -
	Subtotal	\$ 18,337	\$ 2,810	\$ 2,664	\$ 1,951	\$ 4,014
General						
GN010730	Horizontal Valve Replacement Phase III	\$ 1,082	\$ 457	\$ 625	\$ -	\$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ 5,264	\$ 2,632	\$ 2,632	\$ -	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ 3,834	\$ 2,700	\$ 1,134	\$ -	\$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	\$ 515	\$ 515	\$ -	\$ -	\$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 600	\$ 600	\$ -	\$ -	\$ -
GN013300	Treatment Plant Grease Handling Facilities	\$ 8,832	\$ 2,031	\$ 4,527	\$ 2,274	\$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	\$ 4,539	\$ 229	\$ 220	\$ 2,551	\$ 1,538
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 754	\$ -	\$ 38	\$ 67	\$ 243
GN015300	Interceptor System Valve Improvements Phase I	\$ 2,594	\$ 161	\$ 555	\$ 1,408	\$ 469
GN015400	South Shore Aerial Crossing Improvements	\$ 268	\$ 4	\$ 15	\$ 11	\$ 141
GN015800	North Shore Automated Diversion Facilities	\$ 1,338	\$ 803	\$ 535	\$ -	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ 71	\$ 71	\$ -	\$ -	\$ -
GN016310	Integrated Planning of SWIFT	\$ 7,664	\$ 2,002	\$ 1,941	\$ 1,941	\$ 1,780
GN016311	Outfall Dispersion Modeling for Full Scale SWIFT	\$ 1,181	\$ 306	\$ 350	\$ 175	\$ 350
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 67,665	\$ 3,204	\$ 4,321	\$ 5,842	\$ 10,052
GN016330	Well Services for SWIFT	\$ 1,157	\$ 1,157	\$ -	\$ -	\$ -
GN016341	VIP SWIFT Land Acquisition	\$ 15,000	\$ -	\$ -	\$ -	\$ 15,000
GN016342	Williamsburg SWIFT Land Acquisition	\$ 868	\$ 868	\$ -	\$ -	\$ -
GN016343	James River SWIFT Land Acquisition	\$ 3,310	\$ 3,310	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 105,905	\$ 230	\$ 7,284	\$ 45,686	\$ 46,671
GN016351	Williamsburg Recharge Wells	\$ 10,300	\$ 76	\$ 392	\$ 7,458	\$ 2,374
GN016360	James River SWIFT Facility	\$ 151,871	\$ 3,170	\$ 1,157	\$ 12,242	\$ 43,694
GN016361	James River Recharge Wells	\$ 10,780	\$ -	\$ -	\$ 299	\$ 554
GN016370	York River SWIFT Facility	\$ 136,960	\$ -	\$ -	\$ -	\$ -
GN016371	York River Recharge Wells	\$ 13,940	\$ -	\$ -	\$ -	\$ -
GN016380	Nansemond SWIFT Facility	\$ 282,991	\$ -	\$ -	\$ 5,553	\$ 740
GN016381	Nansemond Recharge Wells	\$ 24,630	\$ -	\$ -	\$ -	\$ -
GN016390	VIP SWIFT Facility	\$ 287,187	\$ -	\$ -	\$ -	\$ 6,966
GN016391	VIP Recharge Wells	\$ 37,503	\$ -	\$ -	\$ -	\$ -
GN016392	VIP SWIFT Site Work	\$ 38,185	\$ -	\$ -	\$ -	\$ 187
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ 2,828	\$ 2,828	\$ -	\$ -	\$ -
GN016500	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ 597	\$ 597	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ 309	\$ 309	\$ -	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ 2,569	\$ 469	\$ 2,100	\$ -	\$ -
GN016800	Fleet Management (FY19)	\$ -	\$ -	\$ -	\$ -	\$ -
GN016900	Mobile Workforce Implementation	\$ 515	\$ 515	\$ -	\$ -	\$ -
GN017100	Climate Change Planning	\$ 3,000	\$ 1,375	\$ 1,500	\$ 125	\$ -
GN017200	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements Phase II	\$ 9,005	\$ 750	\$ 2,458	\$ 4,050	\$ 1,748
GN017300	Treatment Plant Dewatering Replacement Program	\$ 24,500	\$ -	\$ -	\$ 3,500	\$ 7,000
GN017400	Treatment Plant Dewatering Replacement Phase III	\$ 3,500	\$ -	\$ 735	\$ 2,074	\$ 691
GN017500	Fleet Management Program	\$ 16,195	\$ -	\$ 1,193	\$ 1,312	\$ 1,443
GN017600	Fleet Management (FY20)	\$ 1,237	\$ 1,237	\$ -	\$ -	\$ -
	Subtotal	\$ 1,291,043	\$ 32,606	\$ 33,714	\$ 96,567	\$ 141,641
Future Improvements						
IP010800	Regional Wet Weather Improvements	\$ 29,750	\$ 52	\$ 225	\$ 1,425	\$ 2,201
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 155,676	\$ 789	\$ 2,490	\$ 503	\$ 3,610
	Subtotal	\$ 185,426	\$ 841	\$ 2,715	\$ 1,929	\$ 5,811
	CIP TOTALS	\$ 2,670,882	\$ 215,000	\$ 189,216	\$ 219,048	\$ 285,714

EXHIBIT A
CAPITAL IMPROVEMENT PROGRAM
FY2020 – FY2029

CIP No	Project Name	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028	FY-2029
York River							
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 1,393	\$ -	\$ -	\$ -	\$ -	\$ -
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 3	\$ -	\$ -	\$ -	\$ -	\$ -
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 509	\$ 1,601	\$ 2,394	\$ 998	\$ -	\$ -
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013710	York River Treatment Plant Advanced Nutrient Reduction Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013900	York River System Isolation Valve Installation and Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 1,905	\$ 1,601	\$ 2,394	\$ 998	\$ -	\$ -
General							
GN010730	Horizontal Valve Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN013300	Treatment Plant Grease Handling Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 406	\$ -	\$ -	\$ -	\$ -	\$ -
GN015300	Interceptor System Valve Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN015400	South Shore Aerial Crossing Improvements	\$ 97	\$ -	\$ -	\$ -	\$ -	\$ -
GN015800	North Shore Automated Diversion Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016310	Integrated Planning of SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016311	Outfall Dispersion Modeling for Full Scale SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 11,049	\$ 10,756	\$ 8,527	\$ 3,021	\$ 3,132	\$ 7,760
GN016330	Well Services for SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016341	VIP SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016342	Williamsburg SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016343	James River SWIFT Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 5,560	\$ 473	\$ -	\$ -	\$ -	\$ -
GN016351	Williamsburg Recharge Wells	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016360	James River SWIFT Facility	\$ 58,633	\$ 25,499	\$ 7,476	\$ -	\$ -	\$ -
GN016361	James River Recharge Wells	\$ 8,722	\$ 1,205	\$ -	\$ -	\$ -	\$ -
GN016370	York River SWIFT Facility	\$ 2,986	\$ 3,538	\$ 14,804	\$ 47,951	\$ 52,263	\$ 15,418
GN016371	York River Recharge Wells	\$ -	\$ -	\$ 386	\$ 2,193	\$ 10,905	\$ 456
GN016380	Nansemond SWIFT Facility	\$ 14,158	\$ 64,403	\$ 55,216	\$ 61,291	\$ 66,409	\$ 15,221
GN016381	Nansemond Recharge Wells	\$ -	\$ 469	\$ 702	\$ 13,088	\$ 10,194	\$ 177
GN016390	VIP SWIFT Facility	\$ 308	\$ 11,412	\$ 20,564	\$ 62,375	\$ 96,163	\$ 89,398
GN016391	VIP Recharge Wells	\$ -	\$ -	\$ -	\$ 1,399	\$ 10,414	\$ 25,690
GN016392	VIP SWIFT Site Work	\$ 735	\$ 8,136	\$ 29,099	\$ 28	\$ -	\$ -
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016500	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016800	Fleet Management (FY19)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016900	Mobile Workforce Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017100	Climate Change Planning	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017200	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017300	Treatment Plant Dewatering Replacement Program	\$ 3,500	\$ 3,500	\$ -	\$ -	\$ 3,500	\$ 3,500
GN017400	Treatment Plant Dewatering Replacement Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017500	Fleet Management Program	\$ 1,587	\$ 1,746	\$ 1,921	\$ 2,113	\$ 2,324	\$ 2,556
GN017600	Fleet Management (FY20)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 107,743	\$ 131,137	\$ 138,694	\$ 193,460	\$ 255,304	\$ 160,176
Future Improvements							
IP010800	Regional Wet Weather Improvements	\$ 2,268	\$ 2,063	\$ 3,126	\$ 5,651	\$ 5,769	\$ 6,970
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 3,946	\$ 10,507	\$ 24,956	\$ 32,999	\$ 43,650	\$ 32,226
	Subtotal	\$ 6,214	\$ 12,569	\$ 28,082	\$ 38,650	\$ 49,419	\$ 39,195
	CIP TOTALS	\$ 285,714	\$ 285,714	\$ 285,714	\$ 309,524	\$ 357,143	\$ 238,095

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #7

AGENDA ITEM 8. – Water Infrastructure Finance and Innovation Act (WIFIA) Letter of Interest (LOI) Submission For Swift Program Funding

- [Resolution](#)
- [Presentation](#)

Hampton Roads Sanitation District
Resolution of
May 28, 2019

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION
AUTHORIZING THE GENERAL MANAGER TO

SUBMIT A LETTER OF INTEREST FOR THE WATER INFRASTRUCTURE FINANCING
AND INNOVATION ACT PROGRAM TO FINANCE A PORTION OF THE SUSTAINABLE
WATER INITIATIVE FOR TOMORROW (SWIFT) PROGRAM

Adopted May 28, 2019

RESOLUTION

RESOLUTION AUTHORIZING THE GENERAL MANAGER TO SUBMIT A LETTER OF INTEREST FOR THE WATER INFRASTRUCTURE FINANCING AND INNOVATION ACT PROGRAM TO FINANCE A PORTION OF THE SUSTAINABLE WATER INITIATIVE FOR TOMORROW (SWIFT) PROGRAM, NOT TO EXCEED \$2,000,000,000 IN PRINCIPAL AMOUNT.

WHEREAS, the Hampton Roads Sanitation District (the “District”) is seeking low cost financing to fund the Sustainable Water Initiative for Tomorrow (SWIFT) program; and

WHEREAS, Congress approved the Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) to accelerate the nation’s investment in water infrastructure by providing long-term, low-cost supplemental loans managed by the Environmental Protection Agency (EPA); and

WHEREAS, The EPA issued a Notice of Funding Availability (NOFA) requesting prospective borrows to submit a Letter of Interest (LOI) indicating the desire to apply for Water Infrastructure Finance Innovation Act (WIFIA) funding; and

WHEREAS, The District is seeking to submit a LOI for the Sustainable Water Initiative for Tomorrow (SWIFT) program; and

WHEREAS, the District will incur no expense to submit the WIFIA LOI; and

WHEREAS, the District will not be held contractually obligated if selected to apply; now, therefore,

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

Section 1. Authorization. The Commission hereby authorizes the General Manager to submit a LOI for WIFIA funding.


Section 2. Maximum Amount. The maximum principal amount in the LOI will not exceed \$2,000,000,000.

Section 3. Further Actions. If the Borrower is invited to apply for WIFIA funding, the Commission will need to approve a separate resolution authorizing the General Manager to apply for WIFIA funding and pay the application fee.

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

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on May 28, 2019.


Frederick N. Elofson, CPA, Chairman



Water Infrastructure Finance
and Innovation Act (WIFIA)
Resolution
May 28, 2019

- Low fixed rate, federally subsidized funding
- Flexible structure for repayment and lien position
 - Can be prepaid without penalty
- WIFIA will fund 49% of approved project(s)
 - Remainder of funding can be through State funding (VCWRLF)
- **Goal:** Acquire the lowest cost of capital without impacting SWIFT implementation schedule

SELECTION WEIGHTS

PROJECT IMPACT CRITERIA	POINTS
National or regional significance	15
Protection against extreme weather events	5
Serves energy exploration or production areas	5
Serves regions with water resource challenges	10
Addresses identified priorities	10
Repair, rehabilitation, or replacement	25
Economically stressed communities	10
Reduces exposure to lead & emergent contaminants	20

BORROWER CREDITWORTHINESS CRITERIA	POINTS
Enables project to proceed earlier	10
Financing plan	10
Reduction of Federal assistance	10
Required budget authority	10
Preliminary creditworthiness assessment	60

PROJECT READINESS CRITERIA	POINTS
Readiness to proceed	50
Preliminary engineering feasibility analysis	30
New or innovative approaches	20

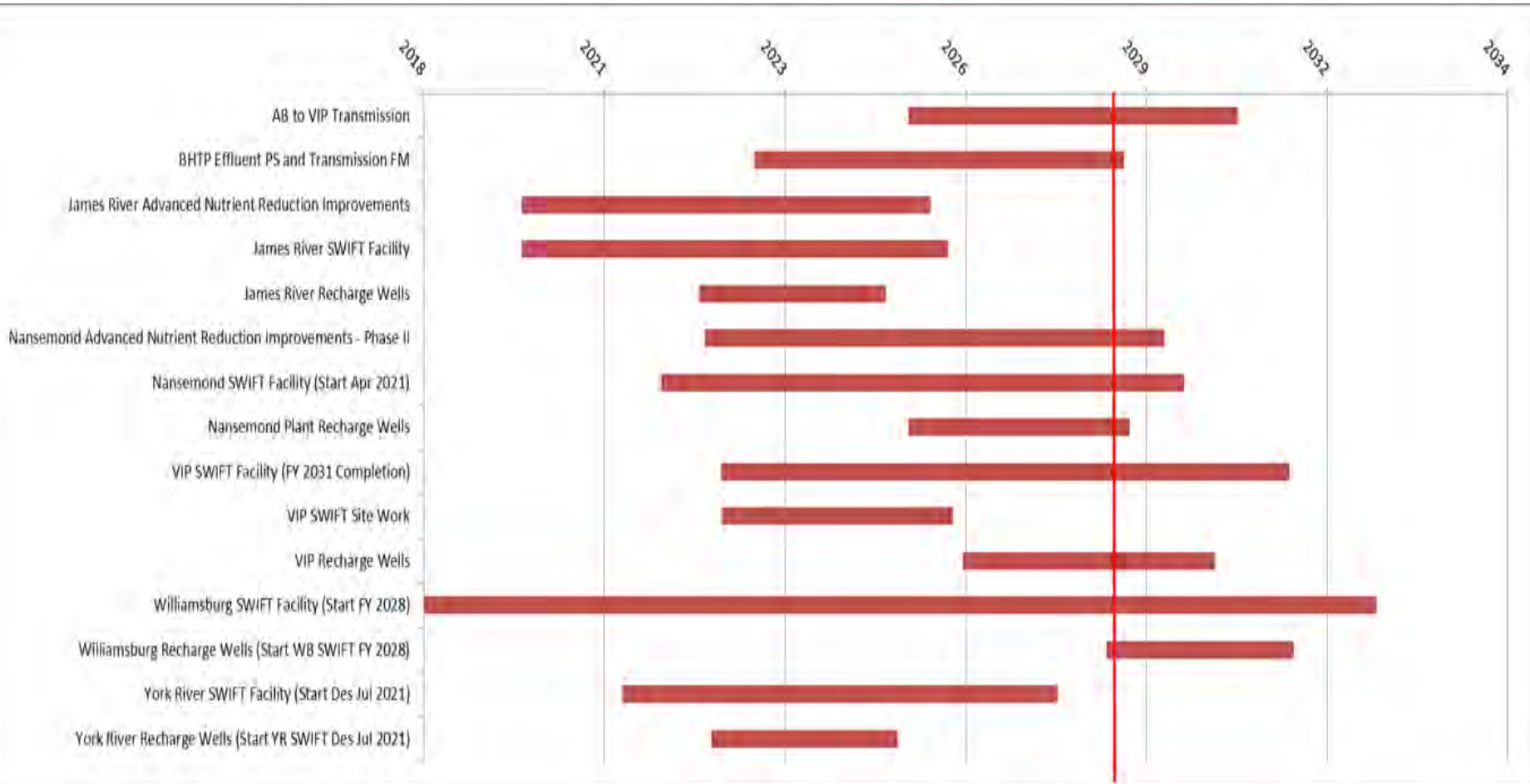
TOTAL AVAILABLE POINTS: 300



SWIFT Program Packaging

Total	\$1,723,958,609
AB to VIP Transmission	\$49,020,000
BHTP Effluent PS and Transmission FM	\$149,298,500
James River Advanced Nutrient Reduction Improvements	\$120,750,000
James River SWIFT Facility	\$151,871,000
James River Recharge Wells	\$10,780,000
Nansemond Advanced Nutrient Reduction Improvements - Phase II	\$219,712,000
Nansemond SWIFT Facility (Start Apr 2021)	\$292,377,000
Nansemond Plant Recharge Wells	\$24,630,000
VIP SWIFT Facility (FY 2031 Completion)	\$348,521,000
VIP SWIFT Site Work	\$38,185,000
VIP Recharge Wells	\$41,690,000
Williamsburg SWIFT Facility (Start FY 2028)	\$109,811,109
Williamsburg Recharge Wells (Start WB SWIFT FY 2028)	\$10,300,000
York River SWIFT Facility (Start Des Jul 2021)	\$143,073,000
York River Recharge Wells (Start YR SWIFT Des Jul 2021)	\$13,940,000

Potential Phased Approach



Schedule of Events



Schedule of Events Continued



- From LOI: Describe the authorizing actions (e.g., local vote, board vote, ordinance) that would need to occur to enter into a loan agreement with the WIFIA program.

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #8

AGENDA ITEM 9. – SWIFT PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)
RESEARCH PRESENTATION



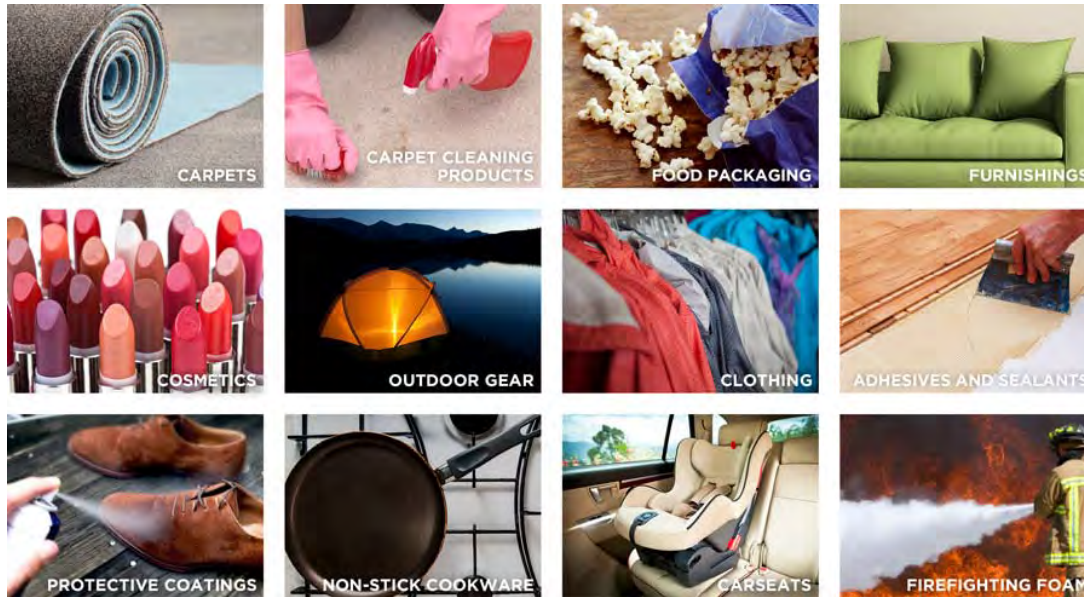
PFAS – Protecting Treatment and Swift

Dana Gonzalez, Ph.D.
May 28, 2019

- Brief PFAS introduction
- Phase 1 (1970's – 2016): Source control to protect wastewater treatment
- Phase 2 (2016 – present): Source control to protect indirect potable reuse activities

PFAS Uses and Health Concerns

- Common products: non-stick coatings, stain and waterproofing products, food wrappers/ tin foil, aqueous film forming foam (AFFF)

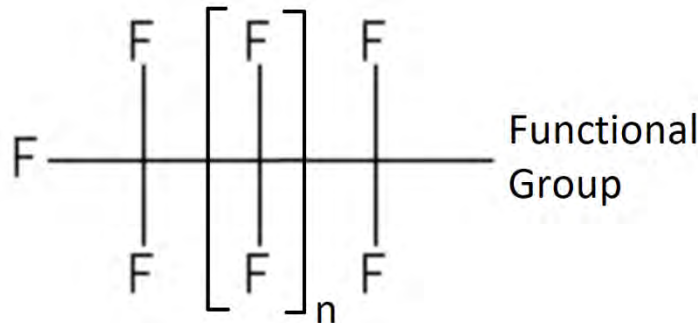


www.sixclasses.org

- Health concerns
 - Bioaccumulation
 - Liver toxicity
 - Cancer
 - Pregnancy complications
 - Endocrine disorders
 - Reduced immune response

Per and Polyfluoroalkyl Substance

- Man-made
- Nearly 5,000 different compounds
- C-F bond is strongest in nature
- Cannot be broken using conventional treatment
- PFAS structure
 - Carbon chain length varies
 - Functional groups: sulfonates (ex. PFOS), carboxylates (ex. PFOA), phosphonates



Phase 1: Protecting Wastewater Treatment



HRSD Pretreatment and Pollution Prevention



- P3 department at HRSD regulates acceptable discharges from commercial customers
- Protect biological processes at treatment plants as well as potential pass-through toxicity in receiving water bodies

Army Base Treatment Plant and AFFF (1976)

- Fleet Training Center Fire Fighting School—trains US Navy Atlantic Fleet personnel
- Request to send firefighting foam waste to treatment plant



Saam, R., P. Rakowski, and G. Aydlett. 1979. Treatability of Firefighting School Wastewaters: US Navy Compliance with POTW Pretreatment Requirements. *Proceedings of the 34th Purdue Industrial Waste Conference, West Lafayette, Indiana.*

Aqueous Film Forming Foam (AFFF)

- In 1976 there were no established techniques for analyzing AFFF waste, nor were there any discharge limits
- HRSD requested testing—treatment inhibition and/or pass-through toxicity



http://www.svfd.net/SVFD%20Files/Articles/Foam/2A_How_AFFF_works.html

AFFF Impacts on BOD Removal

- Study added diluted AFFF waste to pilot version of ABTP
- Impact on BOD removal and effective settling
- AFFF not allowed into HRSD waste stream



- Military dominated area with many airports
- Approximately 10% of HRSD's industrial waste comes from large military installations
- Disposal of AFFF to the sanitary sewers is identified as the preferred method of disposal by the US Army Corp of Engineers
- Requests and studies over the last 40+ years pertaining to AFFF waste

Virginia Initiative Plant and AFFF

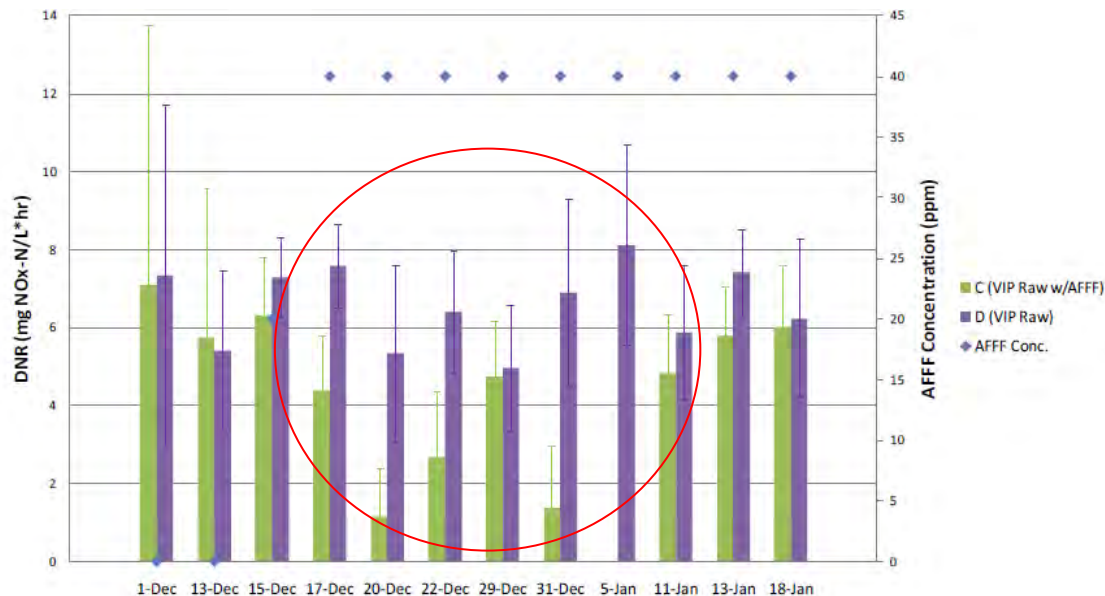
- Study funded in late 1990s by the Navy
- Found that nitrification was not inhibited nor was there pass through toxicity at AFFF concentrations below 60 ppm
- Did not investigate impacts on denitrification or biological phosphorus removal
 - Not uncommon based on the assumption that nitrification is more susceptible than denitrification



Erten-Unal, Mujde, S. Paranjape, and Gary C. Schafran. 1998. *Evaluation of the Effects of AFFF Inputs to the VIP Biological Nutrient Removal Process and Pass-through Toxicity-Phase IA*. No. NRL/MR/6180-98-8141. OLD DOMINION UNIV NORFOLK VA DEPT OF CIVIL AND ENVIRONMENTAL ENGINEERING.

Denitrification Inhibition Associated with AFFF

- 2010 study found denitrification inhibition
 - Heterotrophic inhibition
 - No nitrification inhibition at 40 ppm AFFF addition



Hingley, D.M. 2010. Evaluation of nitrification inhibition using sequencing batch reactors and BioWin modeling, and the effect of aqueous film forming foam on biological nutrient removal. Virginia Tech Masters Thesis.

Recent AFFF Interest at HRSD

- HRSD has four treatment plants where methanol storage requires AFFF fire suppression systems
- What is the potential for these systems to cause treatment upsets?
- Document fate and transport of PFAS after simulated release.

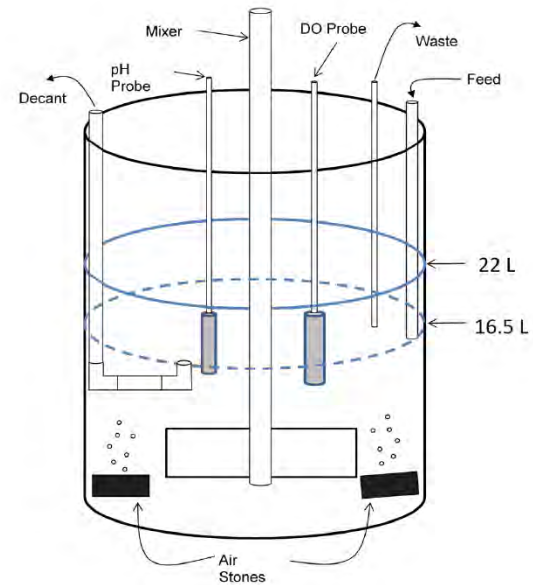
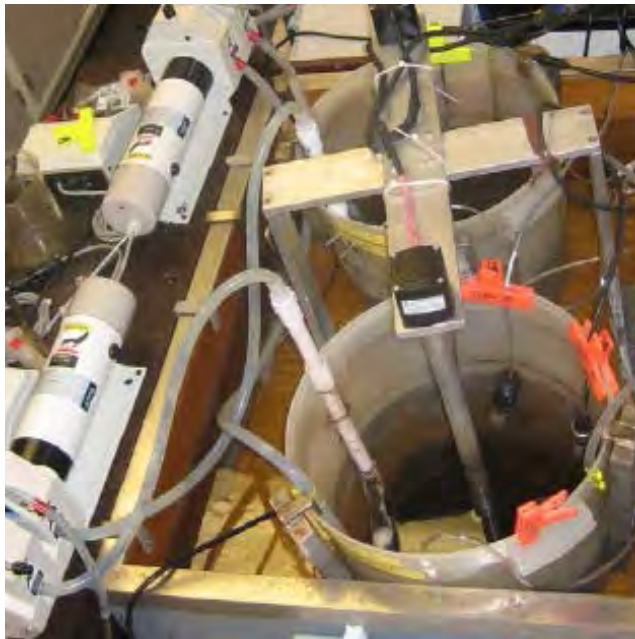


Photos: B McNamara



Sequencing Batch Reactors (SBRs)

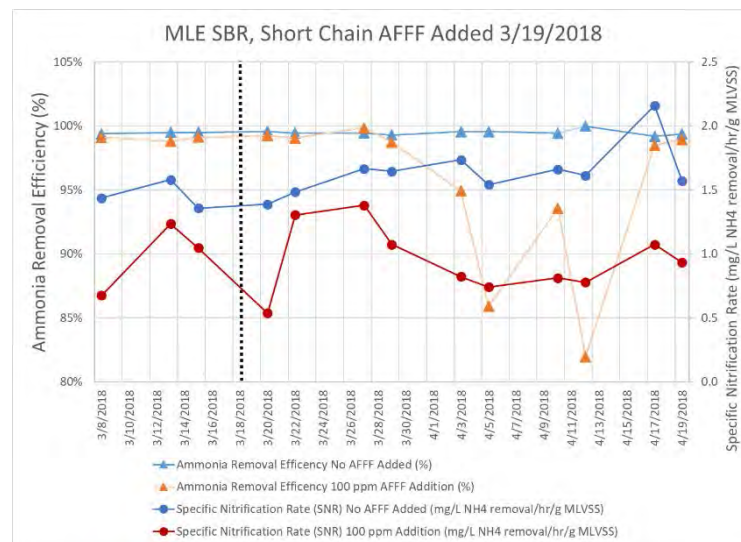
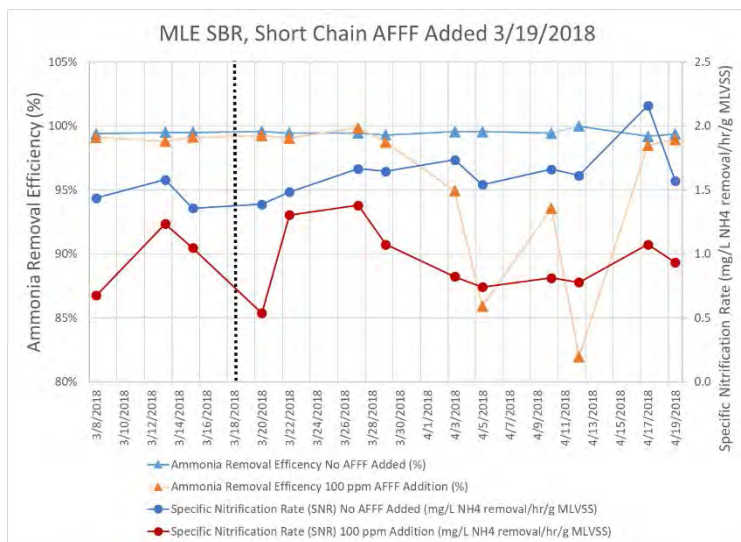
- Reactors that can be configured to mimic any number of wastewater treatment trains
- Used to simulate AFFF release from methanol suppression system and track impacts



D. Hingley (2010)

Testing AFFF used at HRSD Treatment Plants

- Mild impact on nitrification
- No apparent impact on denitrification
- Biological P removal work ongoing
- Fate and transport work ongoing

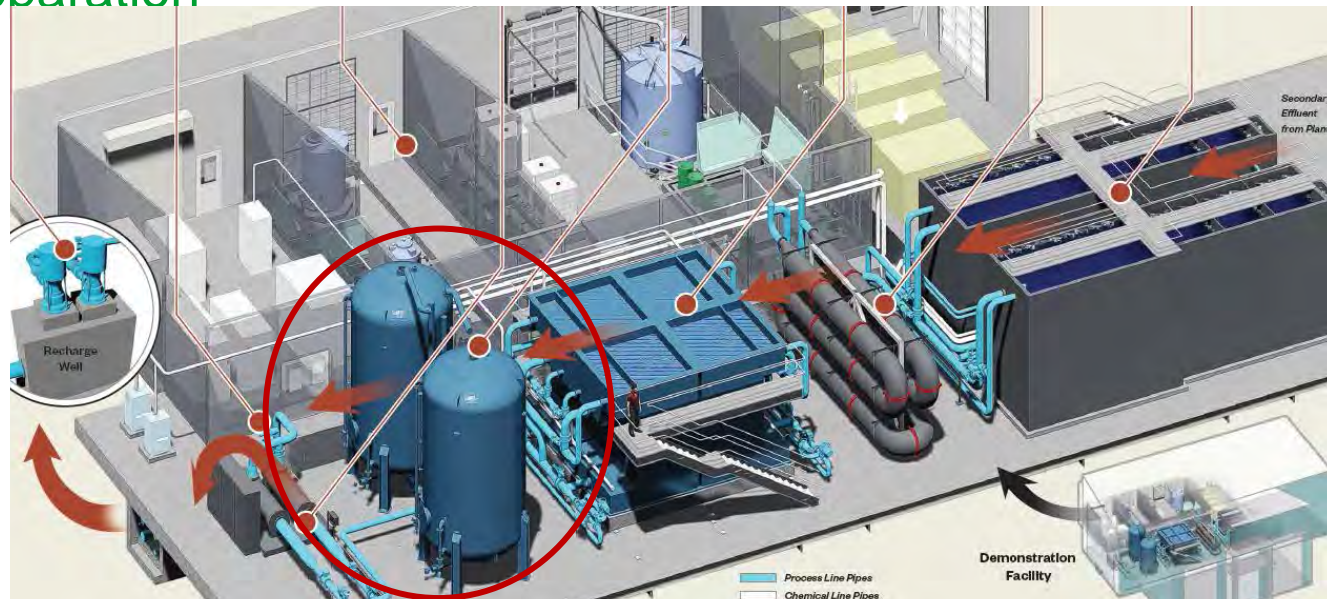


Phase 2: Protection of Indirect Potable Reuse



Phase 2: Protection of Indirect Potable Reuse

- Conventional treatment technologies do not impart enough energy to break down PFAS
- Continue zero-discharge policy for AFFF in order minimize pass-through to SWIFT facilities
- Drinking water technologies for PFAS treatment rely on separation

