



COMMISSION MEETING MINUTES  
April 25, 2017

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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
Bredemeyer, Arthur C.	Commissioner	Absent
Glenn, Michael E.	Commissioner	1-16
Lakdawala, Vishnu K.	Commissioner	3-16
Levenston, Jr., Willie	Commissioner	1-16
Rodriguez, Stephen C.	Commissioner	1-16
Templeman, Ann	Commissioner	1-16

1. **AWARDS AND RECOGNITION**

**Action:** No action required.

**Brief:** The United Way of South Hampton Roads honored HRSD employees for their commitment to improving lives in the community through participation in the 2016-2017 United Way campaign. Campaign co-leaders Mary Strong, Operations, and Ann Copeland, Engineering, were recognized for their efforts.

**Attachment:** None

**Public Comment:** None



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### 2. **CONSENT AGENDA**

**Action:** Approve the items listed in the Consent Agenda.

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

**Brief:**

- a. Approval of minutes from previous meeting.
- b. Contract Awards
  - 1. [Continuous Emissions Monitoring Preventative Maintenance Contract](#) \$360,000
  - 2. [Sustainable Water Recycling Phase 3 Emerson Ovation Hardware and Software](#) \$253,074
- c. Task Orders
  - 1. [Continued Condition Assessment](#) \$298,700
  - 2. [Regional Hydraulic Model and Other Consent Order Requirements](#) \$825,000
- d. Change Orders
  - 1. [Biofloc P-Release](#) \$0
  - 2. [State Street Pump Station Electrical Modifications](#) \$103,178
- e. Sole Source
  - 1. [Anaerobic Metagenomics Research and Nutrient Center and Chesapeake-Elizabeth Biological Nutrient Removal \(BNR\) Pilot](#)
  - 2. [Envirex Dystor<sup>®</sup> Membrane Service](#)



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3. [Fairbanks Nijhuis® Vortex Pump and Parts](#)
4. [Internet-based Publicly Owned Treatment Works Administration and Compliance System \(iPACS\) and Biosolids Data Management System Maintenance and Support](#)
5. [Magnesium Hydroxide Tank and Mixer Assembly](#)
6. [mDataManager™ Enterprise Software Application](#)
7. [Panoptra™ Visualization Platform](#)

**Discussion Summary:** Commissioner Glenn observed there were a significant number of sole source items on the agenda. Staff responded that each is reviewed closely and only proposed when the reason is in accordance with HRSD procurement policies. The majority of sole source approvals are to procure equipment that must match or replace existing equipment.

**Attachment #1:** [Consent Agenda](#)

**Public Comment:** None



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3. **ARMY BASE TREATMENT PLANT IMPROVEMENTS – PHASE III  
PRIMARY CLARIFIER COLUMN REPLACEMENT/REPAIR AND  
REHABILITATION COATING REJECTION OF ALL BIDS (>\$200,000)**

**Action:** Approve rejection of all bids submitted for the Primary Clarifier Column Replacement/Repair & Rehabilitation Coatings.

**Moved:** Willie Levenston **Ayes:** 7  
**Seconded:** Michael Glenn **Nays:** 0

**CIP Project:** AB010100

**Type of Procurement:** Competitive Bid

Bidder	Bid Amount
Eastern Weatherproofing and Restoration of VA LLC	\$275,009
M and M Contractors, Inc.	\$732,282
P. G. Harris Construction Co.	\$835,117

**HRSD Estimate:** \$1,000,000

**Contract Description:** This contract is to rehabilitate all interior wall surfaces, repair cracks, and provide coating of concrete and replacement of columns on Primary Clarifiers two through four at the Army Base Treatment Plant.

During evaluation of bids, all pricing, references, experience and credentials were confirmed by Procurement and all bid documentation was reviewed and accepted by the work center. The low cost is attributed to the contractor’s ability to perform the work without the use of subcontractors on this project (scheduled for completion within 550 days upon notice to proceed). Procurement has confirmed there are no other projects on plant site at risk should there be a delay for any reason with this award.

A pre-award meeting was held with Procurement, Project Manager and Coatings Inspector to review specifications against proposed scope. The contractor was in full agreement with all work laid out and did not present any



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issues with the pricing submitted. Additional information was requested from the Contractor as to their corrosive work experience. This includes public utilities from Fairfax, Chesterfield and Hanover.

After award approval, Intent to Award was provided to the contractor so that they could obtain their performance and payment bonds. Eastern Waterproofing and Restoration of VA LLC was not able to obtain bonding due to the underwriters' concerns with HRSD's estimate versus the Contractor's award amount. The underwriter confirmed the Contractor is not over extended and is in good financial standing, however, they felt the risk was too great. To date, the contractor has been unable to engage another underwriter to provide the needed financial bonding.

Procurement then reviewed the other responses and determined that M & M Contractors did not provide a bid deposit, which is required when submitting a response and P. G. Harris Construction Co. was using a subcontractor that does not have a valid contractor license. Rejection of all bids and advertisement of a new solicitation is recommended.

**Discussion Summary:** Staff continues to research other ways to accomplish quality coating projects.

**Attachment:** None

**Public Comment:** None



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### 4. FINANCIAL POLICY COMMISSION ADOPTED POLICY

**Action: No action required.**

**Brief:** HRSD's Financial Operations are guided by its Financial Policy (Policy). The Policy was originally adopted in 2009 and most recently revised in March 2015. It is the primary document that places parameters and defines management discretion and philosophies relative to the financial aspects of HRSD. The Policy covers areas such as reserves, budgetary principles and control, key financial metrics, internal controls and audits, debt affordability, and risk, debt, derivative and investment management.

One of the primary drivers for the attached [revisions](#) is to provide consistency with the Amended and Restated Subordinate Trust agreement (Subordinate Trust) adopted in March 2016. Since HRSD will be spending money on Locality assets that must be expensed rather than capitalized, there are two versions of how the Debt Service Coverage Ratio (DSCR) is calculated along with definitions of the variables in the formula. The DSCR – GAAP will remain the key ratio that the Ratings Agencies will use and DSCR – Adjusted is consistent with the Subordinate Trust covenants.

Since HRSD will be issuing debt at the subordinate level, the section on Debt Refinancing was modified to allow for refinancing if the present value savings is less than three percent. This could happen if we refunded senior lien bonds down to the subordinate level that would cause the majority of bonds to be at the subordinate level. In the Virginia Resources Authority (VRA) agreement, this would trigger the migration of VRA senior lien debt to the subordinate lien. With the majority of debt at the subordinate level, it would essentially become our senior lien and we would look to the Ratings Agencies to upgrade our ratings since subordinate debt is one ratings notch lower than senior debt.

Another driver for the revision is to modify the portions of the Investment section to reflect different terminology and categories that more closely match how HRSD's Investment Advisor is managing our funds. At the end of the policy, a new section on Asset Capitalization was added.





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Many of the changes include new or expanded defined terms referenced in the document and updates related to regulatory changes. The formatting was revised to provide for an easy way to reference specific sections.

The Finance Committee (Committee) and other Commissioners met on February 28 to review the revised Financial Policy. Comments were incorporated into the current version. The final version will be presented to the Commission for approval in May.

### Summary of Key Changes:

- New definitions related to how key ratios are calculated, including the Liquidity Ratio (Days Cash on Hand), the DSCR - GAAP and Adjusted Ratios, Operating Expenses and Locality Assets
- Senior and Subordinate Bonds defined
- Added a caveat to Debt Refinancing that allows the Commission to refinance debt if we obtain other benefits
- State Non-Arbitrage Program (SNAP) Fund included as a permitted investment for bond proceeds only
- Investment benchmarks changed to ones where data is more readily available
- Asset classes changed to Growth, Income and Real Return
- Reduced the REITs Weightings target to 0%, since this is a cyclical investment
- Asset Capitalization section added

**Attachment #2:** [Draft Financial Policy](#)

**Public Comment:** None



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5. **REVENUE POLICY  
COMMISSION ADOPTED POLICY**

**Action: No action required.**

**Brief:** The purpose of the [Revenue Policy](#) is to ensure that there is sufficient revenue to support direct and indirect operating, capital, reserves and current and future debt service costs. This policy aggregates existing policies and philosophies related to revenue into one Commission-approved document. It provides the framework to ensure consistency in making financial decisions. The policy covers areas such as the basis of charges, how charges are determined, how rates are approved, revenue forecasts, collections and an overview of HRSD's Rate Model.

The Finance Committee and other Commissioners met on February 28 to review the new Revenue Policy. The final version will be presented to the Commission for approval in May.

**Attachment #3:** [Draft Revenue Policy](#) and [PowerPoint Presentation](#)

**Public Comment:** None



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6. **ANNUAL BUDGET AND RELATED COMPONENTS**

**Action:** Receive the report of the Finance Committee for the proposed Fiscal Year-2018 Annual Budget and Capital Improvement Program.

**Brief:** The Finance Committee (Committee) and other Commissioners met to review the Capital Improvement Program and the proposed FY-2018 Annual Budget. The Committee will present its report to the full Commission.

**Background:** The Committee (comprised of Commissioners Rodriguez and Lynch) and other Commissioners, as their schedules allowed, have participated in several meetings related to the development of the Capital Improvement Program (CIP) and the FY-2018 Annual Budget. CIP reviews took place on March 7 and March 30. A budget workshop was held immediately after the regular meeting of the Commission on March 28, and the Committee along with other Commissioners met to discuss the preliminary proposed Annual Budget on April 12.

The entire budget package will be presented to the Commission for approval during the May Commission meeting. In accordance with Commission Governance Guidelines, the Commission must adopt an operating budget on or before the first day of June for the fiscal year beginning July 1.

The annual budgeting process includes updating a long-range financial forecast as well as developing an [Annual Budget](#), CIP and Wastewater Treatment and Facility Charge Schedules. Because these components are inter-related, they are presented together to evaluate the overall budget and financial condition of HRSD.

The long-range financial forecast is a planning tool used to project the need, timing and amount of rate adjustments and debt requirements. The revenue and expense projections are developed using inflationary assumptions, past experience, the Annual Budget and the CIP.

The 10-year CIP, a long-range planning tool used to summarize needed projects, includes a description, cost estimate and schedule for each project. The Commission approves the 10-year plan along with the planned expenditures for the first fiscal year in the plan. Each project is reviewed prior



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to commencement to reevaluate the need, timing, location, capacity, cost and schedule for the project. Individual projects in the approved CIP are presented to the Commission for appropriation of project funding when the first dollar is proposed to be spent. As individual projects proceed, the Commission remains informed through regular reports and briefings. The proposed CIP totals approximately \$2.35 billion over the next 10 years.

**Discussion Summary:** Commissioner Lynch asked Mr. Bernas, the Finance Director, to review the presentation from the last Finance Committee meeting. Commissioner Rodriguez thanked Mr. Bernas for the briefing and Commissioner Lynch for chairing the meeting in his absence.

**Attachment #4:** [Draft Budget and PowerPoint Presentation](#)

**Public Comment:** None



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7. **ANAEROBIC MEMBRANE BIOREACTOR – WATER ENVIRONMENT AND REUSE FOUNDATION (WE&RF) PILOT STUDY DEVELOPMENT AND TESTING OF ADVANCED BIOASSAY METHODS RESEARCH CONTRACTS**

**Actions:**

- a. **Approve a multiple year research contract with The Regents of The University of Michigan to provide support for a WE&RF project to pilot test an Anaerobic Membrane Bioreactor system.**
- b. **Approve a multiple year research contract with The Regents of The University of Michigan for the development and testing of advanced bioassay methods to assess the potential physiological impact of emerging contaminants present in water at very low concentrations.**

**Moved:** Vishnu Lakdawala

**Ayes:** 7

**Seconded:** Maurice Lynch

**Nays:** 0

**Project Description:** Anaerobic Membrane Bioreactor Pilot: The objective of this work is to study the development of anaerobic municipal wastewater treatment processes at temperatures as low as 12-15°C, specifically focused on the anaerobic membrane bioreactor process. This project will consider both polymeric and ceramic membranes. The pilot testing will occur at a treatment plant near Ann Arbor, Michigan. HRSD is a research partner on this project and committed in-kind funding towards the WE&RF funded work.

Testing of Advanced Bioassay Methods: The objective of this work is to develop and test advanced bioassay methods to assess the potential physiological impact of emerging contaminants present in water at very low concentrations. Bioassays attempt to quantify the impact of whole water samples on various biomolecular functions of mammalian cells. These methods will be applied to a wide range of water samples to allow reasonable interpretation of the data and to help validate the methods. The National



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Water Research Institute (NWRI) panel recommended that HRSD pursue this line of testing. Due to Dr. Glen Daigger's roles as chair of the NWRI independent review panel for SWIFT and a professor at the University of Michigan, Dr. Daigger will have no involvement in this research project.

**Discussion Summary:** Staff responded to a question about the cost of the studies, estimating the cost for each at \$45,000 and \$50,000, and that funding is available within the existing Operating Budget appropriation.

**Attachment:** None

**Public Comment:** None





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**Discussion Summary:** A question was asked about removal of the pipeline. Staff responded that it would be filled with flowable fill and abandoned in place as is our normal practice. This is included in the terms of the Deed of Vacation.

**Attachment #5:** [Deed of Vacation](#)

**Public Comment:** None





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9. **RENEWABLE ENERGY CREDITS MARKETING AND SALE CONTRACT AWARD**

**Action:** Award a contract for services to assist in the marketing and sale of renewable energy credits to Blue Delta Energy LLC for one year with four annual renewal options.

**Moved:** Vishnu Lakdawala **Ayes:** 7  
**Seconded:** Maurice Lynch **Nays:** 0

**Type of Procurement:** Competitive Negotiation

Proposers	Technical Points	Recommended Selection Ranking
Blue Delta Energy LLC	87	1
Green Harbor Energy, Inc.	71	2

**Contract Description:** This contract is for services to assist in the marketing and sale of Renewable Energy Credits (RECs) produced by HRSD. In addition, the agreement allows the opportunity to explore the marketing and sale of future renewable energy produced at HRSD. This includes, but is not limited to, Renewable Identification Numbers (RINS) that are a result of digester gas to vehicle fuel creation.

In accordance with HRSD competitive negotiation procedures, the Procurement Division advertised and solicited proposals from potential Offerors. Two proposals were received and evaluated based upon the requirements of the Request for Proposal. Independent interviews and negotiations were held with the two Offerors to negotiate a fair and reasonable cost. The proposal submitted by Blue Delta Energy was ranked by technical points to be highest qualified. Negotiations resulted in a five percent decrease in the revenue share for the Offeror.

As part of HRSD’s renewable energy initiative a Combined Heat and Power system (CHP) was implemented at the Atlantic Treatment Plant. The ability to convert the methane gas created by the water treatment process into electricity produces energy credits or RECs. The Offeror will handle all



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marketing aspects and financial requirements of the credit transactions on a revenue sharing basis and serve as HRSD’s subject matter expert for other renewable energy credit opportunities that may be available.

The CHP engine run time data will be provided to the Offeror electronically on a daily basis and evaluated for the highest buying potential. The Offeror will consult with HRSD as necessary on status and decisions regarding transactions. HRSD will be given access to a REC Tracking Registry that assigns a unique identification number and maintains transaction reports. This will assist with the liability and validation of the REC sale and retirement including substantiation of ownership and sale, electronic access to REC portfolio and transparency, transactional efficiency and reduced costs.

As part of this agreement, the sale of RECs will be employing a revenue sharing price structure based on cumulative monthly sale of RECs produced. This structure was negotiated at 85 percent revenue for HRSD and 15 percent revenue for the Offeror. To increase the options for REC monetization, Atlantic’s CHP facility will take advantage of registering in multiple states with Renewable Portfolio Standards, which is a regulatory mandate to increase production of energy from renewable sources. This opens up the compliance market to the sale of RECs and allows for more flexibility in the sale approach due to constant changes in the rules and regulations of state legislations. HRSD increases its potential for REC sales and revenue based on multiple market conditions.

The [agreement](#) between HRSD and Blue Delta Energy LLC will be the standard sales agreement used to document every transaction. Below is a snapshot of estimated HRSD profit based off the revenue sharing structure, 2016 annual CHP engine run time data and the estimated current market unit rate per REC:

<b>Revenue Percent</b>	<b>Estimated Current Market Price</b>	<b>HRSD Estimated Revenue</b>	<b>Blue Delta Estimated Revenue</b>
15%	\$8.00/MW hour	\$45,560	\$8,040

The agreement has been reviewed by HRSD’s legal counsel.



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**Discussion Summary:** The selection of Blue Delta was a qualifications-based selection. HRSD lacks the expertise to market energy credits in-house and requires the services of an experienced specialty firm like Blue Delta to be successful.

**Attachment #6:** [Agreement](#)

**Public Comment:** None



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10. **CAPITAL IMPROVEMENT PROGRAM (CIP)  
QUARTERLY UPDATE**

**Action:** No action required.

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

**Discussion Summary:** Staff discussed personnel and communications challenges with an aggressive Capital Improvement Program that doubles in size within 10 years. During the discussion of the Consent Decree/SSO Reduction project updates, staff explained a professional engineer is required to submit a certification notice to the U.S. Environmental Protection Agency (EPA) when these projects are completed.

**Attachment #7:** [PowerPoint Presentation](#)

**Public Comment:** None



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11. **UNFINISHED BUSINESS** – None

12. **NEW BUSINESS** – None

13. **COMMISSIONER COMMENTS**

Chair Elofson and Commissioner Lynch commended staff on the excellent financial modeling and infrastructure planning.

Commissioner Rodriguez praised the General Manager and staff for their outstanding efforts that make HRSD an effective agency and allow the Board to make sound decisions for the future.

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**

- 05/16/17 – Chesapeake-Elizabeth Treatment Plant 50<sup>th</sup> Anniversary Celebration and Commemorative Garden Dedication
- 06/07/17 – Annual United Way Campaign Awards Finale to be held at the Virginia Beach Convention Center

**Next Commission Meeting Date:** May 23, 2017 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

**Meeting Adjourned:** 10:21 a.m.

SUBMITTED:

APPROVED:

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Jennifer L. Cascio  
Secretary

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Frederick N. Elofson, CPA  
Chair

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ATTACHMENT #1

AGENDA ITEM 2. – Consent Agenda

## CONSENT AGENDA ITEM 2.b.1. – April 25, 2017

**Subject:** Continuous Emissions Monitoring Preventative Maintenance Contract  
Contract Award (>\$200,000)

**Recommended Action:** Award a blanket purchase contract for Continuous Emissions Monitoring Preventative Maintenance services to STI Cems Services in the estimated amount of \$60,000 for year one with five annual renewal options and an estimated cumulative value in the amount of \$360,000.

**Type of Procurement:** Competitive Negotiation

<b>Proposers</b>	<b>Technical Points</b>	<b>Recommended Selection Ranking</b>
STI CEMS Services	90	1
FD Pace LLC DBA Pace Environmental	76	2
CEMTREX Inc.	56	3

**Contract Description:** This contract is an agreement for a monthly preventative maintenance on HRSD's Continuous Emissions Monitoring Systems located at five sewage sludge incineration (SSI) facilities. This is the maintenance for the equipment that is used to monitor the emissions (i.e., analyzers). The contract was issued for six years instead of five years due to the future of the incinerators. HRSD maintains an inventory of the parts. The contract covers unlimited phone trouble shooting, emergency call outs, and onsite troubleshooting, if needed.



CONSENT AGENDA ITEM 2.b.2. – April 25, 2017

**Subject:** Sustainable Water Recycling Phase 3  
Emerson Ovation Hardware and Software  
Contract Award (>\$200,000)

**Recommended Action:** Award a contract to Emerson Process Management in the amount of \$253,074 for hardware and software in support of the SWIFT Research Center at the Nansemond Treatment Plant.

**CIP Project: GN016200**

Budget	\$27,064,623
Previous Expenditures and Encumbrances	(\$24,954,139)
Available Balance	\$2,110,484

**Project Description:** The Sustainable Water Recycling Phase 3 project will include the design and construction of a 1 MGD advanced water treatment facility and aquifer replenishment well, along with the development of a plan for full scale implementation of sustainable water recycling at HRSD facilities.

**Contract Description:** This contract is for the purchase of critical hardware and software for the Emerson Distributive Control System for the SWIFT demonstration facility at the Nansemond Treatment Plant.

<b><u>Schedule:</u></b>	PER	July 2016
	Design	December 2016
	Bid	December 2017
	Construction	July 2017
	Project Completion	December 2018

## CONSENT AGENDA ITEM 2.c.1. – April 25, 2017

**Subject:** Continued Condition Assessment  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with T.A. Sheets in the amount of \$298,700.

**CIP Project: GN012115**

Budget	*\$131,191,858
Previous Expenditures and Encumbrances	\$129,451,714
Available Balance	\$1,740,144

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with T A Sheets	\$7,607,000
Total Value of Previous Task Orders	\$5,107,000
Requested Task Order	\$298,700
Total Value of All Task Orders	\$5,405,700

\*Includes all Consent Order CIPs: GN012110, GN012112, GN012113, GN012114, GN012115, GN012120, GN012130, GN012140, GN012150, CE011900, AT013800, CE 011900, JR013300, MP012800

**Project Description:** This project will provide for as needed force main pipeline condition assessment.

**Task Order Description:** This task order will provide condition assessment evaluation and install preventative corrosion protection measures at 19 discrete locations along approximately 6,800 feet of 16-inch and 36-inch force mains running along Gum Road, Jolliff Road and parallel to a portion of I-664 in Chesapeake. Recent nearby pipe failures, subsequent site evaluations and maintenance records review indicate that the pipe, valves and air vents along these lines are at increased risk of corrosion-related failure. The work includes visual inspection and wall thickness evaluation using ultrasonic thickness (UST) measurements for condition evaluation. It also includes installation of new hardware associated with the valves and air vents to replace aging materials, as well as corrosion protection measures to minimize further degradation. The work will involve specialized inspection of the installed corrosion protection measures. Certain locations may require night work, during low flow/pressure periods to minimize risk to the exposed HRSD facilities.

## CONSENT AGENDA ITEM 2.c.2. – April 25, 2017

**Subject:** Regional Hydraulic Model and Other Consent Order Requirements  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with CDMSmith in the amount of \$825,000.

**CIP Project: GN012110**

Budget	\$131,191,858
Previous Expenditures and Encumbrances	\$129,416,368
Available Balance	\$1,775,490

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with CDMSmith	\$2,608,061
Total Value of Previous Task Orders	\$22,206,863
Requested Task Order	\$24,814,924
Total Value of All Task Orders	\$825,000
Revised Contract Value	\$25,639,924

\*Includes all Consent Order CIPs: GN012110, GN012112, GN012113, GN012114, GN012115, GN012120, GN012130, GN012140, GN012150, CE011900, AT013800, CE 011900, JR013300, MP012800

**Project Description:** Engineering services, system inspections and software expenses are required to create a fully functional extended state hydraulic model for the specified portions of the regional sanitary sewer system. Model features and engineering services to include extended state simulation, GIS data integration, interoperability with the localities' hydraulic models, training and database administration. Additional modeling efforts and software purchases for each of the localities and the Middle Peninsula are included as part of this project. Additional task items to be completed as mandated by the Federal Consent Decree include overall program management and guidance, consent decree negotiation, locality coordination, capacity and condition assessment (an estimated 2-5 percent of the interceptor force mains and 100 percent of the gravity interceptors will need to be inspected for possible defects), public participation, overall Supervisory Control and Data Acquisition (SCADA) coordination, Sewer System Evaluation Survey (SSES) planning, rehabilitation planning and implementation, and preparation and implementation of the Regional Wet Weather Management Plan (RWWMP). Other related work includes: surveying of manholes and pumping stations, several consent decree related studies and hydraulic model support to make sure other CIP projects fully comply with the Federal Consent Decree.

**Task Order Description:** This task order will provide modeling, engineering evaluations, and technical coordination to support solution set optimization and sequencing and development of the Regional Wet Weather Management Plan Report to be delivered to USEPA and VDEQ by October 1, 2017 to meet the requirements of the Third and Fourth Amendments to the Consent Decree. This task will include modeling for the selection of the high priority projects and support for the RWWMP. This task order will be completed by September 30, 2017.

## CONSENT AGENDA ITEM 2.d.1. – April 25, 2017

**Subject:** Biofloc P-Release  
Contract Change Order

**Recommended Action:** Approve a change order with Bucknell University to extend contract for one additional year.

<b>Contract Status:</b>	Amount	Cumulative % of Contract
Original Contract with Bucknell University	\$40,000	
Total Value of Previous Change Orders	\$0	0 %
Requested Change Order No. 1	\$0	
Total Value of All Change Orders	\$0	0 %
Revised Contract Value	\$40,000	

Time (Additional Calendar Days)		213
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**Change Order Description:** This change order includes modifications from original design of study to extend longer than one year at no additional cost.

## CONSENT AGENDA ITEM 2.d.2. – April 25, 2017

**Subject:** State Street Pump Station Electrical Modifications  
Contract Change Order (>25% or \$50,000)

**Recommended Action:** Approve a change order with Shaw Construction Corporation in the amount \$103,178.

**CIP Project: VP012100**

Budget	\$2,358,034
Previous Expenditures and Encumbrances	(\$2,109,051)
Available Balance	\$248,983

<b>Contract Status</b>	<b>Amount</b>	<b>Cumulative % of Contract</b>
Original Contract with Shaw	\$1,270,000	
Total Value of Previous Change Orders	\$231,400	18%
Requested Change Order No. 6	\$103,179	
Total Value of All Change Orders	\$334,579	26%
Revised Contract Value	\$1,604,579	

Time (Additional Calendar Days)	321
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**Project Description:** This project provided new pump station switchgear, emergency generator, Variable Frequency Drives (VFDs), pumps, and motors. These equipment replacements were required because the pump motor controls were obsolete, the existing generator was located inside the pump station structure and could not be replaced in the current footprint, electrical gear faults due to high temperature were common during the summer, and the existing pumps were not a good match for the actual station flows which wasted energy and required additional maintenance.

**Change Order Description:** This change order addresses miscellaneous additional work including modifications to the monorail and hoist, VFD contactors, new exterior concrete pad and load bank wiring. This is the final change order.

**Analysis of Cost:** The Engineer prepared an independent estimate of costs and recommends approval of these changes.

**Schedule:** Project Completion July 2017

## CONSENT AGENDA ITEM 2.e.1. – April 25, 2017

**Subject:** Anaerobic Metagenomics Research and Nutrient Center and Chesapeake-Elizabeth Biological Nutrient Removal (BNR) Pilot  
Sole Source (>\$10,000)

### **Recommended Actions:**

- a. Approve The Trustees of Columbia University in the City of New York for support of the Water Environment & Reuse Foundation (WE&RF) to conduct research on meta-omics of anaerobic digestion and fermentation at HRSD.
- b. Approve The Trustees of Columbia University in the City of New York for support of U.S. Environmental Protection Agency/WE&RF Nutrient Center and Chesapeake-Elizabeth BNR Pilot at HRSD.

### **Sole Source Justification:**

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

**Details:** Service includes collaboration as part of the WE&RF project on the meta-omics of anaerobic digestion and fermentation in field-scale processes across the nation. HRSD committed to providing in-kind funding for this WE&RF project that was successfully awarded to Columbia University. HRSD will also provide samples from anaerobic digestion facilities, primarily targeted at better understanding biological processes in anaerobic digesters in thermal hydrolysis applications.

WE&RF was awarded a \$2 million grant by EPA to develop a research center targeted at nutrient removal technology. Columbia University, working with HRSD and several other utilities, were included as a sub-project in this grant application to further explore carbon diversion and mainstream deammonification technologies. This grant provides to HRSD the services of Columbia University for providing molecular biological analyses, and a post-doctoral research associate located and working at the CE BNR pilot facility. HRSD committed in-kind funding towards this grant, and the contract to be award to Columbia University partially fulfills that obligation.

## CONSENT AGENDA ITEM 2.e.2 – April 25, 2017

**Subject:** Envirex Dystor<sup>®</sup> Membrane Service  
Sole Source (>\$10,000)

**Recommended Action:** Approve EWT Water Holdings III Corp as the provider of Envirex Dystor<sup>®</sup> Membrane Services for Atlantic Treatment Plant.

### **Sole Source Justification:**

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

**Details:** Service includes a factory qualified and trained field service technician to provide onsite supervision for the safe deflation and inflation, removal, installation, inspection, maintenance and repair of the Dystor<sup>®</sup> Gas Holder System membranes currently installed on two digesters. The service will also include a post-inflation inspection to ensure a proper seal.



## CONSENT AGENDA ITEM 2.e.3 – April 25, 2017

**Subject:** Fairbanks Nijhuis® Vortex Pump and Parts  
Sole Source (>\$10,000)

**Recommended Action:** Approve the purchase of Fairbanks Nijhuis® Vortex pump and 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 has unique characteristics essential to the needs of the program
- Product is covered by a patent or copyright
- Product is part of standardization program to minimize training for maintenance and operation, and parts inventory
- Only known source

**Details:** Product includes a Fairbanks Nijhuis® Vortex pump and related parts. There are four Fairbanks Nijhuis® Vortex pumps used in the grit removal process at the York River Treatment Plant. This replacement pump and parts allows for the reuse of the existing piping and electrical wiring.

CONSENT AGENDA ITEM 2.e.4 – April 25, 2017

**Subject:** Internet-based Publicly Owned Treatment Works Administration and Compliance System (iPACS) and Biosolids Data Management System Maintenance and Support  
Sole Source (>\$10,000)

**Recommended Action:** Approve enfoTech and Consulting, Inc. to provide iPACS and Biosolids Data Management System maintenance and support services for 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 annual software maintenance and support of the iPACS and Biosolids Data Management System. The systems are compatible with other HRSD software in use. The Biosolids Data Management System was designed specifically for HRSD biosolids and is used to track biosolids land application and maintain required regulatory records and reporting.

## CONSENT AGENDA ITEM 2.e.5 – April 25, 2017

**Subject:** Magnesium Hydroxide Tank and Mixer Assembly  
Sole Source (>\$10,000)

**Recommended Action:** Approve the purchase of a magnesium hydroxide bulk storage tank system, including the bulk tank, baffling and top entry mixer configuration from Engineered Lubrications for use at HRSD facilities.

**Sole Source Justification:**

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

**Details:** Magnesium hydroxide, commonly known as milk of magnesia, is a chemical slurry or suspension that must be appropriately mixed in a bulk storage tank. The rheological properties of a normal 60 percent magnesium hydroxide (Mg(OH)<sub>2</sub>) slurry are non-Newtonian and complex, and there have been many cases of failed Mg(OH)<sub>2</sub> feed systems as result of improperly designed bulk tank mixing systems. It is critical to purchase a tank and mixer system that has been proven to work effectively for Mg(OH)<sub>2</sub>. This system, which is specially designed to withstand the challenging rheological properties of this slurry chemical, represents the combined top-entry mixer impeller, tank baffling arrangement and bulk storage tank. With this assembly, the James River Treatment Plant will be able to properly mix magnesium hydroxide in a bulk feed tank for dewatering improvements, reduction of nuisance struvite accumulation and phosphorus removal. This system also has applications at other HRSD treatment plants.

CONSENT AGENDA ITEM 2.e.6 – April 25, 2017

**Subject:** mDataManager™ Enterprise Software Application  
Sole Source (>\$10,000)

**Recommended Action:** Approve Margolis, Ainsworth, & Kinlaw Inc. DBA MAK Solutions as the provider of mDataManager™ enterprise software application for use with the Customer Care and Billing (CC&B) database.

**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 data conversion, archive and purge, data integrity analysis, data sub-setting and a support environment productivity tool. Without this product, the Customer Care and Billing (CC&B) database responsiveness will continue to deteriorate. There is currently no other product on the market that will archive the CC&B database records.

CONSENT AGENDA ITEM 2.e.7 – April 25, 2017

**Subject:** Panoptra™ Visualization Platform  
Sole Source (>\$10,000)

**Recommended Action:** Approve Enstoa Inc. as the provider of Panoptra™ visualization platform for the Primavera Unifier Project Management System.

**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 a data historian application to show trend data in Primavera Unifier. This software extracts data to create a highly efficient reporting database that displays interactive dashboards that can be refreshed in real time. There is currently no other product on the market that can extract this data.

HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #2

AGENDA ITEM 3. – Financial Policy

**COMMISSION ADOPTED POLICY**  
***Financial Policy***



Adopted: May 26, 2009

Revised: ~~March 24, 2015~~ *DRAFT*  
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**1.0 PURPOSE AND NEED**

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

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

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

HRSD recognizes that one of the keys to sound financial management is the development of formal financial policy. This sentiment is echoed by bond rating agencies, investors and the Government Finance Officers Association.

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

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

**2.0 DEFINITIONS**

**2.1 *HRSD Enabling Act.*** *HRSD's Enabling Act is Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended.*

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

**2.3 **Arbitrage.**** The simultaneous purchase and sale of an asset in order to profit from a difference in the price. It is a trade that profits by exploiting price differences of identical or similar financial instruments in different markets or in different forms. For the purposes of this Policy, Arbitrage refers to the difference between the interest paid on the tax-exempt securities and the interest earned by investing the security

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proceeds in higher-yielding taxable securities. ~~The IRS regulations govern~~ *Code governs* arbitrage on the proceeds from issuance of tax-exempt municipal securities.

- 2.4 **Asset Allocation.**- An investment strategy that attempts to balance risk versus reward by adjusting the percentage of each asset in an investment portfolio according to the investor's risk tolerance, goals and investment time frame.
- 2.5 **Balloon Maturity.** A ~~later~~ maturity within an issue of bonds, which contains ~~a disproportionately large percentage~~ *twenty-five percent (25%) or more* of the principal amount of the original issue.
- 2.6 **Bankers' Acceptance.** A draft or bill or exchange accepted by a bank or trust company. The accepting institution guarantees payment of the bill, as well as the issuer.
- 2.7 **Basis Swap.** An agreement between two parties to exchange interest payments based on different variable-rate indices, e.g. SIFMA vs. LIBOR; a floating-to-floating swap.
- 2.8 **Benchmark.** A comparative base for measuring the performance or risk tolerance of an investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.
- 2.9 **Bond Anticipation Note (BANs).** Notes which are ~~paid~~ *generally repaid* from the proceeds of the issuance of long-term ~~bonds. Typically issued for capital projects~~ *indebtedness*.
- 2.10 **Broker.** Brings buyers and sellers together for a commission.
- 2.11 **Bullet Maturity.** A maturity within an issue of bonds for which there are no principal and/or sinking fund payments prior to the stated maturity date.
- 2.12 **Call Provisions.** The ~~terms~~ *term* of ~~the~~ *a* bond giving the issuer the right to redeem all or a portion of ~~asuch~~ *such* bond prior to its stated date of maturity at a specific price, usually at or above par.
- 2.13 **Capital Appreciation Bonds.** A municipal security on which the investment return on an initial principal amount is reinvested at a stated compounded rate until maturity. At maturity the investor receives a single payment (the "maturity value") representing both the initial principal amount and the total investment return.
- ~~3.0 — Capital Improvement Program (CIP). Ten year plan for major non-recurring facility, infrastructure, or acquisition expenditures generally that expand or improve HRSD and/or community assets. Projects included in the CIP include physical descriptions,~~



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~~implementation schedules, year of expenditure cost and funding source estimates, and an indication of HRSD Commission priorities and community benefits.~~

**2.14 Capital Asset.** *A unit of property purchased by, constructed by or donated to HRSD that: (1) was acquired or produced and has a value of \$5,000 or more; and (2) has an economic useful life of a minimum of 60 months. Capital Assets must be capitalized and depreciated for financial statement purposes. Assets constructed and paid by HRSD that improve the performance of the Wastewater System and subsequently transferred to a Locality constitute Locality Assets and will not be capitalized by HRSD for any purpose.*

**2.15 Capital Improvement Program (CIP).** *The CIP is HRSD's planned program of capital projects (greater than \$100,000), such as property, plant and equipment and related engineering, legal and construction services, and may consist of Capital Assets and Locality Assets.*

**3.4.2.16 Capitalized Interest.** A portion of the proceeds of a bond issue which is set aside to pay interest on ~~the same one or more~~ bond ~~issue~~ *issues* for a specific period of time. Interest is commonly capitalized for the construction period of the project.

**3.2.2.17 Certificate of Deposit (CD).** A time deposit with a specific maturity evidenced by a Certificate. Large-denomination ~~CD's~~ *CDs* are typically negotiable.

**2.18 IRS Code.** *The Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.*

**3.3.2.19 Collateral.** Securities, evidence of deposit or other property, which a borrower pledges to secure repayment of a loan. Also refers to securities pledged by a bank to secure deposits of public monies.

**3.4.2.20 Commercial Paper (CP).** Short-term, unsecured promissory notes issued by corporations or governments to finance receivables for a maturity specified by the purchaser that ranges from three days to 270 days. Notes are generally sold at a discount, and carry credit ratings issued by an NRSRO.

**3.5.2.21 Competitive Sale.** A sale/auction of securities by an issuer in which underwriters or syndicates of underwriters submit sealed bids to purchase the securities.

**3.6.2.22 Constant Maturity Swap.** An interest rate swap that is predicated upon the shape of the forward implied yield curve whereby counterparties exchange interest rate payments based on an anticipated future interest rate and a variable swap index rate. The interest rate on one leg of the swap is reset periodically but with reference

to a market swap rate rather than an index such as LIBOR. The other leg of the swap is generally a market index, such as LIBOR.

- 3.7.2.23 Continuing Disclosure.** The principle that accurate and complete information material to a transaction or HRSD, which potential investors would likely consider material in making investment decisions with respect to the securities be made available on an ongoing basis. *Pursuant to Rule 15c2-12 promulgated by the SEC, underwriters of HRSD's bonds are obligated to obtain a Continuing Disclosure Agreement (CDA) from HRSD prior to underwriting such bonds.*
- 3.8.2.24 Corporate Notes.** Unsecured promissory notes issued by corporations to raise capital for a maturity that is longer than 270 days. Notes are generally sold at a discount, and carry credit ratings *issued* by an NRSRO.
- 3.9.2.25 Credit Enhancement.** Credit support purchased by the issuer to raise the credit rating of a debt issue. The most common credit enhancements consist of bond insurance, direct or standby letters of credit, and lines of credit.
- 2.26 Days Cash on Hand.** *Measured by current and non-current cash and investments, plus any restricted cash and investments, if available for general system purposes, divided by operating and maintenance expenses less depreciation, divided by 365. This calculation will exclude accrued debt service for the next fiscal year and all funds in the Risk Reserve and Renewal and Replacement Reserve.*
- 3.10.2.27 Dealer.** Acts as a principal in all transactions, buying and selling for his own account.
- 3.11.2.28 Debenture.** A bond secured only by the general credit of the issuer.
- 2.29 Debt Service Coverage Ratio – GAAP.** *Calculated in accordance with HRSD's Senior Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service. In such calculation, funds spent on Locality Assets are considered an expense. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).*
- 2.30 Debt Service Coverage Ratio - Adjusted.** *Calculated in accordance with HRSD's Subordinate Trust Agreement, the ratio determined by dividing the Net Revenues by annual debt service. In such calculation, funds spent on Locality Assets may be excluded from the calculation of Net Revenues under the circumstances described within the definitions of Net Revenues and Operating Expenses. Annual debt service will be based on actual principal and interest payments during the year (i.e., not accrual based).*

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**3.122.31 Debt Service Reserve Fund.** The fund in which moneys are placed ~~which that~~ may be used to pay debt service if ~~pledged~~ revenues ~~and certain liquidity measures available for debt service and Credit Enhancements, if applicable,~~ are insufficient to ~~satisfy requirements defined in the Trust Agreement.~~ *pay debt service on HRSD's bonds secured by a Debt Service Reserve Fund as it becomes due and payable.*

**3.132.32 Deep Discount Bonds.** Bonds which are priced for sale at a substantial discount from their face or par value.

**3.142.33 Delivery versus Payment.** Delivery of securities with an exchange of money for the securities. (See also Delivery versus Receipt)

**3.152.34 Delivery versus Receipt.** Delivery of securities with an exchange of a signed receipt for the securities. Also known as "free" delivery; (See also Delivery versus Payment).

**3.162.35 Derivatives.** A financial product whose value is derived from some underlying asset value.

**3.172.36 Designation Policies.** Outline how an investor's order is filled when a bond's maturity is oversubscribed when there is an underwriting syndicate. The senior managing underwriter and issuer decide how the bonds will be allocated among the syndicate. There are three primary classifications of orders which form the designation policy: Group Net orders; Net Designated orders and Member orders.

**3.182.37 Discount.** A bond that is issued for less than its par (or face) value, or a bond currently trading for less than its par value in the secondary market.

**3.192.38 Diversification.** A process of investing assets among a variety of security types by sector, maturity and quality rating.

**3.202.39 Encumbrances.** Commitments related to unperformed contracts for goods and services (i.e., purchase orders, contracts and commitments). Encumbrance accounting is utilized to the extent necessary to assure effective budgetary control and accountability and to facilitate effective cash planning and control.

**3.212.40 Escrow.** A fund established to hold moneys pledged and to be used to pay debt service on ~~an outstanding issue~~ *a one or more series of HRSD's bonds or other indebtedness.*

**3.222.41 Federal Agency.** Government sponsored/owned entity created by the U.S. Congress, generally for the purpose of acting as a financial intermediary by borrowing in the marketplace and directing proceeds to specific areas of the

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economy considered to otherwise have restricted access to credit markets, also referred to as Government Sponsored Enterprises ~~or~~ (GSEs). The largest are GNMA, FNMA, FHLMC, FHLB, FFCB, and TVA.

