



FINAL COMMISSION MEETING MINUTES
May 22, 2018

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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-16
Lynch, Maurice P.	Commission Vice-Chair	1-16
Glenn, Michael E.	Commissioner	1-16
Lakdawala, Vishnu K.	Commissioner	1-16
Levenston, Jr., Willie	Commissioner	1-16
Rodriguez, Stephen C.	Commissioner	1-16
Taraski, Elizabeth	Commissioner	1-16
Templeman, Ann	Commissioner	1-16

1. **AWARDS AND RECOGNITION**

Action: No action required.

Brief:

- a. **SWIFT Research Center Video** – The [video](#) that was shown during the SWIFT Research Center Ribbon Cutting ceremony was viewed.
- b. **Service Award** - Chair Elofson presented a service award to Ms. Cheryl Young who marked her 20th year of service with HRSD on April 20, 2018. Cheryl was hired on April 20, 1998 as Human Resources Analyst and became the Organizational Development & Training Manager in December 2008. Cheryl earned her Bachelor of Science from Union College in Psychology-Organizational Behavior in 1981; a Masters of Business Administration in Management and Industrial Relations from the University of Bridgeport in 1986 and a Doctor of Philosophy in Organization and Management from Capella University in 2008. She holds several certifications including: Society of Human Resources Management; *Professional in Human Resources*; International Public Management Association’s *Certified Professional*; was previously a *Certified Mediator* by Supreme Court of Virginia; and recently began pursuing certifications in *Emotional Intelligence* and *Coaching*.

When Cheryl joined HRSD, she became a leadership facilitator and has been an integral part of the development of HRSD’s Quality and Leadership



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Program which began with three quality courses and has expanded into a quality, leadership and development program for HRSD employees. Over 20 courses and 570 hours of instruction are provided to approximately 800 learners each year. She currently leads and trains a group of 17 internal facilitators who teach courses and facilitate annual quality improvement planning at all workcenters. She also oversees the administration of the HRSD Apprenticeship Program, which will celebrate its 40th year in 2019. Over 400 apprentices have graduated from this nationally recognized program to date.

She serves on Water Environment Federation's (WEF) Utility Management's subcommittee on workforce sustainability and has been a speaker on the subjects of coaching and teams at WEFTEC and on WEF webinars. She was recently selected to serve on International Public Management Association's national benchmarking committee.

Outside of HRSD, Cheryl is also involved in her community. She served on the Girl Scouts Council of Colonial Coast Board of Directors from 1999 to 2007 and is currently on the Board of Directors for both *Dress for Success*, Hampton Roads and the *Red Book of Life*; a member of Virginia Beach Youth Leaders in Action; and committee member for *Excellence through Academic Achievement* (Faith Deliverance Christian Center). Cheryl has also had the honor of being cited in a book, *Women in Leadership*, by South University.

Attachment: None

Public Comment: None



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2. **CONSENT AGENDA**

Action: Approve the items listed in the Consent Agenda.

Moved: Maurice Lynch **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Awards
 - 1. [Coating and Repair of Secondary Clarifiers](#) \$438,265
 - 2. [Land Surveying and Related Work](#) \$5,000,000
 - 3. [Pressure Reducing Station Reliability Upgrades for Providence Road PRS, Atlantic PRS, Kempsville PRS, Laskin Road PRS, Pine Tree PRS and Independence Boulevard PRS](#) \$358,400
 - 4. [Small Communities Collection System Rehabilitation Phase I](#) \$273,359
- c. Task Orders
 - 1. [Boat Harbor Outlet Sewer Improvements](#) \$283,444
 - 2. [Boat Harbor Treatment Plant Switchgear and Controls Replacement](#) \$245,812
 - 3. [Mathews Main Vacuum Pump Station Replacement](#) \$314,880
 - 4. [Nansemond Treatment Plant Struvite Recovery Facility Improvements](#) \$466,521



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d Sole Source

1. [Coastal Filtration - Fluid Engineering Automatic Self Cleaning Strainer Replacement Parts](#)
2. [Damuth Trane - Tracer Summit™ Building Automation System \(BAS\) Equipment Maintenance and Software Support Services](#)
3. [Tencarva Machinery Company
SPX Flow Lightnin Mixer Shaft Extensions](#)
4. [Xylem, Inc. - Godwin Equipment Preventive Maintenance, Parts and Service](#)

e. HRSD Use of Existing Competitively Awarded Contract Vehicle

- | | |
|--|-----------|
| 1. Carasoft Based Converged Infrastructure Support | \$375,000 |
| 2. Cisco Based Converged Infrastructure Support | \$750,000 |
| 3. Research and Advisory Services | \$995,000 |
| 4. Structured Cabling System Services | \$375,000 |

Item(s) Removed for Discussion: None

Attachment #1: [Consent Agenda](#)

Public Comment: Mr. Matthew Ulliman, President of Ulliman Schutte addressed the Commission on the [Pressure Reducing Station Reliability Upgrades for Providence Road PRS, Atlantic PRS, Kempsville PRS, Laskin Road PRS, Pine Tree PRS and Independence Boulevard PRS](#) (Item 2.b.3.). He said they were excited to be selected as the construction manager for this project and he thanked the Commission for their vote of confidence. He said his company's motto is "building a better environment" and he believes their core values are well aligned with HRSD. They are looking forward to working collaboratively as a team.



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3. **FISCAL YEAR 2019 (JULY 1, 2018 – JUNE 30, 2019) BUDGETS**

Actions:

- a. Approve the [FY-2019 to FY-2038 Financial Forecast](#)
- b. Approve the [Operating Budget for FY-2019](#), 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-2019
- d. Approve the Capital Improvement Program for FY-2019 to FY-2028 ([Summary Capital Improvement Program](#))
- e. Approve the [Rate Schedules](#) to be effective July 1, 2018 subject to the requirements of the Enabling Act.

Moved: Vishnu Lakdawala

Ayes: 8

Seconded: Elizabeth Taraski

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 Schedules to support these budgets.

The preliminary budgets were forwarded for Commission review in mid-March. The Finance Committee (comprised of Commissioners Rodriguez and Lynch) and several other commissioners participated in the CIP review meetings and met with staff to review the draft components of the budget for the next fiscal year. The Finance Committee reported to the Commission at the April 24, 2018 meeting. The Commission is required to approve an annual budget by June 1 and to print and distribute the budget by June 30.

The Capital Budget includes the first year of the CIP. The CIP includes the proposed capital projects to be undertaken by HRSD over the next ten years. Projects in the approved CIP (including those in the approved Capital Budget) are



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individually presented to the Commission for full project funding specific to each project at the time the first dollar is spent for funding authorization. Changes to the CIP, which may be required by changing conditions, are presented to the Commission as amendments. The proposed CIP recommends spending approximately \$2.54 billion over the next 10 years. The CIP will be available on the HRSD website upon Commission approval.

The Financial Forecast was updated to cover the period 2019 through 2038 to forecast HRSD finances over an extended timeframe. The Financial Forecast is a planning tool used to project revenue requirements and spending limits needed for HRSD to comply with its financial policies throughout the forecast period.

The Rate Schedules summarize rates necessary to generate sufficient revenue to cover expenses and reserves requirements for the next fiscal year. HRSD's Rate Model assigns the operating and debt service costs from the proposed budget to the four primary treatment parameters of Biochemical Oxygen Demand (BOD), total suspended solids, phosphorus and nitrogen at each treatment plant as weighted averages or percentages to determine the total cost for treating each parameter. The total cost is converted into a unit cost based on the estimated quantity of each parameter, and surcharge rates for high strength wastewater are calculated. The result is that the Rate Model calculates rates sufficient to recover expenses based on the waste characteristics of each customer. To meet the requirements of the Financial Forecast, the FY-2019 wastewater charge will increase from \$4.92 per 100 cubic feet to \$5.37 per 100 cubic feet. The current average residential customer (as measured by a 5/8-inch meter) uses approximately 6.5 CCF of water per month, resulting in an average monthly increase of \$2.93 (approximately \$0.10 per day). Our charges for wastewater treatment remain reasonable, with the average residential customer paying about \$1.16 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. The capital cost component generally includes the amortized cost incurred by HRSD when the systems were acquired.



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Discussion Summary: The Commission discussed the impact of the proposed surcharge rates to HRSD's largest surcharge customers. The proposed Total Phosphorus (TP) rate is lower than last year offsetting some of the increases in the other surcharged pollutants. Unrelated to surcharge rates, the Commission asked about the status of SPSA's plan for leachate discharge during the initial operation of the SWIFT Research Center. Staff responded that the recent rain has caused more leachate production but impact of this has been managed to date by SPSA. Staff is working with SPSA to manage the discharges in a consistent volume versus discharging sporadic large quantities.

Attachment #2: [Annual Budget and Presentation](#)

Public Comment: None



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4. **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: Maurice Lynch **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

Brief: When staff prepares the Fiscal Year 2018 Comprehensive Annual Financial Report (CAFR), there is work being performed on two locality improvement projects with an estimated total project cost of \$3,041,000. A portion of this amount will be expended in Fiscal Year 2018 and needs to be excluded from Operating Expenses as defined in the Subordinate Trust Agreement. The remaining amount is expected to be expended annually up to Fiscal Year 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.

These projects improved the integrity of the regional wastewater system by rehabilitating aging infrastructure to reduce inflow and infiltration and also provided insight on three different project delivery methods that we may use to accomplish the work. 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 #3: [Resolution](#)

Public Comment: None



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5. **TAX EXEMPT BOND PROCEEDS EXPENDITURE FOR FISCAL YEAR 2019
REIMBURSEMENT RESOLUTION**

Action: Approve reimbursement resolution.

Moved: Maurice Lynch

Ayes: 8

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 [reimbursement resolution](#) amount of \$80,000,000 is based on the [FY 2019 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.

In FY 2019, staff is planning to initially use cash to fund Virginia Clean Water Revolving Loan Fund (VCWRLF) and grant funded 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.

Attachment #4: [Resolution](#)

Public Comment: None



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6. BRIDGE STREET PUMP STATION REPLACEMENT
ADDITIONAL APPROPRIATION

Action: Appropriate additional funding in the amount of \$400,464.

Moved: Willie Levenston **Ayes:** 8
Seconded: Ann Templeman **Nays:** 0

CIP Project: BH011600

Budget	\$14,123,400
Previous Expenditures and Encumbrances	(\$13,703,864)
Available Balance	\$419,536
Proposed Change Order Work	(\$720,000)
Proposed Contingency	(\$100,000)
Project Shortage/Requested Additional Funding	(\$400,464)
Revised Total Project Authorized Funding	\$14,523,864

Project Description: This project includes the replacement of the Bridge Street Pump Station to address conditional issues. The proposed replacement will include a relocated pump station and a new gravity sewer and force main connection to the existing system.

Funding Description: The revised total project cost is currently \$14,523,864. This amount is based on construction costs of \$11,800,000, engineering services costs of \$1,845,000, and real-estate acquisition costs of \$800,000. Project delays and design changes amount to approximately \$400,464 more in additional costs than the balance available for this CIP project. An additional \$100,000 in contingency is requested for unforeseen conditions. This amount is needed to cover forthcoming change order work for MEB General Contractors.

The project scope of work has changed due to a significant revision in the anticipated sequence of work. The originally designed pipe alignment required the closure of Bridge Street and a detour to the north across the adjacent bridge.



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Since the construction of the bridge is not complete access needs to be maintained for residents and emergency vehicles to the Georgetown Condominiums. Therefore, a re-design of the pipe alignment was required to provide this access during construction of the pipeline. Additional costs and project delays were associated with these changes in construction.

Schedule: Construction March 2016
 Project Completion July 2018

Discussion Summary: Several factors have caused the project delays. The bridge replacement contract has created some of the delays and cost increases in our project, but with all the challenges the City of Hampton has encountered with that contract, there is no real path to recovering any of those costs from the City or the bridge contractor.

Attachment: None

Public Comment: None



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7. **INTERCEPTOR SYSTEMS PUMP STATION CONTROL AND SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) UPGRADES AND ENHANCEMENTS BRIEFING**

Action: No action required.

CIP Project: GN012800

Brief: This project began in 2009 to replace and improve the SCADA System installed in the 1990s. The legacy system was developed over a long period of time and fulfilled basic regulatory requirements of providing system alarms.

The legacy SCADA could **Acquire Data** but could not **Control** the system. A more robust system was needed to add control features. Control would allow development of a “Smart” sewer in the future. It was this updated and fully functional SCADA system we envisioned when the project began in 2009.

This project was a large CIP and was included in the original list of interim system improvement projects that were part of the Consent Decree with a February 2018 completion deadline. Several times the project was delayed to allow the CIP budget to fully balance, recognizing the existing SCADA system met current regulatory requirements and we had until 2018 to complete the new system.

Those delays actually contributed to the major technical changes late in the project. Technology changed rapidly during that time frame and many of the assumptions in the original basis of design were changed by the rapid advancement of sensor technologies and ever increasing data needs. As a result, we made significant changes to the project which resulted in significant investment in technology and resources that are no longer needed and make no sense to pursue.

Staff presented a short background on this project, the challenges that have occurred and the efforts that still remain.

Discussion Summary: The program required 12 new cell towers and leased space on 10 other existing towers. HRSD has a partnership with Milestone Communications who built and funded the 12 towers. Staff is exploring options to reduce the long-term liability with Crown Castle leased space which expires in 2026



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but emphasized that there is little motivation on Crown Castle's part to assist with finding solutions that reduced our costs. Staff is working with Milestone to further investigate ways to reduce these costs going forward. The agreement with Milestone continues to reduce costs on the 12 towers built on our property as cell providers continue to need tower space. Staff emphasized that due to the change in SCADA technology, HRSD made a significant investment in tower leases that are not needed. Commissioner Rodriguez asked staff to explore adding a buyout clause to future contracts.

Attachment #5: [Presentation](#)

Public Comment: None



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8. **WATER QUALITY SERVICES BUILDING – PHASE II
LEASE OF PROPERTY FOR HRSD STORAGE**

Action: Authorize the General Manager to execute the proposed lease, with an initial term of five years with the option to renew for two additional terms of five years each, with Bayside Investors, LLC, owner of 5741 Bayside Road, Virginia Beach.

Moved: Michael Glenn **Ayes:** 8
Seconded: Stephen Rodriguez **Nays:** 0

CIP Project: AD012200 & AD012300

Project Description: This project includes the renovation of existing Technical Services Division (TSD) and Pretreatment and Pollution Prevention (P3) spaces to meet the future space needs of the Central Environmental Laboratory (CEL) and as outlined in the April 2017 Water Quality Space Study, Option E, prepared by Guernsey Tingle Architects. To facilitate this new building, the existing building located at 1460 Air Rail Avenue must be demolished. This existing building houses numerous items including storage for all of HRSD.

Agreement Description: The lease is for two storage units totaling 6,100 square feet and HRSD staff has evaluated the facilities and determined that the units will meet the need for storage space. The [proposed lease](#) is attached and is currently under review by HRSD staff and legal counsel. A Facilities Orientation [map](#) is provided for clarification purposes.

Analysis of Cost: HRSD staff worked with its on-call Real Estate consultant JMT and CBRE, (a commercial real estate and investment firm) to determine comparable market rent for warehouse/industrial storage. The proposed monthly base lease rates of \$2,859.38 and \$2,096.88 is approximately \$0.90 per square foot compared to the area average of \$4.92 per square foot for warehouse/industrial storage. The owner has also agreed to provide 20 dedicated parking spaces for \$1,525 per year.

Attachment #6: [Lease and map \(final executed added 07/11/18\)](#)

Public Comment: None



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9. **RESCHEDULE COMMISSION MEETING DATE – JULY 2018**

Action: Approve changing the date of the regularly scheduled July 24, 2018 Commission meeting to Tuesday, July 31, 2018.

<u>Moved:</u>	Vishnu Lakdawala	<u>Ayes:</u>	8
<u>Seconded:</u>	Maurice Lynch	<u>Nays:</u>	0

Brief: Formal action is required to change a regularly scheduled Commission meeting date. This date will accommodate staff's participation in the NACWA Utility Leadership Conference. The Commission meeting time and location would remain as scheduled.

Attachment: None

Public Comment: None



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

Action: The Chair appointed Willie Levenston (Committee Chair), Michael Glenn and Ann Templeman 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 also reviews the HRSD Commission Governance Guidelines, Remote Participation and Ethics policies. Commissioners Levenston and Templeman served on the committee last year.

The Committee will hold its first meeting following adjournment of the May 22 Commission meeting.

Attachment: None

Public Comment: None



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11. **UNFINISHED BUSINESS**

a. **Nutrient Credit Agreement – Jefferson Lab**

Action: Approve the terms and conditions of the Hampton Roads Water Quality Credit Swap Agreement for Chesapeake Bay Restoration between HRSD and the US Department of Energy 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:** 8
Seconded: Willie Levenston **Nays:** 0

Background: The Commission discussed this concept at the March 27, 2018 meeting. At the time, Jefferson Labs (a component of the US Department of Energy) was not ready to move forward with an agreement. They are ready and have agreed to the attached draft.

The Jefferson Lab has the potential need for a relatively small offset of Total Phosphorus (TP), Total Nitrogen (TN) and Total Suspended Solids (TSS) in the James River basin to meet the Jefferson Lab's required Chesapeake Bay Total Maximum Daily Load (TMDL) reductions under their stormwater permit.

The Jefferson Lab is an important regional employer. As a governmental entity, they are not-for-profit and the work accomplished there benefits all residents within HRSD's service area and far beyond. From this perspective, it appears they meet the intent of the HRSD Nutrient Trading Policy.

While a very small amount of nutrients and sediment are covered by this agreement, the agreement sets an important precedent for future potential trades with other state and federal agencies.

Attachment #7: [Agreement](#)

Public Comment: None



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- b. **2401 G. Avenue, Newport News Lease** - Mr. Henifin stated Site One Landscape Supply is no longer interested in leasing the property located at 2401 G. Avenue in Newport News.
- c. **Commissioner Reappointments** – Mr. Henifin congratulated Frederick Elofson and Dr. Vishnu Lakdawala on their recent reappointments to the Commission by the Governor. Chair Elofson stated his time on the Commission has been both rewarding and fascinating. He is proud of all the accomplishments and generation of new ideas from staff. Commissioner Lakdawala begins his 5th term on the Commission and ranks as the 7th longest serving Commissioner in HRSD history.

12. **NEW BUSINESS** – None

13. **COMMISSIONER COMMENTS**

Commissioner Rodriguez thanked Mr. Henifin and staff for the well-organized ribbon cutting ceremony at the SWIFT Research Center. He believes it was warmly received by all in attendance. He said HRSD is a great organization that is highly regarded in the community and the wealth of information and knowledge held by employees is incredible.

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

15. **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 #8: [Informational Items](#)

Public Comment: None



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16. **ANNOUNCEMENTS**

- The O&N Committee will meet after adjournment of this meeting.
- The United Way Campaign Finale will be held on Thursday, June 7, 2018 at the Virginia Beach Convention Center.
- The 25th annual Pretreatment Excellence and Pollution Prevention (p2) Awards will be held on Thursday, June 14, 2018. This awards ceremony provides an opportunity each year for HRSD to recognize those HRSD Permittees who have attained an exemplary compliance record, as well as those who have demonstrated a strong commitment to pollution prevention.

Next Commission Meeting Date: June 26, 2018 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

Meeting Adjourned: 9:52 a.m.

SUBMITTED:

Jennifer L. Cascio

Jennifer L. Cascio
Secretary

APPROVED:

Frederick N. Elofson

Frederick N. Elofson, CPA
Chair

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ATTACHMENT #1

AGENDA ITEM 2. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – May 22, 2018

Subject: Coating and Repair of Secondary Clarifiers
Contract Award (>\$200,000)

Recommended Action: Award a contract to New Kent Coatings, Inc. in the amount of \$438,265.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
New Kent Coatings, Inc.	\$488,000
Town Hall Painting Corporation	\$518,000
VAST Solutions of VA	\$528,458
W W Enroughty and Son, Inc.	Non-Responsive

HRSD Estimate: \$302,000

Contract Description: This contract is an agreement to perform spot repairs on all of the atmospheric steel surfaces, complete removal of the existing coating system and install a new coating system on all immersion steel surfaces on the rake arm system for four secondary clarifiers (#1, 2, 3 and 6) at the Boat Harbor Treatment Plant. Secondary Clarifier #1 and #6 shall have all of the above work completed in addition to scarifying and re-coating of the existing system.

The scope of work for this project increased from two to four clarifiers at time of bid advertisement. This is reflected in the bids received and final negotiated award cost.

W W Enroughty and Son, Inc. was deemed non-responsive for failing to submit the required bid deposit.

CONSENT AGENDA ITEM 2.b.2. – May 22, 2018

Subject: Land Surveying and Related Work
Contract Award (>\$200,000)

Recommended Action: Award a professional services annual contract agreement to Rice Associates for the Land Surveying and Related Work, to become effective July 1, 2018, with a maximum allowable limit of \$1,000,000 per single task and accumulated \$5,000,000 per year with four annual renewal options.

Type of Procurement: Competitive Negotiation

A Public Notice was issued on February 18, 2018. Seven firms submitted proposals on March 28, 2018 and all firms were determined to be responsive and deemed fully qualified, responsible, and suitable to the requirements in the Request for Proposals. Three firms were short-listed, interviewed and technically ranked as listed below:

Proposers	Technical Points	Recommended Selection Ranking
Rice Associates	95	1
Johnson, Mirmiran, and Thompson, Inc.	92	2
Precision Measurements, Inc.	91	3

The Selection Committee recommends award of the Land Survey and Related Work annual services contract to Rice Associates whose professional qualifications and proposed services best serve the interest of HRSD. The contract will become effective on July 1, 2018.

Contract Description: This contract is for land survey and related work. This firm will provide assistance in areas such as property and rights-of-way surveying, hydrographic and land based topographic surveys, photogrammetric mapping, subsurface utility engineering including test holes, and special surveys of existing facilities or areas of interest. Specific needs include plat preparation, GPS field survey and data collection efforts using mapping and survey grade GPS units.

Analysis of Cost: The workforce categories, rates, and direct reimbursable costs were negotiated for the first contract year of the renewable contract. These costs compare favorably to other similar work efforts.

CONSENT AGENDA ITEM 2.b.3. – May 22, 2018

Subject: Pressure Reducing Station Reliability Upgrades for Providence Road PRS, Atlantic PRS, Kempsville PRS, Laskin Road PRS, Pine Tree PRS and Independence Boulevard PRS
Contract Award (>\$200,000)

Recommended Action: Award a contract to Ulliman Schutte Construction LLC in the amount of \$358,400.

CIP Projects: CE011822/CE011827/CE011828/CE011829/CE012200/CE010400

Budget	\$26,000,000
Previous Expenditures and Encumbrances	(\$3,746,450)
Available Balance	\$22,263,550

Type of Procurement: RFQ / RFP

A Public Notice was issued on February 11, 2018. Five firms submitted Statements of Qualifications on March 6, 2018, and all firms that submitted were determined to be responsive and deemed fully qualified, responsible and suitable as per the requirements in the Request for Qualifications (RFQ). Three firms were shortlisted, and those firms received Requests for Proposals (RFP), submitted Technical Proposals, were interviewed, submitted price proposals, and were technically ranked. The Selection Committee recommends Ulliman Schutte Construction LLC as the construction manager for this project.

Construction Manager	SOQ	Technical Proposal	Price Proposal	Total Points	Recommended Selection Ranking
Ulliman Schutte Construction LLC	16.8	25.8	50.0	92.6	1
Crowder Construction Co.	16.8	24.1	49.0	89.9	2
The Haskell Company	16.4	22.1	48.5	87.0	3

Contract Description: This selection is for a Construction Manager to enter into a contract for pre-construction services for reliability modification to the six above listed pressure reducing stations. Construction and post-construction phase services will be added to this contract by amendment following negotiation of the guaranteed maximum price (GMP) at the final design stage.

Project Description: The project objective is to rehabilitate or upgrade six existing PRS facilities so they are capable of delivering the required performance reliably. This project will also construct an interconnect force main near the Providence Road PRS and yard piping at Independence PRS, Pine Tree PRS and Atlantic PRS. This project includes design, pre-construction and construction phase services for the Independence PRS, Providence Road PRS, Kempsville PRS, Laskin PRS, Pine Tree PRS, and Atlantic PRS all located within Virginia Beach, Virginia, utilizing the Construction Management delivery method. This project may include the addition of pre-procured pumping equipment for all of the facilities. The improvements for these PRS facilities are critical to the successful diversion of the Chesapeake-Elizabeth Treatment Plant flow to the Atlantic Treatment Plant.

Analysis of Cost: The three shortlisted firms had very comparable costs for the anticipated construction management services. Estimated construction costs were within three percent from the lowest to the highest firms. The recommended firm has the lowest overall estimated cost of construction.

<u>Schedule:</u>	PER	March 2017
	Design	February 2018
	Bid	January 2019
	Construction	April 2019
	Project Completion	July 2021

CONSENT AGENDA ITEM 2.b.4. – May 22, 2018

Subject: Small Communities Collection System Rehabilitation Phase I
Contract Award (>\$200,000)

Recommended Actions: Award a contract to Tidewater Utility Construction, Inc. in the amount of \$273,359.

CIP Project: MP013000

Budget	\$1,986,250
Previous Expenditures and Encumbrances	(\$121,636)
Available Balance	\$1,864,614

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Tidewater Utility Construction, Inc.	\$273,359
J. Sanders Construction	\$327,705
Walter V. Via Enterprises	\$395,495

Engineer Estimate: \$263,168

Contract Description: This construction contract is for the replacement of 300 linear feet of existing 8-inch gravity sewer and laterals, replacement of 131 linear feet of existing 6-inch force main, rehabilitation of three existing manholes, and abandonment of an existing gravity sewer manhole in the Town of West Point.

Project Description: This construction contract is the first phase of a multi-phase project. This CIP Project will replace and/or rehabilitate 16 declared prompt repairs and other defects in the West Point and Urbanna collection systems.

Analysis of Cost: Three bids were received on May 3, 2018. The apparent low bidder was evaluated and a Letter of Recommendation was received from the Design Engineer, Whitman, Requardt and Associates, LLP, on May 7, 2018 that recommends award to Tidewater Utility Construction, Inc.

Schedule:

PER	Jan 2018
Design	Feb 2018
Bid	May 2018
Construction	June 2018
Project Completion	September 2018

CONSENT AGENDA ITEM 2.c.1. – May 22, 2018

Subject: Boat Harbor Outlet Sewer Improvements
Task Order (>\$200,000)

Recommended Action: Approve a task order with Dewberry Engineers, Inc. in the amount of \$283,444.

CIP Project: BH014700

Budget	\$4,100,082
Previous Expenditures and Encumbrances	(\$91,546)
Available Balance	\$4,008,536

Contract Status:	Amount
Original Contract with Dewberry Engineers, Inc.	\$91,546
Total Value of Previous Task Orders	\$0
Requested Task Order	\$283,444
Total Value of All Task Orders	\$283,444
Revised Contract Value	\$374,990
Engineering Services as % of Construction	7%

Project Description: This project will rehabilitate or replace approximately 3,500 linear feet of gravity pipeline and associated manholes. Pipe diameters range from 48 to 4-inches. Project extends from MH-NG-169-852 to MH-NG-169-1395 and from MH-NG-169-3984 to MH-NG-124-5328. Rehabilitation work includes the 26th Street siphons and the associated chambers. The 25th Street siphons and associated chambers were rehabilitated under a prompt repair contract.

Task Order Description and Analysis of Cost: This task order will provide design and bid phase services. The cost for this task order is based on a negotiated number of consulting hours and hourly rates. The Engineering Services as a percentage of Construction cost is comparable to other pipeline projects of similar length and complexity and is considered to be reasonable for this effort.

Schedule:	PER	January 2018
	Design	June 2018
	Bid	April 2019
	Construction	June 2019
	Project Completion	October 2020

CONSENT AGENDA ITEM 2.c.2. – May 22, 2018

Subject: Boat Harbor Treatment Plant Switchgear and Controls Replacement
Task Order (>\$200,000)

Recommended Action: Approve a task order with HDR Engineering, Inc. in the amount of \$245,812.

CIP Project: BH015300

Budget	\$5,997,000
Previous Expenditures and Encumbrances	(\$777,877)
Available Balance	\$5,219,123

Contract Status:	Amount
Original Contract with HDR	\$102,843
Total Value of Previous Task Orders	\$675,034
Requested Task Order	\$245,812
Total Value of All Task Orders	\$920,864
Revised Contract Value	\$1,023,689
Engineering Services as % of Construction	10%

Project Description: This project includes the replacement of the main switchgear, generator switchgear, controls, and appurtenances at the Boat Harbor Treatment Plant. The main switchgear will be installed in a new building and the generator switchgear will be installed in an existing building.

This work is required to address critical risks with the existing electrical infrastructure. These improvements will continue to be required to provide safe and reliable power to HRSD at Boat Harbor after conversion to a wet weather storage and pumping facility between 2025 and 2030.

Task Order Description: This task order will provide for additional design efforts to include flood mitigation for Substation 1 & 2 and for installation of the generator switchgear and controls in the existing generator building.

Analysis of Cost: The cost for this task order was negotiated between HDR and HRSD. A current construction cost estimate for this project is reflected in the updated CIP. The Engineering Services to Construction cost ratio is approximately 10% which compares well with other recent projects.

Schedule:

Design	June	2018
Bid	January	2019
Construction	April	2019
Project Completion	December	2020

CONSENT AGENDA ITEM 2.c.3. – May 22, 2018

Subject: Mathews Main Vacuum Pump Station Replacement
Task Order (>\$200,000)

Recommended Action: Approve a task order with Hazen and Sawyer in the amount of \$314,880.

CIP Project: MP012500

Budget	\$2,240,000
Previous Expenditures and Encumbrances	(\$465,112)
Available Balance	\$1,774,888

Contract Status:	Amount
Original Contract with Hazen and Sawyer	\$10,347
Total Value of Previous Task Orders	\$178,297
Requested Task Order	\$314,880
Total Value of All Task Orders	\$493,177
Revised Contract Value	\$503,524
Engineering Services as % of Construction	21%

Project Description: This project is to build a new main vacuum/pumping station in Mathews County on a new parcel that has been purchased. The new station will include a new building, new vacuum pumps, new sewage pumps, new sewage holding tank, trailer-mounted vacuum pump, emergency bypass pump connections, abandonment of the existing Court House pump station, and to evaluate the potential of abandoning the existing booster pump station on Buckley Hall Road.

Task Order Description and Analysis of Cost: This task order will provide design and bid phase services for the Mathews Main Vacuum Pump Station Replacement project. The cost for this task order is based on a negotiated number of consulting hours and hourly rates, which are considered reasonable for this effort. The Engineering Services as a percentage of Construction is comparable to other projects of similar size and complexity.

<u>Schedule:</u>	PER	November 2017
	Design	June 2018
	Bid	November 2018
	Construction	February 2019
	Project Completion	July 2020

CONSENT AGENDA ITEM 2.c.4. – May 22, 2018

Subject: Nansemond Treatment Plant Struvite Recovery Facility Improvements
Task Order (>\$200,000)

Recommended Action: Approve a task order with Hazen and Sawyer in the amount of \$466,521.

CIP Project: NP013700

Budget	\$6,628,400
Previous Expenditures and Encumbrances	(\$70,255)
Available Balance	\$6,558,145

Contract Status:	Amount
Original Contract with Hazen and Sawyer	\$70,255
Total Value of Previous Task Orders	\$0
Requested Task Order	\$466,521
Total Value of All Task Orders	\$466,521
Revised Contract Value	\$536,776
Engineering Services as % of Construction Estimate (excluding SRF modifications)	12%

Project Description: This project involves the implementation of the WASSTRIP® (Waste Activated Sludge Stripping to Remove Internal Phosphorous) process and modifications to the Struvite Recovery Facility (SRF). The WASSTRIP® process consists of the storage of thickened WAS in a tank for a period sufficient to allow phosphorus and magnesium release, followed by post thickening, and transfer of thickened solids to digestion. The thickening filtrate (WASSTRIPate) will be transferred to the SRF separate from the centrate stream. This project also includes the addition of a lamella clarifier on the centrate feed to the SRF. The SRF upgrades currently include the addition of a fourth reactor, replacement of the product drying equipment, and several miscellaneous modifications.

Ostara recently approached HRSD to discuss current bench scale testing that has shown significant improvements in efficiency of the process by making changes in the chemical used to assist in production. As such, HRSD has agreed to conduct full scale pilot testing at the Nansemond Treatment Plant in conjunction with Ostara. Bench scale testing has shown that an additional Ostara reactor may not be required as originally planned, which would reduce equipment costs significantly. Pilot testing is currently being planned and will be implemented in the near future. Hazen and Sawyer is only providing design services for this task order which will not be impacted by results of the pilot testing.

Task Order Description: This task order will provide design and bid phase services associated with the WASSTRIP® process and lamella clarifier. Design tasks which could be impacted by results of the pilot testing (modifications to the SRF) will be negotiated after completion of the testing.

Analysis of Cost: The cost for this task order is based on a negotiated price between Hazen and Sawyer and HRSD. The design and bid phase services as a percentage of construction cost is 10.34%, which compares well with other similar projects.

<u>Schedule:</u>	PER	August 2017
	Design	June 2018
	Bid	January 2019
	Construction	March 2019
	Project Completion	October 2020

CONSENT AGENDA ITEM 2.d.1. – May 22, 2018

Subject: Coastal Filtration
Fluid Engineering Automatic Self Cleaning Strainer Replacement Parts
Sole Source (>\$10,000)

Recommended Action: Approve Coastal Filtration as the provider for Fluid Engineering automatic self-cleaning strainer replacement parts 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 the replacement parts for Fluid Engineering brand automatic self-cleaning strainer. The strainer is used for the non-potable water system that feeds several different processes throughout the treatment process. The strainer removes debris and protects systems downstream from damage.

Coastal Filtration is the only current authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.d.2. – May 22, 2018

Subject: Damuth Trane
Tracer Summit™ Building Automation System (BAS) Equipment
Maintenance and Software Support Services
Sole Source (>\$10,000)

Recommended Action: Approve Damuth Trane as the provider of maintenance and support services for the Tracer Summit™ BAS software and equipment in 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: Services include all repairs, replacement, maintenance, remote software support and all technical operational adjustments to the Tracer Summit™ BAS control units and ancillary equipment within the designated buildings at HRSD. The Tracer Summit™ BAS software provides building control through a single, programmable, integrated system, including climate, lighting, energy consumption and scheduling.

Damuth Trane is the only factory authorized control service and warranty provider for the entire line of Trane controls in this territory.

CONSENT AGENDA ITEM 2.d.3. – May 22, 2018

Subject: Tencarva Machinery Company
SPX Flow Lightnin Mixer Shaft Extensions
Sole Source (>\$10,000)

Recommended Action: Approve Tencarva Machinery Company as the provider of SPX Flow Lightnin Mixer Extensions for Sludge Holding Tanks in use at the Atlantic 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 replacement shaft extensions for existing SPX Flow Lightnin mixers in use at Atlantic Treatment Plant Sludge Holding Tanks. The mixers are still currently under factory warranty. The shaft extensions will allow for mixing of the sludge at a lower level of the tanks in support of the CAMBI thermal hydrolysis process.

Tencarva Machinery Company is the only current authorized distributor for Virginia. No other provider can supply the exact mixer shaft extensions and warranty the operability of the current gearbox, shaft and associated components without access to proprietary build information owned by SPX.

CONSENT AGENDA ITEM 2.d.4. – May 22, 2018

Subject: Xylem, Inc.
Godwin Equipment Preventive Maintenance, Parts and Service
Sole Source (>\$10,000)

Recommended Action: Approve Xylem, Inc. as the provider of Godwin equipment preventive maintenance, replacement parts and services 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: Service includes the annual preventative maintenance, technical support, related parts and labor for various Godwin pumps and equipment throughout HRSD. The pumps and majority of all other related equipment have been purchased utilizing a cooperative contract. Providing consistent quality parts and service is critical to ensure the pumps are in operational condition prior to and during Hurricane season.

Xylem, Inc. is the only authorized service provider for Virginia.

CONSENT AGENDA ITEM 2.e.1 – May 22, 2018

Subject: Carasoft Based Converged Infrastructure Support
HRSD Use of Existing Competitively Awarded Contract Vehicle (>\$200,000)

Recommended Action: Approve the use of the Virginia Association of State College and University Purchasing Professionals (VASCUPP) cooperative contract for Carasoft information technology products and services from Achieve One in the estimated amount of \$75,000 for one year with four annual renewal options and an estimated cumulative value in the amount of \$375,000.

HRSD Estimate: \$75,000 per year (based on future project requirements)

Contract Description: This contract is for purchase of Carasoft hardware, software and services for use by the HRSD Information Technology Department utilizing the cooperative contract competitively solicited by VASCUPP in support of ongoing converged infrastructure. Converged infrastructure bundles hardware components with management software to arrange the resources as a single integrated system. The goal is to reduce complexity in data center management and eliminate issues of hardware incompatibility.

The authorized partners/resellers offer branded and supported products in which all the components reside natively on a qualified hardware appliance. This offers improved management flexibility and lowers costs by consolidating systems and utilizing data management.

The contract allows for Carasoft related services, sales and support through designated resellers. Upon evaluation of VASCUPP's contract terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Carasoft and its authorized resellers.

CONSENT AGENDA ITEM 2.e.2. – May 22, 2018

Subject: Cisco Based Converged Infrastructure Support
HRSD Use of Existing Competitively Awarded Contract Vehicle (>\$200,000)

Recommended Action: Approve the use of the VASCUPP cooperative contract for Cisco products and services to the authorized partners noted below in the estimated amount of \$75,000 per supplier for one year with four annual renewal options and an estimated cumulative value in the amount of \$750,000.

1. Innovative Systems & Solutions, Inc. DBA as ABS Technology Architects
2. Savant LTD

HRSD Estimate: \$75,000 per year per supplier (based on future project requirements)

Contract Description: This contract is for purchase of Cisco hardware, software and services for use by the HRSD Information Technology Department utilizing the cooperative contract competitively solicited by VASCUPP in support of ongoing converged infrastructure. Converged infrastructure bundles hardware components with management software to arrange the resources as a single integrated system. The goal is to reduce complexity in data center management and eliminate issues of hardware incompatibility.

The authorized partners/resellers offer branded and supported products in which all the components reside natively on a qualified hardware appliance. This offers improved management flexibility and lowers costs by consolidating systems and utilizing data management.

The contract is comprised of several product and service categories which include discount pricing for the full line of Cisco products, maintenance and services on the most current version of the Cisco Systems, Inc. Global Price List. The authorized partners are also authorized to provide professional IT services for projects related to the purchase of Cisco products from the contract.

Upon evaluation of VASCUPP's contract terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Cisco, LLC and its authorized partners.

CONSENT AGENDA ITEM 2.e.3. – May 22, 2018

Subject: Research and Advisory Services
HRSD Use of Existing Competitively Awarded Contract Vehicle (>\$200,000)

Recommended Action: Approve the use of the Virginia Information Technology Agency (VITA) cooperative contract for Research and Advisory Services from Gartner, Inc. in the estimated amount of \$199,000 for one year with four annual renewal options and an estimated cumulative value in the amount of \$995,000.

HRSD Estimate: \$199,000 per year (based on future project requirements)

Contract Description: This contract is for research and advisory services for use by the HRSD Information Technology Department in accordance with a cooperative contract competitively solicited by VITA. The service categories include customized and individualized advisory services regarding IT strategy and planning, subscriptions with access to published research report bulletins, industry data on IT trends and summaries of industry issues.

The contract will be for services to facilitate and develop a structured methodology and corresponding operating procedures for the identification, assessment, evaluation and mitigation of organizational risk tolerance and management for all HRSD projects as well as projects containing critical/core IT components. The services will include workshops, individual and group interviews, as well as a tailored methodology to incorporate HRSD's unique structure and culture.

Upon evaluation of the VITA contract terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Gartner, Inc.

CONSENT AGENDA ITEM 2.e.4. – May 22, 2018

Subject: Structured Cabling System Services
HRSD Use of Existing Competitively Awarded Contract Vehicle (>\$200,000)

Recommended Action: Approve the use of the Chesapeake Public Schools cooperative contract for Structured Cabling Systems from Shore Communications, Inc. in the estimated amount of \$75,000 for one year with four annual renewal options and an estimated cumulative value in the amount of \$375,000.

HRSD Estimate: \$75,000 per year (based on future project requirements)

Contract Description: This contract is for structured cabling services for use by the HRSD Information Technology Department in accordance with a cooperative contract competitively solicited by Chesapeake Public Schools. The contract will include services for designing, procuring, installing, testing, documenting, repairing and maintaining structured cabling systems and networked distribution services.

Upon evaluation of Chesapeake Public Schools' contract terms and conditions, as a public agency, HRSD is eligible to use the contract awarded to Shore Communications, Inc.

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #2

AGENDA ITEM 3. – Fiscal Year 2019 Budgets

- [Draft Budget](#)
- [PowerPoint Presentation](#)

Annual Budget

Fiscal Year 2019 (July 1, 2018 – June 30, 2019)

The logo for the Horry Regional Sanitary District (HRSD) features the letters "HRSD" in a bold, white, sans-serif font. The letters are centered between two horizontal white lines, one above and one below, creating a stylized, enclosed appearance.

Ensuring future generations
inherit clean waterways

HRSD Annual Budget For
Fiscal Year 2019
(July 1, 2018 – June 30, 2019)

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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 78 years, HRSD has developed into one of the premier wastewater treatment organizations in the nation. With 16 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 78-year investment in wastewater infrastructure.

The Governor-appointed, eight-member HRSD Commission approved this Fiscal Year-2019 budget at its regular meeting on May 22, 2018. 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 billions of dollars 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, while not as large as the overflow mandate, has required a significant investment in infrastructure and process improvements. Major plant upgrades have been completed at the Nansemond Treatment Plant in Suffolk, the James River Treatment Plant in Newport News, the York River Treatment Plant in Seaford, and the Army Base Treatment Plant in Norfolk. Work on HRSD's largest capital project continues at the Virginia Initiative Plant (VIP) that will improve nutrient removal performance while expanding wet weather capacity. With the completion of the VIP project, HRSD is on track to meet the requirements of the Chesapeake Bay Total Maximum Daily Load.

Pursuing 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.

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 pump it into the ground to provide a sustainable source of groundwater, slow the rate of land subsidence due to over withdrawal of the groundwater, block salt water intrusion with a pressurized fresh water barrier and practically eliminate HRSD 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. HRSD is committed to implementing this initiative only if it can be accomplished within the financial framework laid out in the Financial Forecast as presented in this budget. To do that, many of the proposed capital improvements related to reducing system overflows will be deferred 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 eighty percent of the \$2.5 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, a voluntary initiative, 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 ten years, the annual investment in capital projects (debt payments and cash funded) has grown from less than 37 percent of HRSD's total revenue to more than 48 percent with the Fiscal Year 2019 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. According to the American Society of Civil Engineers, the unmet need for wastewater exceeds \$120 billion per year and the current state of wastewater infrastructure was graded at a D+ in 2017. The federal government contributed over 63 percent of the national investment in wastewater infrastructure in 1977. Last year the federal portion was 9 percent. 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 2019, 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 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. By not flushing unused medications down the sink or the toilet, our ratepayers can make a difference. Each flush counts.