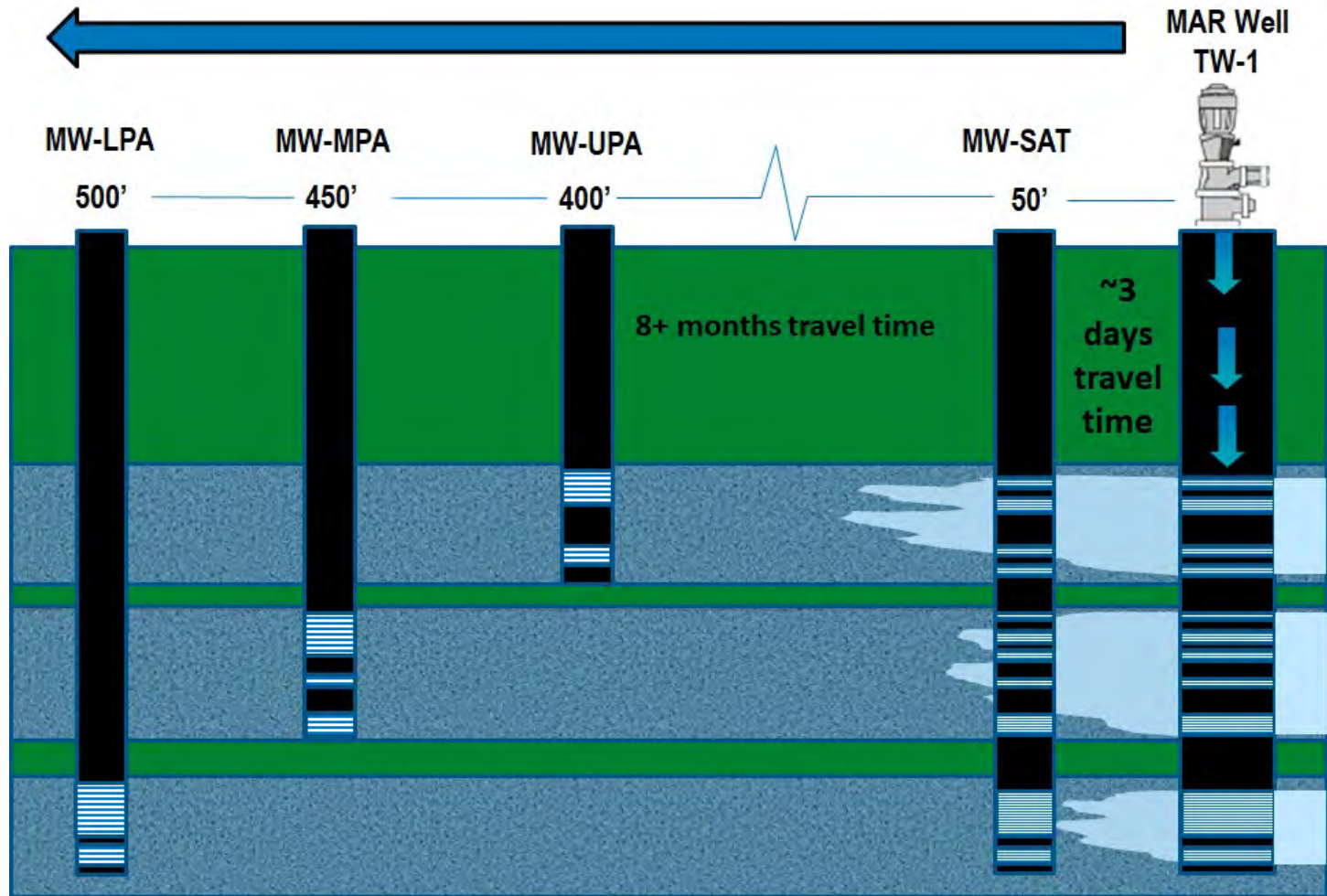


SWIFT Water Characterization

- Initial monitoring (March 2017 – August 2018)
 - Looked for six PFAS compounds in NP Raw Influent and NP SCE (SWIFT influent)
 - All below detection on seven sample dates
- Current monitoring (only one sample date so far)
 - Looked for 14 PFAS compounds with lower detection limits than initial monitoring

	NP SCE (SWIFT influent)	SWIFT Water
Perfluorooctanesulfonic Acid (PFOS, µg/L)	0.008	<0.002
Perfluorooctanoic Acid (PFOA, µg/L)	0.007	<0.002
Perfluorohexanesulfonic Acid (PFHxS, µg/L)	0.003	<0.002
Perfluoroheptanoic Acid (PFHpA, µg/L)	0.002	<0.002
Perfluorobutanesulfonic Acid (PFBS, µg/L)	0.006	0.002
Perfluorohexanoic Acid (PFHxA, µg/L)	0.016	0.016

Groundwater Monitoring at SWIFT RC



Perfluorohexanoic Acid (PFHxA) in Monitoring wells

- EPA Method 537 (14 compound) analysis with lowest LOQs available
- Only showing PFHxA data, all other compounds non-detect

	7/23/2018 (µg/L)	8/1/2018 (µg/L)	10/1/2018 (µg/L)	10/15/2018 (µg/L)	10/29/2018 (µg/L)	1/23/2019 (µg/L)
Well Screen 1	<0.002	<0.002	0.003*	0.008	0.012	0.014
Well Screen 4					0.011	0.007
Well Screen 8						0.004
Well Screen 9					0.012	0.003
Well Screen 10						<0.002
Well Screen 11						<0.002
Upper Potomac						<0.002
Middle Potomac						<0.002
Lower Potomac						<0.002

*Flag: potential matrix interference

Expanded Contract Lab In-House Method (39 Compound)

- One sample point so far: 4/3/2019
- All with lowest LOQ developed (0.002 or 0.005 µg/L)
- Of 39 compounds, only detected five PFAS at low levels

	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	6:2 Fluorotelomer sulfonic acid (6:2 PFS)	8:2 Fluorotelomer sulfonic acid (8:2 PFS)
Well Screen 1	0.011	0.025	0.014	<0.002	<0.002
Well Screen 2	0.011	0.026	0.016	<0.002	<0.002
Well Screen 3	0.007	0.014	0.008	0.003	0.005
Well Screen 4	<0.005	0.010	0.005	<0.002	<0.002
Well Screen 5	0.009	0.019	0.012	<0.002	<0.002
Well Screen 6	0.007	0.013	0.007	<0.002	<0.002
Well Screen 7	0.006	0.008	0.005	<0.002	<0.002
Well Screen 8	0.009	0.013	0.004	<0.002	<0.002
Well Screen 9	<0.005	0.004	<0.002	<0.002	<0.002
Well Screen 10	<0.005	0.003	<0.002	<0.002	<0.002
Well Screen 11	<0.005	<0.002	<0.002	<0.002	<0.002
Upper Potomac	<0.005	<0.002	<0.002	<0.002	<0.002
Middle Potomac	<0.005	<0.002	<0.002	<0.002	<0.002
Lower Potomac	<0.005	<0.002	<0.002	<0.002	<0.002

- Focus of toxicology research has been on PFOS/PFOA (> 80% of studies)
- CDC ATSDR Toxicological Profile for Perfluoroalkyls
 - Analyzed toxicology information for 14 compounds from nearly 200 studies
 - Only calculated Minimal Risk Levels (MRL) for PFOS, PFOA, PFHxS, PFNA based on intermediate exposure (15-364 days); no chronic estimates

What do we know about PFBA, PFPeA, PFHxA?

- Bioaccumulation estimates
 - PFBA: 70 - 80 hour half life in humans
 - PFPeA & PFHxA: not available for humans
 - PFHxA cleared from system of primates in ~5 days (Compare to PFOA ~20-30 days and PFOS ~100-170 days)
- Animal studies
 - PFBA: Increased liver weights in rats (30 mg/kg/day for 1 to 3 months → equivalent to 70 kg human drinking 2L of 1,050 mg/L PFBA each day); all other body functions normal
 - PFHxA: chronic exposure of rats to 200 mg/kg/day negatively impacted blood cell counts, renal activity, and liver

WRF Grant Collaboration



- Goal: Understand removal of PFAS, particularly low molecular weight compounds across GAC
- Fresh GAC installed
- Sampling 2X per month for 12 months
- Subset of samples will incorporate TOP assay

- Two low level detections of PFAS seen in SWIFT water when looking at lowest quantitation limits available
- Still need more information on PFAS toxicology
- Ongoing work:
 - PFAS fate and transport through wastewater treatment
 - Removal of PFAS (especially low MW) across GAC

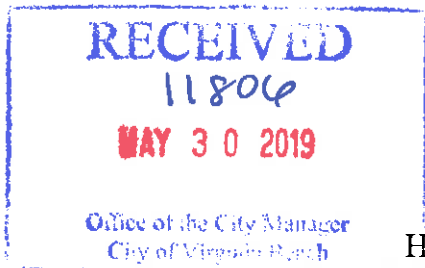
Questions?

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #9

AGENDA ITEM 15. – Providence Road Off-line Storage Facility Deed of Easement and Agreement

- [Intergovernmental Agreement](#)
- [Deed of Easement](#)



INTERGOVERNMENTAL
AGREEMENT
BETWEEN
HAMPTON ROADS SANITATION DISTRICT
AND THE
CITY OF VIRGINIA BEACH, VIRGINIA

This AGREEMENT (hereinafter referred to as the "AGREEMENT"), is entered into this 30th day of MAY, 2019, by and between the **HAMPTON ROADS SANITATION DISTRICT, a political subdivision of the Commonwealth of Virginia** (hereinafter referred to as the "HRSD"), and the **CITY OF VIRGINIA BEACH, a municipal corporation of the Commonwealth of Virginia** (hereinafter the "City") (collectively, HRSD and the City may be referred to as the "Parties").

WHEREAS, the Parties desire to undertake improvements, including a concrete tank with a skate park atop and adjacent to the tank, within City property known as Woodstock Park (hereinafter the "Project"); and

WHEREAS, HRSD is undertaking a design build process for the design and construction of elements of the Project; and

WHEREAS, the City desires to contribute its funds for betterments in Woodstock Park such as replacing shelters, new walkways, and a new restroom (hereinafter "City Elements"); and

WHEREAS, the Parties desire to memorialize their agreement as to the Project and the City's contribution for the City Elements.

NOW, THEREFORE, the City and HRSD agree as follows:

1. The elements and preliminary renderings of the Project are attached hereto as Exhibit A, which is incorporated herein. The Parties agree that Exhibit A is a conceptual rendering and there is no promise or guarantee by either Party that the Project will necessarily result in the end result depicted in Exhibit A.
2. The City will contribute a maximum amount of \$2,000,000 (hereinafter "City Cost Cap") for the costs of construction of the City Elements. The individual elements of the City Elements are listed in Exhibit B, which is attached hereto and incorporated herein. The City agrees that the City Cost Cap may be modified by mutual agreement of the parties based on actual costs of construction if the need for such adjustment is substantiated.
3. The City's Department of Parks and Recreation will be provided the opportunity to review the design for the Project at various milestones, including 60%, 90%, and 100%. The Department of Parks and Recreation will provide comments to these designs within 14 days of being provided the opportunity to review the designs. The review by Parks and Recreation is a separate review from the submission to the Development Services Center for site plan approval to obtain permits. Should there be any dispute between the Parties regarding design, the Parties will escalate the dispute to HRSD's General Manager and the City's Director of Parks and Recreation. If such dispute cannot be resolved, the HRSD will defer to the City's comment or concern regarding City Elements and the City will defer to HRSD for other Project elements.

4. At the conclusion of all phases of the Project, HRSD shall provide the City with an invoice detailing the costs of construction of the City Elements as outlined in "Exhibit B", including design, construction administration, and construction inspection costs. Within thirty (30) days of receipt of such invoice, the City shall reimburse HRSD for costs of improvements detailed in the invoice for the City Elements.
5. The financial obligations of the City as outlined in this Agreement are subject to appropriation by the City Council. The parties hereby acknowledge and agree that such funds shall be appropriated by City Council prior to HRSD commencing work on the City Elements.
6. Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the Parties. Should any dispute be brought, it shall be in the court of competent jurisdiction for the City of Virginia Beach.
7. To the extent permitted by law and without waiving its sovereign immunity, HRSD shall hold and save the City free from all damages arising from the design, construction, operation, maintenance, repair, replacement, and rehabilitation of the Project except for claims related to the Skate Park or City Elements or damages due to the fault or negligence of the City.
8. Relationship of Parties. In the exercise of their respective rights and obligations under this Agreement, the City and HRSD each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.
9. Notices.
 - a. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and either delivered personally or by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the HRSD:	Hampton Roads Sanitation District ATTN: Laura Kirkwood 1434 Air Rail Avenue Virginia Beach, Virginia 23455
If to the City:	City of Virginia Beach Department of Parks and Recreation ATTN: Chad Morris 2154 Landstown Road Virginia Beach, Virginia 23456
 - b. A party may change the address to which such communications are to be directed by giving written notice to the other party in a manner provided in this paragraph.
 - c. Any notice, request, demand, or other communication made pursuant to this paragraph shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven days after it is mailed.
10. This agreement shall terminate after the Project is completed. The parties hereby agree that the City shall be responsible for the Skate Park and City Elements in the same manner and to the same extent as other City parks.

11. In the event that either Party is in default, the other Party shall give written notice of such default by certified mail at the address set forth in paragraph 9. Unless otherwise provided, the Party shall have thirty (30) days from the date such notice is mailed in which to cure the default. Upon failure of a Party to cure the default, the other party may immediately cancel and terminate this Agreement as of the mailing of the default notice.
12. No assignment of this Agreement is authorized without written approval from the other party.
13. This Agreement shall be deemed a Virginia contract.
14. There may be no modification of this Agreement except in writing executed by the authorized representative of the Parties.
15. This Agreement and any exhibits incorporated by reference shall constitute the complete, final, and exhaustive written expression of the intentions of the Parties, and shall supersede all previous communications, representations, agreements, promises or statements, whether oral or written, by any Party or between the Parties.

IN WITNESS WHEREOF, the Parties hereby execute this Agreement as of the day, month, and year first above written.

HAMPTON ROADS SANITATION DISTRICT

CITY OF VIRGINIA BEACH, VIRGINIA



Edward G. Henifin, General Manager

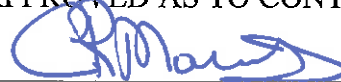
DATE: 5/20/2019



DATE: 06-06-19

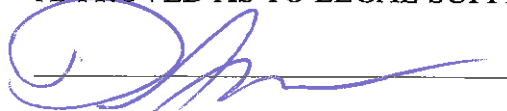
CITY MANAGER OR DESIGNEE

APPROVED AS TO CONTENT:



DEPARTMENT OF PARKS AND RECREATION

APPROVED AS TO LEGAL SUFFICIENCY




SENIOR CITY ATTORNEY

THIS INSTRUMENT PREPARED BY
VIRGINIA BEACH CITY ATTORNEY'S OFFICE
Rebecca D. Kubin, VSB #34410

TITLE INSURANCE UNDERWRITER: Unknown

EXEMPTED FROM RECORDATION TAXES
UNDER SECTIONS 58.1-811(A)(3)
AND 58.1-811(C)(5) REIMBURSEMENT
AUTHORIZED UNDER SECTION 25.1-418

CONSIDERATION: \$1,750,000.00


20190703000550410 1/11
City of Virginia Beach
07/03/2019
12:03:17 PM ESMT
Tina E. Sinnen, Clerk

THIS DEED OF EASEMENT is made this 14th day of June, 2019, by and between **CITY OF VIRGINIA BEACH**, a municipal corporation of the Commonwealth of Virginia, (the "Grantor" or "City"), and **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the "Grantee" or "HRSD"), whose address is 1434 Air Rail Avenue, Virginia Beach, Virginia 23455.

WHEREAS, City is the owner of two parcels of land (GPINs: 1456-83-3244 and 1456-83-2842) located at 5709 Providence Rd, Virginia Beach, VA 23464, used by the public as a park, and known as Woodstock Park (the "Woodstock Park Property");

WHEREAS, HRSD was created by the Virginia General Assembly (1960, c.66 as amended) as a governmental instrumentality to provide for the public health and welfare;

WHEREAS, HRSD has requested that City grant it an easement over a portion of the Woodstock Park Property to construct a large concrete storage tank to be known as the Providence Road Off-Line Storage Facility, to effect its plan to shut down the Chesapeake-Elizabeth Treatment Plant and re-route wastewater flow as a cost effective alternative for addressing multiple regulatory mandates;

WHEREAS, the Grantor and the Grantee have entered into that certain *Intergovernmental Agreement Between Hampton Roads Sanitation District and the City of*

GPIN: 1456-83-3244 and 1456-83-2842

RECEIVED
2019 JUL -2 PM 3: 31

TINA E. SINNEN, CLERK

Virginia Beach dated May 30, 2019 (the "Construction Agreement"), incorporated herein by this reference, to govern HRSD's construction of certain improvements on the Woodstock Park Property, including the planned concrete storage tank (the "Tank") with a public skate park (the "Skate Park") to be incorporated on top and alongside the Tank, and pipes and equipment necessary to operate the Tank (collectively the "HRSD Improvements");

WHEREAS, HRSD has agreed to construct the Skate Park as part of the Tank's construction in exchange for and as consideration for the City's granting to HRSD the Easement (defined below) described herein;

WHEREAS, pursuant to the terms of the Construction Agreement, HRSD will also construct for City certain park improvements (the "City Elements") defined more particularly in the Construction Agreement in order to upgrade and modernize the Woodstock Park Property while it is undergoing construction of the Tank and Skate Park; and

WHEREAS, HRSD also requires access to the entire Woodstock Park to allow HRSD to complete construction of both the HRSD Improvements and the City Elements, which will require the Woodstock Park Property to be closed to the public for a duration of two (2) years.

WITNESSETH:

That for and in consideration of the sum of TEN DOLLARS (\$10.00) cash in hand paid, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantor does hereby grant and convey, with SPECIAL WARRANTY, unto the Grantee, the following described utility easements for the purpose of erecting, constructing, operating, and maintaining the Tank and its connecting pipes and

equipment necessary to operate the Tank, which may include underground wastewater and/or water reuse force mains and/or gravity mains, together with above and below ground equipment, accessories and appurtenances thereto, (the Tank, pipes and equipment hereinafter collectively called the "Facilities") on a portion of the Woodstock Park Property, said easements (collectively, the "Easement"), being subject to the reservations and restrictions stated herein, to wit:

GPIN: 1456-83-3244 (Parcel 001)

ALL THAT certain utility easement, situate, lying, and being in the City of Virginia Beach, Virginia and designated and described as: "PROPOSED VARIABLE WIDTH HAMPTON ROADS SANITATION DISTRICT EASEMENT AREA = 204,928 SQ. FT. OR 4.705 ACRES" and further described as "PROPOSED VARIABLE WIDTH HAMPTON ROADS SANITATION DISTRICT EASEMENT 204,928 SQ. FT. OR 4.705 ACRES," as shown on that certain plat entitled "001 PLAT SHOWING PROPOSED EASEMENT TO BE ACQUIRED BY HAMPTON ROADS SANITATION DISTRICT PROPERTY OF CITY OF VIRGINIA BEACH FOR PROVIDENCE ROAD OFF-LINE STORAGE FACILITY (CEO11826) PROJECT VIRGINIA BEACH, VIRGINIA," Scale: 1" = 50', dated November 29, 2018 and revised through March 29, 2019, prepared by Precision Measurements, Inc., which plat is recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia as Instrument Number 20190626000522210, to which reference is made for a more particular description.

GPIN: 1456-83-2842 (PARCEL 003)

ALL THAT certain utility easement, situate, lying, and being in the City of Virginia Beach, Virginia and designated and described as: "PROPOSED 30' HAMPTON ROADS SANITATION DISTRICT EASEMENT AREA = 10,850 SQ. FT. OR 0.249 ACRES" and further described as "PROPOSED 30' HAMPTON ROADS SANITATION DISTRICT EASEMENT 10,850 SQ. FT. OR 0.249 ACRES," as shown on that certain plat entitled "003 PLAT SHOWING PROPOSED EASEMENT TO BE ACQUIRED BY HAMPTON ROADS SANITATION DISTRICT PROPERTY OF CITY OF VIRGINIA BEACH FOR PROVIDENCE ROAD OFF-LINE STORAGE FACILITY (CEO11826) PROJECT VIRGINIA BEACH, VIRGINIA," Scale: 1" = 50', dated November 30, 2018, and revised through March 29, 2019, prepared by Precision Measurements, Inc., which plat is recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia as Instrument Number 20190626000522220, to which reference is made for a more particular description.

Together with a temporary construction easement over all of Parcel 001 (GPIN: 1456-83-3244) and Parcel 003 (GPIN: 1456-83-2842) for a period of two (2) years from the date the Grantor closes the Park to public use to allow Grantee general access to construct the Facilities and the City Elements and at the termination of this temporary construction easement, Grantee will leave the Woodstock Park Property in a satisfactory condition and in accordance with the approved construction plans.

ALL BEING a portion of the same property conveyed to the City of Virginia Beach from Harry B. Davis and Rosa L. Davis, his wife, and Lucille D. Thompson, by deed dated December 15, 1977, recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia in Deed Book 1741, at page 352.

All portions of the Easement on Parcel 001 as shown on the above-referenced plat of Parcel 001 having a width of greater than forty feet (40') are hereinafter referred to as the "Tank Easement" and all portions of the Easement on Parcels 001 and 003 as shown on the above-referenced plats of Parcels 001 and 003 and having a width of less than forty feet (40') are hereinafter referred to as the "Pipe Easements".

The Easement conveyed herein is subject to the following terms and conditions.

A. Ownership of Facilities. The Facilities constructed within the Easement shall remain the property of Grantee. The Grantee and its agents, assigns, and/or successors shall have the right to inspect, rebuild, remove, repair, improve, and make such changes, alterations, additions to or extensions of the Facilities within the boundaries of the Easement as are consistent with the purpose expressed herein. All construction, maintenance, equipment and Facilities shall comply with all applicable laws, ordinances, codes and regulations. The Skate Park and City Elements constructed within the Easement shall be the property of the Grantor.

B. Restoration of Site. Grantee or its contractor shall restore to a satisfactory condition any disturbance of the Woodstock Park Property. This includes, paving, fences, backfilling of trenches, grass, reseeding, replacing or replanting landscaping, and removal

of trash and debris and removal of any equipment, accessories or appurtenances not consistent with construction, maintenance or operation of the Facilities. Landscaping will be replaced with immature trees, shrubs, and ground cover. Grantee shall maintain the Easement and the Facilities in such repair as not to endanger or otherwise limit the enjoyment and use of adjacent properties.

C. Tree-trimming, etc. Rights. Grantee shall have the right to trim, cut, and remove trees, shrubbery or other obstructions from within the Easement which interfere with or threaten the efficient and safe operation, construction and maintenance of said Facilities. All trees and limbs cut by Grantee shall remain the property of Grantor if Grantor, in writing prior to removal, request that they be left on the premises; otherwise all brush, branches and other debris resulting from any cutting, trimming or clearing of the Easement shall be removed from lands of Grantor for disposal.

D. Ingress/Egress and Access. Grantee shall have the right of ingress, egress and regress to, from and over the Easement and the right to use the adjoining lands of Grantor where necessary, provided, however, that its right to use the adjoining lands shall be exercised only during periods of actual construction, operation and/or maintenance and shall be coordinated in advance with the Grantor. Grantee shall exercise such right in such manner as shall not occasion injury and inconvenience to Grantor. Grantee shall, at Grantee's election, either pay for or repair any injury to any of Grantor's land, structures, roads, park features, fences and other improvements caused by Grantee, its employees, agents, or contractors.

E. Reserved Rights. The Grantor reserves to itself all rights not expressly granted herein, including without limitation, rights of access to allow portions of the Easement for

use as a Skate Park. The Pipe Easement will contain underground pipes and will not restrict the public access or Grantor's use on the surface in any manner, except as necessary to protect public safety during construction, periodic maintenance and repair of the underground Facilities. Grantor, its successors and assigns, may use said Easement for any purposes not inconsistent with the rights hereby granted, provided such use does not interfere with the safe and efficient use, construction, operation or maintenance of the Easement and/or Facilities. Grantor shall not place any permanent improvements within the Tank Easement without written permission of Grantee, or its successors, including, but not limited to buildings, pools, sheds, signs, or similar permanent structures. Subject to the foregoing, Grantor may install fences, driveways, pavement and landscaping (trees and shrubs shall be varieties that will not exceed 20 feet tall at maturity if within 20 feet of any HRSD facility).

F. Indemnification and Hold Harmless. Grantee covenants and agrees that it will be responsible for any claims of injury to any persons or property resulting from its sole negligence in the installation, operation, maintenance, replacement, repair, removal or use of any of the Facilities and/or the Easement, or which result from Grantee's exercise of the rights herein granted. Any contractor performing work for Grantee in the Easement shall be required to furnish a certificate of insurance satisfactory to Grantor. To the extent permitted by law and without waiving sovereign immunity, the Grantee shall indemnify, hold harmless, and defend the Grantor, its agents, representatives and employees, from and against all claims, damages, losses and expenses, including reasonable attorney's fees, arising from the design, construction, operation, maintenance, repair, replacement and rehabilitation of the Facilities, except for claims relating to the Skate Park or City Elements

or damage due to the fault or negligence of the City, in case it shall be necessary to file or defend an action arising out of the Grantee's use of the Easement and Facilities.

G. Emergency Access. The Grantor reserves to itself the right to repair or adjust the Grantee's Facilities in the Easement in the event of an emergency, public necessity, or public safety, if Grantee is unable to be on site to address the emergency and Grantee shall bear all costs and expenses of such repair and adjustment.

H. Allowed Uses. Nothing herein contained shall be construed to enlarge the permission and authority to permit the maintenance or construction of any facilities within the Easement other than those specified herein and to the limited extent specified herein, nor to permit the maintenance and construction of any facilities by anyone other than the Grantee. No construction or maintenance of facilities other than for the purposes set forth above will be permitted.

I. Easement Maintenance. Unless otherwise agreed to by the Grantor and the Grantee in writing, the Grantee agrees to maintain (including without limitation, trash and debris removal, landscaping, weed removal, and the like) the portions of the Tank Easement that are not open to the public or that are structural, including without limitation side slopes, so as not to become unsightly or a hazard, and the Grantor agrees to maintain all the surface areas of the Pipe Easement and portions of the Tank Easement that are open to the public.

J. Height Restriction; Tank Specifications. The Tank, exclusive of the Skate Park improvements, shall be constructed in a manner that it will be buried to a sufficient depth so that it will be no more than thirty feet (30') in elevation, which is ten feet (10') in height above the existing grade of the property, except for portions or elements of the Facilities as

expressly allowed in writing by the Grantor in Grantor's sole discretion. Grantee will install and maintain odor-controlling equipment to minimize odors caused by operation of the Tank. The Tank will be screened from public view in a manner consistent with the preliminary design developed by the Grantee in coordination with the Grantor to be approved by the Grantor, which approval will not be unreasonably withheld.

K. Approvals; Permitting. The Grantee must obtain all necessary federal, state and/or local permits, including, without limitation, a permit from the Virginia Beach Civil Inspections Division of the Department of Planning, prior to commencing any construction within the Easement Area (the "Permit").

L. Survey. The Grantee must submit for review and approval, a survey of the Easement area, certified by a registered professional engineer or a licensed land surveyor, and/or "as built" plans of the Facilities sealed by a registered professional engineer, if required by either the City's Department of Parks and Recreation or the Engineering Division of the Department of Public Utilities.

M. Title. This conveyance is made subject to conditions, restrictions, easements, and reservations of record in the chain of title, if any, constituting constructive notice thereof.

IN WITNESS WHEREOF, on the date hereinabove mentioned, the City of Virginia Beach, Grantor, has caused its name to be hereunto signed by its City Manager or his authorized designee and its seal to be affixed and attested by its Clerk, all duly authorized.

[SIGNATURES ON FOLLOWING PAGE(S)]

[Deed of Easement between City of Virginia Beach and Hampton Roads Sanitation District]

WITNESS the following signatures and seals:

CITY OF VIRGINIA BEACH

By  (SEAL)
City Manager/Authorized
Designee of the City Manager

(SEAL)

ATTEST:


City Clerk/Authorized
Designee of the City Clerk

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

The foregoing instrument was acknowledged before me this 14th day of
June, 2019, by Kenneth L. Chandler, ~~CITY MANAGER/AUTHORIZED~~
DESIGNEE OF THE CITY MANAGER OF THE CITY OF VIRGINIA BEACH, VIRGINIA,
on its behalf. He/She is personally known to me.

Commonwealth Of Virginia
Jennifer Anne Grundler - Notary Public
Commission No. 7037167
My Commission Expires 5/31/2022
Notary Registration Number: 7037167
My Commission Expires: 5/31/2022

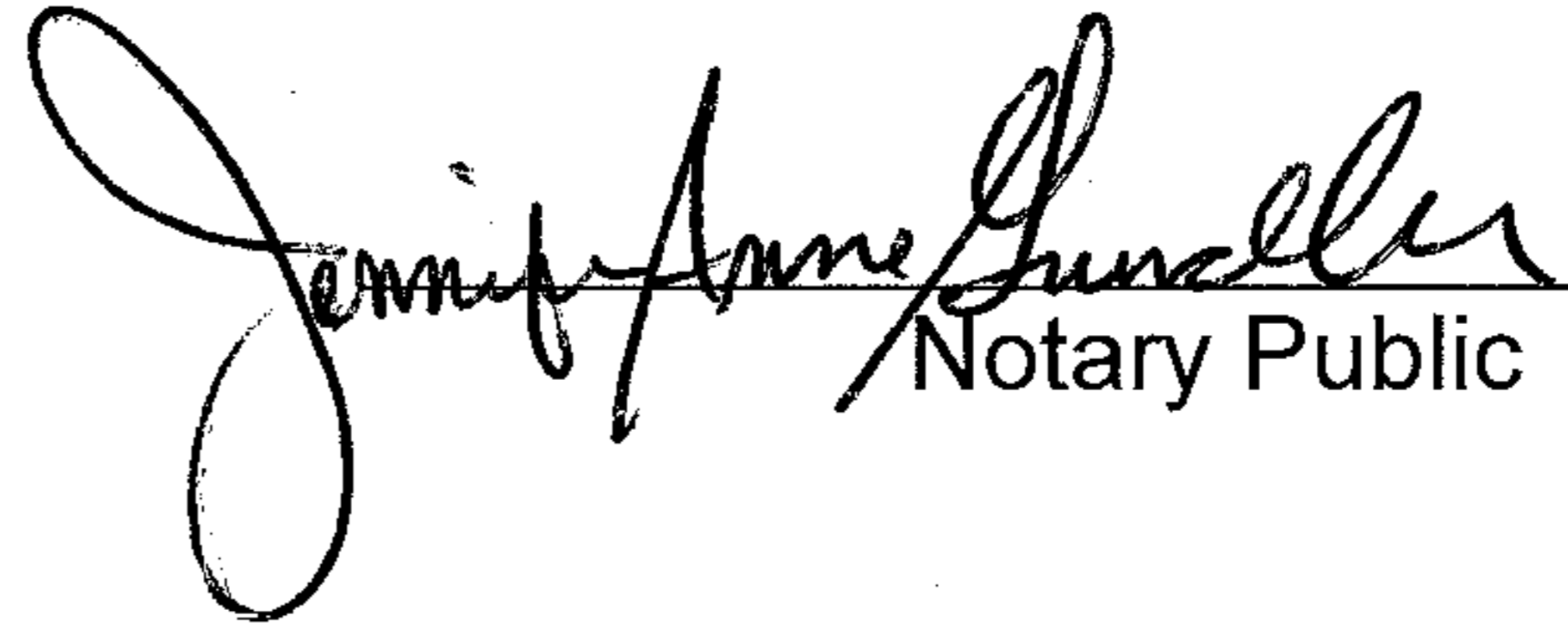
 (SEAL)
Notary Public

[Deed of Easement between City of Virginia Beach and Hampton Roads Sanitation District]

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

The foregoing instrument was acknowledged before me this 17th day of June, 2019, by Amanda Barnes, CITY CLERK/AUTHORIZED DESIGNEE OF THE CITY CLERK OF THE CITY OF VIRGINIA BEACH, VIRGINIA, on its behalf. She is personally known to me.