**3.232.42 Federal Funds Rate.** The rate of interest at which ~~Fed funds~~ *Federal Funds* are traded. This rate is currently set by the Federal Reserve through open – market operations.

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

**2.44 FINRA.** *The Financial Industry Regulatory Authority.*

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

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

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

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

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

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

**3.302.50 Internal Controls.** ~~Systematic measures (such as reviews, checks and balances, methods and procedures) instituted by an organization to: conduct its business in an orderly and efficient manner; safeguard its assets and resources; deter and detect errors, fraud, and theft; ensure accuracy and completeness of its accounting data; produce reliable and timely financial and management information; and ensure adherence to~~

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~~its policies and plans.~~ *Systematic measures (such as reviews, checks and balances, methods and procedures) instituted by an organization to:* conduct its business in an orderly and efficient manner; safeguard its assets and resources; deter and detect errors, fraud, and theft; ensure accuracy and completeness of its accounting data; produce reliable and timely financial and management information; and ensure adherence to its policies and plans. An important concept in establishing appropriate internal controls is that the cost of the controls should not exceed their anticipated benefits.

**3.342.51 Knock-in Option.** An option the existence of which is conditional upon a pre-set trigger price trading before the option's designated maturity. If the trigger is not touched before maturity, then the option is deemed not to exist.

**3.322.52 Letters of Credit.** A bank credit facility wherein the bank agrees to lend a specified amount of funds for a limited term. *Letters of Credit may be used as Credit Enhancement for HRSD's indebtedness.*

**2.53 Line of Credit.** *A bank facility wherein the bank permits the borrower to access funds at any time, subject to a maximum loan balance.*

**3.332.54 Liquidity.** *The ability of ease with which an asset can be converted into cash without a substantial loss of value.*

**2.55 Liquidity Facility.** *A type of bank credit facility wherein the bank agrees to purchase securities, typically variable rate debt, that cannot be immediately remarketed to investors. The Liquidity Facility provider purchases the securities until such time as they can be remarketed.*

**2.56 Locality Assets.** *Assets constructed and paid for by HRSD and subsequently transferred to a locality. A Commission Resolution is required to exclude these costs from the calculation of the Operating Expenses for purposes of the calculation of the Debt Service Coverage Ratio – Adjusted.*

**3.342.57 London InterBank Offered Rate (LIBOR).** LIBOR is the rate on U.S. dollar denominated deposits with maturities from one day to 12 months transacted between banks in London. LIBOR is generally the benchmark floating index in the taxable or corporate swap market.

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

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

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

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

**3.392.62 Members.** Underwriters in a syndicate other than the senior underwriter.

**2.63 Moody’s.** *Moody’s Investors Service, Inc. is a NRSRO.*

**3.402.64 Nationally Recognized Statistical Rating Organization (NRSRO).** ~~A credit rating agency~~ *A credit rating agency* which issues ~~credit ratings~~ *credit ratings* that the SEC permits other financial firms to use for certain regulatory purposes. Examples include Moody’s ~~Investors Service, Standard & Poor’s and Fitch Ratings~~ *and S&P.*

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

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

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

**3.432.68 Normal Cost.** The annual current cost of a member’s future retirement benefit.

**2.69 Operating Expenses.** *As defined by the Enabling Act and as used in the Senior Trust Agreement, operating expenses includes the cost of maintaining, repairing and operating such system or systems or sewer improvements and to provide such reserves therefor as may be provided in the resolution providing for the issuance or such revenue bonds or in the trust agreement securing the same. As defined in the Subordinate Trust Agreement, Operating Expenses includes those expenses required to pay the cost of maintaining, repairing and operating the Wastewater System, including, but not limited to, reasonable and necessary usual expenses of administration, operation, maintenance and repair, costs for billing and collecting the rates, fees and other charges for the use of or the services furnished by the Wastewater System, insurance premiums, credit enhancement and liquidity support fees, legal, engineering, auditing and financial advisory expenses, expenses and compensation of the Trustee, and deposits into a self-insurance program. Operating Expenses shall exclude allowance for depreciation and amortization and expenditures for extraordinary maintenance or repair or improvements. Operating*

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

- 3.442.70 Original Issue Discount.** The amount by which the original par amount of an issue exceeds its public offering price at the time it is originally offered to an investor.
- 3.452.71 Percentage of (% of) LIBOR Swap.** A swap whose floating rate is reset based on a percentage of a taxable rate (e.g. 67% of LIBOR) rather than a true tax-exempt rate, e.g. the SIFMA Index. A Percentage of LIBOR swap generally carries a lower expected or nominal fixed rate than a comparable SIFMA swap to compensate the fixed payer (issuer) for the assumption of basis and tax risk.
- 3.462.72 Portfolio.** Collection of securities held by an investor.
- 3.472.73 Premium.** The difference between the higher price paid for a fixed-income security and the security's face amount at issue.
- 3.482.74 Present Value.** The current value of a future cash flow.
- 3.492.75 Primary Dealer.** A group of government securities dealers who submit daily reports of market activity and positions and monthly financial statements to the Federal Reserve Bank of New York and are subject to its informal oversight. Primary dealers include SEC, registered securities broker-dealers, banks, and a few unregulated firms.
- 3.502.76 Private Placement.** The ~~original~~ placement of an issue *of indebtedness directly* with one or more *qualified or institutional* investors ~~versus being publicly offered or sold~~.
- 3.512.77 Prudent Person Rule.** An investment standard outlining the fiduciary responsibilities of public funds invested relating to investment practices.
- 3.522.78 Rate Lock.** An interest rate hedge that is cash-settled at maturity based on the prevailing level of an agreed upon underlying index. (e.g. the SIFMA 'AAA' scales)
- 3.532.79 Rate of Return.** The yield obtainable on a security based on its purchase price or its current market price. This may be the amortized yield to maturity on a bond or the current income return.

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**3.542.80 Rebate.** A requirement imposed by the Tax Reform Act of 1986 whereby the issuer of tax exempt bonds must pay the IRS an amount equal to its profit earned from investment of tax-exempt bond proceeds at rates exceeding the tax exempt borrowing rate. The tax-exempt borrowing rate (or bond yield) is calculated pursuant to the IRS code together with all income earned on the accumulated profit pending payment.

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

**3.562.82 Revenue (Limited Liability) Bonds.** Bonds issued by HRSD secured by a specific revenue pledge of rates, rents or fees.

**3.572.83 Revenue Anticipation Notes (RANS).** Notes issued in anticipation of receiving revenues at a future date.

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

**3.592.85 SEC Rule 15C3-1.** See Uniform Net Capital Rule.

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

**3.642.87 Securities Industry and Financial Markets Association (SIFMA).** SIFMA is a high grade market index of 7-day variable rate demand notes that is produced by Municipal Market Data. SIFMA is the benchmark swap floating index in the tax-exempt swap market.

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

**3.632.89 Selling Groups.** *The group of securities dealers who participate in an offering not as underwriters but rather who receive securities less the selling concession from the managing underwriter for distribution at the public offering price.*



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- 2.90 Senior Bonds.** *Bonds and other indebtedness issued by HRSD secured by the Senior Trust Agreement.*
- 2.91 Senior Trust Agreement.** *The Trust Agreement, dated March 1, 2008, as the same may be amended and supplemented from time, between HRSD and a trustee. The Senior Trust Agreement secures HRSD's Senior Bonds.*
- 3.642.92 Serial Bond.** *A bond issue in which a portion of the outstanding bonds matures at regular intervals until eventually all of the bonds have matured.*
- 2.93 Standard & Poor's (S&P).** *Standard & Poor's Global Ratings is a NRSRO.*
- 3.652.94 Stripped Security.** Security that has been transformed from a principal amount with periodic interest coupons into a series of zero-coupon bonds, with the range of maturities matching the coupon payment dates and the redemption date of the principal amount.
- 2.95 Subordinate Bonds.** *Bonds and other indebtedness issued by HRSD and secured by the Subordinate Trust Agreement.*
- 2.96 Subordinate Trust Agreement.** *The Trust Agreement, dated October 1, 2011, as amended and restated as of March 1, 2016, as the same may be amended and supplemented from time to time, between HRSD and a trustee. The Subordinate Trust Agreement secures HRSD's Subordinate Bonds.*
- 3.662.97 Swaption.** An option on a forward swap. The purchaser of a swaption (counterparty) has the right, but not the obligation, to compel the swaption seller (usually an issuer) to enter into a pre-negotiated swap agreement at some future date (exercise date). In exchange for this right, the swaption purchaser pays the swaption seller a premium amount. This amount can be paid up front, at some future date, or as an annuity over time.
- 3.672.98 Syndicate Policies.** The contractual obligations placed on the underwriting group relating to distribution, price limitations and market transactions.
- 3.682.99 Term Bonds.** Bonds from the same issue that share the same maturity dates and interest rate. A term bond is the opposite of a serial bond, which has various maturity schedules at regular intervals until the issue is retired.
- 3.692.100 Termination Payment Risk.** The risk that an issuer is forced to liquidate a swap when it owes a termination payment to its counterparty.

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- | **3.702.101 Treasury Bills.** A non-interest bearing discount security issued by the U.S. Treasury to finance the national debt. Most bills are issued to mature in three months, six months, or one year.
  
- | **3.712.102 Treasury Bonds.** Long-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities of more than 10 years.
  
- | **2.103 Treasury *Inflation Protected Securities (TIPS).*** *The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When a TIPS matures, the adjusted principal or original principal, whichever is greater is paid.*
  
- | **3.722.104 Treasury Notes.** Medium-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities from two to 10 years.
  
- | **2.105 Trust Agreements.** *Collectively, the Senior Trust Agreement and the Subordinate Trust Agreement.*
  
- | **3.732.106 Underwriter.** A dealer that purchases new issues of municipal securities from the Issuer and resells them to investors.
  
- | **3.742.107 Underwriter's Discount.** The difference between the price at which bonds are bought by the Underwriter from the Issuer and the price at which they are offered to investors.
  
- | **3.752.108 Underwriter's Expenses.** Compensates senior managers for out-of-pocket expenses including: ~~underwriters~~*underwriter's* counsel; DTC charges, travel, syndicate expenses, dealer fees, overtime expenses, communication expenses, computer time and postage.
  
- | **3.762.109 Uniform Net Capital Rule.** SEC requirement that member firms as well as nonmember broker-dealers in securities maintain a maximum ratio of indebtedness to liquid capital also called net capital rule and net capital ratio. Indebtedness covers all money owed to a firm, including margin loans and commitments to purchase securities, one reason new public issues are spread among members of underwriting syndicates. Liquid capital includes cash and assets easily converted into cash.
  
- | **3.772.110 Variable Rate Debt- (VRD).** An interest rate on a security which changes at intervals according to an index or a formula or other standard of measurement as stated in the bond contract.

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

### 3.0 GUIDING PRINCIPLES

#### 3.1 RESERVES.

An important metric of HRSD's financial flexibility is its liquidity position as measured by available cash and liquid investments. ~~These reserve policies identify and segregate amounts of cash and investments~~ *Setting a minimum liquidity position* for known risks and obligations ~~and set minimum will provide funding goals that may be used~~ in emergency or other unexpected situations as they arise. The reserves represent an earmarking, for budgetary and Policy purposes, of cash and liquid investments (current and non-current). These reserves are in addition to existing ~~legal~~ reserves required by the Trust ~~Agreement~~ *Agreements, if any*, and any funds earmarked for capital improvements or budget carryover amounts.

**3.1.1 General Reserve.** ~~The General Reserve HRSD will be maintained in an amount necessary maintain sufficient liquidity~~ to ensure adequate working capital for HRSD's operations. ~~The General Reserve at the end of a fiscal year will not be less than 270 or more than 365 days of the current years' projected operating and maintenance expenses less depreciation. This reserve is~~ *These funds are* intended to help HRSD cover unanticipated expenses that cannot be paid from the current fiscal year's budgetary resources. *Liquidity will be determined in terms of Days Cash on Hand which will be measured by current and non-current cash and investments, plus any restricted cash and investments, if available for general system purposes, divided by operating and maintenance expenses less depreciation, divided by 365. This calculation will exclude accrued debt service for the next fiscal year and all funds in the Risk Reserve and Renewal and Replacement Reserve, described below. Days Cash on Hand at the end of a fiscal year may not be less than 270 or more than 365 days.*

In the event the ~~General Reserve is cash and investments are used and reduced to a level that is less than the 270 day minimum~~ to provide funding for unanticipated expenses *and the Days Cash on Hand falls below the 270 day minimum*, the General Manager will submit a plan in writing to the Commission that will restore the ~~General Reserve~~ *Days Cash on Hand* to the policy level over a period not to exceed five fiscal years.

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

- A. HRSD will maintain a Risk Reserve as of the end of the fiscal year of not less than 25 percent of projected annual self-insured claims costs for known, retained risks.
- B. In the event the Risk Reserve is used and reduced to a level that is less than the 25 percent minimum to provide funding of unanticipated self-insured expenses, the General Manager will submit a plan in writing to the Commission that will restore the reserve to the policy level over a period not to exceed five fiscal years.

~~**3.1.23.1.3**~~ **Renewal and Replacement Reserve.** ~~HRSD's~~ *As required by the Enabling Act, HRSD's* Trust ~~Agreement requires HRSD to~~ *Agreements* establish a reserve to finance "anticipated renewals, replacements, extensions, additions and extraordinary repairs" to wastewater system the extent needed. ~~These policies mirror the Trust Agreement requirement.~~ Under the Trust Agreement, *the* funding *of* the ~~reserve~~ *Renewal and Replacement Reserve* is discretionary ~~based on management's judgment.~~

**3.2 BUDGETARY PRINCIPLES.**

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

This forecast will serve as the foundation for the General Manager's annual budget proposal to the Commission.

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

The Commission will adopt an operating budget that:

- A. Is structurally balanced whereby current budgetary revenues are sufficient to meet current budgetary expenses (those that are ongoing in nature);
- B. Considers the affordability of rates within the context of local wealth and income indicators;
- C. Is at a level necessary to ensure the adequate maintenance and operations of the wastewater system;

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- D. Is sufficient to meet Actuarially Determined Contribution (ADC) for HRSD's defined benefit plans;
- D.E. Includes amounts necessary to maintain the required reserves in amounts at least equal to the minimum balances as defined in this Policy;
- E.F. Enables HRSD to meet the debt service coverage targets defined in these policies; and
- F.G. Annually funds at least 15 percent of its capital improvement program in cash.

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

~~Projects included in the CIP will have a multi-year dollar value of not less than \$100,000. Those projects financed with debt will have aggregate useful lives that exceed the final maturity of any related permanent debt financing by at least 120 percent.~~ *A capital project by definition involves expenditures to acquire or add assets of a relatively permanent nature such as property, plant and equipment. The CIP is typically for capital projects (not less than \$100,000), new facilities, expansions and improvements requiring engineering and/or construction services.*

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

- A. The operating budget is adopted by department, with budgetary controls exercised administratively by management at the department 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.
- B. The ~~Capital Budget represents~~ *capital budget is* a ten-year plan. ~~Funds for the Capital Budget are adopted throughout a fiscal year of CIP spending based on a~~ *estimated* project ~~basis. Transfers among projects require approval by~~ *costs and prioritized schedules. Prior to the commencement of construction for any project, the Commission.* ~~Appropriations must appropriate funding for these budgets continue until the purpose of the total project cost. If a project is expected to exceed its initial~~ *appropriation has*

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~~been fulfilled.~~, *the Commission must approve any additional funding through a revised appropriation. .*

**3.3 DEBT AFFORDABILITY.**

HRSD will comply with the debt service coverage ~~requirements~~ *ratios* included in its Trust Agreements. Beyond the Trust Agreements' minimums, HRSD will adopt operating and capital budgets that it projects will enable HRSD to maintain ~~net revenues~~ *a Debt Service Coverage Ratio – Adjusted* at a minimum of 1.5 *times on senior lien debt* and 1.4 times ~~senior and on~~ total debt ~~service requirements, respectively.~~ *When calculating compliance with these coverage requirements, HRSD may make reasonable adjustments to the net revenues as presented on a GAAP basis.*

### **3.4 DERIVATIVES.**

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

#### **ACCOUNTING AND FINANCIAL REPORTING.**

A. **Accounting and Financial Reporting.** HRSD will comply with all Generally Accepted Accounting Principles (GAAP). *As permitted by the Subordinate Trust Agreement, HRSD may present, or cause to be presented, certain calculations that reflect certain adjustments that are not in accordance with GAAP.*

- (1) HRSD will maintain a comprehensive framework of internal controls, and policies and procedures.
- (2) Over a period of not more than every five years, HRSD under the direction of the Finance Committee of the Commission will seek proposals from qualified certified public accountant firms, including the current auditors, if their performance has been satisfactory to perform an annual audit of HRSD's financial statements.

#### **RISK MANAGEMENT.**

B. **Risk Management.** HRSD will make diligent efforts to protect and preserve HRSD assets through a Risk Management program that selectively transfers risk (purchase insurance) for high severity-low frequency exposures and retains risk (self-insurance) for low severity-high frequency exposures.

#### **INTERNAL AUDIT.**

C. **Internal Audit.** HRSD or its designee will conduct internal audits using a risk based approach. Such audit efforts will be approved and directed by the Finance Committee of the Commission.

## **4.0 PROCEDURES**

### **4.1 DEBT MANAGEMENT**

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

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

The most appropriate instrument for a proposed sale of debt shall be determined by financing needs and expected market conditions at the time of sale. HRSD may legal issue debt instruments described below.

- A. Lease Financing.** HRSD may use leasing for facilities or equipment if (1) it can be demonstrated that this is the most cost effective or appropriate way to secure financing, or (2) on small projects that do not warrant entry into the bond market.
- B. Installment Purchases or Conditional Sale Contracts.** HRSD may utilize installment purchase or conditional sale contracts having an original term of one year or less.

~~Bond Anticipation Notes (C. BANs). Includes Commercial Paper, CP and Lines of Credit.~~ *Each* are typically ~~an~~ *short duration debt instruments issued to provide* interim ~~means of~~ financing and, ~~by due to~~ their ~~very nature~~ *short duration*, expose HRSD to interest rate risk *and market access risk* upon renewal. BANs, *CP and Lines of Credit* may be used to ~~(1) to~~

- ~~(1)~~ *To* finance small projects until such time as the project or projects can be incorporated into a larger bond sale, ~~(2) during~~
- ~~(2)~~ *During* times of high interest rates and when the expectation is that interest rates will stabilize in the future or trend downward, ~~(3) when~~
- ~~(4)~~ *(3) When* market conditions are such that a BAN, *CP or Lines of Credit* may be more readily received in the market than long-term debt, or ~~(4)~~ as an interim financing tool during the construction period for a project(s) until such time as the project(s) is placed into service and / or HRSD sells long-term debt.

- D. Long-Term Revenue Bonds.** HRSD may issue long-term revenue bonds to fund ~~capital projects~~ *Capital Assets and Locality Assets*.



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- E. **Revenue Anticipation Notes (RANs).** May be issued to meet HRSD's operational cash flow needs.

~~Lines of Credit. May be considered an alternative to other short-term borrowing options.~~

~~**GUIDELINES ON DEBT ISSUANCE.**~~

**4.1.2 Guidelines on Debt Issuance.**

- A. Trust Agreements.** HRSD will abide by the covenants contained in its Trust Agreements. HRSD considers these covenants to be minimum requirements and generally expects to exceed the requirements of each covenant.
- B. Authorization.** Prior to the issuance of debt, the Commission will pass a resolution authorizing the financing arrangements and setting appropriate limits and parameters for the anticipated financing.
- C. Lowest Cost Financing.** Generally, HRSD intends to pursue the lowest cost of financing within the parameters of this Policy, the Trust Agreements and ~~HRSD's enabling legislation~~ *the Enabling Act*.
- D. Cash Financing from Available Sources.** HRSD will contribute at least 15 percent of each year's ~~capital improvement plan~~ *CIP* in cash.
- E. Project Costs Prior to Debt Issue.** If project costs are incurred prior to the issuance of debt, the Commission will pass a resolution documenting its intent to be reimbursed from bond proceeds.

~~Long-Term Debt Service Coverage. HRSD intends to adopt operating budgets sufficient to produce net revenue sufficient to generate a minimum annual debt service coverage of 1.50 times on senior bonds' debt service requirements and 1.40 times on total bonds' (subordinate and senior obligations) annual debt service requirements.~~

- F. Variable Rate Debt (VRD) and BANs.** VRD and BANs carry inherent interest rate risk. Such securities historically have interest rates lower than fixed rate securities and offer the potential for lower debt service costs over the term of the bond issue. HRSD will consider using VRD when it improves matching of assets and liabilities, potentially lowers debt service costs, adds flexibility to HRSD's capital structure, or diversifies HRSD's investor base.
  - (1)** Debt service on VRD will be budgeted at a conservative rate based on historical fluctuations in interest activity and current market assumptions. Before issuing VRD, HRSD will determine how potential spikes in the debt service will be funded and consider the impact of various interest rate scenarios on its financial position and on various debt ratios.

(2) HRSD will not issue VRD in excess of 15 percent of its total debt portfolio. This limitation, however does not apply to BANs with a maturity greater than nine months from the date of issue or BANs issued as part of an interim financing program. In addition, if HRSD can demonstrate historical and projected sufficiency of offsetting principal and interest coverage from short-term and variable rate investment assets held in unrestricted, non-operating accounts, these assets may be netted from variable rate liabilities.

**G. Derivative Products.** HRSD recognizes that the use of derivatives may aid HRSD in reducing the cost of capital and gaining flexibility in structuring its debt portfolio. The use of such products are governed by the Derivatives section of this policy.

**H. Method of Sale.** HRSD will select a method of sale it believes is the most appropriate and economically advantageous in light of financial, market, transaction-specific and HRSD-related conditions. Acceptable methods of sale may include a competitive sale, a negotiated sale, or a private placement.

**I. Duration of Debt.** HRSD will not issue debt for a period longer than aggregate useful lives of the projects being financed. ~~HRSD does not expect to~~ Pursuant to the Enabling Act, HRSD cannot issue debt with a final maturity more than 40 years from the date of issuance. Factors to be considered when determining the final maturity of debt include: the average life of the assets being financed, relative level of interest rates, and the year-to-year differential in interest rates.

## ~~DEBT STRUCTURE~~

### **4.1.3 Debt Structure**

**A. Interest Rate Structure.** HRSD may make use of both variable and fixed rate debt in accordance with limitations set forth in this policy.

**B. Tax Status.** Tax-exempt debt will be used whenever possible and appropriate.

**C. Maturity Structure.** HRSD's long-term debt may include serial and term bonds. Other maturity structures may also be considered when demonstrated to be advantageous to HRSD.

**D. Coupon Structure.** Fixed rate debt may include par, discount, premium and capital appreciation bonds.

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- E. Redemption Features.** In order to preserve flexibility and refinancing opportunities, HRSD debt shall generally be issued with call provisions. HRSD may consider call provisions that are shorter than traditional and/or non-call debt when warranted by market conditions ~~and opportunities.~~ For each transaction, various call option scenarios will be evaluated so that the most beneficial can be utilized.

- F. Credit Enhancement.** HRSD may use bond insurance and/or line and letters of credit for credit enhancement when it is economically advantageous to do so.
- (1) When considering the use of bond insurance, HRSD will perform a maturity-by-maturity analysis. The economic feasibility of insurance will be analyzed based on the value of insurance as priced to *the earlier of* each maturity's first applicable call date *and the maturity date of such maturity*. Enhancement will be used when present value savings result or when such use permits HRSD to incorporate less restrictive covenants into a transaction which results in greater flexibility or lower user charges. HRSD may insure bonds in maturities that are borderline from an economic feasibility standpoint if warranted by other factors (e.g., use of insurance to attract investor interest where certain bond maturities might otherwise be difficult to sell).
  - (2) When considering the use of a letter of credit or ~~Liquidity Facility~~, HRSD will examine the economic feasibility of a credit facility by taking into account the trading spread, the cost of the credit facility and the interest costs of HRSD's debt if enhanced.
- G. Debt Service Reserve Fund.** ~~HRSD's senior~~ *The Senior* Trust Agreement requires HRSD to fund a Debt Service Reserve Fund when certain debt service coverage and liquidity ratios are not met. HRSD will fund such reserve when and if it is required. ~~The Subordinate Trust Agreement permits, but does not require, the funding of a Debt Service Reserve Fund.~~
- H. Capitalized Interest.** By definition, capitalization of interest increases the amount of debt that is issued. If HRSD capitalizes interest *on one or more series of indebtedness*, it will do so only until such time as the project being financed is expected to be placed in service. ~~Generally, HRSD will capitalize interest for revenue generating facilities only.~~
- I. Refinancing of Debt.** HRSD will refinance debt from time to time to achieve debt service savings as market opportunities arise.
- (1) Since federal regulations limit a tax-exempt issue to one advance refunding (a refinancing prior to a bond's call provision), HRSD will ensure that the advance refunding results in a significant present value savings. A proposed refinancing ~~must~~ *should* achieve a minimum cumulative, net present value savings of three percent of the amount refinanced, *provided HRSD may refinance debt that does not meet this threshold if it obtains other benefits, financial or otherwise, from the refinancing and only if the Commission determines that the*

*issuance of such bonds will be in the District's best interests.*

In addition, HRSD may consider the efficiency of a proposed refinancing transaction. The efficiency evaluation considers the value realized by HRSD when exercising its option to redeem its bonds early calculated under a variety of different interest rate environments versus the savings garnered. In general, HRSD believes a weighted average aggregate efficiency of 70 percent or greater is ~~strong~~ *reasonable benchmark*.

- (2) In any refinancing transaction, HRSD maintains a bias to not extend maturities.

**J. Escrow Structuring.** HRSD will utilize the least costly securities available in structuring refinancing escrows. Unless State and Local Government Securities (SLGS) are used, a certificate will be provided by a third party agent stating that the securities were procured through an arms-length, competitive bid process (in the case of open market securities), and that the price paid for the securities was reasonable within federal guidelines. Under no circumstances will an underwriter, agent or financial advisor sell escrow securities to HRSD from its own account.

**K. Hiring of Professionals.** All members of the financial advisory team including underwriter, financial advisor, bond counsel, and other professionals will be selected in a manner consistent with HRSD's procurement policy for professional services.

#### ~~UNDERWRITER SELECTION.~~

##### *4.1.4 Underwriter Selection.*

**A. Senior Manager Selection.** HRSD will select a senior manager for any proposed negotiated sale. The selection criteria will include but not be limited to the following:

- (1) The firm's ability and experience in managing transactions similar to that contemplated by HRSD
- (2) Prior knowledge and experience with HRSD
- (3) The firm's ability and willingness to risk capital and demonstration of the firm's capital availability and underwriting of unsold balances
- (4) Quality and experience of personnel assigned to HRSD's engagement
- (5) Financing plan presented

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(6) Cost including underwriting fees and anticipated pricing

- B. Co-Manager Selection.** Co-managers may be selected on the same bases as the senior manager with the exception of underwriting fees, which are determined by the senior manager. In addition to their qualifications, co-managers appointed to specific transactions will be a function of transaction size and the necessity to ensure maximum distribution of HRSD's bonds.
- C. Selling Groups.** HRSD may establish selling groups in certain transactions. To the extent that selling groups are used, HRSD may make appointments to selling groups, as the transaction dictates.
- D. Underwriter's Counsel.** In any negotiated sale of HRSD debt in which legal counsel is required to represent the underwriter, the appointment will be made by the Senior Manager.
- E. Underwriter's Discount.** HRSD will evaluate the proposed underwriter's discount against *other proposals and/or* comparable issues in the market. If there are multiple underwriters in the transaction, HRSD will determine the allocation of underwriting liability and management fees. The allocation of fees will be determined prior to the sale date; a cap on management fees, expenses and underwriter's counsel fee will be established and communicated to all parties by HRSD. Any additional expenses must be substantiated.
- F. Evaluation of Underwriter Performance.** HRSD will evaluate each bond sale after completion to assess the following: costs of issuance including underwriters' compensation, pricing of the bonds in terms of the overall interest cost and on a maturity-by-maturity basis, and the distribution of bonds and sales credits.
- G. Syndicate Policies.** For each negotiated transaction, HRSD will establish syndicate policies that will describe the priority of orders and designation policies governing the upcoming sale. ~~HRSD will ensure receipt of each member's acknowledgement of the syndicate policies for the upcoming sale prior to the sale date.~~
- H. Designation Policies.** To encourage the pre-marketing efforts of each member of the underwriting team, orders for HRSD's bonds will be net designated, unless otherwise expressly stated. HRSD shall require the senior manager to:

(1) Fairly allocate bonds to other managers and the selling group.

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- (2) Comply with the Municipal Securities Rulemaking Board's (MRSB) regulations governing the priority of orders and allocations.
- (3) Within 10 working days after the sale date, submit to HRSD a detail of orders, allocations and other relevant information pertaining to HRSD's sale.

**CONSULTANTS.**

**4.1.5 Consultants.**

- A. **Financial Advisor.** HRSD will select a financial advisor (or advisors) to assist in its debt issuance and debt administration processes. Such financial advisor(s) will be ~~a registered~~ *an Independent Registered* Municipal Advisor ~~with~~ *within the meaning of* the Securities ~~and~~ Exchange ~~Commission~~ *Act of 1934, as amended*. Selection of HRSD's financial advisor(s) will be based on, but not limited to, the following criteria:
  - (1) Experience in providing consulting services to entities similar to HRSD
  - (2) Knowledge and experience in structuring and analyzing bond issues
  - (3) Experience and reputation of assigned personnel
  - (4) Fees and expenses
- B. **Bond Counsel.** HRSD debt will include a written opinion by legal counsel affirming that HRSD is authorized to issue the proposed debt, that HRSD has met all legal requirements necessary for issuance, and, *if the interest on the debt to be issued is to be exempt under the IRS Code*, a determination ~~of the proposed debt's federal income tax status~~ *consistent therewith*. The approving opinion and other documents relating to the issuance of debt will be prepared by counsel with extensive experience in public finance and tax issues. The Bond Counsel will be selected by HRSD.
- C. **Conflicts of Interest.** HRSD requires that its consultants and advisors provide objective advice and analysis, maintain the confidentiality of HRSD financial plans, and be free from any conflict of interest. In no case will HRSD's financial advisor be permitted to underwrite any portion of HRSD's bond issues, whether sold competitively or negotiated.
- D. **Disclosure by Financing Team Members.** All financing team members will be required to provide full and complete disclosure, relative to agreements with other financing team members and outside parties. The extent of disclosure may vary depending on the nature of the transaction. However, in



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general terms, no agreements will be permitted which could compromise the firm's ability to provide independent advice which is solely in HRSD's best interests or which could reasonably be perceived as a conflict of interest.

~~COMMUNICATION AND DISCLOSURE.~~

**4.1.6 Communication and Disclosure.**

- A. Rating Agencies.** HRSD seeks to maintain the highest possible credit ratings it believes appropriate for its debt without compromising the delivery of its basic core services. The Director of Finance will manage relationships with the rating analysts assigned to HRSD.
- B. Investors, Bond Insurers, Liquidity Providers.** The Director of Finance will manage relationships using both informal and formal methods to disseminate information.
- C. Continuing Disclosure.** HRSD recognizes that accurate and complete disclosure is imperative to maintaining the high credit quality of its debt. HRSD will comply with all ~~state and federal disclosure of its contractual~~ obligations and *applicable law and* will meet ~~its such~~ disclosure requirements in a timely and thorough manner.
- D. Arbitrage Compliance.** HRSD will maintain a system of record keeping and reporting in order to comply with the Arbitrage Rebate Compliance Requirements of the Internal Revenue Code of 1986, as amended.
- E. Post-Issuance Compliance Procedures.** Separate from this policy, HRSD will maintain and follow post-issuance compliance procedures. Such procedures will include provisions regarding continuing disclosure and arbitrage compliance, among others.

**4.2 ~~Derivatives~~ DERIVATIVES.**

~~APPROACH AND OBJECTIVES~~

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

**A. Specific Objectives for Utilizing Swaps.** HRSD may consider the use of specific ~~Swaps~~swaps if they meet one or more of the benefits previously described in this Policy or if they:

- (1) Result in an expected lower net borrowing cost than traditional debt alternatives;

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- (2) Result in an improved capital structure (e.g., altered pattern of debt service payments or to create variable rate exposure) or better asset/liability matching;
- (3) Cap, limit, or hedge HRSD's exposure to changes in interest rates on a particular financial transaction; or
- (4) Provide a specific benefit not otherwise available.
- (5) Swaps must not be speculative or create unreasonable risk. Each swap will be reviewed on a case-by-case basis to determine whether or not the level of risk is appropriate for HRSD. Examples of ~~Swaps~~ swaps that HRSD considers speculative and which create unreasonable risk include, without limitation:
  - Basis swaps;
  - Constant maturity swaps;
  - Knock-in options on swaps;
  - Swaps that including a floating index multiplier (e.g., three times SIFMA); and
  - Swaps that are not associated with a specific bond issue.
- (6) HRSD prefers Swaps that meet the "consistent critical terms method" for evaluating the effectiveness of Swaps as defined by the Governmental Accounting Standards Board ("GASB") in Statement #53: Accounting and Financial Reporting for Derivative Instruments.

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

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

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

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

All derivatives contracts require Commission approval.

- D. **Permitted Instruments.** HRSD may utilize the following financial products on a current or forward basis, after identifying the objective(s) to be realized and assessing the attendant risks.
- (1) Interest rate swaps, including fixed and floating rate swaps.
  - (2) Options, including swaptions, ~~caps, floors, and collars~~ *Interest Rate Caps, Interest Rate Floors, and Interest Rate Collars.*
    - a. HRSD prefers swaps that have strong price transparency and which are of a type referred to as “plain vanilla,” e.g., a fixed to floating rate SIFMA based interest rate swap.
    - b. Swaps will be subject to the legal provisions set forth in HRSD’s Trust Agreement, applicable debt documents, and statutory requirements.
- E. **Procedure for Submission and Execution.** HRSD may consider ~~Swaps~~ *swaps* that are either presented as proposals or that are developed by HRSD in consultation with its financial advisor and legal counsel. HRSD will give detailed consideration only to proposals that HRSD, in its sole discretion, believes will offer the projected savings or other benefits and will have the ability to meet one or more of the objectives outlined herein.

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- (1) When feasible, ~~Swaps~~swaps should be competitively procured either under a competitive sealed bid or competitive negotiation (e.g. RFP). On a product-by-product basis, HRSD will have authority to negotiate the procurement of financial instruments that have customized or specific attributes designed for HRSD.
- (2) For both competitive and negotiated procurements, the execution of any ~~Swap~~swap transaction will be ~~the~~ subject to receipt of ~~an independent review, analysis and a fairness opinion from HRSD's financial advisor,~~ finding that ~~its~~the terms and conditions of the swap reflect a fair market value of such ~~agreement~~transaction as of the date and time of its execution.
- (3) ~~All~~The execution of all Swaps will be ~~executed with~~subject to receipt of an opinion from a law firm with extensive experience in public finance and tax issues that the contract is a legal, valid and binding obligation of ~~the parties~~HRSD and complies with ~~state~~applicable law.

F. **Swap Analysis and Participant Requirements.** In connection with any ~~Swap~~swap, HRSD, its financial advisor and legal counsel will review the proposed transaction and outline considerations associated with the transaction. Such a review will include the following:

- (1) The identification of the proposed benefit and potential risks, which will include, but not necessarily be limited to, those risks outlined in this Policy;
- (2) Analysis of potential savings and stress testing of the proposed transaction;
- (3) Fixed versus variable rate and swap exposure;
- (4) To the extent HRSD deems relevant, any rating reports or criteria regarding swaps by rating agencies; and
- (5) Legal constraints.

G. **Swap Risks.** In reviewing proposed or possible ~~Swaps~~swaps, HRSD will consider at a minimum each of the following types of risks, as applicable:

- (1) **Counterparty Risk.** The risk of a payment default on a ~~Swap~~swap by a swap counterparty.
- (2) **Termination Risk.** The risk that a ~~Swap~~swap has a negative value and HRSD owes a "breakage" fee if the contract has to be terminated.

- (3) **Tax Risk.** A mismatch between changes in the rate or price on HRSD's underlying debt and the ~~Swap~~swap caused by a reduction or elimination in the benefits of the tax exemption for municipal bonds, e.g. a tax cut that results in an increase in the ratio of tax-exempt to taxable yields.
- (4) **Basis Risk.** A mismatch between the rate on HRSD's underlying debt and the rate paid under the ~~Swap~~swap, e.g. a tax-exempt variable rate issue which trades at 67% of LIBOR while HRSD receives 80% of LIBOR under the ~~Swap~~swap.
- (5) **Liquidity/Remarketing Risk.** The risk that HRSD cannot secure a cost-effective renewal of a Letter or Line of Credit or suffers a failed remarketing with respect to its variable rate debt.
- (6) **Rollover Risk.** The risk that a ~~Swap~~swap maturity does not match maturity of the related debt or asset.

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

- (1) The institutions' long-term, unsecured and unsubordinated obligations are rated at the time of execution of the ~~Swap~~swap by at least one rating agency at least "Aa3" by Moody's Investors Services, Inc. ("Moody's") or "AA" by Standard & Poor's Rating Services ("S&P"), or "AA" by Fitch Ratings ("Fitch") and by at least one other rating agency at no lower than "A2" by Moody's, "A" by S&P, or "A" by Fitch; or
- (2) The institutions' obligations under the ~~Swap~~swap and the Credit Support Annex are unconditionally guaranteed by a bank or non-bank financial institution the long-term, unsecured and unsubordinated obligations of which are rated at the time of execution of the ~~Swap~~swap by at least one credit agency at least "Aa3" by Moody's or "AA" by S&P or "AA" by Fitch and by at least one other rating agency at no lower than "A2" by Moody's, "A" by S&P, or "A" by Fitch.

In the event of downgrade of a swap counterparty below the minimal rating standard set forth above, the counterparty will be required to:

- a. Provide a substitute guarantor or assign the swap contract to an acceptable counterparty meeting the rating criteria, or

b. Provide collateral as described in the Collateral section of this Policy.

- I. **Benefit Expectation.** Financial transactions using swaps or other derivative products related to a debt issue should generate at least two percent or greater projected debt service savings than a traditional debt alternative. Such savings analysis will include, where applicable, the consideration of the probability (based on historical interest rate indices, where applicable, or other accepted analytic techniques) of the realization of savings for the derivative structure. The savings target requirement is intended to reflect the complexity and risk of derivative financial instruments, and should include a risk adjustment for other factors. For example, if the underlying debt is callable and the ~~Swap~~swap is not, then the analysis should include a risk adjustment for this factor.

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

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

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~~affecting~~ *permitting termination based on a downgrade of the* counterparty.

- (2) Governing law for ~~Swaps~~ *swaps* will be New York law *to the extent permitted by law*, but should reflect ~~Virginia~~ *that HRSD's authorization provisions of the related agreement is governed by Virginia law.*
- (3) The specified debt related to credit events in any swap agreement should be narrowly drafted and refers only to specific debt.
- (4) Collateral thresholds will be set on a sliding scale reflective of credit ratings (see Collateral Section).
- (5) Eligible collateral will be as set forth in the Collateral Section.

~~(6)~~ — Termination value will be ~~set~~ *established* by “market quotation” methodology, ~~when HRSD deems appropriate.~~

~~(7)~~ *(6) HRSD will only agree to a termination event to which involves the detriment solicitation of HRSD to quotations from unrelated brokers regarding the extent that valuation of the ratings on the applicable HRSD debt fall below a ratings trigger acceptable to HRSD and the counterparty and no form of credit support or enhancement is in place.* ~~swaps.~~

M. **Notional Amount.** HRSD will limit the ~~total~~ *aggregate* notional amount of derivatives to an amount not to exceed 20 percent of ~~total~~ *aggregate* outstanding debt, ~~adjusted for the amount of any authorized new money bonds not yet issued.~~

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

N. **Final Maturity.** The final maturity of any swap agreement will not extend beyond the lesser of the final maturity date of HRSD's related debt and the expiration date of any letter of credit or ~~Liquidity facility~~ *Facility* on the related bonds unless HRSD has the right to cancel the swap agreement without cost on such expiration date.

O. **Termination Provisions.** Swaps will contain provisions granting HRSD the right to optionally terminate a swap agreement at any time over the term of the agreement. Such a provision will be required even if the termination is at market. In general, exercising the right to terminate an agreement should produce a benefit to HRSD, either through the receipt of a payment from a



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termination or, if the termination payment is made by HRSD, in conjunction with ~~a~~the conversion of the related indebtedness to a more beneficial ~~obligation of interest rate mode or mitigates a risk to~~ HRSD, as will be determined by HRSD in its sole discretion.

~~Downgrade provisions triggering termination of the swap agreement will in no event be worse than those affecting the counterparty. The specified debt related to credit events in any swap agreement will be narrowly defined and refers only to debt of HRSD that could have a materially adverse effect on HRSD's ability to perform its obligations under the Swap.~~

Any termination payment will be ~~set~~established by a "market quotation" methodology, unless HRSD deems an alternate methodology to be appropriate. HRSD's Director of Finance will provide a written report to the Commission with respect to any termination, including the reason(s) why the ~~Swap~~swap was terminated.

P. **Collateral.** As part of any swap ~~agreement~~, HRSD will require collateralization or other forms of credit enhancement to secure any or all swap payment obligations. As appropriate, HRSD, in consultation with its ~~legal counsel and~~ financial advisor, will require collateral or other credit enhancement to be posted by each swap counterparty as follows:

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

counterparty. A complete list of acceptable securities and valuation percentages is included in the Acceptable Collateral section of the Policy.