As we reflect on 78 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". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

Ted Henifin, P.E.
General Manager

Principal Officials

June 30, 2018

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

Ann W. Templeman

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

Phillip L. Hubbard, PE
Special Assistant for
Compliance Assurance

Bruce W. Husselbee, PE
Director of Engineering

James J. Pletl, PhD
Director of Water Quality

Leila E. 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-2019)	836
Miles of Interceptor Systems	540 Miles
Wastewater Treated	153 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

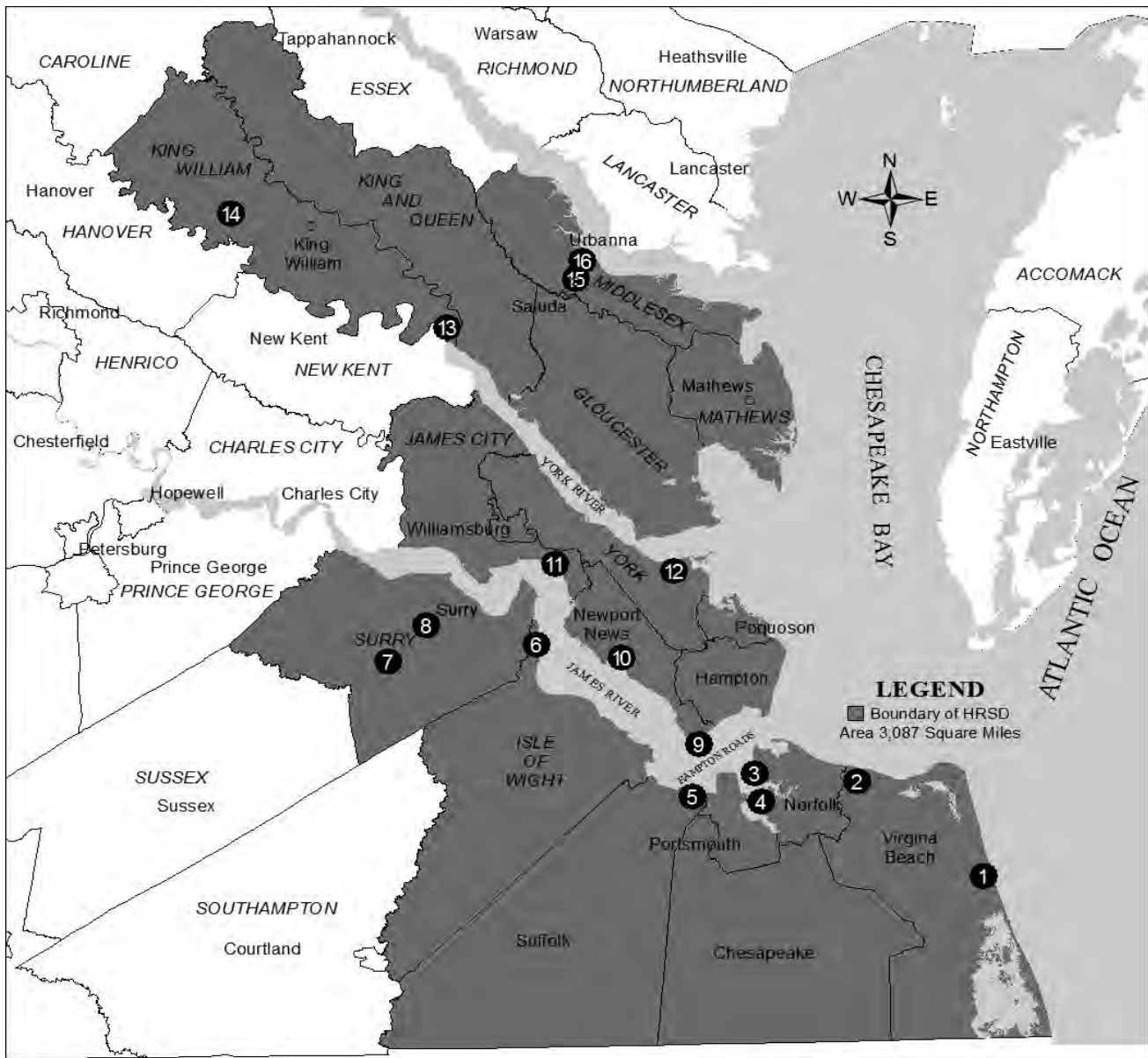
Operating Budget (FY-2019)	\$310,262,000
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HRSD Service Area

A Political Subdivision of the Commonwealth of Virginia

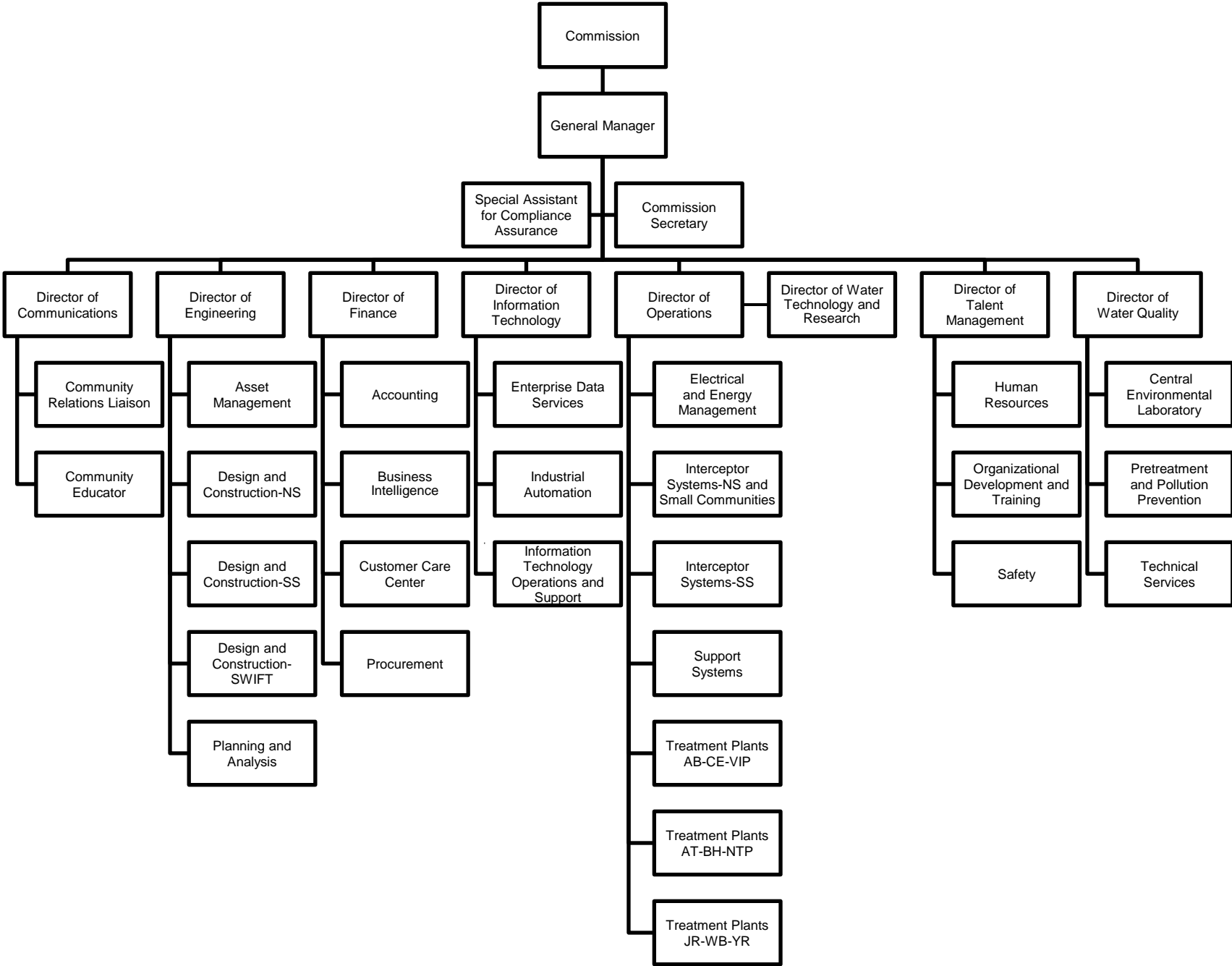
Facilities include the following:

- | | | |
|------------------------------------|---|--|
| 1. Atlantic, Virginia Beach | 9. Boat Harbor, Newport News | 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 |
| 2. Chesapeake-Elizabeth, Va. Beach | 10. James River, Newport News | |
| 3. Army Base, Norfolk | 11. Williamsburg, James City County | |
| 4. Virginia Initiative, Norfolk | 12. York River, York County | |
| 5. Nansemond, Suffolk | 13. West Point, King William County | |
| 6. Lawnes Point, Smithfield | 14. King William, King William County | |
| 7. County of Surry | 15. Central Middlesex, Middlesex County | |
| 8. Town of Surry | 16. Urbanna, Middlesex County | |



HRSD Organization Chart

July 1, 2018



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 2016. The major treatment plants received the following awards in recognition of their outstanding permit compliance status: Atlantic—Gold, Boat Harbor—Platinum (15 consecutive years), Chesapeake-Elizabeth—Silver, James River—Gold, Nansemond—Platinum (15 consecutive years), Virginia Initiative Plant—Platinum (21 consecutive years), Williamsburg—Platinum (22 consecutive years) and York River—Platinum (9 consecutive years). Three treatment plants in the Small Communities Division, Central Middlesex, King William and West Point, earned Silver Awards while Urbanna received a Gold Award.

HRSD's other honors received in 2017 included the Virginia Section American Water Works Association 2017 Public Information Award for Community Relations, large division for SWIFT Community Education and Outreach. In addition, HRSD earned National Environmental Achievement Awards (NEAA) in the following categories: Operations and Environmental Performance for *Molecular Tools for Environmental Management*, Research and Technology for *An International Collaboration: The InDENSE® Process*; Public Information & Education, Education Program for *Living the Legacy*, and Water Resources Utility of the Future for *Sustainable Water Initiative for Tomorrow (SWIFT)*.

Rate Schedules

WASTEWATER TREATMENT CHARGE SCHEDULE

<u>Service</u>		<u>FY-2019</u>	<u>FY-2018</u>
Flow (monthly basis)			
Per CCF *	\$	5.37	\$ 4.92
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	\$ 0.000104	\$ 0.000091
Total Suspended Solids (TSS)	261 mg/L	0.000592	0.000520
Total Phosphorus (TP)	6 mg/L	0.009535	0.011569
Total Kjeldahl Nitrogen (TKN)	47 mg/L	0.003595	0.003156
Surcharge, per 100 pounds			
BOD	282 mg/L	\$ 1.67	\$ 1.46
TSS	261 mg/L	9.49	8.32
TP	6 mg/L	152.74	185.32
TKN	47 mg/L	57.59	50.56
Septic, per gallon	\$	0.1697	\$ 0.1300
Residential flat rate (per 30-day period)	\$	34.91	\$ 31.98

* CCF = 100 Cubic Feet (approximately 748 gallons)

VOLUME BASED FACILITY CHARGE SCHEDULE

<u>Meter Size</u>		<u>FY-2019</u>	<u>FY-2018</u>
5/8 Inch	\$	1,895	\$ 1,895
3/4 Inch		4,830	4,830
1 Inch		8,170	8,170
1 ½ Inch		17,260	17,260
2 Inch		30,510	30,510
3 Inch		70,800	70,800
4 Inch		128,660	128,660
6 Inch		298,610	298,610
8 Inch		542,680	542,680
10 Inch		862,550	862,550
12 Inch		1,259,520	1,259,520
14 Inch		1,734,700	1,734,700
16 Inch		2,289,010	2,289,010

SMALL COMMUNITIES CHARGE SCHEDULE

Flow (monthly basis) Per 1,000 Gallons		<u>FY-2019</u>	<u>FY-2018</u>
King William	\$	13.25	\$ 12.57
Mathews		12.71	12.03
Surry		12.71	12.03
Urbanna		14.84	14.16
West Point		14.95	14.27
Residential flat rate (per 30-day period)			
King William	\$	53.00	\$ 50.28
Mathews		50.84	48.12
Surry		50.84	48.12
Urbanna		59.36	56.64
West Point		59.80	57.08

FEES AND SERVICE CHARGES

		<u>FY-2019</u>	<u>FY-2018</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
Delinquent		15	15
Account documentation fee		10	10
Deduction meter service		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 <http://www.hrsd.com/capitalimprovementprogram.shtml>.

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 is available at <http://www.hrsd.com/finance.shtml>.

HRSD's Rate Schedule is available at <http://www.hrsd.com/rateschedule.shtml>.

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.

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.

General Reserve as Percent of Operating Revenues: Unrestricted cash and investments at fiscal year-end that are not earmarked for another purpose divided by budgeted appropriations for Operations adjusted by certain adjustments required by GAAP. HRSD's Financial Policy requires that the General Reserve at the end of any fiscal year not be less than 270 – 365 (75-100 percent) days of the current years' projected operating and maintenance expenses less depreciation. This reserve is intended to help HRSD cover unanticipated expenses that cannot be paid from the current fiscal year's budgetary resources.

Liquidity Ratio: Unrestricted cash and investments divided by Maximum Annual Debt Service. This ratio measures the liquidity available to meet debt service requirements.

Maximum Annual Debt Service: Represents the greatest long-term debt service requirement for the then current or succeeding fiscal year.

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).

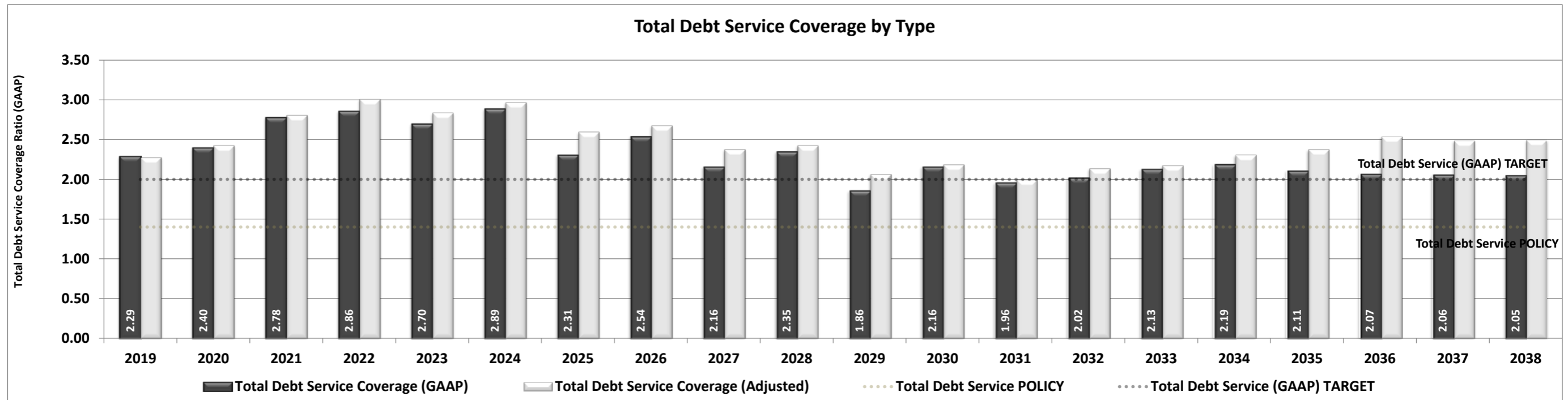
Trust Agreement: The formal agreement between bond holders, acting through a trustee, and HRSD.

Unrestricted Cash as Percentage of Operating Expenses: Unrestricted cash and investments at fiscal year-end that are not earmarked for another purpose divided by budgeted appropriations for Operations adjusted by certain adjustments required by GAAP. HRSD'S Financial Policy requires that the General Reserve at the end of any fiscal year not be less than 270 – 365 (75-100 percent) days of the current years' projected operating and maintenance expenses less depreciation. This reserve is intended to help HRSD cover unanticipated expenses that cannot be paid from the current fiscal year's budgetary resources.

Financial Forecast

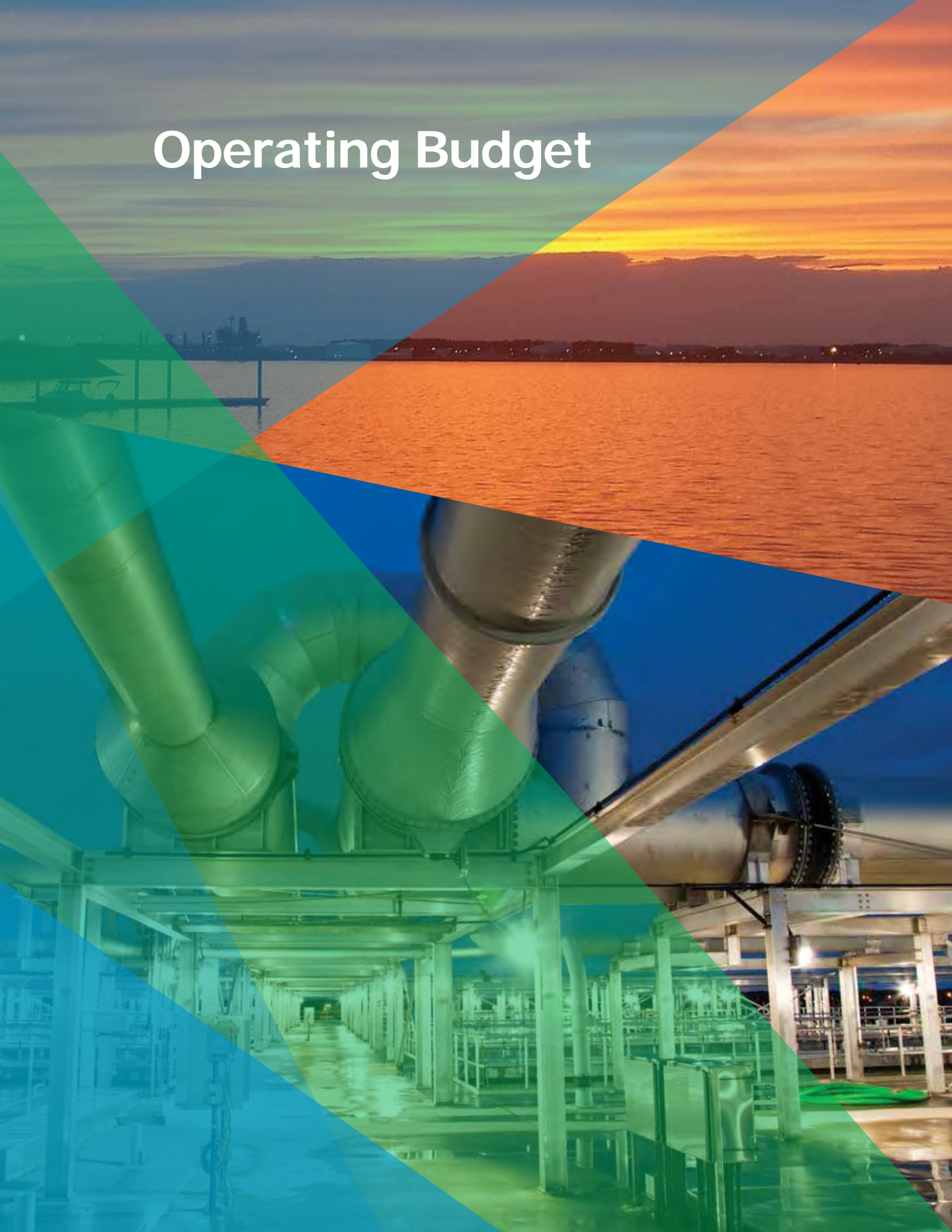


Financial Forecast (in thousands)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Operating Budget Forecast																				
<i>Projected Wastewater Rate Increase</i>	9.1%	9.1%	9.0%	9.1%	9.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	3.5%
Revenues																				
Operating Revenues	\$ 298,467	\$ 321,299	\$ 345,722	\$ 372,193	\$ 400,643	\$ 423,455	\$ 447,766	\$ 473,523	\$ 500,675	\$ 524,820	\$ 549,870	\$ 576,263	\$ 603,951	\$ 632,887	\$ 663,485	\$ 695,684	\$ 729,428	\$ 764,660	\$ 801,765	\$ 821,001
Non-operating Revenues	11,795	11,631	11,639	11,654	11,837	11,924	12,438	12,905	12,818	13,777	13,685	14,512	14,412	14,726	15,190	15,079	15,500	16,100	16,882	16,956
Total Revenues	\$ 310,262	\$ 332,930	\$ 357,361	\$ 383,847	\$ 412,480	\$ 435,380	\$ 460,204	\$ 486,428	\$ 513,493	\$ 538,597	\$ 563,555	\$ 590,775	\$ 618,364	\$ 647,613	\$ 678,675	\$ 710,763	\$ 744,929	\$ 780,760	\$ 818,648	\$ 837,956
Expenses																				
Operations	\$ 151,303	\$ 156,991	\$ 162,907	\$ 166,060	\$ 178,237	\$ 184,978	\$ 199,387	\$ 206,941	\$ 222,978	\$ 231,441	\$ 265,592	\$ 275,642	\$ 306,571	\$ 318,163	\$ 330,220	\$ 342,762	\$ 355,809	\$ 369,384	\$ 383,510	\$ 398,211
Major Repairs and Replacements	7,832	8,146	8,472	8,810	9,163	9,529	9,911	10,307	10,719	11,148	11,594	12,058	12,540	13,042	13,563	14,106	14,670	15,257	15,867	16,502
Capital Acquisitions	602	626	651	677	704	732	761	792	823	856	890	926	963	1,002	1,042	1,083	1,127	1,172	1,219	1,267
Total Operating Appropriations from Budget	159,737	165,763	172,029	175,547	188,104	195,239	210,058	218,039	234,520	243,446	278,076	288,626	320,074	332,207	344,825	357,951	371,606	385,813	400,596	415,980
Debt Service	62,811	67,458	65,191	66,748	77,572	78,617	95,847	97,256	117,148	118,292	138,016	134,704	148,110	143,824	151,583	149,373	154,600	152,150	166,646	167,358
Transfer to Capital Improvement Plan (PAYGO)	87,475	95,078	114,776	124,852	136,138	157,089	122,545	170,815	139,479	176,499	100,942	167,036	128,898	142,533	181,773	176,054	182,182	196,912	240,679	234,602
Transfer to General Reserve (Unrestricted Cash)	-	4,414	5,132	16,453	10,403	4,154	31,455	-	22,007	-	46,136	-	20,846	28,586	-	26,858	35,981	45,288	10,091	19,339
Transfer to Risk Management Reserve	239	218	232	247	263	280	299	318	339	361	384	409	436	464	494	526	560	597	636	677
Total Appropriations	\$ 310,262	\$ 332,930	\$ 357,361	\$ 383,847	\$ 412,480	\$ 435,380	\$ 460,204	\$ 486,428	\$ 513,493	\$ 538,597	\$ 563,555	\$ 590,775	\$ 618,364	\$ 647,613	\$ 678,675	\$ 710,763	\$ 744,929	\$ 780,760	\$ 818,648	\$ 837,956
Capital Improvement Budget Forecast																				
Beginning Capital Reserves	\$ 75,000	\$ 70,862	\$ 12,446	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sources of Funds																				
Debt funded (Revenue Bonds and Interim Financing)	-	-	77,572	84,148	163,862	141,011	177,455	129,185	160,521	113,501	159,058	92,964	91,102	57,467	18,227	48,946	102,818	138,088	109,321	115,398
Va Clean Water Revolving Loan Fund	38,028	37,296	5,206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRSD - Cash	87,475	95,078	114,776	124,852	136,138	157,089	122,545	170,815	139,479	176,499	100,942	167,036	128,898	142,533	181,773	176,054	182,182	196,912	240,679	234,602
Grants and Other Reimbursements	4,359	210	-	1,000	-	1,900	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Resources	204,862	203,446	210,000	210,000	300,000	300,000	300,000	300,000	300,000	290,000	260,000	260,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000
Uses of Funds - Capital Expenditures	134,000	191,000	210,000	210,000	300,000	300,000	300,000	300,000	300,000	290,000	260,000	260,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000
Ending Capital Resources	\$ 70,862	\$ 12,446	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reserves Balance Forecast																				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%	100%	100%	100%	101%	100%	101%	100%	103%	100%	100%	100%	100%	100%	100%	100%	100%
Unrestricted Cash	\$ 166,000	\$ 170,414	\$ 175,545	\$ 191,998	\$ 202,401	\$ 206,555	\$ 238,010	\$ 238,010	\$ 260,017	\$ 260,017	\$ 306,153	\$ 306,153	\$ 326,999	\$ 355,585	\$ 355,585	\$ 382,444	\$ 418,425	\$ 463,713	\$ 473,804	\$ 493,143
Risk Reserve	3,353	3,571	3,803	4,050	4,313	4,594	4,892	5,210	5,549	5,910	6,294	6,703	7,139	7,603	8,097	8,623	9,184	9,780	10,416	11,093
Total Reserves Balance	\$ 169,353	\$ 173,984	\$ 179,348	\$ 196,048	\$ 206,714	\$ 211,149	\$ 242,902	\$ 243,220	\$ 265,566	\$ 265,927	\$ 312,447	\$ 312,856	\$ 334,138	\$ 363,188	\$ 363,682	\$ 391,067	\$ 427,608	\$ 473,494	\$ 484,220	\$ 504,236
Financial Ratios Forecast																				
Senior Debt Service Coverage (GAAP)	4.29	4.84	5.69	6.28	6.26	6.79	8.30	9.53	12.33	13.65	12.65	14.39	28.27	30.58	34.51	35.40	35.79	35.16	39.04	39.57
Subordinate Debt Service Coverage (GAAP)	4.96	4.79	5.46	5.24	4.77	5.03	3.21	3.48	2.62	2.85	2.18	2.54	2.11	2.16	2.27	2.33	2.24	2.20	2.18	2.16
Total Debt Service Coverage (GAAP)	2.29	2.40	2.78	2.86	2.70	2.89	2.31	2.54	2.16	2.35	1.86	2.16	1.96	2.02	2.13	2.19	2.11	2.07	2.06	2.05
Total Debt Service Coverage (Adjusted)	2.28	2.43	2.81	3.01	2.84	2.97	2.60	2.68	2.38	2.43	2.07	2.19	2.00	2.14	2.18	2.31	2.38	2.54	2.49	2.50
CIP % Cash Funded (current year contributions)	65%	50%	55%	59%	45%	52%	41%	57%	46%	61%	39%	64%	59%	71%	91%	78%	64%	59%	69%	67%
Debt Service as a % of Total Revenues	20%	20%	18%	18%	19%	18%	21%	20%	23%	22%	24%	23%	24%	22%	22%	21%	21%	20%	20%	20%



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Operating Budget



Operating Budget

	FY-2019	Adopted FY-2018	Increase/ (Decrease)	Percent Change
Operating Revenues				
Wastewater Treatment Charges	\$ 297,062,000	\$ 273,087,693	\$ 23,974,307	9%
Miscellaneous	1,405,000	1,545,000	(140,000)	(9%)
Total Operating Revenue	298,467,000	274,632,693	23,834,307	9%
Non-Operating Revenues				
Wastewater Facility Charges	6,075,000	6,000,000	75,000	1%
Investment Earnings	2,500,000	1,800,000	700,000	39%
Build America Bond Subsidy	2,400,000	2,400,000	-	0%
Other	820,000	720,000	100,000	14%
Total Non-Operating Revenues	11,795,000	10,920,000	875,000	8%
Total Revenues	\$ 310,262,000	\$ 285,552,693	\$ 24,709,307	9%
Operating Appropriations				
General Management	\$ 624,583	\$ 680,710	\$ (56,127)	(8%)
Communications	423,764	470,615	(46,851)	(10%)
Finance	13,884,533	13,593,503	291,030	2%
Information Technology	15,089,692	16,229,457	(1,139,765)	(7%)
Talent Management	2,293,202	2,280,395	12,807	1%
Operations	98,842,274	94,102,651	4,739,623	5%
Engineering	7,903,702	5,731,535	2,172,167	38%
Water Quality	14,913,423	14,205,703	707,720	5%
General Expenses	5,761,766	3,928,399	1,833,367	47%
Total Operating Appropriations	159,736,939	151,222,965	8,513,974	6%
Appropriations for Debt Service and Transfers				
Debt Service	62,811,000	60,849,120	1,961,880	3%
Transfer to Capital Improvement Program (CIP)	87,475,061	58,802,000	28,673,061	49%
Transfer to General Reserve	-	14,418,608	(14,418,608)	(100%)
Transfer to Risk Management Reserve	239,000	260,000	(21,000)	(8%)
Total Appropriations for Debt Service and Transfers	150,525,061	134,329,728	16,195,333	12%
Total Appropriations	\$ 310,262,000	\$ 285,552,693	\$ 24,709,307	9%

Operating Budget Summary

	General			Information	Talent			Water	General
	Management	Communications	Finance	Technology	Management	Operations	Engineering	Quality	Expenses
Personal Services	\$ 427,748	\$ 247,062	\$ 5,965,582	\$ 4,427,273	\$ 1,366,058	\$ 33,328,889	\$ 3,786,920	\$ 7,582,353	\$ (1,800,000)
Fringe Benefits	122,835	101,402	2,526,249	1,607,569	544,900	14,828,080	1,431,145	3,018,989	115,000
Materials & Supplies	10,000	45,000	86,610	851,000	68,100	4,631,734	28,201	1,439,600	30,000
Transportation	14,000	13,800	14,250	16,200	27,600	1,305,080	14,905	38,906	-
Utilities	-	-	271,430	1,224,000	-	10,247,264	-	2,700	499,744
Chemical Purchases	-	-	-	-	-	10,703,626	-	-	-
Contractual Services	20,000	-	4,781,891	6,541,000	53,200	14,737,567	2,484,557	2,117,200	6,628,022
Major Repairs	-	-	-	192,000	-	7,540,425	-	100,000	-
Capital Assets	-	-	-	-	-	546,500	-	55,000	-
Miscellaneous Expense	30,000	16,500	238,521	230,650	233,344	973,109	157,974	558,675	289,000
Operating Appropriations	\$ 624,583	\$ 423,764	\$ 13,884,533	\$ 15,089,692	\$ 2,293,202	\$ 98,842,274	\$ 7,903,702	\$ 14,913,423	\$ 5,761,766

Full-time Positions:

Current	3	2	100	51	15	510	41	110
Changes	0	1	1	0	1	0	2	(1)
Budgeted	3	3	101	51	16	510	43	109

Operating Budget Summary

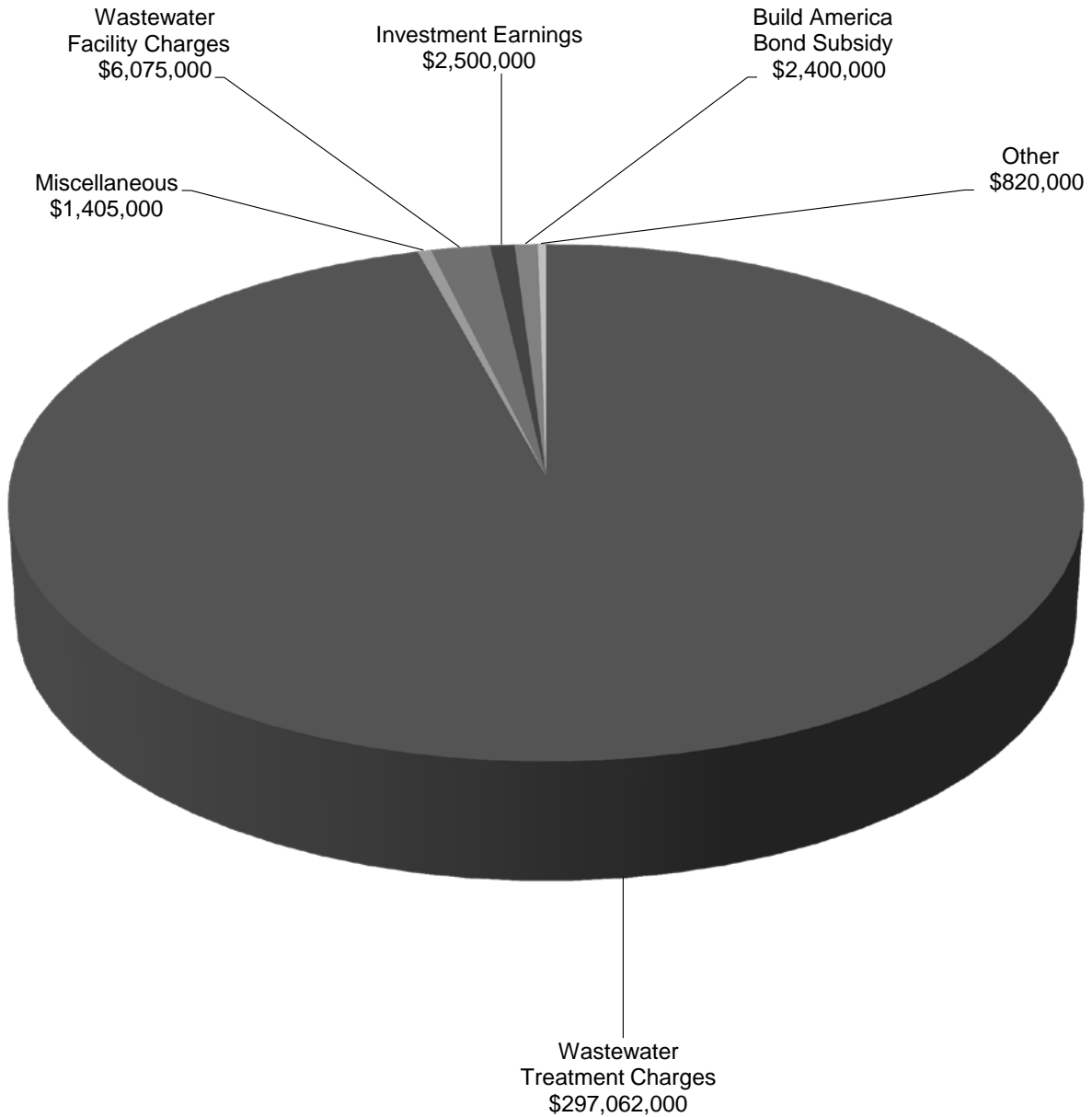
	FY-2019	Percent of Budget	FY-2018 Budget	Increase/ Decrease	Percent Inc/(Dec)
Personal Services	\$ 55,331,885	17.8%	\$ 53,773,327	\$ 1,558,558	3%
Fringe Benefits	24,296,169	7.8%	24,691,453	(395,284)	(2%)
Materials & Supplies	7,190,245	2.3%	7,088,092	102,153	1%
Transportation	1,444,741	0.5%	1,419,385	25,356	2%
Utilities	12,245,138	3.9%	11,947,481	297,657	2%
Chemical Purchases	10,703,626	3.4%	10,324,400	379,226	4%
Contractual Services	37,363,437	12.0%	30,994,210	6,369,227	21%
Major Repairs	7,832,425	2.5%	7,831,219	1,206	0%
Capital Assets	601,500	0.2%	814,100	(212,600)	(26%)
Miscellaneous Expense	2,727,773	0.9%	2,339,298	388,475	17%
Operating Appropriations	<u>159,736,939</u>	51.5%	<u>151,222,965</u>	8,513,974	6%
Debt Service Costs	62,811,000	20.2%	60,849,120	1,961,880	3%
Transfer to Capital Improvement Program (CIP)	87,475,061	28.2%	58,802,000	28,673,061	49%
Transfer to General Reserve	-	0.0%	14,418,608	(14,418,608)	(100%)
Transfer to Risk Management	239,000	0.1%	260,000	(21,000)	(8%)
Appropriations for Debt Service and Transfers	<u>150,525,061</u>	48.5%	<u>134,329,728</u>	16,195,333	12%
	<u>\$ 310,262,000</u>	100.0%	<u>\$ 285,552,693</u>	<u>\$ 24,709,307</u>	9%

Full-time Positions:

Current	832
Changes	4
Budgeted	836

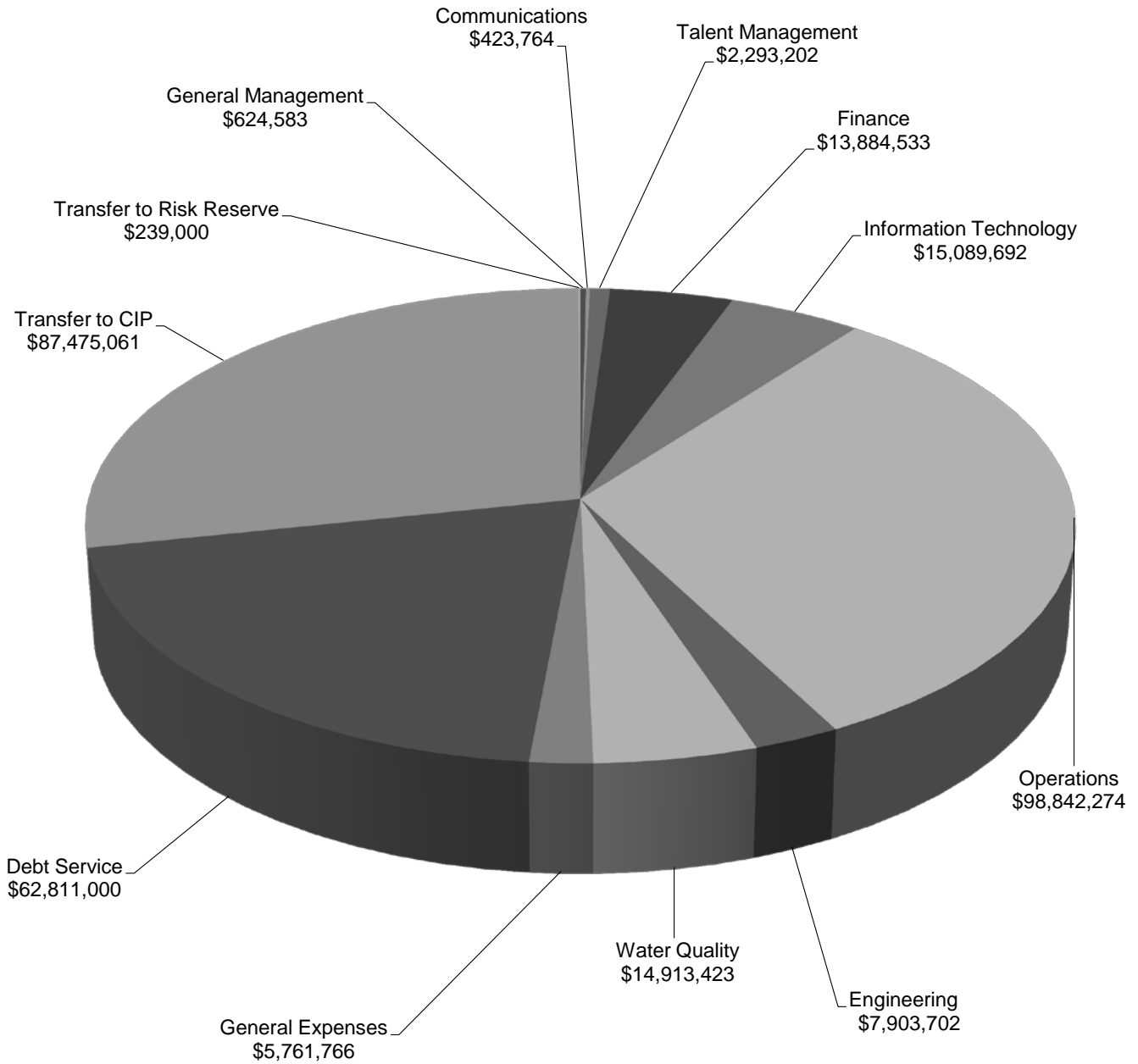
Operating Budget Charts

Revenues and Transfers In \$310,262,000



Operating Budget Charts

Expenses and Transfers Out \$310,262,000



General Management

The General Manager supervises the department directors, Commission Secretary and the Special Assistant for Compliance Assurance. The Commission Secretary provides administrative support to the General Manager as well as the HRSD Commission. The Special Assistant for Compliance Assurance works closely with representatives of local jurisdictions, the Department of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA) to ensure appropriate and timely adherence to the requirements of regulatory wet weather enforcement actions.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 427,748	\$ 482,625	\$ (54,877)	(11%)
Fringe Benefits	122,835	135,085	(12,250)	(9%)
Material & Supplies	10,000	10,000	-	0%
Transportation	14,000	2,000	12,000	600%
Contractual Services	20,000	20,000	-	0%
Miscellaneous	30,000	31,000	(1,000)	(3%)
Total	\$ 624,583	\$ 680,710	\$ (56,127)	(8%)

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
General Manager		1		1		1
Special Assistant for Compliance Assurance	12	1		1		1
Commission Secretary	6	1		1		1
Total		3	0	3	0	3

Communications

The Communications Department supports HRSD's mission through public outreach, community engagement and educational programs and partnerships. The department also manages internal communications, media relations, social media and branding for both HRSD and SWIFT.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 247,062	\$ 278,347	\$ (31,285)	(11%)
Fringe Benefits	101,402	87,268	14,134	16%
Material & Supplies	45,000	45,000	-	0%
Transportation	13,800	3,000	10,800	360%
Contractual Services	-	35,000	(35,000)	(100%)
Miscellaneous	16,500	22,000	(5,500)	(25%)
Total	\$ 423,764	\$ 470,615	\$ (46,851)	(10%)

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Communications	12	1		1		1
Community Relations Liason	6	1		1		1
Community Educator	6	0		0	1	1
Total		2	0	2	1	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 Procurement Division is responsible for purchasing, renting, leasing or otherwise acquiring goods and services, managing vendor relationships and disposing of surplus property. The Customer Care Center Division handles billing, collections, maintenance of customer accounts and liaison with HRSD's customers.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 5,965,582	\$ 5,819,422	\$ 146,160	3%
Fringe Benefits	2,526,249	2,721,921	(195,672)	(7%)
Material & Supplies	86,610	73,140	13,470	18%
Transportation	14,250	14,000	250	2%
Utilities	271,430	237,800	33,630	14%
Contractual Services	4,781,891	4,464,850	317,041	7%
Miscellaneous	238,521	262,370	(23,849)	(9%)
Total	\$ 13,884,533	\$ 13,593,503	\$ 291,030	2%

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
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	1	1	2		2
Customer Care Manager	9	3	1	4		4
Strategic Sourcing Manager	9	1		1	(1)	0
Business Analyst	8	3		3		3
Customer Care Operations Manager	8	1	(1)	0		0
Financial Analyst	8	3	(1)	2		2
Procurement Analyst	8	1		1	1	2
Customer Care Supervisor	7	4		4		4
Accounts Payable Supervisor	6	1		1		1
Accounts Receivable Specialist	6	2		2		2
Payroll Specialist	6	1		1		1
ProCard & Contract Administrator	6	0	1	1		1
Procurement Specialist	6	4		4		4
Accounting Coordinator	4	1		1		1
Accounts Receivable Technician	4	3		3		3
Customer Care Administrative Coordinator	4	1		1		1
Customer Care Coordinator	4	4		4		4
Procurement Coordinator	4	1	(1)	0		0
Account Investigator	3	14	(1)	13		13
Accounts Payable Associate	3	2		2	1	3
Customer Care Account Representative	3	41		41		41
Procurement Administrative Assistant	3	3		3		3
Mail Processing Clerk	2	2		2		2
Total		101	(1)	100	1	101

Information Technology Department

The Information Technology (IT) Department is responsible for HRSD's computer systems, communication systems, network systems, cyber security and data management functions. The Information Technology Operations Division assists HRSD departments in achieving their missions by ensuring all required hardware, storage and network devices are accessible and available to support all business and operational requirements. The Enterprise Data Services Division is responsible for data management, storage and all software supporting HRSD operations. Industrial Controls Division personnel also are responsible for programming industrial controls and automation at HRSD operations facilities.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 4,427,273	\$ 4,389,838	\$ 37,435	1%
Fringe Benefits	1,607,569	1,679,289	(71,720)	(4%)
Material & Supplies	851,000	902,250	(51,250)	(6%)
Transportation	16,200	87,251	(71,051)	(81%)
Utilities	1,224,000	1,524,000	(300,000)	(20%)
Contractual Services	6,541,000	5,626,354	914,646	16%
Major Repairs	192,000	1,750,000	(1,558,000)	(89%)
Miscellaneous	230,650	270,475	(39,825)	(15%)
Total	\$ 15,089,692	\$ 16,229,457	\$ (1,139,765)	(7%)

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Information Technology	12	1		1		1
Chief of Enterprise Data Services	11	1		1		1
Chief of Industrial Controls	11	1		1	(1)	0
Chief of IT Operations and Support	11	1		1		1
Database Administrator	9	3		3		3
Enterprise Architect	9	3		3		3
Industrial Automation Manager	9	1		1		1
Oracle Developer	9	2		2		2
Programming Development Manager	9	1		1		1
Senior Systems Engineer	9	6		6		6
Systems Analysis Manager	9	1		1		1
Industrial Automation Programmer	8	5		5		5
Senior Programmer Analyst	8	6		6		6
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	5		5	1	6
Systems Analyst	6	0	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		50	1	51	0	51

Talent Management

The Talent Management Department attracts new talent, develops talent and retains existing talent. The department maintains employee records, handles employee recruiting and orientation, administers employee benefits, oversees training, the apprenticeship program and ensures employee safety.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 1,366,058	\$ 1,356,029	\$ 10,029	1%
Fringe Benefits	544,900	541,996	2,904	1%
Material & Supplies	68,100	65,500	2,600	4%
Transportation	27,600	27,600	-	0%
Contractual Services	53,200	53,200	-	0%
Miscellaneous	233,344	236,070	(2,726)	(1%)
Total	\$ 2,293,202	\$ 2,280,395	\$ 12,807	1%

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Talent Management	12	1		1		1
Human Resources Manager	9	1		1		1
Organizational Development and Training Manager	9	1		1		1
Safety Manager	9	1		1		1
Human Resources Business Analyst	8	1		1		1
Industrial Hygienist	8	2		2		2
Training Superintendent	8	1		1		1
Human Resources Specialist	7	3		3		3
Training Specialist	6	0		0	1	1
Human Resources Coordinator	4	2		2		2
Organizational Development and Training Coordinator	4	1		1		1
Safety Coordinator	4	1		1		1
Total		15	0	15	1	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 developing 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, and the Small Communities Division – Surry, which includes the operation of two treatment plants and the associated sewer collection systems in the County of Surry. The Electrical and Energy Management Division supports the electrical and instrumentation maintenance and construction needs of all HRSD facilities. The Interceptor Divisions operate and maintain over 500 miles of interceptor pipelines and over 100 pump stations using Supervisory Control and Data Acquisition (SCADA) to monitor wastewater conveyed to each treatment plant. The Support Systems Division is responsible of the maintenance of the HRSD fleet, all buildings and operates two carpentry shops and a full service machine shop.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 33,328,889	\$ 32,428,555	\$ 900,334	3%
Fringe Benefits	14,828,080	15,407,324	(579,244)	(4%)
Material & Supplies	4,631,734	4,622,095	9,639	0%
Transportation	1,305,080	1,218,155	86,925	7%
Utilities	10,247,264	9,738,681	508,583	5%
Chemical Purchases	10,703,626	10,324,400	379,226	4%
Contractual Services	14,737,567	13,176,502	1,561,065	12%
Major Repairs	7,540,425	5,893,219	1,647,206	28%
Capital Assets	546,500	771,100	(224,600)	(29%)
Miscellaneous	973,109	772,620	200,489	26%
Total	\$ 98,842,274	\$ 94,352,651	\$ 4,489,623	5%

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
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		1
Chief of Interceptor Operations	11	1		1		1
Chief of NS Interceptors & SCD	11	1		1		1
Chief of Process Engineering & Research	11	0	1	1		1
Chief of Treatment	11	0	3	3		3
Senior Plant Manager	11	3	(3)	0		0
Treatment Process Engineer-2	10	0	3	3		3
Electrical Manager	9	2		2		2
Instrumentation Manager	9	1		1		1
Interceptor Engineer	9	2		2		2
Plant Manager	9	6	(5)	1		1
Process Engineering & Research Manager	9	1	(1)	0		0
Project Manager	9	0	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	0		0	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
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 Systems Operator	7	2		2		2
Coating, Concrete and Roofing Chief Inspector	7	1		1		1
Electrical & Instrumentation Process Specialist	7	1		1		1
Electrical & Instrumentation Specialist	7	58	1	59		59
Lead Operator	7	31	1	32		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

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Interceptor Systems Supervisor	6	2		2		2
Machinist Foreman	6	1		1		1
Maintenance Planner	6	0	3	3		3
Maintenance Specialist	6	3	(3)	0		0
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
Equipment Technician	5	3		3		3
Facility Maintenance Technician	5	2		2		2
Interceptor Technician	5	29	1	30		30
Machinist	5	3		3	(1)	2
Maintenance Operator	5	61	4	65		65
Plant Operator	5	73	1	74		74
Heavy Equipment Operator I	4	21	(2)	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
Utility Administrative Assistant	3	1		1		1
SCADA Administrative Assistant	3	1		1		1
Interceptor Assistant	2	27	1	28		28
Maintenance Operations Assistant	2	52	1	53	(1)	52
Plant Clerk	2	9		9		9
Facility Assistant	1	11	(9)	2		2
Custodian	1	4		4		4
Subtotal - Operations		489	(1)	488	(1)	487
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 Operator	5	11		11		11
Administrative Coordinator	4	1		1		1
Heavy Equipment Operator I	4	1		1		1
Maintenance Operations Assistant	2	2	1	3		3
SCD Lab Assistant	2	0		0	1	1
Facility Assistant	1	1	(1)	0		0
Subtotal - Small Communities		22	0	22	1	23
Total		511	(1)	510	0	510