Commonwealth Of Virginia
Jennifer Anne Grundler - Notary Public
Commission No. 7037167
My Commission Expires 5/3/2022

 (SEAL)
Notary Public

Notary Registration Number: 7037167
My Commission Expires: 5/3/2022

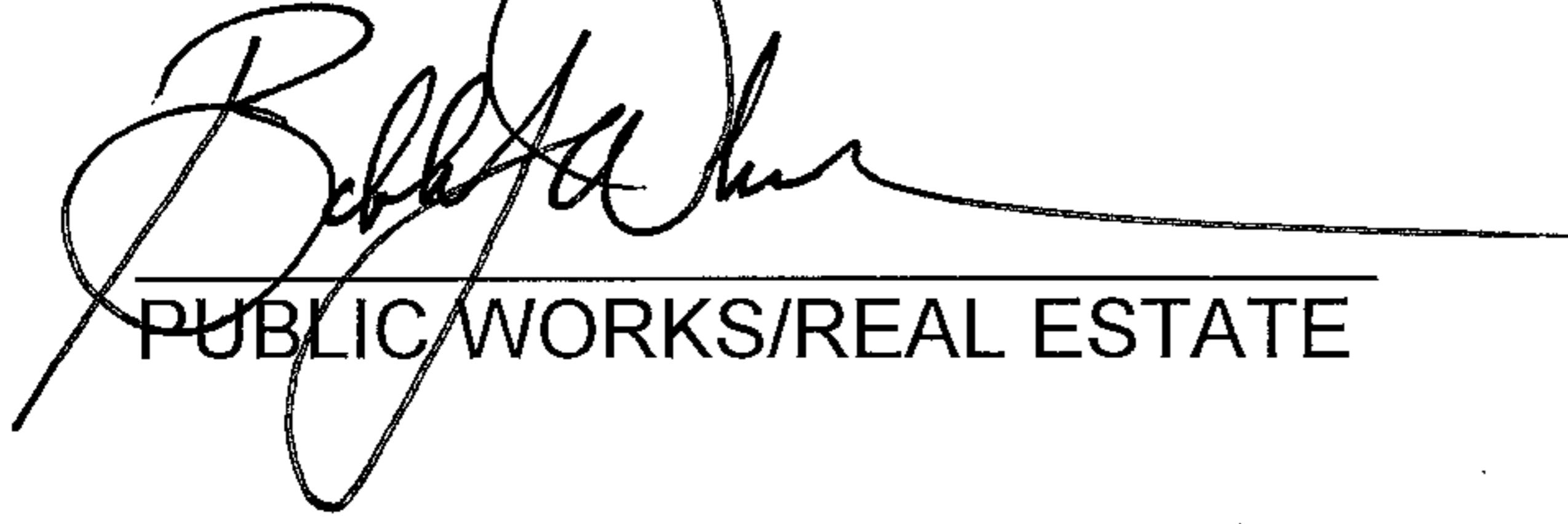
APPROVED AS TO CONTENTS


PARKS & RECREATION

APPROVED AS TO FORM


CITY ATTORNEY

APPROVED AS TO CONTENTS


PUBLIC WORKS/REAL ESTATE

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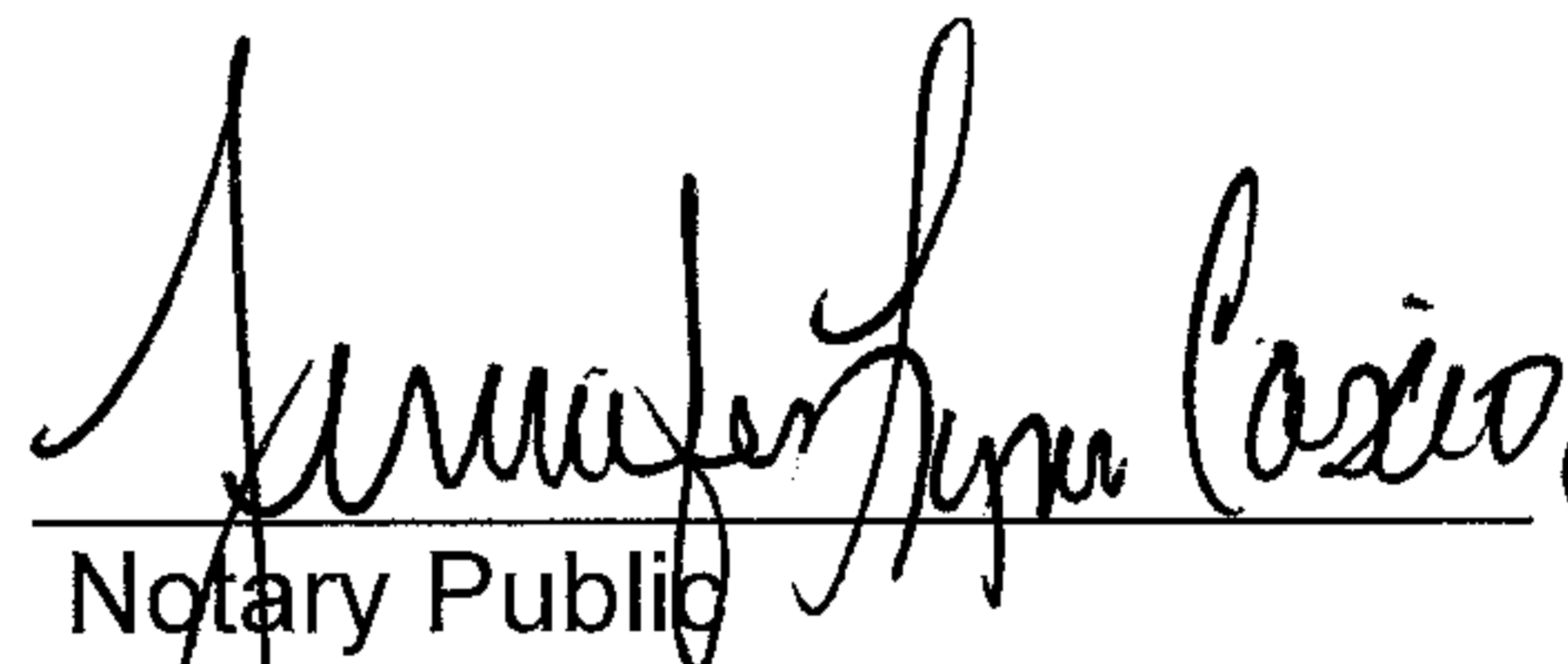
[Deed of Easement between City of Virginia Beach and Hampton Roads Sanitation District]

HAMPTON ROADS SANITATION DISTRICT, a political subdivision of the Commonwealth of Virginia

By  (SEAL)
Edward G. Henifin, P.E.
General Manager

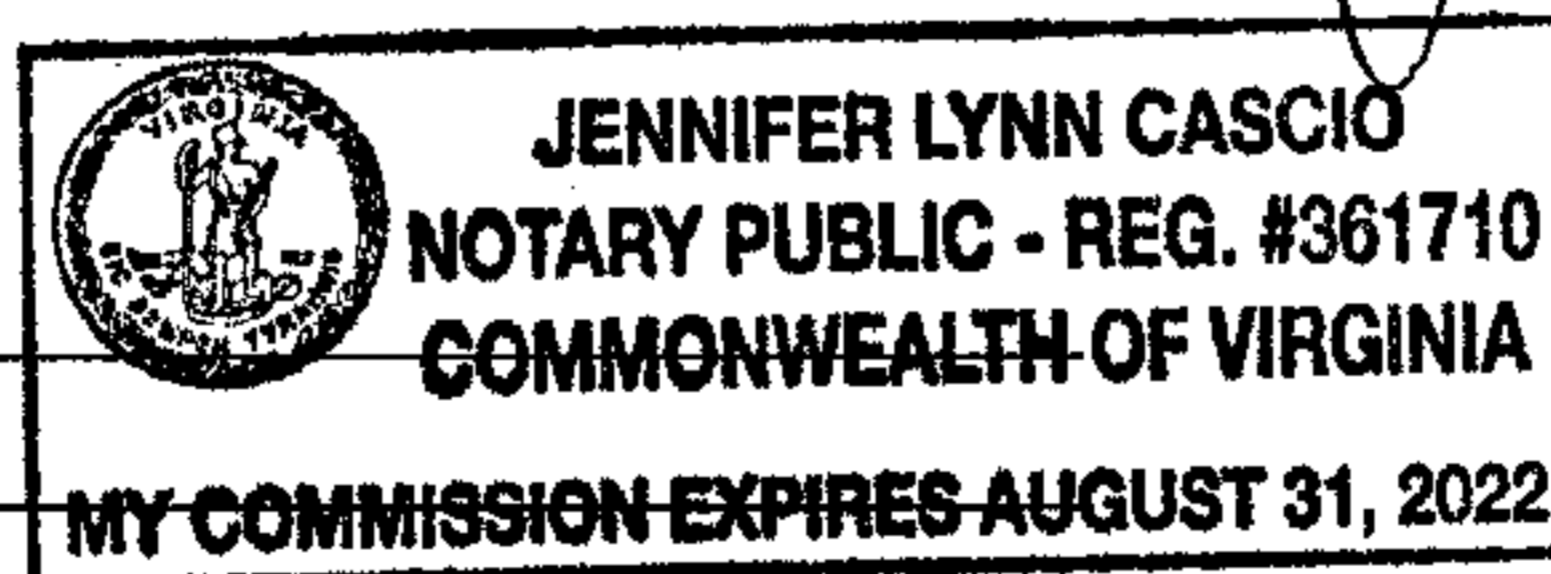
STATE OF VIRGINIA
CITY/COUNTY OF Virginia Beach, to-wit:

The foregoing instrument was acknowledged before me this 28th day of May, 2019, by Edward G. Henifin, P.E., General Manager OF HAMPTON ROADS SANITATION DISTRICT, a political subdivision of the Commonwealth of Virginia.

 (SEAL)
Notary Public

Notary Registration Number: _____

My Commission Expires: _____



HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #10

AGENDA ITEM 17. – Smithfield Interim Pressure Reducing Station (PRS) Agreement

AGREEMENT FOR COST SHARING
OF THE
HAMPTON ROADS SANITATION DISTRICT
Smithfield Interim Pressure Reducing Station
NP014300

AND

Isle of Wight
State Project 0644-046-628

THIS AGREEMENT FOR COST SHARING (the "Agreement"), between Isle of Wight County ("COUNTY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), is entered into this 28th day of May, 2019 (the "Effective Date").

RECITALS

R:1. HRSD is constructing its Smithfield Interim Pressure Reducing Station project and connecting force main as shown on Exhibit 1 (the "HRSD Facilities"); and

R:2. COUNTY is constructing its own State Project 0644-046-628 (UPC 103021) as shown in part on **Exhibit 2** (the "COUNTY Facilities"); and

R:3. The design and construction of the HRSD Facilities and the County Facilities (collectively referred to as the "Improvements") will necessitate the design and construction of force mains and roads within the same project area; and

R:4. HRSD and the County agree that it is in the best interest of the parties to have the Improvements designed and constructed by one entity; and

R:5. County agrees to include the design and construction of the HRSD Facilities as part of the design and construction of the County Facilities, in accordance with the approved plans and specifications; and

R:6. HRSD agrees to reimburse the County for that portion of the costs of the design and construction of the Improvements attributable to the HRSD Facilities under the terms and conditions set forth herein.

TERMS

NOW THEREFORE, in consideration of the above provisions and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

I. DESIGN OF IMPROVEMENTS

A. Plans and Specifications

1. COUNTY will employ AMT Engineering ("ENGINEER"), to prepare plans and specifications for the HRSD Facilities and the COUNTY Facilities. A location map of the HRSD Facilities is shown on Exhibit 1. A location map of the COUNTY Facilities is shown on Exhibit 2. The plans and specifications will be substantially in accordance with Exhibit 1 and Exhibit 2 herein.
2. ENGINEER, along with HRSD and the COUNTY, will meet to coordinate, review, and approve a set of final construction documents (the "Final Plans and Specifications") for the Improvements.

B. Payment of the Design Costs

1. COUNTY will compensate the ENGINEER for all engineering design costs and any amendments related to the COUNTY Facilities. COUNTY will also compensate the ENGINEER, on HRSD's behalf, for all engineering design costs and any amendments related to the HRSD Facilities and HRSD shall reimburse the COUNTY for all such payments.
2. HRSD shall reimburse the COUNTY for the design costs attributable to the HRSD Facilities in one lump sum payment due once the design of the Improvements is complete. The COUNTY shall provide HRSD with an invoice detailing HRSD's share of the design costs. Within thirty (30) days of its receipt of such invoice, HRSD shall reimburse the COUNTY for HRSD's share of the design costs as detailed by the Engineer in the invoice. Pursuant to the COUNTY's agreement with ENGINEER, the current estimated design cost for the HRSD Facilities is \$8,180.00.

C. Compliance

1. This is a Federal-Aid project. All local, State, and Federal construction specifications, standards, and requirements shall be met.

2. All roadway improvement portions of the project shall be constructed in accordance with the VDOT 2016 Road and Bridge Specifications, including 2017 and 2018 supplements approved and adopted by VDOT no later than June 2018.
3. All force main design work shall also comply with HRSD Standards and Preferences for use in Engineered Construction Projects, latest edition, and the Hampton Roads Planning District Commission Regional Construction Standards, latest edition. Any changes to the Final Plans and Specifications shall be approved by HRSD and the COUNTY.
4. In any case where conflicts occur with the standards and the requirements set forth herein, the Federal-Aid, or most conservative standards, shall govern.

II. CONSTRUCTION OF IMPROVEMENTS

A. Cost of Construction

1. The total cost of the Improvements, as more particularly defined by the Final Plans and Specifications, prepared by the ENGINEER for HRSD and the COUNTY (the "Improvements Costs") shall include:
 - a. Cost of construction of the Improvements;
 - b. Cost of advertising for bids;
 - c. Cost of approvals and permits required for the construction of the Improvements;
 - d. Costs for construction contract administration and inspection;
 - e. Costs of services rendered by ENGINEER;
 - f. Costs for all temporary or permanent easements and fee simple land acquisitions; and
 - g. Any related miscellaneous essential expenses attributable to the Improvements certified by ENGINEER.
2. The current lowest base bid price cost of the construction of the HRSD Facilities is \$616,900.00 and the current lowest base bid price for the construction of the COUNTY Facilities is \$459,282.00. The

current total estimated fee for Construction,

B. Approval of Final Plans and Specifications; Contractors; Change Orders

1. HRSD and the COUNTY agree that before any construction work is to begin under this Agreement, HRSD and the COUNTY will jointly review and approve the Final Plans and Specifications. This approval shall be in writing.
2. HRSD shall acquire all necessary plan approvals and property acquisitions related to HRSD Facilities prior to the award of the construction contract.
3. The COUNTY shall acquire all necessary plan approvals and property acquisitions related to COUNTY Facilities prior to the award of the construction contract.
4. HRSD and the COUNTY shall review and agree upon the qualifications prior to bidding the project and jointly confirm that the construction contract is awarded to a firm that meets the stated requirements.
5. The contractors shall be responsible for all necessary permits and approvals necessary for the Improvements.
6. The ENGINEER will review and approve shop drawings related to the HRSD Facilities and the COUNTY Facilities.
7. HRSD will review and approve scope of work and fee for the construction contract administration and inspections related to the HRSD Facilities. The COUNTY will review and approve scope of work and fee for the construction contract administration and inspections related to the COUNTY Facilities.
8. HRSD will review and approve change orders related to the HRSD Facilities. COUNTY will review and approve change orders related to the COUNTY Facilities.

C. Payment of Improvement Costs

1. The Improvement Costs shall be apportioned among the parties as follows:
 - a. HRSD will be responsible for bearing one hundred percent

(100%) of the cost of the HRSD Facilities.

- b. The COUNTY will be responsible for bearing one hundred percent (100%) of the cost of the COUNTY Facilities.
 - c. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - (1) HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and
 - (2) The COUNTY shall be responsible for costs due to a Change Order requested by the COUNTY.
5. HRSD shall reimburse the COUNTY for the as bid construction costs attributable to the HRSD Facilities after execution of the construction contract. The COUNTY shall provide HRSD with an invoice detailing HRSD's as-bid construction costs. Within thirty (30) days of its receipt of such invoice, HRSD shall reimburse the COUNTY for HRSD's as-bid construction costs. The current estimated construction cost for HRSD Facilities is \$738,633.50. Refer to Exhibit 3 for a detailed breakdown of those costs.
6. In conjunction with the above, and for additional clarity, it is agreed that HRSD shall pay its share of the construction administration and construction inspection costs (the "CA and CI Costs") to the COUNTY after execution of the construction contract. The COUNTY shall provide HRSD with an invoice detailing HRSD's estimated share of the CA and CI Costs. Within thirty (30) days of its receipt of such invoice, HRSD shall reimburse COUNTY for HRSD's estimated share of the CA and CI Costs as detailed in the invoice. The current estimated costs for HRSD CA and CI is \$92,903.30. Refer to Exhibit 4 for a detailed breakdown of those costs.
7. During the course of construction, COUNTY shall compensate the Contractors and other individuals and entities providing materials and/or services related to the Improvements for all Improvement Costs, including those for which HRSD is responsible.
8. The records of the HRSD Facilities costs, CA, and CI costs shall be available for review by HRSD at any mutually convenient time. At the completion of the HRSD Facilities the COUNTY shall prepare and submit a final invoice to HRSD which provides detail of the project costs. HRSD shall reimburse the COUNTY within thirty (30) days in the case where it

owes funds in addition to those already paid to the COUNTY and the COUNTY shall provide a refund to HRSD in the event that the costs are less than those estimated and previously paid by HRSD to the COUNTY.

D. Operation and Maintenance of the Improvements during and after Construction

1. HRSD shall be responsible for operation and maintenance of the HRSD Facilities during and after construction.
2. COUNTY shall be responsible for operation and maintenance of the COUNTY Facilities during and after construction.
3. HRSD and the COUNTY agree to cooperate and coordinate for the operations and maintenance of any interconnections between the HRSD Facilities and COUNTY Facilities.

III. SCHEDULE

The construction is anticipated to start by June 15th 2019 and be complete by December 1st 2019. If the start of construction date listed herein is substantially delayed, HRSD reserves the right to terminate this Agreement and compensate the COUNTY for costs incurred that HRSD is responsible for.

IV. OBLIGATIONS OF HRSD AND THE COUNTY

A. Public Hearing or Meeting

HRSD and the COUNTY will be responsible for holding a public hearing or meeting if required. The COUNTY will coordinate and reserve the location, and assist HRSD in such public hearing.

B. Bidding of the Improvements

1. The COUNTY agrees to issue bidding documents (identified as IFB #19-4110-04) for construction of the Improvements. HRSD agrees to provide administrative support during the bidding phase. In particular HRSD shall:
 - a. Attend the preconstruction meeting.
 - b. Provide timely responses to the ENGINEER for any questions, requests for clarification, or addenda during the bidding phase.

- c. Provide miscellaneous support to the COUNTY as required during the bidding phase.
2. The COUNTY will receive bids for construction of the Improvements. All bids received will be reviewed and approved by the COUNTY and HRSD prior to award of the construction contract. The COUNTY and HRSD shall negotiate in good faith to resolve financial matters with regards to bidding the Improvements. The bidding procedure shall be conducted in accordance with the Virginia public Procurement Act and the HRSD Procurement Policy.

C. Administration

The COUNTY shall provide contract administration of the Improvements.

D. Inspection

The COUNTY will employ ATCS (the "INSPECTOR") to provide inspection and documentation for the project. The INSPECTOR shall provide full-time inspection for the Improvements. HRSD shall reimburse the COUNTY for the INSPECTOR's inspection and documentation costs for the HRSD Facilities. The inspector(s) shall have the authority to assure the Improvements are constructed in accordance with the Final Plans and Specifications. A digital copy of all inspection records and project documentation will be provided to HRSD upon completion of the project.

E. Deeds and Easements

1. HRSD shall obtain any and all necessary fee simple deeds and/or deeds of easement needed for the HRSD Facilities.
2. COUNTY shall obtain any and all necessary fee simple deeds and/or deeds of easements for the COUNTY Facilities.

F. Correction of Construction Defects in the Improvements

The COUNTY shall require the Contractors to provide a performance and payment bond for the full amount of the construction of the Improvements. The construction contract shall also provide for a warranty of the Contractor's work against construction defects in the Improvements and shall require the Contractor to correct such defects that are reported by HRSD or the COUNTY within one (1) year of the final acceptance of the Improvements.

G. Construction Record Drawings

ENGINEER shall provide HRSD and the COUNTY approved construction record drawings in accordance with HRSD Standards and Preferences for use in Engineered Construction Projects and COUNTY's Utility Policy and Design and Construction Standards, latest edition.

V. GOVERNING LAW

This Agreement shall be deemed to be a Virginia Contract and shall be governed as to all matters whether of validity, interpretations, obligations, performance or otherwise exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with such laws. Regardless of where actually delivered and accepted, this contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia.

VI. TERMINATION

Anything herein or elsewhere to the contrary notwithstanding, this Agreement and the obligations of the parties hereunder may be terminated by the COUNTY or HRSD in the event that the other party breaches or violates any material provision of this Agreement or fails to perform any material covenant or agreement to be performed by either party under the terms of this Agreement and such breach, violation or failure is not cured within sixty (60) days of the defaulting party's receipt of written notice of such breach from the non-defaulting party; or by mutual agreement of the COUNTY and HRSD.

VII. NOTICE

Any notice, communication or request under this Agreement shall be provided in writing by either (a) certified mail, return receipt requested, postage prepaid, or (b) a nationally recognized overnight delivery service (next business day service), or (c) hand-delivery, if the receipt of the same is evidenced by the signature of the addressee or authorized agent, and addressed to the following:

For: HRSD

If by U.S. Postal Service:
General Manager
P. O. Box 5911
Virginia Beach, VA 23471-0911
Telephone: (757) 460-4242

If by Overnight Mail:
General Manager
1434 Air Rail Avenue
Virginia Beach, VA 23455

With Copy to:
Conway H. Sheild, III

Jones, Blechman, Woltz and Kelly
701 Town Center Drive, Suite 200
Newport News, VA 23606

For: Isle of Wight
Randy Keaton
County Administrator
P.O. Box 80
Isle of Wight, VA 23397
Telephone: (757) 365-6204

With Copy to:
Robert W. Jones, Jr.
County Attorney
P.O. Box 80
Isle of Wight, VA 23397
Telephone: (757) 365-1642
Facsimile: (757) 365-1643

VIII. ASSIGNMENT

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

IX. AMENDMENT

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

X. SEVERABILITY

If any provision of this Agreement or the application thereof to any circumstance shall be determined to be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall continue to be valid, in effect and enforceable to the fullest extent permitted by law.

XI. DAMAGES

If by omission that constitutes negligence or willful misconduct or failure to abide by engineering standards or failure to abide by the Final Plans and Specifications

described herein, the negligent party shall be responsible for the payments for damages to any other party to this Agreement.

XII. INSURANCE

HRSD and the COUNTY have the right to review and approve insurance coverage in the various insurance categories that HRSD and the COUNTY deem necessary to be carried by the Contractor or any other parties to this Agreement. Proof of insurance shall be provided at the request of HRSD or the COUNTY and the insurance coverage shall be maintained during the term of this Agreement.

XIII. TERM OF AGREEMENT

The term of the Agreement will commence on the date the Agreement is entered into and be completed when each party has completely performed its obligations hereunder.

XIV. FORCE MAJEURE

In the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond the control of the COUNTY or HRSD or the Contractor and without their fault or negligence, including, but not restricted to, acts of God or of the public enemy, acts of the government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargos, and unusually severe weather or delays of subcontractors due to such causes; it being the purpose and intent of this provision that in the event of the occurrence of any such enforced delay, the time or times for performance of the obligations of the parties shall be extended for the period of the enforced delay.

XV. INDEPENDENT CONTRACTOR

If the Contractor(s) hire subcontractors or independent contractors, HRSD and the COUNTY have the right to approve them by reviewing their requisite experience and knowledge to complete the work assigned.

XVII. WAIVER

No waiver of breach of any term or provision of this Agreement shall be construed to be, or shall constitute, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the parties waiving the breach.

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not

prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Such rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

XVIII. INTEGRATION

This Agreement constitutes the entire understanding among the parties. No provision of this Agreement may be waived, modified or amended except by an instrument signed by the party against whom the enforcement of such waiver, modification or amendment is sought. No waiver by either party of any failure or refusal by the other party to comply with its obligations hereunder shall be deemed a waiver of any other or subsequent failure or refusal to comply.

Signature pages follow

IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on May 28, 2019.

HAMPTON ROADS SANITATION DISTRICT

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

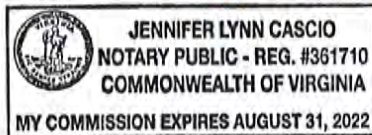
COMMONWEALTH OF VIRGINIA,
CITY OF VIRGINIA BEACH, to-wit:

The foregoing Agreement was acknowledged before me this 28th day of May, 2019, by Edward G. Henifin, HRSD General Manager.


Notary Public

My commission expires:

Registration No.:



Agreement for Cost Sharing of the HRSD Smithfield Interim Pressure Reducing Station
NP014300 and Isle of Wight State Project 0644-046-628

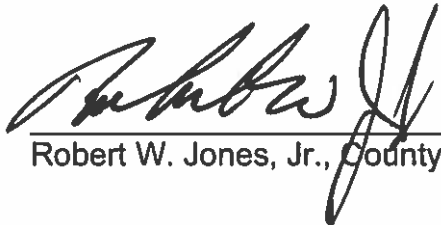
IN WITNESS WHEREOF, the Isle of Wight has caused this Agreement to be signed by the
County Administrator on its behalf pursuant to The Board of Supervisors on May 16 _____,
2019.

Isle of Wight

By: 

Randy Keaton, County Administrator

Approved as to Form and Correctness:



Robert W. Jones, Jr., County Attorney

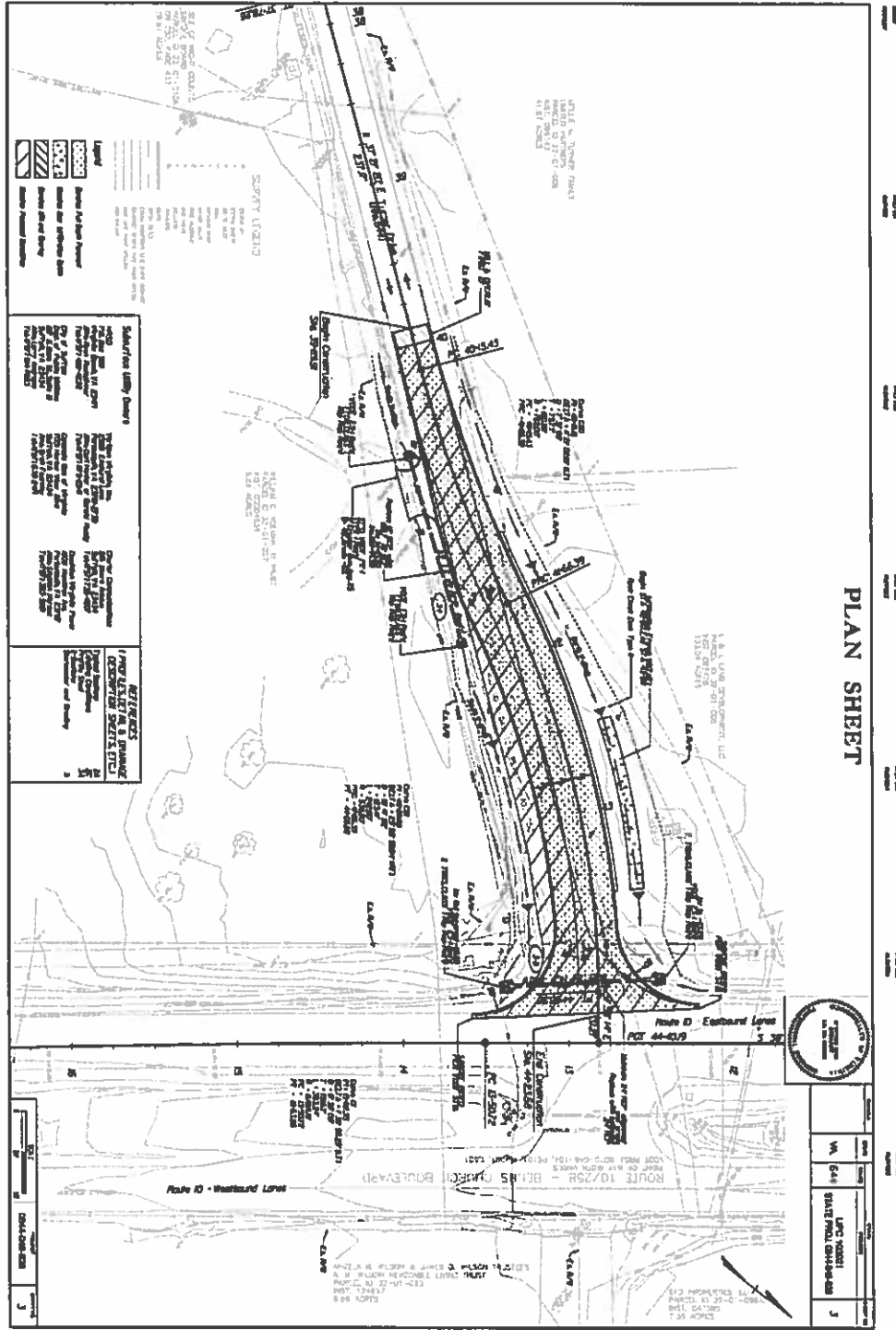
Approved as to Content:



Jamie Oliver, Transportation Manager

Agreement for Cost Sharing of the HRSD Smithfield Interim Pressure Reducing Station
 NP014300 and Isle of Wight State Project 0644-046-628

Exhibit 2 – COUNTY Facilities Location Map



Agreement for Cost Sharing of the HRSD Smithfield Interim Pressure Reducing Station
NP014300 and Isle of Wight State Project 0644-046-628

Exhibit 3 – HRSD Estimated Facilities Cost

Spec Section	BID ITEM	Description	Quantity	Unit	Unit Price	COST
01270-2	1a	18" CI51 Restrained Joint DI Sewer Forcemain with Corrosion-Resistant LF	1100	LF	350.00	\$385,000.00
01270-2	1b	6" CI51 Restrained Joint DI Sewer Forcemain with Corrosion-Resistant LF	30	LF	100.00	\$3,000.00
01270-2	2a	18" MI 90 Degree Bend	2	EA	3,500.00	\$7,000.00
01270-2	2b	18" MI 45 Degree Bend	3	EA	3,500.00	\$10,500.00
01270-2	2c	18" MI 22.5 Degree Bend	3	EA	3,500.00	\$10,500.00
01270-2	2d	18" MI 11.25 Degree Bend	3	EA	3,500.00	\$10,500.00
01270-2	2e	18" MI Sleeve	4	EA	3,000.00	\$12,000.00
01270-2	2f	18x18x6 MI Tee	1	EA	4,000.00	\$4,000.00
01270-2	2g	6" MI 90 Degree Bend	2	EA	800.00	\$1,600.00
01270-2	2h	6" 6x6x6 MI Tee	1	EA	1,200.00	\$1,200.00
01270-2	2i	6" MI Sleeve	2	EA	500.00	\$1,000.00
01270-3	3a	18" MI Plug Valve	2	EA	10,000.00	\$20,000.00
01270-3	3b	6" MI Plug Valve	2	EA	1,200.00	\$2,400.00
01270-3	3c	6" MI Vertical Gate Valve	1	EA	1,200.00	\$1,200.00
01270-3	3d	18" Isolation Valve	2	EA	8,000.00	\$16,000.00
01270-3	3e	18x30" Tapping Saddle	2	EA	20,000.00	\$40,000.00
01270-4	3f	2" Airvent Assembly	3	EA	2,500.00	\$7,500.00
01270-4	4	18" HRSD to 6" IOW Forcemain Interconnect	1	EA	10,000.00	\$10,000.00
01270-4	5a	Pipe Bedding Material	100	CY	80.00	\$8,000.00
01270-4	5b	Select Material	650	CY	50.00	\$32,500.00
Subtotal (Construction Costs)						\$583,900.00
CEI (15%)						\$87,585.00
Contingency (10%)						67,148.50
Total						\$738,633.50

Turner Drive Turning Lane Improvements - HRSD 18" Force Main Bid Alternate
Final Cost Estimate
UPC 103021, State Proj. Number 0644-046-628

4/1/2019
Final Submission

Agreement for Cost Sharing of the HRSD Smithfield Interim Pressure Reducing Station
NP014300 and Isle of Wight State Project 0644-046-628

Exhibit 4 – HRSD Estimated CA and CI Costs

Personnel	Hourly Rate	Hours/Week	Weeks	Total
Inspector (CI)	100	40	17	\$68,000.00
Construction Manager (CA)	130	8	17	\$17,680.00
				\$85,680.00

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #11

AGENDA ITEM 18. – Surry Hydraulic Improvements and Interceptor Force Main Easement Acquisition

- [Utility Easement Agreement](#)
- [Deed of Easement](#)
- [Acquisition Plat](#)
- [Facilities Orientation Maps](#)

UTILITY EASEMENT AGREEMENT

THIS UTILITY EASEMENT AGREEMENT, made this 5th day of June 2019, by and between **HAMPTON ROADS SANITATION DISTRICT** (“HRSD”), a political subdivision of the Commonwealth of Virginia, located at 1434 Air Rail Avenue, Virginia Beach, Virginia 23455 (the “Grantee”), and **BEVERLEY BABB DAVIN, a/k/a BEVERLY BABB DAVIN**, whose mailing address is 968 Beechland Road, Elberon, Virginia 23846 (“Landowner”). Collectively, Buyer and Seller shall be referred to as the “Parties.”

WITNESSETH: That for and in consideration of one dollar and other valuable consideration, receipt of which is hereby acknowledged, Landowner agrees to convey to HRSD a permanent easement over, across and through the following described property of the Landowner, by deed of easement, properly executed, acknowledged, and delivered.

The land and improvements subject to this Utility Easement Agreement (hereinafter referred to as the "Easement") is described as follows:

All that certain permanent utility easement located in the County of Surry, Virginia, shown and designated as "50' H.R.S.D. PERMANENT UTILITY EASEMENT 2.141 ACRES 93,262 SQUARE FOOT", as shown on that certain plat entitled, "PLAT SHOWING EASEMENT TO BE ACQUIRED FROM BEVERLY BABB DAVIN BY HAMPTON ROADS SANITATION DISTRICT FOR SURRY COUNTY MARINA FORCE MAIN TOWN OF SURRY SURRY COUNTY, VIRGINIA", made by W. M. Naulty, Surveyor, dated April 22, 2019, a copy of which plat is attached hereto and made a part hereof, to which reference is here made.

Together with all and singular the buildings and improvements, tenements, hereditaments, rights, privileges and appurtenances thereunto belonging or in anywise appertaining (the “Easement”), which Plat is attached hereto and made a part hereof.

The total consideration for the conveyance provided for herein is as follows:

CONSIDERATION: ONE HUNDRED THOUSAND AND 00/100 DOLLARS (\$100,000.00) in full for the easement described hereinbefore and for all damages, if any.

The consideration hereinabove mentioned represents the value of all estates or interests in such land, and the damages to remaining lands of the Landowner which may result by reason of the use to which HRSD will put the land to be conveyed. The Landowner agrees to accept her legal proportionate share of such total consideration for her interest and right in the said land.

The Landowner hereby covenants and agrees for herself, her heirs and assigns and successors, that the consideration herein mentioned shall be in lieu of any and all claims to compensation and damages by reason of the location, construction and maintenance of the project by HRSD, including such drainage facilities as may be necessary.

In the event the Landowner is unable to convey clear title to the above easement to HRSD as herein provided, and HRSD should elect to institute condemnation proceedings for the purpose of acquiring such easements, it is agreed by the Landowner that this instrument may be introduced in such proceedings as evidence of the value of land and damages, if any, to the remaining property of the Landowner.

The Landowner by execution of this instrument acknowledges that the plans for the aforesaid project as they affect the subject property have been fully explained to the undersigned.

HRSD or its contractor will restore Landowner's land and Parcel affected as a result of construction of the project as closely as is reasonably possible to its pre-construction condition (or better) upon completion of the Project including replacing with acceptable landscaping.

HRSD or its contractor hereby agrees that it will perform all such measures in a manner causing as little inconvenience and disruption to the Landowner, and Landowner's invitees, licensees and occupants as is reasonably possible. Plans for the Easement have been explained to the Landowner, and Grantee warrants that it will not construct above ground pumping station facilities within the easement area.

In the event that HRSD no longer needs the aforementioned easement for the purposes enumerated herein, HRSD agrees to vacate its interest in said easement at no cost to Landowner.

RIGHT TO ENTER: The HRSD, or its agents, may exercise the right to enter upon so much of the parcel or Land needed for such purposes as may be necessary for the construction of this project without further notice to the Landowner.

ETHICS IN PUBLIC CONTRACTING: By executing this Agreement, the undersigned Landowner or its representative, and the representative of HRSD, certify that the prices agreed to in this Agreement were arrived at without collusion or fraud and that they have not offered or received any payment, kickbacks or other inducement from any other party to this Agreement or its agent or employee in connection with this Agreement, and that they have not conferred on any public employee having responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised unless disclosed in this Agreement.

Landowner acknowledges that HRSD has relied upon these covenants, representations and warranties in purchasing the above easement.

Settlement shall be within ninety (90) days, or as soon thereafter, allowing a reasonable time to correct any title defects reported by the title examiner and preparation and signing of the necessary documents to enable the HRSD to take proper title.

THE COVENANTS, AGREEMENTS, REPRESENTATIONS, WARRANTIES OF THE LANDOWNER CONTAINED IN THESE PARAGRAPHS SHALL SURVIVE THE CLOSING AND DELIVERY OF THE DEED OF EASEMENT ACROSS THE SUBJECT LAND.

WITNESS the following signatures and seals:

SELLER:

Beverly Babb Davin
Beverley Babb Davin a/k/a Beverly Babb Davin
(signature)

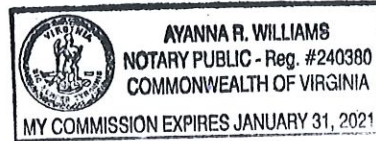
COMMONWEALTH OF VIRGINIA
CITY OF VA Beach, to-wit:

I, Ayanna Williams, a Notary Public in and for the City of VA Beach, in the Commonwealth of Virginia, whose term of office expires on 1/31/21, do hereby certify that Beverley Babb Davin a/k/a Beverly Babb Davin, Seller herein, whose name is signed to the foregoing Utility Easement Agreement, has acknowledged the same before me in my City and State aforesaid.

Given under my hand this 5th day of June, 2019.