- (5) The market value of the collateral will be determined on at least a weekly basis, or more frequently if HRSD determines it is in its best interest given the specific collateral.

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

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

Legal modification to an existing ~~Swap~~swap will require approval from the Commission. In modifying any ~~Swap~~swap, HRSD will fulfill all terms of this Policy and refer back to the original procurement and execution procedures outlined in this Policy.

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

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

- (1) A description of all outstanding swap agreements, including, if and when applicable, bond series, type of ~~Swap~~swap, rates paid and received by HRSD, total notional amount, average life of each swap agreement, remaining term of each swap agreement and covenant compliance.
- (2) Highlights of all material changes to swap agreements or new ~~Swap~~swap agreements entered into by HRSD since the last report.

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- (3) The credit rating of each swap counterparty and credit enhancer insuring ~~Swaps~~ *swap* payments, if any.
- (4) A summary of swap agreements that were terminated or that have expired.
- (5) A mark-to-market valuation of swap agreements and the source of the valuation, which HRSD may use for financial reporting purposes.
- (6) *A summary of Collateral postings.*

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**S. Acceptable Collateral.**

<u>Security</u>	<b>Collateral Requirement</b>	
	<b>Valuation Percentage*</b>	<b>Example: \$ Value Based on \$1.0 Million</b>
Cash	100%	\$1.0 million
(x) Negotiable debt obligations issued by the U.S. Treasury Department or the Government National Mortgage Association (Ginnie Mae), or		
(y) <del>mortgage</del> <i>Mortgage</i> backed securities issued by Ginnie Mae (but with respect to either (x) or (y) excluding interest only or principal only Stripped Securities, securities representing residual interests in mortgage pools, or securities that are not listed on a national securities exchange or regularly quoted in a national quotation service) and in each case having a remaining maturity of:		
less than one year	98%	\$1.02 million
greater than one year	95%	\$1.05 million

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

**T. Conformance with Dodd-Frank Act.** It is the intent of HRSD to conform to the requirements relating to legislation and regulations for over-the-counter derivatives transactions under Title VII of the Dodd-Frank Wall Street Transparency and Accountability Act of 2010, as amended from time to time, *and the regulations promulgated thereunder* (herein collectively referred to as Dodd-Frank). It is the policy of HRSD that (i) each swap advisor engaged or to be engaged by HRSD will function as the designated qualified investment representative of HRSD (Designated QIR); (ii) each swap advisor agrees to meet and meets the requirements specified in the Commodity Futures Trading Commission Regulation 23.450(b)(1) or any successor regulation thereto (hereinafter referred to as the QIR Regulation); (iii) each swap advisor provide a written certification to HRSD to the effect that such swap advisor agrees to meet and meets the requirements specified in the QIR Regulation; (iv) HRSD monitor the performance of each swap advisor consistent with the

requirements specified in the QIR regulation; (v) HRSD exercise independent judgment in consultation with its swap advisor in evaluating all recommendations, if any presented by any counterparty with respect to transactions authorized pursuant to this Financial Policy; (vi) HRSD rely on the advice of its swap advisor with respect to transactions authorized pursuant to this Financial Policy and not rely on recommendations, if any, presented by any counterparty with respect to transactions authorized pursuant to this Financial Policy; (vii) HRSD comply with all recordkeeping reporting and certification requirements for end-users as applicable under the Commodity Exchange Act ~~(CEA)~~.

**4.3 ~~Investment~~ INVESTMENT**

**~~ETHICS AND CONFLICTS OF INTEREST~~**

**4.3.1 *Ethics and Conflicts Of Interest.*** The Director of Finance and other employees involved in the investment process will comply with the Code of Virginia Section §2.2-3100 et seq., the state and Local Government Conflict of Interests Act. ~~Specifically, no officer or employee will:~~

**A. *Specifically, no officer or employee will:***

(1) Accept any money, loan, gift, favor, service, or business or professional opportunity that reasonably tends to influence him in the performance of his official duties; or

(2) Accept any business or professional opportunity when he knows there is a reasonable likelihood that the opportunity is being afforded to influence him in the performance of his official duties.

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

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

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

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4.3.1 ~~OPERATING FUNDS~~ Operating Funds

A. **Scope.** Except for funds maintained in trust for retirement and health and welfare benefits for employees and/or retirees, this Policy applies to all HRSD's cash and investments (the Investment Portfolio). The Policy will apply to such monies from the time of receipt until the time the monies leave HRSD's accounts. Although these assets may be pooled for investment purposes, they may be segregated as necessary for accounting and budgetary reporting purposes.

B. **Objectives.**

(1) All investments will be in compliance with the Code of Virginia Sections §2.2-4400 et seq. and §2.2-4500 et seq. and the Trust ~~Agreement~~ *Agreements*.

(2) The cash management and investment activities of HRSD will be conducted in a manner which is consistent with *applicable law and* prevailing prudent business practices which may be applied by other public organizations of similar size and financial resources.

(3) The Investment Portfolio will be managed to accomplish the following fundamental goals:

a. **Safety of Principal.** The single most important objective of the investment program is the preservation of principal of those funds within the Investment Portfolio.

b. **Maintenance of Liquidity.** The Investment Portfolio will be managed at all times with sufficient liquidity to meet all daily and seasonal needs, ~~as well as~~ to fund special projects and other operational requirements which are either known or which might reasonably be anticipated, ~~and to provide adequate Self-Liquidity, if applicable.~~

c. **Maximizing Return.** The Investment Portfolio will be managed so as to maximize the return on investments within the context and parameters set forth by the safety and liquidity objectives above.

C. **Standard of Prudence.** All investments will be in compliance with the Code of Virginia Sections §2.2-4400 et seq. and §2.2-4500 et seq. and the Trust Agreement. Public funds held and invested by HRSD ~~will be~~ held ~~in trust~~ for *the benefit of* its rate payers and any investment of such funds will be made solely in the interest of the rate payers and with the care, skill,

prudence, and diligence under the circumstances then prevailing that a person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

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

### General Account Structure.

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

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



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- E. Authorized Investments.** Under ~~the guidelines of~~ the Trust Agreement, the Director of Finance may invest in the following securities that are in compliance with ~~the Virginia Code~~ *applicable law*. The Director of Finance, however, may impose additional requirements and restrictions in order to ensure that HRSD's goals are met. Permitted investments for the Investment Portfolio include:
- (1) **U.S. Treasury Obligations.** Bills, notes and any other obligation or security issued by or backed by the full faith and credit of the United States ~~Treasury of America~~. The final maturity will not exceed a period of five- years from the time of purchase.
  - (2) **Federal Agency Obligations.** Bonds, notes and other obligations of the United States, and securities ~~except for Collateralized Mortgage Obligations~~ issued by any federal government agency or instrumentality or government sponsored enterprise, *provided that such investments must be rated in one of the two highest rating categories by at least one NRSRO and or the have the same rating as those of U.S. Treasury obligations*. The final maturity will not exceed a period of five years from the time of purchase.
  - (3) **Municipal Obligations.** Bonds, notes and other general ~~obligations~~ *obligation indebtedness*, upon which there is no default, ~~has with~~ a rating of at least AA ~~by Standard & Poors from S&P~~ and Aa ~~by from~~ Moody's Investor Services, ~~matures~~ *maturing* within five years of the date of purchase, and otherwise ~~meets~~ *meeting* the requirements of Code of Virginia §2.2-4501. However, HRSD is prohibited from purchasing its own debt for the purpose of investing its Operating Funds. Please see the *Self-Liquidity* section of this policy for important language related to Self-Liquidity and HRSD's purchase of its own debt.
  - (4) **Commercial Paper.** Prime quality commercial paper, with a maturity of 270 days or less, issued by domestic corporations (corporations organized and operating under the laws of the United States or any state thereof) provided that the issuing corporation, or its guarantor, has a short-term debt rating of no less than "A-1" (or its equivalent) ~~by from~~ at least two of the NRSROs.
  - (5) **Bankers Acceptance.** Issued by domestic banks or a federally chartered office of a foreign bank, which are eligible for purchase by the Federal Reserve System with a maturity of 180 days or less. The issuing corporation, or its guarantor, must have a short-term debt

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rating of no less than "A-1" (or its equivalent) ~~by~~*from* at least two of the NRSROs.

- (6) **Corporate Notes.** High quality corporate notes with a rating of at least "Aa" by Moody's ~~Investor's Service, Inc.~~ and at least "AA" by ~~Standard & Poor's, Inc.~~ *S&P*. The final maturity will not exceed a period of five years from the time of purchase.
- (7) **Negotiable Certificates of Deposit and Bank Deposit Notes.** Negotiable certificates of deposit and negotiable bank deposit notes of domestic banks and domestic offices of foreign banks with ~~a rating~~*ratings* of at least A-1 ~~by Standard & Poor's, Inc., and from~~ P-1 ~~by from~~ Moody's ~~Investor Service, Inc.~~, for maturities of one year or less, and a rating of at least AA ~~by Standard & Poor's from~~ *S&P* and Aa ~~by~~ Moody's ~~Investor Service, Inc.~~, for maturities over one year. The final maturity may not exceed a period of five years from the time of purchase.
- (8) **Money Market Mutual Funds (Open-Ended Investment Funds).** Shares in open-end, no-load investment funds provided such funds are registered under the Federal Investment Company Act of 1940, provided that the fund is rated at least "AAAm" or the equivalent by an NRSRO. The mutual fund must comply with the diversification, quality and maturity requirements of Rule 2(a)-7, or any successor rule, of the SEC, provided the investments by such funds are restricted to investments otherwise permitted by the Code of Virginia for political sub-divisions.
- (9) **Local Government Investment Pool (LGIP).** A specialized ~~money market~~ fund created in the 1980 session of the General Assembly designed to offer a convenient, *liquid*, and cost-effective investment vehicle for public entities. The Fund is administered by the Treasury Board of the Commonwealth of Virginia and is rated AAAM by Standard & Poor's, Inc.
- (10) ***SNAP Fund.*** *Any pooled investment vehicle established for the investment of bond proceeds under the Government Non-Arbitrage Investment Act (Chapter 47 of Title 2.2 of the Code of Virginia).*
- ~~(10)~~(11) **Repurchase Agreements.** In overnight, term and open repurchase agreements provided that the following conditions are met:
  - a. The contract is fully secured by deliverable U.S. Treasury and Federal Agency obligations as described in paragraph 1 and 2

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above (with a maximum maturity of five years), having a market value at all times of at least 102 percent of the amount of the contract;

- b. A Master Repurchase Agreement or specific written Repurchase Agreement governs the transaction;
- c. The securities are free and clear of any lien and held by an independent third party custodian acting solely as agent for HRSD, provided such third party is not the seller under the repurchase agreement;
- d. A perfected first security interest under the Uniform Commercial Code in accordance with book entry procedures prescribed at 31 C.F.R. 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the benefit of HRSD;
- e. For repurchase agreements with terms to maturity of greater than one day, HRSD will value the collateral securities daily and require that if additional collateral is required then that collateral must be delivered within one business day (if a collateral deficiency is not corrected within this time frame, the collateral securities will be liquidated);
- f. The counterparty is a:
  - (1) Primary government securities dealer who reports daily to the Federal Reserve Bank of New York; or
  - (2) A bank, savings and loan association, or diversified securities broker-dealer having at least \$5 billion in assets and \$500 million in capital and subject to regulation of capital standards by any state or federal regulatory agency; and
  - (3) The counterparty meets the following criteria: ~~(1)~~ A long-term credit rating of at least 'AA' or the equivalent from an NRSRO; ~~(2)~~ Has has been in operation for at least five years; and ~~(3)~~ Isis reputable among market participants.

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**12. Collateralized Bank Deposits.** Certificates of deposit and other evidence of deposit as permitted by Section 2.2.4400 et seq. of the Code of Virginia.

**US 13. U.S. Dollar Denominated Supra Sovereign Agency Bonds.** Bonds and other obligations issued, guaranteed or assumed by the International Bank for Reconstruction and Development, by the Asian Development Bank or by the African Development Bank, provided that the obligation is rated by an NRSRO the higher of "AA" or the rating on **US U.S.** Treasury obligations.

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

<u>Permitted Investment</u>	<u>Sector Limit</u>	<u>Issuer Limit</u>
U.S. Treasury Obligations	100%	100%
Federal Agency Obligations	100%	35%
Municipal Obligations	15%	5%
Commercial Paper	25%	5%
Bankers' Acceptances	25%	5%
Corporate Notes	25%	3%
Negotiable Certificates of Deposit and Bank Deposit Notes	<del>40</del> 25%	3%
Money Market Mutual Funds	100%	100%
LGIP	100%	100%
<i>SNAP Fund (bond proceeds only)</i>	<i>100%</i>	<i>100%</i>
Repurchase Agreements	35%	35%
Collateralized Bank Deposits	100%	100%
Supra Sovereign Agency Bonds	15%	10%

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

- F. **Maximum Maturity.** Maintenance of adequate liquidity to meet the cash flow needs of HRSD is essential. Accordingly, to the extent possible, the investment portfolio will be structured in a manner that ensures sufficient cash is available to meet anticipated liquidity needs. Whenever practical, selection of investment maturities will be consistent with the known cash requirements of HRSD in order to minimize the forced sale of securities prior to maturity. For the purposes of the Investment Policy:
- (1) The **Operating Liquidity Strategy** will be invested in short-term investments maturing in 12 months or less. Because of the difficulties inherent in accurately forecasting all cash flow requirements, at least 25 percent of this strategy will be continuously invested in readily available funds such as bank deposit accounts, money market funds and overnight repurchase agreements and at least 75 percent of this strategy will be invested in securities with maturities less than 180 days.
  - (2) The **Total Return Strategy** will be invested in permitted investments with a stated maturity of not more than five years from the date of purchase. To manage volatility, the Director of Finance will from time-to-time determine an investment duration target which will not exceed three years and which will be comparable to the selected performance standards as identified under the Performance Standards section of this Policy.
  - (3) The Capital Investment Strategy will be invested in compliance with the specific requirements of the Trust ~~Agreement and any supplemental indenture or covenants.~~ *Agreements*. However, in no case will bond proceeds, or funds set aside for capital projects, be invested in securities with a term to maturity that exceeds the expected disbursement date of those monies.
  - (4) Debt service reserve funds with longer term investment horizons may be invested in securities exceeding five years ~~if the maturity of such investment is made to coincide as nearly as practical with the expected use of funds,~~ *provided that such investments will mature no later than the first call date for the related bonds.*
- G. **Security Downgrades.** In the event that any security held in the Investment Portfolio is downgraded below AA or equivalent rating by any NRSRO, the security will be sold within 180 days of such downgrade.
- H. **Self-Liquidity.** In the event that HRSD determines to provide ~~self-liquidity~~ *Self-Liquidity* for any issuance of ~~commercial paper, variable rate~~

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~~demand bonds, variable rate demand obligations~~ CP, VRDs, or ~~other structures, certain~~ related indebtedness investments of the Total Return Strategy will be used to ~~back~~ support such obligations, *if necessary, provided that HRSD will not be legally obligated to pledge such funds for such purpose.* The Strategy's investments identified to provide self-liquidity coverage will be sufficient to meet the quality, volatility, liquidity, and maturity guidelines of the NRSRO's then providing ratings on HRSD's debt obligations. If needed, HRSD is permitted to purchase its own debt on a temporary basis or for the retirement of the debt. Such purchase will not be limited to the sector and issuer diversification limits as set forth in the Portfolio Diversification section of this policy or the maximum maturity requirement as set forth in the ~~General Account Structure~~-Capital Investment Strategy section of this Policy.

- I. **Investment of Bond Proceeds.** HRSD intends to comply with all applicable sections of the Internal Revenue Code as it relates to Arbitrage Rebate and the investment of bond proceeds. All investment records will be maintained to ensure compliance with all regulations.
- J. **Collateralization of Bank Deposits.** All bank deposits of HRSD should be considered Public Deposits as defined by Code of Virginia Security for Public Deposits Act (Section 2.2-4400 et seq.) and all deposits must be made with Qualified ~~Pubic~~Public Depositories *within the meaning of such law.*
- K. **Selection of Broker/Dealers.** All broker/dealers who desire to provide investment services to HRSD will be provided with current copies of HRSD's ~~Investment~~Financial Policy. Before an organization can provide investment services to HRSD, it must confirm in writing that it has received and reviewed HRSD's ~~Investment~~Financial Policy.
  - (1) At the request of the Director of Finance, broker/dealers will supply HRSD with information sufficient to adequately evaluate their financial capacity and creditworthiness. The following information will be provided:
    - (a) Audited financial statements;
    - (b) Regulatory reports on financial condition;
    - (c) Proof of Financial Institution Regulatory Authority (FINRA) certification and of state registration;
    - (d) A sworn statement by an authorized representative of the broker/dealer pledging to adhere to Capital Adequacy

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Standards established by the Federal Reserve Bank and acknowledging the broker/dealer understands that HRSD has relied upon this pledge; and

- (e) Any additional information requested by the Director of Finance in evaluating the creditworthiness of the institution.
- (2) Only firms meeting the following requirements will be eligible to serve as broker/dealers for HRSD:
  - (a) "Primary" dealers and regional dealers that qualify under Securities and Exchange -Commission Rule 15C3-1 (uniform net capital rule);
  - (b) Capital of at least -\$10,000,000;
  - (c) Registered as a dealer under the Securities Exchange Act of 1934;
  - (d) Member of the ~~Financial Institution Regulatory Authority (FINRA)~~;;
  - (e) Registered to sell securities in the Commonwealth of Virginia; and
  - (f) Engaged in the business of effecting transactions in U.S. government and agency obligations for at least five consecutive years.
- (3) HRSD will designate broker/dealers on an annual basis.

~~(4)~~ —

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

that generates the highest sale price, consistent with the diversification requirements.

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

(1) All securities in HRSD's investment portfolio will be held in the name of HRSD and will be free and clear of any lien. Further, all investment transactions will be conducted on a delivery versus payment basis. ~~The custodial agent will issue a safekeeping receipt to HRSD listing the specific instrument, rate, maturity, and other pertinent information.~~ On a monthly basis, the custodial agent will provide reports that list all securities held for HRSD, the book value of holdings, and the market value as of month-end.

(2) HRSD officials and representatives of the custodial agent responsible for, or in any manner involved with, the safekeeping and custody process of HRSD will be bonded in such a manner as to protect HRSD from losses from malfeasance and misfeasance.

(3) Original copies of non-negotiable certificates of deposit and confirming copies of all other investment transactions must be delivered to HRSD or its custodial agent.

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

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

**P. Performance Standards.** The investment portfolio will be designed to obtain at least a market level rate of return, given budgetary and economic cycles, commensurate with HRSD's investment risk and cash flow needs. HRSD's



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portfolio management approach will be active, allowing periodic restructuring of the investment portfolio to take advantage of current and anticipated interest rate movements.

- (1) The returns on HRSD's investments will be compared on a quarterly basis to indices of U.S. Treasury securities having similar maturities or to other appropriate benchmarks.
- (2) The applicable benchmarks for each of HRSD's three major ~~investment~~*Investment* strategies are listed below:

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

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

- (1) Only firms meeting the following requirements will be eligible to serve as investment manager for HRSD:
  - (a) Registered with the SEC under the Investment Advisers Act of 1940;
  - (b) Must provide to HRSD an annual updated copy of Form ADV, Part II;

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- (c) Must be registered to conduct business in the Commonwealth of Virginia; and
  - (d) Must have proven experience in providing investment management services under Code of Virginia §Sections 2.2-4500 et seq.
- (2) Any firm engaged by HRSD to provide investment services will:
- (a) Maintain a list of approved security brokers/dealers selected by creditworthiness who are authorized to provide investment services in the Commonwealth of Virginia;
  - (b) Provide monthly reports of transactions and holdings to the Director of Finance;
  - (c) Provide performance reports, at least quarterly, that display investment performance in comparison to HRSD's investment benchmarks; and
  - (d) Not collect any soft dollar fees from any broker/dealer or other financial firm in relation to services provided to HRSD.

**4.3.2 ~~RETIREE HEALTH PLAN TRUST~~<sup>3</sup> *Retiree Health Plan Trust***

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

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and asset allocation to provide sufficient diversification and overall return over the long-term time horizon of the Trust.

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

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

- (1) The Administrator has a fiduciary duty to the Trust and the participants and beneficiaries, which requires integrity and competence. Integrity requires management of the Trust and the assets for the exclusive benefit of the Trust's participants and beneficiaries. The required level of competence is that of a prudent person acting in like capacity and familiar with such matters would act. This standard of competence extends to the retention and supervision of expert investment advice and all other areas of Trust's management.

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- (2) In implementing this Policy, the Administrator, in accord with the provisions of the Trust, may delegate certain functions ~~such as~~ *an to:*
- (a) *An investment advisor (the Investment Advisor) to assist the Administrator in the investment process and to maintain compliance with this Policy. The Investment Advisor may assist the Administrator in establishing investment policy, objectives, and guidelines; selecting. The Investment Advisor will adjust asset allocation for the Trust subject to the guidelines and limitations set forth in this Policy. The Investment Advisor will also select investment managers; (Managers) and strategies consistent with its role as a fiduciary for the Trust. The investment vehicles allowed may include mutual funds, commingled trusts, separate accounts, limited partnerships and other investment vehicles deemed to be appropriate by the Investment Advisor. The Investment Advisor is also responsible for monitoring and reviewing such investment managers over time; measuring and evaluating investment performance; and other tasks as deemed appropriate in its role as Advisor for Trust assets. The Investment Advisor may also select investment managers with discretion to purchase, sell, or hold specific securities, such as Exchange Traded Funds, that will be used to meet the Trust's investment objectives. The Investment Advisor shall never take possession of securities, cash or other assets of the Trust, all of which shall be held by the custodian. The Investment Advisor must be registered with the SEC. The Director of Finance will conduct appropriate due diligence in the selection of the Investment Advisor and will periodically confirm the Investment Advisor's qualifications by visiting its operational facilities that provide services to the Trust and HRSD.*
  - (b) *A custodian to physically maintain possession of securities owned by the Trust, collect dividend and interest payments, redeem maturing securities, and effect receipt and delivery following purchases and sales, among other things. The custodian may also perform regular accounting of all assets owned, purchased, or sold, as well as movement of assets into and out of the Trust.*
  - (c) *A trustee appointed by the Trust, such as a bank trust department, if the Trust does not have its own Trustees, to assume fiduciary responsibility for the administration of Trust assets; provided, however, that if the Administrator shall have*

*appointed an investment advisor, then any trustee appointed under this paragraph shall have no authority with respect to selection of investments.*

*(d) Specialists such as attorneys, auditors, actuaries and, retirement plan consultants to assist the Administrator in meeting its responsibilities and obligations to administer Trust assets prudently.*

(3) HRSD members, staff, investment advisors, consultants and managers will refrain from engaging in any activity that impairs (or has the potential to impair) their ability to make impartial investment decisions for the Trust. Persons who nevertheless engage in such conduct will immediately disclose the conduct to the Administrator. HRSD members, staff, investment managers and advisers will also immediately disclose to the Administrator any activity engaged in by their respective firms, employers, employees and agents which conflicts (or has the potential to conflict) with the execution of HRSD's investment program for the Trust.

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

(1) **Funding.** The primary objective of the Administrator is to maintain the assets of the Trust at the funding level necessary to provide a pool of funds to be used to provide post-retirement welfare benefits to Plan participants. To obtain this objective the Administrator will diversify Trust assets and adopt ~~a moderately aggressive~~ investment ~~posture relative to other retirement systems~~ *strategy consistent with the Trust's investment objectives.*

(2) **Safety.** In order to maintain the safety of Trust assets the Administrator will:

(a) Invest assets of the Trust in a manner consistent with the following fiduciary standards: all transactions undertaken must be for the sole interest of Trust beneficiaries and defray reasonable expenses in a prudent manner, and assets are to be diversified in order to minimize the impact of large losses in individual investments.

(b) Conserve and enhance the value of Trust assets in real terms through asset appreciation and income generation, while maintaining a moderate investment risk profile.

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- (c) Minimize principal fluctuations over the Time Horizon (as defined below).
  - (d) Achieve a long-term level of return commensurate with contemporary economic conditions and equal to or exceeding the investment objective set forth in this policy under the Performance Expectations section of the Policy.
- (3) **Liquidity.** The Trust's Investment Portfolio in combination with the projected net cash flows will provide sufficient liquidity to enable the Plan to meet all operating requirements which may be reasonably anticipated.

**Investment Guidelines**

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

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

*can include inflation protected securities, commodities, certain real estate investments and hedge funds.*

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

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

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

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

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



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**INVESTMENT ASSETS**

<u>Asset Classes</u>	<u>Asset Range</u>	<u>Weightings Target</u>
<b>Growth Assets</b>		
Domestic Equity	<del>23% - 43%</del> 19% - 59%	<del>33%</del> 39%
International Equity	<del>11% - 31%</del> 1% - 41%	21%
REITs	<del>0% - 12%</del>	<del>6%</del>
Inflation Hedge Other	0% - 10%	<del>30%</del>
<b>Income Assets</b>		
Fixed Income	<del>25% - 65%</del> 20% - 60%	40%
Other	0% - 10%	0%
<b>Real Return Assets</b>		
	0% - 20%	0%
<b>Cash Equivalents</b>		
	0% - 20%	0%

**LIQUIDITY ASSETS**

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

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

~~Additional Investment Guidelines. In addition to the asset allocation guidelines set forth above, the Administrator or Investment Advisor, as appropriate, will allocate Trust assets in accordance with the following summary of additional guidelines:~~

<u>Asset Class</u>	<u>Not to exceed as a percentage of Asset Class</u>
<del>Domestic Equity</del>	



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~~aggregate Trust market value of the common stock of one corporation 5%~~

~~aggregate Trust market value of the common stock in one industry category 25%~~

~~International Equity~~

~~aggregate Trust market value of the non-U.S. common stock of emerging market countries 35%~~

~~Fixed Income~~

~~aggregate Trust market value of any single issue (excluding U.S. Treasury and Federal Agencies) 5%~~

~~aggregate Trust market value of Federal Agency issues 35%~~

~~aggregate Trust market value of securities assigned a rating of below Baa3 or BBB 20%~~

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

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

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

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

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

- (1) The investment manager must be a bank, insurance company, or investment adviser as defined by the Investment Advisers Act of 1940.
- (2) With respect to Trust assets invested in a mutual fund, the Manager must provide historical quarterly performance data for the mutual fund compliant with SEC and Financial Industry Regulatory Authority (FINRA) standards.
- (3) The investment manager must provide historical quarterly performance data compliant with Global Investment Performance Standards (GIPS), *SEC, FINRA or industry recognized standards, as appropriate*, calculated on a time-weighted basis, based on a composite of all fully discretionary accounts of similar investment style and reported net of fees.
- (4) The investment manager must provide detailed information on history of the firm, key personnel, key clients, fee schedule (including most favored nation clauses) and support personnel.
- (5) The investment manager must clearly articulate the investment strategy that will be followed and document that the strategy has been successfully adhered to over time.
- (6) *The investment professionals making the investment decisions must have a minimum of three years of experience managing similar strategies either at their current or at previous firms.*

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(7) The investment manager for portfolios other than Pooled Vehicles (see the following Guidelines for Portfolio Holdings) must confirm that it has received, understands and will adhere to this policy and any manager specific policies by signing a consent form.

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

(1) Until the Trust reaches a size for which investment in separate accounts is viable and appropriate, the Trust will invest in Pooled Vehicles such as commingled and/or mutual funds. Pooled Vehicles are regulated by either the Office of the Comptroller of the Currency (OCC) or the SEC and provide the Trust the ability to appropriately diversify its holdings in a cost effective manner. Inherent within the Pooled Vehicle structure is the limitation on customizing the underlying security selection based on Trust specific economic, social or other screens.

~~Pooled Vehicles.~~ (2) **Direct Investments by Advisor.** Every effort ~~will~~ *shall* be made, to the extent practical, prudent and appropriate, to select ~~commingled funds and/or mutual funds~~ *investments* that have investment objectives and policies that are consistent with this Policy *Statement* (as outlined ~~below in Equities, Fixed Income and Cash Equivalents the following sub-sections~~ *of the Guidelines for Portfolio Holdings*). However, given the nature of ~~commingled funds and mutual funds~~ *the investments*, it is recognized that there may be deviations between this Policy *Statement* and the objectives of these ~~pooled vehicles~~. ~~A commingled fund or mutual fund will not be included in the Trust portfolio unless it complies with the~~ *investments*.

(3) **Limitations on Investment** ~~Company Act of 1940's diversification requirement~~ *Manager's Portfolios*.

~~**Separate Accounts.** Upon attaining asset size for which use of a separate account structure is viable and appropriate, the selection of individual asset managers will be considered along with Pooled Vehicles for inclusion in the Trust. Separate accounts are governed by contract. When using separate accounts, the Trust may develop addenda to this Policy to constrain the individual asset manager using economic, social or other screening techniques.~~

~~**Equities.** Investment in common stocks, preferred stocks and publicly traded Real Estate Investment Trusts will be restricted to high quality, readily marketable securities of corporations that are actively traded on a major exchange.~~

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~~———— Not more than five percent of the total stock~~ **Growth Assets.**

**Equities.** *Not more than five percent or weighting in the relevant index (Russell 3000 Index for U.S. issues and MSCI ACWI ex-U.S. for non-U.S. issues) of the total equity portfolio valued at market may be invested in the common stock of any one corporation. Ownership of the shares of one company will not exceed two percent of those outstanding. Not more than 25 percent of stock valued at market may be held in any one industry category sector, as defined by the Global Industry Classification Standard (GICS)*

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

~~————~~ (2) **International Equities.** The overall non-U.S. equity allocation, if any, should include a diverse global mix ~~of at least 40 that is comprised of the equity of companies from multiple countries. The emerging markets allocation, if any, as defined by Morgan Stanley Capital International Inc. should be limited to 35 percent of the non-U.S. portion of the portfolio, regions and sectors.~~ *of at least 40 that is comprised of the equity of companies from multiple countries. The emerging markets allocation, if any, as defined by Morgan Stanley Capital International Inc. should be limited to 35 percent of the non-U.S. portion of the portfolio, regions and sectors.*

~~———— In order to maintain an effective money management structure that is style neutral, the target ratio of growth to value allocation in all market capitalizations will be a ratio equal to one (1:1). However, in no case will the growth to value allocation in any market capitalization exceed a ratio greater than two (2:1). Conversely, value will not exceed growth by the same ratio.~~

~~**Fixed Income.** Fixed income investments will be high quality, marketable securities with a preponderance of the investments in (1) U.S. Treasury, federal agencies and U.S. Government guaranteed obligations, and (2) investment grade municipal or corporate issues including convertibles.~~

~~————~~ (b) **Income Assets.**

**Fixed Income.**

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

~~Federal Agencies of any one issuer should not exceed 35 percent of the total bond portfolio.~~

The overall *weighted* rating of the fixed income assets will be at least "A", ~~according to one of AA", based upon the three rating agencies (Fitch, Moody's or Standard & Poor's). In cases where the yield spread adequately compensates for additional risk, securities where two of the three rating agencies (Fitch, Moody's or Standard & Poor's) have assigned ratings of Baa3 or BBB, can be purchased up to such assets from a maximum of 20~~NRSRO.

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

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

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

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

(d) **Real Return Assets.**

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

If the credit quality of any one issue should drop below investment grade (as defined by two of the three rating agencies – Fitch, Moody's and Standard & Poor's), the investment manager should notify the Administrator and Investment Advisor immediately detailing a plan of action regarding the security.

~~Active bond management may require transactions that will temporarily lower the return or change the maturity of the portfolio in anticipation of market changes. Holdings of individual securities should be liquid so as not to incur unnecessary transaction costs.~~

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

(f) **Additional Limitations.**

(1) **Prohibited Investments.** ~~The~~ *Except for purchase within authorized investments, the* following investments and transactions are not authorized and will not be purchased: ~~letter~~

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

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*Further*, derivatives, options or futures for the *sole* purpose of portfolio leveraging (portfolio leveraging refers specifically to investments which can lead to losses in excess of 100 percent of initial invested capital) are also prohibited. ~~Neither direct~~ *Direct ownership of* real estate ~~equity nor~~, natural resource properties such as oil, gas or timber ~~may be held except by purchase of publicly traded securities or within Pooled Vehicles.~~ ~~The~~ *and the* purchase of collectibles is also prohibited.

(2) **Safekeeping.** All securities will be held by a third-party custodian ~~appointed~~ *selected through a public procurement process* by the Administrator, pursuant to contract approval, for safekeeping. The custodian will produce statements monthly listing the name and value of all assets held, and the dates and nature of all transactions. Assets of the Trust held as liquidity or investment reserves will, at all times, be invested in interest-bearing accounts. *Investments and portfolio securities may not be loaned.*

(g) **Control Procedures.**

(1) **Legal Requirements, Controls, and Investment Policy Statement Review.** At all times the Administrator will comply with all local, State, and federal reporting requirements. The Administrator will establish, maintain and review prudent internal controls for the assets of the Trust, including those used by HRSD staff, and the Trust's Investment Advisor and custodian. The Administrator will provide for annual review of the adequacy and compliance of these control procedures.

(2) The Administrator will review the ~~Investment~~ *Financial Policy Statement* no less than annually, ~~and provide documentation to HRSD when their review is complete.~~ Specifically, the investment ~~policy~~ *component of the Financial Policy* will be reviewed when any one of the following occurs:

- Change in investment advisors
- Initial use of investment vehicles other than mutual funds

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- Significant change in Trust assets
- Significant change in funded status
- Significant change in market conditions

(3) **Review of Investment Objectives.** The Administrator will review annually the appropriateness of the Policy for achieving the Trust's stated objectives. It is not expected that the Policy will change frequently. In particular, short-term changes in the financial markets should not require an adjustment in the investment policy.

(4) **Review of Investment Performance.** The Administrator, on a quarterly basis, will review the total Trust investment performance, including all fees and costs and provide a report to the Commission. In addition, should investment functions be delegated, the Investment Advisor will be responsible for keeping the Administrator advised of any material change in investment strategy, investment managers, and other pertinent information potentially affecting performance of the Trust.

—The Administrator will compare the investment results including all fees and costs on a quarterly basis to appropriate benchmarks, as well as to market index returns in both equity and debt markets. Examples of benchmarks and indexes that will be used include the ~~S&P 500 Index for large cap equities, Russell 2000 Index for small cap equities, MSCI Europe, Australia, and Far East Index (EAFE) for international equities, Barclay's Aggregate Bond Index for fixed income securities, and the U.S. 91 Day T-bill Index for cash equivalents.~~:

- ~~Voting of Proxies.~~—*Russell 3000 Index for broad U.S. equity strategies;*
- *S&P 500 Index for large cap U.S. equities,*
- *Russell 2000 Index for small cap U.S. equities,*
- *MSCI ACWI ex-U.S. Index for broad based non-U.S. equity strategies;*
- *MSCI Europe, Australasia, and Far East (EAFE) Index for developed markets international equities,*



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- *Barclays Capital Aggregate Bond Index for fixed income securities, and*
- *U.S. 91 Day T-bill for cash equivalents*
- *Russell 3000 Index will be used to benchmark the U.S. equities portfolio;*
- *MSCI ACWI ex-U.S. Index will be used to benchmark the non-U.S. equities portfolio;*
- *Barclays U.S. Aggregate Bond Index will be used to benchmark the fixed income portfolio.*

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

- (5) ***Voting of Proxies.*** *The Administrator recognizes that proxies are a significant and valuable tool in corporate governance. The voting rights of individual stocks held in separate accounts or collective, common, or pooled funds will be exercised by the investment managers in accordance with their own proxy voting policies. The voting rights of funds will be exercised by the Investment Advisor.*

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

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

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

#### **4.4 ASSET CAPITALIZATION**

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

**A. Cost.**

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

**B. Useful Life.**

- (1) *Assets with an economic useful life of less than 60 months are required to be expensed for financial statement purposes, regardless of the acquisition or production cost.*

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(2) *Major repairs that substantially extend the life of an asset or expand its service capacity may be capitalized. For example, if a roof repair or coating is expected to extend the asset's useful life 20 years or beyond, the cost may be capitalized.*

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

*Treatment plants, buildings and facilities 30 years*

*Interceptor systems 50 years*

*Office furniture, computer hardware and equipment 5-10 years*

*Software and intangible assets 5-7 years*

*Automotive 5 years*

**5.0 RESPONSIBILITY AND AUTHORITY**

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

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

HRSD understands that changes in the capital markets or other unforeseen circumstances may from time to time produce situations that are not covered by the Policy and will require modifications or exceptions to achieve the Policy goals. In these cases, HRSD's management flexibility is appropriate provided specific authorization from the HRSD Commission is obtained. Failure to comply in any manner with the Policy will not result in any liability on the part of HRSD to any party.

HRSD, together with HRSD's financial advisor and legal counsel, will no less than bi-annually review the Policy and recommend appropriate changes.

Approved:

**COMMISSION ADOPTED POLICY**  
*Financial Policy*



Adopted: May 26, 2009	Revised: <del>March 24, 2015</del> <i>DRAFT</i> <i>April 25, 2017</i>	Page 70 of 70
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Attest: ~~Vishnu K. Lakdawala, Ph.D.~~  
*Frederick N. Elofson*  
Commission ~~Chairman~~ *Chair* \_\_\_\_\_ Date

Jennifer L. Cascio \_\_\_\_\_ Date  
Commission Secretary

HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #3

AGENDA ITEM 4. – [Revenue Policy](#) and [PowerPoint Presentation](#)

## **1.0 Purpose and Need**

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

## **2.0 Definitions**

- 2.1 Domestic Quality Wastewater.** Defined in accordance with HRSD's Domestic Wastewater Survey that specifies the primary pollutants through sampling and the corresponding concentration limits for domestic wastewater.
- 2.2 Facility Charges.** Charges to cover the cost of treatment and conveyance capacity consumed by new development or redevelopment. Facility charges are applied to any sewer or sewer system discharging into HRSD facilities and any increase to existing service.
- 2.3 Hauled Wastewater.** Wastewater transported to a wastewater treatment plant and discharged that is subject to a fee.
- 2.4 High Strength or Unusual Waste.** Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) discharged waste requiring a Surcharge Rate when concentrations exceed the published levels in the Rate Schedule or unusual wastes not covered by the Rate Schedule that may be considered separately and may be assigned a special rate.
- 2.5 HRSD Charges.** Any and all charges or fees billed to customers for wastewater services provide by HRSD.
- 2.6 HRSD Collection System.** All infrastructure conveying flow from homes, businesses and industries to the Interceptor System in localities where HRSD owns or operates a collection system.
- 2.7 HRSD Enabling Act.** The Commonwealth of Virginia 1960 Acts of the Assembly, c. 66 as amended
- 2.8 Interceptor System.** Large pipelines conveying flow from the Collection System to the Wastewater Treatment Plant.

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

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

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

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

### **3.0 Guiding Principles**

**3.1** General.

**3.1.1** To the extent feasible, HRSD is a cost recovery enterprise and supports a uniform rate structure for interception and treatment regardless of which wastewater treatment plant treats a customer's wastewater.

**3.1.2** Wastewater Treatment and Collection Charges shall not be waived. However, payment extensions may be established for the collection of HRSD Charges.

**3.1.3** All new connections shall pay an equitable share for the treatment and conveyance capacity consumed by their wastewater discharge to the Regional Sanitary Sewer System.

**3.1.4** All rates shall be reviewed and revised (if required) annually and approved by the Commission as part of the annual budget process. Changes shall be publically advertised in accordance with HRSD's Enabling Act as well as posted on the HRSD web site.

**3.1.5** Surcharge rates for high strength wastes are set to recover costs in direct proportion to volume and pollutant concentrations. Since the majority of HRSD's costs are fixed, surcharge rates are based on a marginal cost approach for the

variable costs associated with the incremental costs to treat high strength wastes.

**3.1.6** Facility Charges are an up-front charge proportional to the cost of treatment and conveyance capacity consumed by each new user. This charge ensures that an unfair burden is not placed on existing users that would otherwise pay higher rates to expand the system to accommodate new growth. HRSD uses the Rational Nexus Criteria to derive facility charges.

**3.1.7** HRSD will avoid dependence on temporary revenues such as grants to fund operating costs. One-time temporary revenues or grants should typically be used to fund capital projects.

**3.2** Basis of Charges.

**3.2.1** Wastewater Treatment Charges - HRSD shall establish rates based on the wastewater quality and one of the following factors:

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

**3.2.2** Facility Charges.

- (1) HRSD shall establish Facility Charges for new connections based upon the size of the water meter serving the new connection. If the Locality does not offer a specific meter size, a combination meter is proposed or other similar scenario, the Facility Charge may be based on a calculated meter size using the AWWA M22 Sizing Water Service Lines and Meters manual. Additional special exceptions may be outlined in the HRSD rate schedule.



- (2) The Facility Charge for each meter size is based on the unit volume rate, which is the total net replacement value of all HRSD's assets divided by HRSD's total hydraulic capacity, times the average water consumption for each meter size.
- (3) HRSD reserves the right to establish facility charges for new connections based upon wastewater that differs from domestic quality wastewater and that consumes loading capacity in excess of capacity consumed by the equivalent volume of Domestic Quality Wastewater.

**3.2.3** HRSD Collection System Maintenance Charges - HRSD may establish separate collection system maintenance charges for each Locality within the HRSD Collection System. A weighted average cost of HRSD Locality collection rates will be used to develop the collection rate annually. Localities that do not charge a Locality collection rate will be excluded from this calculation. The weighted average will be based on the latest population estimates provided by the Welden Cooper Center for Public Service or other Commonwealth designated demographics agency.