Engineering Department

The Engineering Department is responsible for HRSD 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 maintenance, replacement and capital planning decisions. The Design and Construction Divisions work with consultants and contractors to ensure that work is performed in a manner consistent with our quality standards. The Planning and Analysis Division manages the Capital Improvement Program (CIP), Hydraulic Modeling, Geographic Information System (GIS), Data Analysis, Computer Aided Design (CAD) 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 HRSD's needs.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 3,786,920	\$ 3,464,514	\$ 322,406	9%
Fringe Benefits	1,431,145	1,351,675	79,470	6%
Material & Supplies	28,201	29,778	(1,577)	(5%)
Transportation	14,905	16,723	(1,818)	(11%)
Contractual Services	2,484,557	703,904	1,780,653	253%
Major Repairs	-	9,000	(9,000)	(100%)
Miscellaneous	157,974	155,941	2,033	1%
Total	\$ 7,903,702	\$ 5,731,535	\$ 2,172,167	38%

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
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	0	1	1		1
Chief of Planning & Analysis	11	1		1		1
Capital Program Manager	9	1		1		1
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	1	10	(1)	9
Real Estate Manager	8	1		1		1
CMMS Analyst	7	1		1		1
Data Analyst	7	3	1	4		4
Engineering Specialist	7	0		0	2	2
GIS Analyst	7	2		2		2
Contract Specialist	6	2		2	1	3
GIS CAD Technician	5	3		3	(1)	2
CIP Coordinator	4	1		1		1
Data Analysis Technician	4	1	(1)	0		0
Administrative Coordinator	4	1		1		1
CMMS Administrative Assistant	3	1		1		1
Engineering Clerk	2	0		0	1	1
Total		39	2	41	2	43

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 (Lab) 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 permit 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 locations, and all reporting required by HRSD permits.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 7,582,353	\$ 7,304,005	\$ 278,348	4%
Fringe Benefits	3,018,989	3,161,895	(142,906)	(5%)
Material & Supplies	1,439,600	1,310,329	129,271	10%
Transportation	38,906	50,656	(11,750)	(23%)
Utilities	2,700	-	2,700	0%
Contractual Services	2,117,200	1,649,095	468,105	28%
Major Repairs	100,000	179,000	(79,000)	(44%)
Capital Assets	55,000	43,000	12,000	28%
Miscellaneous	558,675	507,723	50,952	10%
Total	\$ 14,913,423	\$ 14,205,703	\$ 707,720	5%

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
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
Recycling Manager	9	1		1	(1)	0
Lab EDMS Administrator	8	1		1		1
Lab Operations Manager	8	1		1		1
Lab Supervising Chemist	8	11		11		11
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	13	1	14		14
P3 PIMS Analyst	6	1		1		1
P3 Specialist	6	3		3		3
TSD Specialist	6	10	(1)	9		9
WQ Specialist	6	0	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		7
Lab Assistant	2	7		7		7
TSD Assistant	2	1		1		1
Total		109	1	110	(1)	109

General Expenses, Debt Service and Transfers

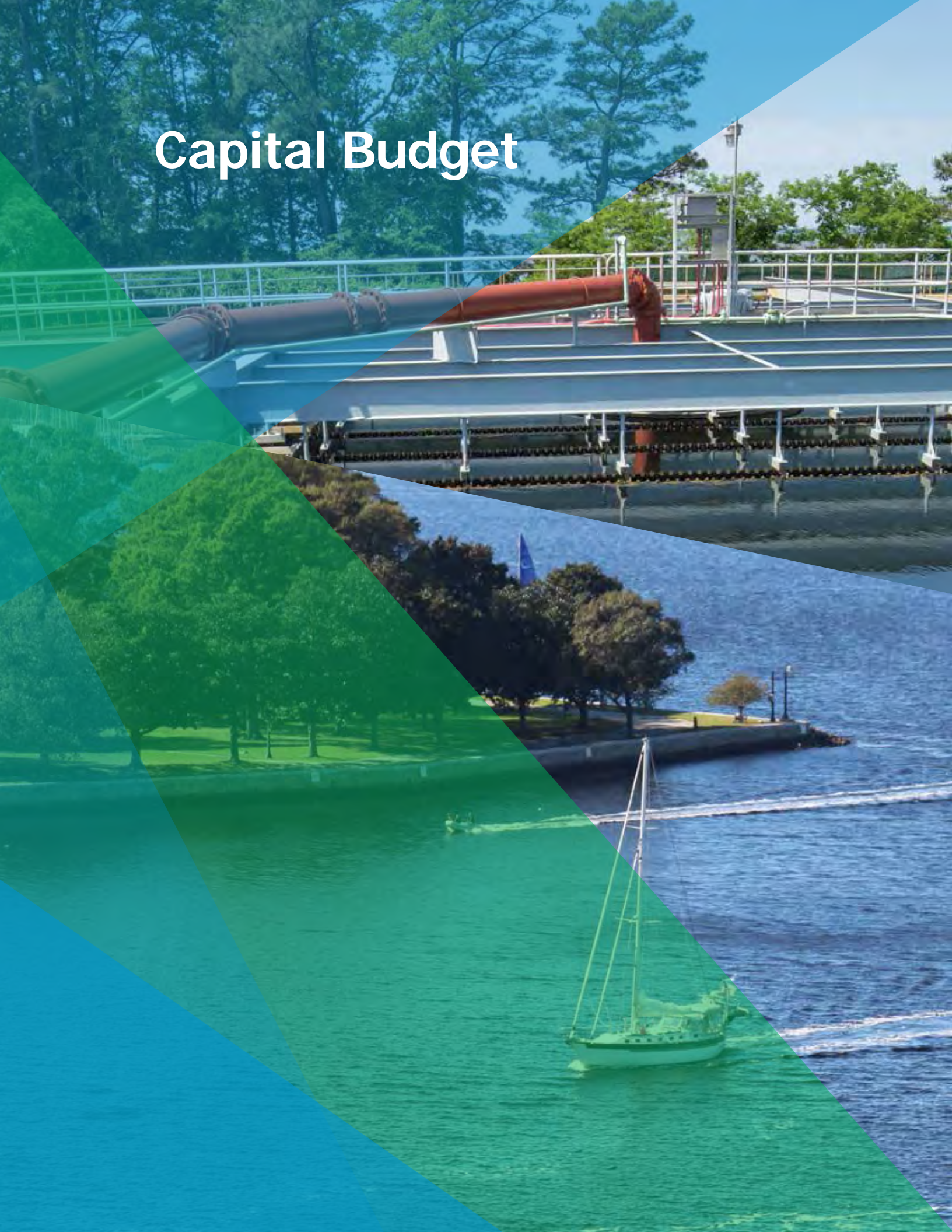
General Expenses includes operating expenditures not assigned to any specific HRSD Department. Debt Service includes payments on bonds issued by HRSD and through the Virginia Clean Water Revolving Loan Fund (VCWRLF). The costs incurred to issue bonds are included in General Expenses - Miscellaneous.

Expenditure Budget

	FY-2019 Budget	FY-2018 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ (1,800,000)	\$ (1,750,006)	\$ (49,994)	3%
Fringe Benefits	115,000	(395,000)	510,000	(129%)
Material & Supplies	30,000	30,000	-	0%
Utilities	499,744	447,000	52,744	12%
Contractual Services	6,628,022	5,515,305	1,112,717	20%
Miscellaneous	289,000	981,100	(692,100)	(71%)
Total General Expenses	\$ 5,761,766	\$ 4,828,399	\$ 933,367	19%
Publically Sold Bonds - Principal	16,740,000	15,845,000	895,000	6%
Publically Sold Bonds - Interest	32,110,000	30,122,320	1,987,680	7%
VCWRLF Bonds	13,961,000	13,981,800	(20,800)	(0%)
Subtotal - Debt Service	62,811,000	59,949,120	2,861,880	5%
Transfer to CIP	87,475,061	58,802,000	28,673,061	49%
Transfer to General Reserve	-	14,418,608	(14,418,608)	0%
Transfer to Risk Management	239,000	260,000	(21,000)	(8%)
Subtotal - Transfers	87,714,061	73,480,608	14,233,453	19%
Total Debt Service and Transfers	\$ 150,525,061	\$ 133,429,728	\$ 17,095,333	13%

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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-2019				
	to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
Beginning Capital Reserves	\$ 158,308	\$ 75,000	\$ 70,862	\$ 12,446	\$ -
Bonds	1,047,255			77,572	84,148
VCWRLF	80,530	38,028	37,296	5,206	
Cash	1,324,746	87,475	95,078	114,776	124,852
Grants and Other Reimbursements	7,469	4,359	210		1,000
Transfer from Debt Service Reserve Fund	-				
Total Capital Resources	2,618,308	204,862	203,446	210,000	210,000
Capital Expenditures	2,535,000	134,000	191,000	210,000	210,000
Ending Capital Reserves	\$ 83,308	\$ 70,862	\$ 12,446	\$ -	\$ -

Capital Expenditures (in thousands)	Total FY-2019				
	to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
Administration	\$ 13,592	\$ 7,102	\$ 5,210	\$ 1,280	\$ -
Army Base	38,253	1,341	1,825	6,085	14,151
Atlantic	75,492	25,570	24,009	9,606	3,388
Boat Harbor	204,998	14,291	21,487	21,669	14,152
Chesapeake-Elizabeth	115,593	13,338	34,283	44,941	13,501
James River	30,247	3,350	7,098	9,015	9,947
Middle Peninsula	23,546	8,224	7,391	699	1,005
Nansemond	41,822	10,415	21,991	5,937	577
Surry	16,500	4,131	8,307	4,061	-
Virginia Initiative Plant	64,673	9,326	6,328	15,831	15,831
Williamsburg	17,318	2,204	3,618	7,332	4,163
York River	15,603	1,318	386	1,691	1,614
General	1,154,062	33,194	40,225	49,945	76,348
Future Improvements	614,318	196	5,096	21,908	45,323
Subtotal	2,426,017	134,000	187,255	200,000	200,000
Contingency	108,983	-	3,745	10,000	10,000
Total Expenditures	\$ 2,535,000	\$ 134,000	\$ 191,000	\$ 210,000	\$ 210,000

Capital Budget

CIP Budget Forecast (in thousands)

	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Beginning Capital Reserves	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bonds	163,862	141,011	177,455	129,185	160,521	113,501
VCWRLF						
Cash	136,138	157,089	122,545	170,815	139,479	176,499
Grants and Other Reimbursements		1,900				
Transfer from Debt Service Reserve Fund						
Total Capital Resources	300,000	300,000	300,000	300,000	300,000	290,000
Capital Expenditures	300,000	300,000	300,000	300,000	300,000	290,000
Ending Capital Reserves	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Capital Expenditures (in thousands)

	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Administration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Army Base	2,271	413	4,167	8,000	-	-
Atlantic	7,088	3,637	2,193	-	-	-
Boat Harbor	17,612	17,222	24,642	24,642	24,642	24,642
Chesapeake-Elizabeth	3,948	2,856	1,722	1,004	-	-
James River	838	-	-	-	-	-
Middle Peninsula	900	2,664	2,664	-	-	-
Nansemond	507	2,394	-	-	-	-
Surry	-	-	-	-	-	-
Virginia Initiative Plant	9,631	4,872	2,855	-	-	-
Williamsburg	-	-	-	-	-	-
York River	3,897	1,850	1,555	2,325	969	-
General	157,847	132,294	139,059	187,184	164,182	173,784
Future Improvements	81,175	117,512	106,860	62,560	95,922	77,765
Subtotal	285,714	285,714	285,714	285,714	285,714	276,190
Contingency	14,286	14,286	14,286	14,286	14,286	13,810
Total Expenditures	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 290,000

FY-2019 to FY-2028 Cash Flow Projections (in thousands)

CIP No	Project Name	Total				
		FY-2019 to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
Administration						
AD010400	Environmental Data Management System	\$ 328	\$ 328	\$ -	\$ -	\$ -
AD012100	Asset Management Implementation	\$ 1,338	\$ 669	\$ 669	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ 7,313	\$ 4,388	\$ 2,925	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ 2,212	\$ 117	\$ 815	\$ 1,280	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ 2,400	\$ 1,600	\$ 800	\$ -	\$ -
	Subtotal	\$ 13,592	\$ 7,102	\$ 5,210	\$ 1,280	\$ -
Army Base						
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 22,339	\$ -	\$ 1,607	\$ 4,832	\$ 13,629
AB010100	Army Base Treatment Plant Improvements - Phase III	\$ 1,244	\$ 1,244	\$ -	\$ -	\$ -
AB010500	Section W Force Main Replacement	\$ 2,090	\$ 97	\$ 218	\$ 1,253	\$ 522
AB011700	Army Base Treatment Plant Solids Dewatering and Loading Facility	\$ 12,580	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 38,253	\$ 1,341	\$ 1,825	\$ 6,085	\$ 14,151
Atlantic						
AT011510	Shipp's Corner Interim Pressure Reducing Station	\$ 283	\$ 283	\$ -	\$ -	\$ -
AT011520	Shipp's Corner Pressure Reducing Station Modifications	\$ 1,416	\$ -	\$ 9	\$ 104	\$ 652
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 4,315	\$ -	\$ -	\$ -	\$ 61
AT012000	Atlantic Treatment Plant Administration Building Renovation and Expansion	\$ 268	\$ 268	\$ -	\$ -	\$ -
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ 4,153	\$ 1,866	\$ 1,847	\$ 440	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ 3,786	\$ 33	\$ -	\$ 555	\$ 125
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ 2,032	\$ 72	\$ 83	\$ 864	\$ 1,013
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 5,301	\$ -	\$ -	\$ 324	\$ 288
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 251	\$ -	\$ -	\$ -	\$ -
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ 44,508	\$ 20,000	\$ 19,800	\$ 4,708	\$ -
AT013600	Atlantic Treatment Plant Motor Control Center Replacements	\$ 335	\$ 335	\$ -	\$ -	\$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ 250	\$ 107	\$ 107	\$ 36	\$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	\$ 1,666	\$ 1,486	\$ 180	\$ -	\$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	\$ 928	\$ 403	\$ 450	\$ 75	\$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	\$ 6,000	\$ 717	\$ 1,533	\$ 2,500	\$ 1,250
	Subtotal	\$ 75,492	\$ 25,570	\$ 24,009	\$ 9,606	\$ 3,388
Boat Harbor						
BH011600	Bridge Street Pump Station Replacement	\$ 15	\$ 15	\$ -	\$ -	\$ -
BH012700	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	\$ 2	\$ 2	\$ -	\$ -	\$ -
BH013000	Willard Avenue Pump Station Upgrades	\$ 5,320	\$ 502	\$ 2,751	\$ 2,067	\$ -
BH013400	Bridge Street Siphon and Vent Relocation Replacement	\$ 13	\$ 13	\$ -	\$ -	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3,496	\$ -	\$ -	\$ 225	\$ 814
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 11,173	\$ 745	\$ 2,572	\$ 4,277	\$ 3,572
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 2,014	\$ -	\$ -	\$ 16	\$ 585
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	\$ 9,847	\$ 671	\$ 1,468	\$ 4,865	\$ 2,843
BH014700	Boat Harbor Outlet Sewer Improvements	\$ 5,517	\$ 400	\$ 4,134	\$ 983	\$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	\$ 2,416	\$ 1,358	\$ 1,058	\$ -	\$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ 3,689	\$ -	\$ 176	\$ 179	\$ 1,141
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ 5,798	\$ 3,540	\$ 2,258	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ 2,784	\$ -	\$ 105	\$ 177	\$ 755
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ 8,482	\$ 4,707	\$ 3,775	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ 1,832	\$ -	\$ 80	\$ 1,092	\$ 661
BH015600	Hampton Trunk A and B Replacement - Jefferson Ave. to Buxton	\$ 9,971	\$ 578	\$ 1,348	\$ 6,026	\$ 2,019
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 144,950	\$ 1,762	\$ 1,762	\$ 1,762	\$ 1,762
	Subtotal	\$ 204,998	\$ 14,291	\$ 21,487	\$ 21,669	\$ 14,152
Note:	Fats, Oils, and Grease (FOG) Virginia Department of Transportation (VDOT) Force Main (FM)					

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Administration							
AD010400	Environmental Data Management System	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012100	Asset Management Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012200	Water Quality Services Building Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012300	Central Environmental Laboratory Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD012400	Capital Program Management Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Army Base							
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 2,271	\$ -	\$ -	\$ -	\$ -	\$ -
AB010100	Army Base Treatment Plant Improvements - Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AB010500	Section W Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AB011700	Army Base Treatment Plant Solids Dewatering and Loading Facility	\$ -	\$ 413	\$ 4,167	\$ 8,000	\$ -	\$ -
	Subtotal	\$ 2,271	\$ 413	\$ 4,167	\$ 8,000	\$ -	\$ -
Atlantic							
AT011510	Shipp's Corner Interim Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT011520	Shipp's Corner Pressure Reducing Station Modifications	\$ 652	\$ -	\$ -	\$ -	\$ -	\$ -
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 221	\$ 2,036	\$ 1,997	\$ -	\$ -	\$ -
AT012000	Atlantic Treatment Plant Administration Building Renovation and Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT012910	Atlantic Treatment Plant FOG Receiving Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT012920	Atlantic Treatment Plant Access Road Extension	\$ 3,073	\$ -	\$ -	\$ -	\$ -	\$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	\$ 3,126	\$ 1,563	\$ -	\$ -	\$ -	\$ -
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 16	\$ 38	\$ 196	\$ -	\$ -	\$ -
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AT013600	Atlantic Treatment Plant Motor Control Center Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 7,088	\$ 3,637	\$ 2,193	\$ -	\$ -	\$ -
Boat Harbor							
BH011600	Bridge Street Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH012700	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH013000	Willard Avenue Pump Station Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH013400	Bridge Street Siphon and Vent Relocation Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 2,454	\$ 3	\$ -	\$ -	\$ -	\$ -
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 8	\$ -	\$ -	\$ -	\$ -	\$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 1,414	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ 2,193	\$ -	\$ -	\$ -	\$ -	\$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015100	Bloxoms Corner Force Main Replacement	\$ 1,747	\$ -	\$ -	\$ -	\$ -	\$ -
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015600	Hampton Trunk A and B Replacement - Jefferson Ave. to Buxton	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	\$ 9,797	\$ 17,219	\$ 24,642	\$ 24,642	\$ 24,642	\$ 24,642
	Subtotal	\$ 17,612	\$ 17,222	\$ 24,642	\$ 24,642	\$ 24,642	\$ 24,642
Note:	Fats, Oils, and Grease (FOG) Virginia Department of Transportation (VDOT) Force Main (FM)						

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	Total				
		FY-2019 to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
Chesapeake-Elizabeth						
CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$ 1,323	\$ 114	\$ 434	\$ 775	\$ -
CE010520	Newtown Road Interceptor Force Main Relocation	\$ 15,506	\$ 876	\$ 4	\$ 6,996	\$ 7,630
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ 1,425	\$ -	\$ -	\$ -	\$ 509
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 1,737	\$ -	\$ -	\$ 21	\$ 130
CE011700	Western Trunk Force Main Replacement	\$ 1,359	\$ 1,359	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 10,759	\$ 478	\$ 1,674	\$ 717	\$ 1,722
CE011821	Elbow Road Pressure Reducing Station	\$ 7,104	\$ 526	\$ 3,659	\$ 2,919	\$ -
CE011822	Providence Road PRS Upgrades and Interconnect Force Main	\$ 5,239	\$ 1,364	\$ 2,444	\$ 1,431	\$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	\$ 14,447	\$ 825	\$ 5,459	\$ 6,529	\$ 1,635
CE011825	Salem Road Interconnect Force Main	\$ 1,132	\$ 188	\$ 943	\$ -	\$ -
CE011826	Providence Road Off-Line Storage Facility	\$ 24,110	\$ 2,357	\$ 9,467	\$ 11,161	\$ 1,125
CE011827	Atlantic PRS Reliability Modifications	\$ 5,593	\$ 1,021	\$ 1,788	\$ 2,781	\$ 3
CE011828	Kempsville PRS Reliability Modifications	\$ 2,840	\$ 581	\$ 889	\$ 1,368	\$ 3
CE011829	Laskin Road PRS Reliability Modifications	\$ 1,342	\$ 947	\$ 395	\$ -	\$ -
CE011830	Little Creek Pump Station Modifications	\$ 650	\$ 44	\$ 116	\$ 485	\$ 5
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	\$ 1,680	\$ 220	\$ 373	\$ 1,084	\$ 3
CE011840	Oceana Off-Line Storage Facility	\$ 14,362	\$ 1,638	\$ 4,544	\$ 8,130	\$ 50
CE012000	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	\$ 11	\$ -	\$ -	\$ 11	\$ -
CE012110	Witchduck Road Interceptor Force Main Improvements Phase I	\$ 860	\$ 127	\$ 733	\$ -	\$ -
CE012120	Witchduck Road Interceptor Force Main Improvements Phase II	\$ 1,885	\$ 25	\$ 100	\$ 214	\$ 687
CE012200	Pine Tree PRS Reliability Modifications	\$ 2,228	\$ 647	\$ 1,261	\$ 320	\$ -
	Subtotal	\$ 115,593	\$ 13,338	\$ 34,283	\$ 44,941	\$ 13,501
James River						
JR010600	Lucas Creek Pump Station Upgrade	\$ 6,347	\$ -	\$ 133	\$ 303	\$ 5,912
JR011300	Patrick Henry Pump Station Interconnection Force Main	\$ 3,207	\$ 330	\$ 1,370	\$ 1,504	\$ 3
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ 9,095	\$ 601	\$ 2,135	\$ 5,442	\$ 917
JR012100	Huxley to Middle Ground Force Main Extension	\$ 3,976	\$ 1,032	\$ 2,942	\$ 3	\$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ 1,236	\$ 47	\$ 126	\$ 443	\$ 619
JR013100	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	\$ 1,134	\$ 1,134	\$ -	\$ -	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 5,252	\$ 206	\$ 392	\$ 1,319	\$ 2,497
	Subtotal	\$ 30,247	\$ 3,350	\$ 7,098	\$ 9,015	\$ 9,947
Middle Peninsula						
MP011400	Mathews Collection System Vacuum Valve Replacement	\$ 81	\$ 81	\$ -	\$ -	\$ -
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 2,379	\$ 2,359	\$ 20	\$ -	\$ -
MP011800	Kirby Street Sanitary Sewer Rehabilitation	\$ 695	\$ 695	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ 6,458	\$ 1,388	\$ 5,070	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ 221	\$ 221	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ 2,283	\$ 760	\$ 1,517	\$ 5	\$ -
MP012700	Middle Peninsula Sewer Lateral Improvements	\$ 23,750	\$ -	\$ -	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ 626	\$ 624	\$ 3	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ 1,742	\$ 647	\$ 647	\$ 449	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ 1,214	\$ 1,079	\$ 135	\$ -	\$ -
MP013200	Middlesex County Sewer Service Expansion Study	\$ 146	\$ 146	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 2,150	\$ -	\$ -	\$ 245	\$ 1,005
MP013400	Small Communities Operation Center Parking and Laydown Area	\$ 225	\$ 225	\$ -	\$ -	\$ -
	Subtotal	\$ 23,546	\$ 8,224	\$ 7,391	\$ 699	\$ 1,005
Note:	Pressure Reducing Station (PRS)					

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
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	\$ 916	\$ -	\$ -	\$ -	\$ -	\$ -
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 624	\$ 962	\$ -	\$ -	\$ -	\$ -
CE011700	Western Trunk Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 1,722	\$ 1,722	\$ 1,722	\$ 1,004	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE012000	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE012110	Witchduck Road Interceptor Force Main Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CE012120	Witchduck Road Interceptor Force Main Improvements Phase II	\$ 687	\$ 172	\$ -	\$ -	\$ -	\$ -
CE012200	Pine Tree PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 3,948	\$ 2,856	\$ 1,722	\$ 1,004	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013100	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 838	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 838	\$ -	\$ -	\$ -	\$ -	\$ -
Middle Peninsula							
MP011400	Mathews Collection System Vacuum Valve Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP011800	Kirby Street Sanitary Sewer Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012000	King William Treatment Plant Improvements Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012400	West Point Treatment Plant Tertiary Filter	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP012700	Middle Peninsula Sewer Lateral Improvements	\$ -	\$ 2,664	\$ 2,664	\$ -	\$ -	\$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013200	Middlesex County Sewer Service Expansion Study	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MP013300	King William Treatment Plant Improvements Phase II	\$ 900	\$ -	\$ -	\$ -	\$ -	\$ -
MP013400	Small Communities Operation Center Parking and Laydown Area	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 900	\$ 2,664	\$ 2,664	\$ -	\$ -	\$ -
Note:	Pressure Reducing Station (PRS)						

FY-2019 to FY-2028 Cash Flow Projections (in thousands)

CIP No	Project Name	Total				
		FY-2019 to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
Nansemond						
NP010620	Suffolk Pump Station Replacement	\$ 9,749	\$ 719	\$ 4,332	\$ 4,698	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ 1,250	\$ 282	\$ 968	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 2,707	\$ -	\$ -	\$ -	\$ 156
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ 7,261	\$ 1,606	\$ 5,220	\$ 435	\$ -
NP012600	Deep Creek Interceptor Force Main Replacement	\$ 4,203	\$ 2,055	\$ 2,098	\$ 50	\$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	\$ 2,036	\$ 421	\$ 421	\$ 421	\$ 421
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ 2,291	\$ 483	\$ 1,808	\$ -	\$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ 4,632	\$ 1,420	\$ 3,212	\$ -	\$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ 1,840	\$ 1,840	\$ -	\$ -	\$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ 5,854	\$ 1,588	\$ 3,933	\$ 333	\$ -
	Subtotal	\$ 41,822	\$ 10,415	\$ 21,991	\$ 5,937	\$ 577
Surry						
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	\$ 16,500	\$ 4,131	\$ 8,307	\$ 4,061	\$ -
	Subtotal	\$ 16,500	\$ 4,131	\$ 8,307	\$ 4,061	\$ -
Virginia Initiative Plant						
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 1,420	\$ -	\$ -	\$ -	\$ 73
VP014010	Ferebee Avenue Pump Station Replacement	\$ 4,809	\$ 313	\$ 2,248	\$ 2,248	\$ -
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 6,115	\$ 447	\$ 2,524	\$ 3,144	\$ -
VP014700	Ingleside Road Pump Station Replacement	\$ 3,015	\$ -	\$ 133	\$ 65	\$ 65
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 1,029	\$ -	\$ -	\$ -	\$ 103
VP015310	Larchmont Sanitary Sewer Master Plan Study	\$ 84	\$ 84	\$ -	\$ -	\$ -
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 13,265	\$ 281	\$ 375	\$ 2,574	\$ 5,780
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 15,849	\$ 615	\$ 349	\$ 5,367	\$ 6,766
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ 6,379	\$ 6,379	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 1,964	\$ -	\$ 37	\$ 101	\$ 1,267
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 2,414	\$ -	\$ -	\$ 45	\$ 15
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 2,460	\$ -	\$ -	\$ -	\$ 47
VP017300	Rodman Avenue Pump Station Wet Well Rehabilitation	\$ 176	\$ 176	\$ -	\$ -	\$ -
VP018000	Park Avenue Pump Station Replacement	\$ 4,894	\$ 229	\$ 662	\$ 2,287	\$ 1,715
VP018200	Effingham Interceptor Vault Removal	\$ 802	\$ 802	\$ -	\$ -	\$ -
	Subtotal	\$ 64,673	\$ 9,326	\$ 6,328	\$ 15,831	\$ 15,831
Williamsburg						
WB010700	Williamsburg Interceptor Force Main Contract A Replacement	\$ 18	\$ 18	\$ -	\$ -	\$ -
WB012200	North Trunk Force Main Part B Replacement	\$ 1,378	\$ 1,030	\$ 347	\$ -	\$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	\$ 6,095	\$ 588	\$ 1,850	\$ 2,918	\$ 740
WB012500	Lodge Road Pump Station Upgrades	\$ 1,472	\$ 68	\$ 126	\$ 954	\$ 323
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	\$ 1,075	\$ 175	\$ 540	\$ 360	\$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements	\$ 7,155	\$ 200	\$ 755	\$ 3,100	\$ 3,100
WB012800	Williamsburg Treatment Plant Outfall and Diffuser Repair 2018	\$ 125	\$ 125	\$ -	\$ -	\$ -
	Subtotal	\$ 17,318	\$ 2,204	\$ 3,618	\$ 7,332	\$ 4,163
York River						
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 3,031	\$ -	\$ -	\$ -	\$ 221
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 4,131	\$ -	\$ 66	\$ 322	\$ 1,357
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 5,429	\$ -	\$ -	\$ -	\$ 31
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ 1,087	\$ 82	\$ 221	\$ 784	\$ -
YR012220	York River Treatment Plant Digester Cover Replacement Phase II	\$ 572	\$ 572	\$ -	\$ -	\$ -
YR013140	York River Treatment Plant Environmental Studies and Habitat Enhancement	\$ 305	\$ 305	\$ -	\$ -	\$ -
YR013500	Westminster Drive Force Main Replacement	\$ 688	\$ -	\$ 99	\$ 585	\$ 5
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ 360	\$ 360	\$ -	\$ -	\$ -
	Subtotal	\$ 15,603	\$ 1,318	\$ 386	\$ 1,691	\$ 1,614

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Nansemond							
NP010620	Suffolk Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NP012400	Western Branch Sewer System Gravity Improvements	\$ 156	\$ 2,394	\$ -	\$ -	\$ -	\$ -
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	\$ 351	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 507	\$ 2,394	\$ -	\$ -	\$ -	\$ -
Surry							
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	\$ 146	\$ 554	\$ 646	\$ -	\$ -	\$ -
VP014010	Ferebee Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP014700	Ingleside Road Pump Station Replacement	\$ 668	\$ 1,564	\$ 521	\$ -	\$ -	\$ -
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 926	\$ -	\$ -	\$ -	\$ -	\$ -
VP015310	Larchmont Sanitary Sewer Master Plan Study	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP015320	Larchmont Area Sanitary Sewer Improvements	\$ 4,255	\$ -	\$ -	\$ -	\$ -	\$ -
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	\$ 2,752	\$ -	\$ -	\$ -	\$ -	\$ -
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 559	\$ -	\$ -	\$ -	\$ -	\$ -
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 120	\$ 1,718	\$ 516	\$ -	\$ -	\$ -
VP017100	Central Norfolk Area Gravity Sewer Improvements	\$ 205	\$ 1,036	\$ 1,172	\$ -	\$ -	\$ -
VP017300	Rodman Avenue Pump Station Wet Well Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018000	Park Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VP018200	Effingham Interceptor Vault Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 9,631	\$ 4,872	\$ 2,855	\$ -	\$ -	\$ -
Williamsburg							
WB010700	Williamsburg Interceptor Force Main Contract A Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WB012800	Williamsburg Treatment Plant Outfall and Diffuser Repair 2018	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
York River							
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 1,458	\$ 1,353	\$ -	\$ -	\$ -	\$ -
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 2,383	\$ 3	\$ -	\$ -	\$ -	\$ -
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 56	\$ 494	\$ 1,555	\$ 2,325	\$ 969	\$ -
YR011900	Bethel-Poquoson Force Main Part III Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR012220	York River Treatment Plant Digester Cover Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013140	York River Treatment Plant Environmental Studies and Habitat Enhancement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013500	Westminster Drive Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 3,897	\$ 1,850	\$ 1,555	\$ 2,325	\$ 969	\$ -

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	Total				
		FY-2019 to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
General						
GN010730	Horizontal Valve Replacement Phase III	\$ 3,136	\$ 365	\$ 605	\$ 605	\$ 605
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ 4,814	\$ 2,027	\$ 1,858	\$ 929	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ 207	\$ 207	\$ (0)	\$ (0)	\$ -
GN012131	Manhole Rehabilitation Phase 1A (North Shore)	\$ 712	\$ 712	\$ -	\$ -	\$ -
GN012132	Manhole Rehabilitation Phase 1B	\$ 1,305	\$ 913	\$ 391	\$ -	\$ -
GN012133	Manhole Rehabilitation Phase 1C	\$ 1,305	\$ -	\$ 1,174	\$ 130	\$ -
GN012134	North Shore Siphon Chamber Rehabilitation Phase 1	\$ 1,305	\$ 507	\$ 797	\$ -	\$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	\$ 2,422	\$ 855	\$ 855	\$ 712	\$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 6,745	\$ 5,729	\$ 1,016	\$ -	\$ -
GN013300	Treatment Plant Grease Handling Facilities	\$ 4,532	\$ 867	\$ 2,741	\$ 924	\$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	\$ 187,638	\$ -	\$ -	\$ -	\$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	\$ 4,487	\$ 80	\$ 222	\$ 214	\$ 2,477
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 732	\$ -	\$ -	\$ 37	\$ 65
GN015100	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	\$ 457	\$ 457	\$ -	\$ -	\$ -
GN015300	Interceptor System Valve Improvements Phase I	\$ 2,592	\$ 74	\$ 157	\$ 539	\$ 1,367
GN015400	South Shore Aerial Crossing Improvements	\$ 260	\$ -	\$ 4	\$ 15	\$ 11
GN015800	North Shore Automated Diversion Facilities	\$ 1,422	\$ 148	\$ 1,040	\$ 235	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ 219	\$ 188	\$ 31	\$ -	\$ -
GN016300	Sustainable Water Initiative for Tomorrow (SWIFT)	\$ 704,021	\$ -	\$ -	\$ -	\$ -
GN016310	Integrated Planning of SWIFT	\$ 8,500	\$ 3,000	\$ 2,000	\$ 1,500	\$ 1,000
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 80,000	\$ 6,154	\$ 6,154	\$ 6,154	\$ 6,154
GN016330	Well Services for SWIFT	\$ 2,500	\$ 2,500	\$ -	\$ -	\$ -
GN016341	Virginia Initiative Plant SWIFT Land Acquisition	\$ 15,000	\$ -	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 124,575	\$ 4,560	\$ 10,890	\$ 15,150	\$ 40,550
GN016360	James River SWIFT Facility	\$ 173,130	\$ -	\$ 6,340	\$ 20,646	\$ 15,534
GN016370	York River SWIFT Facility	\$ 163,806	\$ -	\$ -	\$ -	\$ 6,000
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ 1,848	\$ 254	\$ 1,594	\$ -	\$ -
GN016500	James River and Nansemond Treatment Plant Dewatering Building Mod and Centrifuge Replacement	\$ 763	\$ 763	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ 450	\$ 188	\$ 263	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ 3,315	\$ -	\$ 721	\$ 849	\$ 1,496
GN016800	Fleet Management	\$ 4,381	\$ 612	\$ 1,372	\$ 1,307	\$ 1,090
GN016900	Mobile Workforce Implementation	\$ 1,750	\$ 1,750	\$ -	\$ -	\$ -
GN017000	Water Quality Department Instrumentation and Monitoring Equipment	\$ 285	\$ 285	\$ -	\$ -	\$ -
	Subtotal	\$ 1,154,062	\$ 33,194	\$ 40,225	\$ 49,945	\$ 76,348
Future Improvements						
IP010200	Treatment Plant Expansions and Improvements	\$ 16,368	\$ -	\$ -	\$ 752	\$ 3,311
IP010300	General Expansions and Improvements	\$ 1,653	\$ -	\$ -	\$ -	\$ 338
IP010600	Treatment Plant Rehabilitation and Replacement	\$ 16,368	\$ -	\$ -	\$ 752	\$ 3,311
IP010700	General Rehabilitation and Replacement	\$ 1,653	\$ -	\$ -	\$ -	\$ 338
IP010800	Regional Wet Weather Improvements	\$ 1,800,791	\$ -	\$ 1,773	\$ 3,218	\$ 15,553
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 529,868	\$ 196	\$ 3,323	\$ 17,185	\$ 22,471
	Subtotal	\$ 614,318	\$ 196	\$ 5,096	\$ 21,908	\$ 45,323
	CIP TOTALS	\$ 2,426,017	\$ 134,000	\$ 187,255	\$ 200,000	\$ 200,000

FY-2019 to FY-2028

Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
General							
GN010730	Horizontal Valve Replacement Phase III	\$ 605	\$ 353	\$ -	\$ -	\$ -	\$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012131	Manhole Rehabilitation Phase 1A (North Shore)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012132	Manhole Rehabilitation Phase 1B	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012133	Manhole Rehabilitation Phase 1C	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN012134	North Shore Siphon Chamber Rehabilitation Phase 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ 1,493	\$ -	\$ -	\$ -	\$ -	\$ -
GN015000	South Shore Gravity Sewer Improvements Phase I	\$ 236	\$ 394	\$ -	\$ -	\$ -	\$ -
GN015100	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN015300	Interceptor System Valve Improvements Phase I	\$ 456	\$ -	\$ -	\$ -	\$ -	\$ -
GN015400	South Shore Aerial Crossing Improvements	\$ 137	\$ 94	\$ -	\$ -	\$ -	\$ -
GN015800	North Shore Automated Diversion Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016300	Sustainable Water Initiative for Tomorrow (SWIFT)	\$ 12,115	\$ 39,827	\$ 67,195	\$ 122,491	\$ 146,312	\$ 167,630
GN016310	Integrated Planning of SWIFT	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ -
GN016320	Program Management of SWIFT Full Scale Implementation	\$ 6,154	\$ 6,154	\$ 6,154	\$ 6,154	\$ 6,154	\$ 6,154
GN016330	Well Services for SWIFT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016341	Virginia Initiative Plant SWIFT Land Acquisition	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -
GN016350	Williamsburg SWIFT Facility	\$ 44,510	\$ 8,915	\$ -	\$ -	\$ -	\$ -
GN016360	James River SWIFT Facility	\$ 56,360	\$ 61,860	\$ 12,390	\$ -	\$ -	\$ -
GN016370	York River SWIFT Facility	\$ 19,533	\$ 14,697	\$ 53,320	\$ 58,540	\$ 11,716	\$ -
GN016400	Treatment Plant Dewatering Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016500	James River and Nansemond Treatment Plant Dewatering Building Mod and Centrifuge Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016600	South Shore High Point Air Vent Installation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	\$ 249	\$ -	\$ -	\$ -	\$ -	\$ -
GN016800	Fleet Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN016900	Mobile Workforce Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GN017000	Water Quality Department Instrumentation and Monitoring Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 157,847	\$ 132,294	\$ 139,059	\$ 187,184	\$ 164,182	\$ 173,784
Future Improvements							
IP010200	Treatment Plant Expansions and Improvements	\$ 1,701	\$ 6,124	\$ 1,379	\$ 407	\$ 515	\$ 2,178
IP010300	General Expansions and Improvements	\$ 138	\$ 680	\$ 153	\$ 45	\$ 57	\$ 242
IP010600	Treatment Plant Rehabilitation and Replacement	\$ 1,701	\$ 6,124	\$ 1,379	\$ 407	\$ 515	\$ 2,178
IP010700	General Rehabilitation and Replacement	\$ 138	\$ 680	\$ 153	\$ 45	\$ 57	\$ 242
IP010800	Regional Wet Weather Improvements	\$ 27,490	\$ 29,516	\$ 27,012	\$ 31,655	\$ 32,730	\$ 27,926
IP011000	Advanced Treatment Infrastructure Upgrades	\$ 50,008	\$ 74,387	\$ 76,783	\$ 30,000	\$ 62,048	\$ 45,000
	Subtotal	\$ 81,175	\$ 117,512	\$ 106,860	\$ 62,560	\$ 95,922	\$ 77,765
	CIP TOTALS	\$ 285,714	\$ 285,714	\$ 285,714	\$ 285,714	\$ 285,714	\$ 276,190

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HRSD

1434 Air Rail Avenue
Virginia Beach, VA 23455
www.hrsd.com



FY2019 Budget Surcharge Rates

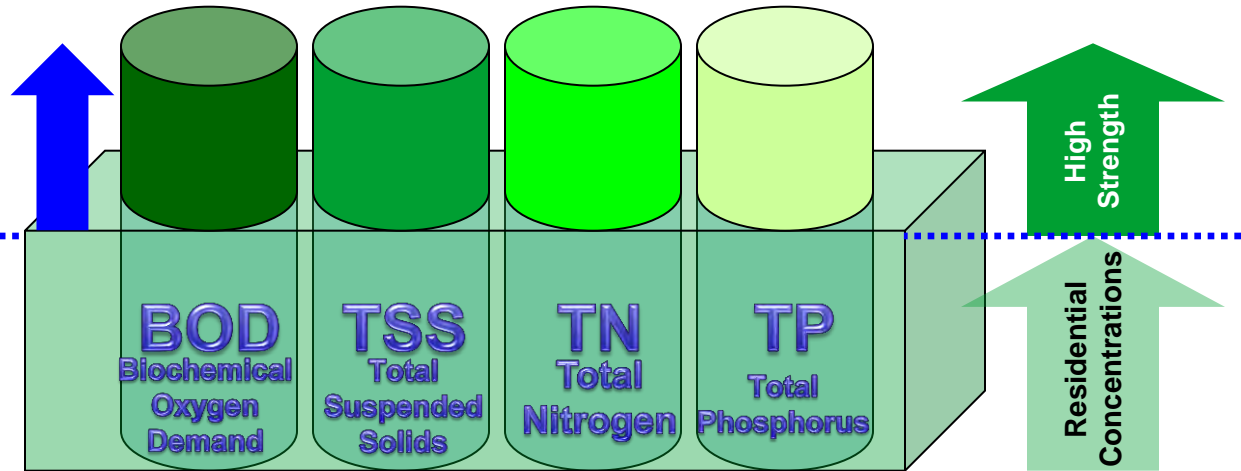
May 22, 2018

Surcharges for High Strength or Unusual Wastes

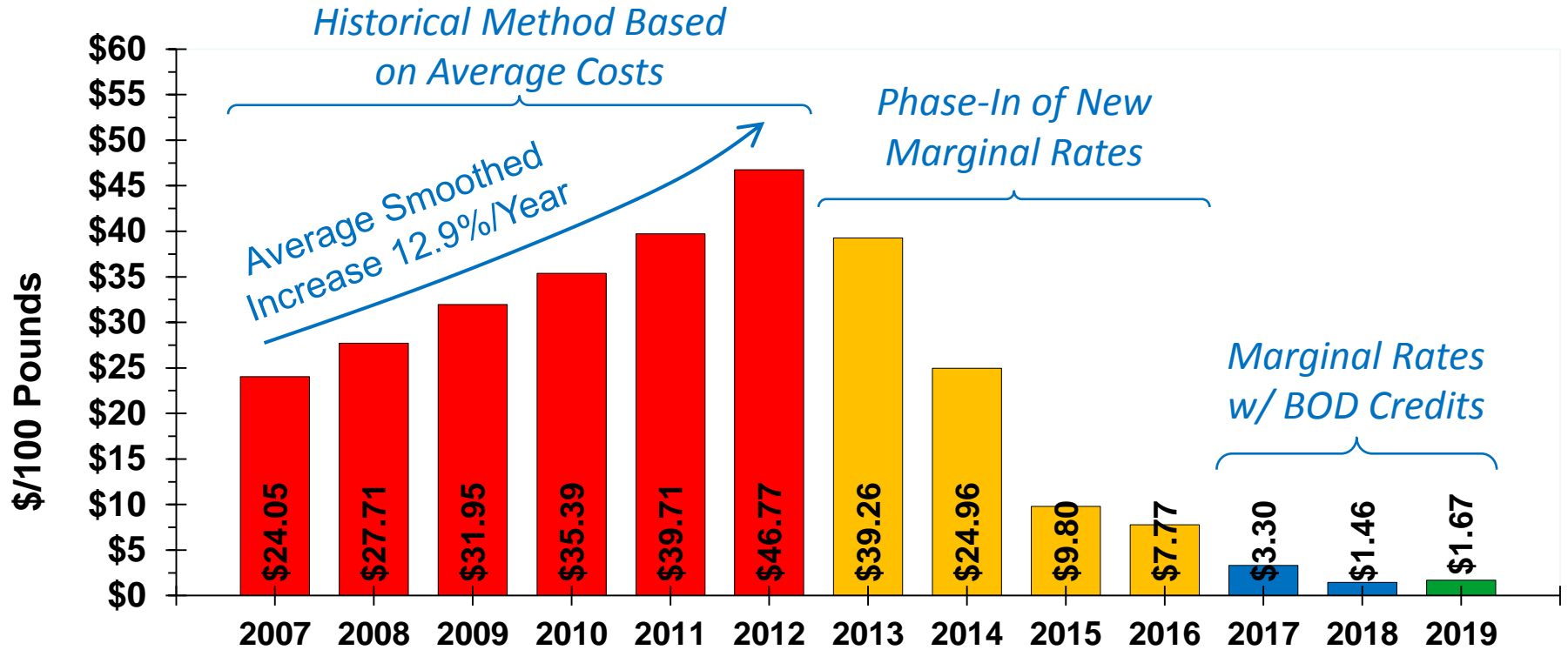
- Domestic Quality Wastewater
- High Strength or Unusual Wastes
- Unit Cost per 100 pounds

Surcharge Rates represent
Marginal/Incremental Costs
(Variable Costs Only)

BASE COST includes Fixed and
Variable Costs



Historical BOD Rates (\$/100 lbs)



Proposed Surcharge Rates

Surcharge Rate per 100 lbs					
Pollutant	In Excess of	FY18	FY19	FY18 vs FY 19	
		Calculated	Calculated	\$ Differential	% Difference
Biochemical Oxygen Demand (BOD)	282 mg/L	\$ 1.46	\$ 1.67	\$ 0.21	14%
Total Suspended Solids (TSS)	261 mg/L	\$ 8.32	\$ 9.49	\$ 1.17	14%
Total Phosphorus (TP)	6 mg/L	\$ 185.32	\$ 152.74	\$ (32.58)	-18%
Total Kjeldahl Nitrogen (TKN)	47 mg/L	\$ 50.56	\$ 57.59	\$ 7.03	14%

Ten Largest Surcharge Customers – Projected FY19 bill

	FY2018	FY2019						FY18 vs FY19	
	TOTAL	BOD	TSS	TP	TKN	VOLUME	TOTAL	\$	%
ANHEUSER BUSCH INC	\$ 2,937,946	\$ 110,816	\$ 65,820	\$ 48,327	\$ 27,692	\$ 2,947,401	\$ 3,200,057	\$ 262,111	8.9%
37TH ST WATER TREATMENT PLANT	\$ 366,129	\$ -	\$ 328,061	\$ -	\$ -	\$ 85,695	\$ 413,756	\$ 47,627	13.0%
SMITHFIELD FOODS INC	\$ 5,164,720	\$ -	\$ -	\$ 167,181	\$ -	\$ 5,415,709	\$ 5,582,890	\$ 418,170	8.1%
MD VA MILK PRODUCERS ASSOC	\$ 262,081	\$ 14,265	\$ 9,327	\$ 7,526	\$ 12,778	\$ 241,304	\$ 285,201	\$ 23,119	8.8%
PEPSI COLA COMPANY	\$ 301,044	\$ 12,779	\$ -	\$ 495	\$ -	\$ 315,729	\$ 329,003	\$ 27,959	9.3%
J M SMUCKER COMPANY	\$ 235,022	\$ 7,058	\$ 6,198	\$ 197	\$ 4,936	\$ 238,862	\$ 257,251	\$ 22,229	9.5%
SENTARA HAMPTON GENERAL HOSPITAL	\$ 205,894	\$ 645	\$ 19,574	\$ 1,055	\$ 2,966	\$ 201,141	\$ 225,381	\$ 19,487	9.5%
SENTARA LEIGH HOSPITAL	\$ 101,275	\$ -	\$ 20,136	\$ -	\$ 68	\$ 91,205	\$ 111,409	\$ 10,134	10.0%
ISF USA LLC	\$ 249,812	\$ 2,403	\$ 3,967	\$ 3,917	\$ 980	\$ 260,445	\$ 271,712	\$ 21,900	8.8%
C & M INDUSTRIES INC	\$ 112,310	\$ 5,410	\$ 2,144	\$ -	\$ -	\$ 115,368	\$ 122,922	\$ 10,612	9.4%

Questions?