Ayanna R. Williams
Notary Public

My Commission Expires: Jan. 31, 2021
Registration Number: 240380



HAMPTON ROADS SANITATION DISTRICT

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

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

The foregoing Utility Easement Agreement was acknowledged before me this 14th day of June, 2019, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.

Darlene Marie Raleigh
Notary Public

My Commission Expires: 3/21/2022
Registration No.: 7768789



606269 (04-19-2019)

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

Tax ID: 27A-1-48

DEED OF EASEMENT

THIS DEED OF EASEMENT, made this 5th day of June, 2019, by and among **BEVERLEY BABB DAVIN**, a/k/a **BEVERLY BABB DAVIN**, GRANTOR, (whether one or more) and **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia, GRANTEE, whose mailing address is: P.O. Box 5911, Virginia Beach, Virginia, 23471-0911.

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, **GRANTOR** does hereby grant and convey, all of their right, title and interest, if any, in the following easement, with GENERAL WARRANTY OF TITLE, unto **GRANTEE**, its successors and assigns, forever, the perpetual right, privilege, easement and right-of-way, hereinafter described, for the purpose of laying, erecting, constructing, operating, and maintaining underground wastewater and/or water reuse force mains and/or gravity mains together with above and/or below ground equipment, accessories, and appurtenances thereto, hereinafter called "facilities," on the lands of the **GRANTOR**, said Permanent Easement (the "Easement") being further described as follows:

All that certain permanent utility easement located in the County of Surry, Virginia, shown and designated as "50' H.R.S.D. PERMANENT UTILITY EASEMENT 2.141 ACRES 93,262 SQUARE FOOT", as shown on that certain plat entitled, "PLAT SHOWING EASEMENT TO BE ACQUIRED FROM BEVERLY BABB DAVIN BY HAMPTON ROADS SANITATION DISTRICT FOR SURRY COUNTY MARINA FORCE MAIN TOWN OF SURRY SURRY COUNTY, VIRGINIA", made by W. M. Naulty, Surveyor, dated April 22, 2019, a copy of which plat is attached hereto and made a part hereof, to which reference is here made.

Together with all and singular the buildings and improvements, tenements, hereditaments, rights, privileges and appurtenances thereunto belonging or in anywise appertaining (the "Easement"), which Plat is attached hereto and made a part hereof.

It being part of the property devised to BEVERLEY BABB DAVIN by will of Lillian S. Babb, deceased on August 24, 2001, by her will recorded in the

Clerk's Office of the Circuit Court for the County of Surry, in Will Book 24, page 208.

This easement is subject to the following conditions and provisions:

A. The facilities existing or constructed on or under the Easement shall remain the property of **GRANTEE**. **GRANTEE** shall have the right to inspect, rebuild, remove, repair, improve, and make such changes, alterations, additions to or extensions of its facilities within the boundaries of said right of way as are consistent with the purpose expressed herein. All construction, maintenance, equipment and facilities shall comply with all applicable laws, ordinances, codes and regulations.

B. Any disturbance of the premises by the **GRANTEE** or its contractor will be restored by the **GRANTEE** as nearly as practicable. This includes paving, fences, backfilling of trenches, grass, reseeding, replacing or replanting landscaping, and removal of trash or debris. Landscaping will be replaced with immature trees, shrubs, and ground cover.

C. **GRANTEE** shall have the right to trim, cut and remove trees, shrubbery or other obstructions which interfere with or threaten the efficient and safe operation, construction and maintenance of said facilities. All trees and limbs cut by **GRANTEE** shall remain the property of **GRANTOR**. All brush, branches, and other debris resulting from any cutting, trimming, or clearing of said right of way shall be removed from lands of **GRANTOR** for disposal.

D. **GRANTEE** shall have the right of ingress to and egress from said right of way over the lands of **GRANTOR**. **GRANTEE** shall exercise such right in such manner as shall not occasion injury and inconvenience to **GRANTOR**. **GRANTEE** shall at **GRANTEE'S** election pay for or repair any injury to any of **GRANTOR'S** land, structures, roads, fences and other improvements caused by **GRANTEE**, its employees, agents or contractors.

E. **GRANTOR**, its successors and assigns, may use said right of way for any purpose not inconsistent with the rights hereby granted, provided such use does not interfere with the safe and efficient construction, operation or maintenance of said facilities, and further provided that such use is not inconsistent with any laws, ordinances or codes pertaining to the construction, operation or maintenance of said facilities. **GRANTOR** shall not place any permanent improvements within the easement without permission of **GRANTEE**, or its successors, including but not limited to houses, buildings, pools, sheds, signs, or similar permanent structures. **GRANTOR** may install fences, driveways, pavement and landscaping (trees and shrubs shall be varieties that will not exceed 20 feet tall at maturity).

F. It is understood and agreed that the consideration paid to the **GRANTOR** in connection herewith constitutes payment in full for the property hereby conveyed and for damages, if any, to the residue or other property of the **GRANTOR** resulting from the project and use made of the property conveyed.

G. Notwithstanding the above, should the property on which the aforesaid perpetual easement lies be subdivided, then the access rights to the easement as above enumerated shall be along the publicly dedicated streets within the said subdivision as far as practical, and then the access shall be on subdivided lots within the subdivision which shall efficiently provide access for the purposes of the **GRANTEE** as herein enumerated.

WITNESS the following signature and seal all as of the day and year first above written.

GRANTOR:

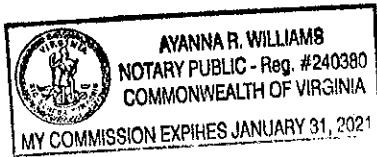
Beverly Babb Davin
BEVERLEY BABB DAVIN A/K/A
BEVERLY BABB DAVIN

STATE OF VIRGINIA
CITY/COUNTY OF VA Beach, to-wit:

The foregoing instrument was acknowledged before me this 5th day of June, 2019, by BEVERLEY BABB DAVIN A/K/A BEVERLY BABB DAVIN.

Ayanna R. Williams

Notary Public

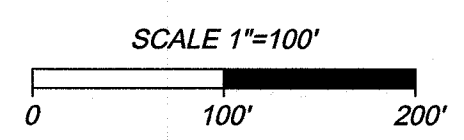
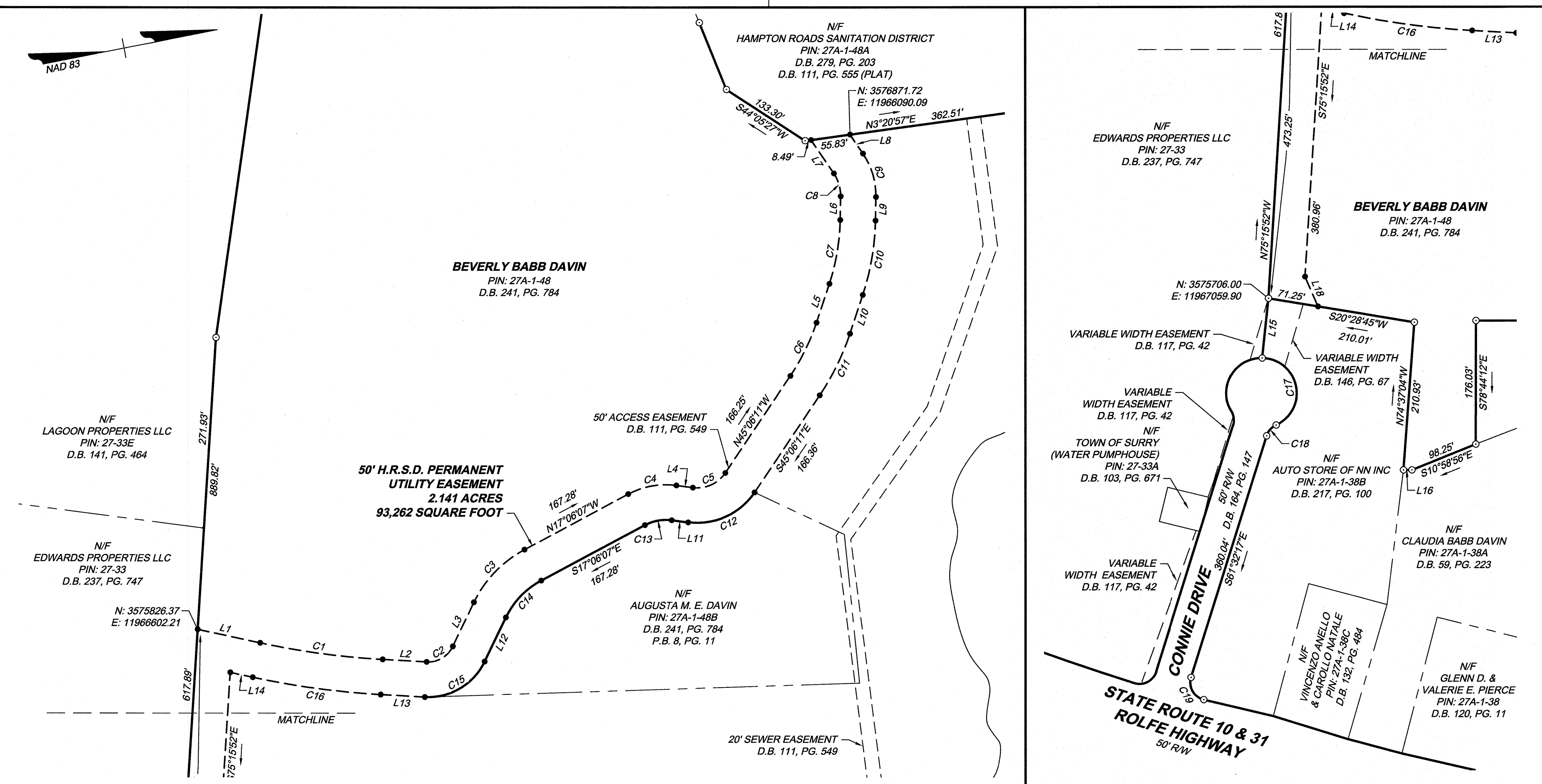
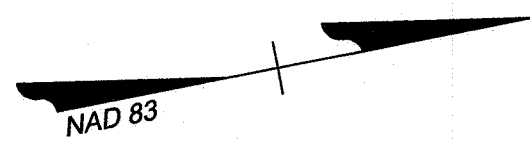


My Commission Expires: Jan. 31, 2021
Registration Number: 240380

IN WITNESS WHEREOF, the Hampton Roads Sanitation District Commission has caused this Deed to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on 5/28/, 2019. This Deed is expressly subject to approval by the HRSD Commission.

HAMPTON ROADS SANITATION DISTRICT:

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



AREA TABLE

BEVERLY BABB DAVIN (PID: 27A-1-48)	2.141 ACRES
50' H.R.S.D. PERMANENT UTILITY EASEMENT TO BE ACQUIRED	93,262 SQUARE FOOT

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD BEARING	CHORD
C1	1106.60'	175.73'	88.05'	9°05'56"	N18°48'41"E	175.55'
C2	38.90'	45.96'	26.09'	67°41'21"	N19°30'40"W	43.33'
C3	166.70'	105.48'	54.57'	36°15'11"	N35°13'42"W	103.73'
C4	113.16'	70.89'	36.65'	35°53'31"	N0°50'39"E	69.73'
C5	47.79'	53.29'	29.80'	63°53'35"	N13°09'24"W	50.57'
C6	313.92'	84.72'	42.62'	15°27'43"	N52°48'42"W	84.46'
C7	308.39'	92.72'	46.71'	17°13'37"	N69°08'03"W	92.37'
C8	55.87'	34.56'	17.85'	35°26'21"	N84°38'41"E	34.01'
C9	105.87'	65.28'	33.72'	35°19'45"	S84°35'23"W	64.25'
C10	358.39'	107.61'	54.21'	17°12'15"	S69°08'43"E	107.21'

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD BEARING	CHORD
C11	363.92'	98.05'	49.32'	15°26'14"	S52°49'27"E	97.76'
C12	97.79'	109.08'	61.00'	63°54'38"	S13°09'55"E	103.51'
C13	63.16'	39.57'	20.46'	35°53'46"	S0°50'31"W	38.93'
C14	116.70'	73.84'	38.20'	36°15'11"	S35°13'42"E	72.61'
C15	88.90'	104.90'	59.52'	67°36'28"	S19°33'06"E	98.92'
C16	1156.60'	183.59'	91.99'	9°05'40"	S18°48'39"W	183.39'
C17	50.00'	134.79'	220.59'	154°27'27"	S89°25'10"W	97.53'
C18	25.00'	21.03'	11.18'	48°11'50"	S37°27'01"E	20.42'
C19	25.00'	41.00'	26.79'	93°57'54"	S71°28'46"W	36.56'

LINE TABLE

LINE	BEARING	LENGTH
L1	N23°21'30"E	90.69'
L2	N14°20'01"E	62.60'
L3	N53°21'20"W	69.53'
L4	N18°47'24"E	23.60'
L5	N60°32'34"W	58.10'
L6	N77°44'51"W	33.35'
L7	S66°55'30"W	57.47'
L8	N66°55'30"E	32.62'
L9	S77°44'51"E	33.46'
L10	S60°32'34"E	58.22'
L11	S18°47'24"W	23.60'
L12	S53°21'20"E	69.53'
L13	S14°20'01"W	62.70'
L14	S23°21'30"W	32.59'
L15	N72°50'04"W	85.62'
L16	S10°42'52"W	12.08'

- NOTES:**
1. PROPERTY LINES AND RIGHT OF WAY INFORMATION SHOWN IS BASED ON PLATS, DEEDS OR RECORD AND ACTUAL FILED MEASUREMENTS. ONLY THE BOUNDARIES SHOWN HAVE BEEN SURVEYED FOR THIS PROJECT.
 2. THIS SURVEY MAY NOT REFLECT ALL EASEMENTS OR RESTRICTIONS THAT AFFECT THIS PROPERTY
 3. EASEMENTS SHALL BE ACQUIRED BY DEED.



PLAT SHOWING EASEMENT
TO BE ACQUIRED FROM






BEVERLY BABB DAVIN

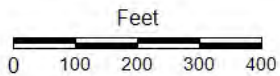
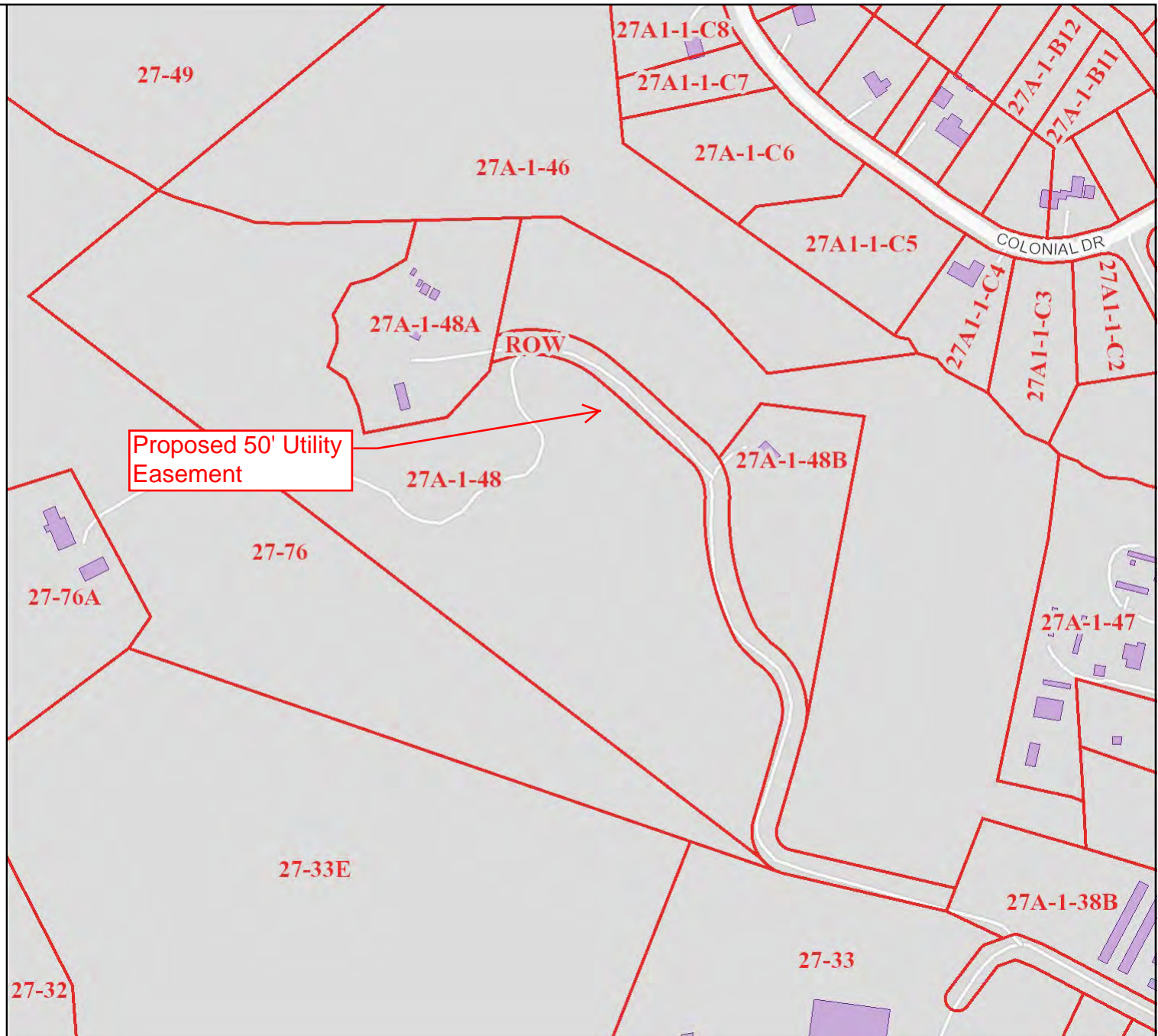
BY HAMPTON ROADS SANITATION DISTRICT
FOR SURRY COUNTY MARINA FORCE MAIN
TOWN OF SURRY
SURRY COUNTY, VIRGINIA

SCALE 1"=100' APRIL 22, 2019
JN: 42956-903-27A-1-48
W.M. NAULTY, SURVEYOR
4701 OWENS WAY, SUITE 900
PRINCE GEORGE, VIRGINIA 23875

Surry County, Virginia

Legend

-  County Boundary
-  Parcels
-  Building Footprints
-  Hidden Roads 4514
-  Driveways



Title: Rolfe Highway, Surry, VA

Date: 5/14/2019

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 Surry County is not responsible for its accuracy or how current it may be.

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #12

AGENDA ITEM 19. – Surry Marina Force Main and Facility Transfer Cost Sharing Agreement

AGREEMENT FOR COST SHARING
OF THE
HAMPTON ROADS SANITATION DISTRICT
SURRY HYDRAULIC IMPROVEMENTS & INTERCEPTOR FORCE MAIN
(SU010200)
AND
COUNTY OF SURRY

THIS AGREEMENT FOR COST SHARING (the "Agreement"), between the COUNTY OF SURRY ("COUNTY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), is entered into this 7th day of October, 2019 (the "Effective Date").

RECITALS

R:1. The COUNTY'S marina is located at 633 Marina Drive, Surry, Virginia (hereinafter referred to as the "MARINA"); and

R:2. The COUNTY desires public sewer service at the MARINA; and

R:3. The COUNTY had planned to construct a sewer force main running parallel to Route 31 and connecting the MARINA to the sanitary sewer collection system located in the Town of Surry; and

R:4. HRSD has since accepted ownership and operation of the Town of Surry and COUNTY sanitary sewer systems; and

R:5. The COUNTY has designated the Route 31 corridor as a residential investment area; and

R:6. HRSD has determined that a sewer force main extending service from the MARINA to HRSD facilities in the Town of Surry should include availability for future connections; and

R:7. HRSD and COUNTY agree it is in the best interest of the parties to share in the cost to extend the sanitary sewer collection system serving the Town of Surry to the MARINA to convey and transport wastewater from the MARINA and points in between to HRSD's sanitary sewer collection system which is more particularly shown and identified as "Proposed HRSD Force Main (IMPROVEMENTS)" on attached Exhibit A, dated April 2019; and

R:8. HRSD is constructing its SURRY HYDRAULIC IMPROVEMENTS & INTERCEPTOR FORCE MAIN Project, which include the IMPROVEMENTS shown on **Exhibit A** to comply with DEQ Consent Order requirements.

NOW THEREFORE, in consideration of the above provisions and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

I. DEFINITIONS

- A. The FACILITIES are defined as the existing sewer infrastructure including a pump station, tank, and discharge force main originating at the MARINA and extending along Marina Drive and terminating at Route 31 as shown on Exhibit A
- B. The IMPROVEMENTS are defined as the extension of the sewerage system from the MARINA (expressly excluding the existing FACILITIES) as shown on Exhibit A, to the HRSD sewer system and shall include all valves, air vents, piping, manholes, and other appurtenances reasonably necessary for conveying wastewater in the quantities contemplated.

II. DESIGN-BUILD OF IMPROVEMENTS

A. Plans and Specifications

- 1. HRSD will employ MEB ("DESIGN-BUILDER"), to prepare plans and specifications for the IMPROVEMENTS. A location map of the IMPROVEMENTS and existing FACILITIES are shown as Exhibit A.
- 2. DESIGN-BUILDER, along with HRSD and the COUNTY, will meet to coordinate, review, and approve a set of final construction documents (the "Final Plans and Specifications") for the IMPROVEMENTS.

B. Compliance

- 1. All design work shall comply with HRSD Design and Construction Standards for use in Engineered Construction Projects, latest edition, and the Hampton Roads Planning District Commission Regional Construction Standards, latest edition. Any changes to the Final Plans and Specifications shall be approved by HRSD and the COUNTY.

C. Cost of Construction

1. The total cost of the IMPROVEMENTS, as more particularly defined by the Final Plans and Specifications, prepared by the DESIGN-BUILDER for HRSD and the COUNTY (the "Costs") shall include:
 - a. Cost of construction of the IMPROVEMENTS;
 - b. Cost of approvals and permits required for the construction of the IMPROVEMENTS;
 - c. Costs for construction contract administration and inspection;
 - d. Costs of services rendered by DESIGN-BUILDER;
 - e. Costs for all temporary or permanent easements and fee simple land acquisitions; and
 - f. Any related miscellaneous essential expenses.
2. The current estimated design-build cost of the IMPROVEMENTS is \$1.6 million.

D. Approval of Final Plans and Specifications; Contractors; Change Orders

1. HRSD and the COUNTY agree that before any construction work is to begin under this Agreement, HRSD and the COUNTY will jointly review and approve the Final Plans and Specifications. This approval shall be in writing.
2. HRSD shall acquire all necessary plan approvals and property acquisitions related to the IMPROVEMENTS prior to the award of the construction contract.
3. The COUNTY shall acquire all necessary easements and property acquisitions related to the FACILITIES prior to the transfer of ownership to HRSD.
4. HRSD will review and approve change orders related to the IMPROVEMENTS. HRSD and the COUNTY will jointly review and approve change order related to the FACILITIES.

E. Payment of Improvement Costs

The Costs shall be apportioned among the parties as follows:

1. HRSD shall pay all external costs associated with engineering, design, right-of-way acquisition, construction, inspection, and all associated permitting fees to build the IMPROVEMENTS as described herein (Costs), it being understood that HRSD's costs or allocations for review, coordination and overhead shall not be included in Costs. Upon completion, defined herein as when FACILITIES begin conveying wastewater to the Town collection system, HRSD shall invoice the COUNTY for its share of the Costs. HRSD shall use reasonable efforts to notify the COUNTY four (4) months before completion of the IMPROVEMENTS.
2. COUNTY shall reimburse HRSD 20% of the Costs, not to exceed \$320,000, within 60 days after receipt of the invoice from HRSD in accordance with payment instructions included with the invoice.
3. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - a. HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and
 - b. The COUNTY shall be solely responsible for costs due to a Change Order requested by the COUNTY.
 - c. All other changes jointly approved by both HRSD and the COUNTY, shall be paid by HRSD. The COUNTY shall reimburse HRSD 20% of the Change Order costs.

F. Operation and Maintenance during and after Construction

1. HRSD shall be responsible for operation and maintenance of the IMPROVEMENTS during and after construction.
2. COUNTY shall be responsible for operation and maintenance of the FACILITIES during construction. MARINA is solely responsible for all costs associated with disposal of wastewater prior to completion of the IMPROVEMENTS. HRSD acknowledges that MARINA can meet those responsibilities only by hauling wastewater.

3. HRSD shall assume ownership and be responsible for operation and maintenance of the FACILITIES at the time of Substantial Completion stage of construction, defined herein as when FACILITIES begin to convey and transport wastewater via the IMPROVEMENTS to HRSD's Town of Surry sanitary sewer collection system
4. HRSD and the COUNTY agree to cooperate and coordinate for the operations and maintenance of any interconnections between the IMPROVEMENTS and FACILITIES.

III. SCHEDULE

The construction is anticipated to begin by September 2019 and be complete by November 2020. If the construction dates listed herein are substantially delayed, HRSD reserves the right to terminate this Agreement.

IV. OBLIGATIONS OF HRSD AND THE COUNTY

A. Public Hearing or Meeting

HRSD and the COUNTY will be responsible for holding a public hearing or meeting if required. The COUNTY will coordinate and reserve the location, and assist HRSD in such public hearing.

B. Administration

HRSD shall provide contract administration of the IMPROVEMENTS.

C. Inspection

HRSD shall provide full-time inspection for the IMPROVEMENTS. The inspector(s) shall have the authority to assure the IMPROVEMENTS are constructed in accordance with the Final Plans and Specifications.

D. Deeds and Easements

1. HRSD shall obtain any and all necessary fee simple deeds and/or deeds of easement needed for the IMPROVEMENTS.
2. COUNTY shall obtain any and all necessary fee simple deeds and/or deeds of easements for the FACILITIES. The FACILITIES will be

conveyed to HRSD at no cost and the easements and real property conveyed by the COUNTY to HRSD will have clear title and unimpeded access.

3. COUNTY shall assist HRSD with securing adequate easements along the final alignment for construction, maintenance, repair and replacement of the IMPROVEMENTS. Easements should support multiuse paths as well as future underground utilities.

E. Limitations

Connection to HRSD's sanitary sewer collection system requires the MARINA and all tenants to understand and comply with the HRSD Industrial Wastewater Discharge Regulations. The Food Service Establishment (FSE) located onsite, shall install an appropriately sized grease control device using the Hampton Roads Regional Technical Standards for Sizing of Grease Control Devices. HRSD shall approve the grease control device prior to installation. Installation of the grease control device shall be completed at the time of or before connection to the sanitary sewer. The FSE shall install and maintain the grease control device, at its own expense, and shall follow the requirements of the HRSD Best Management Practice for Grease Control Devices.

F. Correction of Construction Defects in the Improvements

HRSD shall require the Contractors to provide a performance and payment bond for the full amount of the construction of the IMPROVEMENTS. The construction contract shall also provide for a warranty of the Contractor's work against construction defects in the IMPROVEMENTS and shall require the Contractor to correct such defects that are reported by HRSD or the COUNTY within one (1) year of the final acceptance of the IMPROVEMENTS.

V. GOVERNING LAW

This Agreement shall be deemed to be a Virginia Contract and shall be governed as to all matters whether of validity, interpretations, obligations, performance or otherwise exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with such laws. Regardless of where actually delivered and accepted, this contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia.

VI. TERMINATION

Anything herein or elsewhere to the contrary notwithstanding, this Agreement and the obligations of the parties hereunder may be terminated by the COUNTY or HRSD in the event that the other party breaches or violates any material provision of this Agreement or fails to perform any material covenant or agreement to be performed by either party under the terms of this Agreement and such breach, violation or failure is not cured within sixty (60) days of the defaulting party's receipt of written notice of such breach from the non-defaulting party; or by mutual agreement of the COUNTY and HRSD.

VII. NOTICE

Any notice, communication or request under this Agreement shall be provided in writing by either (a) certified mail, return receipt requested, postage prepaid, or (b) a nationally recognized overnight delivery service (next business day service), or (c) hand-delivery, if the receipt of the same is evidenced by the signature of the addressee or authorized agent, and addressed to the following:

For: HRSD

If by U.S. Postal Service:
General Manager
P. O. Box 5911
Virginia Beach, VA 23471-0911
Telephone: (757) 460-4242

If by Overnight Mail:
General Manager
1434 Air Rail Avenue
Virginia Beach, VA 23455

With Copy to:

William A. Cox, III
Kellam, Pickrell, Cox & Anderson PC
403 Boush Street, Suite 300
Norfolk, VA 23510

For: COUNTY of SURRY

Jonathan Lynn, County Administrator
COUNTY of SURRY, Virginia
45 School Street
Surry, VA 23883
Telephone: 757-294-5271
Facsimile: 757-294-5204

VIII. ASSIGNMENT

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

IX. AMENDMENT

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

X. SEVERABILITY

If any provision of this Agreement or the application thereof to any circumstance shall be determined to be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall continue to be valid, in effect and enforceable to the fullest extent permitted by law.

XI. DAMAGES

If by omission that constitutes negligence or willful misconduct or failure to abide by engineering standards or failure to abide by the Final Plans and Specifications described herein, the negligent party shall be responsible for the payments for damages to any other party to this Agreement.

XII. INSURANCE

HRSD and the COUNTY have the right to review and approve insurance coverage in the various insurance categories that HRSD and the COUNTY deem necessary to be carried by the Contractor or any other parties to this Agreement. Proof of insurance shall be provided at the request of HRSD or the COUNTY and the insurance coverage shall be maintained during the term of this Agreement.

XIII. TERM OF AGREEMENT

The term of the Agreement will commence on the date the Agreement is entered into and be completed when each party has completely performed its obligations hereunder.

XIV. FORCE MAJEURE

In the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond the control of the COUNTY or HRSD or the Contractor and without their fault or negligence, including, but not restricted to, acts of God or of the public enemy, acts of the government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargos, and unusually severe weather or delays of subcontractors due to such causes; it being the purpose and intent of this provision that in the event of the occurrence of any such enforced delay, the time or times for performance of the obligations of the parties shall be extended for the period of the enforced delay.

XV. INDEPENDENT CONTRACTOR

If the Contractor(s) hire subcontractors or independent contractors, HRSD and the COUNTY have the right to approve them by reviewing their requisite experience and knowledge to complete the work assigned.

XVI. SUBCONTRACTOR

If any Contractors or subcontractors are selected by any party to this Agreement for completion of the work contemplated herein, HRSD has the right to approve the same.

XVII. WAIVER

No waiver of breach of any term or provision of this Agreement shall be construed to be, or shall constitute, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the parties waiving the breach.

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Such rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

XVIII. INTEGRATION

This Agreement constitutes the entire understanding among the parties. No provision of this Agreement may be waived, modified or amended except by an instrument signed by the party against whom the enforcement of such waiver, modification or amendment is sought. No waiver by either party of any failure or refusal by the other party to comply with its obligations hereunder shall be deemed a waiver of any other or subsequent failure or refusal to comply.

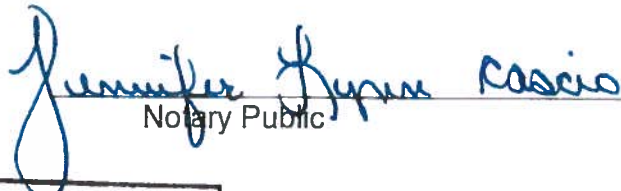
IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on May 28, 2019.

HAMPTON ROADS SANITATION DISTRICT

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

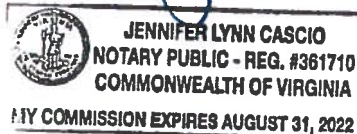
COMMONWEALTH OF VIRGINIA,
COUNTY OF VIRGINIA BEACH, to-wit:

The foregoing Agreement was acknowledged before me this 6th day of August, 2019, by Edward G. Henifin, HRSD General Manager.


Notary Public

My commission expires:

Registration No.:



Agreement for Cost Sharing of the HRSD SURRY HYDRAULIC IMPROVEMENTS & INTERCEPTOR
FORCE MAIN (HRSD PROJECT SU010200) and
SURRY COUNTY

IN WITNESS WHEREOF, the COUNTY of SURRY (COUNTY) has caused this Agreement to be signed by the COUNTY Administrator on its behalf pursuant to Resolution adopted by the COUNTY Board on September 5th, 2019,

COUNTY OF SURRY

By: [Signature]
Name: Jonathan Lynn
Title: County Administrator

The foregoing Agreement was acknowledged before me this 3rd day of October, 2019, by Jonathan Lynn, County Administrator, COUNTY of SURRY, Virginia.

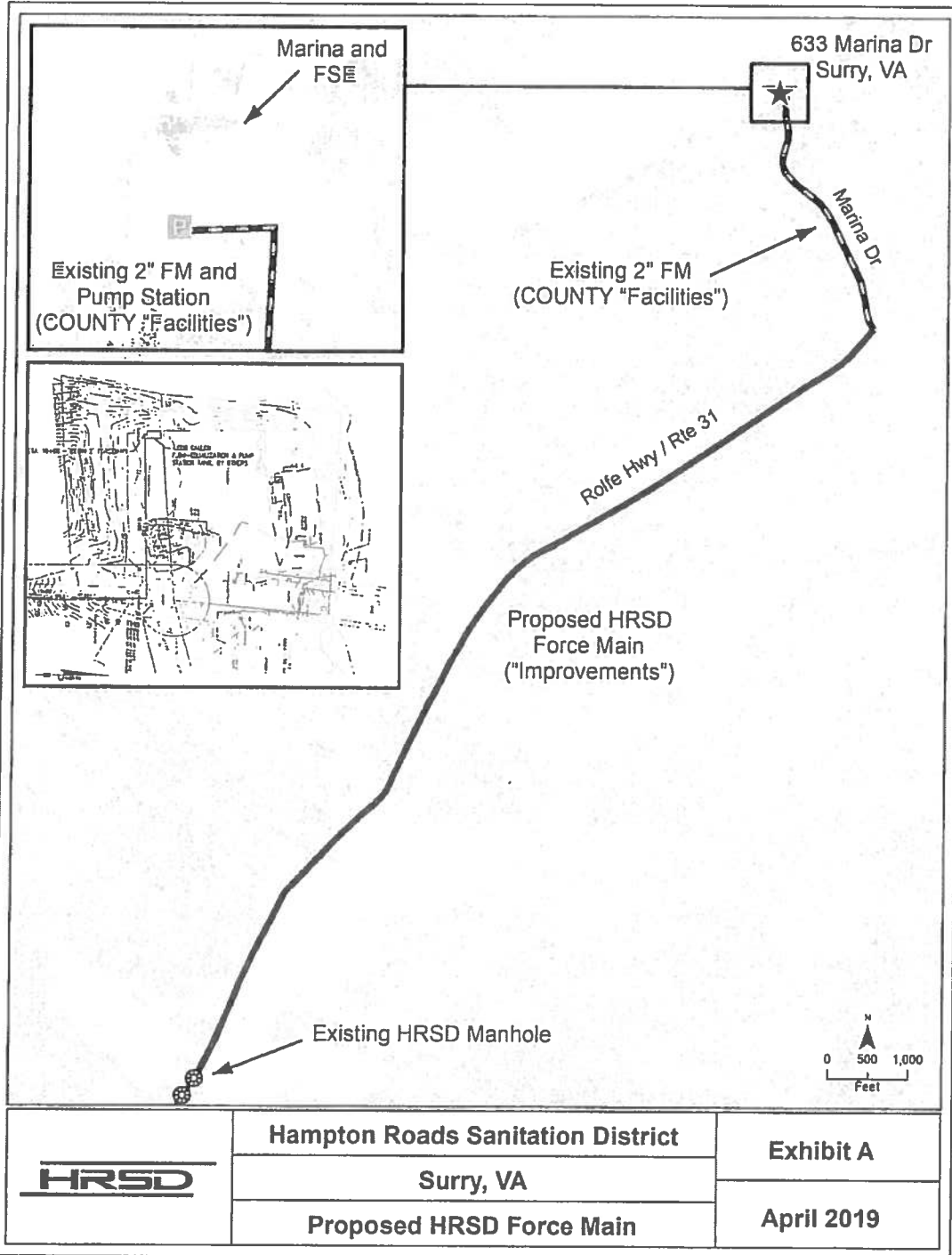
[Signature]
Notary Public

My commission expires: March 31, 2020
Registration No.: 7501312
Exp 3/31/19
Staci C. Lytle
Notary Public
Reg. #7501312
Commonwealth of Virginia

Approved as to Form and Correctness:
[Signature]
County Attorney

Approved as to Content:
[Signature]
County Administrator

Exhibit A – IMPROVEMENTS and FACILITIES



HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #13

AGENDA ITEM 20. – Hampton Roads Regional Water Quality Monitoring Program
Letter of Agreement

- [Regional Study](#)
- [Letter of Agreement](#)



MEMBER JURISDICTIONS

April 24, 2019

CHESAPEAKE

Mr. Ted Henifin
General Manager

FRANKLIN

HRSD
PO Box 5911
Virginia Beach, VA 23471-0911

GLOUCESTER

Re: Hampton Roads Regional Water Quality Monitoring Program

HAMPTON

Dear Mr. Henifin:

ISLE OF WIGHT

The Hampton Roads Planning District Commission (HRPDC) hereby agrees to administer funds to the Hampton Roads Sanitation District (HRSD) for the continuation of the Hampton Roads Regional Water Quality Monitoring Program. The HRPDC will reimburse HRSD for costs associated with the Regional Monitoring Program from July 1, 2019 through June 30, 2024. The attached plan outlines the objectives and deliverables of the continuation of the program.