**3.2.4** Hauled Wastewater - Charges are based on a common charge across all plants as derived from the HRSD rate model and are not subject to a minimum charge.

#### **4.0 Procedures**

**4.1** Determining Costs.

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

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

**4.2** Determining Total Wastewater Volume.

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

**4.3** Calculating Rates.

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

**4.3.2** The model shall calculate the incremental cost to treat each additional pound of each pollutant in excess of the pounds of pollutants identified for Domestic Quality Wastewater in the current HRSD Domestic Wastewater Survey. The rates shall be expressed in dollars per 100 pounds or per milligrams per liter per hundred cubic feet of wastewater.

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

**4.3.4** Flat Rate Accounts are for single family residential accounts with water meters 1" and smaller that do not have a water meter or that use a significant amount of water that is not discharged to the sanitary sewer. The Flat Rate is based on average residential water consumption for a 30-day period times the prevailing Wastewater Treatment Rate. The General Manager or Director of Finance may approve a flat rate account for water meters greater than 1" if the requestor provides sufficient evidence that there is a significant portion of water that is not discharged into the sanitary sewer system relative to average residential water consumption.

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

**4.4** Implementation.

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

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

**COMMISSION ADOPTED POLICY**  
***DRAFT Revenue Policy***



Adopted: May 23, 2017

Revised: N/A

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**4.5** Financial Forecast.

HRSD will analyze water consumption, regional economic and population data periodically to identify any trends that may impact the long-range financial forecast. Based on this analysis, a conservative approach will be used to project revenues in the long-range financial forecast.

**4.6** Collections.

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

**5.0** **Responsibility and Authority**

**5.1** The General Manager shall ensure the Commission reviews all rates annually as part of the annual budget process.

**5.2** Rates may only be changed with an affirmative vote of a majority of the Commission at a legally noticed public meeting of the Commission.

**5.3** The General Manager shall ensure any rate revisions are advertised and published in accordance with the HRSD Enabling Act.

**5.4** The Director of Finance will present an updated Financial Forecast to the Commission and manage the update to the Rate Model on an annual basis.

Approved:

\_\_\_\_\_  
Frederick N. Elofson  
Commission Chair

\_\_\_\_\_  
Date

Attest:

\_\_\_\_\_  
Jennifer L. Cascio  
Commission Secretary

\_\_\_\_\_  
Date

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



Adopted: May 23, 2017

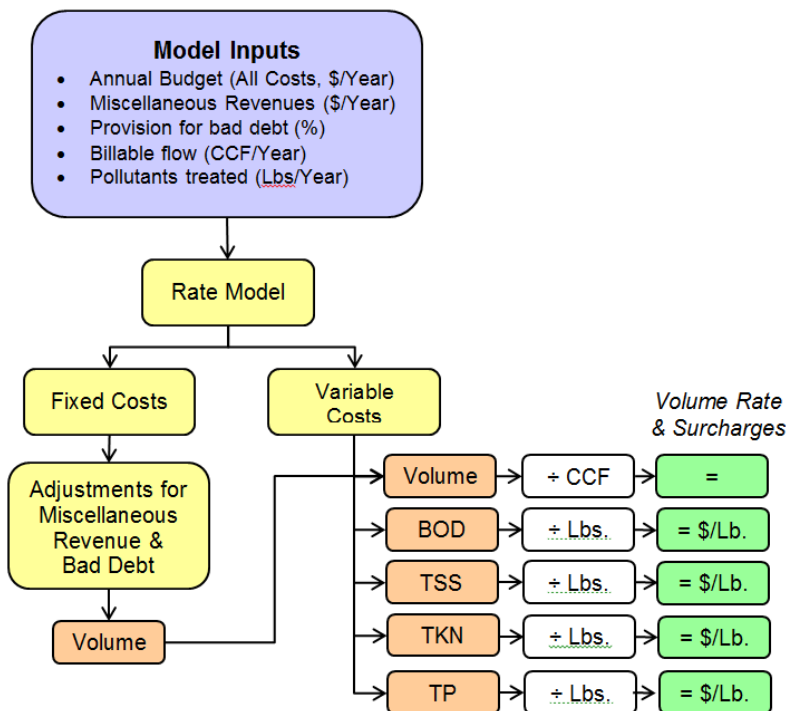
Revised: N/A

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**1.0 Rate Model Summary**

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

**2.0 Rate Model Schematic**





# New Revenue Policy

April 25, 2017

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## Purpose of Revenue Policy

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- Aggregate current policies into one Commission approved document
- Provides framework and consistency for financial decisions
- Defines key terms

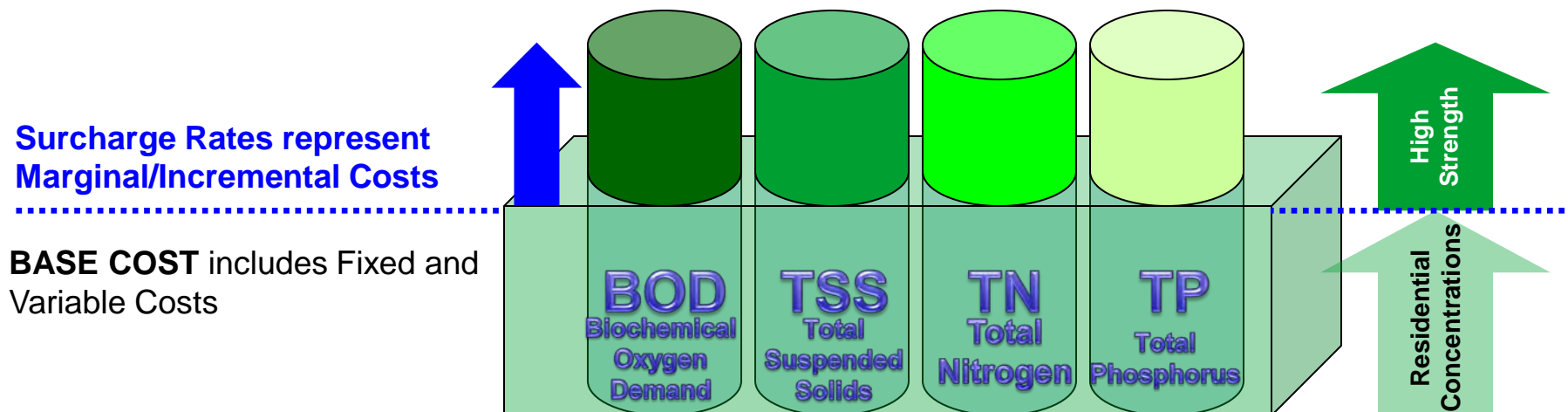
- Rational Nexus Criteria

*Link between the services provided to a user and the fee or rates charged for that service*

- Uniform rate structure regardless of location
- Cost differentiated by type of waste
- We charge and collect for services provided

## Policy Defines Key Rates

- Domestic Quality Wastewater
- High Strength or Unusual Wastes





## Policy Defines Key Rates (cont.)

- Facility Charges
  - Charged to new development to cover the cost of consumed capacity

$$\frac{\text{Net Replacement Value}}{\text{HRSD's Plant Capacity}} \times \frac{\text{Meter Size}}{\text{Average Flow}} =$$

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

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## Commission Policy - Key Points

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- Financial Forecast
  - Conservative approach to project revenues
- Collections
  - Equitably administered
  - Cost of collections shall not exceed the marginal incremental revenue and not be a large percentage of the amount to be collected
- Flat rate accounts
  - Enabling Act requires that we provide a mechanism to account for water that is not discharged into the sanitary sewer system (typically pools and irrigation)
  - 1" water meters and smaller
  - General Manager or Director of Finance may approve a larger meter size upon request

- *Preliminary draft presented Feb 28*
- Final draft submitted April 25
- Commission votes on May 23

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# Questions

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HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #4

AGENDA ITEM 6. – Annual Budget and Related Components

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

# 2018 HRSD

## **Proposed Annual Budget**

For Fiscal Year Ended June 30, 2018

HRSD Proposed Annual Budget For  
Fiscal Year Ended June 30, 2018  
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# INTRODUCTION



# GM'S LETTER TO BE PROVIDED

# Principal Officials

June 30, 2017

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## **COMMISSIONERS**

Frederick N. Elofson, CPA, Chair

Maurice P. Lynch, PhD, Vice-Chair

Arthur C. Bredemeyer

Michael E. Glenn

Vishnu K. Lakdawala, PhD

Willie Levenston, Jr.

Stephen C. Rodriguez

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  
Director of  
Communications

## **COUNSEL**

Kellam, Pickrell, Cox & Tayloe  
General Counsel

Jones, Blechman, Woltz & Kelly, PC  
Associate Counsel

AquaLaw, PLC  
Special Counsel

Norton Rose Fulbright US, LLP  
Bond Counsel

# Key Facts

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## **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-2018)	830
Miles of Interceptor Systems	536 Miles
Wastewater Treated	155 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	Aa2	n/a	n/a

Operating Budget (FY-2018)	\$285,553,000
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# HRSD

A Political Subdivision of the Commonwealth of Virginia

Major facilities include the following:

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



# ORG CHART

# History of HRSD

June 30, 2016

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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 2016.

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 to every HRSD treatment plant for outstanding compliance with National Pollutant Discharge Elimination System (NPDES) permits during calendar year 2015. The Army Base Treatment Plant was honored for 29 consecutive years of perfect permit compliance, an achievement unsurpassed in the nation. The other major treatment plants received the following awards in recognition of their outstanding permit compliance status: Atlantic—Gold, Boat Harbor—Platinum (14 consecutive years), Chesapeake-Elizabeth—Platinum (6 consecutive years), James River—Gold, Nansemond—Platinum (14 consecutive years), Virginia Initiative Plant—Platinum (20 consecutive years), Williamsburg—Platinum (21 consecutive years) and York River—Platinum (8 consecutive years). Two treatment plants in the Small Communities Division, Central Middlesex and King William, earned Gold Awards while Urbanna received a Silver Award. West Point received a Platinum Award for 5 consecutive years of perfect compliance.

HRSD's other Fiscal Year 2016 honors included the NACWA Public Information & Education National Environmental Achievement Award for the Education Program *H2w0w: Wonders of Water*. In addition, HRSD and the Virginia STEAM Academy received from Governor Terry McAuliffe a 2016 Programs that Work award presented by the Virginia Mathematics and Science Coalition. HRSD was the 2016 winner of the prestigious Inside Business River Star Hall of Fame Award and also was recognized by the Elizabeth River Project for Sustained Distinguished Performance as a Model Level River Star Business. HRSD's sustainable water recycling initiative was among the water issue solutions featured during the March 22, 2016, White House Water Summit in Washington, D.C.

# Rate Schedules

## WASTEWATER TREATMENT CHARGE SCHEDULE

<u>Service</u>		<u>FY-2018</u>	<u>FY-2017</u>
Flow (monthly basis)			
Per CCF *		\$ 4.92	\$ 4.51
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	\$ 0.000091	\$ 0.000206
Total Suspended Solids (TSS)	261 mg/L	\$ 0.000520	0.000454
Total Phosphorus (TP)	6 mg/L	\$ 0.011569	0.011642
Total Kjeldahl Nitrogen (TKN)	47 mg/L	\$ 0.003156	0.001660
Surcharge, per 100 pounds			
BOD	282 mg/L	\$ 1.46	\$ 3.30
TSS	261 mg/L	8.32	7.27
TP	6 mg/L	185.32	186.49
TKN	47 mg/L	50.56	26.59
Septic, per gallon		\$ 0.1300	\$ 0.1366
Residential flat rate (per 30-day period)		\$ 31.98	\$ 29.32

\* CCF = 100 Cubic Feet (approximately 748 gallons)

## VOLUME BASED FACILITY CHARGE SCHEDULE

<u>Meter Size</u>		<u>FY-2018</u>	<u>FY-2017</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)		<u>FY-2018</u>	<u>FY-2017</u>
Per 1,000 gallons			
West Point		\$ 14.27	\$ 13.61
Mathews		12.03	11.37
Urbanna		14.16	13.50
King William		12.57	11.91
Surry		12.03	11.37
Residential flat rate (per 30-day period)			
West Point		\$ 57.08	n/a
Mathews		48.12	n/a
Urbanna		56.64	n/a
King William		50.28	n/a
Surry		48.12	n/a

## FEES AND SERVICE CHARGES

		<u>FY-2018</u>	<u>FY-2017</u>
Damaged lock		\$ 100	\$ 100
Service restoration		100	100
Meter reading (customer-owned meter)		75	75
Inaccessible meter		50	50
Returned payments		25	25
Delinquent		15	15
Deduction meter service		2	2

# Reader's Guide to the Annual Budget

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## **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 [LINK TO BE PROVIDED IN ADOPTED BUDGET](#).

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/pdf/FinancialPolicyRev-6\\_20150324.pdf](http://www.hrsd.com/pdf/FinancialPolicyRev-6_20150324.pdf).

HRSD's Rate Schedule is available at [LINK TO BE PROVIDED IN ADOPTED BUDGET](#).

## **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

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**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.

**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.

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

**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. HRSD's Trust Agreement requires Senior Debt Service Coverage will not be less than 1.2 times senior lien debt service.

**Total Debt Service (GAAP):** Current-year net revenues available for total debt service divided by current-year total debt service according to Generally Accepted Accounting Principles (GAAP). Total debt service represents the combination of senior lien and subordinate lien debt service. This ratio indicates the financial margin to meet current both senior lien debt service and subordinate lien debt service with current revenues available.

**Total Debt Service (Adjusted):** Current-year net revenues available for total debt service divided by current-year total debt service excluding expenses for improvements that will not be owned by HRSD, but which will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System. Total debt service represents the combination of senior lien and subordinate lien debt service. This ratio indicates the financial margin to meet current both senior lien debt service and subordinate lien debt service with current revenues available. HRSD's Financial Policy requires that total debt service coverage (adjusted) will not be less than 1.4 times total debt service. HRSD's Trust Agreement requires that Total Debt Service Coverage will not be less than 1.2 times total debt service coverage (adjusted).

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

# FINANCIAL FORECAST

<b>Financial Forecast (in thousands)</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
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### Operating Budget Forecast

	<i>Rate and Fees Increase - %</i>			
	9%	9%	9%	9%
	<i>YOY Op Rev</i>	<i>7.75%</i>	<i>7.75%</i>	<i>7.69%</i>
<b>Revenues</b>				
Operating Revenues	\$ 274,633	\$ 295,912	\$ 318,831	\$ 343,334
Non-operating Revenues	10,920	11,208	11,146	11,162
<b>Total Revenues</b>	<b>285,553</b>	<b>307,120</b>	<b>329,976</b>	<b>354,496</b>
<b>Operations</b>	142,578	147,974	152,868	157,938
Major Repairs and Replacements	7,831	8,066	8,308	8,557
Capital Acquisitions	814	839	864	890
<b>Total Operating Appropriations</b>	<b>151,223</b>	<b>156,879</b>	<b>162,040</b>	<b>167,385</b>
	<i>YOY Op Exp</i>	<i>3.74%</i>	<i>3.29%</i>	<i>3.30%</i>
Debt Service	60,849	60,295	61,239	67,860
Transfer to Capital Improvement Plan (PAYGO)	58,802	89,708	100,852	105,824
Transfer to General Reserve (Unrestricted Cash)	14,419	-	5,629	13,195
Transfer to Risk Management Reserve	260	239	218	232
<b>Total Appropriations</b>	<b>\$ 285,553</b>	<b>\$ 307,120</b>	<b>\$ 329,976</b>	<b>\$ 354,496</b>

### Capital Improvement Budget Forecast

<b>Beginning Capital Reserves</b>	\$ 22,787	\$ -	\$ 218	\$ -
<b>Sources of Funds</b>				
Debt funded (Revenue Bonds and Interim Financing)	30,139	-	58,661	91,530
Va Clean Water Revolving Loan Fund	21,658	21,658	14,418	11,971
HRSD - Cash	58,802	89,708	100,852	105,824
Grants and Other Reimbursements	5,810	3,359	210	-
Transfer from Debt Service Reserve Fund	804	494	642	674
<b>Total Capital Resources</b>	<b>140,000</b>	<b>115,218</b>	<b>175,000</b>	<b>210,000</b>
Uses of Funds - Capital Expenditures	140,000	115,000	175,000	210,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ 218</b>	<b>\$ -</b>	<b>\$ -</b>

### Reserves Balance Forecast

Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%
Unrestricted Cash	\$ 162,838	\$ 162,838	\$ 168,466	\$ 181,661
Risk Reserve	3,114	3,353	3,571	3,803
Debt Service Reserve Fund	30,950	30,456	29,814	29,140
<b>Total Reserves Balance</b>	<b>\$ 196,902</b>	<b>\$ 196,647</b>	<b>\$ 201,851</b>	<b>\$ 214,604</b>

### Financial Ratios Forecast

<b>Total Debt Service Coverage (GAAP)</b>	<b>2.05</b>	<b>2.39</b>	<b>2.63</b>	<b>2.54</b>
<b>Total Debt Service Coverage (Adjusted)</b>	<b>2.08</b>	<b>2.37</b>	<b>2.63</b>	<b>2.65</b>
CIP % Cash Funded (current year contributions)	42%	78%	58%	50%
Debt Service as a % of Total Revenues	21%	20%	19%	19%
Moody's Projected Rating	Aa1	Aa1	Aa1	Aa1

### RWWMP Summary

HRSD Projected Capex Spending		\$ 2,044	\$ 7,174
Projected Locality/Priv Property Capex Spending		\$ 2,044	\$ 7,174
Locality % of Total CIP		1.2%	3.4%
RWWMP % of Total CIP		2.3%	6.8%

<b>Line of Credit Balance</b>	\$ 30,139	\$ 30,139	\$ 88,800	\$ 180,330
<b>Total Par Issued</b>	\$ -	\$ -	\$ -	\$ -

<b>Financial Forecast (in thousands)</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Operating Budget Forecast</b>				
	<i>Rate and Fees Increase - %</i>			
	9%	9%	7%	7%
<b>Revenues</b>	7.73%	7.71%	5.76%	5.80%
Operating Revenues	\$ 369,875	\$ 398,387	\$ 421,328	\$ 445,765
Non-operating Revenues	11,288	11,321	11,456	12,072
<b>Total Revenues</b>	<b>381,163</b>	<b>409,708</b>	<b>432,784</b>	<b>457,837</b>
Operations	160,191	172,898	178,669	202,896
Major Repairs and Replacements	8,814	9,079	9,351	9,631
Capital Acquisitions	916	944	972	1,001
<b>Total Operating Appropriations</b>	<b>169,921</b>	<b>182,920</b>	<b>188,992</b>	<b>213,529</b>
	1.52%	7.65%	3.32%	12.98%
Debt Service	65,691	78,256	80,804	98,268
Transfer to Capital Improvement Plan (PAYGO)	138,076	134,030	156,085	120,859
Transfer to General Reserve (Unrestricted Cash)	7,228	14,239	6,623	24,883
Transfer to Risk Management Reserve	247	263	280	299
<b>Total Appropriations</b>	<b>\$ 381,163</b>	<b>\$ 409,708</b>	<b>\$ 432,784</b>	<b>\$ 457,837</b>
<b>Capital Improvement Budget Forecast</b>				
<b>Beginning Capital Reserves</b>	\$ -	\$ -	\$ -	\$ -
Sources of Funds				
Debt funded (Revenue Bonds and Interim Financing)	80,197	155,268	141,337	178,208
Va Clean Water Revolving Loan Fund	-	-	-	-
HRSD - Cash	138,076	134,030	156,085	120,859
Grants and Other Reimbursements	1,000	-	1,900	-
Transfer from Debt Service Reserve Fund	727	702	679	933
Total Capital Resources	220,000	290,000	300,000	300,000
Uses of Funds - Capital Expenditures	220,000	290,000	300,000	300,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserves Balance Forecast</b>				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%
Unrestricted Cash	\$ 188,889	\$ 203,128	\$ 209,751	\$ 234,634
Risk Reserve	4,050	4,313	4,594	4,892
Debt Service Reserve Fund	28,413	27,711	27,033	26,100
<b>Total Reserves Balance</b>	<b>\$ 221,353</b>	<b>\$ 235,153</b>	<b>\$ 241,378</b>	<b>\$ 265,627</b>
<b>Financial Ratios Forecast</b>				
<b>Total Debt Service Coverage (GAAP)</b>	<b>2.96</b>	<b>2.63</b>	<b>2.80</b>	<b>2.27</b>
<b>Total Debt Service Coverage (Adjusted)</b>	<b>3.05</b>	<b>2.79</b>	<b>2.92</b>	<b>2.43</b>
CIP % Cash Funded (current year contributions)	63%	46%	52%	40%
Debt Service as a % of Total Revenues	17%	19%	19%	21%
Moody's Projected Rating	Aaa	Aa1	Aa1	Aa1
<b>RWWMP Summary</b>				
HRSD Projected Capex Spending	\$ 9,884	\$ 11,152	\$ 11,731	\$ 12,106
Projected Locality/Priv Property Capex Spending	\$ 9,884	\$ 11,152	\$ 11,731	\$ 12,106
Locality % of Total CIP	4.5%	3.8%	3.9%	4.0%
RWWMP % of Total CIP	9.0%	7.7%	7.8%	8.1%
<b>Line of Credit Balance</b>	<b>\$ 60,528</b>	<b>\$ 215,796</b>	<b>\$ 57,133</b>	<b>\$ 235,341</b>
<b>Total Par Issued</b>	<b>\$ 201,207</b>	<b>\$ -</b>	<b>\$ 301,811</b>	<b>\$ -</b>

<b>Financial Forecast (in thousands)</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Budget Forecast</b>				
	<i>Rate and Fees Increase - %</i>			
	7%	7%	6%	6%
<b>Revenues</b>	5.81%	5.78%	4.87%	4.82%
Operating Revenues	\$ 471,645	\$ 498,918	\$ 523,227	\$ 548,445
Non-operating Revenues	12,408	12,556	13,296	13,652
<b>Total Revenues</b>	<b>484,052</b>	<b>511,474</b>	<b>536,523</b>	<b>562,097</b>
Operations	216,741	223,949	248,007	265,138
Major Repairs and Replacements	9,920	10,218	10,525	10,840
Capital Acquisitions	1,031	1,062	1,094	1,127
<b>Total Operating Appropriations</b>	<b>227,693</b>	<b>235,230</b>	<b>259,625</b>	<b>277,105</b>
	6.63%	3.31%	10.37%	6.73%
Debt Service	101,015	118,396	118,355	135,633
Transfer to Capital Improvement Plan (PAYGO)	140,553	149,898	134,568	134,241
Transfer to General Reserve (Unrestricted Cash)	14,473	7,612	23,614	14,733
Transfer to Risk Management Reserve	318	339	361	384
<b>Total Appropriations</b>	<b>\$ 484,052</b>	<b>\$ 511,474</b>	<b>\$ 536,523</b>	<b>\$ 562,097</b>
<b>Capital Improvement Budget Forecast</b>				
<b>Beginning Capital Reserves</b>	\$ -	\$ -	\$ -	\$ -
Sources of Funds				
Debt funded (Revenue Bonds and Interim Financing)	158,426	148,980	154,237	124,826
Va Clean Water Revolving Loan Fund	-	-	-	-
HRSD - Cash	140,553	149,898	134,568	134,241
Grants and Other Reimbursements	-	-	-	-
Transfer from Debt Service Reserve Fund	1,021	1,123	1,195	933
Total Capital Resources	300,000	300,000	290,000	260,000
Uses of Funds - Capital Expenditures	300,000	300,000	290,000	260,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserves Balance Forecast</b>				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%
Unrestricted Cash	\$ 249,107	\$ 256,719	\$ 280,333	\$ 295,066
Risk Reserve	5,210	5,549	5,910	6,294
Debt Service Reserve Fund	25,079	23,957	22,762	21,829
<b>Total Reserves Balance</b>	<b>\$ 279,397</b>	<b>\$ 286,225</b>	<b>\$ 309,005</b>	<b>\$ 323,188</b>
<b>Financial Ratios Forecast</b>				
<b>Total Debt Service Coverage (GAAP)</b>	<b>2.35</b>	<b>2.15</b>	<b>2.18</b>	<b>1.96</b>
<b>Total Debt Service Coverage (Adjusted)</b>	<b>2.45</b>	<b>2.28</b>	<b>2.26</b>	<b>2.06</b>
CIP % Cash Funded (current year contributions)	47%	50%	46%	52%
Debt Service as a % of Total Revenues	21%	23%	22%	24%
Moody's Projected Rating	Aa1	Aa1	Aa1	Aa1
<b>RWWMP Summary</b>				
HRSD Projected Capex Spending	\$ 12,446	\$ 12,552	\$ 11,802	\$ 9,088
Projected Locality/Priv Property Capex Spending	\$ 12,446	\$ 12,552	\$ 11,802	\$ 9,088
Locality % of Total CIP	4.1%	4.2%	4.1%	3.5%
RWWMP % of Total CIP	8.3%	8.4%	8.1%	7.0%
<b>Line of Credit Balance</b>	\$ 93,767	\$ 242,747	\$ 96,984	\$ 221,809
<b>Total Par Issued</b>	\$ 301,811	\$ -	\$ 301,811	\$ -



<b>Financial Forecast (in thousands)</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>
<b>Operating Budget Forecast</b>				
	<i>Rate and Fees Increase - %</i>			
	6%	6%	6%	6%
<b>Revenues</b>	4.84%	4.84%	4.83%	4.87%
Operating Revenues	\$ 575,006	\$ 602,863	\$ 631,969	\$ 662,735
Non-operating Revenues	13,832	14,193	14,725	15,072
<b>Total Revenues</b>	<b>588,838</b>	<b>617,056</b>	<b>646,694</b>	<b>677,807</b>
Operations	281,437	300,702	310,690	321,041
Major Repairs and Replacements	11,165	11,500	11,845	12,201
Capital Acquisitions	1,161	1,196	1,231	1,268
<b>Total Operating Appropriations</b>	<b>293,763</b>	<b>313,398</b>	<b>323,767</b>	<b>334,510</b>
	6.01%	6.68%	3.31%	3.32%
Debt Service	138,266	155,705	150,880	149,906
Transfer to Capital Improvement Plan (PAYGO)	132,307	113,887	145,929	169,986
Transfer to General Reserve (Unrestricted Cash)	24,093	33,630	25,654	22,911
Transfer to Risk Management Reserve	409	436	464	494
<b>Total Appropriations</b>	<b>\$ 588,838</b>	<b>\$ 617,056</b>	<b>\$ 646,694</b>	<b>\$ 677,807</b>
<b>Capital Improvement Budget Forecast</b>				
<b>Beginning Capital Reserves</b>	\$ -	\$ -	\$ -	\$ -
Sources of Funds				
Debt funded (Revenue Bonds and Interim Financing)	126,651	104,245	51,150	28,246
Va Clean Water Revolving Loan Fund	-	-	-	-
HRSD - Cash	132,307	113,887	145,929	169,986
Grants and Other Reimbursements	-	-	-	-
Transfer from Debt Service Reserve Fund	1,042	1,868	2,921	1,768
Total Capital Resources	260,000	220,000	200,000	200,000
Uses of Funds - Capital Expenditures	260,000	220,000	200,000	200,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserves Balance Forecast</b>				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%
Unrestricted Cash	\$ 319,158	\$ 352,789	\$ 378,443	\$ 401,354
Risk Reserve	6,703	7,139	7,603	8,097
Debt Service Reserve Fund	20,787	18,919	15,998	14,230
<b>Total Reserves Balance</b>	<b>\$ 346,648</b>	<b>\$ 378,847</b>	<b>\$ 402,044</b>	<b>\$ 423,680</b>
<b>Financial Ratios Forecast</b>				
<b>Total Debt Service Coverage (GAAP)</b>	<b>1.96</b>	<b>1.69</b>	<b>1.77</b>	<b>1.85</b>
<b>Total Debt Service Coverage (Adjusted)</b>	<b>2.06</b>	<b>1.91</b>	<b>2.06</b>	<b>2.21</b>
CIP % Cash Funded (current year contributions)	51%	52%	73%	85%
Debt Service as a % of Total Revenues	23%	25%	23%	22%
Moody's Projected Rating	Aa1	Aa1	Aa1	Aa1
<b>RWWMP Summary</b>				
HRSD Projected Capex Spending	\$ 11,090	\$ 15,490	\$ 23,027	\$ 29,033
Projected Locality/Priv Property Capex Spending	\$ 16,556	\$ 30,587	\$ 45,907	\$ 58,112
Locality % of Total CIP	6.4%	13.9%	23.0%	29.1%
RWWMP % of Total CIP	10.6%	20.9%	34.5%	43.6%
<b>Line of Credit Balance</b>	\$ 48,461	\$ 152,706	\$ 203,856	\$ 32,102
<b>Total Par Issued</b>	\$ 301,811	\$ -	\$ -	\$ 201,207

<b>Financial Forecast (in thousands)</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>
<b>Operating Budget Forecast</b>				
	<i>Rate and Fees Increase - %</i>			
	6%	6%	6%	6%
<b>Revenues</b>	4.88%	4.88%	4.86%	4.88%
Operating Revenues	\$ 695,102	\$ 729,013	\$ 764,413	\$ 801,684
Non-operating Revenues	15,384	15,651	15,883	16,088
<b>Total Revenues</b>	<b>710,486</b>	<b>744,664</b>	<b>780,296</b>	<b>817,772</b>
Operations	331,770	342,891	354,423	366,381
Major Repairs and Replacements	12,567	12,944	13,332	13,732
Capital Acquisitions	1,306	1,346	1,386	1,428
<b>Total Operating Appropriations</b>	<b>345,643</b>	<b>357,181</b>	<b>369,141</b>	<b>381,540</b>
	3.33%	3.34%	3.35%	3.36%
Debt Service	159,967	158,987	156,711	168,935
Transfer to Capital Improvement Plan (PAYGO)	183,666	208,981	236,141	249,756
Transfer to General Reserve (Unrestricted Cash)	20,683	18,956	17,707	16,905
Transfer to Risk Management Reserve	526	560	597	636
<b>Total Appropriations</b>	<b>\$ 710,486</b>	<b>\$ 744,664</b>	<b>\$ 780,296</b>	<b>\$ 817,772</b>
<b>Capital Improvement Budget Forecast</b>				
<b>Beginning Capital Reserves</b>	\$ -	\$ -	\$ -	\$ -
Sources of Funds				
Debt funded (Revenue Bonds and Interim Financing)	39,809	74,640	97,583	98,920
Va Clean Water Revolving Loan Fund	-	-	-	-
HRSD - Cash	183,666	208,981	236,141	249,756
Grants and Other Reimbursements	-	-	-	-
Transfer from Debt Service Reserve Fund	1,525	1,379	1,276	1,324
Total Capital Resources	225,000	285,000	335,000	350,000
Uses of Funds - Capital Expenditures	225,000	285,000	335,000	350,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserves Balance Forecast</b>				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%
Unrestricted Cash	\$ 422,037	\$ 440,993	\$ 458,699	\$ 475,604
Risk Reserve	8,623	9,184	9,780	10,416
Debt Service Reserve Fund	12,705	11,326	10,050	8,727
<b>Total Reserves Balance</b>	<b>\$ 443,365</b>	<b>\$ 461,502</b>	<b>\$ 478,530</b>	<b>\$ 494,747</b>
<b>Financial Ratios Forecast</b>				
<b>Total Debt Service Coverage (GAAP)</b>	<b>1.80</b>	<b>1.91</b>	<b>2.06</b>	<b>2.02</b>
<b>Total Debt Service Coverage (Adjusted)</b>	<b>2.23</b>	<b>2.35</b>	<b>2.55</b>	<b>2.53</b>
CIP % Cash Funded (current year contributions)	82%	73%	70%	71%
Debt Service as a % of Total Revenues	23%	21%	20%	21%
Moody's Projected Rating	Aa1	Aa1	Aaa	Aaa
<b>RWWMP Summary</b>				
HRSD Projected Capex Spending	\$ 33,756	\$ 37,433	\$ 40,290	\$ 42,539
Projected Locality/Priv Property Capex Spending	\$ 67,700	\$ 75,157	\$ 80,945	\$ 85,491
Locality % of Total CIP	30.1%	26.4%	24.2%	24.4%
RWWMP % of Total CIP	45.1%	39.5%	36.2%	36.6%
<b>Line of Credit Balance</b>	\$ 71,911	\$ 146,551	\$ 44,134	\$ 143,055
<b>Total Par Issued</b>	\$ -	\$ -	\$ 201,207	\$ -

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# OPERATING BUDGET

# Operating Budget

	FY-2018	Adopted FY-2017	Increase/ (Decrease)	Percent Change
<b>Operating Revenues</b>				
Wastewater Treatment Charges	\$ 273,087,693	\$ 249,743,000	\$ 23,344,693	9%
Miscellaneous	1,545,000	2,120,000	(575,000)	(27%)
<b>Total-Operating Revenue</b>	<b>274,632,693</b>	<b>251,863,000</b>	<b>22,769,693</b>	<b>9%</b>
<b>Non-Operating Revenues</b>				
Wastewater Facility Charges	6,000,000	5,850,000	150,000	3%
Investment Earnings	1,800,000	1,400,000	400,000	29%
Build America Bond Subsidy	2,400,000	2,400,000	-	0%
Other	720,000	720,000	-	0%
<b>Total Non-Operating Revenues</b>	<b>10,920,000</b>	<b>10,370,000</b>	<b>550,000</b>	<b>5%</b>
<b>Total Revenues and Transfers</b>	<b>\$ 285,552,693</b>	<b>\$ 262,233,000</b>	<b>\$ 23,319,693</b>	<b>9%</b>
<b>Operating Appropriations</b>				
General Management	\$ 680,710	\$ 952,913	\$ (272,203)	(29%)
Communications	470,615	-	470,615	0%
Finance	13,593,503	13,274,002	319,501	2%
Information Technology	16,229,457	15,318,700	910,756	6%
Talent Management	2,280,395	2,243,164	37,231	2%
Operations	94,102,651	90,913,570	3,189,081	4%
Engineering	5,731,535	5,667,444	64,090	1%
Water Quality	14,205,703	13,477,883	727,820	5%
General Expenses	3,928,399	4,177,026	(248,627)	(6%)
<b>Total-Operating Appropriations</b>	<b>151,222,965</b>	<b>146,024,702</b>	<b>5,198,263</b>	<b>4%</b>
<b>Appropriations for Debt Service and Transfers</b>				
Debt Service	60,849,120	63,847,000	(2,997,880)	(5%)
Transfer to CIP	58,802,000	52,101,298	6,700,702	13%
Transfer to General Reserve	14,418,608	-	14,418,608	0%
Transfer to Risk Management Reserve	260,000	260,000	-	0%
<b>Total Appropriations for Debt Service and Transfers</b>	<b>134,329,728</b>	<b>116,208,298</b>	<b>18,121,430</b>	<b>16%</b>
<b>Total Appropriations</b>	<b>\$ 285,552,693</b>	<b>\$ 262,233,000</b>	<b>\$ 23,319,693</b>	<b>9%</b>

# Operating Budget Summary

	General			Information	Talent	Operations	Engineering	Water	General
	Management	Communications	Finance	Technology	Management			Quality	Expenses
Personal Services	\$ 482,624	\$ 278,347	\$ 5,819,422	\$ 4,389,837	\$ 1,356,029	\$ 32,428,555	\$ 3,464,514	\$ 7,304,005	\$ (1,750,006)
Fringe Benefits	135,085	\$ 87,268	2,721,921	1,679,289	541,996	15,407,324	1,351,675	3,161,895	(395,000)
Materials & Supplies	10,000	\$ 45,000	73,140	902,250	65,500	4,622,095	29,778	1,310,329	30,000
Transportation	2,000	\$ 3,000	14,000	87,251	27,600	1,218,155	16,723	50,656	-
Utilities	-	\$ -	237,800	1,524,000	-	9,738,681	-	-	447,000
Chemical Purchases	-	\$ -	-	-	-	10,324,400	-	-	-
Contractual Services	20,000	\$ 35,000	4,464,850	5,626,354	53,200	12,926,502	703,904	1,649,095	5,515,305
Major Repairs	-	\$ -	-	1,750,000	-	5,893,219	9,000	179,000	-
Capital Assets	-	\$ -	-	-	-	771,100	-	43,000	-
Miscellaneous Expense	31,000	\$ 22,000	262,369	270,475	236,070	772,620	155,941	507,723	81,100
<b>Operating Appropriations</b>	<b>\$ 680,710</b>	<b>\$ 470,615</b>	<b>\$ 13,593,503</b>	<b>\$ 16,229,457</b>	<b>\$ 2,280,395</b>	<b>\$ 94,102,651</b>	<b>\$ 5,731,535</b>	<b>\$ 14,205,703</b>	<b>\$ 3,928,399</b>

Full-time Positions:

Current	3	2	100	48	15	509	38	106
Changes	0	0	1	2	0	3	0	3
Budgeted	3	2	101	50	15	512	38	109

# Operating Budget Summary

	FY-2018	Percent of Budget	FY-2017 Budget	Increase/ Decrease	Percent Inc/(Dec)
Personal Services	\$ 53,773,327.17	0.0%	\$ 52,521,153	\$ 1,252,174	2%
Fringe Benefits	24,691,453.38	0.0%	\$ 24,277,464	413,990	2%
Materials & Supplies	7,088,091.73	0.0%	\$ 7,025,374	62,717	1%
Transportation	1,419,385.00	0.0%	\$ 1,443,719	(24,334)	(2%)
Utilities	11,947,481.00	0.0%	\$ 12,110,491	(163,010)	(1%)
Chemical Purchases	10,324,400.00	0.0%	\$ 9,210,500	1,113,900	12%
Contractual Services	30,994,210.00	0.0%	\$ 28,239,821	2,754,389	10%
Major Repairs	7,831,219.22	0.0%	\$ 7,424,907	406,312	5%
Capital Assets	814,100.00	0.0%	\$ 1,454,400	(640,300)	(44%)
Miscellaneous Expense	2,339,298.00	0.0%	\$ 2,316,872	22,426	1%
Operating Appropriations	<u>151,222,965</u>	0.0%	<u>146,024,702</u>	<u>5,198,263</u>	4%
Debt Service Costs	60,849,120.00	0.0%	63,847,000	(2,997,880)	(5%)
Transfer to CIP	58,802,000.00	0.0%	52,101,298	6,700,702	13%
Transfer to General Reserve	14,418,608.00	0.0%	-	14,418,608	0%
Transfer to Risk Management	260,000.00	0.0%	260,000	0	0%
Appropriations for Debt Service and Transfers	<u>134,329,728.00</u>	0.0%	<u>116,208,298</u>	<u>18,121,430</u>	16%
	<u><b>\$ 285,552,693</b></u>	0.0%	<u><b>\$ 262,233,000</b></u>	23,319,693	9%

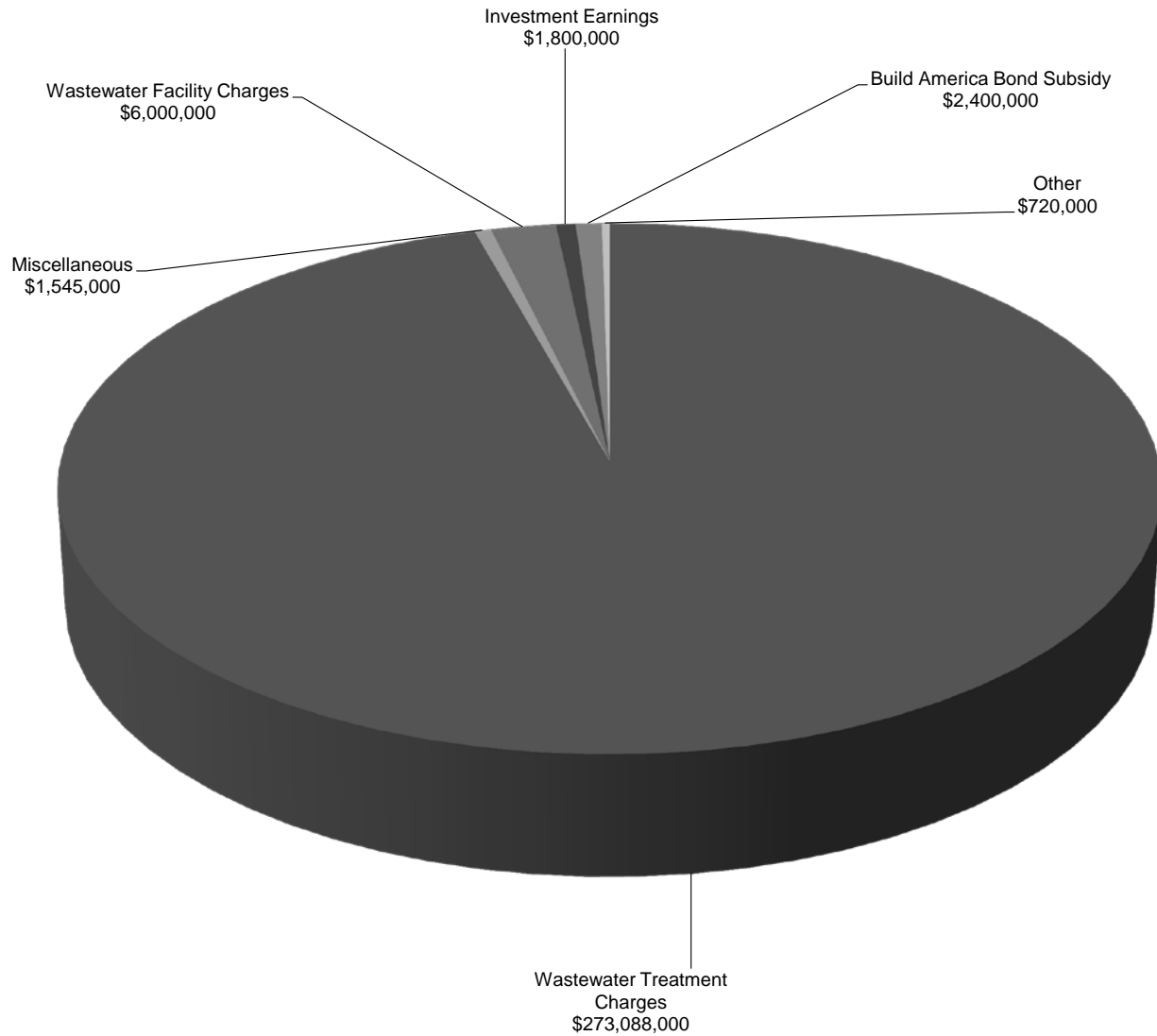
Full-time Positions:

Current	821
Changes	9
Budgeted	830

# Operating Budget Charts

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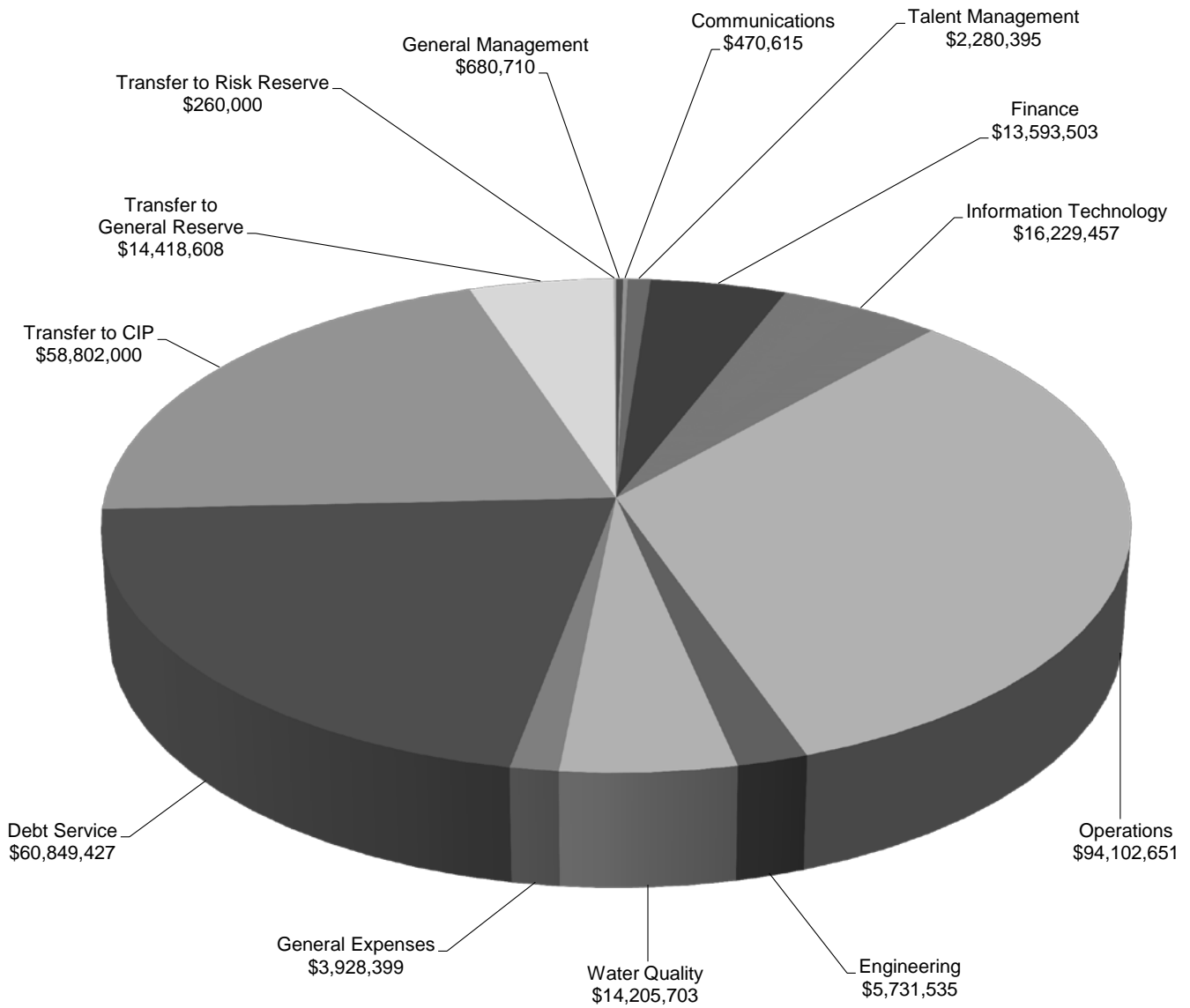
## Revenues and Transfers In \$285,553,000





# Operating Budget Charts

## Expenses and Transfers Out \$285,553,000



# General Management

The General Manager supervises the department directors, Chief of Communications, Commission Secretary and the Special Assistant for Compliance Assurance. The Communications Division supports HRSD's mission through communications, community outreach and education programs. 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 representation of local jurisdictions, DEQ and EPA to ensure appropriate and timely adherence to the requirements of regulatory wet weather enforcement actions.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 482,624	\$ 624,432	\$ (141,808)	(23%)
Fringe Benefits	135,085	200,081	(64,996)	(32%)
Material & Supplies	10,000	10,000	-	0%
Transportation	2,000	32,400	(30,400)	(94%)
Utilities	-	-	-	0%
Chemical Purchases	-	-	-	0%
Contractual Services	20,000	85,000	(65,000)	(76%)
Major Repairs	-	-	-	0%
Capital Assets	-	-	-	0%
Miscellaneous	31,000	1,000	30,000	3000%
<b>Total</b>	<b>\$ 680,710</b>	<b>\$ 952,913</b>	<b>\$ (272,203)</b>	<b>(29%)</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
General Manager		1		1		1
Special Assistant for Compliance Assurance	12	1		1		1
Chief of Communications	11	1	(1)	0		0
Commission Secretary	6	1		1		1
<b>Total</b>		<b>4</b>	<b>(1)</b>	<b>3</b>	<b>0</b>	<b>3</b>

# 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-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 278,347	\$ -	\$ 278,347	0%
Fringe Benefits	87,268	-	87,268	0%
Material & Supplies	45,000	-	45,000	0%
Transportation	3,000	-	3,000	0%
Utilities	-	-	-	0%
Chemical Purchases	-	-	-	0%
Contractual Services	35,000	-	35,000	0%
Major Repairs	-	-	-	0%
Capital Assets	-	-	-	0%
Miscellaneous	22,000	-	22,000	0%
<b>Total</b>	<b>\$ 470,615</b>	<b>\$ -</b>	<b>\$ 470,615</b>	<b>0%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
Director of Communications	12	0	1	1	0	1
Community Relations Liaison	6	0	1	1	0	1
<b>Total</b>		0	2	2	0	2

# 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-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 5,819,422	\$ 5,867,981	\$ (48,558)	(1%)
Fringe Benefits	2,721,921	2,621,566	100,355	4%
Material & Supplies	73,140	131,127	(57,987)	(44%)
Transportation	14,000	108,110	(94,110)	(87%)
Utilities	237,800	266,600	(28,800)	(11%)
Contractual Services	4,464,850	4,004,364	460,486	11%
Capital Assets	-	35,000	(35,000)	(100%)
Miscellaneous	262,369	239,254	23,115	10%
<b>Total</b>	<b>\$ 13,593,503</b>	<b>\$ 13,274,002</b>	<b>\$ 319,501</b>	<b>2%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
Director of Finance	12	1		1		1
Chief of Accounting & Finance	11	1		1		1
Chief of Customer Care Center (CCC)	11	1		1		1
Chief of Procurement	11	1		1		1
Accounting Manager	9	1		1		1
CCC Manager	9	3		3		3
Strategic Sourcing Manager	9	1		1		1
Business Analyst	8	3		3		3
Financial Analyst	8	2		2	1	3
Operations Manager	8	1		1		1
CCC Supervisor	7	4		4		4
Procurement Analyst	7	1		1		1
Accounts Payable Supervisor	6	1		1		1
Accounts Receivable Specialist	6	3		3		3
Procurement Specialist	6	4		4		4
Payroll Technician	5	1		1		1
Accounting Coordinator	4	1		1		1
Accounts Receivable Technician	4	3		3		3
CCC Administrative Coordinator	4	1		1		1
CCC Coordinator	4	4		4		4
Procurement Coordinator	4	1		1		1
Account Investigator	3	14		14		14
Accounts Payable Assistant	3	2		2		2
CCC Account Representative	3	41		41		41
Procurement Assistant	3	2		2		2
Mail Processing Clerk	2	2		2		2
<b>Total</b>		<b>100</b>	<b>0</b>	<b>100</b>	<b>1</b>	<b>101</b>

# Information Technology Department

The Information Technology 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 operation facilities.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 4,389,837	\$ 4,229,958	\$ 159,879	4%
Fringe Benefits	1,679,289	1,579,216	100,073	6%
Material & Supplies	902,250	948,500	(46,250)	(5%)
Transportation	87,251	68,651	18,600	27%
Utilities	1,524,000	1,424,700	99,300	7%
Contractual Services	5,626,354	5,310,200	316,154	6%
Major Repairs	1,750,000	1,500,000	250,000	17%
Miscellaneous	270,475	257,475	13,000	5%
<b>Total</b>	<b>\$ 16,229,457</b>	<b>\$ 15,318,700</b>	<b>\$ 910,756</b>	<b>6%</b>

## Positions

	Grade	Adopted		Final		
		FY-2017	Adjustments	FY-2017	Adjustments	FY-2018
Director of Information Technology	12	1		1		1
Chief of Enterprise Data Services (EDS)	11	1		1		1
Chief of Industrial Controls	11	1		1		1
Chief of Information Technology (IT)	11	1		1		1
Database Administrator	9	3		3		3
Enterprise Architect	9	5		5	(2)	3
Industrial Control Manager	9	1		1		1
Oracle Developer	9	2		2		2
Programmer Development Manager	9	1		1		1
Senior System Engineer	9	5		5	1	6
SharePoint Web Developer	9	0		0	1	1
System Analysis Manager	9	1		1		1
Industrial Control Systems Manager	8	4		4	1	5
Senior Programmer Analyst	8	6		6		6
Senior System Analyst	8	3		3		3
Unix System Administrator	8	2		2		2
IT HelpDesktop Supervisor	7	1		1		1
Desktop Support Analyst	6	5		5		5
Web Portal Administrator	6	1		1		1
Information Technology Administrative Coordinator	4	1		1		1
Telecommunications Support Coordinator	4	0		0	1	1
Computer Operator	3	3		3		3
<b>Total</b>		<b>48</b>	<b>0</b>	<b>48</b>	<b>2</b>	<b>50</b>

# 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 and ensures employee safety.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 1,356,029	\$ 1,329,872	\$ 26,157	2%
Fringe Benefits	541,996	557,651	(15,655)	(3%)
Material & Supplies	65,500	65,500	-	0%
Transportation	27,600	26,300	1,300	5%
Contractual Services	53,200	48,800	4,400	9%
Capital Assets	-	-	-	0%
Miscellaneous	236,070	215,040	21,030	10%
<b>Total</b>	<b>\$ 2,280,395</b>	<b>\$ 2,243,164</b>	<b>\$ 37,231</b>	<b>2%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
Director of Talent Management	12	1		1		1
Human Resources Manager	9	1		1		1
Safety Manager	9	1		1		1
Training 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
Administrative Coordinator Quality	4	1		1		1
Human Resources Coordinator	4	2		2		2
Safety Coordinator	4	1		1		1
<b>Total</b>		<b>15</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>15</b>

# Operations Department

The Operations Department is responsible for operating and maintaining all of HRSD's treatment plants, pump stations, pipelines, buildings and equipment. 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 treatment plant divisions (each with 3 treatment plants) treating wastewater from over 1.5 million people in 13 cities and counties in Hampton Roads. The Small Communities Divisions operates four smaller treatment plants and all the associated sewer collection systems for four counties on the Middle Peninsula, including the Town of West Point. The Electrical and Energy Management Division supports the electrical and instrumentation maintenance and construction needs of all HRSD facilities. The Interceptor Divisions operates and maintains over 500 miles of interceptor pipelines and over 100 pump stations ensuring wastewater is conveyed to each treatment plant. The Support Systems Division is responsible of the maintenance of the HRSD fleet, all buildings and operates two carpentry shops and a full service machine shop.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 32,428,555	\$ 31,696,205	\$ 732,350	2%
Fringe Benefits	15,407,324	14,905,386	501,938	3%
Material & Supplies	4,622,095	4,628,977	(6,883)	(0%)
Transportation	1,218,155	943,369	274,786	29%
Utilities	9,738,681	9,884,191	(145,510)	(1%)
Chemical Purchases	10,324,400	9,210,500	1,113,900	12%
Contractual Services	12,926,502	12,404,645	521,857	4%
Major Repairs	5,893,219	5,767,907	125,312	2%
Capital Assets	771,100	564,400	206,700	37%
Miscellaneous	772,620	907,990	(135,370)	(15%)
<b>Total</b>	<b>\$ 94,102,651</b>	<b>\$ 90,913,570</b>	<b>\$ 3,189,081</b>	<b>4%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
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	2		2		2
Senior Plant Manager	11	3		3		3
Electrical Manager	9	2		2		2
Instrumentation Manager	9	1		1		1
Interceptor Engineer	9	1	1	2		2
Plant Manager	9	6		6		6
Process Engineering & Research Manager	9	1		1		1
Water Recycling Project Manager	9	1		1		1
Support System Manager	9	1		1		1
Systems Manager	9	3	(1)	2		2
Automotive Superintendent	8	1		1		1
Condition Assessment Superintendent	8	0	1	1		1
Electrical and Instrumentation Supervisor	8	0	4	4		4
Electrical Superintendent	8	1		1		1
Facility Superintendent	8	1		1		1
Instrument Supervisor	8	2	(2)	0		0
Interceptor Superintendent	8	3	(1)	2		2
Plant Superintendent	8	18	(1)	17	1	18
Chief Foreman Pump Station	7	2		2		2
Chief Systems Operator	7	1		1		1
Coating, Concrete and Roofing Chief Inspector	7	0	1	1		1
Electrical & Instrumentation Process Specialist	7	0	1	1		1
Electrical & Instrumentation Specialist	7	0	57	57	1	58
Electrical Supervisor	7	2	(2)	0		0
Instrumentation Specialist	7	28	(28)	0		0
Interceptor Chief Foreman	7	3		3		3
Operations Support Specialist	7	1		1		1
Structural & Roofing Inspector	7	1	(1)	0		0
Automotive Foreman	6	2		2		2
Coatings Inspectors	6	2		2		2
Condition Assessment Supervisor	6	1		1		1
Electrician	6	28	(28)	0		0
Engineering Assistant	6	4		4		4
Interceptor Foreman	6	7		7		7

	<b>Grade</b>	<b>Adopted FY-2017</b>	<b>Adjustments</b>	<b>Final FY-2017</b>	<b>Adjustments</b>	<b>FY-2018</b>
Interceptor System Supervisor	6	1		1		1
Lead Operator	6	31	1	32	(1)	31
Machinist Foreman	6	1		1		1
Maintenance Specialist	6	3		3		3
Pump Station Supervisor	6	1		1	1	2
Automotive Technician	5	5		5		5
Carpenter	5	4		4		4
Equipment Technician	5	3		3		3
Facility Maintenance Technician	5	2		2		2
Interceptor Technician	5	31		31		31
Machinist	5	3		3		3
Maintenance Operator	5	57	2	59	1	60
Plant Operator	5	72	0	72	1	73
Heavy Equipment Operator 1	4	22		22	(1)	21
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	2		2		2
SCADA Administrative Assistant	3	1		1		1
Interceptor Assistant	2	28		28		28
Maintenance Operations Assistant	2	56	(3)	53		53
Plant Clerk	2	9		9		9
Facility Assistant	1	12	(1)	11		11
Facilities Maintenance Custodian	1	2	2	4		4
<i>Subtotal - Operations</i>		<b>485</b>	<b>2</b>	<b>487</b>	<b>3</b>	<b>490</b>
<b>Small Communities</b>						
Systems Manager	9	1		1		1
Systems Superintendent	8	1		1		1
Systems Chief Foreman	7	1		1		1
Systems Lead Operator	6	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		2		2
Facility Assistant	1	1		1		1
<i>Subtotal - Small Communities</i>		<b>22</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>22</b>
<b>Total</b>		<b>507</b>	<b>2</b>	<b>509</b>	<b>3</b>	<b>512</b>



# Engineering Department

The Engineering Department is responsible for HRSD facility planning, design and construction and related support. The Asset Management Division is responsible for managing asset information including condition to inform all maintenance, replacement and capital planning decisions. The Design and Construction Division works 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 Improvement Program, Hydraulic Modeling, Geographic Information System (GIS), Data Analysis and Records Management System and plans the infrastructure required to meet the region's future wastewater needs.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 3,464,514	\$ 3,526,675	\$ (62,161)	(2%)
Fringe Benefits	1,351,675	1,402,754	(51,079)	(4%)
Material & Supplies	29,778	25,100	4,678	19%
Transportation	16,723	71,458	(54,735)	(77%)
Contractual Services	703,904	510,062	193,842	38%
Major Repairs	9,000	-	9,000	0%
Miscellaneous	155,941	131,395	24,546	19%
<b>Total</b>	<b>\$ 5,731,535</b>	<b>\$ 5,667,444</b>	<b>\$ 64,090</b>	<b>1%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
Director of Engineering	12	1		1		1
Chief of Asset Management	11	1		1		1
Chief of Condition Assessment	11	1		1		1
Chief of Design & Construction	11	2		2		2
Chief of Planning & Analysis	11	1		1		1
Capital Program Manager	9	1		1		1
Data Analysis Manager	9	1		1		1
GIS Manager	9	1		1		1
Hydraulic Analysis Manager	9	4		4		4
Project Manager	9	9		9		9
Real Estate Manager	8	1		1		1
Data Analyst	7	3		3		3
GIS Analyst	7	2		2		2
CMMS Analyst	6	1		1		1
Community Liaison	6	1	(1)	0		0
Contract Specialist	6	2		2		2
GIS CAD Technician	5	3		3		3
CIP Coordinator	4	0	1	1		1
Data Analysis Technician	4	1		1		1
Administrative Coordinator	4	1		1		1
CMMS Administrative Assistant	3	1		1		1
Engineering Clerk	2	1	(1)	0		0
<b>Total</b>		<b>39</b>	<b>(1)</b>	<b>38</b>	<b>0</b>	<b>38</b>

# Water Quality Department

The Water Quality 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 Laboratory Division provides analytical support for numerous monitoring, research and regulatory purposes. The Pretreatment and Pollution Prevention Division monitors wastewater conveyed to treatment plants and implements its industrial permit regulations to protect treatment plant staff, facilities and processes. The Technical Services Division is responsible for a number of activities including environmental monitoring, specialized sampling, treatment process and research studies as well as all reporting required by HRSD permits.

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ 7,304,005	\$ 6,996,033	\$ 307,971	4%
Fringe Benefits	3,161,895	2,965,813	196,082	7%
Material & Supplies	1,310,329	1,156,170	154,159	13%
Transportation	50,656	193,431	(142,775)	(74%)
Contractual Services	1,649,095	723,250	925,845	128%
Major Repairs	179,000	157,000	22,000	14%
Capital Assets	43,000	855,000	(812,000)	(95%)
Miscellaneous	507,723	431,185	76,538	18%
<b>Total</b>	<b>\$ 14,205,703</b>	<b>\$ 13,477,883</b>	<b>\$ 727,820</b>	<b>5%</b>

## Positions

	Grade	Adopted FY-2017	Adjustments	Final FY-2017	Adjustments	FY-2018
Director of Water Quality (WQ)	12	1		1		1
Chief of Central Environmental Laboratory (CEL)	11	1		1		1
Chief of Pretreatment & Pollution Prevention (P3)	11	1		1		1
Chief of Technical Services Division (TSD)	11	1		1		1
Quality Assurance Manager	9	1		1		1
Environmental Scientist	9	7		7		7
Laboratory Manager	9	4		4		4
P3 Manager	9	4		4		4
Recycling Manager	9	1		1		1
Laboratory Operations Manager	8	1		1		1
Technical Service Operations Manager	8	1		1		1
Chemist	7	11		11		11
EDMS Administrator	7	1		1		1
P3 Supervising Specialist	7	3		3		3
TSD Supervising Specialist	7	3		3		3
CEL Quality Assurance Specialist	6	1		1		1
P3 Specialist	6	0		0	1	1
EDMS Analyst	6	1		1		1
P3 PIMS Analyst	6	0	1	1		1
TSD Specialist	6	0	3	3	2	5
WQ Specialist	6	20		20		20
Laboratory Technician	5	5	1	6	1	7
P3 Administrative Technician	5	1		1		1
WQ Technician	5	0		0		0
P3 Technician	5	11		11		11
TSD Technician	5	3	(3)	0		0
P3 Coordinator	4	1		1		1
WQ Administrative Coordinator	4	1		1		1
TSD Operations Coordinator	4	1		1		1
CEL Coordinator	4	1		1		1
MAP Coordinator	4	1		1	(1)	0
P3 Administrative Assistant	3	2		2		2
TSD Investigator	3	7		7		7
Laboratory Assistant	2	7		7		7
TSD Assistant	2	1	(1)	0		0
<b>Total</b>		<b>105</b>	<b>1</b>	<b>106</b>	<b>3</b>	<b>109</b>

# General Expenses, Debt Service and Transfers

## Expenditure Budget

	FY-2018 Budget	FY-2017 Budget	Increase/ (Decrease)	Percentage Change
Personal Services	\$ (1,750,006)	\$ (1,750,003)	\$ (3)	0%
Fringe Benefits	(395,000)	44,996	(439,996)	(978%)
Material & Supplies	30,000	60,000	(30,000)	(50%)
Utilities	447,000	535,000	(88,000)	(16%)
Contractual Services	5,515,305	5,153,500	361,805	7%
Miscellaneous	81,100	133,533	(52,433)	(39%)
<b>Total General Expenses</b>	<b>\$ 3,928,399</b>	<b>\$ 4,177,026</b>	<b>\$ (248,627)</b>	<b>(6%)</b>
Publically Sold Bonds - Principal	15,845,000	16,780,000	\$ (935,000)	(6%)
Publically Sold Bonds - Interest	30,122,320	29,979,180	143,140	0%
VRLF Bonds	13,981,800	16,187,820	(2,206,020)	(14%)
Cost of Issuance	900,000	900,000	-	100%
<i>Subtotal - Debt Service</i>	<u>60,849,120</u>	<u>63,847,000</u>	<u>(2,997,880)</u>	<u>(5%)</u>
Transfer to CIP	58,802,000	52,101,298	6,700,702	13%
Transfer to General Reserve	14,418,608	-	14,418,608	0%
Transfer to Risk Management	260,000	260,000	-	0%
<i>Subtotal - Transfers</i>	<u>73,480,608</u>	<u>52,361,298</u>	<u>21,119,310</u>	<u>40%</u>
<b>Total Debt Service and Transfers</b>	<b>\$ 134,329,728</b>	<b>\$ 116,208,298</b>	<b>\$ 18,121,430</b>	<b>16%</b>

# 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-2018 in the amount of \$140 million. The remaining years (FY-2019 to FY-2027) 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-2018 to FY-2027 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 \$2.35 billion.

CIP Budget Forecast (\$,000)	Total																					
	FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27											
Begin Capital Reserves	\$	22,787	\$	0	\$	0	\$	0	\$	0	\$	0										
Bonds	\$	1,042,995	\$	30,139	\$	0	\$	58,879	\$	91,532	\$	80,201	\$	155,273	\$	141,342	\$	178,214	\$	158,431	\$	148,985
VCWRLF	\$	69,704	\$	21,658	\$	21,658	\$	14,418	\$	11,971	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Cash	\$	1,194,656	\$	58,802	\$	89,708	\$	100,852	\$	105,823	\$	138,072	\$	134,025	\$	156,080	\$	120,854	\$	140,548	\$	149,892
Grants and Other																						
Reimbursements	\$	12,061	\$	5,810	\$	3,141	\$	210	\$	-	\$	1,000	\$	-	\$	1,900	\$	-	\$	-	\$	-
Transfer from Debt Serv Re.	\$	7,797	\$	804	\$	494	\$	642	\$	674	\$	727	\$	702	\$	679	\$	933	\$	1,021	\$	1,123
Total Capital Resources	\$		\$	140,000	\$	115,000	\$	175,000	\$	210,000	\$	220,000	\$	290,000	\$	300,000	\$	300,000	\$	300,000	\$	300,000
Capital Expenditures	\$	2,350,000	\$	140,000	\$	115,000	\$	175,000	\$	210,000	\$	220,000	\$	290,000	\$	300,000	\$	300,000	\$	300,000	\$	300,000
End Capital Reserves	\$		\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0

Capital Expenditures (\$,000)	Total																					
	FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27											
Administration	\$	2,507	\$	1,373	\$	567	\$	567	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Army Base	\$	27,827	\$	2,148	\$	1,250	\$	-	\$	1,785	\$	5,282	\$	14,882	\$	2,480	\$	-	\$	-	\$	-
Atlantic	\$	79,350	\$	13,819	\$	25,219	\$	14,333	\$	2,740	\$	1,428	\$	3,513	\$	8,734	\$	9,565	\$	-	\$	-
Boat Harbor	\$	79,977	\$	11,080	\$	13,492	\$	14,499	\$	14,327	\$	15,027	\$	11,547	\$	4	\$	-	\$	-	\$	-
Chesapeake-Elizabeth	\$	125,470	\$	7,589	\$	12,158	\$	56,703	\$	27,526	\$	2,373	\$	3,226	\$	3,033	\$	1,343	\$	6,174	\$	5,343
James River	\$	36,432	\$	8,310	\$	4,352	\$	4,146	\$	8,962	\$	9,851	\$	813	\$	-	\$	-	\$	-	\$	-
Middle Peninsula	\$	35,914	\$	5,368	\$	5,456	\$	932	\$	408	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Nansemond	\$	47,557	\$	11,167	\$	16,620	\$	11,598	\$	5,547	\$	151	\$	151	\$	2,322	\$	-	\$	-	\$	-
Virginia Initiative Plant	\$	81,822	\$	23,289	\$	2,289	\$	6,075	\$	18,113	\$	15,632	\$	6,753	\$	4,918	\$	4,753	\$	-	\$	-
Williamsburg	\$	6,417	\$	509	\$	1,378	\$	2,182	\$	2,034	\$	314	\$	-	\$	-	\$	-	\$	-	\$	-
York River	\$	16,608	\$	2,185	\$	1,210	\$	493	\$	879	\$	1,566	\$	3,779	\$	1,794	\$	1,508	\$	2,255	\$	939
General	\$	1,331,977	\$	53,058	\$	17,876	\$	19,305	\$	67,950	\$	89,216	\$	103,488	\$	132,117	\$	152,360	\$	125,606	\$	118,041
Future Improvements	\$	2,798,136	\$	-	\$	9,983	\$	33,985	\$	49,728	\$	68,684	\$	128,038	\$	130,311	\$	116,186	\$	151,680	\$	161,391
Sub-Total	\$	2,247,983	\$	140,000	\$	112,745	\$	166,667	\$	200,000	\$	209,524	\$	276,190	\$	285,714	\$	285,714	\$	285,714	\$	285,714
Contingency	\$	102,017	\$	-	\$	2,255	\$	8,333	\$	10,000	\$	10,476	\$	13,810	\$	14,286	\$	14,286	\$	14,286	\$	14,286
Total Expenditures	\$	2,350,000	\$	140,000	\$	115,000	\$	175,000	\$	210,000	\$	220,000	\$	290,000	\$	300,000	\$	300,000	\$	300,000	\$	300,000

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.

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
FY-2018 TO FY-2027 CASH FLOW PROJECTION (\$,000)**

CIP No	Project Name	Total				
		FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21
<b>Administration</b>						
PR_AD01040	Environmental Data Management System	\$ 582	\$ 582	\$ -	\$ -	\$ -
PR_AD01200	Water Quality Department Work Space Expansion-Redesign	\$ 224	\$ 224	\$ -	\$ -	\$ -
PR_AD01210	Asset Management Implementation	\$ 1,700	\$ 567	\$ 567	\$ 567	\$ -
	Subtotal	\$ 2,507	\$ 1,373	\$ 567	\$ 567	\$ -
<b>Army Base</b>						
PR_AB01000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 22,339	\$ -	\$ -	\$ -	\$ 1,607
PR_AB01010	Army Base Treatment Plant Improvements - Phase III	\$ 1,848	\$ 1,848	\$ -	\$ -	\$ -
PR_AB01050	Section W Force Main Replacement	\$ 2,090	\$ -	\$ -	\$ -	\$ 178
PR_AB01160	Army Base Treatment Plant Biosolids Loading Facility	\$ 1,550	\$ 300	\$ 1,250	\$ -	\$ -
	Subtotal	\$ 27,827	\$ 2,148	\$ 1,250	\$ -	\$ 1,785
<b>Atlantic</b>						
PR_AT01141	Providence Road Interim Pressure Reducing Station	\$ 661	\$ 661	\$ -	\$ -	\$ -
PR_AT01151	Shipp's Corner Interim Pressure Reducing Station	\$ 1,514	\$ 1,514	\$ -	\$ -	\$ -
PR_AT01152	Shipp's Corner Pressure Reducing Station Modifications	\$ 13,933	\$ -	\$ -	\$ -	\$ 662
PR_AT01190	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 4,185	\$ -	\$ -	\$ -	\$ -
PR_AT01200	Atlantic Treatment Plant Administration Building Renovation and Expansion	\$ 2,654	\$ 2,654	\$ -	\$ -	\$ -
PR_AT01291	Atlantic Treatment Plant FOG Receiving Station	\$ 3,495	\$ 1,075	\$ 1,075	\$ 1,075	\$ 269
PR_AT01300	Washington District Pump Station Area Sanitary Sewer Improvements	\$ 1,479	\$ -	\$ 70	\$ 80	\$ 615
PR_AT01310	South Norfolk Area Gravity Sewer Improvements	\$ 5,141	\$ -	\$ -	\$ -	\$ 314
PR_AT01320	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ 243	\$ -	\$ -	\$ -	\$ -
PR_AT01332	Atlantic Treatment Plant Primary Clarifiers 1 thru 4 Automated Scum Removal	\$ 533	\$ 533	\$ -	\$ -	\$ -
PR_AT01350	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ 42,863	\$ 6,890	\$ 22,550	\$ 12,576	\$ 847
PR_AT01360	Atlantic Treatment Plant Motor Control Center Replacements	\$ 495	\$ 239	\$ 256	\$ -	\$ -
PR_AT01370	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ 295	\$ 66	\$ 98	\$ 98	\$ 33
PR_AT01390	Atlantic Treatment Plant Influent Screen Expansion	\$ 1,859	\$ 187	\$ 1,169	\$ 503	\$ -
	Subtotal	\$ 79,350	\$ 13,819	\$ 25,219	\$ 14,333	\$ 2,740
<b>Boat Harbor</b>						
PR_BH01000	33rd Street Pump Station Replacement Rehabilitation	\$ 227	\$ 227	\$ -	\$ -	\$ -
PR_BH01010	58th Street Connecting Sewer Rehabilitation	\$ 368	\$ 368	\$ -	\$ -	\$ -
PR_BH01160	Bridge Street Pump Station Replacement	\$ 5,529	\$ 5,529	\$ -	\$ -	\$ -
PR_BH01200	Hampton Trunk Sewer Extension Division E Gravity Replacement	\$ 703	\$ 703	\$ -	\$ -	\$ -
PR_BH01270	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	\$ 4,639	\$ 2,418	\$ 2,218	\$ 3	\$ -
PR_BH01300	Willard Avenue Pump Station Upgrades	\$ 5,320	\$ -	\$ 502	\$ 2,751	\$ 2,067
PR_BH01340	Bridge Street Siphon and Vent Relocation Replacement	\$ 239	\$ 239	\$ -	\$ -	\$ -
PR_BH01370	Ferguson Park Interceptor Force Main - Bridge Span Relocation	\$ 911	\$ 911	\$ -	\$ -	\$ -
PR_BH01400	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 3,200	\$ -	\$ -	\$ -	\$ 99
PR_BH01422	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 11,172	\$ -	\$ 745	\$ 2,572	\$ 4,277
PR_BH01450	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 2,013	\$ -	\$ -	\$ -	\$ 16
PR_BH01460	46th Street Diversion Sewer Rehabilitation Replacement	\$ 9,664	\$ 286	\$ 337	\$ 1,334	\$ 4,865
PR_BH01470	Boat Harbor Outlet Sewer Improvements	\$ 3,429	\$ 204	\$ 114	\$ 2,071	\$ 1,040
PR_BH01480	Jefferson Avenue Extension Gravity Improvements	\$ 2,324	\$ 127	\$ 1,371	\$ 826	\$ -
PR_BH01490	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ 3,578	\$ -	\$ -	\$ 170	\$ 174
PR_BH01500	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ 5,721	\$ 60	\$ 3,566	\$ 2,095	\$ -
PR_BH01510	Bloxoms Corner Force Main Replacement	\$ 2,633	\$ -	\$ -	\$ 100	\$ 135
PR_BH01530	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ 6,986	\$ 10	\$ 4,640	\$ 2,335	\$ -
PR_BH01550	LaSalle Avenue Interceptor Force Main Replacement	\$ 1,765	\$ -	\$ -	\$ 65	\$ 1,059
PR_BH01560	Hampton Trunk A and B Replacement - Jefferson Ave. to Buxton	\$ 9,557	\$ -	\$ -	\$ 176	\$ 596
	Subtotal	\$ 79,977	\$ 11,080	\$ 13,492	\$ 14,499	\$ 14,327

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
FY-2018 TO FY-2027 CASH FLOW PROJECTION (\$,000)**

CIP No	Project Name	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27
<b>Administration</b>							
PR_AD01040	Environmental Data Management System	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AD01200	Water Quality Department Work Space Expansion-Redesign	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AD01210	Asset Management Implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Army Base</b>							
PR_AB01000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	\$ 4,832	\$ 13,629	\$ 2,271	\$ -	\$ -	\$ -
PR_AB01010	Army Base Treatment Plant Improvements - Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AB01050	Section W Force Main Replacement	\$ 450	\$ 1,253	\$ 209	\$ -	\$ -	\$ -
PR_AB01160	Army Base Treatment Plant Biosolids Loading Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 5,282	\$ 14,882	\$ 2,480	\$ -	\$ -	\$ -
<b>Atlantic</b>							
PR_AT01141	Providence Road Interim Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01151	Shipp's Corner Interim Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01152	Shipp's Corner Pressure Reducing Station Modifications	\$ 376	\$ 251	\$ 5,206	\$ 7,438	\$ -	\$ -
PR_AT01190	Great Bridge Interceptor Extension 16-Inch Replacement	\$ 59	\$ 214	\$ 1,975	\$ 1,937	\$ -	\$ -
PR_AT01200	Atlantic Treatment Plant Administration Building Renovation and Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01291	Atlantic Treatment Plant FOG Receiving Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01300	Washington District Pump Station Area Sanitary Sewer Improvements	\$ 713	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01310	South Norfolk Area Gravity Sewer Improvements	\$ 279	\$ 3,032	\$ 1,516	\$ -	\$ -	\$ -
PR_AT01320	Dozers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	\$ -	\$ 16	\$ 37	\$ 190	\$ -	\$ -
PR_AT01332	Atlantic Treatment Plant Primary Clarifiers 1 thru 4 Automated Scum Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01350	Atlantic Treatment Plant Thermal Hydrolysis Process	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01360	Atlantic Treatment Plant Motor Control Center Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01370	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_AT01390	Atlantic Treatment Plant Influent Screen Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 1,428	\$ 3,513	\$ 8,734	\$ 9,565	\$ -	\$ -
<b>Boat Harbor</b>							
PR_BH01000	33rd Street Pump Station Replacement Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01010	58th Street Connecting Sewer Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01160	Bridge Street Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01200	Hampton Trunk Sewer Extension Division E Gravity Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01270	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01300	Willard Avenue Pump Station Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01340	Bridge Street Siphon and Vent Relocation Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01370	Ferguson Park Interceptor Force Main - Bridge Span Relocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01400	West Avenue and 35th Street Interceptor Force Main Replacement	\$ 1,175	\$ 1,926	\$ -	\$ -	\$ -	\$ -
PR_BH01422	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	\$ 3,571	\$ 8	\$ -	\$ -	\$ -	\$ -
PR_BH01450	Ivy Home-Shell Road Sewer Extension Division I Replacement	\$ 584	\$ 1,413	\$ -	\$ -	\$ -	\$ -
PR_BH01460	46th Street Diversion Sewer Rehabilitation Replacement	\$ 2,843	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01470	Boat Harbor Outlet Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01480	Jefferson Avenue Extension Gravity Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01490	Hampton Trunk Sewer Extension Division K Gravity Improvements	\$ 1,107	\$ 2,122	\$ 4	\$ -	\$ -	\$ -
PR_BH01500	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01510	Bloxoms Corner Force Main Replacement	\$ 714	\$ 1,684	\$ -	\$ -	\$ -	\$ -
PR_BH01530	Boat Harbor Treatment Plant Switchgear and Controls Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01550	LaSalle Avenue Interceptor Force Main Replacement	\$ 641	\$ -	\$ -	\$ -	\$ -	\$ -
PR_BH01560	Hampton Trunk A and B Replacement - Jefferson Ave. to Buxton	\$ 4,391	\$ 4,393	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 15,027	\$ 11,547	\$ 4	\$ -	\$ -	\$ -

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
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CIP No	Project Name	Total				
		FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21
<b>Chesapeake-Elizabeth</b>						
PR_CE01040	Independence Boulevard Pressure Reducing Station Modifications	\$ 2,544	\$ 278	\$ -	\$ 853	\$ 1,413
PR_CE01052	Newtown Road Interceptor Force Main Relocation	\$ 12,961	\$ 457	\$ 291	\$ 1,700	\$ -
PR_CE01130	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ 1,425	\$ -	\$ -	\$ -	\$ -
PR_CE01160	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 1,685	\$ -	\$ -	\$ -	\$ 20
PR_CE01170	Western Trunk Force Main Replacement	\$ 3,641	\$ 128	\$ 83	\$ 1,929	\$ 1,501
PR_CE01181	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 10,759	\$ -	\$ 478	\$ 1,674	\$ 717
PR_CE01182	Elbow Road Pressure Reducing Station	\$ 7,397	\$ 521	\$ 1,398	\$ 4,382	\$ 1,096
PR_CE01182	Providence Road PRS Upgrades and Interconnect Force Main	\$ 4,389	\$ 370	\$ 1,355	\$ 2,459	\$ 205
PR_CE01182	Virginia Beach Boulevard Force Main Phase VI	\$ 13,128	\$ 682	\$ 613	\$ 6,513	\$ 5,321
PR_CE01182	Lynnhaven Parkway Force Main Phase II	\$ 16,718	\$ 953	\$ 1,500	\$ 9,510	\$ 4,755
PR_CE01182	Salem Road Interconnect Force Main	\$ 1,205	\$ 88	\$ 174	\$ 943	\$ -
PR_CE01182	Providence Road Off-Line Storage Facility	\$ 21,283	\$ 1,041	\$ 1,492	\$ 13,754	\$ 4,996
PR_CE01182	Atlantic PRS Reliability Modifications	\$ 6,292	\$ 563	\$ 174	\$ 3,396	\$ 2,158
PR_CE01182	Kempsville PRS Reliability Modifications	\$ 2,660	\$ 257	\$ 51	\$ 1,179	\$ 1,174
PR_CE01182	Laskin Road PRS Reliability Modifications	\$ 2,670	\$ 258	\$ 52	\$ 1,183	\$ 1,178
PR_CE01182	Pine Tree PRS Reliability Modifications	\$ 2,885	\$ 278	\$ 1,051	\$ 1,555	\$ -
PR_CE01183	Little Creek Pump Station Modifications	\$ 698	\$ 71	\$ 44	\$ 299	\$ 283
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase I	\$ 3,456	\$ 468	\$ 1,360	\$ 1,628	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase II	\$ 1,849	\$ 122	\$ 95	\$ 725	\$ 907
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase III	\$ 826	\$ 111	\$ 152	\$ 564	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase IV	\$ 1,806	\$ 300	\$ 49	\$ 644	\$ 813
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase V	\$ 2,232	\$ 359	\$ 64	\$ 819	\$ 989
PR_CE01200	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	\$ 118	\$ 73	\$ 45	\$ -	\$ -
PR_CE01210	Southern Blvd and Witchduck Rd IFM Improvements	\$ 2,843	\$ 211	\$ 1,638	\$ 994	\$ -
	Subtotal	\$ 125,470	\$ 7,589	\$ 12,158	\$ 56,703	\$ 27,526
<b>James River</b>						
PR_JR01010	Center Avenue Pump Station Service Area I I Remediation	\$ 166	\$ 166	\$ -	\$ -	\$ -
PR_JR01060	Lucas Creek Pump Station Upgrade	\$ 6,347	\$ -	\$ -	\$ 133	\$ 303
PR_JR01082	Warwick Boulevard to James River Influent Force Main Section 2	\$ 723	\$ 723	\$ -	\$ -	\$ -
PR_JR01110	Warwick Boulevard to James River Influent Force Main Section 1	\$ 996	\$ 996	\$ -	\$ -	\$ -
PR_JR01130	Patrick Henry Pump Station Interconnection Force Main	\$ 3,284	\$ 87	\$ 320	\$ 1,370	\$ 1,507
PR_JR01150	Center Avenue I-I Remediation Phase II	\$ 235	\$ 235	\$ -	\$ -	\$ -
PR_JR01173	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ 9,407	\$ 333	\$ 580	\$ 2,135	\$ 5,442
PR_JR01202	Warwick Boulevard to James River Influent Force Main Section 3, Phase 2	\$ 1,516	\$ 1,517	\$ -	\$ -	\$ -
PR_JR01210	Huxley to Middle Ground Force Main Extension	\$ 3,361	\$ 625	\$ 2,730	\$ 5	\$ -
PR_JR01280	James River Treatment Plant Hydraulic Improvements	\$ 100	\$ 100	\$ -	\$ -	\$ -
PR_JR01290	James River Treatment Plant Centrate Equalization Improvements	\$ 100	\$ 100	\$ -	\$ -	\$ -
PR_JR01300	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ 1,183	\$ -	\$ 31	\$ 122	\$ 430
PR_JR01310	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	\$ 4,005	\$ 3,429	\$ 576	\$ -	\$ -
PR_JR01320	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 5,009	\$ -	\$ 115	\$ 381	\$ 1,280
	Subtotal	\$ 36,433	\$ 8,310	\$ 4,352	\$ 4,146	\$ 8,962
<b>Middle Peninsula</b>						
PR_MP01140	Mathews Collection System Vacuum Valve Replacement	\$ 574	\$ 574	\$ -	\$ -	\$ -
PR_MP01170	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 3,420	\$ 2,400	\$ 1,020	\$ -	\$ -
PR_MP01180	Kirby Street Sanitary Sewer Rehabilitation	\$ 495	\$ 495	\$ -	\$ -	\$ -
PR_MP01200	King William Treatment Plant Improvements	\$ 2,069	\$ 778	\$ 1,291	\$ -	\$ -
PR_MP01240	West Point Treatment Plant Tertiary Filter	\$ 460	\$ 412	\$ 48	\$ -	\$ -
PR_MP01250	Mathews Main Vacuum Pump Station Replacement	\$ 1,672	\$ 140	\$ 1,176	\$ 357	\$ -
PR_MP01270	Middle Peninsula Sewer Lateral Improvements	\$ 23,750	\$ -	\$ -	\$ -	\$ -
PR_MP01290	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ 544	\$ 80	\$ 465	\$ -	\$ -
PR_MP01300	Small Communities Collection System Rehabilitation Phase I	\$ 1,900	\$ 342	\$ 575	\$ 575	\$ 408
PR_MP01310	Small Communities Mobile Dewatering Facilities Installation	\$ 1,030	\$ 148	\$ 881	\$ -	\$ -
	Subtotal	\$ 12,164	\$ 5,368	\$ 5,456	\$ 932	\$ 408