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #3

AGENDA ITEM 4. – Subordinate Trust Agreement Exclusion of Certain Locality Improvements from Calculation of Operating Expenses Resolution

Hampton Roads Sanitation District
Resolution of
May 22, 2018

HAMPTON ROADS SANITATION DISTRICT COMMISSION

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

Adopted May 22, 2018

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 22, 2018.


Frederick N. Elofson, Chair

LOCALITY IMPROVEMENTS

CE011830: Little Creek Pump Station Modifications

Project Description: There are two pumping stations associated with Little Creek and two of those stations are being upgraded currently. HRSD will be responsible for upgrading the other three stations as needed after completing a preliminary engineering study.

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: \$849,000

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.

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: \$2,192,000

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #4

AGENDA ITEM 5. – Tax Exempt Bond Proceeds Expenditure for
Fiscal Year (FY) 2019 Reimbursement Resolution

Hampton Roads Sanitation District
Resolution of
May 22, 2018

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-ADVANTAGED
FINANCINGS FOR CERTAIN EXPENDITURES MADE OR TO BE MADE IN
CONNECTION WITH THE ACQUISITION, CONSTRUCTION OR EQUIPPING OF
CERTAIN CAPITAL IMPROVEMENTS

Adopted May 22, 2018

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-ADVANTAGED
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 sale of bonds (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, as part of the District’s FY2019 – FY2028 CIP adopted on the date hereof, a portion of which is attached hereto as Exhibit A, the District has projected issuing Clean Water Revolving Fund Loans or bonds in an aggregate amount equal to \$80,000,000 for capital projects in FY2019 and FY2020 (the “Projects”); and

WHEREAS, the District has paid, and will pay, no more than 60 days prior to the date hereof, certain expenditures (the “Expenditures”) in connection with the acquisition, construction and/or equipping of 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-advantaged bonds, e.g., bonds issued in accordance with Sections 54A, 54AA or 103 of the Internal Revenue Code of 1986, as amended (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 \$80,000,000.

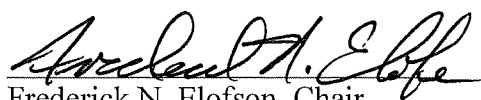
Section 4. The District will make a reimbursement allocation, which is a written allocation by the District that evidences the District's use of proceeds of the Clean Water Revolving Fund Loans or the Bonds to reimburse an Expenditure, no later than 18 months after the later of the date on which the 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, expenditures by "small issuers" (based on the year of issuance and not the year of expenditure) 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 22nd day of May, 2018.

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

CAPITAL IMPROVEMENT PROGRAM

FY2019 – FY2028 [10-Year Plan]

(ATTACHED)

CAPITAL IMPROVEMENT PROGRAM
 FY19 TO FY28 (\$,000)
 Based on Program Cost Estimates (Project Contingencies not Included)

	Regulatory Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Proj Exp to Prev Yr	Sum FY19 to FY28	Est Program Cost
Administration														
PR_AD010400 Environmental Data Management System	None	\$328	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,031	\$328	\$4,359
PR_AD012100 Asset Management Implementation	None	\$669	\$669	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$362	\$1,338	\$1,700
PR_AD012200 Water Quality Services Building Phase II	None	\$4,388	\$2,925	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,587	\$7,313	\$8,900
PR_AD012300 Central Environmental Laboratory Phase II	None	\$117	\$815	\$1,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,212	\$2,212
PR_AD012400 Capital Program Management Improvements Phase I	None	\$1,600	\$800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,400	\$2,400
Administration Subtotal		\$7,102	\$5,210	\$1,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,979	\$13,592	\$19,571
Army Base														
PR_AB010000 Army Base 24-Inch and 20-Inch Transmission Main Replacements	Rehab Plan Phase Two	\$0	\$1,607	\$4,832	\$13,629	\$2,271	\$0	\$0	\$0	\$0	\$0	\$834	\$22,339	\$23,173
PR_AB010100 Army Base Treatment Plant Improvements - Phase III	Nutrient Reduction	\$1,244	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$121,278	\$1,244	\$122,522
PR_AB010500 Section W Force Main Replacement	None	\$97	\$218	\$1,253	\$522	\$0	\$0	\$0	\$0	\$0	\$0	\$95	\$2,090	\$2,185
PR_AB011700 Army Base Treatment Plant Solids Dewatering and Loading Facility	None	\$0	\$0	\$0	\$0	\$0	\$413	\$4,167	\$8,000	\$0	\$0	\$0	\$12,580	\$12,580
Army Base Subtotal		\$1,341	\$1,825	\$6,085	\$14,151	\$2,271	\$413	\$4,167	\$8,000	\$0	\$0	\$122,207	\$38,253	\$160,460
Atlantic														
PR_AT011510 Shippis Corner Interim Pressure Reducing Station	Rehab Plan Phase Two	\$283	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,228	\$283	\$2,510
PR_AT011520 Shippis Corner Pressure Reducing Station Modifications	Rehab Plan Phase Two	\$0	\$9	\$104	\$652	\$652	\$0	\$0	\$0	\$0	\$0	\$0	\$1,416	\$1,416
PR_AT011900 Great Bridge Interceptor Extension 16-Inch Replacement	Rehab Plan Phase Two	\$0	\$0	\$0	\$61	\$221	\$2,036	\$1,997	\$0	\$0	\$0	\$0	\$4,315	\$4,315
PR_AT012000 Atlantic Treatment Plant Administration Building Renovation and Expansion	None	\$268	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,620	\$268	\$2,887
PR_AT012910 Atlantic Treatment Plant FOG Receiving Station	None	\$1,866	\$1,847	\$440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,204	\$4,153	\$6,357
PR_AT012920 Atlantic Treatment Plant Access Road Extension	None	\$33	\$0	\$555	\$125	\$3,073	\$0	\$0	\$0	\$0	\$0	\$0	\$3,786	\$3,786
PR_AT013000 Washington District Pump Station Area Sanitary Sewer Improvements	Rehab Plan Phase Two	\$72	\$83	\$864	\$1,013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,032	\$2,032
PR_AT013100 South Norfolk Area Gravity Sewer Improvements	Rehab Plan Phase Two	\$0	\$0	\$324	\$288	\$3,126	\$1,563	\$0	\$0	\$0	\$0	\$0	\$5,301	\$5,301
PR_AT013200 Doziers Corner PS and Washington District PS Flooding Mitigation Improvements	Rehab Plan Phase Two	\$0	\$0	\$0	\$0	\$16	\$38	\$196	\$0	\$0	\$0	\$0	\$251	\$251
PR_AT013500 Atlantic Treatment Plant Thermal Hydrolysis Process	None	\$20,000	\$19,800	\$4,708	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,990	\$44,508	\$58,498
PR_AT013600 Atlantic Treatment Plant Motor Control Center Replacements	None	\$335	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$149	\$335	\$484
PR_AT013700 Atlantic Trunk Interceptor Force Main Relocation-VDOT Laskin Road Betterment	None	\$107	\$107	\$36	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48	\$250	\$298
PR_AT013900 Atlantic Treatment Plant Influent Screen Expansion	None	\$1,486	\$180	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$243	\$1,666	\$1,909
PR_AT014000 Lynnhaven-Great Neck IFM (SF-021) Relocation	None	\$403	\$450	\$75	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72	\$928	\$1,000
PR_AT014100 Suffolk Regional Landfill Transmission Force Main	None	\$717	\$1,533	\$2,500	\$1,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,000	\$6,000
Atlantic Subtotal		\$25,570	\$24,009	\$9,606	\$3,388	\$7,088	\$3,637	\$2,193	\$0	\$0	\$0	\$21,553	\$75,492	\$97,045
Boat Harbor														
PR_BH011600 Bridge Street Pump Station Replacement	Consent Decree 2008	\$15	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,523	\$15	\$13,538
PR_BH012700 Hampton Trunk Sewer Extension Division B-Claremont Force Main Replacement	Rehab Plan Phase One	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,742	\$2	\$4,743
PR_BH013000 Willard Avenue Pump Station Upgrades	None	\$502	\$2,751	\$2,067	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$143	\$5,320	\$5,463
PR_BH013400 Bridge Street Siphon and Vent Relocation/Replacement	None	\$13	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$839	\$13	\$852
PR_BH014000 West Avenue and 35th Street Interceptor Force Main Replacement	Rehab Plan Phase Two	\$0	\$0	\$225	\$814	\$2,454	\$3	\$0	\$0	\$0	\$0	\$0	\$3,496	\$3,496
PR_BH014220 Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	None	\$745	\$2,572	\$4,277	\$3,572	\$8	\$0	\$0	\$0	\$0	\$0	\$86	\$11,173	\$11,259
PR_BH014500 Ivy Home-Shell Road Sewer Extension Division I Replacement	Rehab Plan Phase Two	\$0	\$0	\$16	\$585	\$1,414	\$0	\$0	\$0	\$0	\$0	\$74	\$2,014	\$2,088
PR_BH014600 46th Street Diversion Sewer Rehabilitation/Replacement	Rehab Plan Phase Two	\$671	\$1,468	\$4,865	\$2,843	\$0	\$0	\$0	\$0	\$0	\$0	\$194	\$9,847	\$10,041
PR_BH014700 Boat Harbor Outlet Sewer Improvements	Rehab Plan Phase One	\$400	\$4,134	\$983	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$124	\$5,517	\$5,641
PR_BH014800 Jefferson Avenue Extension Gravity Improvements	Rehab Plan Phase One	\$1,358	\$1,058	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$229	\$2,416	\$2,645
PR_BH014900 Hampton Trunk Sewer Extension Division K Gravity Improvements	Rehab Plan Phase Two	\$0	\$176	\$179	\$1,141	\$2,193	\$0	\$0	\$0	\$0	\$0	\$0	\$3,689	\$3,689
PR_BH015000 Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	Rehab Plan Phase One	\$3,540	\$2,258	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$659	\$5,798	\$6,457
PR_BH015100 Bloxoms Corner Force Main Replacement	Rehab Plan Phase Two	\$0	\$105	\$177	\$755	\$1,747	\$0	\$0	\$0	\$0	\$0	\$0	\$2,784	\$2,784
PR_BH015300 Boat Harbor Treatment Plant Switchgear and Controls Replacements	None	\$4,707	\$3,775	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$754	\$8,482	\$9,236
PR_BH015500 LaSalle Avenue IFM Replacement	None	\$0	\$80	\$1,092	\$661	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,832	\$1,832
PR_BH015600 Hampton Trunk A and B - Jefferson Ave. to Buxton	None	\$578	\$1,348	\$6,026	\$2,019	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,971	\$9,971
PR_BH015700 Boat Harbor Treatment Plant Effluent PS and Transmission FM	None	\$1,762	\$1,762	\$1,762	\$1,762	\$9,797	\$17,219	\$24,642	\$24,642	\$24,642	\$24,642	\$0	\$132,629	\$132,629

CAPITAL IMPROVEMENT PROGRAM
 FY19 TO FY28 (\$,000)
 Based on Program Cost Estimates (Project Contingencies not Included)

	Regulatory Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Proj Exp to Prev Yr	Sum FY19 to FY28	Est Program Cost
Boat Harbor Subtotal		\$14,291	\$21,487	\$21,669	\$14,152	\$17,612	\$17,222	\$24,642	\$24,642	\$24,642	\$24,642	\$21,366	\$204,998	\$226,364
Chesapeake-Elizabeth														
PR_CE010400 Independence Boulevard Pressure Reducing Station Modifications	Rehab Plan Phase One	\$114	\$434	\$775	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$234	\$1,323	\$1,557
PR_CE010520 Newtown Road Interceptor Force Main Relocation	None	\$876	\$4	\$6,996	\$7,630	\$0	\$0	\$0	\$0	\$0	\$0	\$550	\$15,506	\$16,056
PR_CE011300 Birchwood Trunk 24 and 30-In. FM at Independence Boulevard Replacement Phase II	Rehab Plan Phase Two	\$0	\$0	\$0	\$509	\$916	\$0	\$0	\$0	\$0	\$0	\$0	\$1,425	\$1,425
PR_CE011600 Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	Rehab Plan Phase Two	\$0	\$0	\$21	\$130	\$624	\$962	\$0	\$0	\$0	\$0	\$0	\$1,737	\$1,737
PR_CE011700 Western Trunk Force Main Replacement	Rehab Plan Phase One	\$1,359	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$316	\$1,359	\$1,675
PR_CE011810 Chesapeake-Elizabeth Treatment Plant Decommissioning	Regional Wet Weather Management Plan	\$478	\$1,674	\$717	\$1,722	\$1,722	\$1,722	\$1,722	\$1,004	\$0	\$0	\$0	\$10,759	\$10,759
PR_CE011821 Elbow Road Pressure Reducing Station	Regional Wet Weather Management Plan	\$526	\$3,659	\$2,919	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$383	\$7,104	\$7,487
PR_CE011822 Providence Road PRS Upgrades and Interconnect Force Main	Regional Wet Weather Management Plan	\$1,364	\$2,444	\$1,431	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$697	\$5,239	\$5,936
PR_CE011823 Virginia Beach Boulevard Force Main Phase VI	Regional Wet Weather Management Plan	\$825	\$5,459	\$6,529	\$1,635	\$0	\$0	\$0	\$0	\$0	\$0	\$704	\$14,447	\$15,151
PR_CE011825 Salem Road Interconnect Force Main	Regional Wet Weather Management Plan	\$188	\$943	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$98	\$1,132	\$1,229
PR_CE011826 Providence Road Off-Line Storage Facility	Regional Wet Weather Management Plan	\$2,357	\$9,467	\$11,161	\$1,125	\$0	\$0	\$0	\$0	\$0	\$0	\$365	\$24,110	\$24,475
PR_CE011827 Atlantic PRS Reliability Modifications	Regional Wet Weather Management Plan	\$1,021	\$1,788	\$2,781	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$879	\$5,593	\$6,472
PR_CE011828 Kempsville PRS Reliability Modifications	Regional Wet Weather Management Plan	\$581	\$889	\$1,368	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$442	\$2,840	\$3,282
PR_CE011829 Laskin Road PRS Reliability Modifications	Regional Wet Weather Management Plan	\$947	\$395	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$741	\$1,342	\$2,083
PR_CE011830 Little Creek Pump Station Modifications	Regional Wet Weather Management Plan	\$44	\$116	\$485	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$87	\$650	\$737
PR_CE011835 Virginia Beach City Pump Station Upgrades Phase V	Regional Wet Weather Management Plan	\$220	\$373	\$1,084	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$226	\$1,680	\$1,906
PR_CE011840 Oceana Off-Line Storage Facility	Regional Wet Weather Management Plan	\$1,638	\$4,544	\$8,130	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$333	\$14,362	\$14,696
PR_CE012000 Poplar Hall Davis Corner Trunk 24-in. GS Imp-1-264 VDOT	Rehab Plan Phase Two	\$0	\$0	\$11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$111	\$11	\$122
PR_CE012110 Witchduck Rd IFM Improvements Phase I	None	\$127	\$733	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7	\$860	\$867
PR_CE012120 Witchduck Rd IFM Improvements Phase II	None	\$25	\$100	\$214	\$687	\$687	\$172	\$0	\$0	\$0	\$0	\$0	\$1,885	\$1,885
PR_CE012200 Pine Tree PRS Reliability Modifications	Regional Wet Weather Management Plan	\$647	\$1,261	\$320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$352	\$2,228	\$2,580
Chesapeake-Elizabeth Subtotal		\$13,338	\$34,283	\$44,941	\$13,501	\$3,948	\$2,856	\$1,722	\$1,004	\$0	\$0	\$6,525	\$115,593	\$122,118
James River														
PR_JR010600 Lucas Creek Pump Station Upgrade	Rehab Plan Phase Two	\$0	\$133	\$303	\$5,912	\$0	\$0	\$0	\$0	\$0	\$0	\$88	\$6,347	\$6,436
PR_JR011300 Patrick Henry Pump Station Interconnection Force Main	None	\$330	\$1,370	\$1,504	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$117	\$3,207	\$3,324
PR_JR011730 Jefferson Avenue Interceptor Force Main Replacement Phase III	None	\$601	\$2,135	\$5,442	\$917	\$0	\$0	\$0	\$0	\$0	\$0	\$312	\$9,095	\$9,407
PR_JR012100 Huxley Place to Middle Ground Boulevard Force Main Extension	Rehab Plan Phase One	\$1,032	\$2,942	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$208	\$3,976	\$4,184
PR_JR013000 Morrison Pump Station Discharge Force Main Replacement and Capacity Enhancements	None	\$47	\$126	\$443	\$619	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,236	\$1,236
PR_JR013100 Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	None	\$1,134	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,533	\$1,134	\$3,667
PR_JR013200 Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	None	\$206	\$392	\$1,319	\$2,497	\$838	\$0	\$0	\$0	\$0	\$0	\$0	\$5,252	\$5,252
James River Subtotal		\$3,350	\$7,098	\$9,015	\$9,947	\$838	\$0	\$0	\$0	\$0	\$0	\$3,258	\$30,247	\$33,505
Middle Peninsula														
PR_MP011400 Mathews Collection System Vacuum Valve Replacement	None	\$81	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,438	\$81	\$1,518
PR_MP011700 Middle Peninsula Interceptor Systems PS Control and SCADA Upgrades/Enhancements	None	\$2,359	\$20	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,136	\$2,379	\$5,516
PR_MP011800 Kirby Street Sanitary Sewer Rehabilitation	None	\$695	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$209	\$695	\$904
PR_MP012000 King William Treatment Plant Improvements Phase I	None	\$1,388	\$5,070	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$292	\$6,458	\$6,749
PR_MP012400 West Point Treatment Plant Tertiary Filter	None	\$221	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$302	\$221	\$523
PR_MP012500 Mathews Main Vacuum Pump Station Replacement	None	\$760	\$1,517	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$439	\$2,283	\$2,722
PR_MP012700 Middle Peninsula Sewer Lateral Improvements	None	\$0	\$0	\$0	\$0	\$0	\$2,664	\$2,664	\$0	\$0	\$0	\$0	\$5,327	\$5,327
PR_MP012900 Mathews Nursing Home Line Vacuum Sewer Main Improvements	None	\$624	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$92	\$626	\$718
PR_MP013000 Small Communities Collection System Rehabilitation Phase I	None	\$647	\$647	\$449	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$165	\$1,742	\$1,907
PR_MP013100 Small Communities Mobile Dewatering Facilities Installation	None	\$1,079	\$135	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$139	\$1,214	\$1,353
PR_MP013200 Middlesex County Sewer Service Expansion Study	None	\$146	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$104	\$146	\$250
PR_MP013300 King William Treatment Plant Improvements Phase II	None	\$0	\$0	\$245	\$1,005	\$900	\$0	\$0	\$0	\$0	\$0	\$0	\$2,150	\$2,150
PR_MP013400 Small Communities Operation Center Parking and Laydown Area	None	\$225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$225	\$225
Middle Peninsula Subtotal		\$8,224	\$7,391	\$699	\$1,005	\$900	\$2,664	\$2,664	\$0	\$0	\$0	\$6,315	\$23,546	\$29,861
Nansemond														

CAPITAL IMPROVEMENT PROGRAM
 FY19 TO FY28 (\$,000)
 Based on Program Cost Estimates (Project Contingencies not Included)

	Regulatory Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Proj Exp to Prev Yr	Sum FY19 to FY28	Est Program Cost
PR_NP010620 Suffolk Pump Station Replacement	Rehab Plan Phase Two	\$719	\$4,332	\$4,698	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$527	\$9,749	\$10,277
PR_NP011300 Suffolk Interceptor Force Main Section I Main Line Valving Replacement	Rehab Plan Phase One	\$282	\$968	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40	\$1,250	\$1,290
PR_NP012400 Western Branch Sewer System Gravity Improvements	Rehab Plan Phase Two	\$0	\$0	\$0	\$156	\$156	\$2,394	\$0	\$0	\$0	\$0	\$0	\$2,707	\$2,707
PR_NP012500 Shingle Creek and Hickman's Branch Gravity Sewer Improvements	Rehab Plan Phase Two	\$1,606	\$5,220	\$435	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$416	\$7,261	\$7,677
PR_NP012600 Deep Creek Interceptor Force Main Replacement	Rehab Plan Phase One	\$2,055	\$2,098	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,125	\$4,203	\$5,327
PR_NP013000 Nansemond Treatment Plant Motor Control Center Replacements	None	\$421	\$421	\$421	\$421	\$351	\$0	\$0	\$0	\$0	\$0	\$176	\$2,036	\$2,211
PR_NP013400 Deep Creek IFM Risk Mitigation	None	\$483	\$1,808	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$159	\$2,291	\$2,450
PR_NP013500 Nansemond Treatment Plant Land Acquisition-Land Stabilization	None	\$1,420	\$3,212	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$274	\$4,632	\$4,906
PR_NP013600 Nansemond Treatment Plant Land Acquisition-Structure Demolition	None	\$1,840	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,840	\$1,840
PR_NP013700 Nansemond Treatment Plant Struvite Recovery Facility Improvements	None	\$1,588	\$3,933	\$333	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$207	\$5,854	\$6,060
Nansemond Subtotal		\$10,415	\$21,991	\$5,937	\$577	\$507	\$2,394	\$0	\$0	\$0	\$0	\$2,923	\$41,822	\$44,746
Surry														
PR_SU010200 Surry Hydraulic Improvements and Interceptor Force Main	Consent Decree - Surry	\$4,131	\$8,307	\$4,061	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,500	\$16,500
Surry Subtotal		4,131	8,307	4,061	0	0	0	0	0	0	0	0	16,500	16,500
Virginia Initiative Plant														
PR_VP010920 Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	Rehab Plan Phase Two	\$0	\$0	\$0	\$73	\$146	\$554	\$646	\$0	\$0	\$0	\$0	\$1,420	\$1,420
PR_VP014010 Ferebee Avenue Pump Station Replacement	Rehab Plan Phase One	\$313	\$2,248	\$2,248	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$145	\$4,809	\$4,954
PR_VP014020 Sanitary Sewer Project 1950 12 Inch FM and 24 and 18 Inch Gravity Replacement	Rehab Plan Phase Two	\$447	\$2,524	\$3,144	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$114	\$6,115	\$6,229
PR_VP014700 Ingleside Road Pump Station Replacement	Rehab Plan Phase Two	\$0	\$133	\$65	\$65	\$668	\$1,564	\$521	\$0	\$0	\$0	\$0	\$3,015	\$3,015
PR_VP014800 Lee Avenue/Wesley Street Horizontal Valve Replacement	Rehab Plan Phase Two	\$0	\$0	\$0	\$103	\$926	\$0	\$0	\$0	\$0	\$0	\$29	\$1,029	\$1,058
PR_VP015310 Larchmont Sanitary Sewer Master Plan Study	None	\$84	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$111	\$84	\$195
PR_VP015320 Larchmont Area Sanitary Sewer Improvements	Rehab Plan Phase Two	\$281	\$375	\$2,574	\$5,780	\$4,255	\$0	\$0	\$0	\$0	\$0	\$0	\$13,265	\$13,265
PR_VP015400 Lafayette Norview-Estabrook Pump Station Replacements	Rehab Plan Phase Two	\$615	\$349	\$5,367	\$6,766	\$2,752	\$0	\$0	\$0	\$0	\$0	\$56	\$15,849	\$15,905
PR_VP016320 Virginia Initiative Plant Nutrient Reduction Improvements Contract B	Nutrient Reduction	\$6,379	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$116,956	\$6,379	\$123,335
PR_VP016500 Norview-Estabrook Division I 12-Inch Force Main Replacement	Rehab Plan Phase Two	\$0	\$37	\$101	\$1,267	\$559	\$0	\$0	\$0	\$0	\$0	\$0	\$1,964	\$1,964
PR_VP016700 Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	Rehab Plan Phase Two	\$0	\$0	\$45	\$15	\$120	\$1,718	\$516	\$0	\$0	\$0	\$0	\$2,414	\$2,414
PR_VP017100 Central Norfolk Area Gravity Sewer Improvements	Rehab Plan Phase Two	\$0	\$0	\$0	\$47	\$205	\$1,036	\$1,172	\$0	\$0	\$0	\$0	\$2,460	\$2,460
PR_VP017300 Rodman Avenue Pump Station Wet Well Rehabilitation	None	\$176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,106	\$176	\$1,282
PR_VP018000 Park Avenue Pump Station Replacement	Rehab Plan Phase Two	\$229	\$662	\$2,287	\$1,715	\$0	\$0	\$0	\$0	\$0	\$0	\$146	\$4,894	\$5,040
PR_VP018200 Eftingham Interceptor Vault Removal	None	\$802	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$802	\$802
Virginia Initiative Plant Subtotal		\$9,326	\$6,328	\$15,831	\$15,831	\$9,631	\$4,872	\$2,855	\$0	\$0	\$0	\$118,663	\$64,673	\$183,337
Williamsburg														
PR_WB010700 Williamsburg Interceptor Force Main Contract A Replacement	Consent Decree 2008	\$18	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,851	\$18	\$8,869
PR_WB012200 North Trunk Force Main Part B Replacement	Rehab Plan Phase One	\$1,030	\$347	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$102	\$1,378	\$1,479
PR_WB012400 Williamsburg Treatment Plant Generator and Switchgear Replacement	None	\$588	\$1,850	\$2,918	\$740	\$0	\$0	\$0	\$0	\$0	\$0	\$49	\$6,095	\$6,144
PR_WB012500 Lodge Road Pump Station Upgrades	None	\$68	\$126	\$954	\$323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,472	\$1,472
PR_WB012600 Kingsmill PS Piping Replacement and Wet Well Rehabilitation	None	\$175	\$540	\$360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,075	\$1,075
PR_WB012700 WBTP Advanced Nutrient Reduction Improvements	None	\$200	\$755	\$3,100	\$3,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,155	\$7,155
PR_WB012800 Williamsburg Treatment Plant Outfall and Diffuser Repair 2018	None	\$125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$125	\$125	\$250
Williamsburg Subtotal		\$2,204	\$3,618	\$7,332	\$4,163	\$0	\$0	\$0	\$0	\$0	\$0	\$9,127	\$17,318	\$26,444
York River														
PR_YR010300 Foxridge, Woodland Road and Fox Hill Road Gravity Sewer Rehabilitation	Rehab Plan Phase Two	\$0	\$0	\$0	\$221	\$1,458	\$1,353	\$0	\$0	\$0	\$0	\$0	\$3,031	\$3,031
PR_YR010520 Magruder Mercury Interceptor Force Main Replacement-Section B	None	\$0	\$66	\$322	\$1,357	\$2,383	\$3	\$0	\$0	\$0	\$0	\$0	\$4,131	\$4,131
PR_YR010530 Magruder Mercury Interceptor Force Main Replacement-Section C	None	\$0	\$0	\$0	\$31	\$56	\$494	\$1,555	\$2,325	\$969	\$0	\$0	\$5,429	\$5,429
PR_YR011900 Bethel-Poquoson Force Main Part III Replacement	None	\$82	\$221	\$784	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50	\$1,087	\$1,137
PR_YR012220 York River Treatment Plant Digester Cover Replacement Phase II	None	\$572	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$572	\$1,572

CAPITAL IMPROVEMENT PROGRAM
 FY19 TO FY28 (\$,000)
 Based on Program Cost Estimates (Project Contingencies not Included)

	Regulatory Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Proj Exp to Prev Yr	Sum FY19 to FY28	Est Program Cost
PR_YR013140 York River Treatment Plant Environmental Studies and Habitat Enhancement	None	\$305	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$695	\$305	\$1,000
PR_YR013500 Westminster Drive Force Main Replacement	None	\$0	\$99	\$585	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$688	\$688
PR_YR013600 YRTP Solids Handling Electrical Improvements	None	\$360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$360	\$360
York River Subtotal		\$1,318	\$386	\$1,691	\$1,614	\$3,897	\$1,850	\$1,555	\$2,325	\$969	\$0	\$1,745	\$15,603	\$17,348
General														
PR_GN010730 Horizontal Valve Replacement Phase III	Rehab Plan Phase Two	\$365	\$605	\$605	\$605	\$605	\$353	\$0	\$0	\$0	\$0	\$0	\$3,136	\$3,136
PR_GN011700 Pump Station Generators and Standby Pump Upgrades	Rehab Plan Phase One	\$2,027	\$1,858	\$929	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,239	\$4,814	\$6,053
PR_GN012130 Manhole Rehab/Replacement Phase I and North Shore Siphon Chamber Rehab Phase I	Rehab Plan Phase One	\$207	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$401	\$207	\$609
PR_GN012131 Manhole Rehabilitation Phase 1A (North Shore)	Rehab Plan Phase One	\$712	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$593	\$712	\$1,305
PR_GN012132 Manhole Rehabilitation Phase 1B	Rehab Plan Phase One	\$913	\$391	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,305	\$1,305
PR_GN012133 Manhole Rehabilitation Phase 1C	Rehab Plan Phase One	\$0	\$1,174	\$130	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,305	\$1,305
PR_GN012134 North Shore Siphon Chamber Rehabilitation Phase 1	Rehab Plan Phase One	\$507	\$797	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,305	\$1,305
PR_GN012140 Pump Station Wet Well Rehabilitation Phase I	Rehab Plan Phase One	\$855	\$855	\$712	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$671	\$2,422	\$3,093
PR_GN012800 Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	Consent Decree 2008	\$5,729	\$1,016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,239	\$6,745	\$26,983
PR_GN013300 Treatment Plant Grease Handling Facilities	None	\$867	\$2,741	\$924	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$104	\$4,532	\$4,636
PR_GN014500 Renewable Energy Facility and Associated Plant Improvements	Clean Air Act	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PR_GN014900 North Shore Gravity Sewer Improvements Phase I	Rehab Plan Phase Two	\$80	\$222	\$214	\$2,477	\$1,493	\$0	\$0	\$0	\$0	\$0	\$0	\$4,487	\$4,487
PR_GN015000 South Shore Gravity Sewer Improvements Phase I	Rehab Plan Phase Two	\$0	\$0	\$37	\$65	\$236	\$394	\$0	\$0	\$0	\$0	\$0	\$732	\$732
PR_GN015100 Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	Rehab Plan Phase One	\$457	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$65	\$457	\$522
PR_GN015300 Interceptor System Valve Improvements Phase I	Rehab Plan Phase Two	\$74	\$157	\$539	\$1,367	\$456	\$0	\$0	\$0	\$0	\$0	\$0	\$2,592	\$2,592
PR_GN015400 South Shore Aerial Crossing Improvements	Rehab Plan Phase Two	\$0	\$4	\$15	\$11	\$137	\$94	\$0	\$0	\$0	\$0	\$0	\$260	\$260
PR_GN015800 North Shore Automated Diversion Facilities	None	\$148	\$1,040	\$235	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9	\$1,422	\$1,432
PR_GN016200 Sustainable Water Phase 3 - Demonstration Facility (SWIFT)	Regional Wet Weather Management Plan	\$188	\$31	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,178	\$219	\$26,396
PR_GN016300 Sustainable Water Initiative for Tomorrow (SWIFT)	Regional Wet Weather Management Plan	\$0	\$0	\$0	\$0	\$12,115	\$39,827	\$67,195	\$122,491	\$146,312	\$167,630	\$0	\$555,569	\$555,569
PR_GN016310 Integrated Planning of SWIFT	Regional Wet Weather Management Plan	\$3,000	\$2,000	\$1,500	\$1,000	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$8,500	\$8,500
PR_GN016320 Program Management of SWIFT Full Scale Implementation	Regional Wet Weather Management Plan	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$6,154	\$0	\$61,538	\$61,538
PR_GN016330 Well Services for SWIFT	Regional Wet Weather Management Plan	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,500	\$2,500
PR_GN016341 VIP SWIFT Land Acquisition	Regional Wet Weather Management Plan	\$0	\$0	\$0	\$0	\$15,000	\$0	\$0	\$0	\$0	\$0	\$15,000	\$15,000	\$30,000
PR_GN016350 Williamsburg SWIFT Facility	Regional Wet Weather Management Plan	\$4,560	\$10,890	\$15,150	\$40,550	\$44,510	\$8,915	\$0	\$0	\$0	\$0	\$0	\$124,575	\$124,575
PR_GN016360 James River SWIFT Facility	Regional Wet Weather Management Plan	\$0	\$6,340	\$20,646	\$15,534	\$56,360	\$61,860	\$12,390	\$0	\$0	\$0	\$0	\$173,130	\$173,130
PR_GN016370 York River SWIFT Facility	Regional Wet Weather Management Plan	\$0	\$0	\$0	\$6,000	\$19,533	\$14,697	\$53,320	\$58,540	\$11,716	\$0	\$0	\$163,806	\$163,806
PR_GN016400 Treatment Plant Dewatering Replacement Phase I	None	\$254	\$1,594	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71	\$1,848	\$1,919
PR_GN016500 JR and NTP Dewatering Building Mod and Centrifuge Replacement	None	\$763	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$178	\$763	\$941
PR_GN016600 South Shore High Point Air Vent Installation Phase I	None	\$188	\$263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$450	\$450
PR_GN016700 Treatment Plant Solids Handling Replacement Phase II	None	\$0	\$721	\$849	\$1,496	\$249	\$0	\$0	\$0	\$0	\$0	\$0	\$3,315	\$3,315
PR_GN016800 Fleet Management (FY19-FY22)	None	\$612	\$1,372	\$1,307	\$1,090	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,381	\$4,381
PR_GN016900 Mobile Workforce Implementation	None	\$1,750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,750	\$1,750
PR_GN017000 Water Quality Department Instrumentation and Monitoring Equipment (FY19)	None	\$285	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$285	\$285
General Subtotal		\$33,194	\$40,225	\$49,945	\$76,348	\$157,847	\$132,294	\$139,059	\$187,184	\$164,182	\$173,784	\$64,748	\$1,154,062	\$1,218,811
Future Improvements														
PR_IP010200 Treatment Plant Expansions and Improvements	None	\$0	\$0	\$752	\$3,311	\$1,701	\$6,124	\$1,379	\$407	\$515	\$2,178	\$0	\$16,368	\$16,368
PR_IP010300 General Expansions and Improvements	None	\$0	\$0	\$0	\$338	\$138	\$680	\$153	\$45	\$57	\$242	\$0	\$1,653	\$1,653
PR_IP010600 Treatment Plant Rehabilitation and Replacement	None	\$0	\$0	\$752	\$3,311	\$1,701	\$6,124	\$1,379	\$407	\$515	\$2,178	\$0	\$16,368	\$16,368
PR_IP010700 General Rehabilitation and Replacement	None	\$0	\$0	\$0	\$338	\$138	\$680	\$153	\$45	\$57	\$242	\$0	\$1,653	\$1,653
PR_IP010800 Regional Wet Weather Improvements	Regional Wet Weather Management Plan	\$0	\$1,773	\$3,218	\$15,553	\$27,490	\$29,516	\$27,012	\$31,655	\$32,730	\$27,926	\$0	\$196,873	\$196,873
PR_IP011000 Advanced Treatment Infrastructure Upgrades	None	\$196	\$3,323	\$17,185	\$22,471	\$50,008	\$74,387	\$76,783	\$30,000	\$62,048	\$45,000	\$0	\$381,402	\$381,402
Future Improvements Subtotal		\$196	\$5,096	\$21,908	\$45,323	\$81,175	\$117,512	\$106,860	\$62,560	\$95,922	\$77,765	\$0	\$614,318	\$614,318
CIP Totals		\$134,000	\$187,255	\$200,000	\$200,000	\$285,714	\$285,714	\$285,714	\$285,714	\$285,714	\$276,190	\$384,411	\$2,426,017	\$2,810,427

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #5

AGENDA ITEM 7. – Interceptor Systems Pump Station Control and Supervisory Control and Data Acquisition (SCADA) Upgrades and Enhancements Briefing



PROJECT UPDATE:
Supervisory Control And Data
Acquisition (SCADA)

May 2018

SCADA Platform Replacement

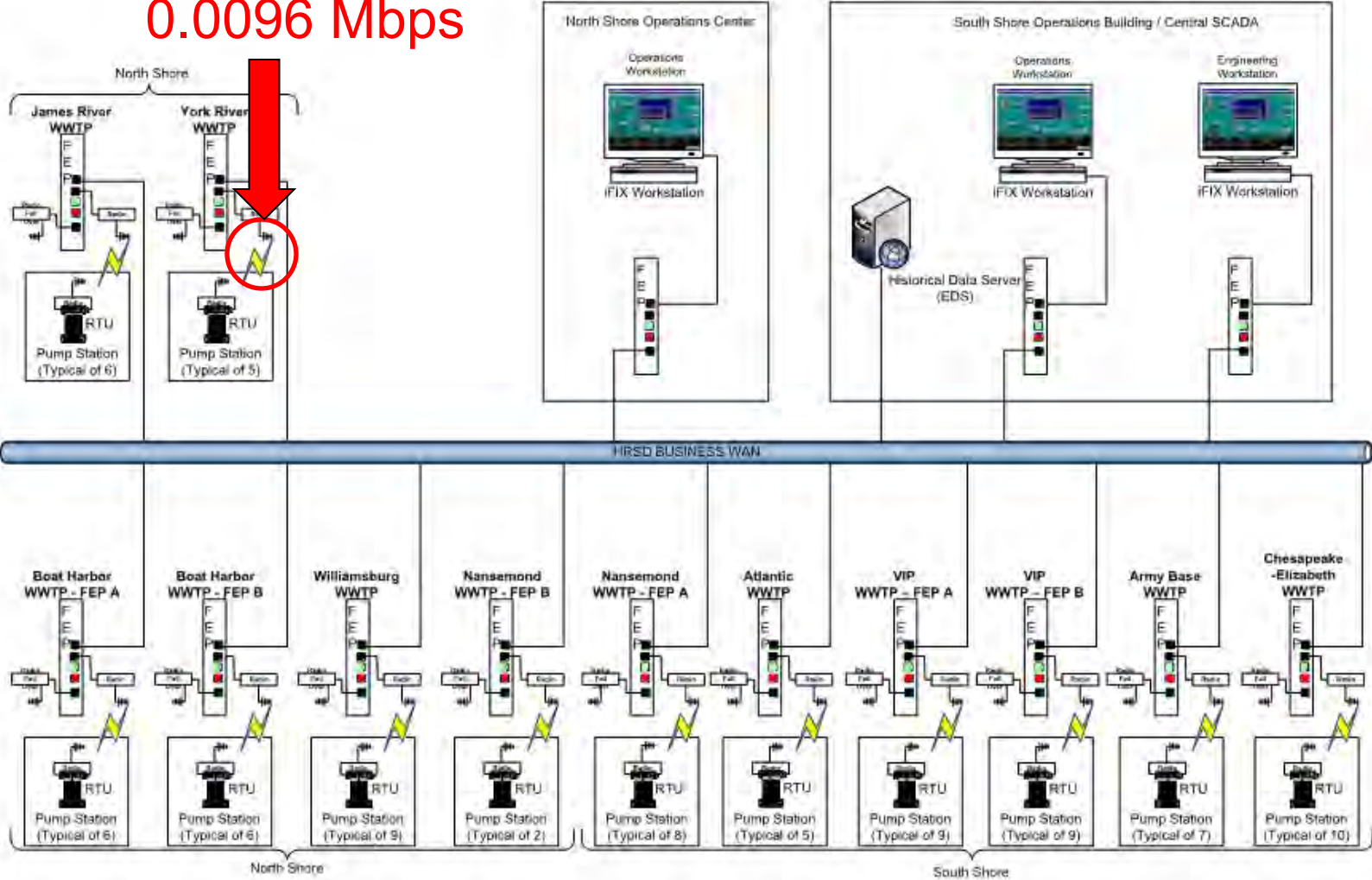
- Agenda
 - Why we are replacing?
 - What we are replacing?
 - A fork in the road
 - Sunk costs
 - Path forward

SCADA Platform Replacement

- Existing SCADA System
 - Monitors, reports, and alarms for HRSD pump stations and pressure reduction stations
 - Licensed band UHF radios provide connectivity between stations, master radios, and central data repositories
 - Uses outdated, proprietary, and slow technologies
 - Incapable of meeting current data exchange, system control and automation needs

Existing SCADA

0.0096 Mbps



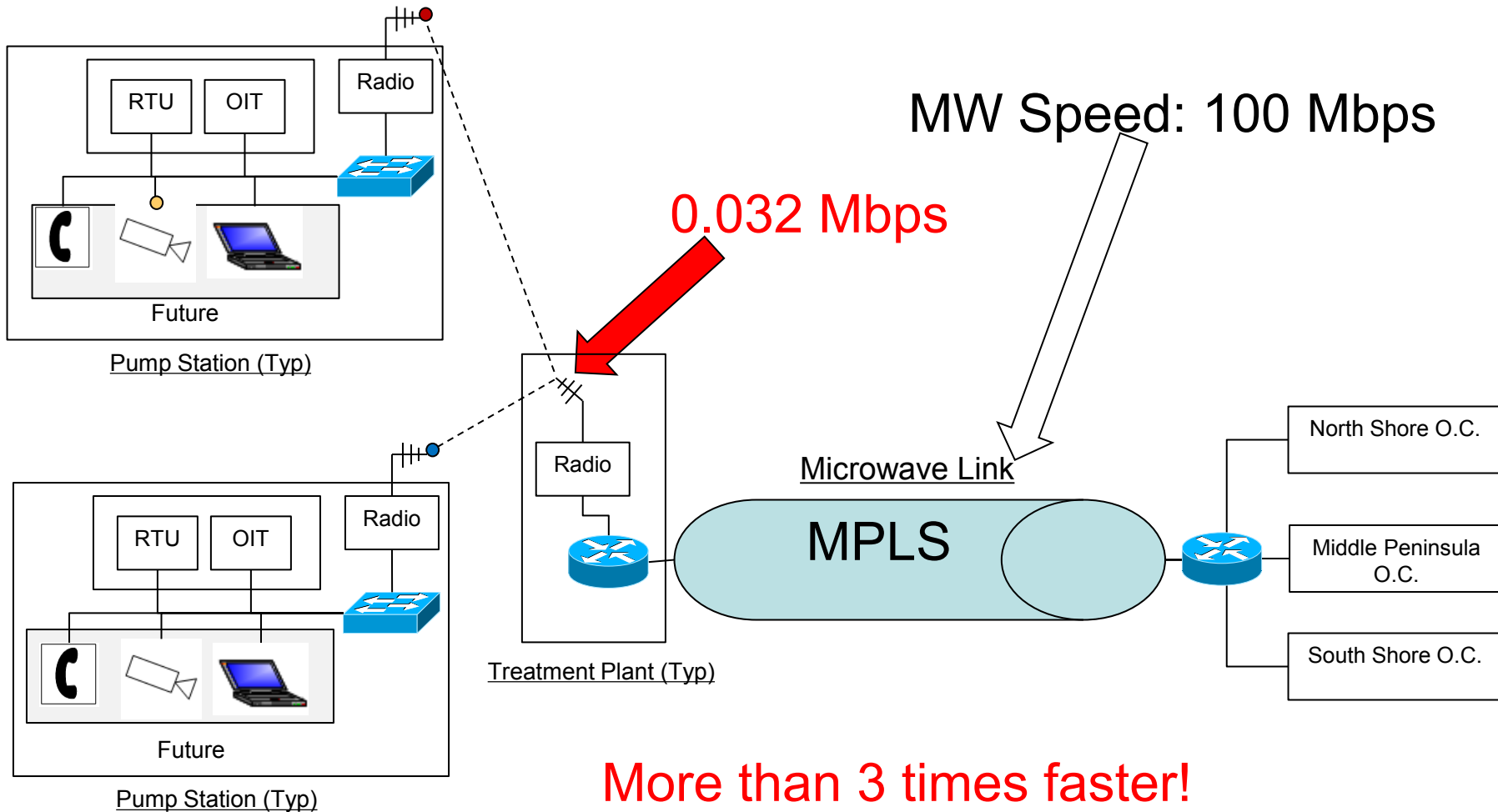
Original design objectives

- Replace obsolete and aging equipment
- Provide both remote monitoring and **control**
- Consolidate data acquisition and data management systems
- Improve reliability
- Provide a forward migration path for future “Smart Sewer” processes
- Improve data management/transfer
- Expandable to accommodate growth
- Integrate with the Enterprise Data System (EDS).