JAMES CITY

NEWPORT NEWS

NORFOLK

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

POQUOSON

PORTSMOUTH

SMITHFIELD

SOUTHAMPTON

The HRPDC will collect the funds for the Program from its member localities and remit them to HRSD. The HRPDC will maintain a Memorandum of Agreement (MOA) with each member locality. HRSD will invoice the HRPDC quarterly for costs related to the program. HRPDC will remit payment to HRSD within 30 days of receipt of the invoice.

SUFFOLK

SURRY

VIRGINIA BEACH

WILLIAMSBURG

YORK

Mr. Ted Henifin

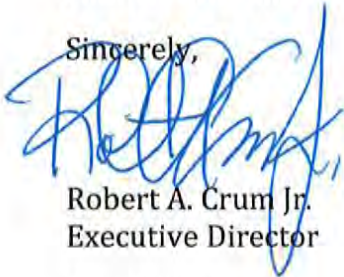
April 24, 2019

Page 2

If the HRPDC ends the Regional Monitoring Program prior to June 30, 2024, then it will be responsible for reimbursing HRSD for any outstanding cost including but not limited to supplies and monitoring equipment. The budget for this project may be amended during the agreement period. Budget amendments must go through HRPDC and localities' approval process.

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

Sincerely,



Robert A. Crum Jr.
Executive Director

Attachments

KCF



Ted Henifin
General Manager
HRSD



Continuation of the Hampton Roads Regional Water-Quality Monitoring Program

Virginia and West Virginia Water Science Center

Introduction and Study Rationale

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

Under the current program, HRPDC has brought together six localities that include Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach to participate in a long-term, 12-station, water-quality and -quantity monitoring effort. This monitoring program was funded through a 5-year Joint Funding Agreement (JFA) between HRPDC and USGS, and through a letter agreement between HRPDC and HRSD. Those agreements are set to expire on June 30, 2019. It is proposed that a new 5-year JFA and letter agreement be established to continue funding the operation of this 12-station monitoring network.

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

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

Methods and Approach

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

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

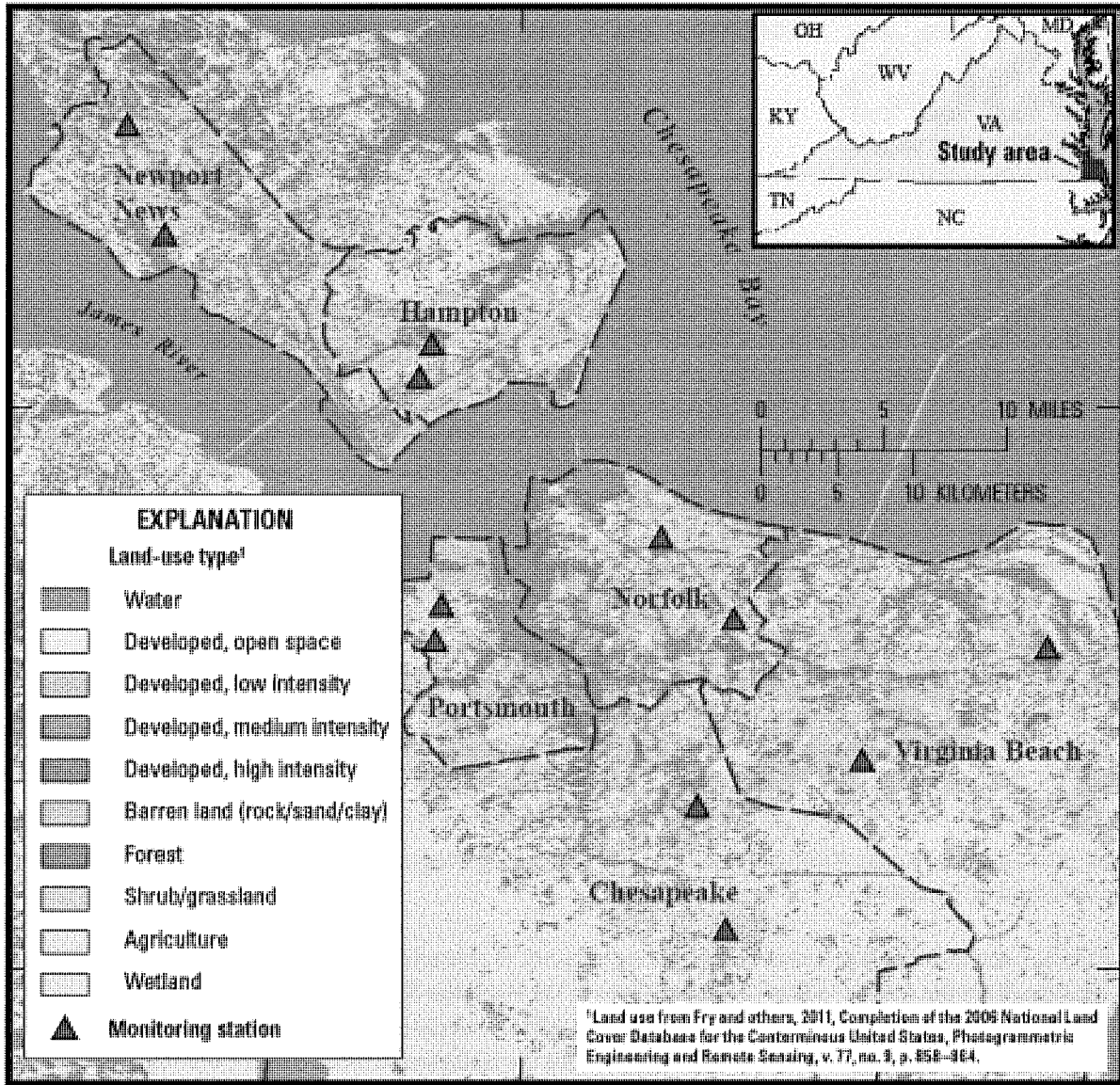


Figure 1. The study area for the stormwater monitoring network.

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

Load-monitoring stations are designed to remain operational under all flow conditions – including extended droughts and extreme floods (including hurricanes). Remaining operational during extreme floods is critical

because these are the primary loading periods – a single large flood can potentially move years to decades worth of material. The primary approach of the load-monitoring stations remains unchanged and each includes:

Continuous-record streamgage

A USGS stream gage is operated at each monitoring station for the collection of stage (water level above a referenced datum) and velocity at 5-minute intervals. Both stage and velocity data are served to the USGS database approximately 1 hour after the data are collected. These data are then used to compute streamflow, which is immediately available on the publicly accessible USGS National Water Information Service Website (NWISWeb) <https://waterdata.usgs.gov/va/nwis/rt>). The traditional USGS stream gage approach consists of a sensor that continually measures gage height. These data are then related to discrete discharge measurements to build a stage-discharge rating curve for the computation of a continuous discharge record. While this approach is currently being employed at some of the monitoring stations, local conditions such as tides, backwater, and the unique hydrologic characteristics of engineered storm conveyances require additional approaches. Each station is equipped with a velocity meter optimized for the unique conditions present at the monitoring location. Velocity and stage data are continuously collected for the development and maintenance of index-velocity rating curves that are ultimately used to compute a continuous record of discharge. Depending on site conditions, index-velocity ratings either replace the traditional stage-discharge rating approach, or are used in conjunction with the traditional approach. These methods require both high accuracy and high precision measurements of stage and water velocity; therefore, a significant effort is required to collect and quality-assure data over both time and the range of hydrologic conditions.

Continuous-record water-quality monitor

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

Automated stream sampler

Each monitoring station is equipped with a refrigerated automatic stream sampler for the collection of water-quality samples. In small urban watersheds, precipitation events characteristically cause a rapid rise and subsequent fall in the hydrograph (commonly referred to as “flashy”). Automated sampling, rather than traditional human-collected sampling, is critical to collecting stormflow samples during these short-duration, high-volume hydrologic events. At each monitoring station, approximately 15 storm events are targeted for sampling each year (2-3 samples collected during each event). Emphasis is placed on the collection of a variety of samples that represent a range of seasons and flow conditions. These automated storm samples are analyzed for both nutrients and total suspended solids. Additionally, baseflow samples, which help quantify groundwater contributions, are analyzed with the collection of dry weather samples, collected quarterly. The suspended solids and nutrient constituents selected for analysis represent a compromise between the desire to generate as much information as possible, while keeping costs reasonable, and meeting the fundamental objectives of the study. The following analytes will continue to be analyzed by HRSD on all water-quality samples that are submitted to the laboratory:

- Total Nitrogen
- Nitrate + Nitrite

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

Other major components

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

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

Data Analysis

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

Annually, discrete water-quality samples, continuous water-quality data, and continuous streamflow data are analyzed to compute annual nutrient and total suspended solids loads. Station-specific surrogate regression models have been developed for each constituent. Loads computed with these models will continue to be considered preliminary as additional samples are collected to better calibrate the regression coefficients. Models and computed loads will be made available for use by Chesapeake Bay watershed modelers once a formal peer reviewed USGS scientific investigations report (SIR) is published. A minimum of five years of loads are required to capture a range of wet and dry years, though a ten-year period is preferred to capture a more representative sample of climate fluctuation.

The computed suspended solids and nutrient loads will be compared to the Chesapeake Bay Program Watershed Model in several ways:

- Station-specific monitoring results will be used to compute area-specific and locality-specific suspended solids and nutrient loads. These locality-specific loads will be determined by scaling from the individual station measurements to the entire locality using locality-specific land-use information and weighted-area

computations. By scaling the monitoring results to the individual locality, loadings can be compared to the loadings generated by the watershed model.

- Direct comparisons between the monitored loads and the land-use specific Watershed Model loads will be made. Comparisons will be made by first identifying the range of computed loads attributed to baseflow and surface runoff in the Hampton Roads region for each of the three primary urban land types. These loads will then be compared to the range of loads assigned to this region for each of these three land types using the Phase-6 Watershed Model.

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

Ultimately, the monitored nutrient and suspended solids loads will be used to better inform future phases of the Watershed Model to more accurately reflect the contributions from urban land uses specific to the Virginia Coastal Plain. Through this collaboration, the USGS will continue to maintain a detailed understanding of how urban land use is represented in the current and future versions of the model, and can ensure that the value of this monitoring effort is maximized

Partnership

All work will be conducted in partnership between HRPDC (and the six participating localities), USGS, and HRSD. A detailed description of partner responsibilities for the collection and processing of continuous data is presented in figure 2, and for the collection and processing of discrete data in figure 3.

USGS will retain overall project leadership and will be responsible for project oversight, coordination of all data collection activities, including those conducted by HRSD, quality assurance of all laboratory data, desktop evaluation and quality assurance of all continuously collected water-quantity and -quality data, as well as dataflow and management using USGS data telemetry network, database, and online webhosting. Furthermore, USGS will be responsible for all data analysis activities, which include land use-land cover characterization, analysis of spatial and temporal variability of watershed hydrology and basic water-quality parameters, and nutrient and total suspended solids concentrations, examination of relations between surrogates (continuously collected data) and nutrient and total suspended solids concentrations (discretely collected data) for the development and calibration of regression models, and the computation of watershed-specific annual nutrient and suspended solids loads.

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

Figure 2. Assignment of responsibilities related to the collection and processing of continuous data

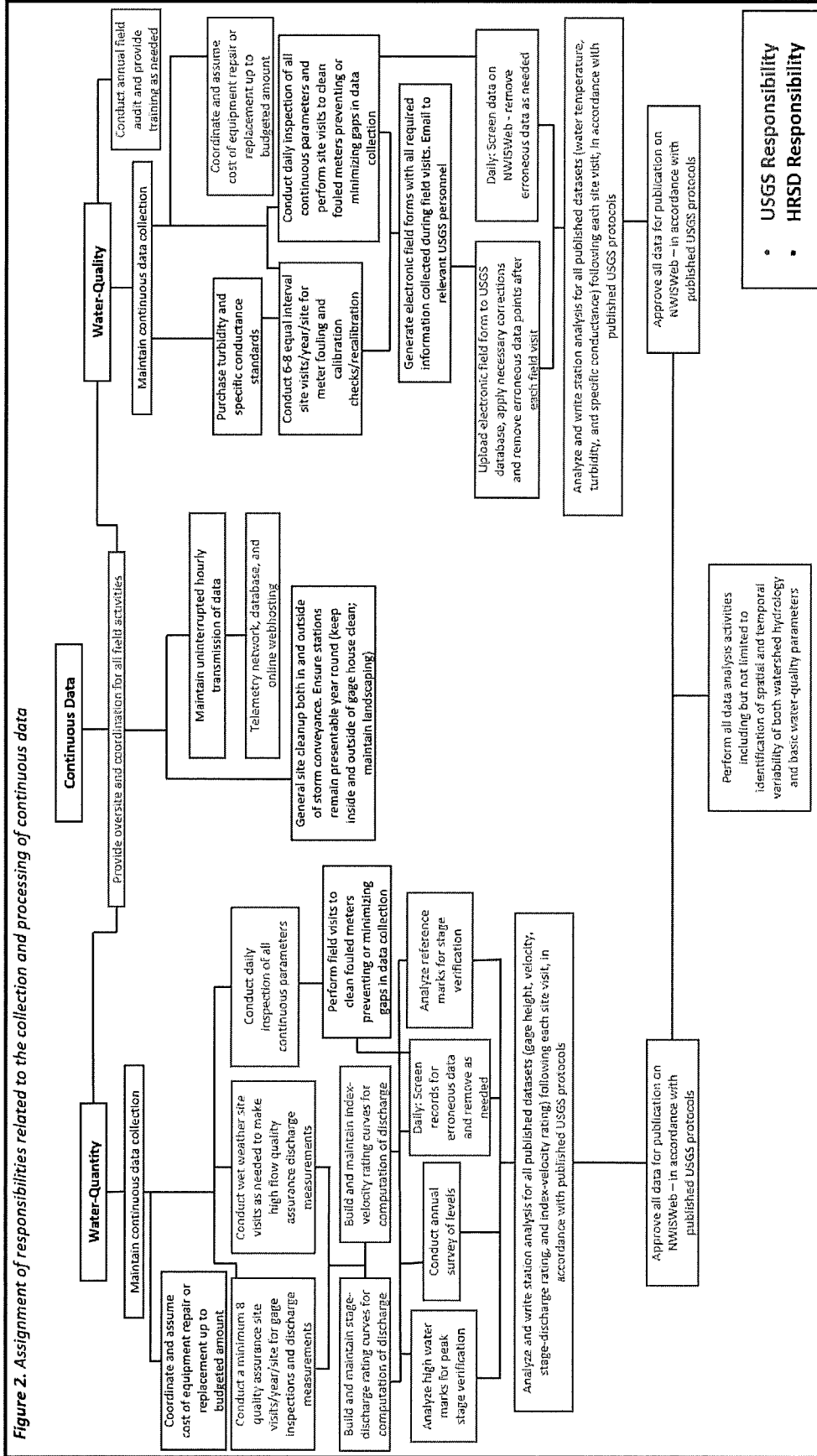
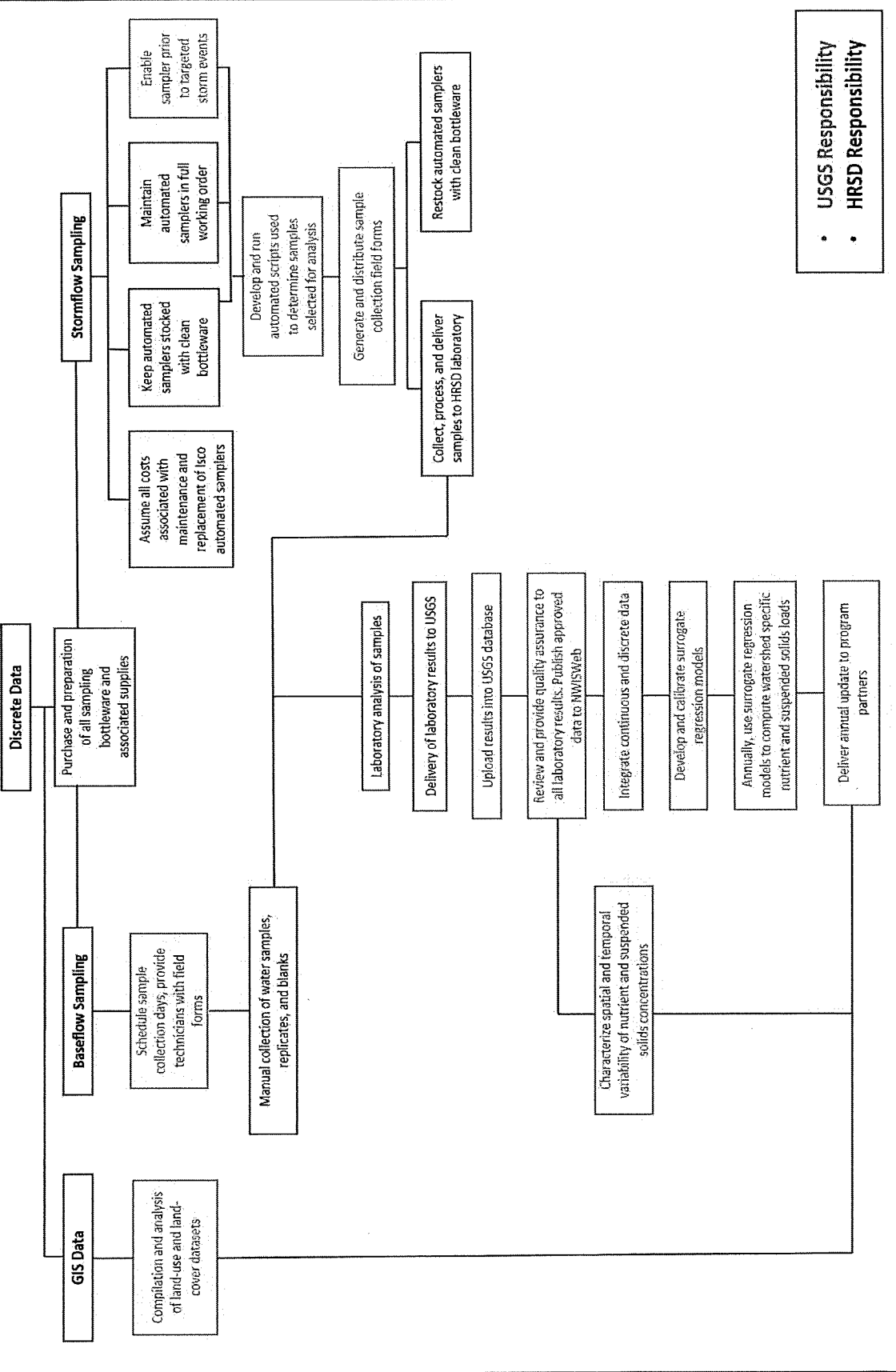


Figure 3. Assignment of responsibilities related to the collection and processing of discrete data



Monitoring Program Products

To date, this monitoring program has been primarily focused on generating regionally-representative water-quality and -quantity data in support of the principal goal of computing locally-accurate nutrient and total suspended solids loadings rates that can ultimately be used to inform the Chesapeake Bay Watershed Model for both the Virginia Coastal Plain and urban land-uses. This effort has resulted in the collection of approximately 1,250 discrete water-quality samples and over 3,000,000 measurements of continuously collected water-quality parameters.

Cooperator Meetings – annual meetings have been held with the HRPDC and all participating locality stormwater managers to provide updates on the status of the monitoring program and findings from preliminary data analysis. These meetings will continue to be held annually, though more frequent presentations and updates can be provided, if preferred. As part of the annual project meeting, any revisions and enhancements to the sampling plan will be discussed. As discussed at the network expansion presentation in November 2017, additional questions and study elements can be added relatively efficiently. Additionally, quarterly progress reports are compiled by USGS and sent to the HRPDC, and may be shared with stakeholders from the participating localities.

Program Website – a project website (<http://va.water.usgs.gov/HRstormwater/>) has been developed to communicate the study design and objectives, program partnerships, monitoring data, results, and related publications. This website offers direct access to all data for local stormwater managers, other city/county staff, and the general public, and it serves to promote the program as a model regional cooperative success story.

USGS Fact Sheet – A USGS Fact Sheet entitled “Hampton Roads Regional Water-Quality Monitoring Program” was published in 2016 (available at <https://pubs.er.usgs.gov/publication/fs20163095>). This fact sheet provides an overview of the benefits of regional collaboration, study objectives, and study design with the intention of highlighting the program’s success.

USGS Report -- Preparation of a peer reviewed, formally-published, and citable USGS Scientific Investigations Report (SIR) will begin after 5 full years of data collection has occurred at each of the 12 monitoring stations. Due to variability in the installation dates for the 12 network stations, the 5-year mark will occur after the second year of the new agreement period for some, and the third year for others. This report will include characterizations of water-quality and -quantity at each monitoring station. Additionally, the report will present nutrient and suspended solids loading rates at each of the monitoring stations, as well as scaling to the locality level. This publication will ensure that data collected during the first five years of the program will be available to Chesapeake Bay modelers to inform the Phase-7 Watershed Model.

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

Timeline

A timeline of program activities is proposed in figure 4 for the period beginning July 1, 2019 and ending June 30, 2024. Continuous and discrete water-quality and -quantity monitoring will be ongoing. Suspended solids and

nutrient loads will be computed and reported to all partners annually. A minimum of five years is required to begin characterizing how suspended solids and nutrient loads vary with wet and dry water years; however, a ten-year period will provide a markedly improved representation of wet, dry, and moderate climate cycles. A formal USGS SIR will be prepared on the first five years of data collection with emphasis on characterizing water-quality and -quantity in each monitored watershed, computed nutrient and suspended solids loads, and scaling loads to the locality level.

Figure 4. Anticipated time of tasks to be completed, by State fiscal year.

	Fiscal Year				
	2020	2021	2022	2023	2024
Monitoring Operations					
O&M of Monitoring Network					
Sample Collection					
Load Computation					
Annual update					
Formal Report					

Funding

The proposed itemized operating budget for this program is presented below in table 1 – these budget numbers reflect a “typical” year of operation. The total funding for the operation of the monitoring network (Table 2) is \$561,000.

	Annual Total	5-Year Total
USGS Elements		
Project Chief Salary	\$120,000	\$600,000
Hydrologic Technician Salary	\$100,000	\$500,000
Travel	\$10,000	\$50,000
Operations	\$50,000	\$250,000
Equipment Repairs/Replacement	\$25,000	\$125,000
Total	\$305,000	\$1,525,000
HRSD Elements		
Labor	\$159,000	\$795,000
Vehicle Mileage	\$12,000	\$60,000
Standards + Supplies	\$38,000	\$190,000
Laboratory Analysis	\$55,000	\$275,000
Equipment Repairs/Replacement	\$17,000	\$85,000
Total	\$281,000	\$1,405,000
Grand Total	\$586,000	\$2,930,000

	Annual Total	5-Year Total
USGS Total Funding	\$305,000	\$1,525,000
USGS Contribution	\$25,000	\$125,000
HRPDC Contribution	\$280,000	\$1,400,000
HRSD Total Funding	\$281,000	\$1,405,000
HRPDC Contribution	\$281,000	\$1,405,000
Total HRPDC Contribution	\$561,000	\$2,805,000

***Please be advised that HRSD provides municipal assistance at cost without profit. The municipality will be billed only for the actual costs incurred without profit.*

The overall monitoring effort was funded at a rate of \$505,000 per year from Fiscal Year 2014 to 2019. To continue operation of the monitoring network, as it has been operated in the first five years of the effort, it is proposed that the total annual funding be increased to \$561,000 per year. The proposed total annual funding level has been increased by \$56,000 to account for critical items not accounted for in the original agreement. These essential line items include water-quality meter calibration standards as well as USGS technician salary to support surface-water gaging operations. The total number of samples collected at each monitoring station will be reduced from 50 to 40 per year to offset a portion of the project expenses attributed to the addition of water-quality meter calibration standards and USGS technician salary. Program costs will be divided equally between the localities over a six-year term, detailed in a memorandum of agreement between the localities and HRPDC. The annual costs to each locality for each of the six-year term of this agreement is estimated at \$77,917. The allocation of annual funding detailed in Table 2 will serve as the annual funding to be paid out by HRPDC to USGS and HRSD to support completion of the proposed scope of work over the proposed 5-year agreement period. It should be noted that these costs are fixed at the beginning of this agreement period and will not change to account for additional needs of the program, such as the cost of repairing or replacing instrumentation.

A significant amount of instrumentation was required for network startup (approximately \$40,000 per site). To keep the USGS elements of the annual project costs level throughout the initial agreement, the costs for this equipment were covered in the following two ways:

1. The USGS purchased over \$200,000 of the necessary equipment (approximately 50% of the total equipment required for the program) as a matching funds contribution.
2. Monitoring did not begin until the second year of the initial agreement period, reducing the operational budget to cover the remaining costs of equipment purchase and installation.

The equipment originally purchased by USGS will be between five and ten years old during the extent of the proposed agreement period. During this agreement period, substantial costs may arise for equipment repairs or replacement due to either natural wear and tear or damage by catastrophic events. USGS will contribute the full costs for maintaining and/or replacing any equipment originally purchased by the agency. The cost of this equipment will be borne by USGS, and will not be passed along to the partnership. These costs savings are represented by the difference in the “Grand Total” (Table 1) and the “Total HRPDC Contribution” (Table 2).

Contact Information

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Hydrologist, Virginia Water Science Center
804-261-2628

Mark Bennett, USGS
Director, Virginia Water Science Center
804-261-2643

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mrbenet@usgs.gov

References

Wagner, R.J., Boulger, R.W., Jr., Oblinger, C.J., and Smith, B.A., 2006, Guidelines and standard procedures for continuous water-quality monitors—Station operation, record computation, and data reporting: U.S. Geological Survey Techniques and Methods 1–D3, 51 p. + 8 attachments; accessed April 10, 2006, at <http://pubs.water.usgs.gov/tm1d3>

Rantz, S. E., et al., Measurement and computation of streamflow, Volume 1, Measurement of Stage and Discharge, U. S. Geological Survey Water Supply Paper 2175, 284 p., 1982a.

MEMBER JURISDICTIONS

February 10, 2014

CHESAPEAKE

Mr. Ted Henifin
General Manager
HRSD
PO Box 5911
Virginia Beach, VA 23471-0911

FRANKLIN

GLOUCESTER

Re: Hampton Roads Regional Water Quality Monitoring Program

HAMPTON

Dear Mr. Henifin:

ISLE OF WIGHT

The Hampton Roads Planning District Commission (HRPDC) hereby agrees to administer funds to the Hampton Roads Sanitation District (HRSD) for the Hampton Roads Regional Water Quality Monitoring Program. The HRPDC will reimburse HRSD for costs associated with the Regional Monitoring Program up to \$300,000 per year from February 1, 2014 through June 30, 2019. The attached Study Plan outlines the objectives and deliverables of the Study.

JAMES CITY

NEWPORT NEWS

NORFOLK

HRSD hereby agrees to purchase the equipment necessary to conduct the monitoring study (less the equipment that will be purchased by USGS), maintain all monitoring equipment in a functioning state, collect water quality samples from the monitoring stations, and analyze samples in the HRSD laboratory. The HRPDC will reimburse HRSD for annual costs associated with the installation and maintenance of the equipment and the collection and analysis of samples. The cost of the monitoring equipment purchased by HRSD is estimated to be \$250,000. The costs of the monitoring equipment purchased by HRSD will be amortized over the 5 year period and billed quarterly to the HRPDC. If the budget allows, the cost of the equipment may be paid back sooner. HRSD will retain ownership of the equipment unless a separate agreement is entered into with a locality directly.

POQUOSON

PORTSMOUTH

SOUTHAMPTON

SUFFOLK

SURRY

VIRGINIA BEACH

The HRPDC will collect the funds for the Program from its member localities and remit them to HRSD. The HRPDC will maintain an Memorandum Of Agreement (MOA) with each member locality. HRSD will invoice the HRPDC quarterly for costs related to the installation and maintenance of the monitoring equipment as well as staff and laboratory costs associated with monitoring. HRPDC will remit payment to HRSD within 30 days of receipt of the invoice.

WILLIAMSBURG

YORK

Mr. Ted Henifin
February 10, 2014
Page 2

If the HRPDC ends the Regional Monitoring Program prior to 2019, then it will be responsible for reimbursing HRSD for the remaining costs associated with the purchase of the monitoring equipment. The budget for this project may be amended during the agreement period based on changes in costs to purchase or install the equipment.

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

Sincerely,



Dwight L. Farmer
Executive Director/Secretary

Attachments

JLT/jc



Ted Henifin
General Manager
HRSD

HRSD COMMISSION MEETING MINUTES
MAY 28, 2019

ATTACHMENT #14

AGENDA ITEM 27. - INFORMATIONAL ITEMS

- a. Management Reports
 - (1) [General Manager](#)
 - (2) [Communications](#)
 - (3) [Engineering](#)
 - (4) [Finance](#)
 - (5) [Information Technology](#)
 - (6) [Operations](#)
 - (7) [Talent Management](#)
 - (8) [Water Quality](#)
 - (9) [Report of Internal Audit Activities](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Effluent Summary](#)
- d. [Air Summary](#)



May 21, 2019

Re: General Manager's Report

Dear Commissioners:

After a lengthy shut down to address warranty items at the SWIFT Research Center, recharge operations resumed at the end of April. The re-start was a team effort with significant assistance provided by many HRSD employees. It is great to be back on-line.

The highlights of March's activities are detailed in the attached monthly reports.

- A. **Treatment Compliance and System Operations:** All treatment plants met permit with no reportable issues in the system. The highlights for the month are included in the attached monthly reports.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
1. An internal United Way Campaign celebration luncheon recognizing winners of special recognition
 2. A meeting to explore aquaculture concepts at the Chesapeake-Elizabeth Treatment Plant
 3. A meeting to discuss Surry issues
 4. A meeting to review property options for a new Suffolk Pump Station
 5. A meeting to review the Oceana storage tank site plan
 6. Several calls discussing EPA/DEQ comments on the Integrated Plan submitted in September 2017
 7. A meeting to review the final draft of the Eastern Shore Sewer Study
- C. **External Communications:** I participated in the following meetings/activities:
1. An interview by the Bay Journal for a SWIFT update
 2. An interview by the Virginian Pilot for a SWIFT update

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Commissioners: Frederick N. Elofson, CPA, Chair • Maurice P. Lynch, PhD, Vice-Chair • Vishnu K. Lakdawala, PhD
Michael E. Glenn • Stephen C. Rodriguez • Willie Levenston, Jr. • Ann W. Templeman • Elizabeth A. Taraski, PhD
www.hrsd.com

3. The quarterly board meeting for NACWA held in conjunction with Water Week in Washington, DC
4. A meeting of the Water Agency Leader Alliance to discuss 2019 workforce initiatives
5. A meeting with the US Water Alliance's Value of Water steering committee to review the 2019 survey results
6. The quarterly board meeting of Virginia Forever
7. Attended the preliminary briefing for the Nansemond River inverse condemnation suit
8. The Newport News Green Foundation annual meeting
9. The spring meeting of the US EPA Environmental Financial Advisory Board (EFAB)
10. Presented HRSD private inflow and infiltration program at the Wet Weather Partnership
11. Presented a webinar on the NACWA Excellence in Management Award application process for 2019
12. Presented HRSD and SWIFT to the Virginia Beach Forum
13. The City of Chesapeake state of the city luncheon
14. A planning call for the Chesapeake Environmental Protection Association's forum
15. A meeting with the Director of Virginia DEQ and senior staff regarding WIP III implications for wastewater plants in Virginia
16. A call with staff from Senator Kaine's office checking in on Federal water issues
17. A meeting with Jeanette Brown a former utility executive, Past President of WEF and professor at Manhattan College where she will be working with HRSD's Ali Gagnon on a controls project
18. Several calls and meetings with James City County staff and members of the Board of Supervisors focused on our proposed acquisition of property adjacent to the Williamsburg Treatment Plant

D. Consent Decree Update:

1. The revised demand letter for stipulated penalties was received and payment of \$73,575 was made.
2. Provided a response to DOJ/EPA comments on the HRSD Integrated Plan received on February 15, 2019.
3. Submitted the Semi-Annual Report prior to the May 1, 2019 deadline.

On April 30, 2019 we received the final signature on the Potomac Aquifer Recharge Monitoring Laboratory (PARML) agreement from the president of Virginia Tech. Old Dominion and Virginia Tech are working to establish the lab and we look forward to a formal “opening” this summer. The PARML will be a great addition to the technical review resources for SWIFT and we look forward to seeing this entity fully functional. The oversight committee also created by legislation will be organizing in the coming weeks with a goal of getting that group up and running in early July.