**HAMPTON ROADS SANITATION DISTRICT  
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CIP No	Project Name	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27
<b>Chesapeake-Elizabeth</b>							
PR_CE01040	Independence Boulevard Pressure Reducing Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01052	Newtown Road Interceptor Force Main Relocation	\$ -	\$ -	\$ -	\$ -	\$ 5,170	\$ 5,343
PR_CE01130	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	\$ 509	\$ 916	\$ -	\$ -	\$ -	\$ -
PR_CE01160	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	\$ 126	\$ 605	\$ 934	\$ -	\$ -	\$ -
PR_CE01170	Western Trunk Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01181	Chesapeake-Elizabeth Treatment Plant Decommissioning	\$ 1,738	\$ 1,705	\$ 2,100	\$ 1,343	\$ 1,004	\$ -
PR_CE01182	Elbow Road Pressure Reducing Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Providence Road PRS Upgrades and Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Virginia Beach Boulevard Force Main Phase VI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Lynnhaven Parkway Force Main Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Salem Road Interconnect Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Providence Road Off-Line Storage Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Atlantic PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Kempsville PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Laskin Road PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01182	Pine Tree PRS Reliability Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Little Creek Pump Station Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase III	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase IV	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01183	Virginia Beach City Pump Station Upgrades, Phase V	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01200	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_CE01210	Southern Blvd and Witchduck Rd IFM Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 2,373	\$ 3,226	\$ 3,033	\$ 1,343	\$ 6,174	\$ 5,343
<b>James River</b>							
PR_JR01010	Center Avenue Pump Station Service Area I I Remediation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01060	Lucas Creek Pump Station Upgrade	\$ 5,912	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01082	Warwick Boulevard to James River Influent Force Main Section 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01110	Warwick Boulevard to James River Influent Force Main Section 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01130	Patrick Henry Pump Station Interconnection Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01150	Center Avenue I-I Remediation Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01173	Jefferson Avenue Interceptor Force Main Replacement Phase III	\$ 917	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01202	Warwick Boulevard to James River Influent Force Main Section 3, Phase 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01210	Huxley to Middle Ground Force Main Extension	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01280	James River Treatment Plant Hydraulic Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01290	James River Treatment Plant Centrate Equalization Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01300	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	\$ 600	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01310	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_JR01320	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	\$ 2,422	\$ 813	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 9,851	\$ 813	\$ -	\$ -	\$ -	\$ -
<b>Middle Peninsula</b>							
PR_MP01140	Mathews Collection System Vacuum Valve Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01170	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01180	Kirby Street Sanitary Sewer Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01200	King William Treatment Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01240	West Point Treatment Plant Tertiary Filter	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01250	Mathews Main Vacuum Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01270	Middle Peninsula Sewer Lateral Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01290	Mathews Nursing Home Line Vacuum Sewer Main Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01300	Small Communities Collection System Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_MP01310	Small Communities Mobile Dewatering Facilities Installation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**HAMPTON ROADS SANITATION DISTRICT  
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CIP No	Project Name	Total				
		FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21
<b>Nansemond</b>						
PR_NP01062	Suffolk Pump Station Replacement	\$ 10,107	\$ 472	\$ 606	\$ 4,332	\$ 4,698
PR_NP01130	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ 1,250	\$ 2	\$ 833	\$ 415	\$ -
PR_NP01181	Holland Road 24-Inch Interceptor Force Main - Section A Phase I	\$ 3,174	\$ 3,174	\$ -	\$ -	\$ -
PR_NP01220	Pughsville Pressure Reducing Station Upgrades	\$ 1,375	\$ 1,375	\$ -	\$ -	\$ -
PR_NP01240	Western Branch Sewer System Gravity Improvements	\$ 2,625	\$ -	\$ -	\$ -	\$ -
PR_NP01250	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ 7,512	\$ 355	\$ 1,503	\$ 5,220	\$ 435
PR_NP01260	Deep Creek Interceptor Force Main Replacement	\$ 5,587	\$ 1,047	\$ 3,405	\$ 1,135	\$ -
PR_NP01270	Nansemond Treatment Plant AAA Tank Coating	\$ 928	\$ 928	\$ -	\$ -	\$ -
PR_NP01300	Nansemond Treatment Plant Motor Control Center Replacements	\$ 1,904	\$ 497	\$ 497	\$ 497	\$ 414
PR_NP01330	Nansemond Treatment Plant Digester Rehabilitation	\$ 426	\$ 426	\$ -	\$ -	\$ -
PR_NP01340	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ 3,310	\$ 250	\$ 3,060	\$ -	\$ -
PR_NP01350	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ 1,734	\$ 306	\$ 1,428	\$ -	\$ -
PR_NP01360	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ 1,785	\$ -	\$ 1,785	\$ -	\$ -
PR_NP01370	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ 5,840	\$ 2,336	\$ 3,504	\$ -	\$ -
	Subtotal	\$ 47,557	\$ 11,167	\$ 16,620	\$ 11,598	\$ 5,547
<b>Surry</b>						
PR_SU01000	Town of Surry Pump Station and Discharge Force Main	\$ 2,300	\$ 75	\$ 374	\$ 1,850	\$ -
PR_SU01010	Surry Treatment Plant Infrastructure Improvements	\$ 550	\$ 29	\$ 521	\$ -	\$ -
	Subtotal	\$ 2,850	\$ 104	\$ 895	\$ 1,850	\$ -
<b>Virginia Initiative Plant</b>						
PR_VP01091	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 1 (Norfolk Fairmount Park Phase IX)	\$ 803	\$ 803	\$ -	\$ -	\$ -
PR_VP01092	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 2,864	\$ -	\$ -	\$ -	\$ -
PR_VP01102	Park Avenue Pump Station Replacement	\$ 5,027	\$ 155	\$ 207	\$ 662	\$ 2,287
PR_VP01160	Sewerage System Improvements Division C, Phase II Replacement	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -
PR_VP01401	Ferebee Avenue Pump Station Replacement	\$ 4,941	\$ 153	\$ 293	\$ 2,248	\$ 2,248
PR_VP01402	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ 5,974	\$ 79	\$ 260	\$ 2,492	\$ 3,144
PR_VP01470	Ingleside Road Pump Station Replacement	\$ 2,925	\$ -	\$ -	\$ -	\$ -
PR_VP01480	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 1,029	\$ -	\$ -	\$ -	\$ -
PR_VP01530	Larchmont Area Pump Station Replacements	\$ 13,352	\$ 94	\$ 493	\$ 288	\$ 4,970
PR_VP01540	Layfayette Norview-Estabrook Pump Station Replacements	\$ 15,905	\$ 56	\$ 615	\$ 349	\$ 5,367
PR_VP01580	Sanitary Sewer System Portsmouth Va Western Diversion Force Main Relcoation (VDOT Turnpike Road Betterment)	\$ 86	\$ 86	\$ -	\$ -	\$ -
PR_VP01632	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ 19,603	\$ 19,182	\$ 421	\$ -	\$ -
PR_VP01650	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 1,905	\$ -	\$ -	\$ 35	\$ 98
PR_VP01670	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 2,341	\$ -	\$ -	\$ -	\$ -
PR_VP01700	VIP Treatment Plant Incinerator Scrubber and ID Fans Replacement	\$ 18	\$ 18	\$ -	\$ -	\$ -
PR_VP01710	Central Norfolk Area Gravity Sewer Improvements	\$ 2,386	\$ -	\$ -	\$ -	\$ -
PR_VP01730	Rodman Avenue Pump Station Wet Well Rehabilitation	\$ 1,063	\$ 1,063	\$ -	\$ -	\$ -
	Subtotal	\$ 81,822	\$ 23,289	\$ 2,289	\$ 6,075	\$ 18,113
<b>Williamsburg</b>						
PR_WB0107	Williamsburg Interceptor Force Main Contract A Replacement	\$ 220	\$ 220	\$ -	\$ -	\$ -
PR_WB0122	North Trunk Force Main Part B Replacement	\$ 700	\$ 9	\$ 515	\$ 176	\$ -
PR_WB0124	Williamsburg Treatment Plant Switchgear Replacement	\$ 4,070	\$ 280	\$ 796	\$ 1,884	\$ 1,109
PR_WB0125	Lodge Road Pump Station Upgrades	\$ 1,428	\$ -	\$ 66	\$ 122	\$ 925
	Subtotal	\$ 6,417	\$ 509	\$ 1,378	\$ 2,182	\$ 2,034

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
FY-2018 TO FY-2027 CASH FLOW PROJECTION (\$,000)**

CIP No	Project Name	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27
<b>Nansemond</b>							
PR_NP01062	Suffolk Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01130	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01181	Holland Road 24-Inch Interceptor Force Main - Section A Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01220	Pughsville Pressure Reducing Station Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01240	Western Branch Sewer System Gravity Improvements	\$ 151	\$ 151	\$ 2,322	\$ -	\$ -	\$ -
PR_NP01250	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01260	Deep Creek Interceptor Force Main Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01270	Nansemond Treatment Plant AAA Tank Coating	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01300	Nansemond Treatment Plant Motor Control Center Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01330	Nansemond Treatment Plant Digester Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01340	Deep Creek Interceptor Force Main Risk Mitigation Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01350	Nansemond Treatment Plant Land Acquisition-Land Stabilization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01360	Nansemond Treatment Plant Land Acquisition-Structure Demolition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_NP01370	Nansemond Treatment Plant Struvite Recovery Facility Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 151	\$ 151	\$ 2,322	\$ -	\$ -	\$ -
<b>Surry</b>							
PR_SU01000	Town of Surry Pump Station and Discharge Force Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_SU01010	Surry Treatment Plant Infrastructure Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Virginia Initiative Plant</b>							
PR_VP01091	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 1 (Norfolk Fairmount Park Phase IX)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01092	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	\$ 71	\$ 142	\$ 1,224	\$ 1,427	\$ -	\$ -
PR_VP01102	Park Avenue Pump Station Replacement	\$ 1,715	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01160	Sewerage System Improvements Division C, Phase II Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01401	Ferebee Avenue Pump Station Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01402	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01470	Ingleside Road Pump Station Replacement	\$ -	\$ 213	\$ 1,023	\$ 1,689	\$ -	\$ -
PR_VP01480	Lee Avenue-Wesley Street Horizontal Valve Replacement	\$ 103	\$ 926	\$ -	\$ -	\$ -	\$ -
PR_VP01530	Larchmont Area Pump Station Replacements	\$ 5,659	\$ 1,848	\$ -	\$ -	\$ -	\$ -
PR_VP01540	Layfayette Norview-Estabrook Pump Station Replacements	\$ 6,766	\$ 2,752	\$ -	\$ -	\$ -	\$ -
PR_VP01580	Sanitary Sewer System Portsmouth Va Western Diversion Force Main Relcoation (VDOT Turnpike Road Betterment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01632	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01650	Norview-Estabrook Division I 12-Inch Force Main Replacement	\$ 1,229	\$ 543	\$ -	\$ -	\$ -	\$ -
PR_VP01670	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	\$ 44	\$ 131	\$ 1,667	\$ 500	\$ -	\$ -
PR_VP01700	VIP Treatment Plant Incinerator Scrubber and ID Fans Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_VP01710	Central Norfolk Area Gravity Sewer Improvements	\$ 46	\$ 199	\$ 1,005	\$ 1,137	\$ -	\$ -
PR_VP01730	Rodman Avenue Pump Station Wet Well Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 15,632	\$ 6,753	\$ 4,918	\$ 4,753	\$ -	\$ -
<b>Williamsburg</b>							
PR_WB0107	Williamsburg Interceptor Force Main Contract A Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_WB0122	North Trunk Force Main Part B Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_WB0124	Williamsburg Treatment Plant Switchgear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_WB0125	Lodge Road Pump Station Upgrades	\$ 314	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 314	\$ -	\$ -	\$ -	\$ -	\$ -

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
FY-2018 TO FY-2027 CASH FLOW PROJECTION (\$,000)**

CIP No	Project Name	Total				
		FY-18 to FY-27	FY-18	FY-19	FY-20	FY-21
<b>York River</b>						
PR_YR01030	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 2,940	\$ -	\$ -	\$ -	\$ -
PR_YR01052	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 4,007	\$ -	\$ -	\$ 64	\$ 312
PR_YR01053	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 5,266	\$ -	\$ -	\$ -	\$ -
PR_YR01190	Bethel-Poquoson Force Main Part III Replacement	\$ 999	\$ -	\$ 666	\$ 333	\$ -
PR_YR01222	York River Treatment Plant Digester Cover Replacement Phase II	\$ 1,127	\$ 882	\$ 245	\$ -	\$ -
PR_YR01311	York River Treatment Plant Outfall and Diffuser Modifications	\$ 825	\$ 825	\$ -	\$ -	\$ -
PR_YR01314	York River Treatment Plant Environmental Studies and Habitat Enhancement	\$ 777	\$ 478	\$ 299	\$ -	\$ -
PR_YR01340	Westminster Drive Force Main Replacement	\$ 668	\$ -	\$ -	\$ 96	\$ 567
	Subtotal	\$ 16,608	\$ 2,185	\$ 1,210	\$ 493	\$ 879
<b>General</b>						
PR_GN01073	Horizontal Valve Replacement Phase III	\$ 3,041	\$ -	\$ 351	\$ 577	\$ 577
PR_GN01170	Pump Station Generators	\$ 5,181	\$ 1,672	\$ 1,239	\$ 1,239	\$ 1,032
PR_GN01211	Regional Hydraulic Model and Other Consent Order Requirements	\$ 6,180	\$ 4,131	\$ 2,049	\$ -	\$ -
PR_GN01211	Condition Assessment - Pipeline Prompts Repairs	\$ 3,700	\$ 3,700	\$ -	\$ -	\$ -
PR_GN01211	Condition Assessment - Gravity Main Pipeline Inspection	\$ 950	\$ 950	\$ -	\$ -	\$ -
PR_GN01211	Continued Condition Assessment	\$ 1,750	\$ 1,750	\$ -	\$ -	\$ -
PR_GN01213	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ 6,074	\$ 1,617	\$ 1,617	\$ 1,617	\$ 1,223
PR_GN01214	Pump Station Wet Well Rehabilitation Phase I	\$ 2,963	\$ 726	\$ 789	\$ 789	\$ 658
PR_GN01214	Locality Hydraulic Model	\$ 800	\$ 400	\$ 400	\$ -	\$ -
PR_GN01280	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ 8,828	\$ 6,188	\$ 2,639	\$ -	\$ -
PR_GN01330	Treatment Plant Grease Handling Facilities	\$ 1,984	\$ 1,287	\$ 697	\$ -	\$ -
PR_GN01390	South Shore Interceptors Air Vent Rehabilitation	\$ 1,759	\$ 1,759	\$ -	\$ -	\$ -
PR_GN01450	Renewable Energy Facility and Associated Plant Improvements	\$ 181,996	\$ -	\$ -	\$ -	\$ -
PR_GN01490	North Shore Gravity Sewer Improvements Phase I	\$ 4,352	\$ -	\$ 78	\$ 216	\$ 207
PR_GN01500	South Shore Gravity Sewer Improvements Phase I	\$ 710	\$ -	\$ -	\$ -	\$ 36
PR_GN01510	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	\$ 502	\$ 25	\$ 477	\$ -	\$ -
PR_GN01530	Interceptor System Valve Improvements Phase I	\$ 2,514	\$ -	\$ 71	\$ 152	\$ 523
PR_GN01540	South Shore Aerial Crossing Improvements	\$ 253	\$ -	\$ -	\$ 4	\$ 14
PR_GN01570	Aquifer Replenishment System (SWIFT)	\$ 8,449	\$ 8,449	\$ -	\$ -	\$ -
PR_GN01580	North Shore Automated Diversion Facilities	\$ 1,432	\$ 9	\$ 148	\$ 1,040	\$ 235
PR_GN01620	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ 20,028	\$ 19,622	\$ 375	\$ 31	\$ -
PR_GN01630	Sustainable Water Initiative for Tomorrow (SWIFT)	\$ 1,066,000	\$ -	\$ 5,187	\$ 13,641	\$ 63,445
PR_GN01640	Treatment Plant Dewatering Replacement Phase I	\$ 1,680	\$ 672	\$ 1,008	\$ -	\$ -
PR_GN01650	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ 852	\$ 100	\$ 752	\$ -	\$ -
	Subtotal	\$ 879,016	\$ 53,058	\$ 17,876	\$ 19,305	\$ 67,950
<b>Future Improvements</b>						
PR_IP01000	Interceptor System Expansions and Improvements	\$ 38,836	\$ -	\$ 2,415	\$ 4,400	\$ 3,015
PR_IP01010	Pump Station Expansions and Improvements	\$ 19,128	\$ -	\$ 1,190	\$ 2,167	\$ 1,485
PR_IP01020	Treatment Plant Expansions and Improvements	\$ 26,210	\$ -	\$ -	\$ -	\$ -
PR_IP01030	General Expansions and Improvements	\$ 5,824	\$ -	\$ -	\$ -	\$ -
PR_IP01040	Interceptor System Rehabilitation and Replacement	\$ 38,836	\$ -	\$ 2,415	\$ 4,400	\$ 3,015
PR_IP01050	Pump Station Rehabilitation and Replacement	\$ 19,128	\$ -	\$ 1,190	\$ 2,167	\$ 1,485
PR_IP01060	Treatment Plant Rehabilitation and Replacement	\$ 26,210	\$ -	\$ -	\$ -	\$ -
PR_IP01070	General Rehabilitation and Replacement	\$ 5,824	\$ -	\$ -	\$ -	\$ -
PR_IP01080	Regional Wet Weather Improvements	\$ 1,713,034	\$ -	\$ -	\$ 7,313	\$ 17,669
PR_IP01100	Advanced Treatment Infrastructure Upgrades	\$ 905,105	\$ -	\$ 2,773	\$ 13,536	\$ 23,058
	Subtotal	\$ 849,986	\$ -	\$ 9,983	\$ 33,985	\$ 49,728
	<b>CIP TOTALS</b>	\$ 2,247,983	\$ 140,000	\$ 112,745	\$ 166,667	\$ 200,000

**HAMPTON ROADS SANITATION DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
FY-2018 TO FY-2027 CASH FLOW PROJECTION (\$,000)**

CIP No	Project Name	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27
<b>York River</b>							
PR_YR01030	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	\$ 214	\$ 1,414	\$ 1,312	\$ -	\$ -	\$ -
PR_YR01052	Magruder Mercury Interceptor Force Main Replacement - Section B	\$ 1,316	\$ 2,311	\$ 3	\$ -	\$ -	\$ -
PR_YR01053	Magruder Mercury Interceptor Force Main Replacement - Section C	\$ 30	\$ 54	\$ 480	\$ 1,508	\$ 2,255	\$ 939
PR_YR01190	Bethel-Poquoson Force Main Part III Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_YR01222	York River Treatment Plant Digester Cover Replacement Phase II	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_YR01311	York River Treatment Plant Outfall and Diffuser Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_YR01314	York River Treatment Plant Environmental Studies and Habitat Enhancement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_YR01340	Westminster Drive Force Main Replacement	\$ 5	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 1,566	\$ 3,779	\$ 1,794	\$ 1,508	\$ 2,255	\$ 939
<b>General</b>							
PR_GN01073	Horizontal Valve Replacement Phase III	\$ 577	\$ 577	\$ 384	\$ -	\$ -	\$ -
PR_GN01170	Pump Station Generators	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01211	Regional Hydraulic Model and Other Consent Order Requirements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01211	Condition Assessment - Pipeline Prompts Repairs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01211	Condition Assessment - Gravity Main Pipeline Inspection	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01211	Continued Condition Assessment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01213	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01214	Pump Station Wet Well Rehabilitation Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01214	Locality Hydraulic Model	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01280	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01330	Treatment Plant Grease Handling Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01390	South Shore Interceptors Air Vent Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01450	Renewable Energy Facility and Associated Plant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01490	North Shore Gravity Sewer Improvements Phase I	\$ 2,403	\$ 1,449	\$ -	\$ -	\$ -	\$ -
PR_GN01500	South Shore Gravity Sewer Improvements Phase I	\$ 63	\$ 229	\$ 382	\$ -	\$ -	\$ -
PR_GN01510	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01530	Interceptor System Valve Improvements Phase I	\$ 1,326	\$ 442	\$ -	\$ -	\$ -	\$ -
PR_GN01540	South Shore Aerial Crossing Improvements	\$ 10	\$ 133	\$ 92	\$ -	\$ -	\$ -
PR_GN01570	Aquifer Replenishment System (SWIFT)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01580	North Shore Automated Diversion Facilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01620	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01630	Sustainable Water Initiative for Tomorrow (SWIFT)	\$ 84,837	\$ 100,659	\$ 131,258	\$ 152,360	\$ 125,606	\$ 118,041
PR_GN01640	Treatment Plant Dewatering Replacement Phase I	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PR_GN01650	JR and NTP Dewatering Building Mod and Centrifuge Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Subtotal	\$ 89,216	\$ 103,488	\$ 132,117	\$ 152,360	\$ 125,606	\$ 118,041
<b>Future Improvements</b>							
PR_IP01000	Interceptor System Expansions and Improvements	\$ 284	\$ 1,483	\$ -	\$ 4,751	\$ 12,605	\$ 9,882
PR_IP01010	Pump Station Expansions and Improvements	\$ 140	\$ 730	\$ -	\$ 2,340	\$ 6,208	\$ 4,867
PR_IP01020	Treatment Plant Expansions and Improvements	\$ -	\$ -	\$ -	\$ 819	\$ 15,087	\$ 10,304
PR_IP01030	General Expansions and Improvements	\$ -	\$ -	\$ -	\$ 182	\$ 3,353	\$ 2,290
PR_IP01040	Interceptor System Rehabilitation and Replacement	\$ 284	\$ 1,483	\$ -	\$ 4,751	\$ 12,605	\$ 9,882
PR_IP01050	Pump Station Rehabilitation and Replacement	\$ 140	\$ 730	\$ -	\$ 2,340	\$ 6,208	\$ 4,867
PR_IP01060	Treatment Plant Rehabilitation and Replacement	\$ -	\$ -	\$ -	\$ 819	\$ 15,087	\$ 10,304
PR_IP01070	General Rehabilitation and Replacement	\$ -	\$ -	\$ -	\$ 182	\$ 3,353	\$ 2,290
PR_IP01080	Regional Wet Weather Improvements	\$ 23,189	\$ 25,829	\$ 27,093	\$ 27,951	\$ 28,743	\$ 29,070
PR_IP01100	Advanced Treatment Infrastructure Upgrades	\$ 44,645	\$ 97,783	\$ 103,219	\$ 72,051	\$ 48,431	\$ 77,636
	Subtotal	\$ 68,684	\$ 128,038	\$ 130,311	\$ 116,186	\$ 151,680	\$ 161,391
	<b>CIP TOTALS</b>	\$ 209,524	\$ 276,190	\$ 285,714	\$ 285,714	\$ 285,714	\$ 285,714

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FY2018 Budget  
April 25, 2017

- Wastewater Rates
- Facility Charges
- Surcharges
- Small Communities
- Budget
- Capital Improvement Program
- Financial Forecast

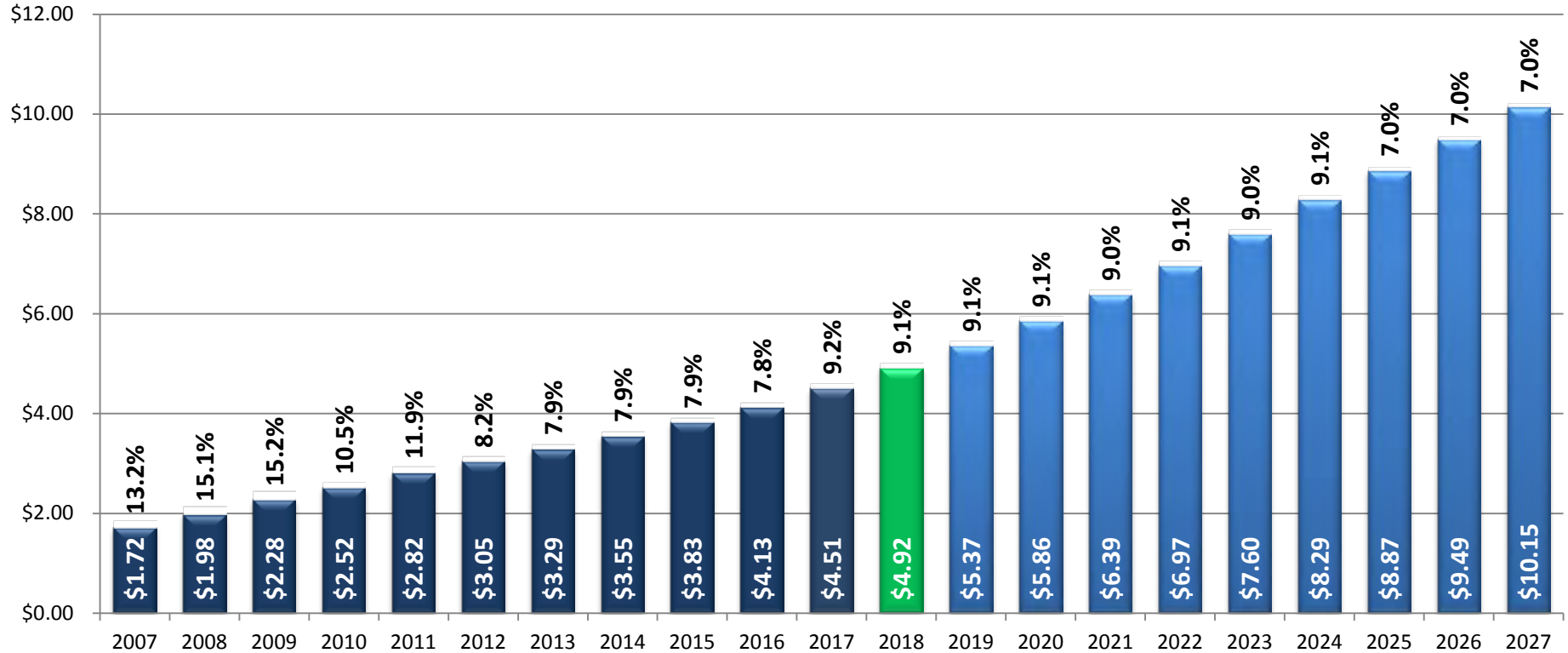


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# Wastewater Rates

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# Proposed FY18 Wastewater Treatment Unit Charge = \$4.92/ccf



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# Facility Charges

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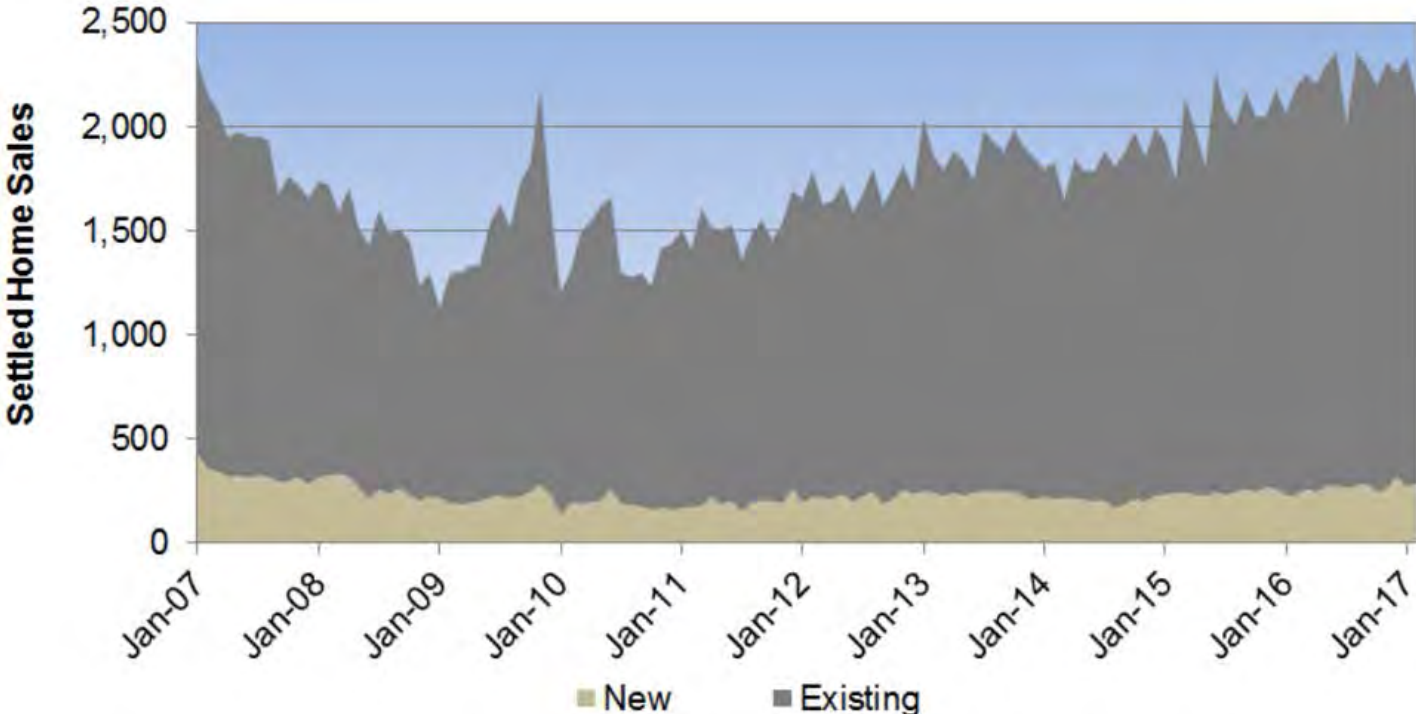
# Hampton Roads Employment



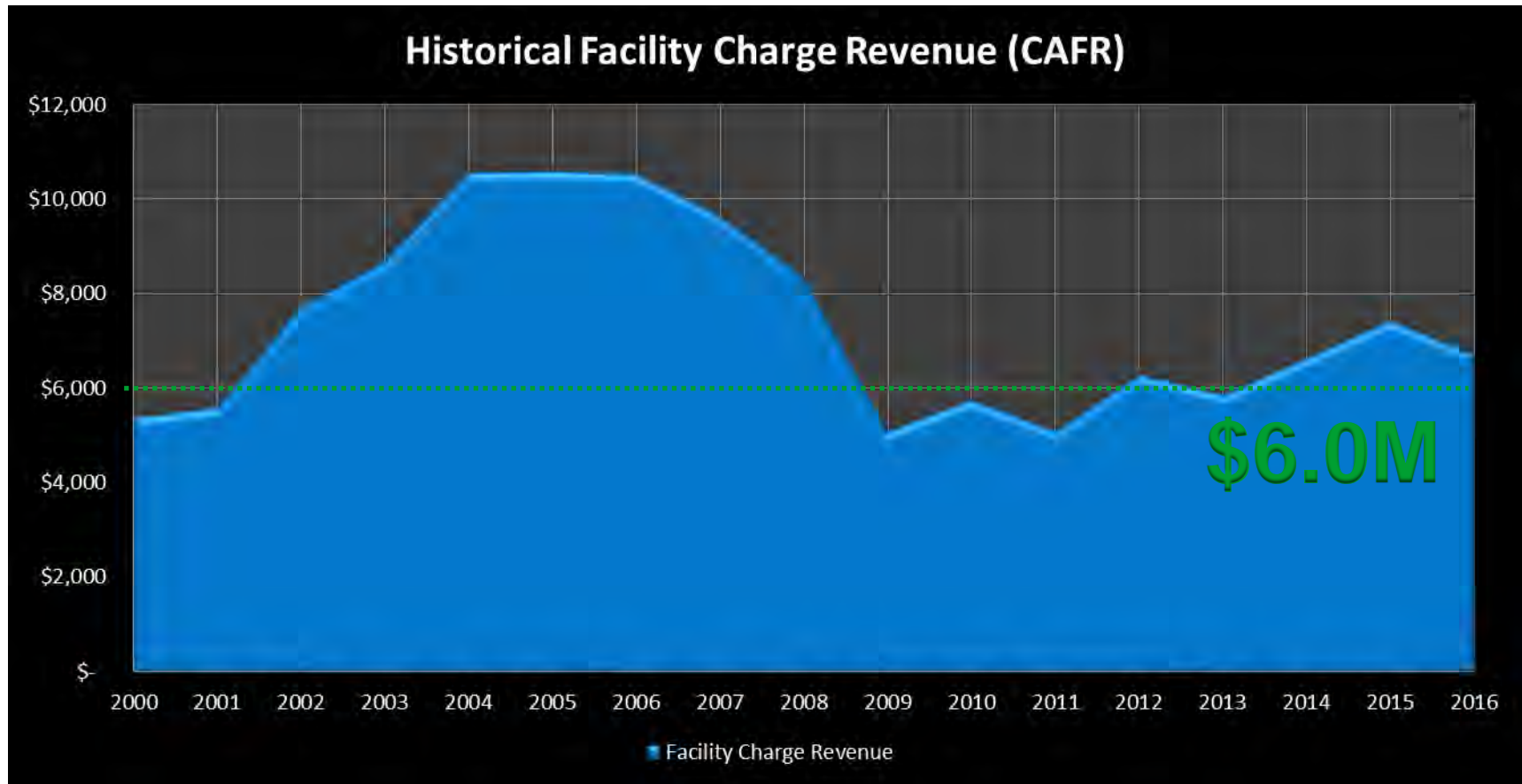
# Housing Permits Rising



# Settled Home Sales



# Historical Annual Facility Charge Revenue (CAFR)



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# Surcharge Rates

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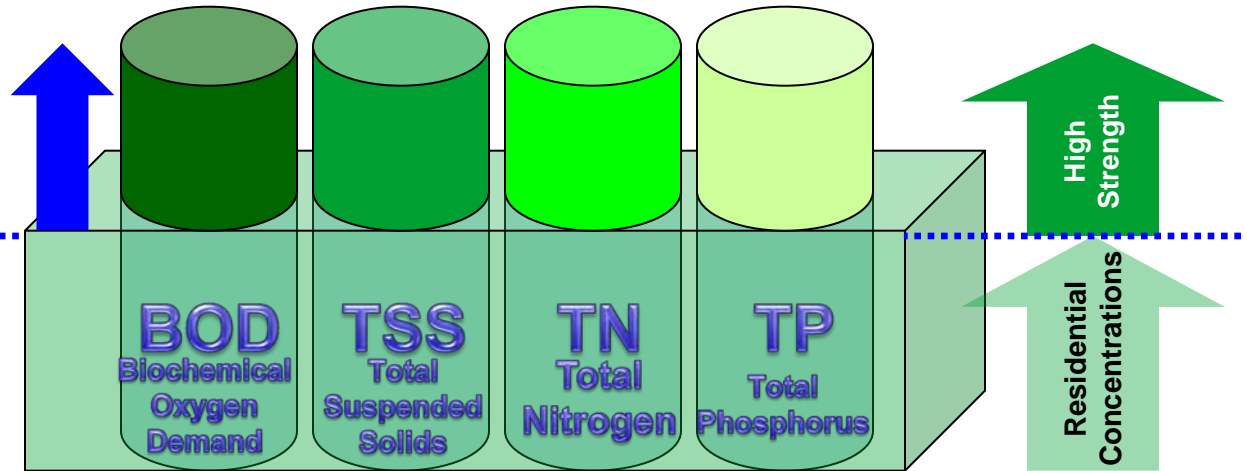


# Surcharges for High Strength or Unusual Wastes

- Domestic Quality Wastewater
- High Strength or Unusual Wastes

Surcharge Rates represent  
Marginal/Incremental Costs

**BASE COST** includes Fixed and  
Variable Costs



# Surcharge Determined by the Rate Model

- Updated annually based on budgeted expenditures
- Provides a defensible rate to the Va State Corporation Commission

FY 17 Budget Summary & Draft Rates (7 April 2016 – 4<sup>th</sup> Revision\*)

FY 17 Budget	Plant or Division	\$/Year
	Army Base	6,365,138
	Atlantic	8,511,755
	Boat Harbor	6,897,723
	Chesapeake Elizabeth	6,205,511
	James River	6,014,208
	Nansemond	6,575,972
	YIP	6,333,864
	Williamsburg	4,598,659
	York River	6,291,982
	Accounting	1,122,714
	Asset Management	532,032
	Automotive Shop	961,943
	Carpentry Shop	389,990
	Central Environmental Laboratory	5,947,291
	Customer Care	9,628,356
	Debt Service	63,795,000
	Design & Construction – North Shore	1,070,485
	Design & Construction – South Shore	910,076
	Electrical & Energy Management	6,982,186
	Engineering Director	1,006,744
	Environmental Improvements	40,000
	Facilities Maintenance	2,296,397
	Finance Director	1,438,729
	General Expenses	4,437,026
	General Expenses (Transfer to Construction)	52,100,912
	General Management	952,913
	Human Resources	997,723
	Industrial Controls	1,132,115
	Information Technology Director	537,731
	Information Technology	13,648,855
	Machine Shop	399,893
	Middle Peninsula	4,080,223
	Municipal Assistance	513,204
	North Shore Interceptors	6,673,097
	North Shore Bio-Solids	20,800
	Operations Director	634,663
	Organizational Development	469,395
	P3	2,690,720
	Planning Division	2,148,108
	Procurement	1,181,676
	Regional Residual Facility	16,900
	Regional Bio-Solids Facility	234,700
	Research	1,837,321
	Safety	574,883
	Small Communities Bio-Solids	12,800
	South Shore Bio-Solids	16,900
	South Shore East Interceptors	8,141,692
	Sludge Recovery	124,900
	Talent Management Director	201,163
	Technical Services	3,769,803
	Water Quality Director	471,776
	<b>Total</b>	<b>362,232,998</b>

\* Changed facility charge income to \$5,750,000; changed excess minimum bills to \$4,500,000; changed base rate bills to \$1,500,000; and changed bad debt from 0.73% to 0.67% (see next page).