Original design

- Based on technology at time (2010)
- Based on data points desired at time
- Depended on HRSD owned Microwave WAN
 - No better solution identified
 - Kept full control with HRSD
 - Required 12 new towers and leased space on 10 other existing towers
- Project delayed due to CIP balancing
- Tower construction at beginning – in advance of SCADA contract
- 2018 compliance date – kept pushing out to complete close to 2018

As designed SCADA - 2010



More than 3 times faster!

Boat Harbor cell tower

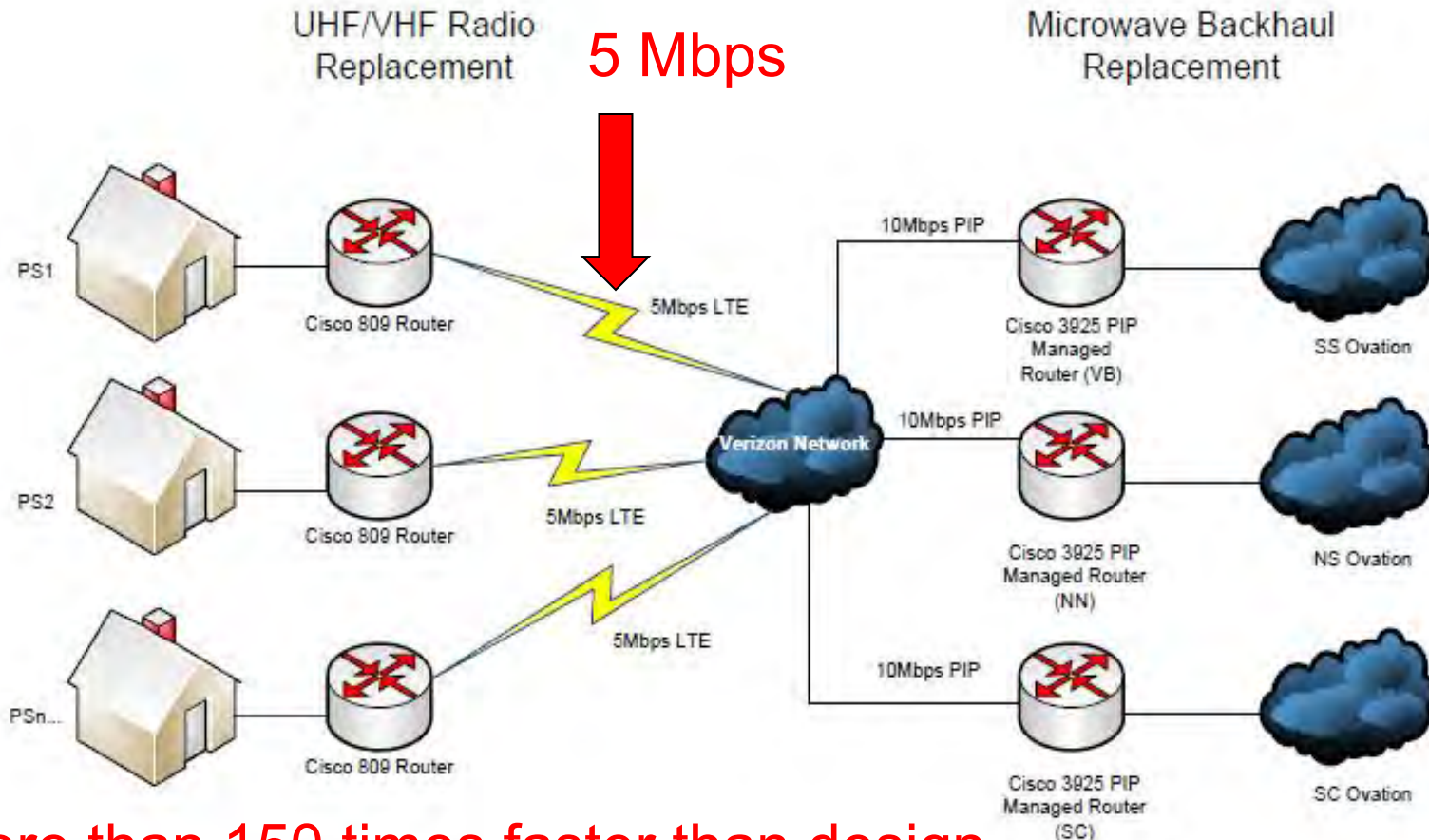


Crown Castle space



- During delays in construction major advances in cell technology and availability
 - IOT was driving cell technology improvements
- During delays internal desire for more data on more frequent basis identified
 - Real time / near real time goals
- Data desires grew beyond radio based solution capacity
- Cell technology matured and became competitive

Revised design SCADA - 2017



More than 150 times faster than design
520 times faster than current SCADA

SCADA Platform Replacement

- Benefits of the cellular based system
 - Supports current and future bandwidth needs in a secure and scalable architecture
 - Replace obsolete technologies
 - Provides enhanced monitoring and control capability for future Smart Sewer initiatives
 - Incorporates state of the art technologies with carrier-class disaster recovery capabilities
 - Allows for in-house support and does not require costly maintenance of tower-based microwave equipment
 - Industry standards-based communication protocols and integration support for HRSD's wide area network
 - Provides a migration path for existing data onto current enterprise data systems

SCADA Platform Replacement

- Path Forward
 - Exploring options to reduce liability with Crown Tower leased space
 - Microwave tower equipment being surplus and/or credited back to contract – continue to market our tower space
 - Final completion of full SCADA now 2019
 - Received relief from EPA regulatory required completion date

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #6

AGENDA ITEM 8. – Water Quality Services Building – Phase II
Lease of Property for HRSD Storage

LEASE

THIS LEASE, made as of the 8th day of May, 2018, by and between Hampton Roads Sanitation District, (“Tenant”), and Bayside Investors, LLC, a Virginia Limited Liability Company (“Landlord”).

WITNESSETH:

FOR AND IN CONSIDERATION of the mutual covenants and agreements contained in this Lease, the parties covenant and agree as follows:

1. **BASIC LEASE PROVISIONS AND DEFINITIONS.** The following capitalized terms whenever used in this Lease shall have the meanings set forth in this Paragraph 1:

(a) Tenant: Hampton Roads Sanitation District

(b) Landlord: Bayside Investors, LLC

(c) Tenant’s Mailing Address:

Hampton Roads Sanitation District

ATTN: Ayanna Williams, Real Estate Manager

1434 Air Rail Avenue

Virginia Beach, VA 23455

(d) Tenant’s Email Address: awilliams@hrsdc.com

(e) Landlord’s Mailing Address:

Bayside Investors, LLC

PO Box 12773

Norfolk, Virginia 23541

(f) Landlord’s Email Address: Meekins15gm@gmail.com

(g) Facility: A certain parcel of land located in Virginia Beach, VA, and the improvements thereon, as generally shown on the site plan attached as Exhibit A to this Lease known as

5741 Bayside Road, Virginia Beach, VA, 23455.

(h) Premises:

- a. The Premises outlined in red or otherwise designated on Exhibit A containing approximately 3,050 square feet of office and warehouse space located in the Facility, and more particularly described or commonly known as, 5741 Bayside Road, Unit 106, Virginia Beach, VA, 23455.

- b. The Premises outlined in red or otherwise designated on Exhibit A containing approximately 3,050 square feet of office and warehouse space located in the Facility, and more particularly described or commonly known as, 5741 Bayside Road, Unit 108, Virginia Beach, VA 23455.
- (i) Initial Term: Five (5) years.
- (j) Permitted Use: The warehousing and distribution of All Zoned Uses.
- (k) Base Rent:
 - a. **Suite 106**: The sum of Thirty-Four Thousand Three Hundred Twelve and 50/100 Dollars (\$34,312.50) annually, payable in equal monthly installments of Two Thousand Eight Hundred Fifty-Nine and 38/100 Dollars (\$2,859.38) each. Base Rent shall be increased annually on each anniversary of the Commencement Date by an amount equal to three percent (3%) of the Base Rent in effect for the preceding Lease Year.
 - b. **Suite 108**: The sum of Twenty-Five Thousand One Hundred Sixty-Two and 50/100 Dollars (\$25,162.50) annually, payable in equal monthly installments of Two Thousand Ninety-Six and 88/100 Dollars (\$2,096.88) each. Base Rent shall be increased annually on each anniversary of the Commencement Date by an amount equal to three percent (3%) of the Base Rent in effect for the preceding Lease Year.
- (l) Security Deposit: **NONE.**
- (m) Current Initial Tenant Charges:
 - a. **Suite 106**: The sum of Four Thousand Five Hundred Fourteen and 00/100 (\$4,514.00) annually, payable in equal monthly installments of Three Hundred Seventy-Six and 17/100 (\$376.17) each, subject to adjustment in accordance with Paragraph 9.
 - b. **Suite 108**: The sum of Four Thousand Five Hundred Fourteen and 00/100 (\$4,514.00) annually, payable in equal monthly installments of Three Hundred Seventy-Six and 17/100 (\$376.17) each, subject to adjustment in accordance with Paragraph 9.
- (n) Rental Mailing Address:

Bayside Investors, LLC
P.O. Box 12773
Norfolk, Virginia 23541

(o) Early Termination: If after the initial five (5) year Term Tenant, in his sole discretion, desires to terminate this Lease prior to the natural expiration of their five (5) year renewal term(s), Tenant shall have an option to buy out of this Lease upon notice to Landlord, at least six (6) months prior to desired early termination date, along with a lump sum payment to Landlord of the then annual Base Rent (twelve (12) months of rent) for Suite 106 and/or Suite 108.

2. PREMISES. Landlord leases to Tenant, and Tenant leases from Landlord, the Premises, subject to the terms and conditions of this Lease.

3. TERM. The Initial Term of this Lease shall commence on July 1, 2018.

4. BASE RENT.

(a) From and after the Commencement Date, Tenant covenants to pay Base Rent and all other Rent (as defined below) to Landlord, without notice or demand, and without deduction or offset. Base Rent shall be payable on the first day of each month, in advance, in equal monthly installments. Base Rent for any partial months of the Term shall be prorated on a thirty (30) day month basis. All payments of Base Rent and all other Rent owed to Landlord under this Lease shall be paid to Landlord at the Rental Mailing Address, or to such other party and/or at such other address as Landlord may from time to time designate in writing.

(b) The term "Rent" shall include Base Rent, Tenant Charges (as defined in Paragraph 9) and any and all other charges and amounts (collectively "Additional Rent") due to Landlord under this Lease. Any Rent not paid on the due date shall bear interest at the rate (the "Default Rate") equal to the lesser of twelve percent (12%) per annum or the maximum interest rate permitted by law until paid. In addition, if any installment of Rent is more than seven (7) days late, Tenant shall pay a "Late Charge" equal to the greater of (i) One Hundred Dollars (\$100.00) or (ii) five percent (5%) of the Rent due to cover the extra expense involved in handling delinquent payments.

5. COMMON AREAS; FACILITY LAYOUT.

(a) All common areas and other common facilities (collectively "Common Areas") made available from time to time by Landlord in or about the Facility shall be subject to the exclusive control and management of Landlord. Common Areas shall include all areas, space, facilities, equipment, signs and special services from time to time made available for the common and joint use and benefit of Landlord, Tenant and other tenants and occupants of the Facility, such as sidewalks, parking areas, access roads, driveways, landscaped areas, truck service ways, loading docks, restrooms and utility facilities. Exhibit A sets forth the contemplated layout of the Common Areas, buildings and improvements of the Facility (collectively the "Improvements"), but this diagram shall not be deemed to be a warranty on the part of Landlord that the Improvements will

be constructed or maintained in accordance with this layout. Landlord shall have the right to add to, remove, relocate, replace and/or otherwise change any Improvements shown on Exhibit A or later constructed and to make all such other changes to the size, location and arrangement of the Improvements as Landlord deems advisable, whether in the Common Areas or on other portions of the Facility.

(b) Tenant shall have a non-exclusive license to use the Common Areas as now or at any time during the Term may exist in common with Landlord and other tenants, occupants and other parties that Landlord allows to use the Facility, such use by Tenant to be for access, loading and unloading and parking only. Landlord will have the right to (i) establish, modify and enforce reasonable rules and regulations with respect to the Facility and Common areas; (ii) designate employee parking areas in the Facility which Tenant and its employees must use; (iii) close all or any portion of the Common Areas to prevent the acquisition of public rights therein, for construction or other purposes; and (iv) perform or permit such other acts in and to the Common Areas that Landlord in the exercise of good business judgment deems to be advisable.

6. OPERATING COSTS. Tenant shall pay to Landlord as Additional Rent a share of the "Operating Costs" for the Facility. "Operating Costs" shall mean the total costs and expenses incurred by Landlord in operating, maintaining and repairing the Facility and Common Areas, including without limitation, the cost and expense of landscaping, gardening and planting; paving, patching and line painting of all parking areas, drives and roadways; Common Area maintenance and cleaning, sanitary control, snow removal and trash, garbage and other refuse removal, including costs related to common trash dumpsters and compactors; repair, maintenance and replacement of sidewalks, pavements, light fixtures; repair, maintenance and painting of buildings; pest control; general repairs; fire protection and security services (if provided by Landlord, it being agreed that Landlord has no duty to provide such services); costs of all liability insurance carried by Landlord for the Facility (excluding "Insurance Charges" that are otherwise paid by Tenant under Paragraph 8 below); maintenance, repair and replacement of utility systems serving the Facility; costs of lighting and other utilities serving the Common Areas; depreciation of machinery and equipment owned and used in operation, and maintenance and repair of the Common Areas, or the rental charges for such machinery and equipment. Landlord may cause any and all of the aforesaid services relating to Operating Costs to be provided by an independent contractor or contractor(s).

Tenant's share of Operating Costs shall be computed by multiplying the total amount of the Operating Costs by a fraction ("Tenant's Fractional Share"), the numerator of which shall be the total number of square feet in the Premises, and the denominator of which shall be the total leasable floor area in the Facility. Tenant's fractional share is Nine Percent (9.0%)

for Suite 106 and Nine Percent (9.0%) for Suite 108. Tenant's share of Operating Costs shall be paid in accordance with Paragraph 9 below.

7. TAXES. Tenant shall pay to Landlord, in accordance with Paragraph 9 below, a share of Real Estate Taxes, which shall be computed by multiplying the total amount of Real Estate Taxes by Tenant's Fractional Share. The term "Real Estate Taxes" shall mean all taxes and assessments (special or otherwise) levied or assessed directly or indirectly against the Facility and other taxes arising out of the use and/or occupancy of the Facility imposed by any taxing authority having jurisdiction over the Facility and shall include expenses and reasonable attorney's fees incurred by Landlord in contesting the validity or amount of any such taxes or assessments or in seeking a rebate of taxes or assessments. Real Estate Taxes shall not include franchise, capital stock, income, estate or inheritance taxes personal in nature to Landlord. Tenant shall also pay promptly when due or make reimbursement to Landlord for all taxes imposed upon Tenant's rent, lease and business operation, including without limitation, all sales taxes, value added taxes, documentary taxes, stamp taxes and other taxes assessed upon the consideration to be received by Landlord for this Lease, or upon the personal property of Tenant.

8. LANDLORD'S INSURANCE. Landlord agrees to maintain fire and extended coverage insurance on the Premises and Facility. Tenant agrees to pay Landlord, in accordance with Paragraph 9 below, a share of the premiums (the "Insurance Charges") paid by Landlord and attributable to the fire and casualty insurance with standard extended coverage, insurance for such other risks that Landlord may elect or be required to carry and rent insurance, which share shall be computed by multiplying the total amount of Insurance Charges by Tenant's Fractional Share. In addition to the foregoing, if Tenant conducts, or permits to be conducted, any activity, or places any equipment in or about the Premises or Facility, that will increase the premiums for Landlord's fire and casualty insurance on the Premises or the Facility, tenant shall reimburse Landlord for the entire amount of such increase within twenty (20) days after Landlord submits to Tenant a billing therefore.

9. PAYMENT OF TENANT CHARGES. Landlord shall estimate the amounts that Tenant will owe for Operating Costs, Real Estate Taxes and Insurance Charges (collectively the "Tenant Charges") on the basis of periods of twelve (12) consecutive months as designated by Landlord, and Tenant shall pay one-twelfth of such estimate of Tenant Charges on a monthly basis in advance together with payment of Base Rent. As of the Commencement Date, the Tenant Charges shall be equal to the "Initial Tenant Charges" amount set forth in Paragraph 1(k) above. Landlord may revise the estimate of Tenant Charges from time to time and change Tenant's monthly estimated payment of Tenant charges accordingly. Landlord shall furnish Tenant annually (within three (3) months after the end of the applicable twelve (12) month period) with a statement of the actual Tenant Charges for the period in question, and there shall be an adjustment between Landlord and Tenant of

Tenant Charges owed by Tenant for such period. Any amount owed to Landlord for an underpayment of the actual Tenant Charges shall be made within twenty (20) days after receipt by Tenant of the billing therefore. Any overpayment shall be credited against Tenant's next payment of Tenant Charges owed hereunder. Tenant Charges at the beginning or end of the Term for periods of less than twelve (12) full calendar months shall be appropriately adjusted by Landlord.

10. USE. Tenant agrees to use and occupy the Premises solely for the Permitted Use and for no other purpose. Tenant acknowledges that Landlord has made no representations to Tenant concerning any particular use that may be made of the Premises or the use to which the Premises legally may be put. Tenant shall not use or permit the use of the Premises in any manner that will tend to create waste or a nuisance, and Tenant shall conduct its business in such a manner, both as regards to noise and other nuisances, as will not interfere with, annoy or disturb any other tenant of the Facility in the conduct of its business or Landlord in the management of the Facility.

11. TRADE FIXTURES. Tenant shall have the right to install its trade fixtures in the Premises, provided such installation shall not interfere with any construction or renovation work on the Premises required to be performed by Landlord (if any), and such installation shall be at the sole risk and expense of Tenant. All trade fixtures installed in the Premises by Tenant shall remain the property of, and shall be removable by, Tenant at the expiration of this Lease, if Tenant is not in default hereunder, and Tenant agrees promptly to repair or reimburse Landlord for the cost of repairing all damage to the Premises occasioned by the removal of said trade fixtures. Equipment and fixtures that are integral to the operation of the Premises as a real estate unit generally, such as HVAC, plumbing, electrical and illumination equipment, or that are permanently installed in the Premises shall not be considered trade fixtures. To secure the payment of all Rent and other amounts owed by Tenant and the performance of Tenant's other obligations under this Lease, Tenant grants Landlord a security interest in all goods, inventory, equipment, fixtures, trade fixtures and all personal property belonging to Tenant which are or may be put into the Premises during the Term, and all proceeds of the foregoing. Tenant agrees to sign any financing statement requested by Landlord to affect such security interest. The lien granted under this Paragraph shall be in addition to any landlord's lien that may now or at any time hereafter be provided by law.

12. MAINTENANCE BY LANDLORD. Landlord will, within a reasonable time after being notified in writing by Tenant of the need therefore, make such repairs to the roof, outside walls (except windows and doors), gutters and downspouts of the building of which the Premises is a part as may be necessary in order to keep such building in good condition, unless said repairs are occasioned by the negligence or willful act of Tenant or any of its agents, employees or contractors, in which event such repairs shall be made at the expense of Tenant. Landlord shall have no liability for damage or injury to persons or

property resulting from Landlord's failure to make such repairs, unless Landlord shall have failed to make such repairs within a reasonable time after having been notified by Tenant of the need therefore.

13. MAINTENANCE BY TENANT.

(a) Tenant agrees that it will, at its own cost and expense, keep the interior of the Premises and the appurtenances thereto, including without limitation the heating and air conditioning systems, interior walls, toilets, plumbing lines, doors (including overhead doors), windows, glass, electric lines, fixtures and equipment, in good condition and repair, making such replacements as may be necessary from time to time. Tenant shall be responsible for all repairs and replacements necessary to keep the Premises and the appurtenances thereto in good order and condition except those which Landlord has expressly agreed to make under the provisions of Paragraph 12 of this Lease.

(b) Tenant agrees to keep the Common Areas immediately adjacent to the Premises free of trash, rubbish and garbage, and to perform snow and ice removal for the Common Areas immediately adjacent to the Premises. Tenant shall not burn any trash, waste, rubbish or garbage in or about the Premises.

(c) In connection with the requirements of this Paragraph 13, Tenant agrees to obtain and maintain from a reputable company a maintenance contract on the heating and air conditioning systems and to furnish Landlord with a copy of said contract on the Commencement Date.

(d) Tenant agrees that it will, at Tenant's expense, comply with any mandatory preventive maintenance items required by insurance carriers, rating authorities or public officials to minimize loss frequency and/or severity within the Premises. Tenant shall not keep within the Premises any articles of a dangerous, flammable or explosive character that would increase the danger of fire upon the Premises or which could be deemed "hazardous" or "extra-hazardous" by Landlord's insurance carriers or insurance rating authorities or public officials.

14. MISCELLANEOUS COVENANTS OF TENANT.

(a) Tenant will pay promptly for all electricity, water, gas, telephone and other utilities consumed in the Premises and all sewage disposal charges assessed against the Premises. If certain utilities are not separately metered for the Premises, Tenant agrees to reimburse Landlord for Tenant's share of such utility bills, such share to be determined by Landlord in its business discretion based on Landlord's estimate of utility use by each tenant of the Facility. Tenant shall reimburse Landlord for its share of such utilities within twenty (20) days after Landlord submits to tenant an itemized statement therefore.

(b) Tenant shall not make any exterior or structural alterations to the Premises without Landlord's prior written consent. Tenant shall not make any interior, non-structural alterations or improvements to the Premises exceeding \$1,000.00 in cost

unless Tenant has obtained Landlord's prior written approval (which approval shall not be unreasonably withheld or delayed) of the work to be performed. Any alteration, addition or improvement made by Tenant shall, at Landlord's option, become the property of Landlord upon the expiration or sooner termination of this Lease; alternatively, Landlord may require Tenant to remove such alterations, additions or improvements and return the Premises to its original condition (ordinary wear and tear excepted) at Tenant's expense. In connection with any alterations, Tenant shall satisfy Landlord's requirements for bonding, insurance and other contractor requirements. All alterations and improvements shall be performed in a first-class manner. In no event shall Tenant make any change to the Premises that alters the character of the Premises from an office/warehouse facility, lessens the value of the Premises or violates any laws or other legal requirements or the provisions of any mortgage on the Facility. Work done by Tenant under the provisions of this paragraph shall not interfere with the use by other tenants of their premises in the Facility. Tenant agrees that it will, at all times during the term of this Lease, take any and all steps necessary to prevent the filing of mechanic's liens against the Premises, or, if filed, to have same discharged by payment or bond immediately.

(c) Tenant shall keep the Premises free from insects, pests and vermin of all kinds, and for that purpose Tenant shall use, at Tenant's cost such pest extermination contractor as Landlord may reasonably direct and at such intervals as Landlord may reasonably require.

(a) Tenant agrees to comply with all federal, state and local laws, ordinances and regulations relating to the Premises and Tenant's business and use and occupancy thereof. Tenant shall not use or permit the use of the Premises for the generation, storage, treatment, use, sale, transportation or disposal of any chemical, material or substance that could pose a hazard to the health and safety of the other tenants and occupants of the Facility or in any manner that violates any law, rule or regulation relating to hazardous substances of any applicable governmental authority. In addition, Tenant agrees not to generate, store, treat, use, transport or dispose of any substance regulated under SARA Title III without the prior written permission and approval of Landlord.

15. ASSIGNMENT AND SUBLETTING. Tenant shall not assign this Lease or sublet the Premises, in whole or part, without the prior written consent of Landlord, which shall not unreasonably be withheld. If such consent is granted by Landlord, Tenant will remain primarily liable for the performance of the covenants herein contained binding upon Tenant (regardless of any subsequent amendment or modification of this Lease and regardless of any further assignment or subletting, all of which are hereby deemed to be consented to by Tenant and any Guarantor). Each assignee must agree in writing to assume the obligations of Tenant under this Lease by an agreement satisfactory to Landlord and delivered to

Landlord within ten (10) days after the date the lease assignment is executed. Each subtenant must agree in writing (delivered to Landlord within ten (10) days after the sublease is executed) that Landlord may collect rent under the sublease directly from the subtenant if there is a default under this Lease and, at Landlord's option, agree to attorn to Landlord should this Lease be terminated.

16. EMINENT DOMAIN. If any part of the Premises shall be taken by governmental authority pursuant to the power of eminent domain (or Landlord conveys any part of the Premises pursuant to a threat thereof), then the Premises shall be reduced in proportion to the amount so taken or conveyed, unless the amount taken shall be so great that it would be impractical for Tenant to continue operation, in which event this Lease shall be cancelled and terminated as of the date of such taking. All compensation awarded for any taking of the Premises or the Facility shall belong solely to and be the property of Landlord, and Tenant assigns to Landlord all of Tenant's rights with respect thereto and waives any claim Tenant may have with respect thereto, including any claim for Tenant's leasehold estate. However, Tenant may apply for reimbursement from the condemning authority (if permitted by law) for moving expenses, removal of Tenant's trade fixtures or loss of Tenant's business good will, provided that any such reimbursement shall not reduce the amount of the award otherwise recoverable from the condemning authority by Landlord. If a portion of the Premises is taken and this Lease is not terminated, Landlord shall, to the extent reasonably and economically feasible, restore the remaining portion of the Premises to a complete architectural unit substantially similar in size and condition to the Premises, provided such restoration can be completed within ninety (90) days. If Landlord determines (in its business judgment) that such restoration cannot be completed within ninety (90) days, this Lease shall be cancelled and terminated as of the date of such taking, upon written notice from either party. Furthermore, in the event of such taking, the Base Rent shall be reduced proportionately based on the percentage of the Premises taken and not restored by Landlord.

17. DAMAGE BY FIRE. If the Premises shall be damaged by fire or other casualty during the term hereof, Landlord agrees that it will, insofar as the proceeds from Landlord's insurance permit, restore the Premises to substantially their condition immediately prior to such fire or other casualty, provided that Landlord's mortgagee does not require insurance proceeds to be paid to it. All other repairs shall be conducted at the sole expense of the Tenant. However, if Landlord determines (in its business judgment) that such restoration cannot be completed within ninety (90) days, then Landlord may cancel and terminate this Lease as of the date such damage occurs by giving written notice to Tenant. If the Premises are rendered untenantable in whole or in part as a result of fire or casualty damage, the Base Rent payable hereunder shall be equitably and proportionately abated (according to loss of use) during the period intervening between the date of such

damage and the date Landlord completes its restoration obligations with respect to the Premises. If this Lease is terminated pursuant to the provisions of this Paragraph 17, then Rent payable hereunder shall be abated as of the date of such damage, and Tenant shall remove all of its property from the Premises within fifteen (15) days after the notice of termination is given.

18. TENANT'S INDEMNIFICATION, LIABILITY AND CASUALTY INSURANCE.

Tenant agrees that it will indemnify, defend and hold Landlord and Landlord's agents, employees, partners and officers harmless from any and all injury or damage to person or property in, on or about the Premises, and all injury or damage occurring elsewhere in the Facility as a result of the negligence or willful misconduct of Tenant, its agents, employees or contractors, including without limitation all costs, expenses, claims or suits arising in connection therewith. Tenant covenants that it will, at all times during the Term, at its own cost and expense, carry commercial general liability insurance on the Premises (including Common Areas adjoining the Premises) with a company or companies licensed to do business in the Commonwealth of Virginia and with coverage for each occurrence of at least \$2,000,000.00 combined single limit for personal and bodily injury, death and property damage, which insurance shall name Landlord, Broker and any mortgagee of Landlord as additional named insureds. Tenant further covenants that it will, at all times during the Term, at its own cost and expense, carry insurance against damage by fire, extended coverage and other perils, in an amount equal to the replacement value thereof, on (1) all parts of the Premises for which Tenant is responsible under the terms of this Lease, and (2) all of Tenant's property, including Tenant's inventory, furniture, fixtures and equipment in the Premises. Binding certificates (ACORD 27 or similar form) of such insurance coverage shall be delivered to Landlord promptly after the issuance of the respective policies. If Tenant fails to provide such insurance, Landlord may (but shall not be obligated to) do so and collect the cost thereof as Rent.

19. RELEASE AND WAIVER OF SUBROGATION. Landlord and Tenant mutually release and discharge each other (as well as the officers, directors, partners, agents and employees of each other) from responsibility and liability (by way of subrogation or otherwise) for loss or damage to any building, structure or other property (real or personal) of the other party, or any resulting loss of income that is an insured loss under the terms of the insurance policy(ies) of the releasing party or that involves a fire, casualty or other risk or loss required to be insured against under this Lease. This release and discharge shall be applicable even though such loss or damage may have been caused by the negligence of the party hereby released. Landlord and Tenant agree to include a waiver of subrogation endorsement in each of their respective casualty insurance policies.

20. DEFAULTS AND REMEDIES.

(a) Defaults. The occurrence of any one or more of the following events (“Defaults”) shall constitute a default and breach of this Lease by Tenant: (i) Tenant fails to pay any Base Rent or any other Rent payments owed under this Lease within five (5) days after Tenant is given written notice of non-payment; (ii) Tenant fails to observe and perform any of the other terms, covenants and/or conditions of this Lease, and such default shall continue for more than thirty (30) days after written notice from Landlord to Tenant (however, if a default under this item (ii) cannot reasonably be cured within thirty (30) days, and Tenant has commenced the cure within such time and is diligently proceeding to complete the cure, then Tenant shall have such reasonable extra time (not to exceed sixty (60) days) to complete the cure); (iii) Tenant fails to pay when due Base Rent or any other Rent owed under this Lease three (3) or more times in any period of twelve (12) consecutive months; (iv) the Premises is abandoned or vacated; (v) Tenant’s interest in the Premises is sold under attachment, execution or similar legal process; (vi) Tenant or any Guarantor is adjudicated as bankrupt or insolvent under any state bankruptcy or insolvency law or an order for relief is entered against Tenant or any Guarantor under the federal Bankruptcy Code and such adjudication or order is not vacated within ten (10) days, or (vii) a case is commenced by or against Tenant or any Guarantor of Tenant’s obligations under this Lease under any chapter of the federal Bankruptcy Code, or a voluntary or involuntary petition is filed proposing the adjudication of Tenant or any Guarantor as bankrupt or insolvent, the reorganization of Tenant or any Guarantor or an arrangement by Tenant or any Guarantor with its creditors (unless the petition is filed or case commenced by a party other than Tenant or Guarantor and is withdrawn or dismissed within thirty (30) days after the date of its filing); (viii) there is filed by or against Tenant, or any successor tenant then in possession, or any Guarantor of this Lease, in any court pursuant to any statute or law, a petition (1) for appointment of a trustee or receiver, (2) for an assignment for the benefit of creditors, or (3) for reorganization.

(b) Remedies. Upon the occurrence and continuance of a Default, Landlord, without notice to Tenant in any instance (except where expressly provided for below) may do any one or more of the following: (i) apply the Security Deposit (if any) toward the satisfaction and cure of such Default; (ii) reenter the Premises, without terminating this Lease, and remove all persons and property from the Premises, by an suitable action or proceeding at law, or without judicial process if Landlord so elects, without being liable for any prosecution therefor or damages therefrom, and repossess and enjoy the Premises; (iii) elect to terminate this Lease upon not less than five (5) days written notice to Tenant, at which time the term of this Lease shall expire, but with Tenant’s liability under all of the provisions of this Lease to continue; or (iv) exercise any other legal or equitable rights or remedies available to Landlord, including those additional rights set forth in this Lease. In exercising any of the above remedies, Landlord may remove Tenant’s property from the Premises and store the same at Tenant’s and/or

Lender's expense without Landlord being deemed guilty of trespass or becoming liable for any loss or damage occasioned thereby, and Landlord may also sell such property at public or private sale, with the proceeds being applied to costs of sale and storage (including attorney's fees), amounts owed to Landlord under this Lease, and with any surplus paid to tenant, in that order. Tenant waives any rights to re-enter the Premises and any rights of redemption.

Tenant understands that Landlord may re-let, in one or more leases, all or part of the Premises, either in Landlord's own right or as agent for Tenant, accepting any rents then obtainable, for a term or terms that may be greater or less than the balance of the Term of this Lease, and Landlord may grant concessions or free rent without in any way affecting Tenant's liability for the Rent payable under this Lease. However, Tenant understands that Landlord shall be under no duty to re-let the Premises and that Tenant's liability under this Lease shall not be affected or diminished in any way whatsoever, for Landlord's failure to re-let the Premises, or if the Premises are re-let, for Landlord's failure to collect the rentals under such re-letting. In connection with any re-letting, Landlord may make or do any alterations, repairs, painting and decorations ("Re-letting Preparations") to the Premises which Landlord considers advisable and necessary in its sole judgment, and such Re-letting Preparations shall not release Tenant from any liability under this Lease.

(c) Damages. If a Default occurs, Tenant shall remain liable for (i) all Rent and damages that may be due or sustained by Landlord up to the time this Lease terminates or Landlord takes possession of the Premises, whichever occurs later, and the performance of all other obligations of Tenant accruing under this Lease through such date (collectively "Accrued Damages"); (ii) all reasonable costs, fee and expenses (including without limitation attorney's fees and expenses, brokerage commissions and fee) incurred by Landlord in pursuit of its remedies under this Lease and in renting the Premises to others from time to time (including Re-letting Preparations) (all such Accrued Damages, costs, fees and expenses being referred to collectively as the "Default Damages"); and (iii) Liquidated Damages (as defined below).

Liquidated Damages, at the election of Landlord, shall be either:

- i. The deficiency (the "Deficiency") between (A) the Rent reserved under this Lease until the stated expiration date of the Term and (B) the amount of rent, if any, that Landlord shall receive during the same period from others to whom the Premises may be rented, from which Landlord may deduct all Default Damages owing to Landlord; such Deficiency to be paid in monthly installments by Tenant on the first day of each calendar month;

or

- ii. An amount equal to the present worth of the sum of the Rent

reserved under this Lease until the stated expiration date of the Term plus the Default Damages owed by Tenant, from which sum there shall be deducted the fair market rental value of the Premises as determined by an independent real estate appraiser designated by Landlord. Liquidated Damages under this item (ii) shall be payable to Landlord in one lump sum on demand and shall bear interest at the Default Rate until paid. For the above purposes "present worth" shall be computed using a discount rate equal to one percentage point above the discount rate then in effect at the Federal Reserve Bank nearest to the location of the Facility.

(d) Remedies Cumulative. All remedies of Landlord shall be cumulative. Acceptance by Landlord of delinquent rent after default shall not cure such default nor entitle Tenant to possession of the Premises.

21. LANDLORD'S EXPENSES. If Tenant shall at any time be in Default under this Lease, and if Landlord shall deem it necessary to engage attorneys to enforce Landlord's rights under this Lease (the determination of such necessity to be in the sole discretion of Landlord), whether or not is instituted, or if Landlord shall deem it necessary to expend sums to remedy Tenant's Default, Tenant agrees to reimburse Landlord for the reasonable expenses incurred thereby, including but not limited to court costs and reasonable attorney's fees and expenses.

22. SIGNS. Tenant agrees not to place or paint any sign, advertising matter or the like on the exterior of the Premises without Landlord's prior written consent. All signs of Tenant shall be subject to and shall comply at all times with applicable governmental requirements. Tenant agrees to maintain all signs in good condition and repair.

23. SUBORDINATION. This Lease shall be subject and subordinate to all ground or underlying leases and to any and all mortgages and deeds of trust that may now or hereafter affect this Lease or the real property of which the Premises forms a part, and to all terms, provisions, renewals, modifications, consolidations, replacements and extensions thereof. Tenant further agrees to attorn to any successor to Landlord's interest in the Premises, including any ground lessor or holder of a mortgage or deed of trust (the "Mortgagee"), or to any purchaser at foreclosure (or by deed in lieu of foreclosure) upon all of the terms and conditions of this Lease. The foregoing subordination and attornment provisions shall be self-operative, but within ten (10) days after receipt of a written request therefore, Tenant agrees to execute promptly such agreements confirming the above subordination and attornment as requested from time to time by Landlord or the Mortgagee. In no event shall any Mortgagee be (i) liable for any act or omission of Landlord or any subsequent landlord; (ii) subject to any offsets or defenses which Tenant might have against Landlord or any subsequent landlord, (iii) bound by any Rent which Tenant may

have paid for more than the current month to Landlord or any subsequent landlord, or (iv) bound by any amendment or modification of this Lease made without the Mortgagee's prior written consent.

24. ESTOPPEL CERTIFICATE. Within ten (10) days after receipt of a request therefore, Tenant agrees to deliver to Landlord and/or to any actual or prospective purchaser, mortgagee or other third party designated by Landlord a duly executed and acknowledged instrument certifying to Tenant's best knowledge (i) whether this Lease is in full force and effect (and if not, why), (ii) as to the existence of any default, (iii) whether there are any defenses, counterclaims or offsets to such default, (iv) whether there has been any modification or amendment to this Lease, and (v) as to such other matters relating to this Lease as may be reasonably requested. Any such certificate may be relied upon by Landlord and by any other person to whom it has been exhibited or delivered, and the contents of the certificate shall be binding upon Tenant.

25. INSPECTION. Tenant agrees to allow Landlord or its representatives or prospective purchasers or mortgagees, at any reasonable hour, to enter the Premises for the purpose of inspecting the same, for making any repairs deemed necessary or desirable, or for showing the Premises to any parties. Tenant will allow "For Rent" signs to be placed on the front walls or doorways of the Premises and to remain thereon without hindrance or molestation during the last six (6) months of the Term.

26. FORCE MAJEURE. In the event either party hereto shall be delayed or hindered in, or prevented from, the performance of any act required hereunder by reason of strikes, lock-outs, labor troubles, inability to procure materials, failure of power, restrictive governmental laws or regulations, riots, insurrection, war or other reason of a like nature not the fault of the party delayed in performing work or doing acts required under the terms of this Lease, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay; provided, however, that the provisions of this Paragraph 26 shall not operate to excuse Tenant, nor shall Tenant in any event be excused, from prompt payment of Rent.

27. NOTICES. Any notice, request, demand, approval or consent given or required to be given under this Lease shall be in writing and shall be deemed to have been given if and when posted in the United States registered or certified mail, return receipt requested, postage prepaid, and addressed to Landlord at Landlord's Mailing Address or addressed to Tenant at Tenant's Mailing Address. Either party may at any time change its address for notice purposes by sending a notice to the other party advising of the new address. Tenant also agrees to give the Mortgagee a copy of any notice of default sent to Landlord, provided that prior to such default Tenant has been notified in writing of the address of the Mortgagee. Tenant shall not exercise any remedies available against Landlord unless Landlord's default is not cured within sixty (60) days after Mortgagee has received the foregoing notice (if the default cannot be reasonably cured within the sixty (60) day period, then

the Mortgagee shall have such reasonable additional time to cause the Landlord's default to be cured so long as the Landlord or the Mortgagee is diligently pursuing the remedies necessary to cure such default).

28. QUIET ENJOYMENT. Provided that Tenant has performed all of its obligations under this Lease, Landlord covenants that Tenant shall have and enjoy quiet and peaceable possession of the Premises during the Term free of molestation by Landlord, subject to the provisions of this Lease and of all mortgages, ground leases, encumbrances and other matters of record affecting title to the Facility.

29. NO WAIVERS. The failure of Landlord or Tenant to insist, in any one or more instances, upon strict performance by the other party of any covenant of this Lease shall not be construed as a waiver or relinquishment for the future of such covenant, but the same shall continue and remain in full force and effect. The receipt by Landlord or its agent of Rent with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision hereof shall be deemed to have been agreed upon unless expressed in writing signed by the parties hereto.

30. SUCCESSORS AND ASSIGNS. This Lease and all the terms, covenants, conditions and provisions herein contained shall be binding upon and shall inure to the benefit of the parties hereto and their respective personal representatives, heirs, successors and (if and when assigned in accordance with the provisions hereof) assigns.

31. OTHER PROVISIONS.

(a) Entire Agreement; Modification. This Lease represents the final understanding and agreement between Landlord and Tenant and incorporates all negotiations between the parties. This Lease cannot be modified except by writing signed by the party against whom the modification is to be enforced.

(b) Interpretation. The captions in this Lease are for the purposes of reference only and shall not limit or define the meaning of the provisions of this Lease. References to any specific gender shall be deemed to include the other gender or neuter, as applicable, references to "expiration" shall include "termination" and vice-versa, and references to the singular shall include the plural, and vice-versa, all as the context may require. If Tenant consists of multiple parties, the liability of such parties shall be joint and several, and the release of any one or more of such parties shall not affect the liability of any other party not expressly released in writing. This Lease shall not be construed more strictly against one party than the other, it being recognized that both Landlord and Tenant have contributed substantially and materially to the preparation of this Lease. Also, this Lease shall be governed by Virginia Law.

(c) Short Form Lease. Tenant agrees not to record this Lease. However, upon the request of either party, the other party shall join in the execution of a "short form lease" for the purposes of recordation, including such terms of this Lease (other

than economic terms) as are typically included in such document. Either party may record such "short form lease" at its own expense.

(d) Submission of Lease. This Lease does not constitute an offer to lease, and Landlord and Tenant shall not be bound by this Lease until it is executed and unconditionally delivered by both parties. This Lease may be executed in counterparts.

(e) Tenant Authority.

- a. If Tenant is a partnership, each person executing this Lease on behalf of Tenant warrants that Tenant is a validly existing partnership qualified to do business under the laws of the state in which the Facility is located, that such partnership has the full right and authority to enter into this Lease and that no other partners other than those signing this Lease on behalf of Tenant must join in this execution; and
- b. If Tenant is a corporation, each person executing this Lease on behalf of Tenant hereby warrants that (1) Tenant is a duly constituted corporation qualified to do business and in good standing in the state in which the Facility is located; (2) such corporation has the full right and authority to enter into this Lease, and (3) each person signing this Lease on behalf of the Tenant has been duly authorized by the board of directors of Tenant to execute and deliver this Lease on behalf of the corporation and that no other signatures are necessary.

32. ACCEPTANCE OF PREMISES. Tenant has examined the Premises, knows the condition of the Premises and accepts the Premises in "as is" condition. Tenant acknowledges that no representations have been made by Landlord, Broker or their agents or employees as to the condition of the Premises or any particular use that may be made thereof. Tenant agrees that except as otherwise expressly set forth in this Lease, Landlord shall have no obligation to improve or repair the Premises.

33. TERMINATION AND HOLDOVER. A written notice of one hundred eighty (180) days shall be given by Tenant should he desire to vacate at termination of the Lease; and should the Landlord desire possession, a like notice shall be required.

On expiration or sooner termination of the Term, Tenant shall surrender to Landlord the Premises and all Tenant's improvements and alterations broom cleaned (with all rubbish removed) and in good, clean, orderly, and undamaged condition, except for ordinary wear and tear or condemnation or destruction of the Premises as covered by Paragraphs 16 and 17 and except for trade fixtures that Tenant has removed under the provisions of Paragraph 11. Tenant shall deliver to Landlord all keys to the Premises, remove all its personal property and make repairs and reimbursements pursuant to Paragraph 11 within the above stated time. Landlord may elect to retain or dispose of in any manner any alterations or

Tenant's personal property that Tenant does not remove from the Premises on expiration or termination of the Term. Title to any such alterations or Tenant's personal property that Landlord elects to retain or dispose of after expiration of the Term shall vest in Landlord. Tenant waives all claims against Landlord for any damage to Tenant resulting from Landlord's retention or disposition of any such alterations or personal property. Tenant shall be liable to Landlord for Landlord's costs of storing, removing, and disposing of any alterations or Tenant's personal property which Landlord does not elect to acquire.

If Tenant fails to surrender the Premises on the date that the Term of this Lease expires or terminates, Tenant's continued occupancy shall be deemed to be a tenancy from month-to-month, and such tenancy shall be subject to all of the provisions of this Lease, except that Base Rent during the holdover tenancy shall be equal to twice the Base Rent in effect immediately prior to the end of the Term.

34. LEASE ADDENDUM AND EXHIBITS. A First Lease Addendum and a Second Lease Addendum are attached to this Lease. The provisions thereof are fully incorporated into this Lease. The following Exhibits are attached to this Lease and are fully incorporated into this Lease:

- Exhibit A - Site Plan
- Exhibit B - Suite 106 & Suite 108 Floor Plan

WITNESS the following signatures:

TENANT:

By: Ayanna R. Williams

Name: Ayanna R. Williams

Title: Real Estate Mgr., HRSD

LANDLORD:

By: John A. Meekins

Name: John A. Meekins

Title: Bayside Investors, LLC Managing Member

FIRST LEASE ADDENDUM

The following provisions are incorporated into that certain Lease, made as of the 8th day of May, 2018, by and between Hampton Roads Sanitation District, (“Tenant”), and Bayside Investors, LLC, a Virginia Limited Liability Company (“Landlord”).

1. RENEWAL OPTION. Provided that Tenant is in occupancy of the Premises and is not then in default under this Lease, Tenant shall have the option to renew this Lease for two (2) additional term(s) of five (5) years each, by giving written notice to Landlord at least six (6) months prior to the expiration of the then current Term. All the terms and conditions of this Lease shall remain in effect during any renewal term, except that Base Rent shall be increased to the amounts set forth in this Lease. Unless otherwise provided for in this lease the rental for the renewal terms shall be based on the prevailing market rate at that time, but in no event shall the rental be less than the rental provided for in this Lease.

2. ANNUAL BASE RENT INCREASE. In accordance with the Base Rent increases set forth in Paragraph 1(i), Base Rent shall be increased annually at the beginning of the following specified Lease Years to equal the amount of annual Base Rent as set forth below, with the monthly payments of Base Rent to be likewise increased to the amounts set forth:

(a) **SUITE 106:**

<u>Lease Year</u>	<u>Annual Base Rent</u>	<u>Monthly Base Rent</u>
07/01/18 – 06/30/19	\$34,312.50	\$2,859.38
07/01/19 – 06/30/20	\$35,341.88	\$2,945.16
07/01/20 – 06/30/21	\$36,402.14	\$3,033.51
07/01/21 – 06/30/22	\$37,494.20	\$3,124.52
07/01/22 – 06/30/23	\$38,619.03	\$3,218.25

(b) **SUITE 108:**

<u>Lease Year</u>	<u>Annual Base Rent</u>	<u>Monthly Base Rent</u>
07/01/18 – 06/30/19	\$25,162.50	\$2,096.88
07/01/19 – 06/30/20	\$25,917.38	\$2,159.78
07/01/20 – 06/30/21	\$26,694.90	\$2,224.58
07/01/21 – 06/30/22	\$27,495.75	\$2,291.31
07/01/22 – 06/30/23	\$28,320.62	\$2,360.05

SECOND LEASE ADDENDUM

The following provisions are incorporated into that certain Lease, made as of the 8th day of May, 2018, by and between Hampton Roads Sanitation District, (“Tenant”), and Bayside Investors, LLC, a Virginia Limited Liability Company (“Landlord”).