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 on Tuesday, May 28, 2019 in Virginia Beach.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager
FROM: Director of Communications
SUBJECT: Monthly Report for April 2019
DATE: May 9, 2019

A. Publicity and Promotion

1. **Northam announces Environmental Excellence Awards | Monday, April 1, 2019 | Augusta Free Press**
<https://augustafreepress.com/northam-announces-environmental-excellence-awards-winners/>
2. **Conditions on James River lead to proposal for new chlorophyll levels | April 15, 2019 | Bay Journal**
https://www.bayjournal.com/article/conditions_in_james_river_lead_to_proposal_for_new_chlorophyll_levels
3. **HRSD is now injecting millions of gallons of treated wastewater into our aquifer | April 17, 2019 | Pilotonline.com**
https://pilotonline.com/ask/article_1fefcfc-6045-11e9-9fa4-6fe71ebfdfae.html
(NOTE: Same story appeared on the front page of the Virginian Pilot print version under the headline, “Refilling an aquifer, a few million gallons at a time”)
4. **HRSD is now injecting millions of gallons of treated wastewater into our aquifer | April 17, 2019 | Daily Press**
<https://www.dailypress.com/news/politics/dp-nws-glad-you-asked-water-aquifer-0418-story.html>
5. **Cleaner Chesapeake Bay must be a common goal (Editorial) | April 17, 2019 | Daily Press**
<https://www.dailypress.com/news/opinion/editorials/dp-edt-farmers-chesapeake-bay-cleanup-0418-story.html>
6. **Board to consider HRSD land acquisition at Carter’s Grove, proposed Wawa | March 8, 2019 | The Virginia Gazette**
<https://www.vagazette.com/news/va-vg-james-city-board-hrsd-wawa-0309-story.html>

7. **Letter: Is aquifer refill plan safe? | April 22, 2019 | Virginian Pilot (Letters to the Editor)**
https://pilotonline.com/opinion/letters/article_d13ea9d4-62c9-11e9-bd85-d72a2493b679.html
8. **Letter: Aquifer plan is safe and necessary |April 23, 2019 | Virginian Pilot (Letters to the Editor)**
https://pilotonline.com/opinion/letters/article_5f33c62a-6536-11e9-a396-5b4c531280bf.html
9. **Catch the King catches Guinness World Record | April 29, 2019 | William & Mary News**
<https://www.wm.edu/news/stories/2019/catch-the-king-catches-guinness-world-record.php>
10. **Virginia Shore officials tout regional sewer plans | April 30, 2019 | Delmarva now**
<https://www.delmarvanow.com/story/news/2019/04/30/virginia-shore-officials-tout-regional-sewer-plans/3615142002/>

B. Social Media and Online Engagement

1. Facebook: 23,225 post impressions and Facebook Engagement of 991
2. Twitter: 11,000 impressions
3. SWIFT website visits: 611
4. LinkedIn Impressions: 204
5. Blog posts: none
6. Construction Project Page Visits: 1025 total (this number does not include direct visits from home page), broken down as follows:
 - a. 367 visits to construction status page
 - b. 658 visits to individual project pages
7. Next Door unique impressions: 261 (three posts targeted to communities near Woodstock Park and Willard Avenue PS)

C. News Releases, Advisories, Advertisements, Project Notices, Community Meetings and Project Websites

1. News Releases/Traffic Advisories/Construction Notices: 2 (Media Advisories)
2. Advertisements: 0
3. Project Notices: 7 (via door hanging/door knocking, targeted NextDoor messaging and civic league emails reaching approximately 4,245 residents)
4. Project/Community Meetings: 3
5. New Project Web Pages/Blogs/Videos: 0

D. Special Projects and Highlights

1. Director attended the Hampton Roads Planning District Commission Public Information Subcommittee meeting.
2. Director and water quality staff gave an interview to Bloomberg Environment on SWIFT.
3. Director and staff attended the Woodstock Park-Avalon Terrace Civic League meeting to present information on the Woodstock Park Improvement Project.
4. Director and staff facilitated an open house for the Providence Road Offline Storage Facility/Woodstock Park Improvement Project in Virginia Beach.
5. Director and staff manned an educational booth at the Naval Weapons Station Yorktown Earth Day Celebration 5K event.
6. Director and staff attended and set up an educational display at the Newport News Green Foundation Meet and Greet event.
7. Director and staff facilitated an open house for the Willard Avenue Pump Station in Hampton.
8. Director went on a construction progress tour of the new CAMBI system at the Atlantic Treatment Plant (ATP).
9. Staff participated in several planning meetings with ATP staff for Earth Action Day.

E. Internal Communications

1. Director participated in the following internal meetings and events:
 - a. Willard Avenue Pump Station (PS) open house planning meetings
 - b. Apprenticeship graduation planning
 - c. New Employee Orientation
 - d. SWIFT QST and QST meetings
 - e. Architectural review committee meetings
 - f. Woodstock Park Improvement Project Open House planning meetings
 - g. Atlantic Treatment Plant Administration building ribbon cutting
 - h. Aquaculture visioning session
 - i. Photo shoot of the Virginia Initiative Plant Nutrient Removal upgrade facilities and assets
2. Director conducted bi-weekly communications department status meetings with staff and informal check-in meetings with staff members.

Metrics

1. Educational and Outreach Activities: 7
 - a. 04/10/19 – Tabb Middle School Science Expo, Yorktown (1000 attendees)
 - b. 04/14/19 – Hoffler Creek Nature Preserve Wings and Things Spring Fling, Portsmouth (80 attendees)
 - c. 04/17/19 – Well Water results clinic, Chesapeake (35 attendees)
 - d. 04/22/19 – TCC Cares Earth Day Extravaganza, Chesapeake (150 attendees)
 - e. 04/25/19 – Naval Weapons Station Yorktown 5K Educational booth (30 attendees)
 - f. 04/27/19 – Earth Action Day at Ocean Lakes High School, Virginia Beach (40 attendees)
 - g. 04/30/19 – Discovery STEM Academy Outreach, Newport News (80 attendees)
2. Number of Community Partners: 7
 - a. York County Public Schools
 - b. Hoffler Creek Wildlife Preserve Foundation
 - c. Virginia Tech Cooperative Extension, Chesapeake
 - d. Tidewater Community College, Chesapeake Campus
 - e. Naval Weapons Station, Yorktown
 - f. Virginia Beach Public Schools

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for April 2019

DATE: May 10, 2019

A. General

1. Capital Improvement Program (CIP) spending for the ninth month of Fiscal Year-2019 was above the planned spending target. Construction associated with the Atlantic Treatment Plant Thermal Hydrolysis Process has accelerated with almost \$6M billed this month.

CIP Spending (\$M):

	Current Period	FYTD
Actual	13.96	65.07
Plan	10.90	97.30

2. The Engineering Department has begun updating the existing Design-Build contract documents. These documents were first used in 2010 and have been used for nine (9) projects since that time. A new edition of the Design-Build contract documents was approved by the Engineers Joint Contract Documents Committee (EJCDC) in 2016. A group of staff members and outside legal support are reviewing the new edition of the documents to create supplemental conditions. Use of the latest version of the EJCDC standard will allow us to stay current with national best practices and use a document familiar to the various consultants and contactors that do work for HRSD. We are also adding to the supplemental conditions our own lessons learned from the past 10 years of experience implementing Design-Build projects. Using the latest contract documents is also important as we begin to consider the large projects to be implemented as part of the SWIFT Program in the coming years. Implementation of these new contract documents should be complete by the end of July.

B. Asset Management Division

1. One benefit of our efforts to update the HRSD Asset Management Program is our ability to meet the requirements of the Virginia Revolving Loan Fund (VRLF) Program. The VRLF Program requires that borrowers complete a fiscal sustainability plan checklist. This checklist requires borrowers to document their efforts to address asset management. Since we have a number of active project loans with the VRLF, our ability to address this checklist is enhanced by our efforts to address asset management here at

HRSD. Organizations without an asset management program would be limited in their ability to document their efforts on the VRLF checklist.

2. The annual Hurricane Readiness and Recovery Plan update is underway. Notifications have been sent out to each work center asking for updates, a meeting was held with staff to review post-incident recovery responsibilities, and the SC&H audit is under review to look for areas for plan improvement. This plan will be updated by July 1 to coincide with the upcoming Hurricane season.

C. North Shore, South Shore and SWIFT Design & Construction Divisions

1. Design of the Williamsburg Treatment Plant Generator and Switchgear Replacement project continues to move forward. This project will provide needed improvements and address reliability of the electrical system at the plant. Many of the existing treatment plants have aging electrical systems which were installed in the 1970s and 1980s. These systems are reaching the end of their useful lives and projects are underway to address these assets. The electrical system is being upgraded to easily add additional electrical load at the plant to accommodate future SWIFT facility needs. The design of this project should be completed in the next month and the project should be advertised for bidding by the end of August.
2. Design is nearly complete for the Virginia Beach Boulevard Force Main Phase VI project. Easement acquisition and plan review by the City of Virginia Beach is underway. The project team recently established the project website and is beginning to reach out to local businesses and civic leagues. The project includes the installation of 12,000 linear feet of 42-inch diameter force main pipe and is located in the busy Virginia Beach Boulevard corridor. This project is one part of the larger effort to direct flow from the Chesapeake-Elizabeth Treatment Plant to the Atlantic Treatment Plant. This project should be advertised for bids in the coming month.
3. The focus of the design effort for SWIFT has shifted to the James River Treatment Plant. Conceptual design for both the existing plant improvements and proposed SWIFT facility are underway. It is important to optimize the treatment plant flow to minimize cost and improve overall performance to the SWIFT facility. It is proposed to combine this work into one large construction contract. This combined effort will limit overhead costs for the general contractor and minimize construction conflicts when compared to using two separate contracts to deliver the work. The conceptual design is moving forward and discussions with the City of Newport News are underway to limit impacts to the adjacent properties and to coordinate property needs.

D. Planning & Analysis Division

1. The Fiscal Year 2020 CIP is now complete. The efforts that were completed in April include; final editing of the document, coordination with the Finance Department on the program costs and spending projections, and selection of a cover for the document. The draft CIP was reviewed at the April Commission Meeting and the final version is on the agenda for Commission consideration at their May meeting. .
2. Staff has drafted three new HRSD policy documents. These documents include:
 - Capacity Assurance and Connection – Planning and connection to the regional interceptor system.
 - Facility Transfer – A process for the transfer of sanitary sewer facilities from one jurisdiction to another.
 - Service Area Expansion – An approval process for service area expansion requests.

These draft policies will help clarify internal procedures and will provide clarification of HRSD expectations to external groups. The guidelines are under review by the HRSD QST and will be presented to the Commission at an upcoming meeting.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 5
 - a. Staff participated in a panel discussion at the Construction Management Association of America (CMAA) Conference entitled, “Women in the Construction Industry,” on April 1.
 - b. Staff made a presentation at the 2019 Design-build Institute of America (DBIA) Water/Wastewater Conference entitled, “Ten Years of Design-Build Experiences at HRSD,” on April 11.
 - c. Staff participated in a Career Fair at Indian Lakes Elementary School on April 11.
 - d. Staff participated at a community outreach event for the Providence Road Tank and Woodstock Park Improvements project on April 22.

- e. Staff participated at a community outreach event for the Willard Avenue Pump Station Replacement project on April 30.
2. Number of Community Partners: 4
 - a. CMAA
 - b. DBIA
 - c. City of Virginia Beach Public Schools
 - d. City of Virginia Beach Parks & Recreation Department
 3. Number of Research Partners: 0
 4. Metrics Summary

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Total Training Hours per Full Time Employee (43) - Current Month	Hours / #FTE	5.15
M-1.4b	Total Training Hours per Full Time Employee (43) - Cumulative Fiscal Year-to-Date	Hours / #FTE	29.48
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	3
M-5.4	Number of Research Partners	Number	0

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

- g. Newport News Public Schools
3. Additional Activities Coordinated by Communications Department:
 - a. 04/6/19 Elizabeth River Project Youth Resilience Expo, Norfolk
 - b. 04/11/19 Indian Lakes Elementary School Career Day, Virginia Beach
 - c. 04/18/19 Norfolk Naval Shipyard Earth Day, Portsmouth
 - d. 04/23/19 Aberdeen Elementary School STEM Career Fair
 4. Monthly Metrics Summary

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Total Training Hours per Full Time Employee (3) - Current Month	Hours / #FTE	22.17
M-1.4b	Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date	Hours / #FTE	102.51
M-5.2	Educational and Outreach Events	Number	7
M-5.3	Number of Community Partners	Number	7

Respectfully,

Leila Rice, APR
 Director of Communications

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for April 2019
DATE: May 15, 2019

(1) General

1. Water consumption increased in April reversing the drop seen in March. As a result, wastewater revenues remain slightly higher than budget. Interest Income continues to be strong with our current cash balance as we focus on spending our 2018 bond proceeds according to the 18-month IRS spend down provision. Facilities Charges are weaker than last fiscal year but remain on track to hit our budget projection. A large worker's compensation claim was reconciled resulting in a \$862k automotive policy reimbursement of medical bills paid by HRSD. This reimbursement is reflected in Other Non-Operating Revenues. Personal Services remain higher than budget due to the three pay periods in March. There are a number of requisitions being processed in Procurement, so we expect operating expenses to be closer to budget by the end of the fiscal year.
2. On April 3, the Director of Finance made a presentation on HRSD's financial forecast at the annual Water/Wastewater Utilities Chief Financial Officer's (CFO) Forum. This Forum is an invite-only event for the largest utilities in the country.
3. With taxes due in April, our \$50 million in Variable Rate Demand Bonds spiked up to 2.25 percent as investors liquidated funds to pay taxes, which is typical this time of year. The interest rate is expected to decline in May.
4. The Quarterly investment summary for [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#) is attached.

(2) Interim Financial Report

1. Operating Budget for the Period Ended April 30, 2019

	Amended Budget	Current YTD	Current YTD as % of Budget (83% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	\$ 289,967,000	\$ 243,364,482	84%	84%
Surcharge	1,425,000	1,250,867	88%	64%
Indirect Discharge	2,750,000	2,457,611	89%	89%
Fees	2,855,000	2,429,893	85%	81%
Municipal Assistance	875,000	519,805	59%	79%
Miscellaneous	595,000	938,615	158%	101%
Total Operating Revenue	<u>298,467,000</u>	<u>250,961,273</u>	84%	84%
Non Operating Revenues				
Facility Charge	6,075,000	5,356,140	88%	96%
Interest Income	2,500,000	6,442,380	258%	150%
Build America Bond Subsidy	2,400,000	2,266,416	94%	96%
Other	820,000	1,400,073	171%	117%
Total Non Operating Revenue	<u>11,795,000</u>	<u>15,465,009</u>	131%	106%
Total Revenues	310,262,000	266,426,282	86%	85%
Transfers from Reserves	<u>8,847,824</u>	<u>7,373,187</u>	83%	83%
Total Revenues and Transfers	<u>\$ 319,109,824</u>	<u>\$ 273,799,469</u>	86%	85%
Operating Expenses				
Personal Services	\$ 55,331,886	\$ 47,761,614	86%	86%
Fringe Benefits	24,321,670	20,014,721	82%	85%
Materials & Supplies	7,686,154	6,251,674	81%	82%
Transportation	1,446,906	1,057,532	73%	67%
Utilities	12,306,952	10,320,490	84%	78%
Chemical Purchases	10,894,183	6,885,321	63%	64%
Contractual Services	42,104,030	22,806,412	54%	62%
Major Repairs	10,315,534	5,619,622	54%	45%
Capital Assets	1,232,144	509,139	41%	84%
Miscellaneous Expense	2,945,304	2,146,929	73%	86%
Total Operating Expenses	<u>168,584,763</u>	<u>123,373,454</u>	73%	75%
Debt Service and Transfers				
Debt Service	62,811,000	56,995,358	91%	87%
Transfer to CIP	87,475,061	72,895,880	83%	83%
Transfer to General Reserve	-	-	0%	83%
Transfer to Risk management	239,000	199,170	83%	83%
Total Debt Service and Transfers	<u>150,525,061</u>	<u>130,090,408</u>	86%	85%
Total Expenses and Transfers	<u>\$ 319,109,824</u>	<u>\$ 253,463,862</u>	79%	80%

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; 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 April 30, 2019

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2018	\$ 193,623,393	\$ 3,260,531	\$ 15,266,324	\$ 75,874,029
Add: Current Year Sources of Funds				
Cash Receipts	269,279,755			-
Capital Grants				2,444,140
VRA Draws				22,221,569
Bond Proceeds (includes interest)				862,315
Transfers In	-	199,170		72,895,880
Sources of Funds	269,279,755	199,170	-	98,423,904
Total Funds Available	\$ 462,903,148	\$ 3,459,701	\$ 15,266,324	\$ 174,297,933
Deduct: Current Year Uses of Funds				
Cash Disbursements	183,561,694			79,063,430
Transfers Out	73,095,050			-
Uses of Funds	256,656,744	-	-	79,063,430
End of Period - April 30, 2019	\$ 206,246,404	\$ 3,459,701	\$ 15,266,324	\$ 95,234,503

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended April 30, 2019

Classification/ Treatment Service Area	Expenditures		Year to Date		Total Expenditures	Outstanding Encumbrances	Available Balance
	Budget	prior to June 30, 2018	FY 2019 Expenditures				
Administration	\$ 74,586,023	\$ 40,373,105	\$ 996,295	\$ 41,369,400	\$ 4,373,237	\$ 28,843,386	
Army Base	158,584,000	124,056,440	748,882	124,805,322	1,867,963	31,910,715	
Atlantic	127,815,138	56,021,559	25,345,771	81,367,330	26,459,754	19,988,054	
Boat Harbor	136,653,850	55,186,498	3,669,037	58,855,535	16,705,766	61,092,549	
Ches-Eliz	175,032,583	10,416,092	7,283,098	17,699,190	68,448,528	88,884,865	
James River	89,151,802	55,333,203	2,666,500	57,999,703	2,120,036	29,032,063	
Middle Peninsula	54,774,891	7,951,942	2,208,576	10,160,518	6,985,705	37,628,668	
Nansemond	85,894,179	39,238,100	2,447,465	41,685,565	3,925,434	40,283,180	
Surry	13,236,000	101,724	337,521	439,245	9,510,366	3,286,389	
VIP	292,547,711	250,845,561	7,461,375	258,306,936	2,685,758	31,555,017	
Williamsburg	19,338,971	10,079,626	690,989	10,770,615	2,659,120	5,909,236	
York River	51,754,404	40,864,038	1,973,619	42,837,657	1,396,083	7,520,664	
General	483,185,283	216,595,238	9,239,296	225,834,534	26,058,811	231,291,938	
	<u>\$ 1,762,554,835</u>	<u>\$ 907,063,126</u>	<u>\$ 65,068,424</u>	<u>\$ 972,131,550</u>	<u>\$ 173,196,561</u>	<u>\$ 617,226,724</u>	

5. Debt Management Overview

Debt Outstanding (\$000's)					
	Principal Mar 2019	Principal Payments	Principal Draws	Principal Apr 2019	Interest Payments
Fixed Rate					
Senior	\$308,095	\$ -	\$ -	\$ 308,095	\$ -
Subordinate	453,366	(88)	2,427	455,705	(3,428)
Variable Rate					
Subordinate	50,000	-	-	50,000	(69)
Line of Credit					
Total	<u>\$811,461</u>	<u>\$ (88)</u>	<u>\$ 2,427</u>	<u>\$ 813,800</u>	<u>\$ (3,497)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt
Benchmark (SIFMA) as of 5/3/19

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	2.30%	2.25%	-0.05%
Average	0.48%	0.47%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 5/3/19	2.12%	2.10%	-0.02%

* Since October 20, 2011 HRSD has averaged 47 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended April 30, 2019

HRSD - UNRESTRICTED CASH

April 30, 2019

Can be used for any purpose since it is not earmarked for a specific use and is extremely liquid

		Days Cash on Hand	Days Cash on Hand
Total Unrestricted Cash	\$ 268,043,810		580
Risk Management Reserve	\$ (3,459,701)	(7)	573
Reserve	\$ (15,266,324)	(33)	540
Capital (PAYGO only)	\$ (74,062,359)	(161)	379
Net Unassigned Cash	\$ 175,255,426		379

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

HRSD - SOURCES OF FUNDS

April 30, 2019

Primary Source	Beginning Market Value July 1, 2018	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value April 30, 2019	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BAML Corp Disbursement Account	10,669,597	440,500,279	444,683,303	46,367	6,532,940	4.1%	N/A	0.70%
VIP Stable NAV Liquidity Pool	-	187,000,000	36,000,000	2,001,583	153,001,583	95.9%	AAAm	2.58%
Va Local Government Investment Pool	68,984,048	5,000,000	74,115,221	131,173	-	0.0%	AAAm	2.58%
Total Primary Source	\$ 79,653,645	\$ 632,500,279	\$ 554,798,524	\$ 2,179,123	\$ 159,534,523	100.0%		

VIP Stable NAV Liquidity Pool performance equaled Va Local Government Investment Pool (the market benchmark) in the month of April.

Secondary Source

	Beginning Market Value July 1, 2018	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value April 30, 2019	Ending Cost	YTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	-	124,728,039	1,017,931	2,252,169	127,020,017	125,962,277	1,057,740	2.35%
Total Secondary Source	\$ -	\$ 124,728,039	\$ 1,017,931	\$ 2,252,169	\$ 127,020,017	\$ 125,962,277	\$ 1,057,740	

VIP 1-3 Year High Quality Bond Fund out performed ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) by 0.02% in the month of April.

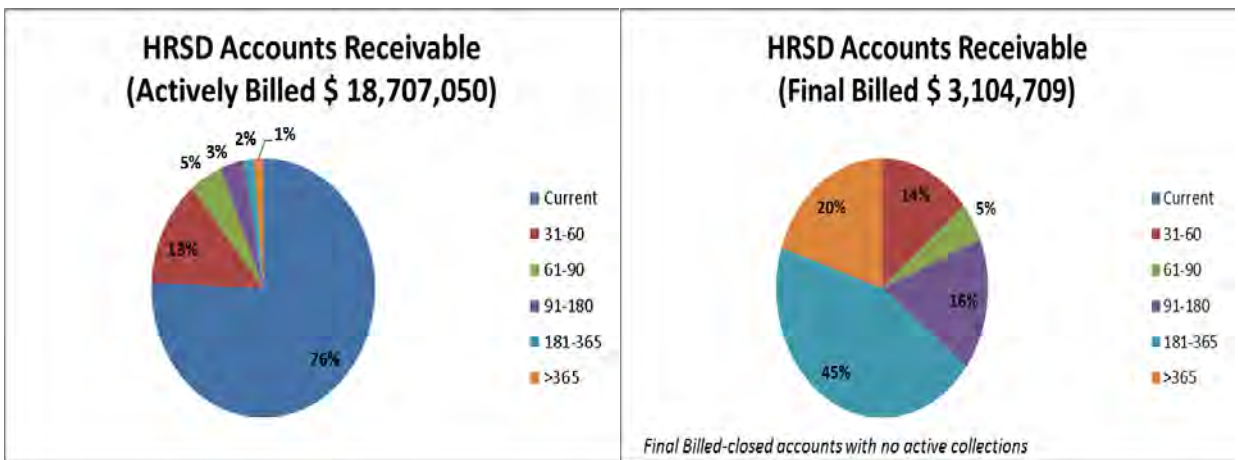
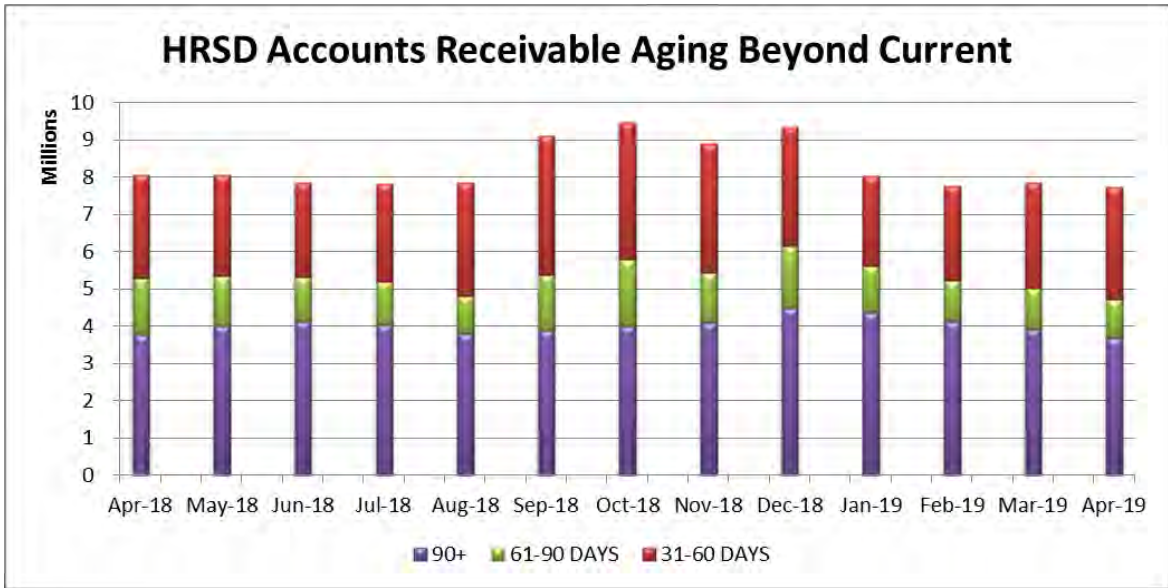
Total Primary Source	\$ 159,534,523	55.7%
Total Secondary Source	\$ 127,020,017	44.3%
TOTAL SOURCES	\$ 286,554,540	100.0%

7. Summary of Billed Consumption

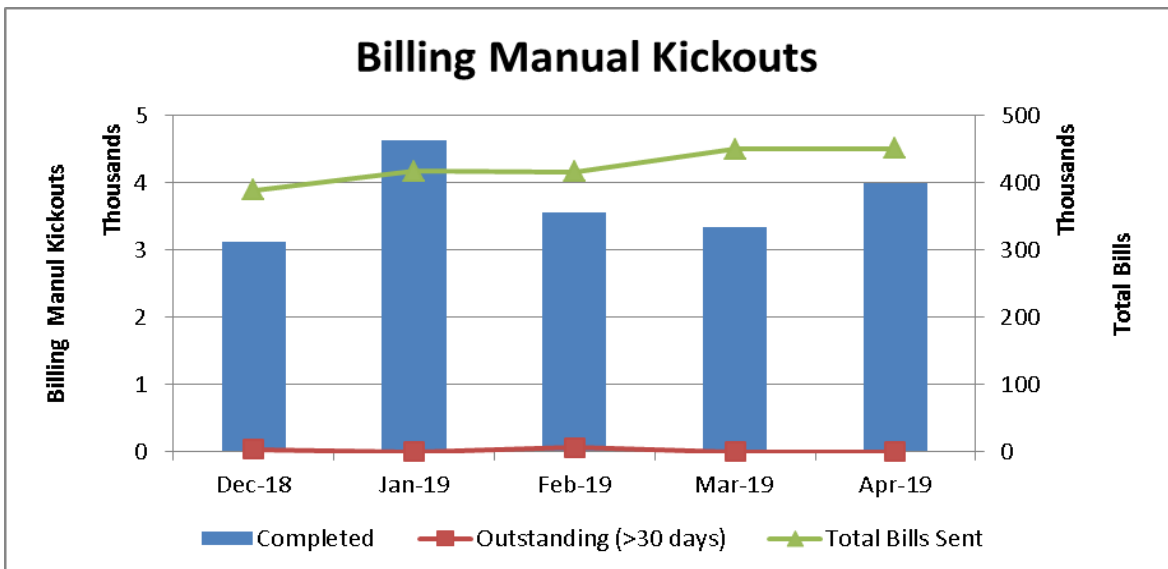
Summary of Billed Consumption (,000s ccf)							
Month	FY2019 Cumulative Budget Estimate	FY2019 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2018 Actual	From FY2018	Cumulative 3 Year Average	From 3 Year Average
July	4,737	5,175	9.3%	4,869	6.3%	4,821	7.3%
Aug	9,595	10,233	6.6%	9,939	3.0%	9,666	5.9%
Sept	14,442	14,294	-1.0%	14,632	-2.3%	14,383	-0.6%
Oct	18,768	19,087	1.7%	19,006	0.4%	18,999	0.5%
Nov	22,834	23,249	1.8%	23,305	-0.2%	23,358	-0.5%
Dec	27,166	27,376	0.8%	27,462	-0.3%	27,616	-0.9%
Jan	31,486	32,010	1.7%	31,965	0.1%	31,948	0.2%
Feb	36,154	36,551	1.1%	36,519	0.1%	36,247	0.8%
March	40,096	40,187	0.2%	40,741	-1.4%	40,654	-1.1%
Apr	43,612	44,551	2.2%	44,732	-0.4%	44,649	-0.2%
May	47,887	-	N/A	49,018	N/A	48,864	N/A
June	52,927	-	N/A	53,298	N/A	53,391	N/A

(3) Customer Care Center

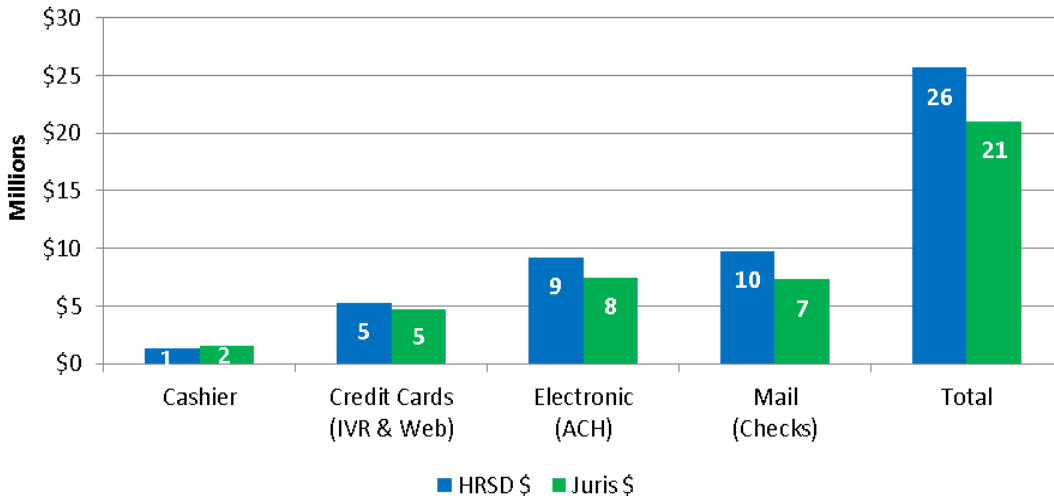
1. Accounts Receivable Overview



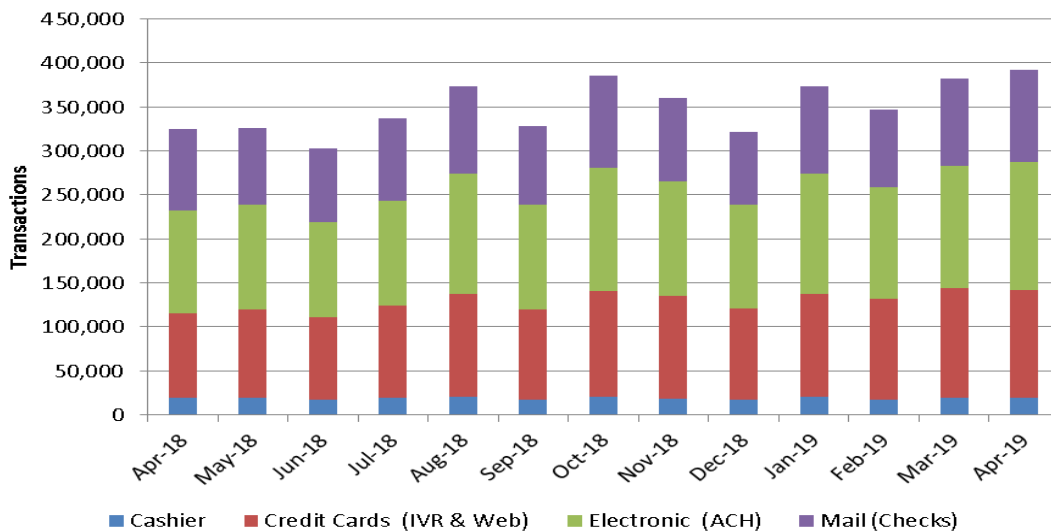
2. Customer Care Center Statistics



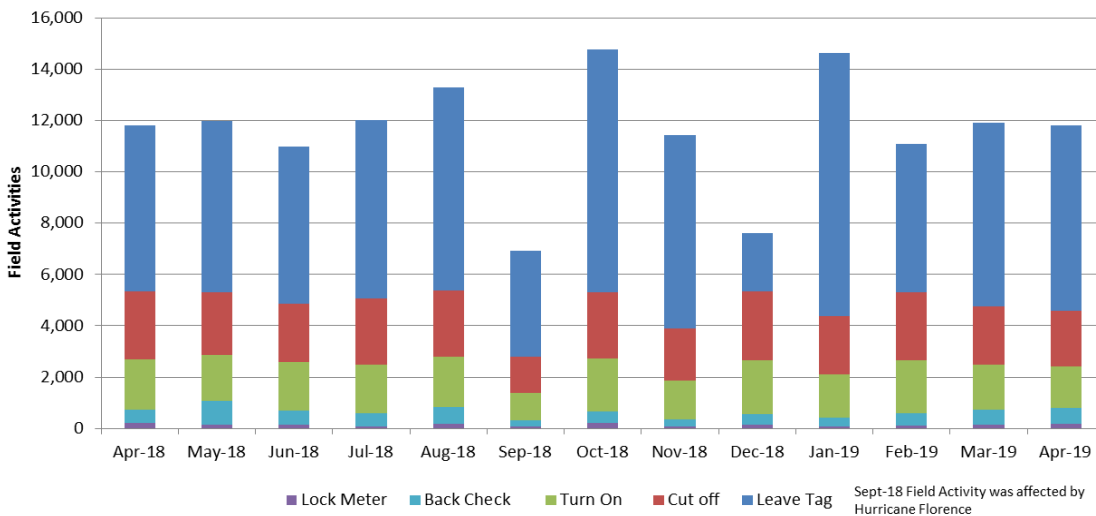
Payments Processed April 2019

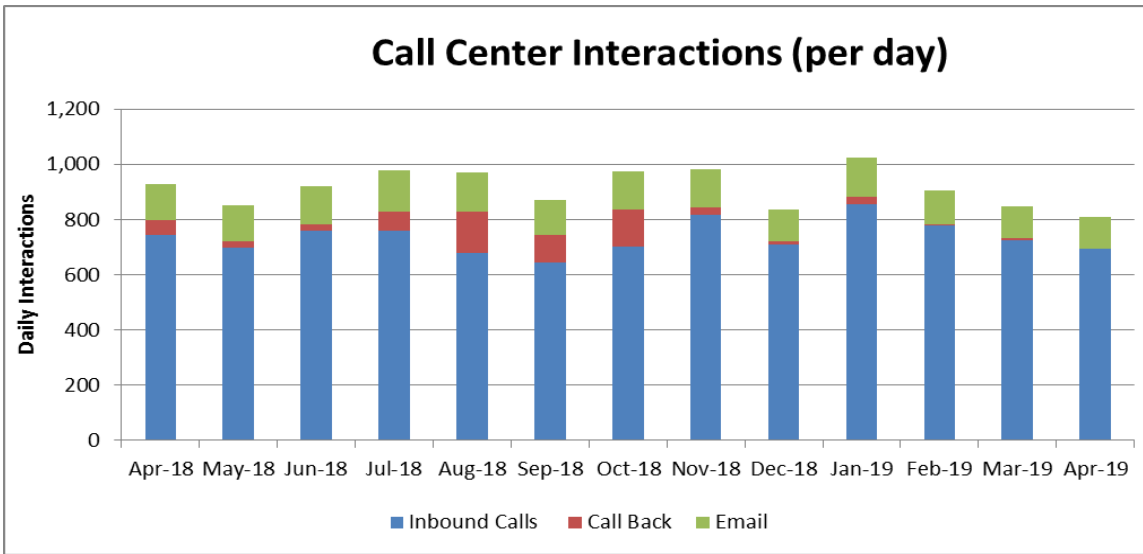
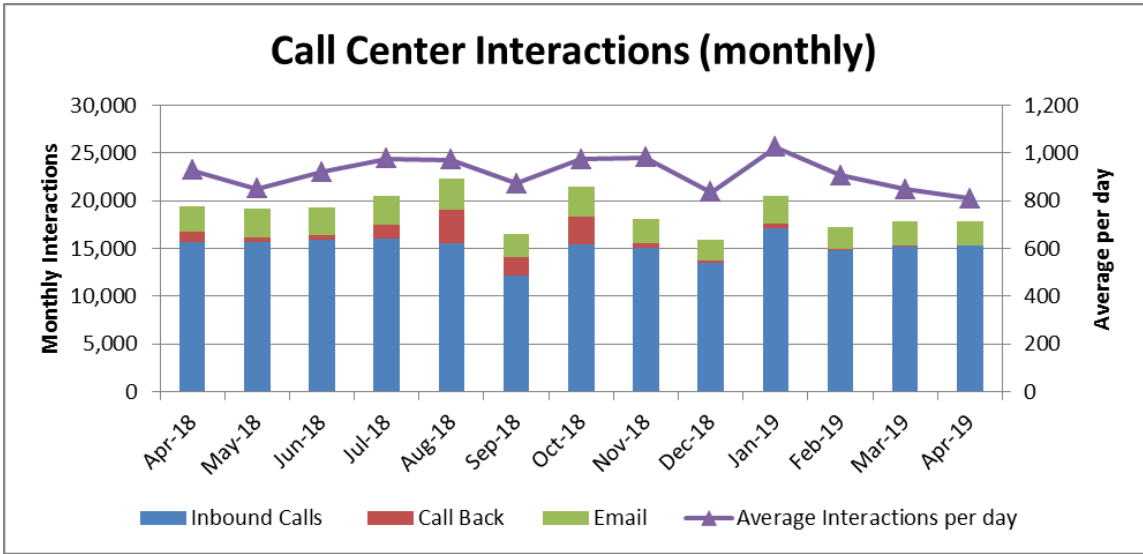
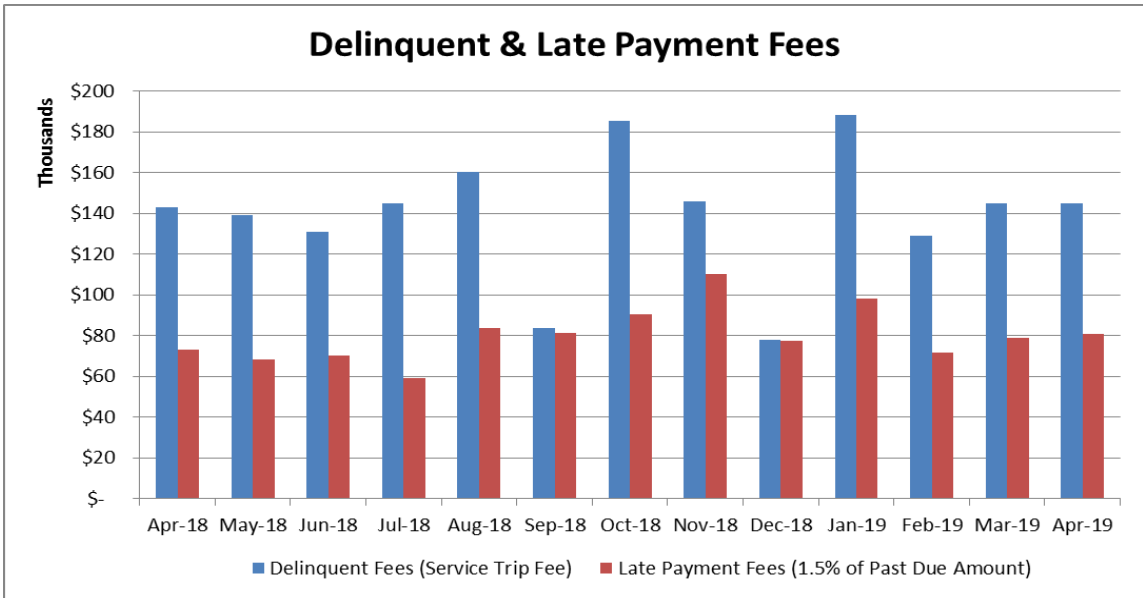