## Proposed Surcharge Rates

- Rate Model quantifies the value of the BOD to the treatment process
- BOD reduces methanol, power, and alkalinity costs
- Disincentivises industries to send us Phosphorus and Nitrogen

Pollutant	2017 Rate per 100 lbs	2018 Rate per 100 lbs	Change in Rate
BOD	\$3.30	\$1.46	-\$1.84 (-56%)
TSS	\$7.27	\$8.32	+\$1.05 (+14%)
TP	\$186.49	\$185.32	-\$1.17 (-1%)
TKN	\$26.59	\$50.56	+\$23.97 (+90%)

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## Small Communities Rates

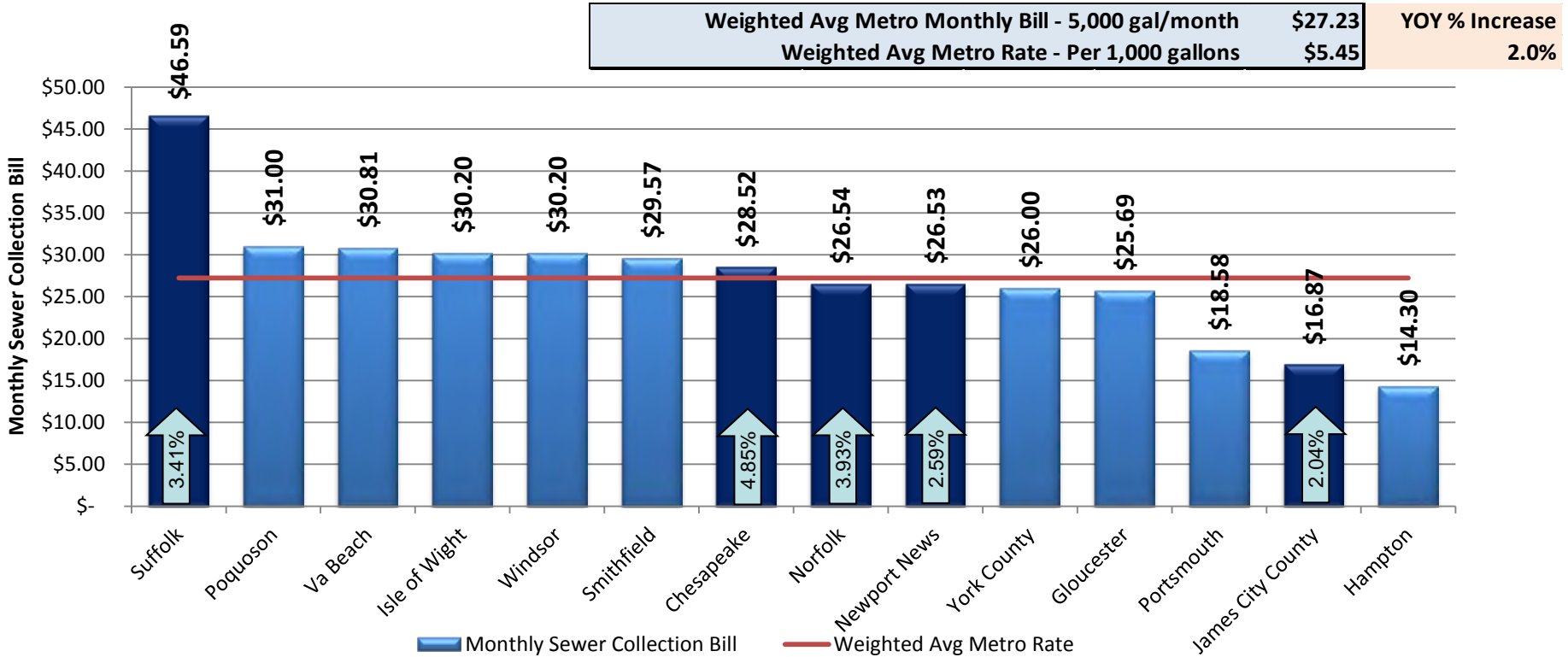
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- Collection System Rates based on a weighted average of the “Metro” localities’ sewer collection rates reported by the Hampton Roads Planning District Commission (HRPDC)
- Wastewater Treatment Charge uniform across HRSD

# Locality Collection System – Summary of Rate Increases

Locality	FY17	FY18	Rate Increase	Notes
<b>Chesapeake</b>	\$ 27.20	\$ 28.52	4.85%	<b>Chesapeake (rates eff. 7-1-2016)</b>
<b>Norfolk</b>	\$ 25.53	\$ 26.54	3.93%	<b>Norfolk (rates eff. 7-1-2016)</b>
<b>Suffolk</b>	\$ 45.05	\$ 46.59	3.41%	<b>Suffolk (rates eff. 7-1-2016)</b>
<b>Newport News</b>	\$ 25.86	\$ 26.53	2.59%	<b>Newport News (rates eff. 7-1-2016)</b>
<b>James City County</b>	\$ 16.54	\$ 16.87	2.04%	<b>James City County (JCSA rates eff. 7-1-2016)</b>
Portsmouth	\$ 18.58	\$ 18.58	0.00%	Portsmouth (rates eff. 7-1-2012)
Va Beach	\$ 30.81	\$ 30.81	0.00%	Virginia Beach (water rates eff. 7-1-2015; sewer rates eff. 7-1-14)
Gloucester	\$ 25.69	\$ 25.69	0.00%	Gloucester (rates eff. July 1, 2013)
Hampton	\$ 14.30	\$ 14.30	0.00%	Hampton (NNWW rates eff. 7-1-2016)
Poquoson	\$ 31.00	\$ 31.00	0.00%	Poquoson (NNWW rates eff. 7-1-2016)
York County	\$ 26.00	\$ 26.00	0.00%	York County (NNWW rates eff. 7-1-2016; YK sewer rates eff. 3-1-2015)
Isle of Wight	\$ 30.20	\$ 30.20	0.00%	Isle of Wight (rates eff. 7-1-16)
Smithfield	\$ 29.57	\$ 29.57	0.00%	Smithfield (rates eff. 7-1-2014)
Windsor	\$ 30.20	\$ 30.20	0.00%	Windsor (rates eff. 2015)

# FY2018 Monthly Collection Charges by Locality (HRPDC)



# Small Communities Residential Bill

## FY18 Small Communities Treatment and Collections Residential Bill

	HRSD Rate (\$/k-gals)	Collections (\$/k-gals)	Capital Recovery (\$/k-gals)	FY18 Rate	YOY Increase	Minimum Monthly Bill - 3,000 gals
West Point	\$6.58	\$5.45	\$2.24	\$14.27	4.8%	\$42.81
Urbanna	\$6.58	\$5.45	\$2.13	\$14.16	4.9%	\$42.48
King William	\$6.58	\$5.45	\$0.54	\$12.57	5.5%	\$37.71
Surry	\$6.58	\$5.45	N/A	\$12.03	5.8%	\$36.09

	HRSD Rate (\$/k-gals)	Collections (\$/k-gals)	Capital Recovery (\$/k-gals)	FY18 Rate	YOY Increase	Flat Monthly Bill based on ERU Usage Rate - 4,000 gals per month
Mathews	\$6.58	\$5.45	N/A	\$12.03	5.8%	\$48.12

The amount charged to Mathews residential customers is a flat rate based on an Equivalent Residential water Usage (ERU) of 12,000 gallons per quarter. All others, including commercial, government and professional customers, are charged based on a schedule of fractions or multiples of the ERU as appropriate for each customer category. This schedule is derived from information supplied by the Mathews Courthouse Sanitary District and may be subject to verification or revision.





## Proposed Flat Rate Changes

- Proposed Metro Flat Rate = \$31.98 per 30-day period
- New Small Communities flat rate (varies due to Capital Recovery)

Proposed Flat Monthly Bill <sup>1</sup>	
West Point	\$57.08
Urbanna	\$56.64
King William	\$50.28
Surry	\$48.12

<sup>1</sup> Assumes 4,000 gals per month

- Limit new flat rate customers - 1" water meters and smaller
  - Existing customers grandfathered
  - Other customers require General Manager or Director of Finance approval

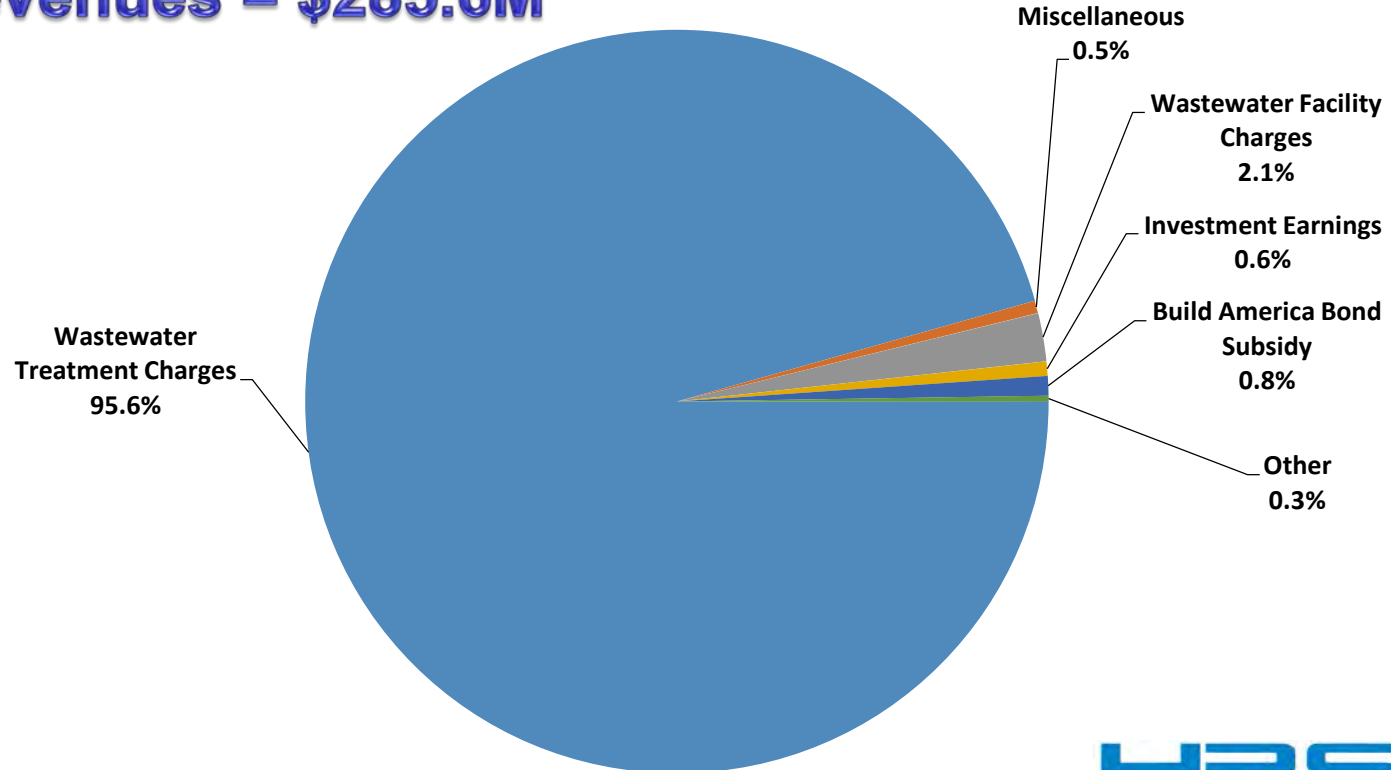
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## FY18 Budget

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# FY18 Budgeted Revenues

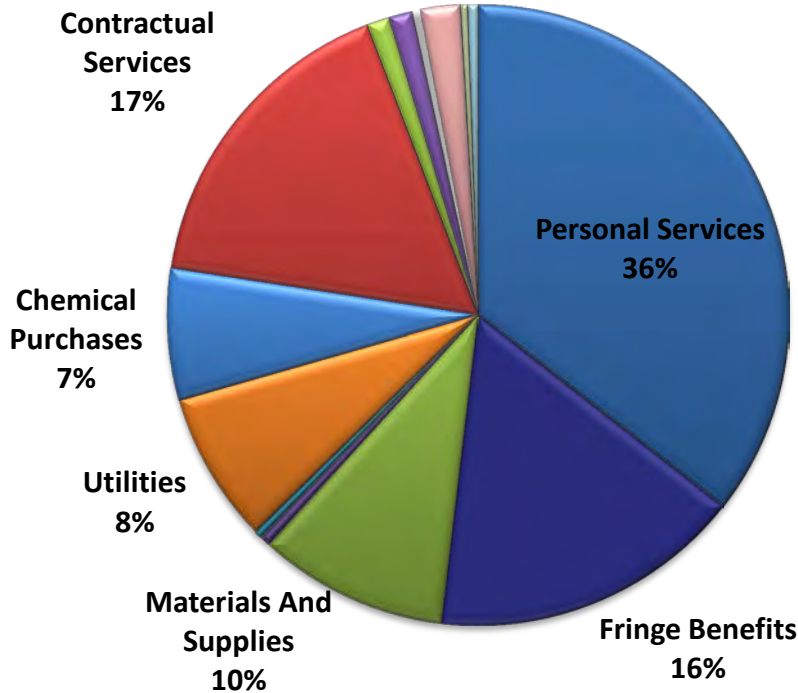
**Total Revenues = \$285.6M**



## FY18 Budgeted Revenues

	FY-2018	Adopted FY-2017	Increase/ (Decrease)	Percent Change
<b>Operating Revenues</b>				
Wastewater Treatment Charges	\$ 273,087,693	\$ 249,743,000	\$ 23,344,693	9%
Miscellaneous	1,545,000	2,120,000	(575,000)	(27%)
<b>Total-Operating Revenue</b>	<b>274,632,693</b>	<b>251,863,000</b>	<b>22,769,693</b>	<b>9%</b>
<b>Non-Operating Revenues</b>				
Wastewater Facility Charges	6,000,000	5,850,000	150,000	3%
Investment Earnings	1,800,000	1,400,000	400,000	29%
Build America Bond Subsidy	2,400,000	2,400,000	-	0%
Other	720,000	720,000	-	0%
<b>Total Non-Operating Revenues</b>	<b>10,920,000</b>	<b>10,370,000</b>	<b>550,000</b>	<b>5%</b>
<b>Total Revenues and Transfers</b>	<b>\$ 285,552,693</b>	<b>\$ 262,233,000</b>	<b>\$ 23,319,693</b>	<b>9%</b>

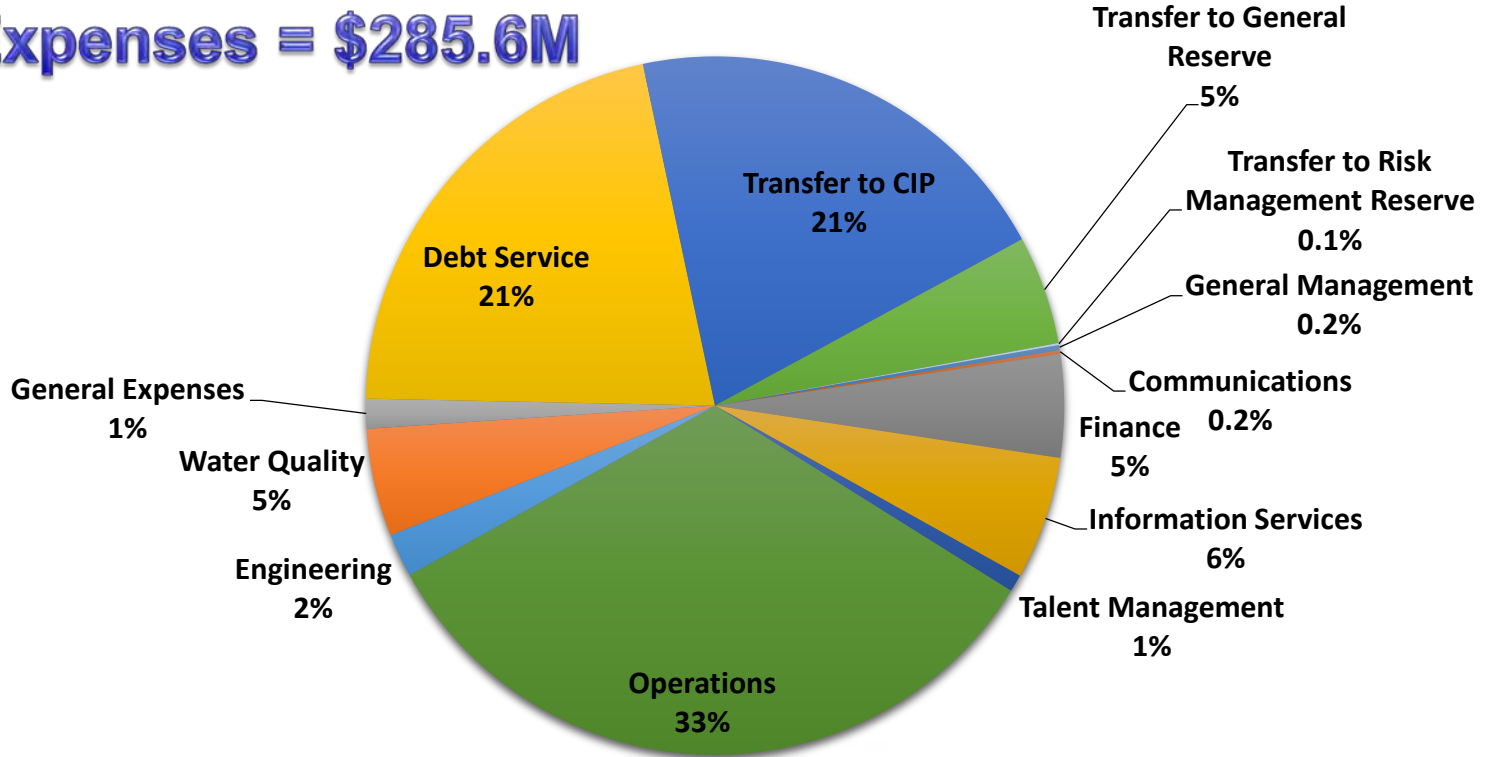
# FY18 Operating Expenses – by Major Object Codes



OBJECT CODE	FY17 Budget Year Total	FY18 Proposed Year Total	FY18 Proposed vs Budget \$ Dif	FY18 Proposed vs Budget % Dif from Budget
Column1	Column4	Column6	Column7	Column8
AC_51000:Personal Services	\$ 52,521,153	\$ 53,773,326	\$ 1,252,173	2.38%
AC_52000:Fringe Benefits	\$ 24,277,464	\$ 24,691,454	\$ 413,990	1.71%
AC_53000:Materials And Supplies	\$ 14,450,282	\$ 14,919,311	\$ 469,029	3.25%
AC_53500:Transportation	\$ 849,429	\$ 804,060	\$ (45,369)	-5.34%
AC_53600:Transportation Fuels	\$ 594,290	\$ 615,325	\$ 21,035	3.54%
AC_54000:Utilities	\$ 12,110,491	\$ 11,947,481	\$ (163,010)	-1.35%
AC_54500:Chemical Purchases	\$ 9,210,500	\$ 10,324,400	\$ 1,113,900	12.09%
AC_55000:Contractual Services	\$ 23,098,221	\$ 25,378,113	\$ 2,279,892	9.87%
AC_55500:Consulting Services	\$ 1,605,100	\$ 1,800,792	\$ 195,692	12.19%
AC_56000:Miscellaneous Expenses	\$ 1,847,174	\$ 1,843,849	\$ (3,325)	-0.18%
AC_56500:Recruitment Expenses	\$ 384,200	\$ 416,500	\$ 32,300	8.41%
AC_57500:Apprentice Program	\$ 209,700	\$ 230,431	\$ 20,731	9.89%
AC_58000:Insurance	\$ 2,910,000	\$ 3,105,000	\$ 195,000	6.70%
AC_58500:District Memberships_AC_58500	\$ 502,298	\$ 558,823	\$ 56,525	11.25%
AC_60000:Capital Assets	\$ 1,454,400	\$ 814,100	\$ (640,300)	-44.03%
<b>Total Operating Expenses</b>	<b>\$ 146,024,702</b>	<b>\$ 151,222,965</b>	<b>\$ 5,198,263</b>	<b>3.56%</b>

# FY18 Budgeted Expenditures – by Department with Transfers

**Total Expenses = \$285.6M**



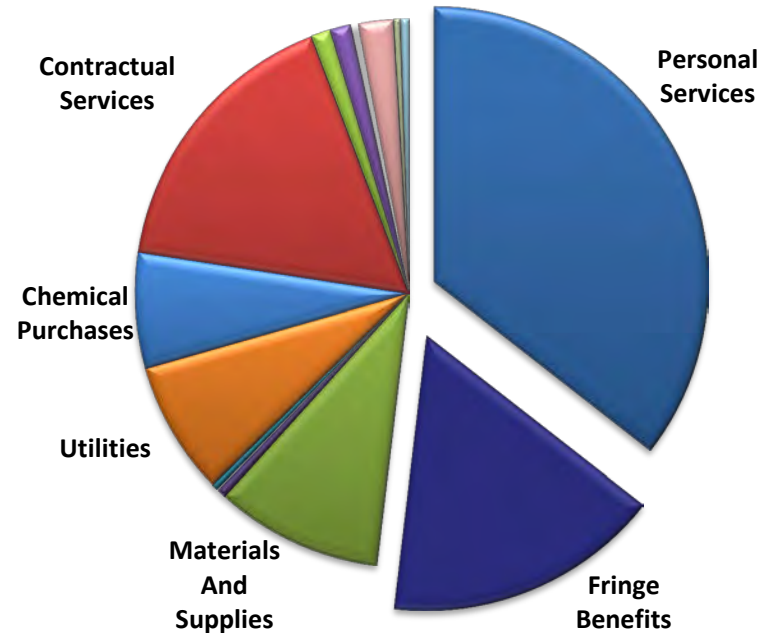
# FY18 Budgeted Expenditures and Transfers

	FY-2018	Adopted FY-2017	Increase/ (Decrease)	Percent Change
<b>Operating Appropriations</b>				
General Management	\$ 680,710	\$ 952,913	\$ (272,203)	(29%)
Communications	470,615	-	470,615	0%
Finance	13,593,503	13,274,002	319,501	2%
Information Services	16,229,457	15,318,700	910,756	6%
Talent Management	2,280,395	2,243,164	37,231	2%
Operations	94,102,651	90,913,570	3,189,081	4%
Engineering	5,731,535	5,667,444	64,090	1%
Water Quality	14,205,703	13,477,883	727,820	5%
General Expenses	3,928,399	4,177,026	(248,627)	(6%)
<b>Total-Operating Appropriations</b>	<b>151,222,965</b>	<b>146,024,702</b>	<b>5,198,263</b>	<b>4%</b>
<b>Appropriations for Debt Service and Transfers</b>				
Debt Service	60,849,120	63,847,000	(2,997,880)	(5%)
Transfer to CIP	58,802,000	52,101,298	6,700,702	13%
Transfer to General Reserve	14,418,608	-	14,418,608	0%
Transfer to Risk Management Reserve	260,000	260,000	-	0%
<b>Total Appropriations for Debt Service and Transfers</b>	<b>134,329,728</b>	<b>116,208,298</b>	<b>18,121,430</b>	<b>16%</b>
<b>Total Appropriations</b>	<b>\$ 285,552,693</b>	<b>\$ 262,233,000</b>	<b>\$ 23,319,693</b>	<b>9%</b>

## Budget Highlights

- Personal Services up only 2.4%
- Fringe Benefits up only 1.7%
  - Hospitalization flat year over year
  - PwC Health Research Institute projects 6.5% increase
- Debt service declined – Va Clean Water Revolving Loan Fund (VCWRLF)
  - Principal payments delayed
  - No new debt issue, interim financing

### Operating Expenses





- FY17 budget 818 FT
- FY17 mid-year count 821 FT, 3 mid-year additions
- FY 18 budget proposal 830 FT, 9 new positions
- New Positions
  - 1 Financial Analyst in Accounting
  - 1 Telecommunications Support Coordinator in IT
  - 1 Industrial Control Systems Manager in Industrial Controls
  - 1 Maintenance Operator in SWIFT Demo Facility
  - 1 Plant Operator in SWIFT Demo Facility
  - 1 Electrical & Instrumentation Specialist in Electrical & Energy Management
  - 1 P3 Specialist in P3
  - 2 TSD Specialist in TSD
- Proposed but NOT added in FY18
  - 2 Electrical and Instrumentation
  - 2 Water Quality Specialists for Municipal Assistance groundwater program

- Notable increase in contractual services
  - SWIFT Research
  - Ovation (DCS) Upgrades at James River and York River
  - Virginia Beach Monthly Billing
  - Software Maintenance/Support
  - Roof maintenance services
  - Ash Handling
  - Surveying
  - Cathodic Protection
  - Legal services for water quality issues (James River Chlorophyll Study)
  - Surry operating contracts (Sussex Service Authority)

- Notable increase in consulting services
  - Plant Process Modeling
  - Small plant and pump station projects
  - BIM (Building Information Management)
  - Corrosion protection services
  - Banking fees
  - Benefits consultant fees (Cigna audit)

- Chemical costs increases - both unit costs & usage
  - Methanol increase to meet WLA with VIP & AB on-line
  - Ferric sulfate in lieu of ferric chloride
  - Increase in dosage of sodium hydroxide for alkalinity control related to nutrient removal efficiencies
  - Two Surry plants

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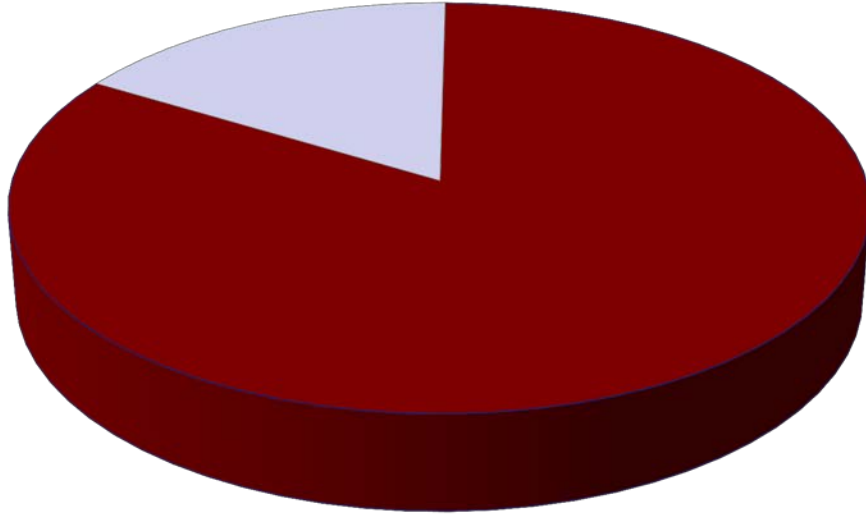
# Capital Improvement Program

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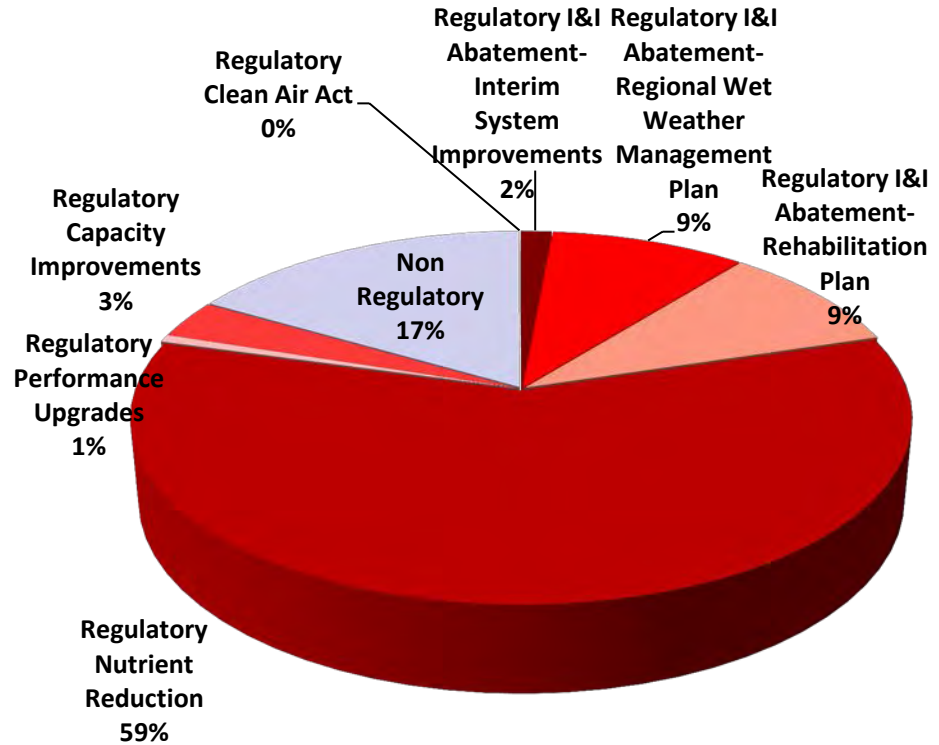
- FY18-27 Projected Spend = \$2.35B
- 168 projects
- Includes Integrated Plan
  - SWIFT projects through FY2030
  - \$200M high priority wet weather improvements in FY20-29
  - Remaining wet weather projects FY30-53

# FY18-27 Project Drivers

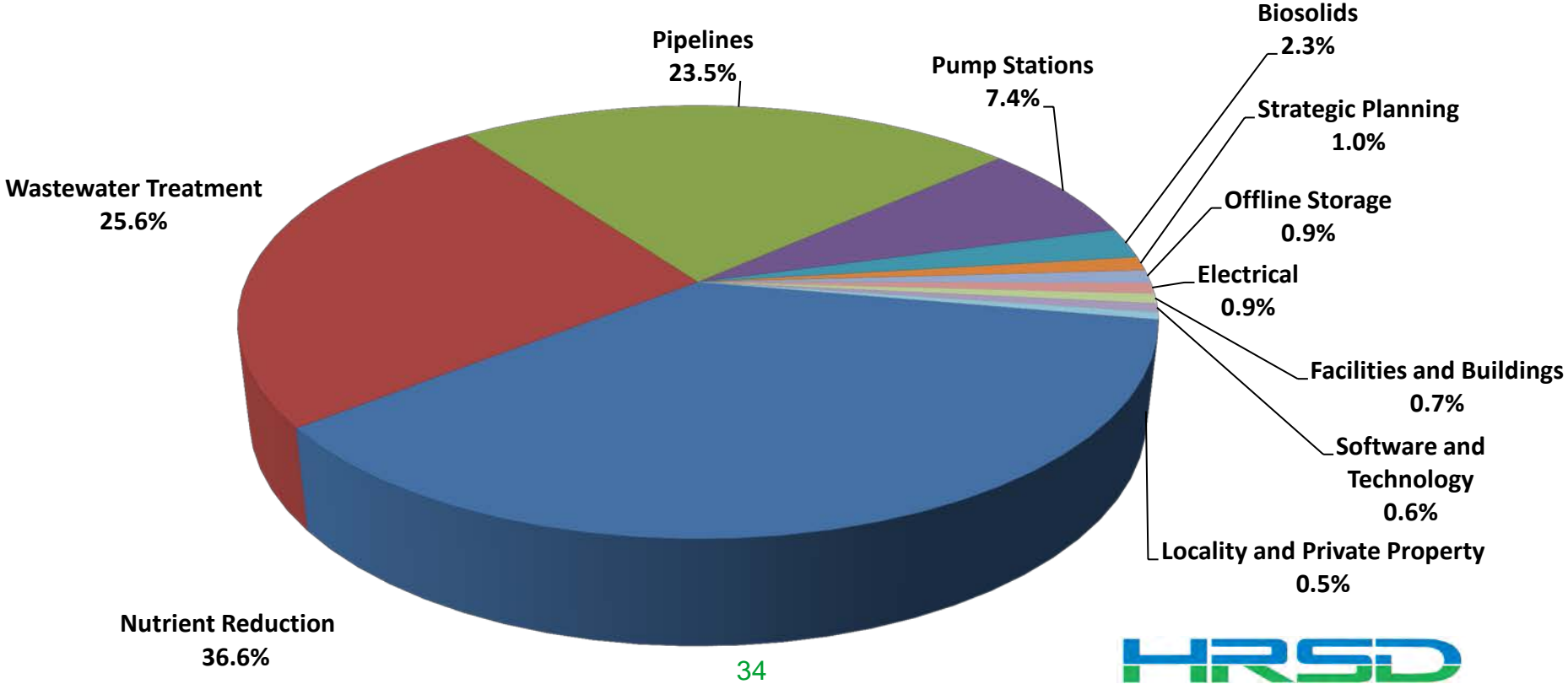
17% Non-regulatory



83% Regulatory



# Project Type





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# 20 Year Financial Forecast

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## Debt Service Coverage Ratio (DSCR) Example Calculation

	FY17 RWWMP	FY18 Integrated Plan
Net Operating Income	\$240M	\$240M
- Locality Projects Expensed	-\$100M	-\$15M
Net Operating Income	\$140M	\$225M
Debt Service <i>(Principal + Interest)</i>	\$70M	\$70M

**DEBT SERVICE COVERAGE RATIO**

$$\$140M/\$70 =$$

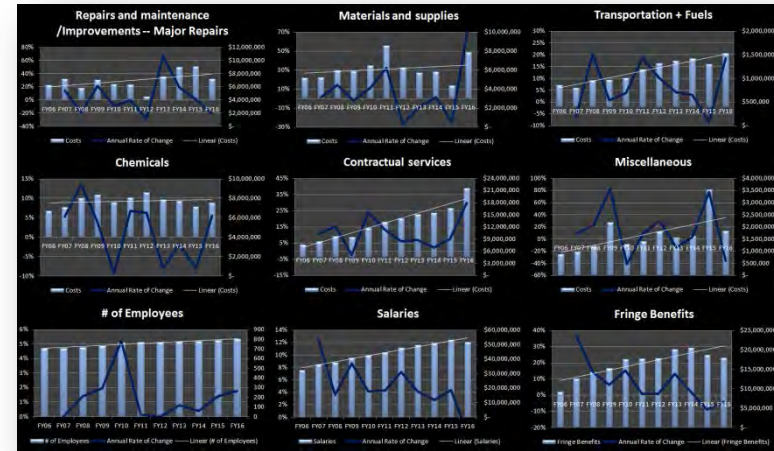
**2.0**

$$\$225/\$70M =$$

**3.2**

# 20 Year Financial Forecast

- Revenues
  - Rate increase schedule intact
  - Assumed a 1% decline in consumption throughout forecast period
- Expenses
  - Revised inflation factors
  - Included SWIFT O&M
- Capital Targets
  - Revised targets to include Integrated Plan components



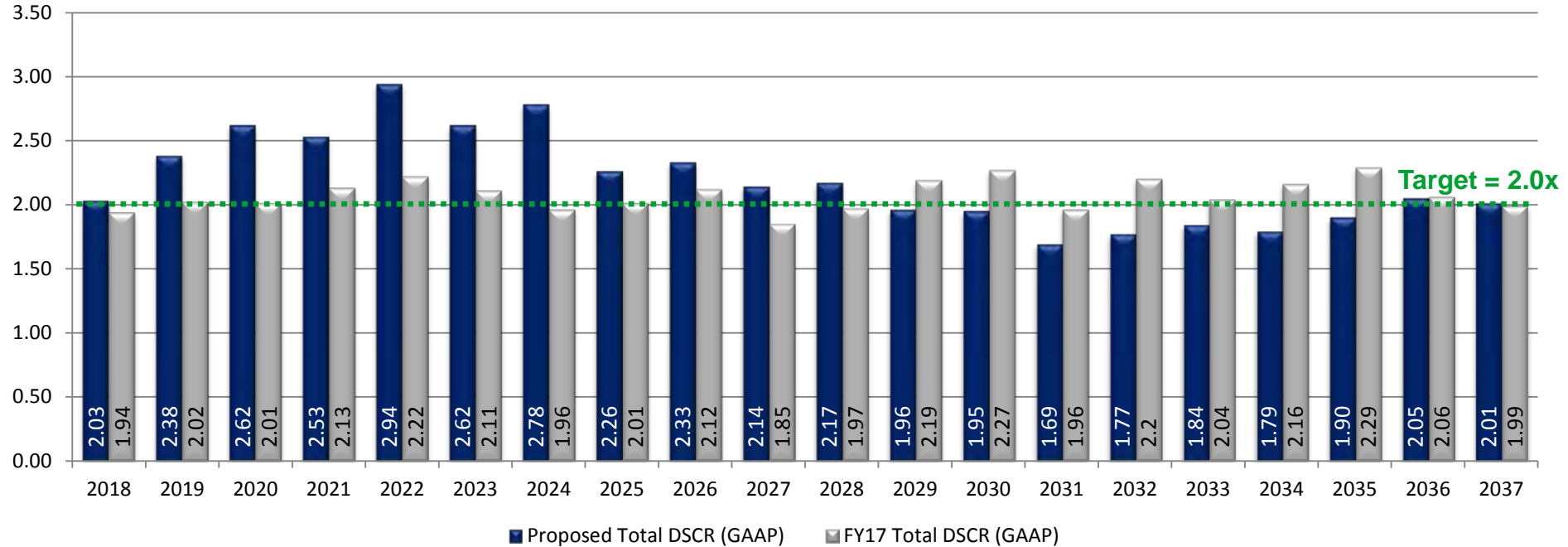
# Annual CIP Spending

## Proposed vs Current CIP Targets



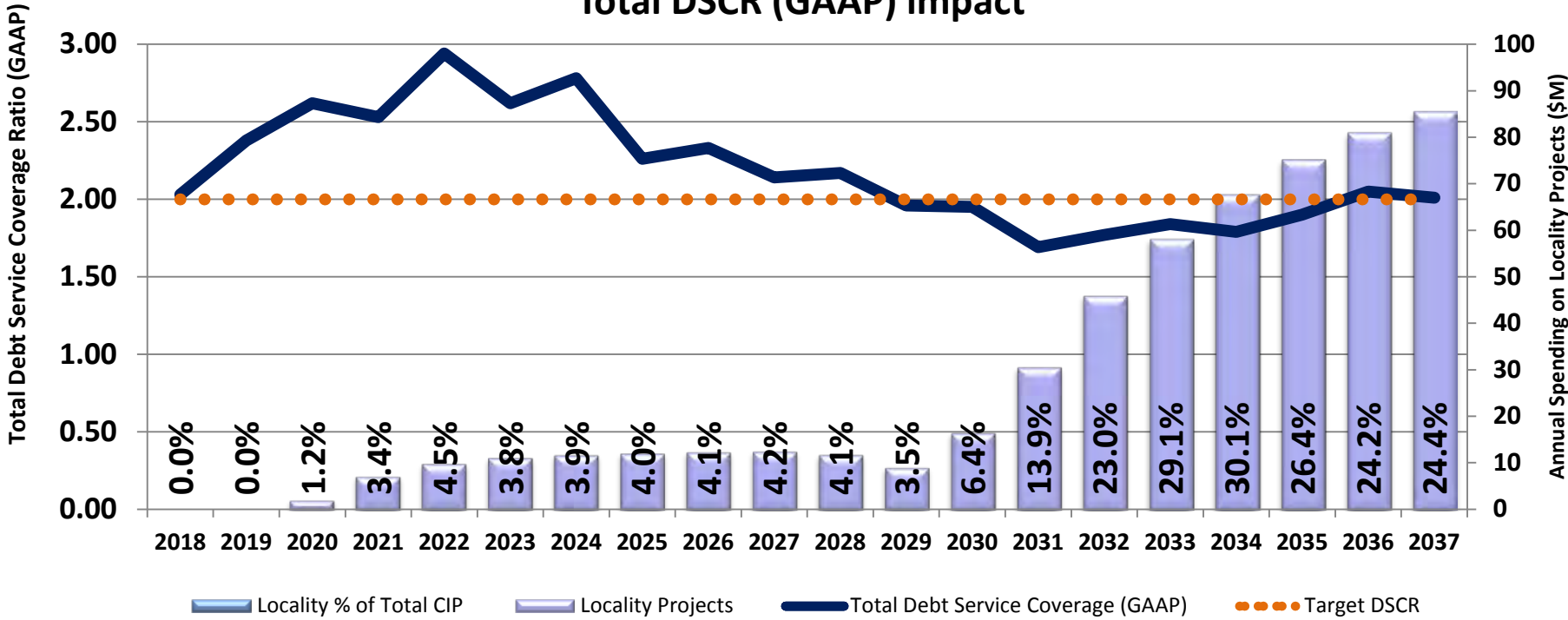
# Total Debt Service Coverage Ratio (GAAP) Comparison

## FY17 Budget vs Proposed FY18 Budget



# Projected Locality Spend

## Locality Projects Projected Spend as a % of Annual Capital Spend with Total DSCR (GAAP) impact



- DSCR (GAAP) = 1.69x to 2.94x
- Average CIP cash funded = 59%
- Liquidity = 100% or 365 Days Cash on Hand
- Moody's Scorecard = Aa1 to Aaa

- *April 25 – Draft Budget Submittal*
- **May 23 – Formal Budget Adoption**
- **4 Consecutive weeks – newspaper advertisement for rates and fees**
- **July 1 – Budget Effective**



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# Questions?

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1. System Characteristics
  - Asset condition, SA Wealth, System Size
2. Financial Strength
  - DSCR, Liquidity, Debt to Op Revenues
3. Management
  - Subjective
4. Legal Provisions
  - Trust Covenants

HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #5

AGENDA ITEM 8. – Bute Street and St. Paul's Boulevard Deed of Vacation Agreement

*Prepared by and return to:*  
Willcox & Savage, P.C.  
440 Monticello Ave., Ste. 2200  
Norfolk, VA 23510  
Attn: Gregory D. Lydon (VSB#42981)

Parcel ID No.: 1437171381  
Consideration: \$0.00

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### **DEED OF VACATION**

THIS DEED OF VACATION (the “*Deed*”) is made this 26<sup>th</sup> day of April, 2017, by and between the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (“*HRSD*”) (a Grantor for indexing purposes), and the **CITY OF NORFOLK, VIRGINIA**, a municipal corporation (the “*City*”) (a Grantee for indexing purposes).