1. Landlord agrees that Tenant shall be permitted twenty (20) predetermined, dedicated parking spaces at the Facility.
The location of the twenty (20) dedicated parking spaces at the Facility is subject to change by Landlord as required.
2. Tenant shall be restricted to parking only within the twenty (20) predetermined, dedicated parking spaces at the Facility.
3. Tenant agrees that, at no time, shall Tenant have construction vehicles or equipment parked at the Facility.
4. The cost for Tenant parking at the Facility is included within the Base Rent.

HRSD

CERTIFICATE

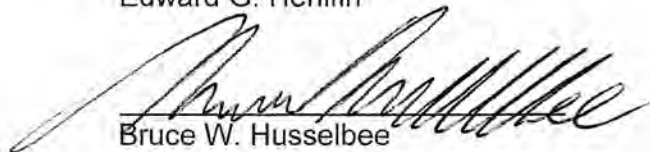
I, Jennifer L. Cascio, Commission Secretary, certify that the following employees/
positions are authorized to execute real estate documents for Hampton Roads
Sanitation District (HRSD) as of this 29th day of January 2016.

GENERAL MANAGER



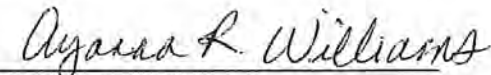
Edward G. Henifin

DIRECTOR OF ENGINEERING




Bruce W. Husselbee

REAL ESTATE MANAGER



Ayanna R. Williams



Jennifer L. Cascio
Commission Secretary





MEEKINS & ASSOCIATES
 P. O. BOX 12773 • NORFOLK, VIRGINIA 23541

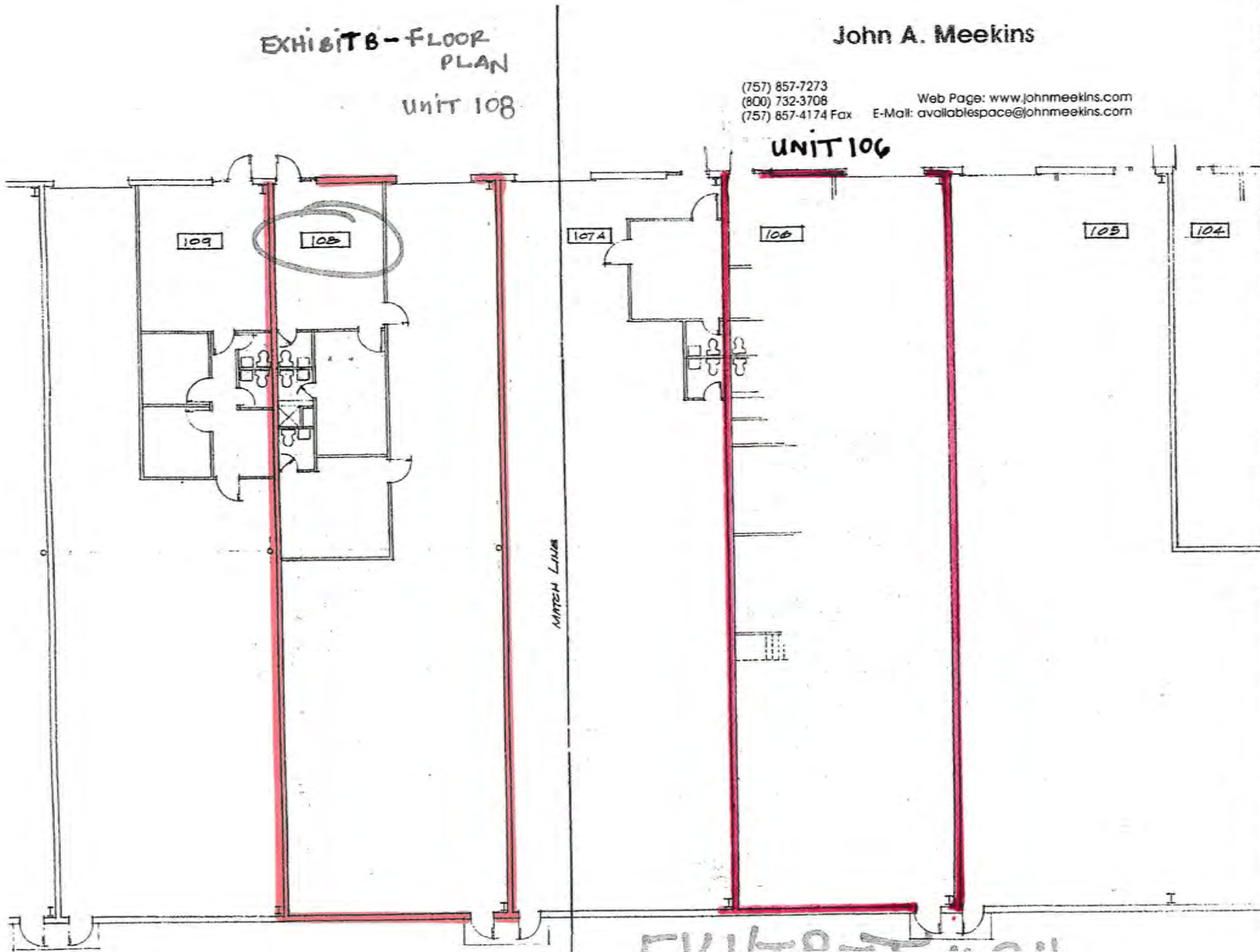
John A. Meekins

(757) 857-7273 Web Page: www.johnmeekins.com
 (800) 732-3708 E-Mail: availablespace@johnmeekins.com
 (757) 857-4174 Fax

EXHIBIT B - FLOOR
 PLAN

UNIT 108

UNIT 106



TEENANT SPACES
 5741 BAYSIDE ROAD
 VIRGINIA BEACH, VA.

Carlton Theodore Goodwin, Ltd., Architect
 118 West Haverhill Road • Virginia Beach, Virginia 23461-4034 • Phone: 757-360-2345 Fax: 757-464-0940

Exhibition	Date



MILLER STORE RD

AIR RAIL AVE

THURSTON AVE

BAYSIDE RD

BAKER RD



HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #7

AGENDA ITEM 11. – Nutrient Credit Swap Agreement - Jefferson Lab

HAMPTON ROADS WATER QUALITY CREDIT SWAP AGREEMENT FOR CHESAPEAKE BAY RESTORATION

THIS HAMPTON ROADS WATER QUALITY CREDIT SWAP AGREEMENT FOR CHESAPEAKE BAY RESTORATION (this "Agreement") is made this 26th day of JUNE, 2018, by and between the Hampton Roads Sanitation District ("HRSD") and the United States Department of Energy ("DOE") (each a "Party" and jointly the "Parties").

BACKGROUND

A. The HRSD Plants. HRSD owns and operates various wastewater treatment plants that are authorized to discharge the nutrients total nitrogen ("TN") and total phosphorus ("TP") as well as sediment as total suspended solids ("TSS") to the Chesapeake Bay watershed (the "HRSD Plants"). The HRSD Plants have TN, TP and TSS waste load allocations assigned by the State Water Control Board and the Virginia Department of Environmental Quality (jointly, "DEQ") pursuant to the Water Quality Management Planning Regulation, 9 VAC 25-720, and by the U.S. Environmental Protection Agency ("EPA") pursuant to the Chesapeake Bay Total Maximum Daily Load ("TMDL") and Virginia's related Virginia Watershed Implementation Plan ("WIP"). The HRSD Plants are subject to the General Virginia Pollutant Discharge Elimination System ("VPDES") Watershed Permit Regulation for TN and TP Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9 VAC 25-820, most recently reissued by DEQ effective February 8, 2017, as hereafter modified or reissued from time to time (the "Watershed General Permit").

B. The DOE Jefferson Lab. DOE owns and operates the Jefferson Lab facility located in the City of Newport News, Virginia ("Jefferson Lab"). Jefferson Lab includes a regulated municipal separate stormwater sewer system ("MS4") from which DOE is authorized to discharge TN, TP and TSS to the Chesapeake Bay watershed. Like the HRSD Plants, the MS4 is subject to the Chesapeake Bay TMDL as derived from the Virginia WIP and to a VPDES Permit issued to DOE by DEQ. Pursuant to the TMDL, WIP and VPDES Permit for the MS4, it is anticipated that DOE will reduce MS4-related TN, TP and TSS discharges pursuant to DOE-developed and DEQ-approved TMDL Action Plans for each of three, five-year permit cycles, which are referred to as the First Bay TMDL Permit Cycle (5% Progress), Second Bay TMDL Permit Cycle (40% Progress), and Third Bay TMDL Permit Cycle (100% Progress). During 2018, DOE is completing its First Bay TMDL Permit Cycle and beginning its Second Bay TMDL Permit Cycle for Jefferson Lab.

C. Nutrient Credit Exchange. Through exceptional stormwater control efforts, Jefferson Lab has outperformed its TMDL Action Plan requirements in the York River basin, where the vast majority of the facility is located, thereby producing TN, TP and TSS credits of potential benefit within HRSD's regional service area. However, space limitations and other site considerations associated with the Continuous Electron Beam Accelerator Facility and other facilities located at Jefferson Lab preclude installation of sufficient new stormwater control measures for the small portion of Jefferson Lab located in the James River basin, which creates a need for TN, TP and TSS credits to meet reduction requirements in this basin. Through exceptional performance and current operating conditions at the HRSD Plants, HRSD discharges

less TN, TP and TSS than the HRSD Plants are authorized to discharge under the Watershed General Permit while protecting Chesapeake Bay water quality and, therefore, HRSD currently has the ability to provide TN, TP and TSS credits in the James River basin.

D. Authority. Pursuant to Virginia Code § 62.1-44.19:21, DOE may acquire and use TN and TP credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TN or TP than permitted under the Watershed General Permit. Pursuant to Virginia Code § 62.1-44.19:21.1, DOE may also acquire and use TSS credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TSS than allocated under the Chesapeake Bay TMDL. With respect to all three parameters, it is recognized that this authority does not limit or otherwise affect the authority of DEQ to establish and enforce more stringent water quality-based effluent limitations in permits where such limitations are necessary to protect local water quality and, further, that the use of water quality credits does not relieve an MS4 permit holder of any requirement to comply with applicable local water quality-based limitations.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises (hereby incorporated as if fully set forth herein) and the mutual covenants and conditions set forth below, the Parties hereby agree as follows.

1. Credit Quantities. HRSD agrees to transfer TN, TP and TSS credits generated in the James River basin to DOE, and DOE agrees to transfer TN, TP and TSS credits generated in the York River basin to HRSD, in such quantities as set forth in Attachment A hereto.

2. Credit Transfers by HRSD. As credits are generated by HRSD annually based on the performance of the HRSD Plants, all credit transfers by HRSD hereunder shall be deemed to occur automatically each June 1 for the immediately preceding compliance year (January 1 to December 31), beginning June 1, 2018 for credits generated during compliance year 2017. Such annual transfers shall continue automatically, without any further action required by either Party, as long as this Agreement remains in effect. For purposes of the credits to be transferred by HRSD under this Agreement, “credit” means a “point source nitrogen credit” or “point source phosphorus credit” as defined in the Watershed General Permit or “sediment credit” and as defined in Virginia Code § 62.1-44.19:21.1.

3. Credit Transfers by DOE. As credits are generated by DOE on a one-time basis based on stormwater management controls installed and pollutant removal credit achieved as of the date of this Agreement, the credit transfer by DOE hereunder shall be effective upon execution of this Agreement without any further action required by either Party. HRSD shall have ownership and control of such credits for its use or that of its member jurisdictions as long as this Agreement remains in effect.

4. Authorized Use of Credits. DOE agrees that its sole and limited use of the credits transferred under this Agreement shall be for the purpose of its permit compliance and Chesapeake Bay TMDL implementation and that it shall not transfer any portion of HRSD-generated credits to any other person or entity. HRSD agrees that its sole and limited use of the credits transferred under this Agreement shall be for the purpose of its permit compliance and Chesapeake Bay TMDL implementation or that of the HRSD member jurisdictions and that it shall not transfer any portion of DOE-generated credits to any other person or entity.

5. Term. This Agreement shall be in effect as of the date first shown above. This Agreement shall remain in full force and effect unless modified by a writing signed by both Parties, until terminated by either Party giving the other Party five (5) years advance written notice of termination, unless a shorter time is mutually agreed to in writing by both Parties. The earliest date either Party may give termination notice is July 1, 2023. In the event of termination, neither Party shall be under any obligation to provide, or continue to provide, credits to the other Party beyond the effective date of termination and, as of that date, all credits transferred under this Agreement shall revert to the Party that generated them.

6. Default. If either Party fails to perform a material obligation hereunder, and fails to cure such failure to perform within thirty (30) days of written notice from the non-defaulting Party, the non-defaulting Party may terminate this Agreement upon written notice to the other Party.

7. Regulatory Approvals. In furtherance of this Agreement, the Parties shall collaborate on appropriate submittals to and requests from DEQ and any other governmental authority (other than HRSD or DOE) as necessary or helpful to carry out the intent of this Agreement; however, neither Party shall have any responsibility for the failure or refusal of DEQ or other governmental authority (other than HRSD or DOE) to approve the credit transfers provided by this Agreement.

a. DOE's TMDL Action Plan. For purposes of credit transfers, DOE shall include in its Chesapeake Bay TMDL Action Plan for the Second Bay TMDL Permit Cycle and each cycle thereafter a provision on the receipt and use of TN, TP and TSS credits from the HRSD Plants (James River Basin), and transfer TN, TP and TSS credits from Jefferson Lab to HRSD (York River Basin), in the form set forth in Attachment B hereto (or such other provision or provisions as may be mutually agreeable to DOE and HRSD).

b. HRSD's Compliance Plan. For purposes of credit transfers, HRSD shall reserve in its compliance plan or any group compliance plan in which it participates pursuant to the Watershed General Permit a sufficient quantity of credits to satisfy its annual transfer obligation to Jefferson Lab (James River Basin).

c. TMDL & WIP Updates. Upon the request of either Party, the Parties agree to collaboratively seek acceptance or continuing acceptance of the credit transfers contemplated by this Agreement in any update, revision or other change by EPA to the Chesapeake Bay TMDL or by the Commonwealth of Virginia to its Chesapeake Bay TMDL WIP or any related regulation, permit or other legal requirement.

d. Further Cooperation. The Parties shall continue to cooperate with each other as reasonably necessary to confirm or bring about the transfers contemplated by this Agreement, including as necessary to facilitate the use of credits transferred by DOE to HRSD or to HRSD and then to its member jurisdictions.

8. Force Majeure. The annual credit transfer obligation of HRSD shall be suspended while and as long as performance is prevented or materially impeded by strikes, disturbances, riots, fire, severe weather, acts of war, acts of terrorism, acts of God, government action (other than by HRSD), major technical, engineering or construction related delays, or any other cause similar or dissimilar to the foregoing that is beyond the reasonable control of and not due to the gross negligence of HRSD.

9. Change in Law. In the event of any material change in applicable laws or regulations, the Parties shall work together to attempt to amend this Agreement to conform to such change, while maintaining as closely as practical the provisions and intent of this Agreement. If in any such event either Party is unable to perform its transfer obligations as provided herein, each Party shall be solely responsible for otherwise meeting its TMDL and permit obligations.

10. No Third-Party Beneficiaries. This Agreement is solely for the benefit of the Parties hereto and their permitted successors and assigns and shall not confer any rights or benefits on any other person or entity.

11. No Assignment. This Agreement, and the rights and obligations established hereunder, shall be binding upon and inure to the benefit of any successors of the Parties. However, no Party may transfer or assign this Agreement, or its rights or obligations hereunder, without the prior written consent of the other Party, which consent shall not be unreasonably withheld, except that HRSD may transfer credits it receives under this Agreement to its member jurisdictions for their use.

12. No Waiver. Neither any failure to exercise or any delay in exercising any right, power or privilege under this Agreement by either Party shall operate as a waiver, nor shall any single or partial exercise of any right, power or privilege hereunder preclude the exercise of any other right, power or privilege. No waiver of any breach of any provision shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision, nor shall any waiver be implied from any course of dealing.

13. Expenses; Commissions. Each Party shall pay its own fees and expenses, including its own counsel fees, incurred in connection with this Agreement or any transaction contemplated hereby. The Parties represent and warrant to each other that they have not dealt with any business broker or agent who would be entitled to a brokerage commission or finders fee as a result of this Agreement or any related transactions.

14. Governing Law; Venue; Severability. This Agreement shall be construed in accordance with and governed for all purposes by the laws of the Commonwealth of Virginia.

This Agreement is a Virginia contract deemed executed and accepted in the City of Virginia Beach; and all questions with respect to any of its provisions shall be instituted, maintained, and contested in a court of competent jurisdiction in the Hampton Roads region of the Commonwealth of Virginia. If any word or provision of this Agreement as applied to any Party or to any circumstance is adjudged by a court to be invalid or unenforceable, the same shall in no way affect any other circumstance or the validity or enforceability of any other word or provision.

15. Entire Agreement; Amendments. This Agreement contains the entire agreement between the Parties as to the subject matter hereof and supersedes all previous written and oral negotiations, commitments, proposals and writings. No amendments may be made to this Agreement except by a writing signed by both Parties.

16. Counterparts; Signatures; Copies. This Agreement may be executed in counterparts, both of which shall be deemed an original, but all of which together shall constitute one and the same instrument. A facsimile or scanned signature may substitute for and have the same legal effect as an original signature. Any copy of this executed Agreement made by photocopy, facsimile or scanner shall be considered the original for all purposes.

17. Authorization. Each Party represents that its execution, delivery and performance under this Agreement have been duly authorized by all necessary action on its behalf, and do not and will not violate any provision of its charter or enabling legislation or result in a material breach of or constitute a material default under any agreement, indenture, or instrument of which it is a party or by which it or its properties may be bound or affected.

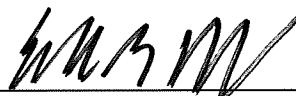
IN WITNESS WHEREOF, the Parties hereto have caused the execution of this Agreement as of the date first written above.

[SIGNATURES BEGIN ON NEXT PAGE]

**SIGNATURE PAGE OF HAMPTON ROADS WATER QUALITY CREDIT SWAP
AGREEMENT FOR CHESAPEAKE BAY RESTORATION
BY AND BETWEEN HRSD AND DOE**

HAMPTON ROADS SANITATION DISTRICT

By:



Edward G. Henifin
General Manager

**SIGNATURE PAGE OF HAMPTON ROADS WATER QUALITY CREDIT SWAP
AGREEMENT FOR CHESAPEAKE BAY RESTORATION
BY AND BETWEEN HRSD AND DOE**

UNITED STATES DEPARTMENT OF ENERGY

By: Joseph Chang / Manager
Name/Title DOE Thomas Jefferson
Site office

**HAMPTON ROADS WATER QUALITY CREDIT SWAP AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT A**

Water Quality Credit Transfer Quantities

Annual Transfers from HRSD to DOE (James River Basin)

Parameter	Quantity (lbs/yr)
TN	1
TP	1
TSS	61

One-Time Transfer from DOE to HRSD (York River Basin)

Parameter	Quantity (lbs/yr)
TN	5
TP	0
TSS	5545

**HAMPTON ROADS WATER QUALITY CREDIT SWAP AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT B**

**Draft Provision for Jefferson Lab MS4
Chesapeake Bay TMDL Action Plan Development**

The DOE plans to utilize water quality credits generated by HRSD to supplement its Chesapeake Bay TMDL reduction commitments at Jefferson Lab. These credits in conjunction with structural and non-structural practices will satisfy DOE's reduction requirements for the Chesapeake Bay TMDL.

The intent of this plan is the generation and use of TN, TP and TSS credits in collaboration with HRSD pursuant to the Hampton Roads Water Quality Credit Swap Agreement for Chesapeake Bay Restoration to which DOE and HRSD are signatories. This compliance method is in lieu of more traditional stormwater retrofit projects for the small portion of Jefferson Lab that is located in the James River Basin, where space limitations and other site considerations associated with the Continuous Electron Beam Accelerator Facility and other facilities preclude installation of sufficient new stormwater control measures.

This component of the plan is fully in accordance with Virginia Code §62.1-44.19:21 (TN and TP) and §62.1-44.19:21.1 (TSS). The quantity of reduction credits from the HRSD Plants that are allocated to this TMDL Action Plan for the James River Basin portion of Jefferson Lab are 1 pound per year ("lbs/yr") TN, 1 lbs/yr TP, and 61 lbs/yr TSS.

HRSD COMMISSION MEETING MINUTES
May 22, 2018

ATTACHMENT #8

AGENDA ITEM 15. – Informational Items

- a. Management Reports
 - (1) [General Manager](#)
 - (2) [Communications](#)
 - (3) [Engineering](#)
 - (4) [Finance](#)
 - (5) [Information Technology](#)
 - (6) [Operations](#)
 - (7) [Special Assistant for Compliance Assurance](#)
 - (8) [Talent Management](#)
 - (9) [Water Quality](#)
 - (10) Report of Internal Audit Activities
 - [Internal Audit Status](#)
 - [Engineering Procurement](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Effluent Summary](#)
- d. [Air Summary](#)



May 15, 2018

Re: General Manager's Report

Dear Commissioners:

Flow to our treatment plants dropped to close to the fiscal year average in April with rainfall close to normal for the month. As a result, plant and system performance were unremarkable, meeting all permit requirements. The Department of Environmental Quality (DEQ) issued new interim permit limits for the Town of Surry plant in accordance with our Special Order by Consent. The new limits are based on actual plant performance data from the first four months of operation by HRSD personnel. Based on these permit limits, the Town of Surry plant met permit for the first time in April.

A significant milestone for the Army Base Treatment Plant was reached in April as the replacement methanol tank came online. The methanol tank installed as part of the large treatment plant upgrade was found to be defective and taken out of service in April 2017. Without a methanol feed, the plant was unable to meet the performance requirement of the Water Quality Improvement Fund grant agreement of Total Nitrogen (TN) less than 5 mg/L (annual average). DEQ granted HRSD a waiver from the grant required performance for the period from April through December 2017. With the new tank online at the end of April 2018, Army Base will have to average approximately 3.5 mg/L for the rest of 2018 to meet the grant required annual average performance. Staff is working hard to ensure we make those numbers and early results with the methanol feed are promising, but it will take a lot of effort, attention and a little luck to achieve the required 5 mg/L TN average for the year at Army Base.

The highlights of April's activities are detailed in the attached monthly reports.

- A. **Treatment Compliance and System Operations:** All treatment plants met permit requirements (if we use the interim permit limits for the Town of Surry Plant). Details of these and other issues are included in the Operations Director's report.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
 - 1. Two new employee orientation sessions
 - 2. A meeting of the Senior Leadership team

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3. A meeting to review options for handling Surry flows
4. A meeting to discuss a work center planning day for administrative staff throughout HRSD
5. The monthly meeting of the SWIFT Quality Steering Team (QST)
6. A length of service breakfast celebration
7. The ribbon cutting and appreciation ceremony for the Urbanna Treatment Plant improvements

C. External Communications: I participated in the following meetings/activities:

1. A meeting in Richmond with the Secretary of Natural Resources
2. A meeting in Richmond with the Health Commissioner and senior staff from the Virginia Department of Health
3. Presented elements of SWIFT on two panels at Environment Virginia
4. Received a Newsmaker Award from Engineering News Record at their recognition luncheon and banquet in New York City
5. Multiple conference calls to discuss next steps for the Potomac Aquifer Monitoring Lab
6. A meeting with the Surry County Administrator regarding long term goals for Surry
7. A meeting with senior leadership from CDM Smith
8. The Septic System Task Force convened by the Elizabeth River Project
9. A briefing with a visiting group from Renewable Water in Greenville, South Carolina
10. A meeting with senior leadership of Jacobs, the firm that acquired CH2M recently
11. The National Association of Clean Water Agencies (NACWA) Policy Meeting and Fly-In where I participated in a Congressional briefing on Capital focused on the importance of Federal funding for water related research
12. A meeting of the Value of Water coalition of the US Water Alliance
13. A conference call with Water Environment Federation (WEF) staff and other utility leaders working on the Public Officials Forum for the WEF Technical Exhibition and Conference (WEFTEC) 2018
14. Presented SWIFT as an educational feature of the Garden Clubs of Virginia Historic Garden Week
15. Met with the United Way to discuss customer assistance concepts
16. Attended the American Council of Engineering Companies annual awards banquet to receive a National Award for the Norchester Pump Station project with Gannett Fleming

The SWIFT Team continued their long hours and hard work through April with a focus on completion by the May 18th ribbon cutting. It is amazing how fast SWIFT has moved from concept to reality. I often take the pace of progress for granted but looking back at the timeline of Commission actions helps put SWIFT into perspective:

July 2014	Feasibility study approved and funded
August 2015	Conceptual study, test wells and pilot approved and funded
June 2016	Alternative delivery method approved for SWIFT Research Center and project funded
September 2016	Tasting event held at York River Treatment Plant pilot
November 2016	Design-Build contract awarded
March 2017	SWIFT Research Center groundbreaking
May 2018	Aquifer recharge begins, ribbon cut on SWIFT Research Center

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 22 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 2018
DATE: May 10, 2018

A. Publicity and Promotion

No media coverage for the month of April.

B. Social Media and Online Engagement

1. Facebook Reach: 5,914 (more than double March reach of 2,589)
2. Twitter: 7,867 impressions (29 % increase over March)
3. SWIFT website visits: 664
4. LinkedIn Impressions: 2,456 (analytics for March 1,097* - analytics were not functioning last month)
5. Google My Business: 303 asked for directions; 1,415 visited website; 754 called
6. Construction Project Page Hits: 7,422

C. News Releases, Advisories, Advertisements, Project Notices, Community Meetings and Project Websites

1. News Releases/Traffic Advisories: 1
2. Advertisements: 0
3. Project Notices: 12
 - a. Chesapeake: Deep Creek
 - b. City of Williamsburg: Survey Notification
 - c. Hampton: Chesapeake Avenue
 - d. City of Williamsburg: Survey Notification
 - e. James City County: Carters Grove

- f. Newport News: Chesapeake Avenue; Center Avenue/Rivermont Pipeline; Warwick-Thorncliff to Lucas
 - g. Norfolk: Norview Wetwell
 - h. Suffolk: Shingle Creek Survey notification
 - i. Virginia Beach: Pilot Warranty Notification; Condition Assessment survey notification
- 4. Project/Community Meetings: 1
 - 5. New Project Web Pages/Blogs/Videos: 1
 - a. [Plastic Pollution: Size Matters](#), 4/19
 - b. Three additional blogs published by Sustainability Advocacy Group

D. Special Projects and Highlights

- 1. The Director of Communications, together with Commissioners Levenston and Rodriguez attended the Ribbon Cutting Ceremony for the Elizabeth River Project's Fred W. Beazley River Academy at Paradise Creek in Portsmouth. This new facility features educational displays about HRSD's history and SWIFT.
- 2. Director staffed a SWIFT Information Booth during Historic Garden Week in Hampton.
- 3. Staff attended the askHRgreen.org FOG subcommittee meeting

E. Internal Communications

- 1. The Director of Communications and staff continued weekly meetings with web designers, advancing the redesign of the HRSD.com website. New website launch is tentatively expected for late May 2018.
- 2. Director also participated in the following internal meetings:
 - a. Senior Leadership meeting
 - b. New employee orientation meetings
 - c. SWIFT interpretive element review and coordination meetings and site visits
 - d. Engineering Department meeting
 - e. Meeting to review draft technical Memo for the Ferebee/Park Pump Station and Sewer Replacement.

3. Director conducted bi-weekly communications department status meetings, monthly social media content development and strategy meetings and project update meetings with staff.
4. Director participated in job shadowing and attended the second 3-day session of Supervisor Training.
5. Director attended the Urbanna Ribbon Cutting Ceremony for the plant's new laboratory.

F. Metrics

1. Educational and Outreach Activities: 5
 - a. Prince of Peace Preschool, Virginia Beach, 4/13
 - b. Greenwood/Elmhurst/Norview Heights Civic League, Norfolk, 4/16
 - c. Earth Day Celebration, Virginia Beach, 4/21
 - d. North Landing Elementary School, Career and College Week, 4/24
 - e. Mack Benn, Jr. Elementary School, 4/27
2. Number of Community Partners: 5
 - a. Prince of Peace Lutheran Church
 - b. Greenwood/Elmhurst/Norview Heights Civic League
 - c. City of Virginia Beach
 - d. Virginia Beach Public Schools
 - e. Suffolk Public Schools
3. Additional Activities Coordinated by Department: 4
 - a. Treatment Plant/Lab Combo Tour, Cape Henry Collegiate 4/12
 - b. Tabb Middle School Science Expo Night, 4/18
 - c. Fairlawn Elementary School Career and College Day, 4/19
 - d. Touch-a-Truck event, 4/28

4. Metrics Summary

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Total Training Hours per Full Time Employee (2) - Current Month	Hours / #FTE	32.75
M-1.4b	Total Training Hours per Full Time Employee (2) - Cumulative Fiscal Year-to-Date	Hours / #FTE	101
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	5

Respectfully,

Leila Rice, APR

Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for April 2018

DATE: May 9, 2018

A. General

1. Capital Improvement Program (CIP) spending for the ninth month of Fiscal Year (FY) 2018 was below the planned spending target. CIP project spending has not kept pace with planned spending this fiscal year. Much of the expected shortfall in spending will occur in the next FY and has been added to next year's planned CIP financial target.

CIP Spending (\$M):

	Current Period	FYTD
Actual	6.44	73.58
Plan	8.40	116.91

No Water Quality Improvement Fund Grant reimbursements were received in the month of April.

2. The Engineering Department held a Spring Gathering on April 12. The all-day meeting was held at the Brock Environmental Center in Virginia Beach. Staff had an opportunity to review the Annual Planning Day efforts started last fall, discussed a number of Department initiatives, and each Division within the Department was able to review some of their work. Debbie Kopecky, HRSD's Wellness Specialist, discussed the importance associated with exercise and how to integrate these wellness activities into your workday.
3. The Engineering Department has "Adopted-A-Spot" through the City of Virginia Beach's Parks and Recreation Department. The program requires a commitment of six clean-up efforts each year. Staff conducted our first clean-up on April 28, collecting eight bags of trash from Mill Dam Creek in Virginia Beach.

B. Asset Management Division

1. The Data Needs Assessment survey was completed this month. Overall, the results showed that HRSD maintains a great level of records for asset management but in disparate systems. The next steps in the process

include developing a treatment plant condition assessment program; developing a uniform risk analysis process for all assets, and integrating systems to streamline information accessibility.

2. A number of enhancements to the Computerized Maintenance Management System (CMMS) are underway to improve the Asset Management Program at HRSD. These enhancements include a purchasing module for inventory, updates to the failure code master list and the creation of an issues log for use by staff to track and inform others of issues related to asset concerns or maintenance issues.

C. North Shore, South Shore and SWIFT Design & Construction Divisions

1. Construction efforts continue on the Bridge Street Pump Station Replacement project in Hampton. Most of the construction is complete and final testing, controls and start-up efforts are underway. Difficulties operating the new pumps, cracks in some of the concrete and connecting to the potable water service are issues yet to be resolved. The final connection to the gravity sewer in Bridge Street will occur once the new pumps are ready for service. Once the pump station is in use, the existing pump station will be demolished. The project is currently planned to be complete by the end of May with a regulatory completion deadline of June 30, 2018.
2. Construction of the relocation of the Western Diversion Force Main in Portsmouth was recently completed. This project was managed by VDOT and involved the relocation and replacement of the existing 24-inch force main located within the roadway that was improved and widened. Final restoration work is underway and should be completed in the coming month. A number of scope change items that occurred during construction are still under review. Final costs will be negotiated with VDOT and their contractor to address these additional work items.
3. Construction efforts continue at the SWIFT Research Center located at the Nansmond Treatment Plant. Work includes final check-out of instrumentation and control systems, electrical wiring, HVAC system, flooring, painting of interior, and start-up/testing of the biological processes. Final efforts to be completed in May include installation of the interpretive elements and educational components, installation of furnishings and cleaning of the entire space. The last project milestone is for the Design-Build Team to complete a week-long Performance Test of the treatment process to show system reliability and conformance with water quality objectives. The ribbon cutting ceremony is planned for May 18 and the project team is working hard to have the facility ready for this event.

D. Planning & Analysis Division

1. The FY 2019 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 final approval of the CIP is planned for the May Commission Meeting.
2. Staff has begun preparation of an updated Solids Management Master Plan. The plan was last updated in 2012, and there have been many changes to the underlying assumptions of the plan since that date. Some of the issues that will impact this plan since it was last updated include the closure of the Chesapeake-Elizabeth Treatment Plant, construction of the Thermal Hydrolysis Process at the Atlantic Treatment Plant, and the SWIFT Program. The new plan will be prepared by a group of internal stakeholders with a goal to complete the effort by January 2019.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 5
 - a. Staff participated as a judge and event coordinator for the Virginia Water Environment Association (VWEA) Student Design Competition on April 6.
 - b. Staff made a presentation at the Water Environment Federation (WEF) Collections System Conference entitled, "Tracking, Quantifying, and Mitigating Saltwater Inflow and Infiltration" on April 9.
 - c. Staff made a presentation at the WEF Collections System Conference entitled, "Managing a Million Data Points: A How to Guide" on April 9.
 - d. Staff provided a full-day job shadowing opportunity for two students from Cape Henry Collegiate School on April 11.
 - e. Staff participated in the Adopt-A-Spot Cleanup of Mill Dam Creek in Virginia Beach on April 28.

2. Number of Community Partners: 4
 - a. VWEA
 - b. WEF
 - c. Cape Henry Collegiate School
 - d. City of Virginia Beach Parks and Recreation Department

3. Number of Research Partners: 0

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Total Training Hours per Full Time Employee (40) - Current Month	Hours / #FTE	5.99
M-1.4b	Total Training Hours per Full Time Employee (40) - Cumulative Fiscal Year-to-Date	Hours / #FTE	32.56
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	4
M-5.4	Number of Research Partners	Number	0

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for April 2018
DATE: June 13, 2018 (corrected)

A. General

1. Katie Markle was recognized at the Virginia Association of Governmental Purchasing (VAGP) Spring Conference on March 6, 2018 for completing the two year Mentor-Protégé program.

The Mentor Protégé program identifies people within the VAGP membership interested in serving in positions of responsibility with the focus on becoming a member of the VAGP Board of Directors. This program pairs experienced members of the board with members who want to learn more about the operations of VAGP to help prepare them to assume a leadership role in the organization. The VAGP Mentor-Protégé program provides an excellent opportunity for the membership to grow and nurture future officers for VAGP, helping the association achieve its goals and contribute to the overall mission, purpose and vision.

2. Revenues continue to exceed expenses as water consumption is higher than budgeted and slightly higher than last fiscal year. This is likely due to the strong regional economy as facility charges (a barometer for new development/new accounts) exceed our forecast. Interest Income exceeds budget as we continue to optimize the yield on our cash balance. The Local Government Investment Pool (LGIP) is yielding approximately 1.90%, which is much higher than the Bank of America yield of 0.25%. Expenses on a cash basis are generally lower than budget, but Personal Services and Fringe Benefits are higher due to having three pay periods in March. We expect expenses to end the year slightly below or at budget based on contractual encumbrances that are in the procurement pipeline.
3. Customer Interaction Center statistics have continued to improve over the last two months as customers are becoming more familiar with the new billing and payments system. In April, the average wait time for customers has reduced to less than two minutes and we are advancing towards the desired service level of 80%.
4. Staff is working diligently with Fiserv (Checkfree) to restore the linkage to individual bank bill-pay systems. We are estimating that this system will "Go-Live" in May.

B. Interim Financial Report

1. Operating Budget for the Period Ended April 30, 2018

	Amended Budget	Current YTD	Current YTD as % of Budget (83% Budget to Date)	Prior YTD as % of Prior Year Budget
Wastewater	\$ 265,662,693	\$ 224,373,356	84%	84%
Surcharge	1,900,000	1,208,546	64%	100%
Indirect Discharge	2,500,000	2,216,553	89%	89%
Norfolk Sludge	90,000	58,112	65%	68%
Fees	2,935,000	2,370,338	81%	86%
Municipal Assistance	700,000	553,019	79%	62%
Miscellaneous	720,000	761,167	106%	111%
Total Operating Revenue	274,507,693	231,541,091	84%	84%
Non Operating Revenues				
Facility Charge	6,000,000	5,755,740	96%	89%
Interest Income	1,800,000	2,693,245	150%	55%
Build America Bond Subsidy	2,400,000	2,313,642	96%	98%
Other	845,000	989,111	117%	71%
Total Non Operating Revenue	11,045,000	11,751,738	106%	85%
Total Revenues	285,552,693	243,292,829	85%	84%
Transfers from Reserves	9,760,286	8,133,572	83%	83%
Total Revenues and Transfers	\$ 295,312,979	\$ 251,426,401	85%	84%
Operating Expenses				
Personal Services	\$ 53,773,327	\$ 46,334,173	86%	85%
Fringe Benefits	24,700,569	20,975,490	85%	83%
Materials & Supplies	7,399,704	6,043,084	82%	83%
Transportation	1,423,974	950,485	67%	73%
Utilities	11,973,115	9,283,204	78%	76%
Chemical Purchases	10,620,594	6,817,681	64%	67%
Contractual Services	36,900,038	22,726,340	62%	65%
Major Repairs	10,429,168	4,649,567	45%	53%
Capital Assets	1,716,528	1,442,225	84%	64%
Miscellaneous Expense	2,396,234	1,979,239	83%	80%
Total Operating Expenses	161,333,251	121,201,488	75%	76%
Debt Service and Transfers				
Debt Service	59,949,120	52,190,671	87%	85%
Cost of Issuance Bonds	900,000	867,003	96%	0%
Transfer to CIP	58,802,000	49,001,667	83%	83%
Transfer to General Reserve	14,068,608	11,723,840	83%	0%
Transfer to Risk management	260,000	216,676	83%	83%
Total Debt Service and Transfers	133,979,728	113,999,857	85%	84%
Total Expenses and Transfers	\$ 295,312,979	\$ 235,201,345	80%	79%

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, 2018

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2017	\$ 169,127,728	\$ 3,000,520	\$ 30,760,330	\$ 37,452,225
Add: Current Year Sources of Funds				
Cash Receipts	244,444,711			273,602
Capital Grants				2,946,739
VRA Draws				3,464,615
Bond Proceeds (includes interest)				75,168,519
Transfers In	494,006	216,676		49,001,667
Sources of Funds	<u>244,938,717</u>	<u>216,676</u>	<u>-</u>	<u>130,855,142</u>
Total Funds Available	<u>\$ 414,066,445</u>	<u>\$ 3,217,196</u>	<u>\$ 30,760,330</u>	<u>\$ 168,307,367</u>
Deduct: Current Year Uses of Funds				
Cash Disbursements	180,817,252			87,134,483
Transfers Out	49,218,343		494,006	-
Uses of Funds	<u>230,035,595</u>	<u>-</u>	<u>494,006</u>	<u>87,134,483</u>
End of Period - April 30, 2018	<u>\$ 184,030,850</u>	<u>\$ 3,217,196</u>	<u>\$ 30,266,324</u>	<u>\$ 81,172,884</u>

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended April 30, 2018

Classification/ Treatment Service Area	Expenditures		Year to Date	Total	Outstanding	Available
	Budget	prior to June 30, 2017	FY 2018 Expenditures	Expenditure s	Encumbrances	Balance
Administration	\$ 62,245,711	\$ 39,641,464	\$ 504,008	\$ 40,145,472	\$ 536,043	\$ 21,564,196
Army Base	158,584,000	120,527,300	2,484,218	123,011,518	3,631,592	31,940,890
Atlantic	120,373,620	42,154,292	6,926,025	49,080,317	54,140,061	17,153,242
Boat Harbor	102,951,544	42,142,558	10,495,479	52,638,037	4,146,612	46,166,895
Ches-Eliz	148,955,317	6,729,890	2,098,671	8,828,561	6,626,989	133,499,767
James River	89,151,802	50,821,444	2,827,335	53,648,779	5,067,430	30,435,593
Middle Peninsula	48,944,866	6,398,032	1,141,687	7,539,719	4,269,055	37,136,092
Nansemond	78,546,570	33,846,838	3,526,150	37,372,988	3,369,818	37,803,764
Surry	3,236,000	-	65,557	65,557	116,909	3,053,534
VIP	272,884,561	229,739,637	15,603,864	245,343,501	10,748,814	16,792,246
Williamsburg	16,321,843	8,937,934	140,504	9,078,438	709,568	6,533,837
York River	45,537,761	39,366,402	668,156	40,034,558	1,717,177	3,786,026
General	249,202,915	166,626,066	27,453,817	194,079,883	23,232,586	31,890,446
	<u>\$ 1,396,936,510</u>	<u>\$ 786,931,857</u>	<u>\$ 73,935,471</u>	<u>\$ 860,867,328</u>	<u>\$ 118,312,654</u>	<u>\$ 417,756,528</u>

5. Debt Management Overview

	Debt Outstanding (\$000's)					
	Principal Mar 2018	Principal Payments	Principal Draws	Principal FY18 Bonds	Principal Apr 2018	Interest Payments
Fixed Rate						
Senior	\$ 337,606	\$ (5,465)	\$ -	\$ -	\$ 332,141	\$ (109)
Subordinate	436,369	(87)	245	-	436,527	(1,063)
Variable Rate						
Subordinate	50,000	-	-	-	50,000	(54)
Line of Credit	-	-	-	-	-	-
Total	<u>\$ 823,975</u>	<u>\$ (5,552)</u>	<u>\$ 245</u>	<u>\$ -</u>	<u>\$ 818,668</u>	<u>\$ (1,226)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 05/04/18

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	1.81%	1.80%	-0.01%
Average	0.31%	0.30%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 05/04/18	1.56%	1.55%	-0.01%

* Since October 20, 2011 HRSD has averaged 30 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended April 30, 2018 (*corrected 6/13/18)

	Current YTD	Policy Minimum
Days Cash on Hand	461 days*	270-365 days
Days Cash on Hand (Excl Reserve \$30.3m and Risk Mgmt \$3.2m)	393 days*	270-365 days
Risk Management Reserve as % of Projected Claims Costs	25%	25%

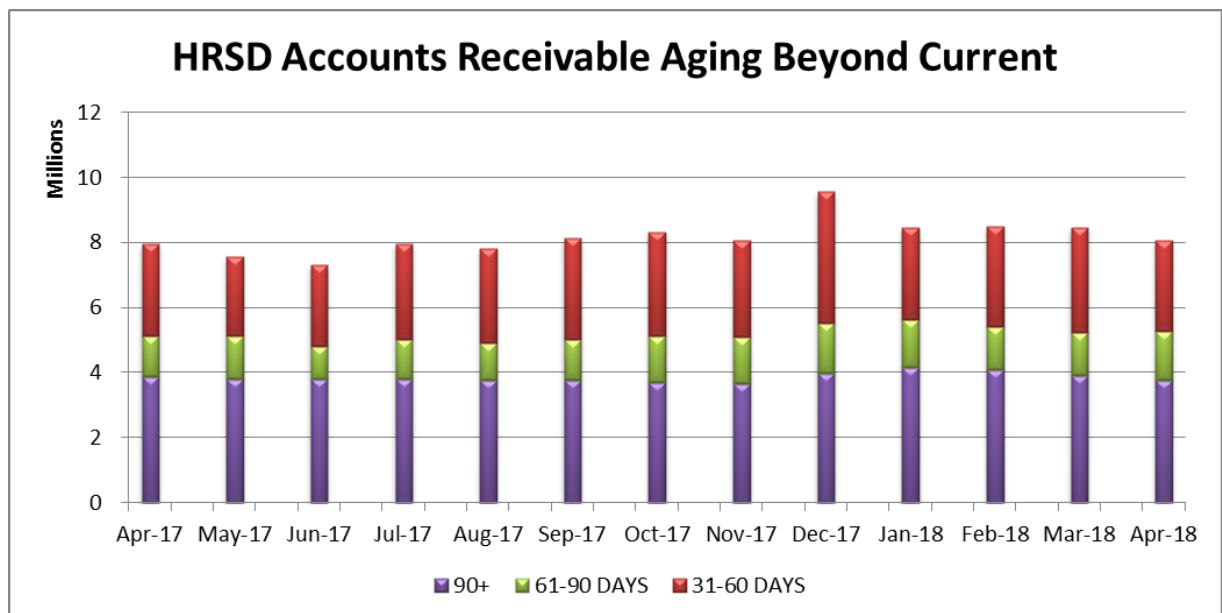
Total Return Strategy					
	Market Value June 30, 2017	YTD Buy/Sell	YTD Change in Market Value	YTD Adjustments	Market Value April 30, 2018
Investment Activity	\$ 123,687,020	\$ 1,540,619	\$ (1,545,908)	\$ -	\$ 123,681,731
Investment Cash	157,418	(47,682)			109,736
Unrestricted Reserve Fund	30,760,330			(494,006)	30,266,324
	\$ 154,604,768	\$ 1,492,937	\$ (1,545,908)	\$ (494,006)	\$ 154,057,791