Payment Transactions



Field Activity

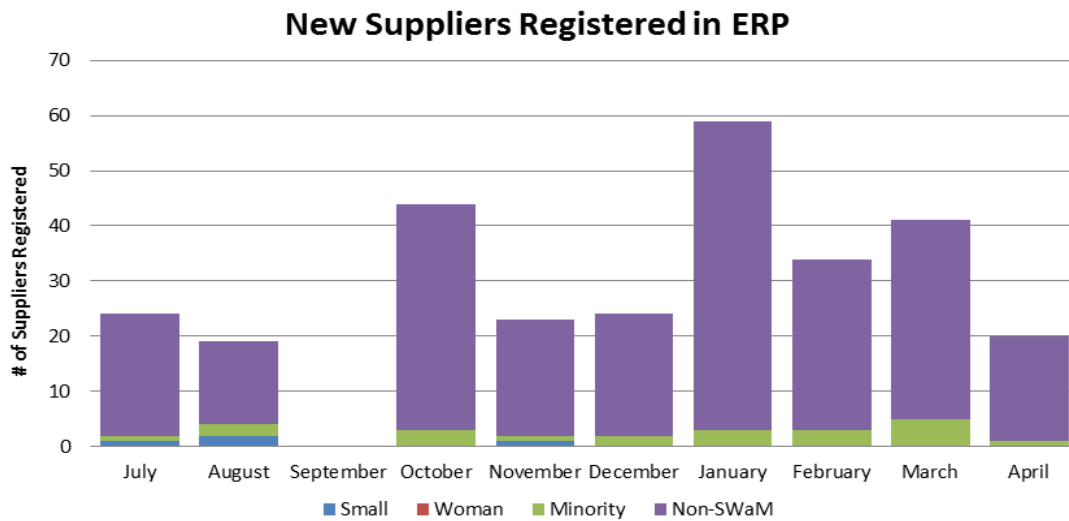




Customer Interaction Statistics	Nov	Dec	Jan	Feb	Mar	Apr
Calls Answered within 3 minutes	89%	93%	85%	94%	94%	96%
Average Wait Time (minutes)	1:12	0:38	1:20	0:37	0:39	0:26
Calls Abandoned	6%	4%	6%	4%	4%	3%

(4) Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings ¹	\$111,630	\$1,304,545
Negotiated Savings ²	\$29,462	\$321,427
Salvage Revenues	\$3,061	\$140,256
Corporate VISA Card - Estimated Rebate	\$19,580	\$180,130

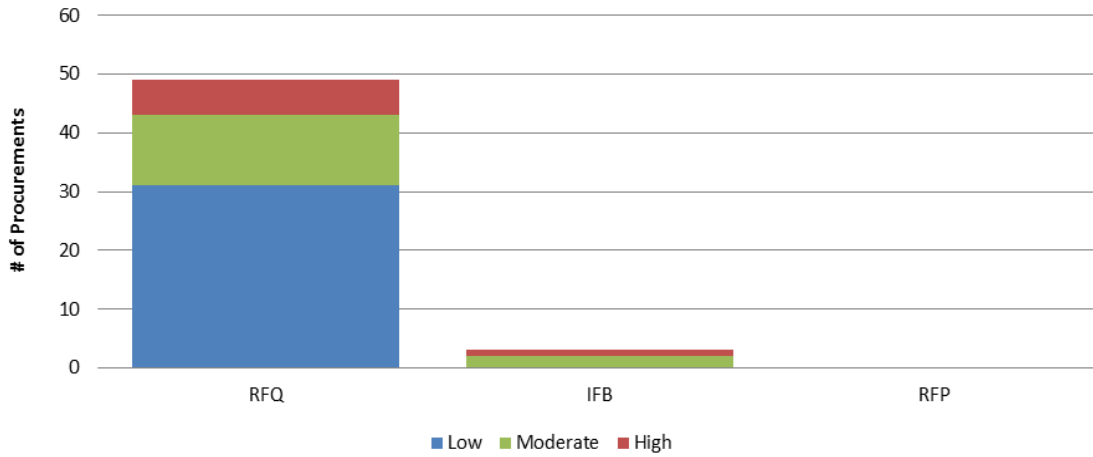


**Increased supplier registration due to supplier outreach at NIGP Forum 8/21/18, Water Jam 9/12/18, WEFTEC 10/2/18, VASCUPP® SWaMFest 10/4/18, DGS Public Procurement Forum 10/23/18, CNU SWaM Fair 11/7/18, Virginia Beach Minority Business Council Conference and Expo 11/8/18*

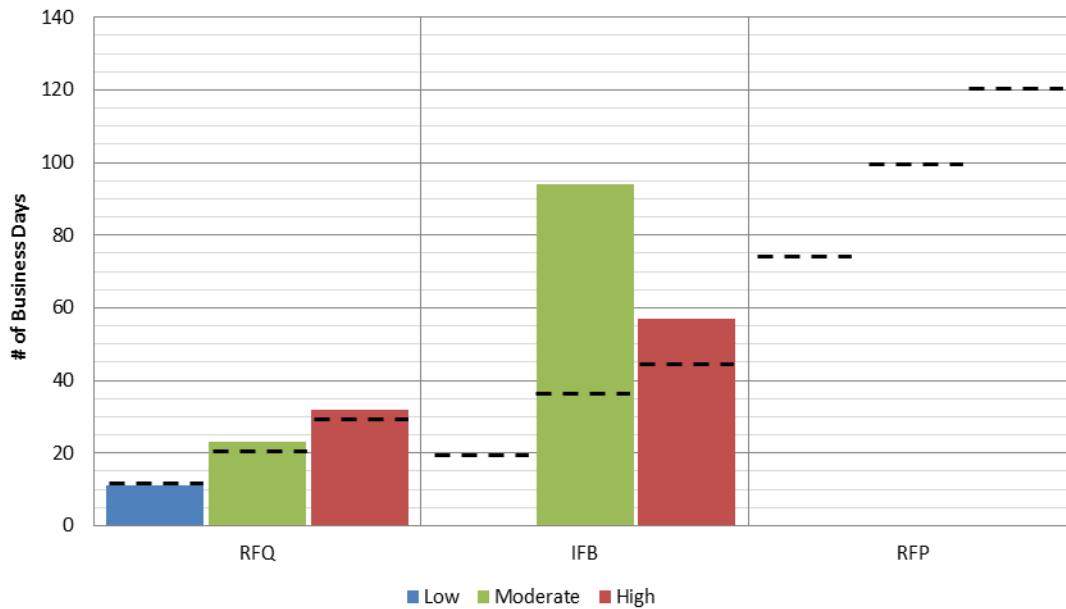
¹ Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

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

Procurements Completed Based on Complexity



Cycle Time per Method of Procurement and Complexity

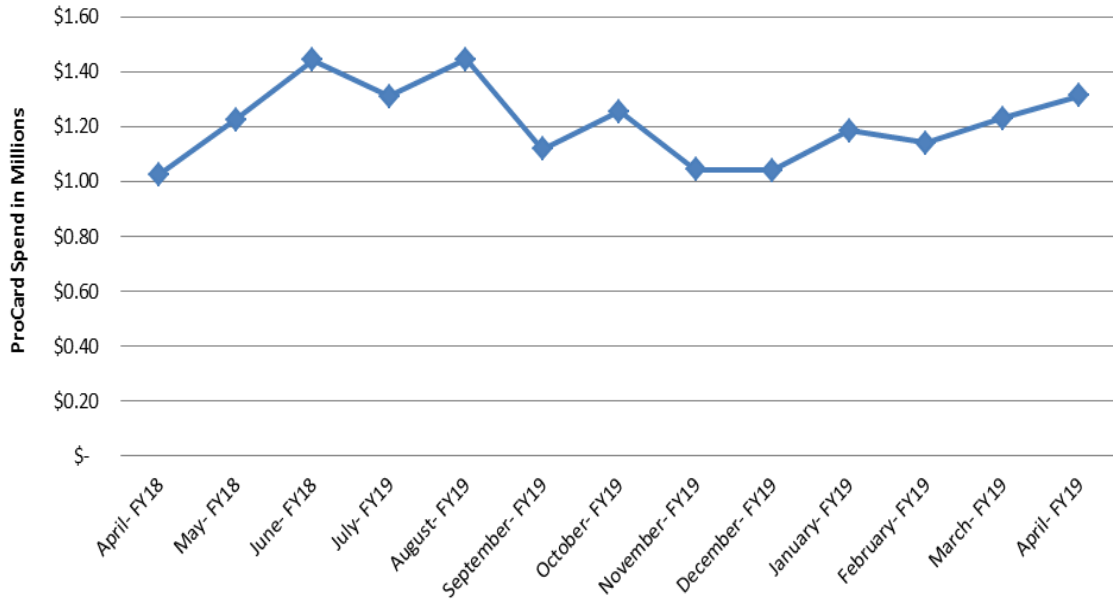


Dashed Line: Target Service Level Cycle Time

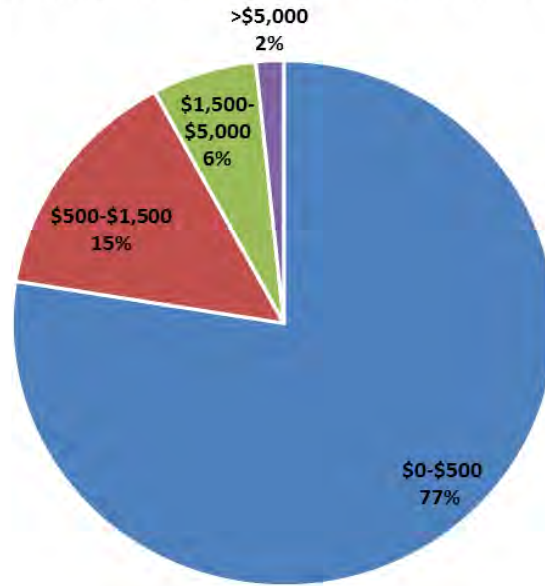
	Low	Moderate	High
RFQ	12	20	30
IFB	20	35	45
RFP	75	100	120

Low: Low technical, quick turnaround, **Moderate:** Technical, routine, **High:** Highly technical, time intensive,

ProCard Spend



ProCard Transaction Dollar Amounts



ProCard Fraud	External Fraud Transactions *	Comments
July	3	1 Caught by Cardholder; 2 Caught by Bank Immediately
August	0	n/a
September	3	1 Caught by Cardholder; 2 Caught by Bank Immediately
October	1	Caught by Cardholder
November	2	1 Caught by bank immediately; 1 caught by cardholder
December	0	n/a
January	1	Caught by bank immediately
February	4	3 Caught by bank immediately; 1 caught by cardholder.
March	1	Caught by bank immediately
April	1	Caught by bank immediately
Total	16	

***External Fraud:** Fraud from outside HRSD (i.e.: a lost or stolen card, phishing, or identity theft)

Accidental Use, which is anything that is not purchased for use and ownership by HRSD, was at 0 transactions (0%) out of the 2,602 April ProCard transactions, with a combined total of \$0.

Procurement Client Training		
	Current Period	YTD
ProCard Policy and Process	2	34
Procurement Cycle	0	21
Procurement 101- Sole Source	0	32
Procurement 101- Request for Proposal	0	37
Total	2	124

(5) Business Intelligence – Enterprise Resource Planning (ERP)

- ERP Helpdesk currently has 136 open work orders in the following statuses:

Escalated	2
In progress	65
On Hold	20
Open	46
Waiting on User	3

- ERP Helpdesk received 297 work orders in April. In April, 288 work orders were closed and 130 were closed within one hour.
- Projects
 - Unifer Admin Support
 - Unifier Admin received 42 work requests with 100 percent resolved.

- b. CAFR/Reporting Software
 - (1) IGM was selected as the vendor for this initiative. A kickoff call was held on 04/24/19 and files are being uploaded to IGM's DropBox location.
- c. ERP Patching
 - (1) Six patches were applied in Production after extensive testing in two non-production environments.
- d. ERP Enhancements
 - (1) Staff is working with IT and Emtec to address several issues related to providing more complete information to ERP users. We are looking at adding the Merchant Name to both the Projects Module and the GL/BI for credit card transactions as well as tracking expenses based on the fiscal year in which an encumbrance was created.
- e. Project EVO Initiative - Unifier improvement project
 This project will improve HRSD's project management system, Unifier, to provide real-time visibility into budgets and schedules and empower data-driven decisions.
 - (1) Oracle Primavera P6 has been configured and is being tested in the simulated production environment. Training has been scheduled for June.
 - (2) EBS/Unifier high level design continues.
 - (3) Data warehouse is being configured. This work will complete in May.
 - (4) The second communication went out to stakeholders on April 30th.

(6) Strategic Planning Metrics Summary

- 1. Educational and Outreach Events: 0
- 2. Community Partners: 0
- 3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	3.66
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	27.93

Item #	Strategic Planning Measure	Unit	April 2019
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	101%
	General Reserves	Percentage of Operating Budget less Depreciation	122%
	Liquidity	Days Cash on Hand	580 Days
	Accounts Receivable (HRSD)	Dollars	\$21,811,759
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	17%

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

Attachment: [HRSD's Operating Cash Strategies and Retiree Health Trust \(OPEB\)](#)

Hampton Roads Sanitation District
Qtrly Performance Report
For the Quarter Ending March 31, 2019

Total Portfolio Summary

Operating Strategies	March 31, 2019	December 31, 2018
Primary Source	\$ 149,025,060	\$ 119,814,088
Secondary Source	126,787,477	125,471,810
SNAP Investment	25,115,153	40,026,308
	\$ 300,927,690	\$ 285,312,206

Primary Source Summary

The Primary Source Portfolio consists of BAML Corp Disbursement Account \$7.3m and VaCo/VML VIP Stable NAV Liquidity Pool \$141.7m. BAML Corp Disbursement Account returned 0.70% for the quarter ending March 31, 2019. VaCo/VML VIP Stable NAV Liquidity Pool 30 Day Average Net Yield was 2.58% for the quarter ending March 31, 2019, an increase from 2.45% at the beginning of the quarter. VaCo/VML VIP Stable NAV Liquidity Pool's weighted average credit rating was A-1 for the quarter.

Secondary Source Summary

The Secondary Source Portfolio consists of VaCo/VML VIP 1-3 Year High Quality Bond Fund. The gross book yield of the 1-3 Year portfolio was 2.49% for the quarter ending March 31, 2019, an increase from 2.36% at the beginning of the quarter. The weighted average credit rating for VaCo/VML VIP 1-3 Year High Quality Bond Fund's portfolio is AA for the quarter.

SNAP Investment

The SNAP Investments current yield was 2.64% as of March 31, 2019, an increase from 2.57% as of December 31, 2018.

Retirement Health Plan Trust	March 31, 2019	December 31, 2018
Investment Assets	49,770,992	45,303,820
Liquidity Assets	175,097	3,770
Combined Assets	\$ 49,946,089	\$ 45,307,590

Retiree Health Plan Trust Summary

The Retiree Health Plan Trust Portfolio returned 9.36% (combined assets) for the quarter ending March 31, 2019, which was above the 8.78% return of the Blended Benchmark. The one-year trailing return for the Retiree Health Plan Trust portfolio was 4.26% compared to the Blended Benchmark return of 4.55%. The weighted average credit quality of fixed income holdings for the Retiree Health Plan Trust portfolio is A for the quarter.

TO: General Manager

FROM: Chief, Enterprise Data Services

SUBJECT: Information Technology Department Report for April 2019

DATE: May 16, 2019

A. General

1. A new contractor account guideline has been established to tighten Cybersecurity around contractor access to HRSD systems. The guideline requires all requests for contractor access to HRSD systems be requested by an HRSD business system owner and access to systems will be granted for 180 days. After 180 days, the renewal for access will need to be requested by the HRSD point of contact responsible for the contractor. The new guideline is intended to assist HRSD in preventing unauthorized access to the HRSD computer system.
2. IronPort email security systems have been upgraded.
3. A health check of HRSD's SharePoint environment has been completed by AQL, the new SharePoint Support Provider. The SharePoint Tech team is working with AQL to mitigate issues found during the health check.
4. An increase of the Internet pipe to 200 Mbps was completed to provide improved failover configuration.
5. Unity Storage System upgrades to North Shore and South Shore systems has been completed.
6. Staff began building environments for preparation of an upgrade of the Customer Care & Billing system version 2.5.0.1 to version 2.7.0.1.
7. IT continues working with Customer Care to archive Customer Care & Billing data more than ten years old to improve production system performance.
8. Staff is working with Engineering and Finance on new integration between Oracle Unifier software and HRSD ERP system.
9. Work continues on the upgrade of the Infor EAM (CMMS) software application.

B. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Number of Community Partners: 0
3. Metrics Summary

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Training During Work Hours Per Full-Time Employee (45) – Current Month	Total Training Hours / # FTE	3.33
M-1.4b	Total Training During Work Hours Per Full-Time Employee (45) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	29.11
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,
Mary Corby

TO: General Manager
FROM: Director of Operations
SUBJECT: Operations Report for April 2019
DATE: May 10, 2019

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. There were three interceptor complaints, and four system alarms during the month. The system alarms were associated with pump failures at various stations. All issues and alarms were fully resolved.
- b. Staff began preparation and diversion plans for the work to replace a failed branch valve at the intersection of Route 134 and Big Bethel Road.
- c. Work continues on the Semple Farm Road emergency repair and the Westminister repair. The Semple Farm Road project is finalizing the restoration of impacted properties. Contractors should be complete by May or early June. The Westminister project is in the middle of pipe replacement. The new line will be on-line soon, but restoration efforts will continue into the summer months.

2. South Shore (SS) Interceptor Systems

- a. On April 11, Virginia Maritime Association (VMA) office staff contacted HRSD about sewage odors in the building. The VMA's commercial building also houses our Plume Street pump station. Earlier that morning, staff had cleaned the wet well that created some residual odors. Staff responded to the complaint and ran the station exhaust fans until the VMA was satisfied. In the future, staff will contact VMA the day before a wet well cleaning.
- b. There were three interceptor complaints reported this month. Staff discovered that one was a resident concerned about her water being cut off due to an unpaid water bill, one was a City of Norfolk water line issue, and the third was an issue with leaking sewage from a tanker truck leaving the Atlantic Treatment Plant.
- c. Staff responded and resolved 12 system alarms this month.

- d. Staff assisted the Chesapeake-Elizabeth Treatment Plant by removing approximately four yards of grease from the septic well.
- e. Staff aided the Nansemond Treatment Plant by removing approximately six yards of material from the Regional Residuals Facility (RRF).
- f. Staff assisted the VIP Treatment Plant by removing a large amount of sludge from the manhole outside of the solids handling building.
- g. Staff supported the Army Base Treatment Plant by removing approximately 11 yards of debris from the biosolids tank. Staff also formed and poured two concrete pads.
- h. Staff assisted North Shore Interceptor Operations with a mainline valve repair at the Ferguson Park Pump Station in Newport News by pumping and hauling a nearby pump station.
- i. Staff provided and installed an additional bypass pump at the Dovercourt Pump Station in Norfolk for the Wet Well Rehabilitation project.
- j. Staff operated system valves to assist the City of Virginia Beach in bringing a new city pump station on-line.

B. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. Staff accommodated a DEQ inspection on April 12, 2019. The inspection went well and no discrepancies were noted.
- b. A contractor completed the installation of #3 IPS pump.
- c. Staff replaced a failed motor on #2 odor control fan.
- d. Staff rebuilt a gear box on #2 secondary clarifier.
- e. Staff replaced the couplings on two scrubber recirculation pumps.
- f. Staff replaced the belt on the #2 gravity belt thickener.
- g. Staff installed LED lights on a high mast light pole. Staff also connected power to a new bisulfite transfer pump and an emergency de-chlorination pump.

- h. Staff replaced a failed network switch in #1 centrifuge.

2. Atlantic Treatment Plant (ATP)

- a. There were three offsite Biosolids spills in April. All three happened while contractors were hauling Biosolids for land application. Two occurred on April 8. The first spill happened near the corner of Princess Anne and Malbon Rd around 9 a.m. The contractor's truck swerved and stopped suddenly to avoid hitting a turning vehicle. The truck ended up on the shoulder of the road and required towing. Approximately one wet ton was released with approximately 98 percent of the spill recovered.

The second spill occurred near the corner of Princess Anne and General Booth Blvd around 6 p.m. The contractor's truck stopped abruptly to avoid a turning vehicle which failed to signal. Approximately two wet tons were spilled. Approximately 99 percent was recovered.

The third spill happened on April 13th near the corner of Head of River Rd and Blackwater Rd. The contractor slowed down and pulled to the side of the road to allow another truck to pass. When doing so the truck's tire dug into the shoulder causing it to flip onto its side. Approximately 20 wet tons were released and about 98 percent was recovered.

These spills are very unusual and have not happened for many years. The contractor was responsive to our concerns and reportedly met with his drivers about the importance of driving safely.

- b. On April 15 Odor station B wiring for the sump low level indicators shorted out causing the system to shut down. The unit was down for just over two hours before staff was able to make the repair and get the system back on-line.
- c. Construction of the Thermal Hydrolysis Process (THP) continues. The steam boiler was delivered on April 10. Work continued on the steam pipe installation and the boiler exhaust stack braces were installed. Contractors also worked on installing the metal frame work for the heat exchangers and feed piping. Concrete and block work continued and contractors continued installation of the HVAC units on the digester roof.
- d. The Combined Heat and Power engine was down all month awaiting parts to repair the flame arrestor. The flame arrestor is needed to prevent a flame or fire from passing through the gas system.

- e. Staff completed the overhaul of Centrifuge #2. The unit had new bearing and seals installed.
- f. On April 18, a contractor damaged the front gate when their truck hit the right side of the gate. The gate was damaged and will have to be replaced.
- g. On April 27th staff hosted about 40 Ocean Lakes High school students for Earth Action Day. The event included a presentation about SWIFT, the benefits of oysters on receiving waters, a lab demonstration, an Operations challenge demonstration, a treatment plant tour, and a wildflower planting activity.

3. Boat Harbor Treatment Plant (BHTP)

- a. Confirmation was received that the plant passed the annual air permit compliance emissions tests performed in March on the # 2 Incinerator.
- b. Staff cleaned and inspected the # 6 Aeration tank.
- c. Contractors completed rehabilitation and coatings work on the steel in secondary clarifier # 6.
- d. A significant amount of staff time was dedicated to process control this month to help with settling problems that continued from the month of March. The solids in the secondary clarifiers settled so well that the mechanical systems could not remove them from the tanks to return to the aeration process. Cell A, which is a selector zone, was changed from anaerobic to aerobic in all the aeration tanks to encourage filamentous growth. To do this, staff used only one blower to create a Low Dissolved Oxygen (DO) environment. Although these efforts resolved the excessive settling issue, it also created very high blankets, resulting in a loss of solids during peak flows. To combat this, staff returned cell A to an anaerobic condition and added hypochlorite to create a balance in the settlings solids. The plant met all permit requirements during the month of April, and process turned around by the end of the month.

4. Chesapeake-Elizabeth Treatment Plant (CETP)

- a. Staff replaced a failed motor on the #1 centrifuge.
- b. Staff replaced a failed motor on the #3 biosolids feed pump.

- c. A contractor installed lifting attachments on the induced draft fans, making them easier to maneuver for maintenance work.
- d. A contractor repaired and installed a butterfly damper for the aeration odor control system.
- e. Staff repaired the damaged scum collection baffle on #9 secondary clarifier.

5. James River Treatment Plant (JRTP)

- a. There was one reportable wastewater event when approximately 100 gallons of non-potable water overflowed from the plant drain system after a drain pump was plugged by debris. Approximately 70 gallons entered a plant storm drain and was not recovered.
- b. Staff completed repairs on the odor control system. Repairs included replacing the #3 scrubber recirculation pump and repairing dilution water and recycle lines on scrubbers #1 and #3.
- c. Staff installed butterfly valves on the centrifuge centrate system on the centrifuge cake chutes to prevent foam from coming out of the service hopper.
- d. Staff replaced a mixer on the #2 centrate equalization tank and acid cleaned centrate line #2 to remove struvite.
- e. Staff replaced and realigned the motor on the #2 sodium hydroxide recirculation pump.
- f. Testing of cyclones on waste activated solids to improve secondary clarifier settling was started again using a combination of large and small nozzle cyclones.
- g. Staff continued work on the magnesium hydroxide feed system designed to form struvite for phosphorus removal through centrifuge cake solids. Work centered on installed piping and vents and providing air for stripping away carbon dioxide which may be hindering struvite formation.

6. Nansemond Treatment Plant (NTP)

- a. Staff continues to pursue automated operations. The current goal is to move to an automated evening shift allowing staffing reductions during fully automated operations. In the month of April the concept was

tested by operating the plant without a dedicated Shift Operator during the day shift.

- b. New flooring and cabinets were installed in the Sewage Treatment laboratory.
- c. It was recently discovered that an Operator deviated from the written Sampling and Testing Standard Operating Procedure for the collection and analysis of chlorine residual. The Operator collected samples and analyzed them in accordance with the standard method; however, the Operator did not accurately document the time. Based on further review, staff determined this was not an isolated incident. The Department of Water Quality notified the Virginia Department of Environmental Quality (DEQ) and appropriate corrective action was taken.
- d. April was busy and full of startup activities at the Sustainable Water Initiative for Tomorrow Research Center (SWIFT RC). Everything went well and as planned. Some of the main activities were:
 - (1) Installation of sand, gravel and media and skimming process;
 - (2) 24-hour disinfection test;
 - (3) Granular Activated Carbon installation of media and backwash;
 - (4) Tuning of the ozone generator with the new ozone injection point;
 - (5) Rehabilitation work on the well and installation of the borehole flowmeter.

7. Virginia Initiative Plant (VIP)

- a. Staff started up Incinerator #2 using the newly installed zero-hearth afterburner technology on April 10. We received confirmation that we passed the annual air permit compliance emissions tests in March.
- b. Staff cleaned and inspected two primary clarifiers. Staff continued the rehabilitation project on the scrubber fan for the main odor control system.
- c. Staff participated in a plant-wide site cleanup project on April 22 to celebrate Earth Day 2019.

8. Williamsburg Treatment Plant (WBTP)

- a. Staff met with the influent screen supplier to discuss issues with rags getting caught in the perforated openings of the screens and plugging them up. A solution to the problem is under development.

- b. Staff fabricated a mockup for the contractor of how electrical conduit supplying additional instrumentation and controls needs to be run on aeration tank #1.

9. York River Treatment Plant (YRTP)

- a. Staff continued to work on nutrient removal improvements for #1 aeration tank. Work included draining and cleaning the tank, moving piping and structural materials in place, and fabricating bubble generating devices.
- b. Staff started transferring digested solids from the digester with the old cover to the digester with the new cover. Once solids have been transferred, the old cover digester will be taken out of service, cleaned and inspected.
- c. The well drilling contractor continued conditioning the well with aluminum chloride.

10. Minor Incinerator Operations Events Summary

- a. All five multiple-hearth incinerator plants met the monthly average total hydrocarbon (THC) continuous emissions requirement of less than 100 parts per million.
- b. There were two deviations from the required minimum operating parameters and five minor (less than 60 minute) non-reportable bypass events.

C. Small Communities (SC)

1. Middle Peninsula Small Communities Treatment and Collections

- a. On April 4 there was one sanitary sewer overflow (SSO) when an in-line check valve failed on a common discharge force main that allowed digester supernatant to flow back up into the drying bed drain well instead of the equalization (EQ) tank causing the well to overflow. A sump pump was placed into the well, pumping the excess volume to the EQ tank. A septage truck removed the remaining volume, and pelletized lime was applied to affected areas. Approximately 100 gallons of digester supernatant soaked into the ground and could not be recovered.

b. West Point

- (1) For the first time in several months, the West Point Treatment Plant (WPTP) average daily flow was below 95 percent of the plant's capacity.
- (2) The Kirby Street Rehabilitation CIP project reached substantial completion. We continue to work with the contractor on a punch list of items.
- (3) Two motor failures occurred on the Thompson Ave Pump Station (PS #4) within approximately 6 weeks of each other. An in-depth investigation was done after the second motor failure which identified multiple hot spots on the Dominion Energy feed into the station. It is believed these hot spots created voltage surges/fluctuations leading to the premature failure and have since been corrected.

c. Urbanna

- (1) Staff continues to work on the various projects at the Urbanna Treatment Plant (UBTP). The replacement handrail and the new stairs to the biological tanks and brand-new roof on the lab building are all complete. Remaining work to be done is to complete installation of grating and potentially to construct/install several 'minion-mixers' in the equalization basin.
- (2) Design efforts for improvements necessary to accommodate increased flow and nutrient loadings from the Bethpage Campground began.

d. King William

Installation of Kennington Subdivision - Phase 3 backbone infrastructure continues to progress well and is anticipated to be complete in June. Once complete the infrastructure will be turned over to HRSD.

e. Central Middlesex Treatment Plant (CMTP)

Staff continues to research and evaluate options for a small inexpensive automated bar-screen option to improve heavy rag and trash removal from the plant flow stream.

f. Mount Olive Treatment Plant (MOTP)

The storage tank improvement project is progressing well. The tank was delivered and anchored to the new concrete pad. Over the next month staff will install associated piping to bring flow over to this new tank. This increased storage capacity should eliminate the need for weekend/overtime pump & haul operations by increasing to the facility to a 3-4 day hold capacity.

2. Small Communities – Surry Systems

- a. Sussex Service Authority (SSA) continued to operate the Town of Surry TP and the Surry County TP on behalf of HRSD.
- b. Both the County treatment plant and the Town treatment plant were above their hydraulic capacity for the first part of the month, however, there were no SSOs reported during the month and no permit concerns.

3. Small Communities - Lawnes Point

Pumping and hauling the plant's influent continues. There were four pump and haul operations this month.

D. Support Systems

1. Automotive

Staff performed load bank tests at King William Treatment Plant, Mathews Main Pump Station (PS), 25th Street PS, Fords Colony PS, Normandy Lane PS, Pughsville Rd. PS, Colley Ave. PS, Deep Creek PS and Independences Pressure Reducing Station (PRS). Staff performed monthly generator tests at the North Shore (NS) and South Shore (SS) Main Operations Complexes. All generators operated as designed and were returned to service.

2. Condition Assessment

- a. 83 percent of the Management, Operations and Maintenance (MOM) Program requirements have been completed year-to-date. Staff anticipates fulfilling the annual CCTV MOM requirements in June.
- b. Staff completed Jefferson Ave. (NG-106) line cleaning with North Shore Interceptor Operations and Tri-State Utilities.
- c. Staff performed numerous site visits at the SWIFT RC inspecting the coating and welding repairs.

3. Facilities Maintenance

- a. Renovation of NTP solids handling locker room continues. The project is 95 percent complete.
- b. Staff moved forward with preparing the warehouse at 1460 Air Rail Avenue for its demolition.
- c. The replacement of a 10-ton heating, ventilation and air condition system (HVAC) system at the ABTP administration was completed.
- d. Staff completed 26 PS inspections and 41 roof inspections.
- e. Staff rebuilt one pump for SS Interceptors and two pumps for NS Interceptors.

E. Energy Management

1. The Virginia Energy Purchasing Governmental Association (VEPGA) and Dominion Energy Virginia (DEV) continue to discuss the provisions of a contract for electric power to be effective July 1, 2019.
2. The electrical load letter supporting the WBTP switchgear project was approved by DEV, which led to a second meeting with them to locate the new utility transformer and metering cabinet as well as determine the arrangement of the 34,500 volt (V) primary voltage cables providing power to the new treatment plant switchgear.
3. Installations of the diesel oxidation catalysts on the BHTP and NTP generators began. These catalysts will reduce carbon monoxide (CO) emissions and allow the generators greater operational flexibility. The installations are scheduled to be completed by the end of May.
4. The Strategic Carbon Footprint Committee is working on two studies that could help HRSD reduce its carbon footprint; shutting down the incinerator at ABTP, and a treatment plant aeration study to better understand the provision and need for air in our treatment plant aeration systems. Generally, the total aeration process represents about 40 percent of the total electrical load at our treatment plants.
5. Training focused on understanding the electrical utility billing structure, the breakdown of the component costs, ratchet clauses, and riders will help staff to better understand the billing and avoid unnecessary costs. Better understanding the impacts of operating major equipment in our treatment

plants can translate into electrical utility bill savings. The training will start in May.

F. Electrical and Instrumentation

1. The Electrical and Instrumentation (EIS) Team worked with a predictive maintenance contractor, to test stray current from variable frequency drive (VFD) motor controllers. Stray currents can cause premature failure of motor bearings.
2. Staff put the Win911 server into production at ATP and VIP. The server will now provide alarm notifications from two different distributive control system (DCS) systems. This system allows staff to receive DCS alarms via email and/or text messaging. Our plans are to connect all DCS systems to a Win911 server over time.
3. Staff assisted in enhancing dissolved oxygen (DO) control at ATP. Staff also repaired a valve actuator and calibrated DO probes to modulate air consumption. These improvements not only enhance process control but also reduce process energy consumption.
4. Staff sent Centrifuge #1 motor out for winding repairs at CETP. The motor was reinstalled, tested, and returned to service.
5. Staff continues to design and research a nitrate and nitrite (NOX) wet chemical analyzer. Results are promising. This internally developed analyzer currently deployed at JRTP has a unique method using a vanadium solution for nitrate analysis. The analyzer accuracy is trending well within acceptable tolerances.
6. Staff worked in conjunction with a contractor, to perform the five-year evergreen (technology refresh) at NTP. The scope of this project is to replace all DCS hardware and software.
7. Staff modified the programmable logic control (PLC) program to auto-restart the membrane bio reactor (MBR) trains after alarm conditions have cleared for a low membrane tank and/or a low air scour at KWTP.
8. Staff installed DO analyzers at UBTP.
9. Several modifications to the DCS logic at the SWIFT RC were made in anticipation of the facility's start up this month.
10. Staff installed a flow meter in the well at the SWIFT RC.

11. Staff responded to 13 Supervisory Control and Data Acquisition (SCADA) communication failures and seven Telog communication failures at various locations. A communication failure is defined as a total loss of communication at a site that requires staff to respond to the site.

G. Water Technology and Research

The restart of the SWIFT Research Center is complete. As of April 29, we are now back to consistent recharge of the Potomac aquifer. The SWIFT process train is performing well. The following provides a summary of process performance and remaining issues and problems:

- There have been some sporadic controller issues associated with the influent feed pump master flow/speed controller and flow control valves. This is a new issue that was not observed previously, and troubleshooting is ongoing.
- The coagulation/flocculation/sedimentation process is operating well and as expected. Testing will begin in about one month to assess lamella plate loading rates (for full-scale design purposes) and to evaluate the impact of settled solids recirculation on effluent turbidity and coagulant demand.
- There are several topics of interest related to the ozonation process:
 - Generator #1 ozone controls have been much better tuned with the assistance of vendor staff, and this has resulted in considerably improved generator response to the distributed control system (DCS) dose demand signal. This has also resulted in much better control of ozone residual in the contactor.
 - Several sensors associated with the ozone system have been repaired, replaced, or serviced by the vendor under warranty.
 - Generator #2 has had electrical power supply and gas flow control valve problems. Repairs are continuing by the vendor under warranty.
 - The ozone injector was moved to a location immediately upstream of the pipeline flash reactor in an attempt to decrease ozone demand and bromate formation in the sidestream piping. This has been successful based on initial measurements.
 - We are now evaluating the impact of increased bromide and refractory organic material from SPSA with stepwise increases in leachate flow. This was made possible by installing better leachate flow control capability at the SPSA landfill. The objective is to determine how much leachate we can safely manage at Nansmond plant as a function of water temperature.
 - The water softening system associated with the generation of preformed monochloramine continues to be problematic. We will be evaluating methods for boosting softened water pressure and actively controlling the flow rate.
- The biofilters have started up with new underdrains and new GAC, sand, and gravel media. Performance in terms of turbidity removal has been acceptable with three of the four filters periodically demonstrating some difficulty in

meeting turbidity requirements without long filter ripening periods. This seems to be improving with continued operation. The biofilters are just beginning to nitrify based on effluent nitrite values increasing slightly.

- A single GAC contactor is in service filled with new media. This process has been operating as expected.
- The UV system vendor repaired the lamp sleeve wiper mechanism in one of the UV reactor periods during the shutdown, cleaned all sleeves, and fully serviced reactor internals. The UV system is operating as expected, but we continue to troubleshoot sporadic problems with the control of the UV effluent flow control valves. Work is ongoing to better diagnose these issues with more information being reported to DCS.
- The tasting system which provides free chlorination of the water delivered to the lobby sink and exterior pump was upgraded during the shutdown. This is now a fully automated system that has the same level of control and protection as the rest of the treatment train. As a result, the tasting system should demand much less operator time and attention during SWIFTRC tours.
- The rehabilitation work on the recharge well appears to have been successful, and the injectivity is consistent with the steady state periods prior to the shutdown. The well is performing as expected, but daily back flushing is being performed as a precaution for now. The borehole flow meter that was discussed in the March monthly report is also performing as expected based on preliminary data collection. Based on the fact that we do not know how long the flow meter will survive the conditions in the well, we will be collecting a lot of data over the next few weeks.

H. MOM reporting numbers

MOM Reporting #	Measure Name	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
2.7	# of PS Annual PMs Performed (NS)	2	2	3	3	2	1	7	4	1	5		
2.7	# of PS Annual PMs Performed (SS)	6	3	5	4	6	3	5	6	6	6		
2.7	# of Backup Generator PMs Performed (Target is 4.6)	6	19	7	8	10	6*	11	11	12	8		
2.8	# of FM Air Release Valve PMs Performed (NS)	128	33	124	268	213	191	181	42	176	130		
2.8	# of FM Air Release Valve PMs Performed (SS)	193	221	222	275	161	230	225	326	265	304		
2.9	# of Linear Feet of Gravity Clean (NS) (Target is 2,417 for HRSD)	7,548	5,980	3,241	7,880	2,739	3,458	1,990	3,815	1,270	2,334		
2.9	# of Linear Feet of Gravity Clean (SS) (Target is 2,417 for HRSD)	5,990	7,971	2,460	11,882	3,938	5,029	4,680	10,109	10,728	8,525		
2.9	# of Linear Feet of Gravity CCTV Inspection (HRSD Target 3,300 LF)	8,637	16,671	5,816*	5,062	9,115	340	869	148	329	0		

*Adjusted monthly total

I. Strategic Measurement Data

1. Education and Outreach Events: 14

- a. 4/27- Earth Action Day with Ocean Lakes High School - 10 Atlantic Treatment Plant employees participated
- b. 4/03 - Provided a tour of the Chesapeake-Elizabeth Treatment Plant for Cape Henry Collegiate Students, led by Michael Chapman
- c. 4/12 – Provided a tour of Chesapeake-Elizabeth Treatment Plant for Cape Henry Collegiate Students, led by Craig VanKleeck
- d. 4/24 – HRPWA Pruden Center Cadet Presentation – Kelly Lamp and BJ Snelling
- e. 4/24 - Tour of Nansemond Plant for 12 students from the Pruden Center
- f. 4/3 – SS Operations Staff took two students from Cape Henry Collegiate School on a tour of Norchester Pump Station in Norfolk.
- g. 4/18 – SS Operations Staff met with City of Virginia Beach Public Utilities Operations staff to collaborate and discuss locality issues – quarterly meeting.
- h. 4/24 - Chief of Energy Management served as an advisor for TCC (Tidewater Community College) mechatronics curriculum.
- i. 4/23 - The NS Electrical Manager volunteered to participate in a STEM (Science, Technology, Engineering, and Math) Career Fair at Aberdeen Elementary School in Hampton, VA
- j. 4/9 - Hosted a tour of James River Treatment Plant by Green Bay Metropolitan Sewerage District – Charles Bott
- k. 4/8 - Hosted BNR Research and Clarifier Technology Workshops – Charles Bott and Stephanie Klaus
- l. 4/15-4/16 - Participated in the Water Research Foundation Water Reuse Advisory Panel workshop – Charles Bott
- m. 4/5-Participated in a Meeting with Denver Metro at the Hite Treatment Plant on inDENSE® - Charles Bott
- n. 4/24-Hosted a workshop with Headworks Inc and University of Manitoba on Granular Sludge, AnitaMox, and IFAS; Presented on HRSD SWIFT and research programs – Charles Bott

2. Community Partners: 9

- a. VIMS
- b. Old Dominion University (ODU)
- c. Chesapeake Bay Foundation – oyster cage maintenance at BHTP for oyster gardening program
- d. Cape Henry Collegiate
- e. HRPWA
- f. Pruden Center
- g. Virginia Beach Public Utilities

- h. Tidewater Community College
- i. Aberdeen Elementary School

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (516) – Current Month	Hours / FTE	4.05
M-1.4b	Total Training During Work Hours per FTE (516) – Cumulative Year-to-Date	Hours / FTE	25.01
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	31,402.75
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	61.14
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	15.12
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	23.74
M- 4.1a	Energy Use: Treatment *reported for March 2019	kWh/MG	2,221
M-4.1b	Energy Use: Pump Stations *reported for March 2019	kWh/MG	186
M-4.1c	Energy Use: Office Building *reported for March 2019	kWh/MG	76
M-5.2	Educational and Outreach Events	Number	14
M-5.3	Number of Community Partners	Number	9

Respectfully submitted,
Steve de Mik, Director of Operations

TO: General Manager
FROM: Director of Talent Management (TM)
SUBJECT: Monthly Report for April 2019
DATE: May 13, 2019

A. Human Resources (HR)

1. Recruitment Summary

New Recruitment Campaigns	10
Job Offers Accepted – Internal Selections	3
Job Offers Accepted – External Selections	13
Internal Applications	26
External Applications	160
Average Days to Fill Position	48

2. Enterprise Resource Planning (ERP)

- a. HRSD worked with the Managed Services consultant on updates to system setup for Short Term Disability and the COBRA interface.
- b. The Business Analyst worked with Information Technology staff on benefit interface updates.
- c. Staff worked with Oracle Support on iRecruitment notifications and appraisal functionality.
- d. HRSD hosted and coordinated the Collaborative Oracle Roundtable for E-Business Suite (CORE) annual meeting. Talent Management and Accounting staff made several presentations at the meeting.

3. Benefits and Compensation

- a. Staff worked with the benefit consultant on Fiscal Year 2020 medical, dental and vision benefits renewal, including planning for open enrollment meetings and implementation of several cost savings strategies. Open Enrollment meetings began for all work centers.

- b. Staff continued regular conference calls with Wellness, Omada and Cigna staff on implementation of Omada's online diabetes and heart disease prevention program.
- c. The Compensation and Classification team continued evaluating positions based on Department requests, Compensation Study results and budget proposals.
- d. HR staff, the Wellness Specialist and Cigna staff met to discuss future strategies related to health and wellness.

4. Wellness

a. Participation Activities

Year Six Participation Activities	Unit	April 2019	Year to Date (April 2019–February 2018)
Biometric Screenings	Number	0	2
Preventive Health Exams	Number	2	9
Preventive Health Assessments	Number	9	29
Coaching Calls	Number	0	0
Online Health Improvement Programs	Number	10	44
Web-MD Online Health Tracking	Number	71	142
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	5	23

- b. The Wellness Specialist developed content for and participated in Open Enrollment Meetings.
- c. Fall flu and tetanus clinics were scheduled.
- d. The final two Neighborhood Harvest presentations were piloted at Chesapeake Elizabeth and Atlantic TPs.
- e. On-site boot camp classes were held at the Air Rail Avenue complex.

5. Workers Compensation

One new case was opened with five cases remaining active.

6. Employee Relations

- a. Staff continued partnering with work center supervisors and employees to support employee relations and address HR issues:
 - (1) Participated on interview panels and assisted with job descriptions for Operations
 - (2) Continued work with Operations Quality Steering Team (QST) to evaluate shift scheduling options
 - (3) Provided HR Policy and Procedure training at HRSD's Supervisor Training program
 - (4) Worked on several policy revisions for QST review.

7. General

- a. HR and Accounting staff continued meeting to streamline and improve HR and payroll processes.
- b. The HR Manager continued work to implement organization changes affecting ERP position set-up and control to document changes for the budget.
- c. Work continued to pilot *A Your Role in Quality Project*: an electronic new hire package to streamline and reduce paperwork for New Employee Orientation.
- d. Staff participated in the following HRSD activities:
 - (1) Leadership Forum
 - (2) Senior Leadership Meeting
 - (3) HRSD Safety Team
 - (4) Facilitated *Your Role in Quality*
- e. Staff participated in HRSD's Emotional Intelligence training.

B. Organization Development and Training (OD&T)

1. Training

- a. The Leadership facilitator team continues to review and finalize the newly formatted Leadership and Management Program (LAMP), for presentation to the HRSD QST.

- b. The Project Management 101 Workshop was successfully piloted and received positive feedback.
- c. Staff continued compiling Work Center Planning Day results and creating a Parking Board listing for QST review.
- f. The Organizational Professional Services Request for Proposal (RFP) team worked on reviewing and scoring proposals.
- g. The following programs were held:
 - (1) HRSD Supervisor Training, Part II at North Shore Operations
 - (2) Your Role in Quality
 - (3) Team and Problem Solving
 - (4) Emotional Intelligence
 - (5) Beginning and Advanced Coaching
 - (6) Leadership Forum
- i. The OD&T Manager worked on a Virginia Water Environment Association and American Water Works Association proposal to participate as a Leadership Institute guest speaker.
- j. Staff worked on developing the upcoming Learning Week Program, *Alert, Aware and Always Ready* scheduled in June.

2. Apprenticeship Program

- a. The Learning Management System (LMS) team finalized procurement of software and implementation services.
- b. Work continued with subject matter experts on developing a *Wastewater Analysis* e-Learning course.
- c. Staff worked on improving and streamlining communication including addition of a dedicated e-mail account for Apprenticeship Program matters.
- d. Work continued with General Management and Communications staff on planning the Apprenticeship Program graduation and 40th Anniversary celebration.
- e. The Apprenticeship Committee met to address issues related to Apprenticeship Math policies, curriculum and testing requirements.

3. General

- a. Recruitment for the OD&T Administrative Coordinator and internal recruitment for Quality Facilitators continued.
- b. Staff participated in the following training:
 - (1) Mentor Coach's *Individual Intensive Coaching*
 - (2) Society for Human Resources Management Virginia State Conference
- c. Staff participated in a Special Project lunch sponsored by the HRSD United Way team.

C. Safety

1. Mishaps and Work Related Injuries

- a. HRSD-Wide Injury Mishap Status to Date (OSHA Recordable)

	<u>2018</u>	<u>2019</u>
Mishaps	45	8
Lost Time Mishaps	6	2
<i>Numbers subject to change pending HR review of each case.</i>		

- b. MOM Program Year Performance Measure Work-Related Injuries

April 2019 Injuries For Operations	April 2019 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2018	Total HRSD Injuries Since July 2018
1	0	4	35

- c. Follow-up investigations were performed on one reported work-related injury and three auto/property incidents.

2. HRSD Safety Training

Strategic Planning Measure	Unit	April 2019
Total Safety Training Hours per Full Time Employee (836) All HRSD – April 2019	210.45 Hours / 836 FTE	0.25
Total Safety Training Hours Per Full Time Employee (836) – Cumulative July 2018	3750.61 Hours / 836 FTE	4.49

3. In addition to regularly scheduled safety training and medical monitoring, the following sessions were conducted:
 - a. Five external briefings for contractors working at treatment plants and pump stations
 - b. Forklift Safety Training for Small Communities employees
 - c. Aerial Lift Safety Training on the new scissors lift for Army Base Treatment Plant (TP) employees
 - d. Emergency Response Training for Main Office employees and after-hours Facilities employees
 - e. Decision Driving Class for several HRSD employees

4. Safety Inspections, Testing and Monitoring
 - a. Weekly onsite inspections of the following construction sites:
 - (1) Army Base TP
 - (2) Atlantic TP
 - (3) Dover Court Pump Station
 - (4) Pine Tree Pump Station
 - (5) Providence Road Pump Station
 - (6) Shipps Corner Pump Station
 - (7) SWIFT Research Center (SWIFT RC)
 - (8) VIP

 - b. Quarterly safety inspections of the following work centers:
 - (1) Army Base TP
 - (2) Boat Harbor TP

- (3) Lawnes Point TP
- (4) North Shore Apprenticeship Classrooms
- (5) North Shore Automotive, Electrical and Machine Shops
- (6) North Shore Interceptors
- (7) Surry TPs and Pump Stations

c. Monitoring and testing for the following:

- (1) Monthly velocity tests on Central Environmental Laboratory, North Shore Pollution Prevention Program (P3), Technical Services Division and VIP lab hoods
- (2) Performed air sampling within CEL based on odor complaints

d. Safety walk-throughs and evaluations:

- (1) Audited Hurricane Lockers and Supplies for all HRSD work centers
- (2) Performed a preliminary walk-through of the Willard Avenue property to prepare for an Asbestos Inspection

5. Safety Programs

a. The HRSD Safety Team met to:

- (1) Review the Safety Innovation award announcement
- (2) Develop a safety notice to prevent accidents involving stationary objects
- (3) Discuss updates to the Electrical Safety Program and Chemical Hygiene Plan
- (4) Discuss articles for the Summer Safety newsletter

b. The following was performed for the Confined Space Entry Program:

- (1) Reviewed completed confined space entry permits for North and South Shore Interceptors
- (2) Met with VIP Plant Superintendent to discuss confined space permits for new areas and TP processes

c. Hot work permits were issued for contractors working at Shippo Corner, Dover Court, Virginia Beach Boulevard, Pine Tree and Providence Road pump stations.

- d. Annual respirator fit testing and pulmonary function testing continued. The Safety Coordinator prepared and distributed test results for HRSD employees.
- e. Industrial Hygienist prepared and distributed an Emergency Response Procedures safety notice.
- f. Staff met with Electrical and Instrumentation supervisors to begin updates to the Electrical Safety Program.
- g. The Chemical Hygiene Plan was updated to incorporate requirements for a new Biosafety Level designation and emergency response procedure updates.
- h. An Industrial Hygienist audited new chemical usage for SWIFT RC.
- i. The Hazardous Materials Refresher Training test was updated.
- j. Chemical Truck Emergency Response procedures were updated.
- k. Prescription Safety Glasses order forms were distributed to employees.

6. General

- a. The Safety Program internal audit process continued. Meetings were held with SC&H staff to clarify processes for several programs and to plan the fieldwork phase.
- b. Staff provided the following to support Design and Construction:
 - (1) Attending a full scale SWIFT Design Review meeting
 - (2) Attending a training webinar on the design software program for SWIFT design review
- c. The Safety Manager met with HRSD's insurance broker, Accounting, Talent Management and Facilities staff to review HRSDs Fleet Safety program.
- d. Staff continued entering safety training rosters into ERP.
- f. Safety staff met to review response procedures and training uniformity.

- g. Staff attended the following training:
 - (1) Asbestos Inspector/Management Planner Refresher training at Applied Laboratory Services
 - (2) Occupational Safety and Health Industry training
- h. Staff participated in the following HRSD activities:
 - (1) HRSD Leadership Forum
 - (2) A HRSD Supervisor Training Program participant shadowed the Safety Manager on an inspection of the Army Base TP

D. Monthly Strategic Planning Metrics Summary

- 1. Education and Outreach Events: (6)
 - a. Virginia Commonwealth University's *Get in Gear* Career Fair, April 3
 - b. City of Suffolk Public Schools 28th Annual Career Expo, April 11
 - c. Hosted Hampton Roads Public Works Academy Meeting, April 11.
 - d. Old Dominion University's Environmental Health Advisory Board meeting, April 12.
 - e. City of Suffolk's Local Emergency Planning Commission Meeting, April 24
 - f. Annual Community Empowerment Day, April 27
- 2. Community Partners: (4)
 - a. Virginia Commonwealth University
 - b. City of Suffolk
 - c. Hampton Roads Public Works Academy
 - d. Old Dominion University

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2019
M-1.1a	Employee Turnover Rate (Total)	Percentage	0
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0
M-1.4a	Total Training Hours Per Full Time Employee (17) – Current Month	Total Training Hours/ FTE	4.38
M-1.4b	Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date	Hours / FTE	40.08
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Community Partners	Number	4

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for April 2019
DATE: May 15, 2019

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed three civil penalties this month.

Miller's Neighborhood Market – Williamsburg

An Enforcement Order was issued to Miller's Neighborhood Market in April 2019 for failure to respond to a Notice of Violation (NOV) and failure to appear for a Show Cause Meeting. The Order contained an invoice totaling \$500 in Civil Penalties.

The NOV was from October 2018 for the unauthorized discharge of a fuel/water mixture into the sanitary sewer system. A Show Cause Meeting was held to discuss the unauthorized discharge as well as the enforcement for failure to respond and failure to appear. The Enforcement Order was accepted and the Civil Penalty was paid in April 2019.

Norfolk International Terminals – Norfolk

An Enforcement Order was issued to Norfolk International Terminals in March 2019 for a technical violation that occurred in December 2018. The Order contained an invoice totaling \$1,000 in Civil Penalties.

The violation was for a COD:BOD ratio permit limit exceedance. The permittee has ongoing COD:BOD issues and entered into an Administrative Order in April 2019 to identify and address sources of COD and BOD. The Enforcement Order was accepted and the Civil Penalty was paid in May 2019.

Perdue Agribusiness LLC – Chesapeake

An Enforcement Order was issued to Perdue Agribusiness LLC in April 2019 for three technical violations which occurred between September and

December 2018. The Order contained an invoice totaling \$5,000 in Civil Penalties.

All three violations were for Silica Gel Treated Hexane Extractable Material (SGT-HEM) Oil and Grease permit limit exceedances. A Show Cause meeting was held in February 2019. The permittee has plans to upgrade their pretreatment system to better treat Oil and Grease. The Enforcement Order was accepted and the Civil Penalty was paid in April 2019.

2. The Director participated in a meeting of the Water Research Foundation's (WRF) Research Advisory Council (RAC). The WRF RAC oversees WRF's research program on behalf of the WRF Board by providing recommendations and identifying objectives regarding research priorities important to subscribers. This program includes source (potable) and surface waters (rivers, streams, lakes, bays) together to support a "One Water" approach like SWIFT. The purpose of this meeting was to consider the projects being proposed by a number of WRF Project Advisory Committees. The research agenda developed during this meeting is diverse and will help HRSD address a number of issues.
3. The Director attended the annual Water Policy Fly-In held in Washington, DC during Water Week 2019. This event provides the opportunity to monitor current and planned activities of EPA and the interests of key members of Congress. David Ross, the EPA Assistant Administrator for the Office of Water, reported that EPA is releasing a water reuse discussion framework and that EPA would be collecting comments on this document. Attendees also learned during the meeting that EPA will be conducting a biosolids risk assessment for the perfluorinated compound PFOS this year and that human health and aquatic life water quality criteria for this chemical will be developed in the 2020-2021 timeframe. The HRSD Water Quality Department has been closely following the activities of EPA with regard to the development of water quality criteria for viruses. EPA indicated that it plans to have its draft criteria undergo external peer review in 2020. This could result in final criteria in 2021 that would then be considered by states for incorporation in regulation and facility permits. This addition to Virginia regulation would likely require greater cost in wastewater treatment and permit compliance. The Water Quality Department will continue to follow these activities to evaluate their basis and potential for impact on HRSD facilities and rate payers.

B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy Group (SEA) reported activities for the month of April.

- a. Metrics Reporting: As part of measuring our communications impact, a survey on recycling knowledge was sent to all staff and results were received. A follow up email was sent out to the organization with the correct answers to the survey.
 - b. Earth Day: Celebrated Earth “Month”, Theme: Save our Species
 - 1) Clean up initiatives at Boat Harbor Treatment Plant, Virginia Initiative Plant, and the Central Environmental Laboratory (CEL) cleanup along the main campus resulted in over 200lbs of trash collected.
 - c. R³ (Reduce, reuse, recycle) Support:
 - 1) Currently conducting a Recycle Right campaign:
 - a) Housekeeping card on Recycling Right issued to housekeeping for use.
 - b) The General Manager sent an email to all HRSD to inform all on the importance of paying attention to the issue of proper recycling.
 - d. HRSD Interactive Challenge – Trash Collector Design: Both teams that registered for the challenge have submitted their designs and will present them for judging on May 29th. We plan to present the winning design at the June QST meeting.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

1. HRSD provided sampling assistance and analytical services to the City of Roanoke to support their microbial source tracking (MST) program monitoring.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 9
 - a. Technical Services Division (TSD) staff presented various City of Norfolk source tracking projects to the Norfolk Watershed Management Task Force on April 3
 - b. TSD and CEL staff provided a tour to recent graduates of Hampden-

- Sydney College on April 8.
- c. CEL staff hosted Cape Henry Collegiate students for a job shadowing event in partnership with Engineering on April 10.
- d. CEL staff hosted students from Cape Henry Collegiate AP Environmental and Global Environmental Issues Science class on April 12.
- e. P3 staff participated in the Clean the Bay Day cleanup site visit on April 22.
- f. P3 staff participated in the Hampton Roads Public Works Academy tour of the SWIFT Research Center on April 24.
- g. P3 staff participated in the Tabb Middle School STEM Career Fair and Expo on April 10.
- h. P3 staff participated in the Hoffler Creek Wings and Things event on April 14.
- i. P3 staff participated in Earth Day event at the Norfolk Naval Shipyard on April 18.

2. Community Partners: 7

- a. City of Hampton
- b. City of Chesapeake
- c. City of Suffolk
- d. City of Virginia Beach
- e. Virginia Department of Environmental Quality
- f. Virginia Department of Health Division of Shellfish Sanitation
- g. Hampton Roads Planning District Commission Fats Oils and Grease

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2019
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	7.61
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	52.05
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0

Item #	Strategic Planning Measure	Unit	April 2019
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	1:50,733
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	156,842,029
M-3.5	Pollutant Discharge	% Pounds Discharged/ Pounds Permitted	20%
M-5.2	Educational and Outreach Events	#	9
M-5.3	Community Partners	#	7
	Average Daily Flow	Total MGD for all Treatment Plants	155.70
	Industrial Waste Related System Issues	#	0

Respectfully submitted,
James Plett, PhD
 Director of Water Quality



The following Internal Audit Status document has been prepared by SC&H for the HRSD Commission. Below is a summary of projects in process, upcoming projects, and the status of current management action plan (MAP) monitoring.

I. Projects in Process

Business Continuity and Disaster Recovery

- **Upcoming Tasks (Q2 2019)**
 - HRSD management has communicated its continued progress to develop a plan to address the recommendations included in the BC/DR report. SC&H will continue to work with HRSD process owners and management to finalize the audit report, incorporating management action plans. A specific completion date has not been identified at this time.

Customer Care

- **Tasks Completed (April 2019)**
 - Conducted exit discussion with process owners
 - Incorporated process owner comments into report document
 - Identified an area of clarification to be completed prior to project closeout; worked with Customer Care to obtain and analyze final documentation
- **Upcoming Tasks (May 2019)**
 - Complete final review steps
 - Communicate final audit report and obtain management action plan responses
 - Work with process owners to finalize report

Safety

- **Tasks Completed (April 2019)**
 - Finalized planning and understanding procedures
 - Finalized fieldwork objectives and prepared audit plan
- **Upcoming Tasks (May 2019)**
 - Conduct fieldwork testing procedures
 - Begin draft of final report documentation

Permitting

- **Tasks Completed (April 2019)**
 - Conducted entrance meeting with applicable process owners
 - Communicated initial documentation request list
 - Prepared project framework documentation
- **Upcoming Tasks (May 2019)**
 - Review documentation provided by process owners
 - Schedule and conduct process walkthroughs
 - Prepare flowchart documentation
 - Identify fieldwork objectives and prepare audit plan



II. Upcoming Projects (FY2019)

SC&H’s next audit will pertain to the Payroll and Timekeeping functions at HRSD and is scheduled to begin in Q3 (July) of calendar year 2019.

III. Management Action Plan (MAP) Monitoring

SC&H is performing on-going MAP monitoring for internal audits previously conducted for HRSD. SC&H begins MAP follow-up approximately one year following the completion of each audit and will assess bi-annually.

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

The following describes the current project monitoring status.

Audit	Report Date	Next Follow-up	Recommendations		
			Closed	Open	Total
D&C: CIP Project Management	5/11/2016	June-19	11	2	13
Biosolids Recycling	10/8/2016	July-19 Pending Permit	7	1	8
HR Benefits	11/22/2016	Closed	15	0	15
Inventory	4/20/2017	May-19	1	4	5
Procurement/ ProCard*	8/23/2017	October-19	8*	3*	11

*SC&H is currently working with process owners to review management action plan implementation steps. Additional items may be closed following this review.

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
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%
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%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%	85.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67	67
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
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
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
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
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%	160%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%	167%
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
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%	44%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%	24%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	5%	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
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142	5,862,256
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
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173	170
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104	104
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%
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
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%
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
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A	53%
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%	114%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15	20
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24	152.8
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66	49.24
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	73%	76%
	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%
	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%

Monthly Updated 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 Mar-19	FY-19 Apr-19
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	145.8	166.6	155.7
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	4	0	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	100%	101%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	118%	122%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$17,013,784	\$17,359,488	\$18,795,475	\$20,524,316	\$20,758,439	\$22,444,273	\$22,572,788	\$22,243,447	\$21,365,727	\$21,811,759
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	18%	17%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	10	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	1:45659	1:50,733
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	6	1	0
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	190,536,910	141,163,051	156,842,029
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Permitted	< 40%		25%	22%	25%	22%	22%	20%	17%	20%	20%	20%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	432	39	38
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	381	28	27

EFFLUENT SUMMARY FOR APRIL 2019

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBI	ENTERO #/UBI	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	TKN mg/l	NH3 mg/l	CONTACT TANK EX
ARMY BASE	10.16	56%	4	5.4	4	2	0.32	0.30	3.2	3.6	NA	NA	15
ATLANTIC	28.41	53%	11	5.8	1	<1	NA	NA	NA	NA	NA	NA	7
BOAT HARBOR	15.93	64%	7	11	4	2	0.84	0.64	22	20	NA	NA	18
CENT. MIDDLESEX	0.010	42%	<2	<1.0	<1	<1	NA	NA	NA	NA	<0.50	0.10	NA
CHES-ELIZ	18.04	75%	18	19	23	8	1.5	1.1	32	30	NA	NA	10
JAMES RIVER	14.27	71%	3	2.3	<1	<1	0.38	0.36	7.0	7.9	NA	NA	0
KING WILLIAM	0.060	60%	<2	<1.0	NA	<1	0.05	0.03	0.95	1.6	0.65	NA	NA
NANSEMOND	17.15	57%	5	7.9	8	1	0.65	0.91	4.0	5.2	NA	NA	0
SURRY, COUNTY	0.068	105%	3	4.0	NA	NA	NA	NA	NA	NA	NA	NA	0
SURRY, TOWN	0.076	126%	5	11	NA	33	NA	NA	NA	NA	1.1	0.10	NA
URBANNA	0.044	44%	3	10	2	1	3.7	2.7	10	10	NA	0.16	NA
VIP	28.21	71%	3	3.3	1	1	0.45	0.44	3.6	3.7	NA	NA	0
WEST POINT	0.476	79%	22	17	2	2	2.3	1.7	15	13	NA	NA	0
WILLIAMSBURG	9.10	40%	3	2.4	4	2	0.34	0.32	2.5	3.0	NA	NA	5
YORK RIVER	13.69	91%	5	0.76	1	<1	0.30	0.27	4.9	5.8	NA	NA	2
	<u>155.70</u>												

	% of Capacity
North Shore	64%
South Shore	61%
Small Communities	73%

Tributaries	Tributary Summary					
	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection CY19		YTD	Projection CY19	
	%	Lbs	%	%	Lbs	%
James River	29%	3,841,403	84%	24%	281,070	88%
York River	32%	260,319	90%	26%	17,205	89%
Rappahannock	31%	NA	NA	125%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY19 to Date: 1:50,733
Pounds of Pollutants Removed in FY19 to Date: 156,842,029
Pollutant Lbs Discharged/Permitted Discharge FY19 to Date: 20%

	Rainfall (inch)		
	<u>North Shore (PHF)</u>	<u>South Shore (ORF)</u>	<u>Small Communities (FYJ)</u>
Month	4.59"	3.24"	3.60"
Normal for Month	4.24"	3.29"	4.16"
Year to Date Total	16.83"	14.17"	14.95"
Normal for YTD	14.18"	12.30"	13.64"

AIR EMISSIONS SUMMARY FOR APRIL 2019

MHI PLANT	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	BZ Temp	Venturi(s) PD	Precooler Flow	Spray Flow	Venturi Flow	Tray/PBs Flow	Scrubber	Any	THC	THC	BZ Temp
	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	pH	Bypass	Mo. Ave	DC	Daily Ave
(F)	(in. WC)	(GPM)	(GPM)	(GPM)	(GPM)	(GPM)	3 hr ave	Stack Use	(PPM)	(%)	Days >Max
ARMY BASE	0	0	1	0	1	0	0	2	29	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	4	9	90	0
CHES-ELIZ	0	0	0	0	0	0	0	1	21	91	0
VIP	0	0	0	n/a	0	0	0	0	57	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	0	19	96	0

ALL OPERATIONS

DEQ Reportable Air Incidents:	0
DEQ Request for Corrective Action (RCA):	0
DEQ Warning Letter:	0
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	0
Odor Complaints Received:	0
HRSD Odor Scrubber H2S Exceptions:	0