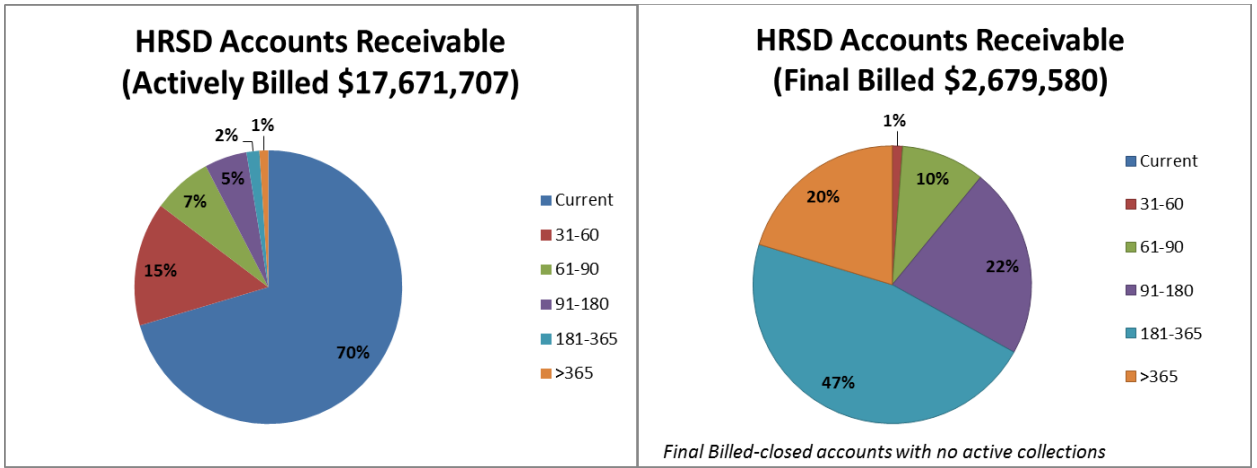
7. Summary of Billed Consumption

Summary of Billed Consumption (,000s ccf)							
Month	2018 Cumulative Budget Estimate	2018 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative 2017 Actual	From 2017	Cumulative 3 Year Average	From 3 Year Average
July	4,427	4,869	10.0%	4,776	1.9%	4,798	1.5%
Aug	8,850	9,939	12.3%	9,275	7.2%	9,525	4.3%
Sept	13,271	14,632	10.3%	14,227	2.8%	14,215	2.9%
Oct	17,689	19,006	7.4%	19,017	-0.1%	18,999	0.0%
Nov	22,104	23,305	5.4%	23,282	0.1%	23,223	0.4%
Dec	26,516	27,462	3.6%	27,761	-1.1%	27,583	-0.4%
Jan	30,925	31,965	3.4%	32,036	-0.2%	31,959	0.0%
Feb	35,331	36,519	3.4%	36,263	0.7%	35,878	1.8%
March	39,734	40,741	2.5%	40,516	0.6%	40,678	0.2%
Apr	44,135	44,732	1.4%	44,383	0.8%	44,834	-0.2%
May	48,532	-	N/A	48,553	N/A	49,058	N/A
June	52,927	-	N/A	53,373	N/A	53,644	N/A

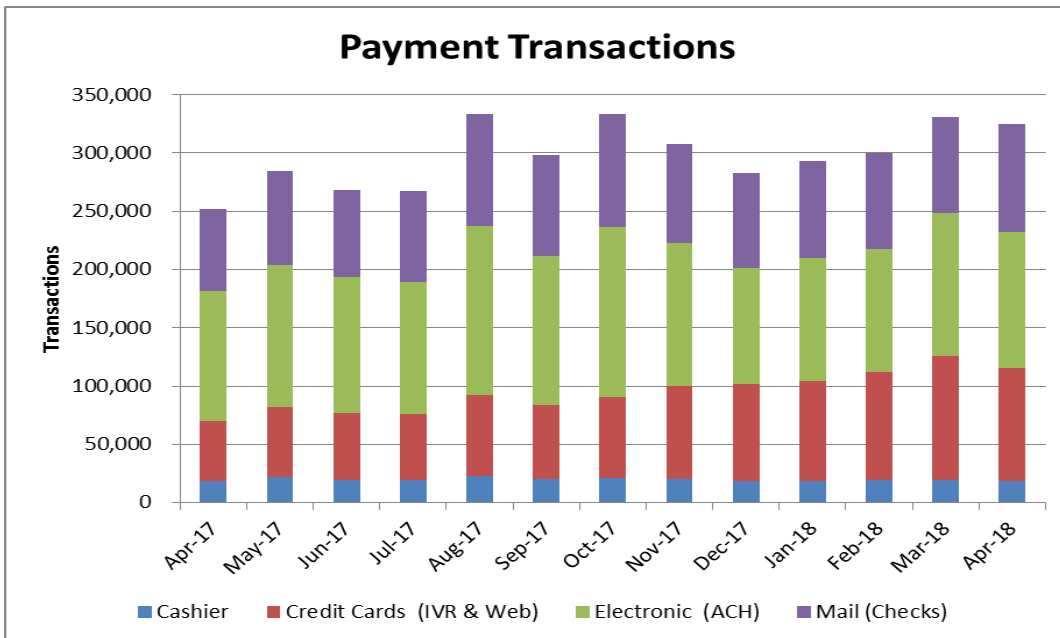
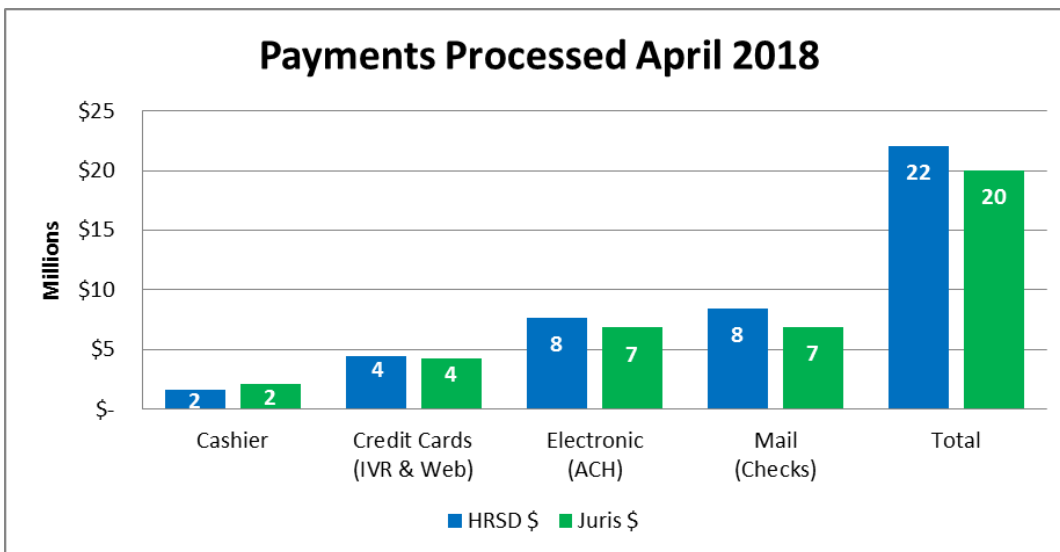
C. Customer Care Center

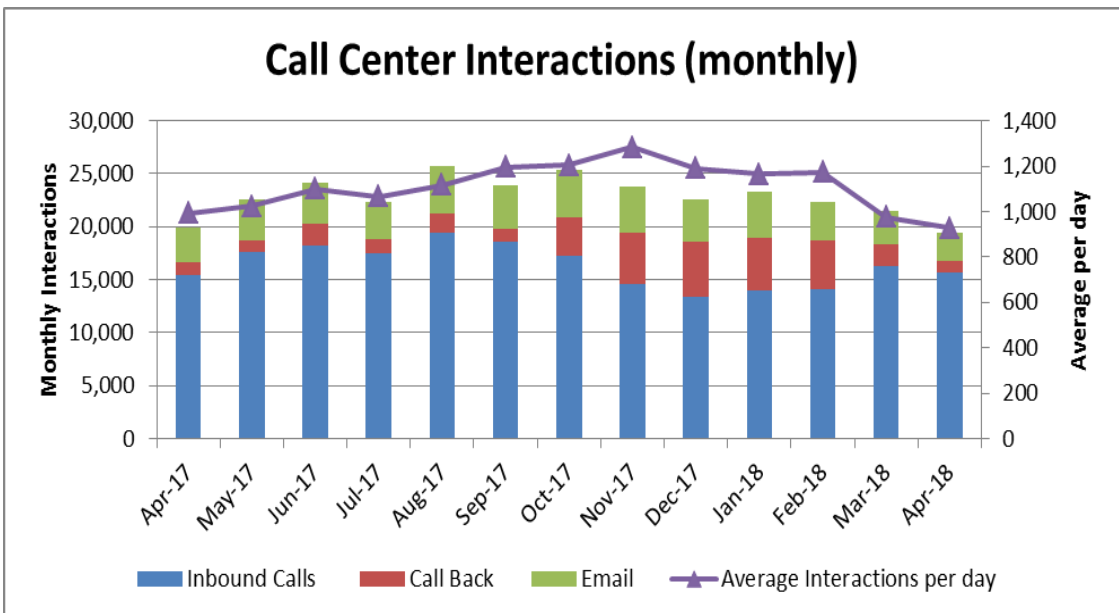
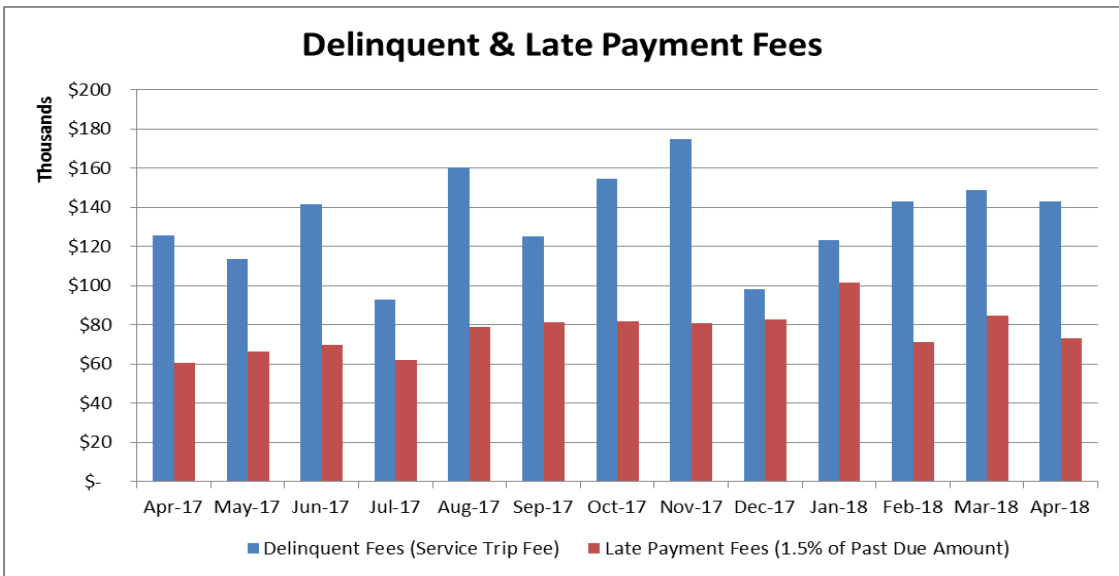
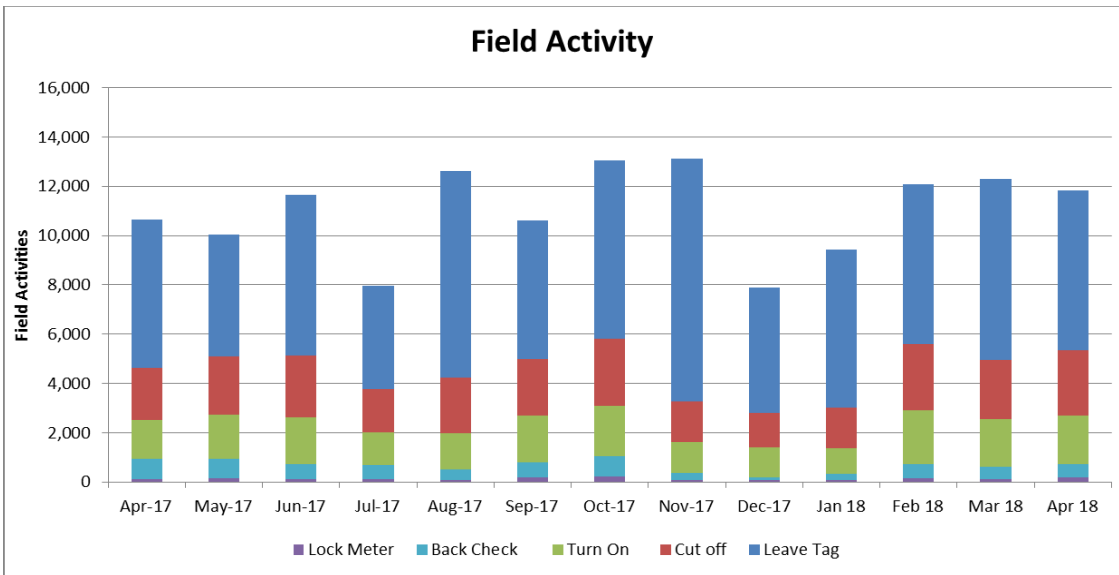
1. Accounts Receivable Overview

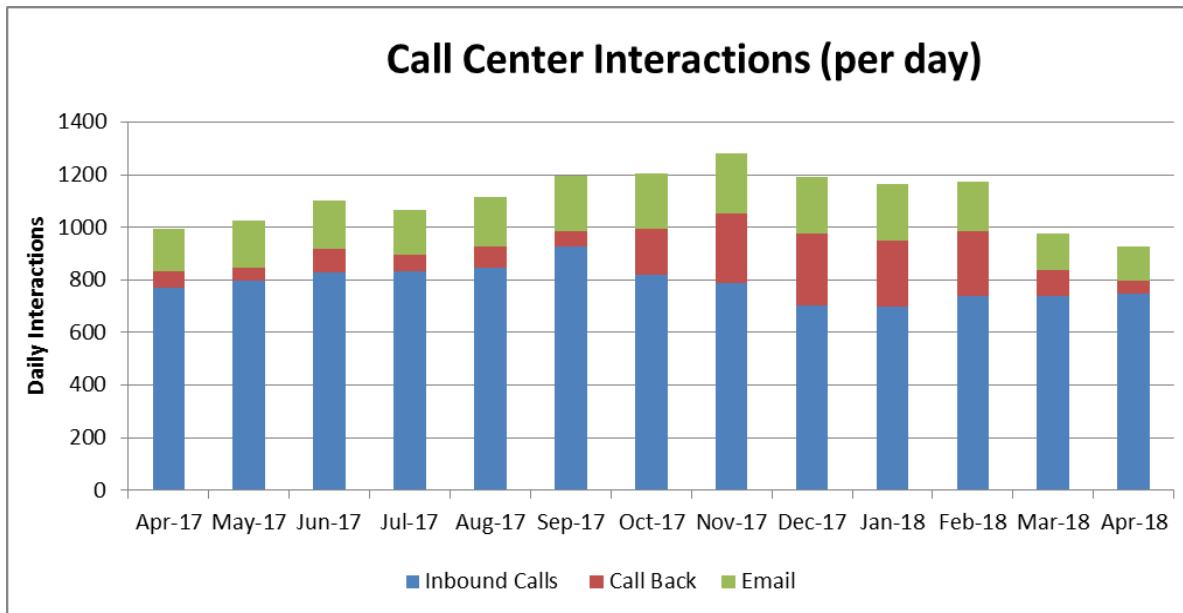




2. Customer Care Center Statistics







Customer Interaction Statistics	Nov	Dec	Jan	Feb	Mar	Apr
Calls Answered within 3 minutes	45%	45%	49%	48%	68%	78%
Average Wait Time (minutes)	5:50	6:39	5:41	5:31	2:51	1:53
Calls Abandoned	18%	18%	17%	16%	10%	8%

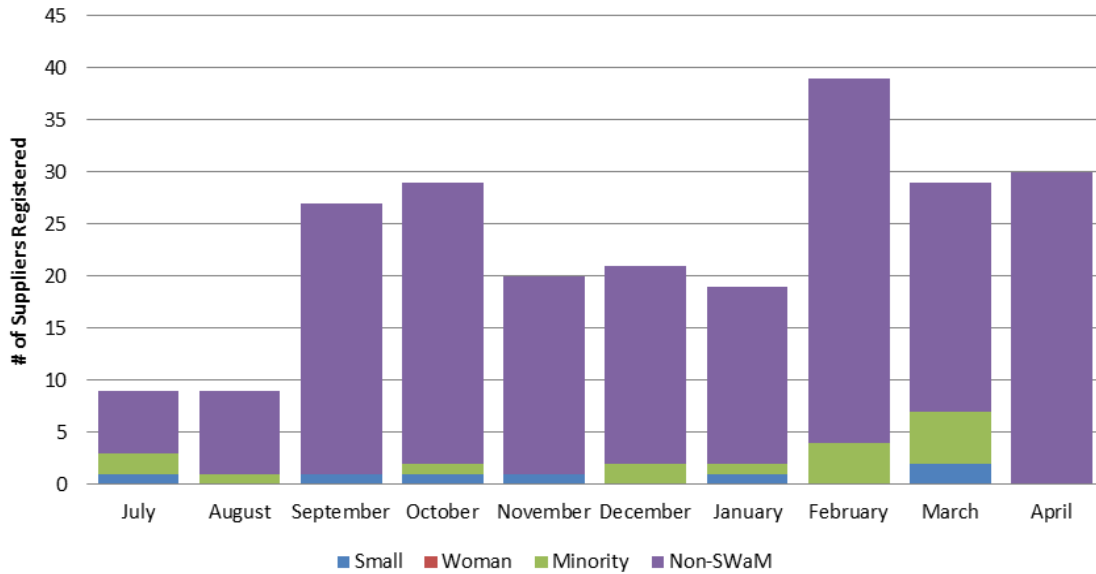
D. Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings ¹	\$282,361	\$1,115,142
Negotiated Savings ²	\$22,146	\$2,147,516
Salvage Revenues	\$2,375	\$41,798
Corporate VISA Card - Estimated Rebate	\$15,301	\$167,872

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.

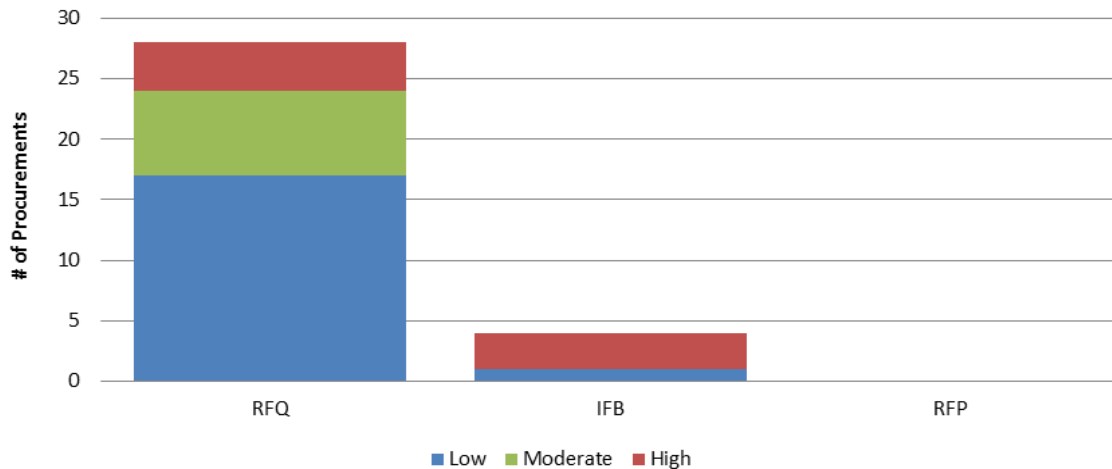
² Negotiated savings are savings obtained during a Request for Proposal process, or if all bids received exceed the budgeted amount, or if only one bid is received.

New Suppliers Registered in ERP

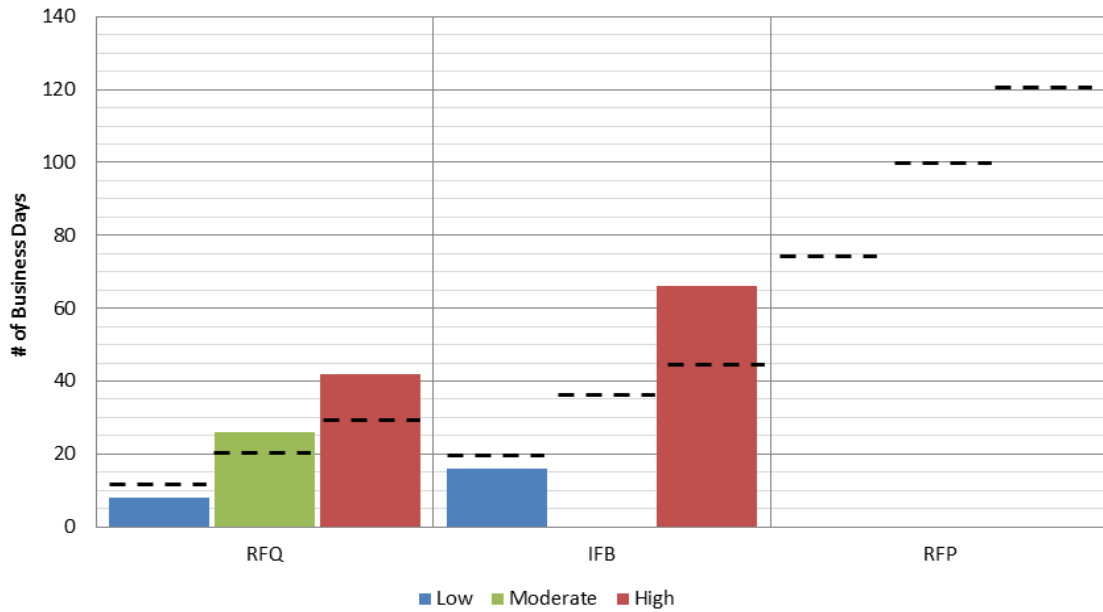


**Increased supplier registration due to supplier outreach at NIGP Forum 8/29/17, Water Jam 9/13/17, VASCUPP® SWaMFest 10/4/17, City of Richmond OMBD and CVMSDC, Procure Your Business Conference 10/18/17, Virginia Beach Minority Business Council Conference and Expo 11/2/17, CNU SWaM Fair 11/9/17, DGS Forum 11/14/17, CVMSDC Supplier Development 1/30/18*

Procurements Completed Based on Complexity



Cycle Time per Method of Procurement and Complexity

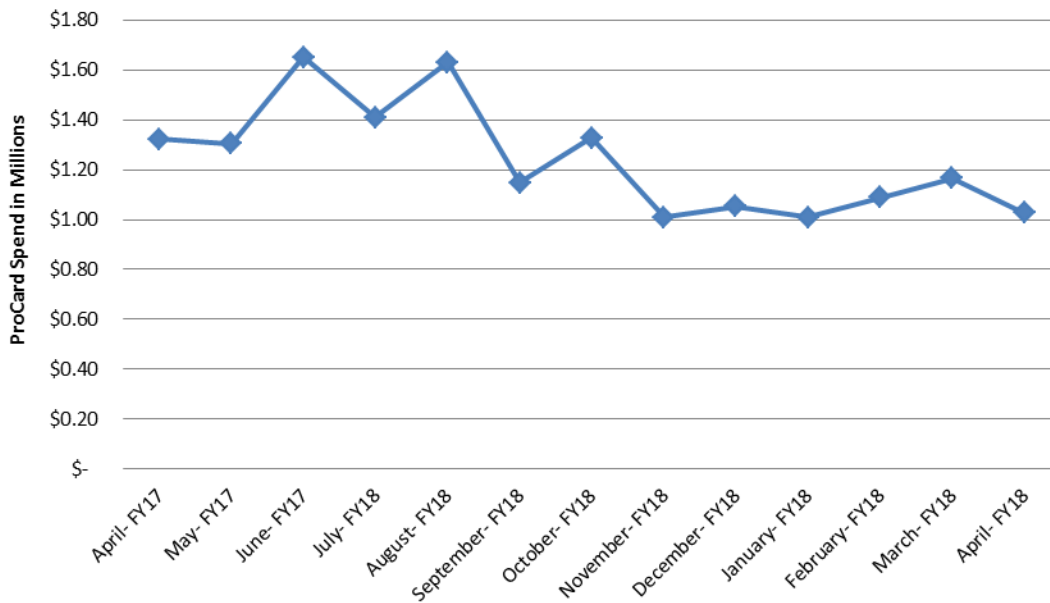


Dashed Line: Target Service Level Cycle Time

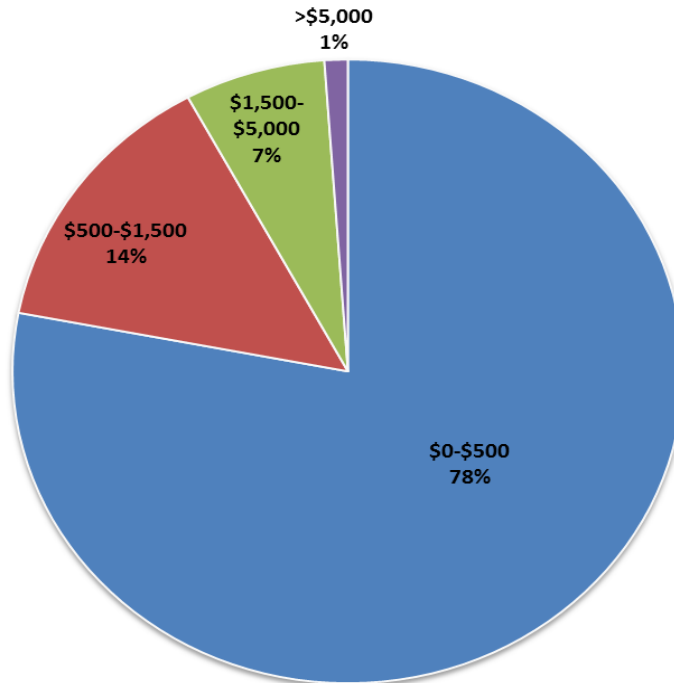
	Low	Moderate	High
RFQ	12	20	30
IFB	20	35	45
RFP	75	100	120

Low: Low technical, quick turnaround, **Moderate:** Technical, routine, **High:** Highly technical, time intensive,

ProCard Spend



April ProCard Transaction Dollar Amounts



ProCard Fraud	External Fraud Transactions *	Comments
July	4	Caught by Bank immediately
August	6	Caught by Bank immediately
September	2	One caught by cardholder immediately, one caught by Bank immediately
October	0	
November	0	
December	4	Three caught by cardholders immediately, one caught by Bank immediately
January	0	
February	1	Caught by Bank immediately
March	9	Caught by Bank immediately
April	0	
Total	26	

***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 0.05% of April's ProCard transactions.

Procurement Client Training		
	Current Period	YTD
ProCard Policy and Process	3	46
Procurement Cycle	2	21
Specification Building Workshop	0	70
Total	5	137

E. Business Intelligence – Enterprise Resource Planning (ERP)

1. ERP Helpdesk currently has 238 open work orders in the following statuses: 3 escalated, 68 in progress, 17 on hold, 148 open, 2 waiting on user. ERP Helpdesk received 227 work orders in April. In April, 294 work orders were closed and 64 were closed within one hour.
2. Staff attended the 2018 Collaborative Oracle Roundtable for E-Business
3. ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1
 - a. 2018 William & Mary Supplier Diversity SWaM Fair
2. Community Partners: 1
 - a. College of William & Mary
3. Monthly Metrics (*corrected 6/13/18)

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	0.83
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	37.73
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	1
	Wastewater Revenue	Percentage of budgeted	101%
	General Reserves	Percentage of Operating Budget less Depreciation	114%
	Liquidity	Days Cash on Hand	461 Days*
	Accounts Receivable (HRSD)	Dollars	\$20,315,287
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	18%

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

TO: General Manager

FROM: Director of Information Technology (IT)

SUBJECT: Information Technology Department Report for April 2018

DATE: May 9, 2018

A. General

1. Testing of the cellular 4G secure communications circuits for the new Supervisory Control and Data Acquisition (SCADA) platform is complete. Individual site assessments are being conducted to determine and document the optimal installation details.
2. The industrial automation programmers continued testing, validation, and tuning of the distributed control system within the SWIFT demonstration facility.
3. Initial software testing of the virtualized desktop and laptop platform is complete. Detailed instructions are being developed for expanded testing by a representative sample of computer users and service consumers. Feedback from this next round of testing will be used to identify and remediate problems and errors.
4. Network, telecommunication and audio visual equipment for the SWIFT facility at the Nansemond Treatment Plant has been installed, tested and is now online.

B. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Number of Community Partners: 0

C. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Training During Work Hours Per Full Time Employee (50) – Current Month	Total Training Hours / # FTE	1.26
M-1.4b	Total Training During Work Hours Per Full Time Employee (50) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	32.38
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,
Don Corrado

TO: General Manager
 FROM: Director of Operations
 SUBJECT: Operations Report for April 2018
 DATE: May 7, 2018

A. Highlights

This month the General Manager recognized Operations Department staff at our five treatment plants that use incineration to dispose of solids. In 2010 the Environmental Protection Agency (EPA) first proposed standards for solid waste incineration units pursuant to the Clean Air Act. HRSD began preparation for these new standards shortly after they were proposed. The original plan called for adding expensive afterburners to all of our furnaces with an estimated cost in excess of \$60 million dollars.

Through a series of operational tests, we found that we could operate our furnaces and meet the new standards without having to add new equipment as originally proposed. The new operating procedures, however, made the furnaces more challenging to operate and required that they operate much closer to permit limits with significant risk of occasional compliance issues.

As we enter our third year of compliance, the performance of all of our furnaces has stabilized with few reportable incidents and no significant compliance issues.

Over the past few years we have provided details in monthly reports of every reportable incident. Prospectively, we plan to report minor reportable incidents in the following table. Significant compliance incidents will be explained in detail.

Condition	Cause	ABTP	BHTP	CETP	VIP	WBTP
Use of Emergency bypass stack	Power anomaly	1	0	1	0	1
Total Hydrocarbon Analyzer Failure	Analyzer failed to record two valid readings	0	0	0	0	1

B. Interceptor Systems

1. North Shore (NS) Interceptor Systems

a. North Shore System

- (1) There was one sanitary sewer overflow (SSO) experienced during the month. The spill was the result of a corporation stop failure resulting in 13,100 gallons of sewage lost. The corporation stop was repaired.

- (2) There was one odor complaint and five system alarms during the month. The alarms and complaints were fully resolved.
- (3) Staff spent a significant amount of time working at the Lawnes Point Treatment Plant. We anticipate that treatment and subsequent discharge of the holding ponds will begin in May.
- (4) Staff coordinated reconnecting Chesapeake Bay Packing, the company located on Terminal Avenue in Newport News, to the HRSD force main.
- (5) Staff continued with the GPS locating all appurtenances and infrastructure recently acquired from the Town of Surry and Surry County. These activities uncovered a number of conditional issues that will need to be corrected over time.
- (6) NS Operations and York River Treatment Plant staffs continue to implement corrective actions and repairs to the Surry system. We are making progress toward bringing these facilities into proper operating condition.

2. South Shore (SS) Interceptor Systems

- a. Staff assisted the City of Chesapeake with a city force main offset by temporarily isolating three City pump stations (PS) from the HRSD system. Staff also helped the City of Suffolk with a city valve replacement.
- b. Staff facilitated a tour of the Norchester Pump Station for several engineering students through a local Engineering Mentorship program.

C. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. On April 24, there was a 50-gallon spill of non-potable water (NPW). A valve closed too quickly and the resulting water hammer ruptured the pipe.
- b. On April 13, staff began feeding methanol to the 2nd anoxic zone in aeration tank #1. The facility has been without methanol since March 2017. Replacing the methanol tank required a lot of hard work and dedication from the plant staff, the engineering department, design consultants, and construction contractors. The final effluent total nitrogen average for the month of April was 7.25 mg/L, but after

approximately two weeks of methanol feed, the nitrogen results for the final two days of the month were 3.07 and 2.76 mg/L. For the plant to meet its annual permit of 5.0 mg/L Total Nitrogen, we must average 3.69 mg/L for the rest of the calendar year.

- c. A NPW pipe ruptured, leaving Odor Station A without any dilution water for the scrubbers. Without NPW, chemicals cannot be recirculated through the odor scrubbers. The loss of NPW resulted in four odor exceptions on April 29th and 12 exceptions on April 30th. No offsite odors were detected, and no odor complaints were received. Repairs are ongoing.
- d. Staff installed new piping and flow meters in the caustic feed pump room.
- e. Staff installed a nitrate probe in aeration tank #5. This probe will improve process control of the nitrified recycle to the 1st anoxic zone and help optimize chemical feed dosages.
- f. Staff replaced five 6-inch valves for the centrifuge feed pumps.

2. Atlantic Treatment Plant (ATP)

- a. Construction of the Thermal Hydrolysis Process (THP) is well underway. Contractors continued work on the yard piping by rerouting drain lines and relocating manholes before laying the foundation for the THP skids. The contractor also started work on the digester gas lines. This included the removal of the old digester gas piping which will be replaced with larger diameter piping to handle the increase in gas production associated with the THP. Staff secured the digester gas system for the contractor to perform the first part of the work.
- b. Construction of the new administration building continues. The roof installation has been a slow process and should be completed by the end of May. A revised completion date is mid-August.
- c. Testing continues on the Enterprise Data Server (EDS) system. Data is collected and compared against the current Daily Plant Operations Report (DPOR). The side by side comparison should be completed by the end of May, at which time we will go live and will replace the older Excel-based DPOR.

- d. Three new cameras were added to the gravity belt thickeners (GBT) for process control. The cameras will allow staff to monitor and adjust feed rates as needed.
- e. In order to complete the coatings work in the influent channel to primary clarifiers 1 through 4, staff took the four primaries out of service. This leaves only two primary clarifiers in service. With the high solids loading, staff is once again required to spray the partially digested solids that float to the surface down into the scum trough around-the-clock until the coatings work is complete.

3. Boat Harbor Treatment Plant (BHTP)

- a. Significant staff efforts, combined with little rainfall and relatively low incoming salinity helped nitrification recover this month.
- b. Staff rebuilt both solids receiving pumps. This work included replacement of rotors and stators on both pumps. We will replace one of the pumps within the next year because of its age and the lack of available parts.

4. Chesapeake-Elizabeth Treatment Plant (CETP)

- a. Staff replaced the scum collection skirting on the sweep arm of #2 secondary clarifier.
- b. Plant staff successfully completed the air permit testing for Incinerator #2.
- c. A contractor inspected and repaired the leaking muriatic acid tank.
- d. Plant staff repaired and replaced sodium hypochlorite piping.

5. James River Treatment Plant (JRTP)

- a. Staff completed replacement of deteriorated fiberglass weirs on the #1 gravity thickener with polyvinyl chloride weirs. Staff also replaced the solids draw off valve and recycle piping.
- b. There was some struvite accumulation on lobe pumps that were installed by staff in March to transfer centrifuge centrate from the centrate wet well to the centrate equalization tanks. The struvite has not accumulated enough to hinder pumping. The objective of using a lobe pump over a centrifugal pump was to produce a less turbulent

environment at the pump. Turbulent environments promote struvite formation.

- c. On the magnesium hydroxide feed project, staff prepared the thickening building by rerouting overhead pipes and clearing space to install a 6,000 gallon storage tank for the magnesium hydroxide. Staff was able to move the tank into the building and set it in its permanent location.
- d. A contractor completed coating the steel and concrete on the #1 and #2 grit tanks and worked on coating the ANITA-Mox tank effluent distribution chamber.
- e. Contracted work to replace the outdated, explosion-proof, power distribution center in the digester basement continued. Efforts focused on routing conduit from the new power distribution building to the digesters.
- f. All nine Integrated Fixed Film Activated Solids (IFAS) tanks were operated in ammonia-based dissolved oxygen (ABAC) mode, revised from the ABAC mode tried in 2017. Results so far look promising; however, IFAS effluent ammonia probes continue to hamper ABAC controls. Staff is looking at replacement for these probes.

6. Nansemond Treatment Plant (NTP)

- a. There was an overflow of primary clarifier scum (oil and grease) of approximately 400 gallons. Approximately 300 gallons were recovered.
- b. Staff began modifications on the scum baffles of its two circular primary clarifiers. These modifications should allow the plant to operate in dry weather conditions with only two of its four primaries. This strategy is intended to reduce the amount of settling in the treatment process, which will supply an additional food source for the microorganisms. The intent is to provide a targeted, stable low nitrogen level of less than 3.5 mg/L and reduce the amount of methanol required to achieve that low nitrogen level.
- c. SWIFT start-up operations occupied a significant amount of staff time this month.
- d. Staff completed the installation and began testing of the new dewatering polymer direct feed emulsion system. This system should reduce operation and maintenance cost in comparison to the old system.

7. Virginia Initiative Plant (VIP)

- a. Staff shut down the main odor control system on April 3 to repair a broken caustic line, resulting in one exhaust H₂S reading greater than 2 ppm.
- b. A primary solids pump discharge valve came apart on April 5, causing approximately 1,000 gallons of solids to overflow onto the ground. Staff recovered 900 gallons.
- c. Staff shut down the main odor control system for two hours and twenty-seven minutes on April 3 to repair a broken caustic line.
- d. Nutrient removal is performing well under current conditions, with effluent values of 0.58 mg/L total phosphorus and 7.63 mg/L total nitrogen. Staff will configure the versatile bioreactor to optimize nitrogen removal in May. The target value is 4 mg/L total nitrogen.
- e. Staff rebuilt primary solids pump #3, ash conveyor #2 and installed new air dampers in furnace #2. Staff also programmed new frequency drives for primary pumps #3 and #4.

8. Williamsburg Treatment Plant (WBTP)

- a. Staff took the #1 aeration tank out of service to clean the tank and replace the deteriorated, anaerobic to anoxic aluminum wall with fiberglass.
- b. Staff replaced a deteriorated cast iron line from the fat, oil, and grease tank to a manhole upstream of the primary effluent with polyvinyl chloride pipe. Staff also rebuilt the contact tank scum pump and replaced one of the large dewatering screw conveyors.
- c. The contractor drilling a SWIFT test well completed preliminary work and started drilling.

9. York River Treatment Plant (YRTP)

- a. The contractor for the replacement of the digester cover completed the assembly process and began welding the new steel cover. Removal of the old membrane cover was also started.
- b. #1 Grit Tank was taken out of service to perform preventive maintenance activities.

- c. Staff performed maintenance repairs at the Town of Surry Treatment Plant.

D. Small Communities

1. Middle Peninsula

a. SC Treatment:

(1) West Point Treatment Plant (WPTP)

In-house design work continues on the tertiary filter, aerobic digester aeration upgrade and the pond pumping and mixing upgrade.

(2) Urbanna Treatment Plant (UBTP)

The plant laboratory construction is complete. Both treatment trains were put back into MLE mode and the fine bubble diffusers are doing well.

(3) King William Treatment Plant (KWTP)

Staff is planning to modify treatment train #1 to make it operational by the end of June. The train has never functioned as originally intended. The intent is to add capacity by making both of the plant's treatment trains fully functional. If successful, this will give staff time to reevaluate the upgrade capital improvement project.

(4) The zinc removal media was replaced this month.

b. SC Collections:

(1) West Point System

Staff removed the failed #2 submersible pump from the 13th and Lee PS.

(2) Urbanna System

The Cross Street PS rehabilitation construction commenced and is progressing well. The final tie in date is scheduled for May. Staff is evaluating and meeting with four homeowners that are connected to the Jameson Cove PS to determine the feasibility of

providing them private grinder pit stations and ultimately removing the PS.

Staff replaced a lateral (the portion in the public right-of-way) to the main line. The installation went well and the property owner was pleased.

c. Miscellaneous

- (1) Staff held a small ribbon cutting ceremony and celebration for the rehabilitated UBTP this month.
- (2) Staff completed the semi-annual Adopt-A-Highway on Cricket Hill Road in Mathews County this month. In total we collected approximately 200 pounds of trash.

2. Small Communities – Surry Systems

a. Surry Systems – Town of Surry

- (1) The rotating biological contractor (RBC) #1 was repaired and placed back into service near the end of the month. Continued flow shift to RBC #2 resulted in elevated, but still within permit TKN numbers in the final effluent.
- (2) A new polymer/coagulant chemical feed line was installed.
- (3) The plant has two drum filters. One was rebuilt and is in service. The other filter is currently out-of-service. With all of the plant's flow conveyed through only one filter, and with that filter having new screens installed on the drum, the filter blinds relatively quickly. This results in frequent backwashing. When the other filter is returned to service the backwash cycle should reduce significantly.

- (4) Effective April 1 HRSD received a new permit for the plant. Although the following experienced values are notable, they are not permit exceedances:

	Limit Type	Unit	Permit Limit	Interim Limit	Reported Value
TSS	Monthly average	MG/L	10	29	12
	Weekly Loading	G/Day	2,300	6,600	2,407
Copper	Monthly average	UG/L	3.8	12	6
	Weekly average	UG/L	3.8	12	6
					Total

b. County of Surry

Operations of the County TP continued without issue during the month. Staff spent a considerable amount of time fixing casting sections of manholes on the plant site and re-grading the site to improve stormwater drainage.

E. Support Systems

1. Automotive

- a. ATP's combined heat and power (CHP) generator unit is back in service. A contractor installed the refurbished turbocharger. The unit is online and functioning as designed.
- b. Staff performed load bank tests at 25th Street, Colley Avenue, Deep Creek, Ford's Colony, Independence Boulevard, Normandy Lane, and Quail Avenue and at the North Shore and South Shore Main Office Complexes. All generators operated as designed and were returned to service.

2. Condition Assessment

- a. Condition Assessment, through use of Closed-Circuit Television (CCTV), inspected 4,286 LF of gravity force mains. Staff completed 30 manhole inspections bringing the total number of inspected manholes, this year to 154.
- b. Staff completed inspection assessments on coatings projects at NTP and VIP.
- c. Coatings work began on the primary influent channels of primaries #1-4 at ATP.

- d. Staff performed a one-year warranty walk-through of coating work completed on BHTP's aeration and secondary tanks. The spot repair work performed by the contractor was unsatisfactory and will require another visit from the contractor.
- e. Rehabilitation of JRTP grit tanks, rake arm assemblies, and channels is complete.

3. Facilities Maintenance

- a. Contractors installed a 3-ton mini-split air-conditioning unit in the Motor Control Center (MCC) at Greensprings PS. The Central Environmental Laboratory's (CEL) building automation system (BAS) went through an upgrade and is now running on HRSD's network.
- b. Staff completed 45 annual PS building inspections and 36 annual PS roof inspections. Staff constructed twelve hut handles for Technical Services Division (TSD), constructed floating shelves for the Engineering Department, replaced a fire door lock at 1436 Air Rail Avenue, repaired the roof of Kempsville PS, and constructed filter holders for sequential batch reactors (SBR) for SWIFT.
- c. Staff rebuilt pumps for Shippo's Corner and Rodman Avenue PS and completed 18 other projects. Staff repaired an emergency check valve for Powhatan PS, assisted plant staff in the removal and installation of pillow block bearings on a large filter at Surry Treatment Plant, assisted SS Interceptors with a seized valve stem, fabricated a pump sleeve for the returned activated solids (RAS) pump at BHTP, made twelve stem operator drivers for VIP, and fabricated a drive and tail shaft for WBTP.

F. Electrical and Energy Management (EEM)

- 1. A medium voltage (MV) contractor performed preventive maintenance on the main and CHP switchgears at ATP. The work involved coordinating multiple shutdowns to isolate, remove and test MV breakers and protective relays. Repairs were made to one of the two breakers. Both breakers were reinstalled and returned to service.
- 2. Staff installed time delays on MV breaker handles for the CHP generator breakers at ATP. This control system modification allows staff to get out of the potential arc flash boundary when the breakers close and connect the generators to the electrical bus.

3. Operational problems continue with the 600 horsepower, effluent pump variable frequency drives (VFD's) at ATP. Staff is working to repair the failed drive before hurricane season.
4. Staff assisted with the start-up for the Sustainable Water Initiative for Tomorrow (SWIFT) Research Facility. The teams resolved multiple issues with automation, equipment and terminations.
5. Staff completed a deep cleaning of the incinerator distributed control system (DCS) control cabinet at WTP. The power was removed and each input/output (I/O) module removed and carefully cleaned along with the entire chassis of the DCS cabinet. Staff is working on a solution to mitigate future problems with contaminants in this cabinet.
6. Thermographic inspections were conducted at 25th Street and Woodland Road PS. Heat anomalies found at 25th Street PS were corrected. However, attempts to mitigate the heat anomaly associated with the main breaker at Woodland Road PS were not successful. Efforts continue to correct the problem.
7. Remote switch operators (RSOs) and remote switch actuators (RSAs) were installed at JRTP. These devices protect staff from the hazards of arc flash by allowing them to mechanically and/or electrically close and open breakers for electrical equipment remotely (outside the arc flash boundary). Training was provided.

G. Water Technology and Research

The SWIFT Research Center (SWIFTRC) is currently in startup with activities targeted at stabilizing treatment processes, testing the function of control systems and interlocks, and sampling and analysis to confirm water quality. There is also considerable work continuing with respect to baseline monitoring well sampling. Since beginning 24/7 operation of the main process train, the primary SWIFTRC team has been operating the facility, but training of Nansemond plant operations staff has been initiated. There have been no major problems during startup beyond normal issues associated with simultaneously starting up a large number of automated processes and equipment. Data also suggest that water quality is as expected.

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	4	4	2	2	1	9	3	3	3		
2.7	# of PS Annual PMs Performed (SS)	5	5	6	5	3	2	3	3	4	5		
2.7	# of Backup Generator PMs Performed (Target is 4.6)	9	10	10	12	7	9	12	11	12	9		
2.8	# of FM Air Release Valve PMs Performed (NS)	108	36	186	204	256	203	130	36	185	267		
2.8	# of FM Air Release Valve PMs Performed (SS)	79	153	115	409	140	210	153	271	263	252		
2.9	# of Linear Feet of Gravity Clean (NS) (Target is 2,417 for HRSD)	11,560	5,608	3,872	3,807	1,837	4,294	1,198	2,732	2,608	4,690		
2.9	# of Linear Feet of Gravity Clean (SS) (Target is 2,417 for HRSD)	5,838	8,330	3,354	0	12,580	5,071	0	1,987	11,777	9,319		
2.9	# of Linear Feet of Gravity CCTV Inspection (HRSD Target 3,300 LF)	9,186	5,796	4,017	2,717	2,019	655	1,057	3,611.9	3,816	4,286		

I. Strategic Measurement Data

1. Education and Outreach Events: 16

- a. BHTP staff participated in a clean-up event with the Navy at BHTP
- b. CETP tour for 20 ODU Students
- c. CETP tour for 30 Cape Henry Collegiate students
- d. NTP staff provided a WEF collections facility tour
- e. VIP tour for Hampton Roads Public Works Academy students
- f. YRTP tour for Hampton Roads Public Works Academy New Horizons students
- g. Steve de Mik was invited to provide a presentation on HRSD for Norfolk Northside Civic League
- h. Charles Bott was invited to provide a presentation on SWIFT at the Water Resources Symposium from the National Capital Region Section of the American Water Resources Association
- i. Charles Bott was invited to provide a podium presentation on SWIFT at the WEF Collection Systems Conference
- j. Charles Bott was invited to provide a lecture on SWIFT at Virginia Tech
- k. Support Systems staff attended the Old Dominion University Industrial Advisory Board Meeting
- l. SCD completed the semi-annual Adopt-A-Highway (AAH) on Cricket Hill Rd in Mathews County
- m. SS Interceptors staff participated in a Touch-A-Truck event at Greenbrier Mall
- n. SS Interceptors staff participated in a Engineering Mentorship event and Norchester Pump Station Tour
- o. The SS Electrical Manager and a member of EIS Project Team participated in Career Day at Fairlawn Elementary School in Norfolk on April 19.
- p. The NS Electrical Manager and the NS Material Operations Coordinator (MOC) coordinated a clothing drive for United Way that concluded in April. The drive provided clothing for Hampton Veterans (VA) Hospital, a shelter for women and children and The Working Women's Wardrobe, a 501 (c) (3) organization and a sub-ministry of the Bridge Network of Churches.

2. Community Partners: 6

- a. Chesapeake Bay Foundation – oyster cage maintenance at BHTP for oyster gardening program
- b. Virginia Institute of Marine Science
- c. Old Dominion University

- d. Cape Henry Collegiate
- e. Hampton Roads Public Works Academy
- f. AAH VDOT Mathews County

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (510) – Current Month	Hours / FTE	2.70
M-1.4b	Total Training During Work Hours per FTE (510) – Cumulative Year-to-Date	Hours / FTE	31.67
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	28,840
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	52.97
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	14.53
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	32.5
M- 4.1a	Energy Use: Treatment *reported for March 2018	kWh/MG	2,137
M-4.1b	Energy Use: Pump Stations *reported for March 2018	kWh/MG	161
M-4.1c	Energy Use: Office Building *reported for March 2018	kWh/MG	80
M-5.2	Educational and Outreach Events	Number	16
M-5.3	Number of Community Partners	Number	6

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager

FROM: Special Assistant for Compliance Assurance

SUBJECT: Monthly Report for April 2018

DATE: May 9, 2018

A. Submittals Completed in April 2018 – The Fiscal Year 2018 Semi-Annual Report was submitted to the U.S. Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) on **April 27**.

B. Activities

1. **Phase 6 – Rehabilitation Plan.** Ongoing system rehabilitation work associated with Prompt Repairs or other items in the Sewer Repair (SR) contract is as follows:
 - SR 037 – Bayshore Lane: Addressing manhole repair issues prior to closing out project.
 - SR 040 – Woodland Avenue: Construction nearly complete to replace sections of gravity sewer and rehabilitate manholes.
 - SR 055 – Hampton University: Draft work order developed to repair influent gravity to HRSD pump station.
 - SR 069 – Powhatan Manhole: Work being scheduled for construction.
2. **Phase 7 – Regional Wet Weather Management Plan.** Several rounds of comments and requests for additional information have been exchanged with the EPA on the Integrated Plan/Regional Wet Weather Management Plan mainly regarding HRSD's financial capability. The latest response was provided on March 23 regarding use of the financial model.
3. **Phase 8 – EPA Consent Decree Services.** HRSD continues sharing information with the localities through the regional SharePoint site and flow, pressure and rainfall data portal. A new SharePoint site is being developed on HRSD's servers and data is being transferred to the new site.
4. **Phase 9 – Supplemental Services.** Management, Operations and Maintenance (MOM) Program elements are ongoing, including the Hydrogen Sulfide (H₂S) Monitoring Program and implementation of a Business Intelligence (BI) system for the Small Communities Division (SCD). This includes a MOM update manual guidance document for use on the next major update. MOM Update workshops were held on **April 2, 3, 12, 16 and 17** with North and South Shore staff to update various MOM sections.

The Flow, Pressure and Rainfall (FPR) monitoring program continued in April with data collection and analysis being performed as part of the MOM Program.

Condition assessment work under Phase II of the Force Main Condition Assessment (FMP2) program progressed in April. Force main inspection work order status is as follows:

- FMP2 039 Bowers Hill: Work is in progress to inspect the force main.
- FMP2 049 Shore Drive (Reservoir Group): Ground penetrating radar (GPR) field scanning has been completed. Work order has been finalized and delivered to contractor for implementation.
- FMP2 050 Laskin Road: Work has been completed. Follow-up recommendations were made based on results.
- FMP2 051 Independence Blvd: Rescan with GPR from Broad St. to Jeanne St. has been completed. Recommendations for additional follow-up are being drafted.

Field work planning continued in April under the Gravity Sewer Inspection Phase II Program. The gravity inspection work order status is as follows:

- GMP2 056 Jefferson Avenue Closed Circuit Television (CCTV) – This WO has been signed and will be completed this fiscal year.
- The following draft work orders are under review:
 - GMP2 059 NS Siphons FY18
 - GMP2 060 SS Siphon FY18
- The following Small Communities Division (SCD) work orders in King William have been signed and work in this area is anticipated to start in FY19:
 - GMP2 SCD 026 Main Pump Station
 - GMP2 SCD 027 Commerce Pump Station
 - GMP2 SCD 028 Central Crossing
 - GMP2 SCD 029 McCauley Park Pump Station
 - GMP2 SCD 030 Kennington Pump Station
 - GMP2 SCD 033 School Pump Station
- Additional work orders are under development:
 - GMP2 SCD 031 Urbanna Manholes
 - GMP2 SCD 032 King William Manholes
 - GMP2 SCD 034 Matthews

Work continued on the Fiscal Year 2017 Condition Assessment Annual Report.

C. Next Submittals

Sanitary Sewer Overflow Response Plan – May 2018

D. Program Budget Status

The overall program budget is \$130,151,133, excluding the Master Metering Program. A summary of appropriations and expenses is attached.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

The WEF/VWEA National Collections Conference was held at the Virginia Beach Convention Center April 8-11, 2018. The conference was well attended and had the largest exhibitor area of any Collections Conference in history. There were approximately 600 registrations, twice as many as needed to meet the overall budget.

2. Number of Community Partners: 0

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Total Training Hours Per Full Time Employee (1) – Current Month	Total Training Hours / # FTE	0
M-1.4b	Total Training Hours Per Full Time Employee (1) – Cumulative Fiscal Year to Date	Total Training Hours / # FTE	40
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	0

Respectfully submitted,

Phil Hubbard, P.E.

Attachments: [Consent Order State & EPA Expenditures](#)

Consent Order State & EPA Expenditures

	Total Appropriation	April 2018 Obligations	Available Balance
Regional Consent Order and Other Consent Order Requirements			
Regional Hydraulic Model	\$109,541,497	\$109,051,147	\$490,350
Locality System Monitoring and Condition Assessment	\$20,609,636	\$20,294,563	\$315,073
Subtotal - In progress	\$130,151,133	\$129,345,710	\$805,423

Completed Work

Regional Consent Order and Other Consent Order Requirements	(Included in subtotal above)
Master Metering Program III	\$2,005,140
Master Metering Program IV	\$13,628,635
Total	\$144,979,485

TO: General Manager
FROM: Director of Talent Management
SUBJECT: Monthly Report for April 2018
DATE: May 9, 2018

A. Human Resources (HR)

1. Recruitment

a. Recruitment Summary

New Recruitment Campaigns	7
Job Offers Accepted – Internal Selections	5
Job Offers Accepted – External Selections	9
Internal Applications	18
External Applications	124
Average Days to Fill Position	84

b. The recruitment process and placement of Hampton Roads Public Works Academy summer interns was initiated.

2. Enterprise Resource Planning (ERP)

a. HRSD worked with the Managed Services consultant on:

- (1) Benefit program setup
- (2) Benefit interface updates
- (3) Appraisal reminder notifications

b. Staff made modifications and tested Fiscal Year 2019 benefit changes prior to the start of open enrollment.

c. Modifications were made to the leave request screen in employee self-serve to display leave carry-over limits.

c. Accounting, Talent Management and Information Technology staff completed 2017 Internal Revenue Service (IRS) Affordable Care Act reporting. The electronic file was “accepted” by the IRS.

3. Benefits and Compensation

a. Staff worked with the benefit consultant on:

- (1) 2019 Fiscal Year Plan renewal follow-up discussion, focused on pharmacy utilization, strategies for savings and stop loss market analysis
- (2) Open enrollment planning including finalizing the renewal, addition of new benefits, benefits guide updates, and development of the new *i-benefits* app which provides mobile phone access to HRSD benefit information
- (3) Start-up of open enrollment meetings to be conducted on-site or virtually. Employees will have until May 30, close of the open enrollment period, to update or select benefits.

b. A kick-off meeting was held with the Compensation Study provider. Project scope, deliverables, and the compensation survey strategy were finalized and staff began compiling information for the survey.

4. Wellness

a. Participation Activities

Year Six Participation Activities	Unit	April 2018	Year to Date (March 2018–February 2019)
Biometric Screenings	Number	0	2
Preventive Health Exams	Number	1	6
Preventive Health Assessments	Number	18	41
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	12	69
Web-MD Online Health Tracking	Number	149	297
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	10	29

b. Following the close of the Wellness Program appeal period, data was finalized to identify employees and spouses earning lowest deductible and incentives. Optima provided the electronic files needed for incentive payouts to be processed in May.

- c. The six-week Outdoor Boot Camp class ended.
- d. The Wellness Specialist presented Wellness Program information at several open enrollment meetings.
- e. The spring edition of *My Health, My Wealth* newsletter was distributed. Articles featured information on work-life balance, stress-free vacations, allergy risks and coping strategies, men's health, healthy recipes and an employee wellness success story.

5. Workers Compensation

Two new cases were opened with 12 cases remaining active.

6. Employee Relations

- a. Staff continued to partner with work center supervisors and employees to support employee relations, address HR issues, and assist with job descriptions and interview processes. HR Specialists participated on interview panels for Operations and Finance.
- b. HR, Accounting and Payroll staff continued to identify roles and outline ERP procedures for overlapping work processes.

7. General

- a. HR Manager worked with accounting staff on position information for the Fiscal Year 19 budget publication.
- b. HR and Organizational Development and Training information was provided for updates to the MOM program.
- c. Talent Management's future records and storage space needs were finalized. Re-organization of HR file room and storage areas continued.
- d. Staff participated in the following HRSD activities:
 - (1) Senior Leaders meeting
 - (2) HRSD Leadership Forum

- e. Staff participated in the following training:
- (1) Virginia Society of Human Resource Management's Annual Conference
 - (2) Marsh McLennan Agency's, *The State of Health Care* panel discussion
 - (3) TrainHR's webinar, *Build a More Diverse Workforce Using Non-Traditional Apprenticeships*
 - (4) Emotional Intelligence Intensive

B. Organization Development and Training (OD&T)

1. The second half of Supervisor Training was held which included coaching, shadowing, HR policies and procedures and feedback modules. This year's class was highly engaged in embracing the concepts of motivational and participative leadership.
2. *Basic and Advanced Coaching, Emotional Intelligence Intensive* and the *Leadership Forum* were held.
3. An Administrative Professional's Workcenter Planning Day initiative began with a workshop held to assess needs and create a presentation for the General Manager. A Planning Day will be held along with creation of a peer group SharePoint site.
4. The OD&T Manager continued working with Operations on an abridged Supervisor Workshop for Lead Operators. A training format was finalized. Participants will be recruited to conduct a needs assessment and to help develop training.
5. The Project Management workshop team continued to gather information on relevant training examples. The majority of content has been completed and feedback from non-engineering project management certification holders will be used to validate and normalize material.
6. Staff continued cross-training to improve e-learning software skills. A follow-up presentation of the *Refresh, Renew and Remember* workshop was developed in Storyline Articulate. The next step is to obtain feedback.

7. Apprenticeship Program

- a. New program initiatives were presented to the Operations Quality Steering Team (QST): Summer Orientation, Instructor In-Service program, Logo creation, Mission and Vision exploration and an Adult Learning course.
- b. Staff continued to enter historical training and apprenticeship program information into ERP and scanned historical records.
- c. The Training Superintendent performed the following in relation to Apprenticeship courses:
 - (1) Evaluated *Wastewater Analysis and Wastewater Laboratory* course for conversion to an online format and revision of the Laboratory component to align with Plant Operator functions
 - (2) Revisions to *Disinfection* curriculum
 - (3) Revisions to *Collection System Maintenance* curriculum

9. General

Staff participated in the following training:

- a. Sacramento State Office of Water Program's online wastewater treatment training
- b. Articulate Storyline e-Learning Certificate
- c. Mentor Coach *Ethics and Intensive Individual Coaching Skills*
- d. Department of Environmental Quality's *100 Wastewater Works Operator Licensure Review*
- e. Brandon-Hall webinars, *Learning Technologies & e-Learning* and *How to Prepare & Succeed in the Future Workplace*
- f. TrainHR's webinar, *Build a More Diverse Workforce Using Non-Traditional Apprenticeships*

C. Safety

1. Mishaps and Work Related Injuries

- a. HRSD-Wide Injury Mishap Status to Date (OSHA Recordable)

	<u>2017</u>	<u>2018</u>
Mishaps	42	9
Lost Time Mishaps	10	1
<i>Numbers subject to change pending HR review of each case.</i>		

b. MOM Program Year Performance Measure Work Related Injuries

April 2018 Injuries For Operations	April 2018 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2017	Total HRSD Injuries Since July 2017
2	0	9	31

c. A follow-up investigation was performed on two reported work-related injuries.

2. HRSD Safety Training

Strategic Planning Measure	Unit	April 2018
Total Safety Training Hours per Full Time Employee (830) All HRSD – April 2018	96.96 Hours / 830 FTE	0.11
Total Safety Training Hours Per Full Time Employee (830) – Cumulative July 2017	3261.99 Hours / 830 FTE	3.93

3. In addition to regularly scheduled safety training and medical monitoring, the following sessions were conducted:

- a. Ten external briefings for contractors working at treatment plants (TP) and pump stations
- b. Fire Drill for employees working in the Water Quality services building
- c. Methanol safety briefing for a contractor working at the Virginia Initiative Plant (VIP) methanol containment area
- d. Two Chainsaw Safety classes held at Nansemond TP for HRSD employees
- e. Confined Space Training for Technical Services Division (TSD) employees
- f. Emergency Response Training for Boat Harbor TP employees.

g. Respiratory Protection Program Training for Central Environmental Lab (CEL) employees

4. Safety Inspections, Testing and Monitoring

a. Weekly on-site inspections of the following construction sites:

- (1) Army Base TP
- (2) Atlantic TP
- (3) James River TP
- (4) SWIFT Research Center at Nansemond TP
- (5) VIP
- (6) York River TP

b. Quarterly safety inspections of the following work centers:

- (1) Army Base TP
- (2) Boat Harbor TP
- (3) Lawnes Point TP
- (4) Nansemond TP
- (5) North Shore Apprenticeship Classrooms and Shops
- (6) North Shore Automotive, Carpentry and Electrical Shops
- (7) North Shore Maintenance
- (8) North Shore Pretreatment and Pollution Prevention (P3)

c. Monitoring and testing for the following:

- (1) Monthly velocity tests on CEL, TSD and North Shore P3 lab hoods
- (2) A velocity test on a new SWIFT Education Center lab hood
- (3) Air sampling within the TSD Clean Lab

d. Safety walk-throughs and evaluations

- (1) The new methanol installation at the Army Base TP
- (2) Methanol and acetone use by a contractor during stack testing at the Chesapeake-Elizabeth TP
- (3) Chemical usage and storage at the SWIFT facility in relation to Superfund Amendments and Reauthorization Act (SARA) Title III reporting requirements.

5. Safety Programs

- a. Industrial Hygienist met with Nansemond TP and SWIFT employees regarding new Emergency Response Procedures and training.
- b. The following was performed in relation to the Respiratory Protection Program:
 - (1) Completed the majority of annual employee pulmonary function and respirator fit testing
 - (2) Began compiling employee testing results for workcenters
- c. Multiple Hot Work Permits were set up for a contractor working at a HRSD pump station.
- d. Several selection team meetings were held as part of the Request for Proposal (RFP) process for the Prescription Safety Glasses program.
- e. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

6. General

- a. A meeting was held with Information Technology staff to identify electronic device needs for the on-line Material Safety Data Sheet (MSDS) program.
- b. The Safety Manager met with CEL staff to address container labelling requirements.
- c. Staff provided comments on HRSD's draft Risk Management procedures.
- d. Staff participated in the following HRSD activities:
 - (1) HRSD Uniform Committee
 - (2) HRSD Strategic Planning team
 - (3) Business Continuity and Disaster Recovery Internal Audit meeting

D. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: 9
 - a. International Personnel Management Association's Benchmarking committee meeting
 - b. Water Environment Federations Utility Management's Workforce Planning subcommittee meeting
 - c. Southeastern Virginia Association of Training and Development meeting
 - d. Instructed Hampton Roads Public Works Academy *Employability Skills* course (2)
 - e. City of Suffolk Local Emergency Planning Commission (LEPC)
 - f. Tidewater Community College Customer Service Career Fair
 - g. The Virginian Pilot Career Connection Day
 - h. Heritage High School 2018 Community Empowerment Fair
2. Community Partners: 5
 - a. Hampton Roads Public Works Academy
 - b. City of Suffolk Technical Education Center
 - c. Tidewater Community College
 - d. The Virginian Pilot
 - e. City of Newport News Public Schools

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	April 2018
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.25
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0
M-1.4a	Total Training Hours Per Full Time Employee (15) – Current Month	Total Training Hours/ FTE	5.70
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	42.52
M-5.2	Educational and Outreach Events	Number	9
M-5.3	Community Partners	Number	5

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for April 2018
DATE: May 10, 2018

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed one civil penalty this month.

Marva Maid Dairy – Newport News

An Enforcement Order was issued to Marva Maid Dairy in March 2018 for administrative and technical violations that occurred between September and December 2017. The Order contained an invoice totaling \$6,500 in Civil Penalties.

The administrative violation was associated with failure to report a low pH record. The technical violations included an unauthorized discharge of bulk acid during a chemical delivery, and copper, lead and zinc permit limit exceedances. A Show Cause Meeting was held. The high metal concentrations are thought to be from vehicle maintenance operations.

Neither the collection system nor the treatment plant were adversely impacted by the bulk acid discharge and new procedures have been put into place with regards to chemical deliveries to prevent a reoccurrence. Additionally the vehicle maintenance contractor has retrained employees on operating procedures. The Enforcement Order was accepted and the Civil Penalty was paid in April 2018.

2. The Director attended the Virginia Environment Symposium in Lexington, Virginia. Governor Northam was the keynote speaker for the conference and he announced a new Virginia Department of Environmental Quality (DEQ) order to address transparency, delays in issuance of permits as well as an effort to update current regulations. It is expected that DEQ will involve various stakeholder groups as it carries out this order. HRSD representation will likely take place through the Virginia Association of Municipal Wastewater Agencies.

3. The Director, with National Association of Clean Water Agency (NACWA) staff, presented a national wastewater facility perspective regarding Integrated Planning during a Water Environment Federation webcast. The presentation attempted to address concerns that are often expressed by these facilities and offered information from HRSD's experience that might address those concerns.
4. The Director attended the Water Policy Fly-In in Washington, DC. This event provides an opportunity to interact with the U.S. Environmental Protection Agency (EPA) and congressional representatives regarding issues important to HRSD and the wastewater treatment community. A dialogue with EPA's Office of Research and Development (ORD) at this meeting may have opened some doors to pursue projects and approaches at a national level that have not yet been possible. For example, attempts have been made to convince EPA that it needs to develop tools, like microbial source tracking, to help communities solve their surface water issues rather than using the command and control approaches used the past 30 years. EPA's ORD seems interested in this idea; HRSD will continue the dialogue to develop and further support that interest.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) did not report activity for the month of April.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to the City of Virginia Beach to support their water quality monitoring program for Lake Trashmore.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 6
 - a. CEL (Central Environmental Laboratory) and TSD (Technical Services Division) staff provided a laboratory tour for Cape Henry Collegiate STEM students.
 - b. TSD staff provided a tour of the Nansemond Plant and SWIFT Research Center to Christopher Newport University microbiology professors and graduate students.

- c. P3 staff participated in America's Great Loop Cruiser's Association meeting (Boater Education and Pump-out Program).
- d. P3 staff participated in the Science Expo night at Tabb Middle School.
- e. P3 staff participated in Earth Day event at Mount Trashmore.
- f. P3 staff participated in the Hampton Roads Public Works Academy.

2. Community Partners: 12

- a. City of Norfolk
- b. City of Newport News
- c. Virginia Department of Health Division of Shellfish Sanitation
- d. Virginia Department of Environmental Quality
- e. Lynnhaven River NOW
- f. Virginia Institute of Marine Science
- g. City of Suffolk
- h. Elizabeth River Project
- i. Virginia Department of Health Office of Epidemiology
- j. City of Virginia Beach
- k. Hampton Roads Planning District Commission
- l. Chesapeake Bay Foundation

3. Industrial Waste Related System Issues: 2

- a. P3 was notified by a permitted industrial laundry that their wastewater treatment system had not properly shut down and approximately 12,000 gallons of untreated wastewater was discharged to the sanitary sewer reaching the VIP Treatment Plant. Proper shutdown procedures were reviewed with industry staff, a shutdown checklist was instituted, and an automatic shut-off valve will be installed to open or close based on the operating status of the system. HRSD treatment was not affected.
- b. P3 was notified by Boat Harbor Treatment Plant staff that a large amount of shrimp and fish fillets had been received at the plant headworks. P3 staff checked the service area, but the source was not located and treatment was not affected.

Item #	Strategic Planning Measure	Unit	April 2018
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	3.93
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	42.54
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	9:48,235
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	157,936,385
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	18%
M-5.2	Educational and Outreach Events	#	6
M-5.3	Community Partners	#	12
	Average Daily Flow	Total MGD for all Treatment Plants	146.12
	Industrial Waste Related System Issues	#	2

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*

Engineering Procurement Process Review

- **Tasks Completed (April 2018)**
 - Worked with Engineering management to complete management action plans and finalize report
 - Issued final report
- **Upcoming Tasks (May 2018)**
 - This audit has been completed, no additional tasks will be performed

IT: Network Security/ Cybersecurity

- **Tasks Completed (April 2018)**
 - Addressed management and Commission questions
- **Upcoming Tasks (May 2018)**
 - This audit has been completed, no additional tasks will be performed

Corporate Governance: Ethics Function

- **Tasks Completed (April 2018)**
 - Followed up regarding clarifying items in management action plan responses
- **Upcoming Tasks (May 2018)**
 - Work with management to complete action plans and finalize report

Treatment Plant Operations

- **Tasks Completed (April 2018)**
 - Finalized audit program details and objectives
 - Created sample selections and worked with process owners to obtain requested documentation
 - Began performance of fieldwork testing steps
 - Began drafting audit report
- **Upcoming Tasks (May 2018)**
 - Complete fieldwork tasks
 - Draft final report
 - Schedule findings discussion with process owners

Business Continuity and Disaster Recovery

NOTE: Due to scheduling and availability considerations, the Customer Care: Assessment and Test of Design previously noted to begin in April will be rescheduled for FY19. SC&H worked with HRSD to determine that the Business Continuity and Disaster Recovery audit will be the next project for FY18.

- **Tasks Completed (April 2018)**
 - Identified key process owners
 - Prepared audit planning and entrance meeting materials



- Scheduled and conducted audit entrance meeting
- Performed preliminary assessment of process documentation

- **Upcoming Tasks (May 2018)**
 - Perform walkthrough procedures and document process understanding
 - Finalize audit program details and objectives
 - Request and obtain process documentation
 - Begin fieldwork testing procedures

II. Upcoming Projects (FY2018)

All FY18 audits have been started at this time. The first FY19 audit will begin in July 2018. The subject of this audit will be determined and communicated prior to commencement.

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	Dec-18	11	2	13
Biosolids Recycling	10/8/2016	Aug-18	7	1	8
HR Benefits	11/22/2016	May-18	12	3	15



Expertise that Works

Internal Audit
Engineering Procurement
Hampton Roads Sanitation District

April 20, 2018

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I. Executive Summary

Background

SC&H conducted an internal audit of the management procedures for the Hampton Roads Sanitation District's (HRSD) Department of Engineering procurement function.

The procurement function within the Engineering Department (herein referred to as Engineering Procurement) is responsible for purchasing specialized, technical services. These purchases include construction and design-build capital projects, capital asset related emergency procurements, real estate procurements, and the issuance of task orders against annual services contracts with retained contractors. Engineering Procurement operates as a distinct and separate business function from HRSD's Finance Department Procurement Division, which is responsible for all procurements not related to capital projects.

The HRSD Engineering Procurement function incorporates applicable regulations provided by the Virginia Public Procurement Act (VPPA) into its policy and procedures. The VPPA is a State-level regulatory guideline document which provides a detailed framework of required purchasing practices for Virginia agencies.

Most engineering procurements are initiated by Project Managers (PMs) within the Engineering Department. The Director of Engineering works with the Chiefs to determine the appropriate method of procurement following the identification of a need and the timing for which the service is required and the PM creates a requisition in the Oracle enterprise resource planning system (ERP) procurement software. The selected procurement method, which may include a public solicitation or task order issued against an annual services contract, is based upon the dollar value of the project and the level of consultant/ contractor specialization required. Contributing factors include past experience and the professional knowledge of the work required to complete the requisitioned project. The requisition is routed to appropriate members of Engineering and HRSD management for approval prior to being routed to the Contract Specialist for conversion into a solicitation. A Contract Specialist reviews the approved requisition and drafts the solicitation using a Microsoft Word template. Once the solicitation template is complete, it is attached to the requisition in ERP and approved by the Contract Specialist.

Following the approval of the requisition and solicitation documents, procurements are advertised online, in local newspapers, and through direct supplier outreach. The Commonwealth of Virginia (eVA) system is used for solicitations of Construction Management solicitations. Contractor responses to solicitations are received via the online ERP contractor portal. Following the receipt of proposals/ bids, responses are reviewed by HRSD Engineering staff and the Design Consultant. For all professional services and design-build/ construction management procurements, a committee is selected to review bid responses. This committee may be composed of Engineering Department members knowledgeable of the project requirements, the original requestor, members from other departments, and external stakeholders. Based on an initial review of the responses submitted by suppliers, the committee creates a shortlist of a minimum of two firms to interview

and review the associated documentation in detail. Responses are evaluated and scored by all committee members. The Contract Specialist reviews and aggregates the committee responses and the consultant/ contractor with the highest average score is recommended for award to the Commission.

Once a firm is selected, the committee provides its selection to the Director of Engineering for final approval. The Director of Engineering reviews applicable documentation for completeness of documentation and to ensure it agrees with the decision of the committee. Once the review is complete, the Director of Engineering signs an inter-office memorandum evidencing approval of the selection. Further, HRSD Commission approval is required for all contract awards totaling \$200,000 or more.

Objectives

The following audit objectives were established based on the internal audit's planning procedures.

- A. Evaluate the Engineering Procurement procedures (RFQ, RFP, Emergency Procurement, Real Estate) for adherence with internal policy, clarity of solicitation documentation, and overall process efficiency.
- B. Evaluate solicitation advertisements to ensure appropriate public notification and adherence with HRSD policies and procedures.
- C. Evaluate contractor selection procedures to ensure bids are appropriately considered and awarded and align with HRSD policy.
- D. Assess the procedures for compliance with regulation, including DEQ, VPPA, and Code of Virginia, within the applicable Engineering Procurement procedures.
- E. Assess the ERP competitive bidding end-user structure to evaluate clarity of guidance and accessibility of use for HRSD bidders.

Scope

The internal audit was initiated in July 2017 and fieldwork procedures completed in November 2017. The internal audit focused on the policies and procedures in place at the time of this review with samples selected from FY17 procurements within the department, as well as the annual services contracts dating to 2014. Follow-up fieldwork associated with Real Estate Procurement was completed in February 2018.

Methodology and Approach

In order to achieve the objectives, SC&H performed the following procedures.

Process Walkthrough and Flowchart Creation

SC&H obtained and reviewed current Engineering Procurement process documentation from department contacts at the outset of this review. SC&H then met with members of the Engineering Department management teams to conduct detailed walkthrough discussions of their procedures. These discussions focused on process flow, required approval, inputs/ outputs, and other control points. Based on these discussions and review of the procedural documentation, SC&H created

summarized flowcharts and a supplemental process narrative to document our understanding of the process. The processes identified and documented include:

- **Procurement Flowcharts**
 - Requisition Initiation
 - RFP Creation – Professional Services/Construction
 - Committee Selection/Advertisement
 - Shortlist/Evaluation of Bids
 - Selection
 - Negotiation
 - Commission
 - Contract/Purchase Order
 - RFQ Creation – Design Build/ CM
 - RFP Creation – Design Build/ CM
 - Evaluation of Bids or Price Proposals – Design Build/ CM
 - Emergency Services
 - Real Estate – Planning
 - Appraisal – Real Estate
 - Offer – Real Estate
 - Settlement – Real Estate
- **Process Narrative**
 - Annual Services Task Order Creation

Audit Program Creation

Based upon the review of the processes, risks, and related controls, SC&H developed an audit program to achieve the objectives described above. This program included detailed steps to address each objective with the goal of assessing risk and identifying opportunities for improvement, where necessary.

Audit Program Execution

SC&H executed the audit program by completing the following tasks:

- Inspected pertinent process documentation and reports
- Inquired about the procedures and met with process owners to document process understanding
- Examined compliance of policy with state law through detailed document review and comparison
- Performed detailed, desk-side walkthroughs of key Engineering Procurement processes
- Reviewed a population of service, construction and design build solicitations published in FY17
- Reviewed a population of task orders issued against annual services contracts issued in FY17
- Reviewed a population of real estate acquisitions made in FY17
- Accessed long term construction contracts and associated task orders and review for compliance with policies and procedures

- Reviewed current contracts and perform walkthrough of a contract submittal within ERP

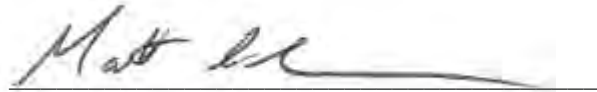
Summary of Work

After reviewing the processes in place and evaluating the current control environment, SC&H concludes that there are improvement opportunities within the Engineering Procurement processes which can help reduce risk and increase process efficiency and effectiveness.

The following section provides detailed observations and recommendations regarding four separate topics.

We appreciate the assistance and cooperation of the management and staff involved in HRSD's Engineering Procurement management processes. Please contact us if you have any questions or comments regarding any of the information contained in the internal audit report.

SC&H Group, Inc.



Matthew Simons, CPA, CIA, CGAP
Principal

II. Detailed Observations and Recommendations

Observation 1

Operating procedures are not adequately documented and communicated within the Engineering Procurement function for certain processes including emergency procurements, real estate acquisitions, and procurements utilizing Virginia Revolving Loan Funds.

Observation Detail

Through inquiry, SC&H noted no formal desktop procedural documentation exists detailing the procedures required should the need for an emergency, real estate, or Virginia Clean Water Revolving Loan Fund procurement arise. In the event procurements of these types occur, procedures are performed ad hoc based on prior experience.

Procurements utilizing Virginia Clean Water Revolving Loan Funds follow a similar path to standard Engineering Procurements. However specific documentation and requirements that change each year are required to be submitted to the Virginia Department of Environmental Quality (DEQ). There is currently no formal process or tools to ensure that all requirements are updated and met.

Additionally, the HRSD policy regarding real estate acquisitions requires the provision of written notification to property owners, which explains the need for an easement and appraisal, at the beginning of the process. Further, both the Code of Virginia and HRSD policy state that prior to finalizing and presenting an offer for the tract of land, HRSD must make every effort to negotiate a fair purchase price. The Real Estate Manager uses several methods, including written notification, email, and phone calls, to initially notify property owners of the need for an easement and the date and time that an appraisal will be performed. These methods of notification may not always meet the HRSD policy requirement of a written initial communication. In addition, the Real Estate Manager uses various methods to document the negotiations of price with the property owners. While the required procedures appear to be performed for each acquisition, they are non-standardized.

Risk

Without adequate documentation and formalized procedures surrounding emergency procurements, real estate purchasing, and procurements utilizing Virginia Clean Water Revolving Loan Funds, Engineering Procurement may not efficiently and effectively execute timely procurements in accordance with HRSD policy and applicable laws and regulations. Additional specific risks include:

- Inappropriate response and documentation in an emergency procurement due to an ad hoc response completed in an expedited manner

- Incomplete or inaccurate documentation submissions to Virginia DEQ due to the lack of procedural documentation in a continually changing process, potentially impacting Virginia Clean Water Revolving Loan fund projects
- Insufficient or inaccurate documentation to support real estate acquisitions. The lack of a formalized process for documenting real estate procedures performed may result in an inability to provide evidence that negotiations with property owners occurred. As negotiations are a requirement of the Code of Virginia, this increases the risk of regulatory non-compliance, as well as the inability to provide pertinent documentation required in legal actions.

Per discussion with Contract Specialists, no emergency procurements had been executed since FY14. Similarly, no procurements utilizing Virginia Clean Water Revolving Loan Funds were executed in FY17. While these types of procurements are not regularly performed, the infrequent nature and lack of documentation may increase the risk of procedural or regulatory reporting errors that could impact HRSD operations due to the lack of familiarity with the solicitations and the required regulatory procedures.

Recommendation 1.1

HRSD should develop and maintain detailed policy and procedure documentation describing the duties required to execute all specialty procurements. HRSD should consider the applicability of the documentation of procedures for non-standardized procurements, such as emergency procurements, to ensure processes are documented at an appropriate level of detail. Specific recommendations include, but are not limited to the following:

- Engineering Procurement should develop formalized standard operating procedures regarding emergency procurements, real estate procurements, and procurements utilizing Virginia Clean Water Revolving Loan Funds to be utilized in conjunction with the policies and procedures already outlined in its Engineering Department Guidelines and Procedures (G&P) Manual. This may be accomplished through the creation of a checklist detailing all required steps in developing and awarding each procurement. This checklist could be provided as support for the procurement when obtaining approval from the Director of Engineering and the Commission and will help to ensure that there are standardized procedures being consistently used within the department.
- In conjunction with formalizing and documenting the Emergency Procurement process, Engineering Procurement should consider integrating the use of ERP into these procurements in order ensure necessary notifications and approvals have been obtained. This will enhance the documentation associated with Emergency Procurements and aid in creating a consistent process. Refer to **Observation 2** for additional details regarding the integration of the ERP system.

Management's Action Plan and Implementation Date

- Update the HRSD Engineering Department G&P Manual to include these specialty procurements by Sept. 1, 2018.
- Review updates to HRSD Engineering Department G&P Manual with staff by Oct. 1, 2018.

Observation 2

Engineering Procurement processes do not uniformly integrate usage of ERP to manage workflow and documentation for solicitations executed on a regular basis.

Observation Detail

The process of developing solicitations within the Engineering Department is partially manual. ERP has the functionality to prepare procurement templates based upon the solicitation being created. Further, solicitations can be fully completed within ERP. However, Engineering does not currently utilize ERP to the fullest extent possible. For instance, Contract Specialists develop solicitation documentation and support outside of ERP. Once documentation is completed, it is saved as attachments to a solicitation within the system.

Risk

Manual processes and documentation storage can lead to risks including:

- Communication of inaccurate information with respect to a particular solicitation due to the manual nature of preparing and publishing documentation
- Inaccurate documentation of information during manual entry
- Inconsistent system data based on multiple entries of similar information
- Incomplete information due to templates not being wholly completed
- Lost documentation due to initial creation and storage outside of ERP

Additionally, a manual process may extend the preparation time of solicitations and reduce the ability to utilize systematic workflow controls.

Recommendation 2.1

The Engineering Department should explore the costs vs. benefits (short-term and long-term) of using ERP to develop solicitations that employ its current features. When practical, standardized templates may be created within the system based upon each solicitation type and utilized as needed. The use of these templates may reduce manual input and upload, leading to the reduction of risks. Additionally, the development of procurements within ERP allows for tracking of solicitation edits and workflow approvals, enhancing accountability and version control.

Management's Action Plan and Implementation Date

- Review potential to further integrate procurement procedures using ERP by Aug. 1, 2108.

Recommendation 2.2

During a separate audit of the HRSD Finance Procurement Division, SC&H noted full use of ERP to prepare, edit, track, and publish solicitations as part of standard procedure. The Engineering

Department should consider working with the Finance Procurement team to develop templates and utilize ERP as practicable. Finance Procurement has been successfully using ERP for the development and publishing of solicitations since its inception in April of 2015 and can provide Engineering Procurement with guidance for using this system while following HRSD policy practices.

Management's Action Plan and Implementation Date

- Same as 2.1 above.

Recommendation 2.3

Following the incorporation of enhanced ERP procedures, Engineering should ensure that all relevant personnel have adequate training regarding the use of procurement functions within ERP. Where feasible, work with the Finance Procurement department to obtain training on newly implemented processes. The implementation of enhanced ERP procedures may allow for the possibility of cross-training. Members of the Finance Department could be trained on the development of engineering procurements and assist in the development of solicitations where possible.

Management's Action Plan and Implementation Date

- After further integration of Engineering Procurement into the ERP, provide training for both Engineering and Finance Department staff by Dec. 31, 2018. Training to be provided when the changes are implemented and when new staff members are added.

Observation 3

The tracking tool developed and utilized by Engineering Procurement to detail all solicitations and task orders awarded during each fiscal year is not consistently prepared and maintained.

Observation Detail

Solicitation tracking is performed outside of ERP with tools (spreadsheets) created and maintained by the Contract Specialists and Engineering Procurement Department. These tools act as a centralized aggregation of solicitations executed in each fiscal year and against each annual services contract. This is due to the inability of ERP to produce reports aggregating information. The tools identify requisition date and number, project name, solicitation number, Commission date, award date and firm, and the contract amount. Based on an analysis detailing the amount of time from requisition to award, four of the twenty-four solicitations did not have complete or accurate information detailed within the document.

Each of the four solicitations had an extended period from requisition through award exceeding one year from the initial requisition date documented. Additional analysis indicated that in three of the four instances, an award date or requisition date was not entered into the tool. The remaining solicitation appeared to have an inaccurate award date.

Per inquiry with the Contract Specialists, Engineering Procurement does not currently have the ability to run a report systematically in ERP to provide this information.

Risk

Without adequate documentation to detail solicitations executed, HRSD is at risk of potentially communicating or acting upon inaccurate award information with respect to a particular solicitation. The amount of a solicitation award could be improperly documented and published, which could lead to the award being contested by another firm not selected.

Recommendation 3.1

Engineering Procurement should identify all current and desired criteria, actionable information, and data points needed to assist in facilitating a more effective reporting process for its procurements. Using this information, the development of reports within the system should be evaluated. These reports should then be incorporated into Engineering Procurement processes to replace current manual documentation. This can result in a decreased risk of entry error in manual spreadsheets due to the ability to produce canned reports from the system and an increase in reporting accuracy.

Management's Action Plan and Implementation Date

- A request has been made to the Business Intelligence (BI) Division of the Finance Department to provide this reporting feature through use of the ERP. Test the validity of this report by Sept. 1, 2018.

Recommendation 3.2

If Engineering Procurement continues to utilize a spreadsheet tool to track executed solicitations, access should be limited to employees who are trained on how to properly populate the document. Limiting the number of people with the ability to alter the document would help to decrease the risk of inconsistent, incomplete, and unauthorized data entry. Additionally, locking cells within the document or allowing the selection from a drop-down list will help to reduce the risk of inconsistent reporting.

Management's Action Plan and Implementation Date

- Modify manual process as recommended if the new BI Report is not approved by Oct. 1, 2018.

Observation 4

Project Action Review Forms (PARFS), which are documents prepared for new task orders that contain pertinent solicitation information, are not consistently prepared and/or maintained for task orders issued against annual services contracts.

Observation Detail

A PARF is prepared by the task requestor and includes details regarding the procurement, including the project name, budget code, and recommend dollar amount, as well as a description of the project action and justification. The form should be completed for all new solicitations and maintained with all other supporting documentation so that it may be readily available to anyone reviewing the task order.

SC&H reviewed five task orders issued against annual services contracts in FY17. As part of the review, we ensured that the task order was appropriately supported with an Action Review Form detailing the nature and need for the task order, as well as the additional supporting documentation provided and approval by the Commission. Two of the five samples did not have a PARF to supplement the task order.

Risk

Justification and detail for an Engineering Procurement project may not be appropriately documented, described, or considered. This may result in a variance from policy and cause HRSD to inappropriately enter into procurements.

Recommendation 4.1

Engineering Procurement should ensure that adequate supporting documentation is provided for each task order or amendment issued to one of the annual services firms or contractors. Management should consider the implementation of a secondary review of a task order or amendment issuance prior to a firm being awarded a notice to proceed with the work assignment, task or project. Review of the work performed will help to mitigate the risk of inadequate documentation.

Management's Action Plan and Implementation Date

- Require the submission of the PARF for all new task orders or amendments unless this requirement is waived by the Chief of the representing division. Add this requirement to the HRSD Engineering Department Guidelines & Procedures Manual by Sept. 1, 2018.

Recommendation 4.2

In conjunction with Recommendation 4.1, HRSD should consider establishing thresholds in relation to the amount of documentation required to support new task orders or amendments issued against annual services contracts. As the PARF provides greater detail of information already captured in ERP, Engineering Procurement may choose to maintain this form for higher dollar or

more sensitive procurements in order to increase documentation accountability. Engineering Procurement may prefer to rely on the documentation in ERP For smaller, less sensitive procurements to streamline the process and reduce duplicated information.

Management's Action Plan and Implementation Date

- Consider a threshold limit for the use of the PARF by July 1, 2018.
- Document any changes in a future edition of the HRSD Engineering Department G&P Manual by September 1, 2018.

Annual Metrics											
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17
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%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	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
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
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
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
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%
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
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	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
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205	2,294
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	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%
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
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%
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
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	73%
	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%
	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%

* To be reported upon completion of the annual financial statements.

Monthly Updated Metrics												FY-18	FY-18
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	Mar-18	Apr-18
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	163.0	146.1
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	0	2
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	101%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	113%	114%
	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	\$21,279,225	\$20,315,287
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	19%	18%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	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	9:43412	9:48235
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	0	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	141,929,484	157,936,385
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	18%	18%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	46	40
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	35	28

EFFLUENT SUMMARY FOR APRIL 2018

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	10.05	56%	3	3.2	3	2	0.27	0.56	7.2	7.6	NA	NA	8
ATLANTIC	25.93	48%	10	7.4	3	1	NA	NA	NA	NA	NA	NA	2
BOAT HARBOR	15.14	61%	5	7.0	1	<1	0.39	0.48	13	15	NA	NA	2
CENT. MIDDLESEX	0.009	37%	<2	2.3	<1	1	NA	NA	NA	NA	1.89	0.02	NA
CHES-ELIZ	17.36	72%	12	8.3	11	3	0.74	0.81	30	30	NA	NA	3
JAMES RIVER	13.54	68%	3	3.6	2	1	0.23	0.31	8.1	9.0	NA	NA	3
KING WILLIAM	0.045	45%	<2	<1.0	NA	<1	0.033	0.022	0.39	1.3	0.27	NA	NA
NANSEMOND	16.51	55%	4	3.5	1	3	0.46	1.2	3.9	4.6	NA	NA	4
SURRY, COUNTY	0.048	73%	2	1.5	NA	1	NA	NA	NA	NA	<0.50	NA	0
SURRY, TOWN	0.047	78%	7	12	NA	15	NA	NA	NA	NA	1.93	0.80	NA
URBANNA	0.039	39%	6	7.5	2	2	3.1	3.3	22	26	NA	0.07	NA
VIP	26.29	66%	4	3.0	6	1	0.58	0.52	7.6	8.3	NA	NA	4
WEST POINT	0.377	63%	25	18	1	1	3.1	2.8	19	19	NA	NA	0
WILLIAMSBURG	7.68	34%	3	3.2	7	1	0.54	0.43	3.5	3.3	NA	NA	3
YORK RIVER	13.07	87%	3	1.6	1	<1	0.44	0.27	2.1	3.2	NA	NA	1
	<u>146.12</u>												

Tributary Summary

	% of Capacity
North Shore	60%
South Shore	58%
Small Communities	57%

Tributaries	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged		Operational	Discharged		Operational
	YTD	Projection CY18	YTD	Projection CY18	YTD	Projection CY18
	%	Lbs	%	%	Lbs	%
James River	30%	3,918,566	86%	23%	267,624	84%
York River	19%	227,414	79%	25%	15,613	81%
Rappahannock	82%	NA	NA	151%	NA	NA

Rainfall (inch)

Permit Exceedances: Total Possible Exceedances, FY18 to Date: 9:48,235
Pounds of Pollutants Removed in FY18 to Date: 157,936,385
Pollutant Lbs Discharged/Permitted Discharge FY18 to Date: 18%

	<u>North Shore (PHF)</u>	<u>South Shore (ORF)</u>	<u>Small Communities (FYJ)</u>
Month	2.64"	3.41"	3.03"
Normal for Month	4.22"	3.30"	4.19"
Year to Date Total	12.51"	12.53"	11.45"
Normal for YTD	14.05"	12.21"	13.54"

AIR EMISSIONS SUMMARY FOR APRIL 2018

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	0	0	0	0	0	1	35	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	0	2	100	0
CHES-ELIZ	0	0	0	0	0	0	0	1	31	99	0
VIP	0	0	0	n/a	0	0	0	0	67	98	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	10	99	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:	21