#### WITNESSETH:

WHEREAS, the City is the owner of certain real property located at the intersection of Bute Street and St. Paul’s Boulevard in Norfolk, Virginia known as “Disposition Parcel 14” and “Disposition Parcel 16” (collectively, the “*Property*”); and

WHEREAS, a portion of the Property is shown on the plat dated April 5, 2017, entitled “VACATION PLAT OF 20’ HRSD EASEMENT (M.B. 19, PG. 46 & M.B. 21, PG. 37) OF PROPERTY OF CITY OF NORFOLK,” and prepared by Langley & McDonald, Inc. (the “*Plat*”) and attached hereto as Exhibit A; and

WHEREAS, it is the desire and intent of HRSD to vacate a portion of an easement encumbering the Property that is for the benefit of HRSD in the location as shown on the Plat and as hereinafter provided; and

WHEREAS, the City and HRSD acknowledge that such vacation is subject to all existing pipes and/or sewage lines existing within said location, which HRSD has no duty or obligation to excavate or remove.

### **VACATION OF EASEMENT**

NOW THEREFORE, in consideration of the premises and the sum of One Dollar (\$1.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, HRSD does hereby VACATE, QUITCLAIM AND RELEASE a portion of that certain HRSD Easement previously shown on the subdivision plats recorded in the Clerk’s Office of the Circuit Court of the City of Norfolk, Virginia in Map Book 21, at page 37 and in Map Book 19, at page 46, which vacated easement area being more particularly shown and depicted on the Plat as “20’ HRSD EASEMENT HEREBY VACATED (M.B. 19, PG. 46 & M.B. 21, PG. 37).”

### **MISCELLANEOUS**

The undersigned warrants that this Deed is made and executed pursuant to authority properly granted.


**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District (HRSD) Commission has caused this Deed of Vacation to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on April 25, 2017.

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

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

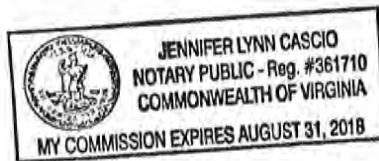
COMMONWEALTH OF VIRGINIA  
CITY OF Virginia Beach, to-wit:

The foregoing instrument was acknowledged before me this 26<sup>th</sup> day of April, 2017, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.

  
Jennifer L. Cascio  
Notary Public

My Commission expires: August 31, 2018

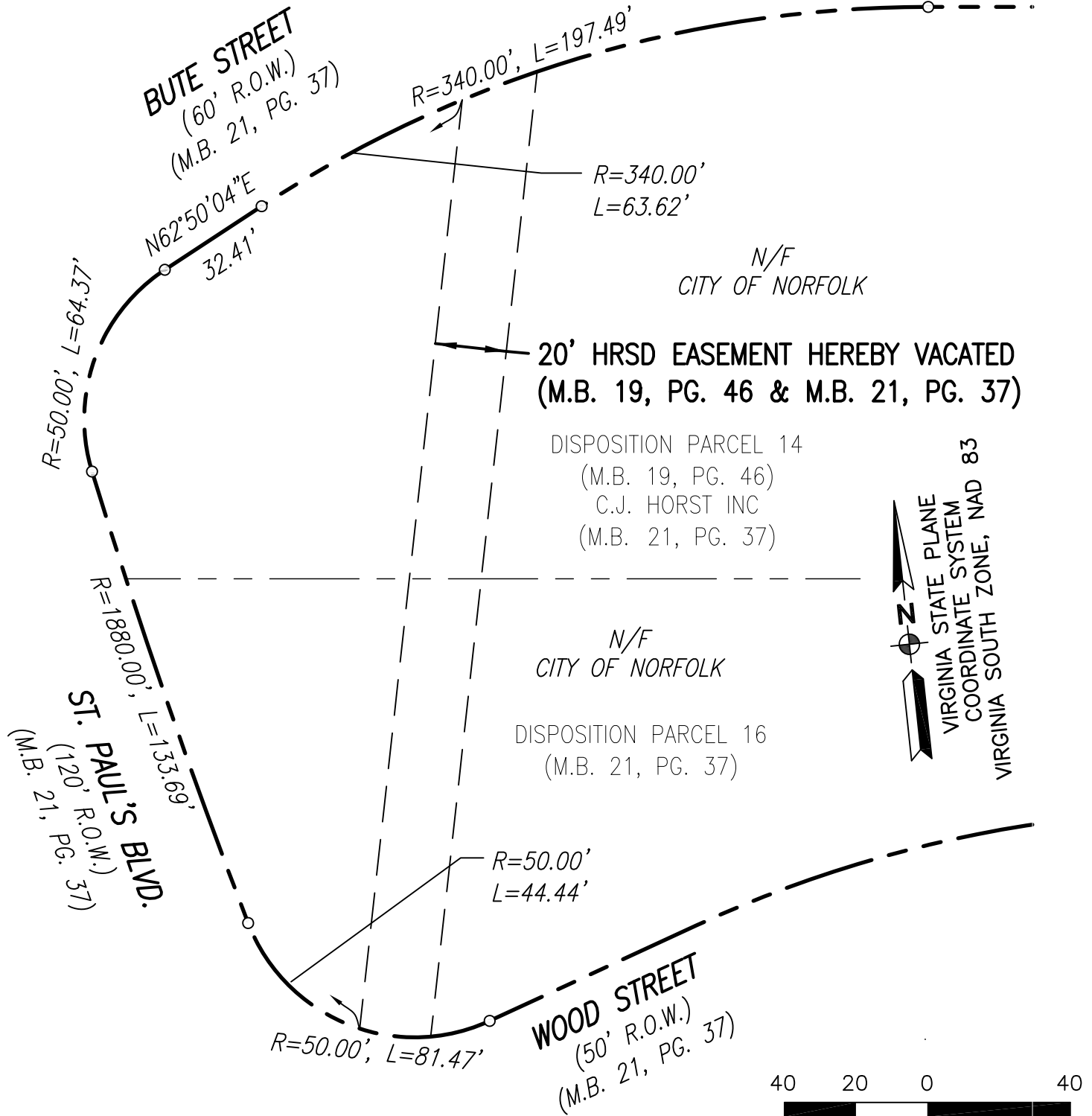
Notary Registration Number: 361710



**EXHIBIT A**

Plat

[Attached hereto]



SCALE 1" = 40'

SHEET 1 OF 1

DATE: 04/05/17

DESIGNED: ABG

DRAWN: NJW

SCALE: 1" = 40'

PROJ. #2016-003/PLAT/VAC

**VACATION PLAT**  
OF 20' HRSD EASEMENT  
(M.B. 19, PG. 46 & M.B. 21, PG. 37)

OF PROPERTY OF  
**CITY OF NORFOLK**

NORFOLK

VIRGINIA

**Langley & McDonald, Inc.**  
Engineering • Planning • Surveying  
309 Lynnhaven Parkway  
Virginia Beach, VA 23452  
PH: (757) 463-4306 FAX: (757) 463-3563

HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #6

AGENDA ITEM 9. – Renewable Energy Credits Marketing and Sale Agreement



## ENVIRONMENTAL ATTRIBUTES PURCHASE AND SALE AGREEMENT (“Agreement”)

<b>Buyer:</b>	Blue Delta Energy, LLC	Address: 458 Grand Avenue, Suite 201 New Haven, CT 06513
<b>Buyer Contact:</b>	Contact Name:	Contact Telephone Number: Contact Fax Number: Contact E-mail:
<b>Seller:</b>		Address:
<b>Seller Contact:</b>	Contact Name:	Contact Telephone Number: Contact E-mail:
<b>Transaction Date:</b>		
<b>Product:</b>	[Environmental attributes] of the vintages and in the quantities indicated below generated by Seller’s [renewable energy unit] located in [city, state] (the “Facility”)	
<b>Vintage:</b>	[Insert dates]	
<b>Quantity:</b>		
<b>Purchase Price:</b>	Seller shall sell to Buyer, and Buyer shall purchase from Seller, the quantity of [environmental attributes] indicated above for the sum of [insert price] for each [attribute] delivered hereunder	
<b>Transfer of [Attributes]:</b>	Within [insert number] days after the end of each [month/calendar quarter] during the term of this Agreement, Seller shall provide to Buyer with the [quarterly/monthly] generation data for the Facility for such [calendar quarter/month]. Buyer shall use the generation data to register the [attributes] with [attribute registry]. Seller agrees that upon [attribute registry] approval of the generation data and creation of the [attributes], Buyer will take ownership of Seller’s [attributes] within Buyer’s [attribute registry] account. Seller shall require Buyer to limit sales to only those counterparties who have a requirement to retire credits.	
<b>Payment:</b>	<p>Payment by Buyer to Seller shall be due within five business (5) days of the receipt of the gross proceeds from the sale of the [attributes] to any third-party buyer and receipt of an invoice from Seller. All funds to be paid to Seller shall be rendered in the form of immediately available funds (U.S. Dollars) by wire transfer or in such other form as agreed to by the parties. If either party fails to remit any amount payable by it when due, interest on such unpaid portion shall accrue at a rate equal to the prime interest rate in effect at the time as published in <i>The Wall Street Journal</i> plus two percent (2%) from the date payment is due to the date of payment.</p> <p>Seller’s Banking Instructions:</p> <p style="padding-left: 40px;">Bank: Account Name: ABA Routing No.: Account No.:</p>	
<b>General Terms and Conditions:</b>	<p><u>Representations and Warranties of Seller.</u> Seller represents and warrants to Buyer that as of and at the time of each transfer hereunder (i) each [attribute] meets the specifications set forth in this Agreement; (ii) Seller has good and marketable title to the [attributes]; (iii) all right, title and interest in and to the [attributes] are free and clear of any liens, taxes, claims, security interests, or other encumbrances; (iv) Seller will use all reasonable efforts to sustain the eligibility of the Facility under any [environmental attributes program] in which the Facility has been approved; (v) Seller did not use the electrical energy that was generated with the [attributes] to meet any federal, state, or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate; and (vi) Seller did not sell, market, or otherwise represent as renewable energy the electrical energy that was generated with the [attributes]. SELLER EXPRESSLY NEGATES ANY OTHER REPRESENTATION OR WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY REPRESENTATION OR WARRANTY WITH RESPECT TO MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE.</p> <p><u>Event of Default.</u> For purposes of this Agreement, a party shall be in default (each of the following, an “Event of Default”): (i) if that party fails to make, when due, any payment required pursuant to this Agreement if such failure is not remedied within five (5) business days of written notice from the other party; (ii) if that party</p>	

materially breaches any or all of its obligations under this Agreement and such breach is not cured within ten (10) business days of written notice of such breach from the other party; (iii) if any representation or warranty made by a party pursuant to this Agreement proves to have been misleading or false in any material respect when made and such party does not cure the underlying facts so as to make such representation and warranty correct and not misleading within ten (10) business days of written notice from the other party; or (iv) if a Party makes an assignment or any general arrangement for the benefit of its creditors; files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause under any bankruptcy or similar law for the protection of creditors; has a petition filed against it, and such petition is not dismissed within sixty (60) days; or otherwise becomes bankrupt or insolvent (however evidenced).

Remedies upon Default. If either Party is in default, the non-defaulting party may select any or all of the following remedies: (i) upon ten (10) business days' written notice to the defaulting party, terminate this Agreement, (ii) withhold any payments and deliveries due in respect of this Agreement, and (iii) exercise such other remedies available at law or in equity.

If Buyer is in default and Seller elects to terminate this Agreement, then Buyer shall pay Seller, within ten (10) business days of invoice receipt, an amount equal to the sum of (i) the purchase price multiplied by the quantity for any [attributes] delivered to Buyer for which Seller has not been paid, and (ii) the positive difference, if any, obtained by subtracting the market price, as reasonably determined by Seller, for the [attributes] from the purchase price multiplied by the quantity of [attributes] not received, plus reasonable third party fees (including broker fees) and legal costs incurred by Seller in enforcement and protection of its rights under this Agreement.

If Seller is in default and Buyer elects to terminate this Agreement, then Seller shall pay Buyer, within ten (10) business days of invoice receipt, an amount equal to the positive difference, if any, obtained by subtracting the purchase price from the market price, as reasonably determined by Buyer, for the [attributes] multiplied by the quantity of [attributes] not delivered, plus reasonable third party fees (including broker fees) and legal costs incurred by Buyer in enforcement and protection of its rights under this Agreement. In no event does the foregoing relieve Buyer of its obligation to pay Seller the purchase price multiplied by the quantity for any [attributes] delivered to Buyer for which Seller has not been paid.

Limitations of Liability. IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR SPECIAL, PUNITIVE, INCIDENTAL, INDIRECT, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING LOSS OF PROFITS (EXCEPT TO THE EXTENT THAT ANY DIRECT DAMAGES INCLUDE AN ELEMENT OF PROFIT).

[note-HRSD cannot agree to this-governed by Virginia FOIA]Notices. All notices, demands, and other communications hereunder shall be effective only if given in writing and shall be deemed given (i) when delivered in person; (ii) when delivered by private courier (with confirmation of delivery); (iii) when transmitted by facsimile (with confirmation of transmission); (iv) upon receipt by the other party after being deposited in the United States mail, first-class, registered or certified, return receipt requested, with postage paid; or (v) through electronic (email) communication (with read receipt confirmation). For purposes hereof, all notices, demands and other communications shall be sent to the contacts and addresses above (or to such other address furnished in writing by one party to the other party).

Assignment. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and permitted assigns. Neither party may transfer or assign this Agreement, in whole or in part, without the other party's prior written consent, which consent shall not be unreasonably withheld, conditioned, or delayed; provided that Seller agrees to grant such consent in the context of a merger or sale of all or substantially all of Buyer's assets or the assets of a business unit of Buyer to which this Agreement relates.

Amendment. This Agreement may be amended at any time, but only by a written agreement signed by both parties.

No Waiver. No delay or omission by a party in the exercise of any right under this Agreement shall be taken, construed, or considered as a waiver or relinquishment thereof. If any of the terms and conditions herein are breached and thereafter waived in writing by a party, such waiver is limited to the particular breach so waived and is not deemed to waive any other breach hereunder.

Severability. If any provision or portion of this Agreement is found to be unenforceable, the remainder shall be enforced as fully as possible and the unenforceable provision shall be deemed modified to the limited extent required to permit its enforcement in a manner most closely representing the intention of the Parties as expressed herein.

Complete Agreement. This Agreement and HRSD issued Contract Agreement Purchase Order represents the parties' final and mutual understanding concerning its subject matter. It replaces and supersedes any prior

	<p>agreements or understandings, whether written or oral.</p> <p><u>Governing Law.</u> This Agreement shall be construed in accordance with and governed by the laws of the Commonwealth of Virginia, excluding any choice of law or conflicts of law rules or principles that would result in application of the laws of a different jurisdiction.</p> <p><u>Dispute Resolution.</u> Any dispute or claim between the parties arising from this Agreement not resolved by negotiation in good faith within thirty (30) days will be settled by arbitration pursuant to the then applicable Commercial Arbitration Rules of the American Arbitration Association. The arbitration shall be held in [city, state]. Either party may initiate such arbitration upon seven (7) days advance written notice to the other party. The parties shall divide equally the costs of the arbitrator and arbitration hearing, and each party shall be responsible for its own expenses and those of its legal counsel or other representatives. The parties agree that any determination of the arbitrator shall be final and binding and that judgment on the award in arbitration may be entered in any court of competent jurisdiction sitting in the Commonwealth of Virginia.</p> <p><u>Counterparts.</u> This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which together shall be deemed to be one and the same instrument. Facsimile or electronic PDF transmission of any signed original document, and retransmission of any facsimile or electronic PDF transmission, will be the same as delivery of any original document.</p> <p><u>Forward Contract.</u> This Agreement constitutes a “forward contract” and the Buyer represents and warrants that it is a “forward contract merchant” within the meaning of the United States Bankruptcy Code.</p>
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**By signing below, the parties agree to be bound by the terms and conditions contained in this Agreement.**

<b>Buyer: Blue Delta Energy, LLC</b>		<b>Seller: Hampton Roads Sanitation District</b>	
<i>Signature:</i>	<i>Date:</i>	<i>Signature:</i>	<i>Date:</i>
<i>Printed Name:</i>	<i>Title:</i>	<i>Printed Name:</i>	<i>Title:</i>

HRSD COMMISSION MEETING MINUTES  
April 25, 2017

ATTACHMENT #7

AGENDA ITEM 10. – Capital Improvement Program (CIP) Quarterly Update  
PowerPoint Presentation



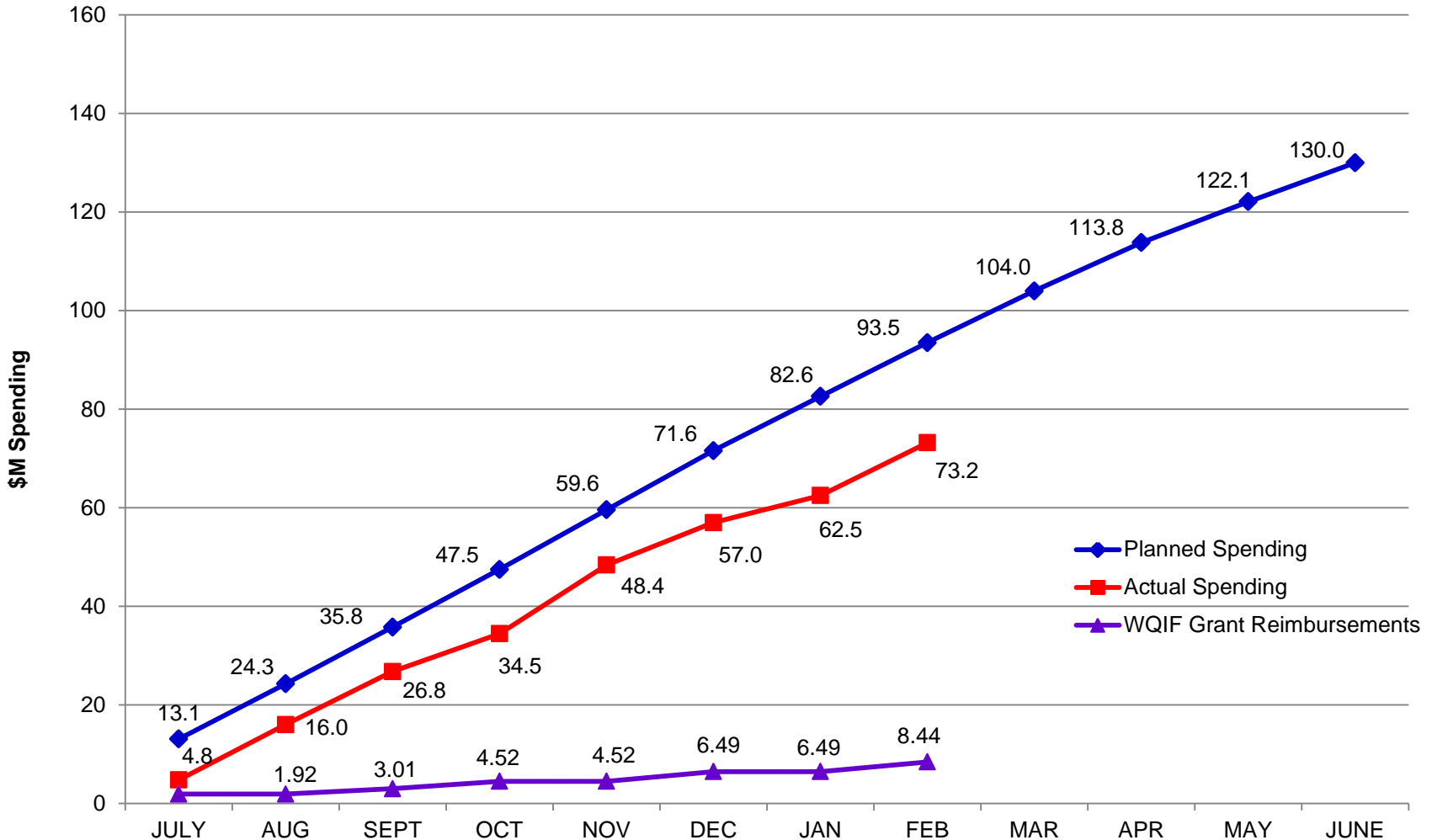
# Capital Improvement Program Commission Briefing

April 25, 2017

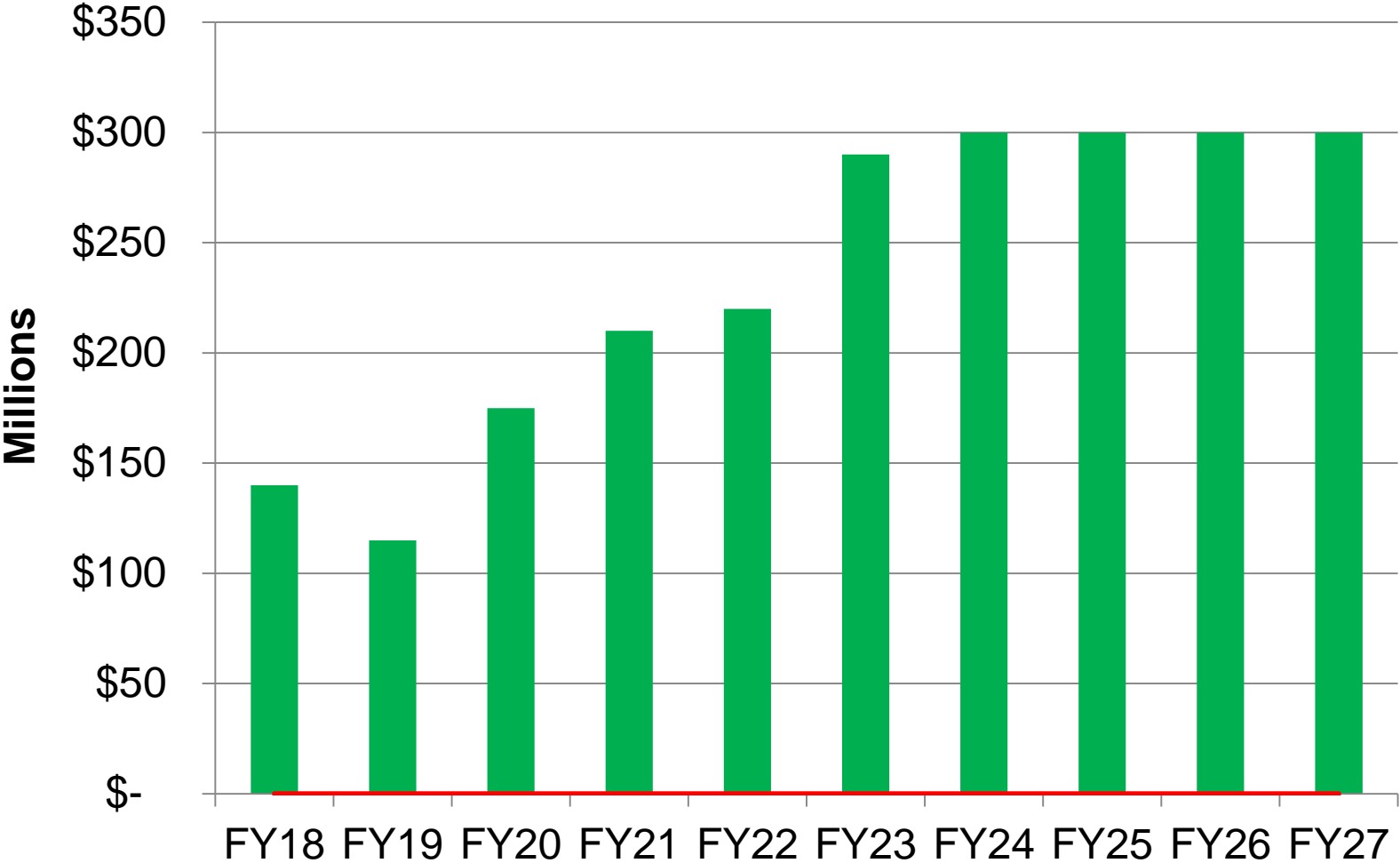
- CIP Expenditures for FY-2017
- Future CIP Delivery
- Consent Decree/SSO Reduction Project Updates
- Project Focus: VIP Nutrient Reduction Improvements

# CIP Expenditures for FY-2017

## Cumulative Monthly Expenditures & Reimbursements



# Future CIP Delivery





## Future CIP Delivery (cont.)

	<u>FY-07 to FY-16</u>	<u>FY-17 to FY-26</u>
Annual CIP Spending	\$123M	\$230M

### Current Staffing:

#### North Shore

- Chief
- Five (5) Project Managers

#### South Shore

- Chief
- Four (4) Project Managers

### Current Workload:

Project Managers oversee 5-10 projects each.

### **Process / Procedural Changes:**

- CIP Enhancement Team
- New Guidelines & Procedures
- New Software Systems and Reporting Tools

### **Program Delivery Options:**

- Program Management Using Consultants
- Staff Augmentation Using Consultants
- Hire Additional Staff

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## Consent Decree/SSO Reduction Project Updates

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- 33 CIP projects were included in the original Federal Consent Decree.
- 18 CIP projects were added to the Federal Consent Decree as part of the negotiation to consider regionalization of the sanitary sewer system.
- These projects involve improvements to the interceptor sewer system and numerous pump stations.
- HRSD has until **February 23, 2018** to complete these projects.
- 2 CIP projects were added to the Federal Consent Decree as part of the final negotiation to implement the Regional Wet Weather Program. HRSD has until **Dec. 31, 2018** to complete these projects.

Ref No.	Project Title	Consent Decree Estimate	Authorized/ Completed	Status
1	Claremont Avenue Pump Station Rehabilitation	\$1,500,000	\$2,202,900	Complete
2	Atlantic Pressure Reducing Station Emergency Generator Replacement	\$1,000,000	\$1,281,100	Complete
3	Lake Ridge Interceptor Force Main Section B - Contract 2 (Land)	\$3,000,000	\$2,676,700	Complete
4	Big Bethel Road to J Clyde Morris Boulevard Interceptor Force Main Replacement	\$2,500,000	\$2,865,502	Complete
5	Williamsburg-James River Connection Force Main Section II and Lucas Creek-Woodhaven Interceptor Force Main Replacements - Phase I	\$4,000,000	\$1,965,951	Complete
6	Route 171 Interceptor Force Main	\$8,000,000	\$6,487,309	Complete
7	Kiln Creek Interceptor Force Main	\$7,000,000	\$6,629,172	Complete
8	South Trunk Sewer Section F 20-Inch, Section H 8-Inch, and Section H 12-Inch Interceptor Force Main Replacement and Gravity Sewer Chesterfield Blvd. Replacement	\$11,000,000	\$6,366,600	Complete
9	Eastern Branch Sections A & B, Green Run Section C, and 24-Inch Kempsville Road Force Main Replacements	\$6,000,000	\$5,585,872	Complete
10	North Trunk Sewer Section W 8-Inch and 12-Inch Force Mains and Larchmont Force Mains (Formerly Siphon Lines) Replacements*	NA	NA	Project Deleted

<b>Ref No.</b>	<b>Project Title</b>	<b>Consent Decree Estimate</b>	<b>Authorized/ Completed</b>	<b>Status</b>
11	North Trunk Sewer Section R 6-Inch Interceptor Force Main and 10-Inch Gravity Replacement	\$1,000,000	\$1,879,294	Complete
12	North Trunk Sewer Section D 24-Inch Interceptor Force Main Replacement	\$6,000,000	\$5,798,029	Complete
13	Hilltop/Point O'Woods Interceptor Force Main Replacements; Section B	\$6,000,000	\$7,122,565	Complete
14	Hilltop/Point O'Woods Interceptor Force Main Replacements; Section A	\$5,000,000	\$7,122,565	Complete
15	Williamsburg Interceptor Force Main Contract A Replacement	\$6,000,000	\$8,445,783	Construction
16	33rd Street Pump Station Replacement/Rehabilitation	\$3,000,000	\$7,046,000	Construction
17	Sanitary Sewer System Portsmouth VA Contract A Clifford Street Force Main	\$1,000,000	\$1,174,254	Complete
18	James River Diversion 35th Street Phase III and Boat Harbor Outlet Sewer Relocation I-664 Rehabilitation	\$2,000,000	\$979,053	Complete
19	Hampton Trunk Sewer Division A Replacement	\$1,000,000	\$5,011,437	Complete
20	Lucas Creek Pump Station Upgrade*	NA	NA	Project Deleted

Ref No.	Project Title	Consent Decree Estimate	Authorized/ Completed	Status
21	South Trunk Sewer Section C-42 inch Force Main Replacement	\$4,000,000	\$13,857,340	Complete
22	Section W Force Main Replacement*	NA	NA	Project Deleted
23	Coliseum Drive Pressure Reducing Station	\$6,000,000	\$10,785,839	Complete
24	Center Avenue Pump Station Replacement	\$4,000,000	\$3,454,200	<b>Complete</b>
25	Norchester St Pump Station Replacement/Rehabilitation	\$2,000,000	\$7,538,145	Complete
26	Providence Road Pressure Reducing Station Modifications	\$2,000,000	\$4,041,725	Complete
27	58th Street Connecting Sewer Rehabilitation	\$1,000,000	\$2,978,845	Construction
28	Bridge St. Pump Station Replacement/Rehabilitation	\$2,000,000	\$14,123,400	Construction
29	South Trunk Sewer Section G-36 inch Force Main Replacement	\$3,000,000	\$13,656,685	Construction
30	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	\$10,000,000	\$24,849,471	Construction
31	Wilroy Pressure Reducing Station, Pughsville PRS Upgrades, Suffolk PS Upgrades*	NA	NA	Project Deleted
32	Army Base 24-Inch and 20-Inch Transmission Main Replacements*	NA	NA	Project Deleted
33	Normandy Lane Interceptor Force Main Replacement*	NA	NA	Project Deleted
		<b>\$109,000,000</b>	<b>\$175,925,736</b>	

<b>Ref No.</b>	<b>Project Title</b>	<b>Consent Decree Estimate</b>	<b>Authorized/ Completed</b>	<b>Status</b>
34	Great Neck Road IFM Replacement – Section A	\$4,500,000	\$6,828,269	Complete
35	Military Highway Interim Pressure Reducing Station	\$750,000	\$220,572	Complete
36	Hampton Trunk Sewer Extension Division E – Gravity Replacement	\$750,000	\$2,254,489	Construction
37	Victoria Boulevard Pump Station	\$3,600,000	\$3,706,218	Complete
38	Ivy Home – Shell Road Sewer Extension Division I – Replacement*	NA	NA	Project Deleted
39	South Shore Interceptors Air Vent Rehabilitation	\$2,500,000	\$3,141,000	Construction
40	North Shore Air Vent Replacements	\$1,200,000	\$786,528	Complete
41	Center Avenue Pump Station Service Area I/I Remediation	\$4,000,000	\$5,308,000	Construction
42	Middle Ground Boulevard – City Center Interconnect Force Main	\$5,000,000	\$6,593,520	Complete
43	Center Avenue I&I Remediation – Phase II	\$3,000,000	\$2,431,000	Construction
44	Jefferson Avenue IFM Replacement – Phase I	\$4,500,000	\$4,091,934	Complete

<b>Ref No.</b>	<b>Project Title</b>	<b>Consent Decree Estimate</b>	<b>Authorized/ Completed</b>	<b>Status</b>
45	Warwick Boulevard to James River Influent Force Main - Section 3*	NA	NA	Project Deleted
46	Holland Road 24-inch IFM – Section A	\$14,000,000	\$22,315,000	Construction
47	Pughsville Pressure Reducing Station Upgrades	\$5,000,000	\$2,720,000	Design
48	Sewerage System Improvements Division C	\$750,000	\$1,649,455	Complete
49	Lafayette River Crossing/Norview – Estabrook Force Main Replacement	\$3,000,000	\$4,091,609	Complete
50	Courthouse Interim Pressure Reducing Station	\$1,500,000	\$2,840,627	Complete
51	Hampton Pump Station 023 Upgrades and Discharge Force Main	\$750,000	\$800,097	Complete
		<b>\$54,800,000</b>	<b>\$69,778,318</b>	



<b>Ref No.</b>	<b>Project Title</b>	<b>Consent Decree Estimate</b>	<b>Authorized/ Completed</b>	<b>Status</b>
52	Virginia Initiative Plant Nutrient Reduction Improvements, Contract A	\$18,000,000	\$18,343,768	Complete
53	Virginia Initiative Plant Nutrient Reduction Improvements, Contract B	\$125,000,000	\$135,284,000	Construction
		<b>\$143,000,000</b>	<b>\$153,627,768</b>	
Total for all work:		<b>\$306,800,000</b>	<b>\$399,331,822</b>	

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# VIP Nutrient Reduction Improvements

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## **Project Description:**

This project is part of HRSD's effort to meet the Virginia Watershed Implementation Plan Nutrient Compliance Strategy. The proposed nutrient reduction improvements will provide a significant reduction in nitrogen and phosphorus to the Elizabeth River and the James River Basin. In addition to the nutrient reduction improvements facilities will be constructed to provide for additional peak weather capacity and improvements to the existing electrical system.

## **Design Engineer:**

HDR Engineering, Inc.

## **Contractors:**

PC Construction (Contract A & Emergency Generator)  
MEB General Contractors (Contract B and Incinerator Scrubber)

## VIP Nutrient Reduction Improvements (cont.)

### Financial Summary:

Engineering Costs	\$24.8M (15.3% of Total)
Contract A Construction	\$13.9M (\$900K C.O.s)
Emergency Generator Installation	\$4.9M (\$400K C.O.s)
Incinerator Scrubber and Odor Control Improvements	\$3.0M (\$370K C.O.s)
Contract B Construction	\$114.8M (\$6.8M C.O.s)
Total Program Cost	\$161.4M

## VIP Nutrient Reduction Improvements (cont.)

### Schedule Summary:

Project Initiation	Sept. 2011
Design Efforts	Sept. 2011 to Feb. 2014
Contract A Construction	Jan. 2013 to Aug. 2015
Emergency Generator Installation	Jan. 2014 to Aug. 2015
Incinerator Scrubber and Odor Control Improvements	Oct. 2014 to Jun. 2016
Contract B Construction	<ul style="list-style-type: none"><li>• Feb. 2014 to Jul. 2018</li><li>• Group 1 (Nutrient Reduction) Completion Feb. 2017</li><li>• Group 2 (Peak Flow/Capacity) Completion Jul. 2018</li></ul>

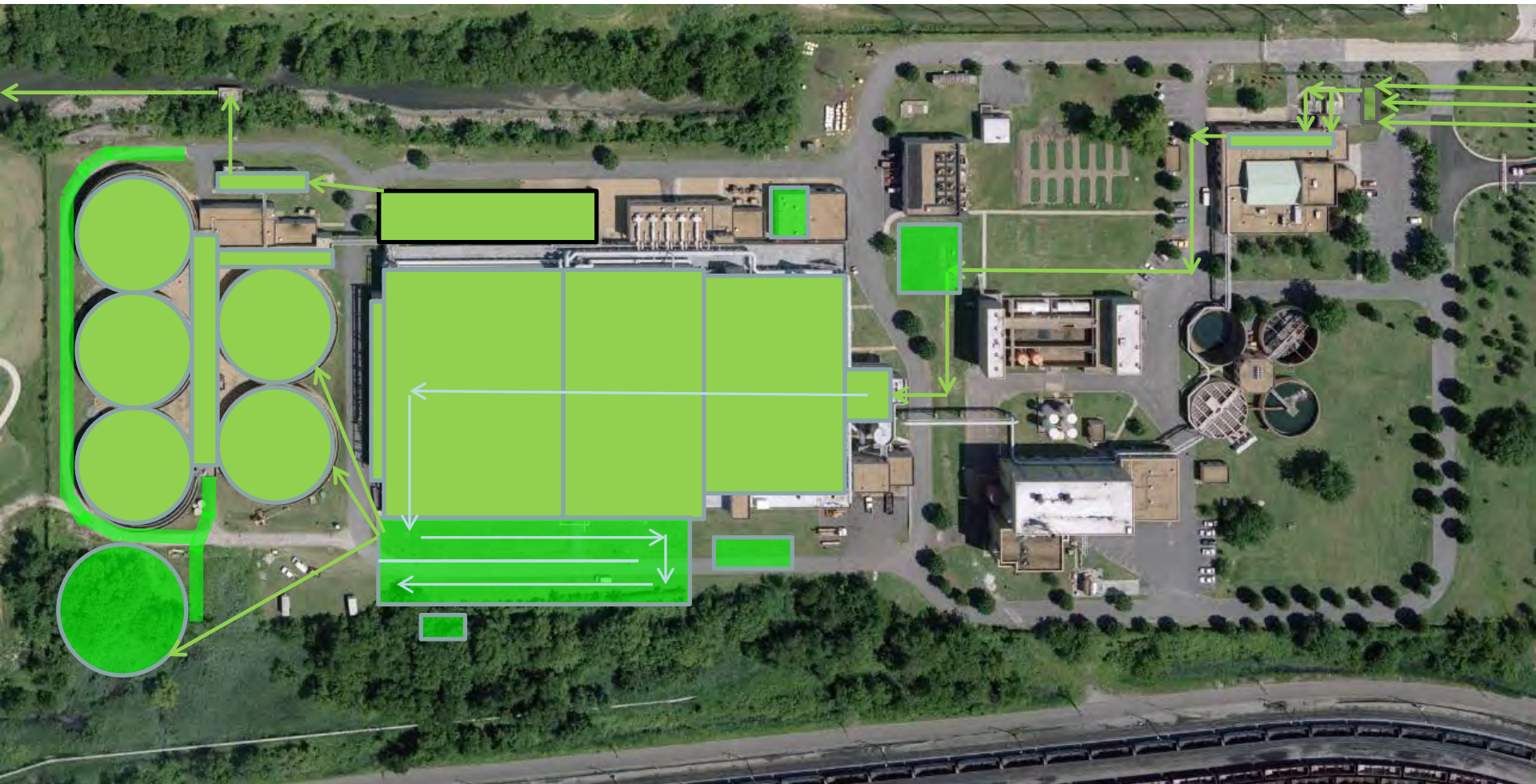
# VIP Nutrient Reduction Improvements (cont.)

## BNR Scenario (Pre-Construction):



# VIP Nutrient Reduction Improvements (cont.)

## Enhanced BNR Scenario:



# VIP Nutrient Reduction Improvements (cont.)

## Enhanced BNR w/New PTF Scenario:







## VIP Nutrient Reduction Improvements (cont.)



## VIP Nutrient Reduction Improvements (cont.)



## VIP Nutrient Reduction Improvements (cont.)



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Questions?

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HRSD COMMISSION MEETING MINUTES  
April 25, 2017

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



April 18, 2017

Re: General Manager's Report

Dear Commissioners:

Few things reveal the culture of an organization as well as a stressful situation. Hosting the Governor qualifies as a stressful situation and HRSD's culture of professionalism, teamwork and attention to detail was evident from the first planning meetings through the clean-up hours after the Governor had left. The HRSD team, led by Karen Russo-Scarano and included people from every department, focused on everything from crafting tables for the signing ceremony to ensuring the backdrop banner was tensioned correctly for wrinkle-free photographs. I have heard directly from several in attendance who were amazed at the organization, the execution and the efficiency of the event. From complex, high-visibility events, to the plant operator making their rounds alone after midnight, HRSD staff lives out our culture of excellence in everything they do to ensure future generations inherit clean waterways and are able to keep them clean.

While the SWIFT ground breaking event made the end of the month exciting, March was relatively uneventful from an operating perspective as detailed in the attached monthly reports.

1. **Treatment Compliance and System Operations:** All plants met all VPDES and air permit requirements during the month. There was one system spill in the South Shore interceptor system.
2. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
  - a. One length of service breakfast
  - b. Several meetings focused on arrangements and preparations for the SWIFT event
  - c. A meeting to discuss the storage tank needs near the Providence Road Pressure Reducing Station (PRS)
  - d. A new employee orientation session

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- e. A meeting to discuss small community policies
- f. Training for the electronic air permit regulatory reporting and approval system
- g. A meeting to discuss the SPSA leachate issue
- h. A meeting to discuss the Deltaville sewer collection system project
- i. The monthly update on the Wet Weather Management Plan
- j. The CIP review meetings
- k. A meeting to review support of Cooperating Hampton Roads Organizations for Minorities in Engineering (CHROME)

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

- a. A meeting of the Hampton City Council to brief them on the SWIFT related nutrient trading agreement
- b. A convening of water professionals to discuss the impact of digital advances on the water sector hosted by XPV Water Partners
- c. A meeting with the Norfolk City Manager and staff to discuss partnership opportunities with HRSD
- d. A Chamber of Commerce dialog about sea-level rise
- e. The Virginia Beach state of the city luncheon
- f. Presented SWIFT to the Virginia Lakes and Watersheds Association annual meeting
- g. Presented SWIFT to the Central Virginia Activities Committee of the Virginia Water Environment Association (VWEA)
- h. The monthly meeting of the HRPDC Director of Utilities Committee
- i. A meeting with representatives from the Chesapeake Bay Foundation and the James River Association to discuss proposed nutrient and sediment trading associated with SWIFT
- j. A meeting with a local entrepreneur to learn about his novel treatment technology
- k. An interview with HDR as part of their external stakeholder data gathering process associated with their strategic plan update
- l. Presented the keynote address to the American Society of Civil Engineers (ASCE) student conference at their awards banquet

The draft budget for fiscal year 2018 will be presented at the April Commission meeting. The draft budget is a product of months of hard work by each department. All costs are closely analyzed to ensure we remain focused on our responsibility to be good stewards of our ratepayers' money. The Accounting Division in the Finance Department carries the heaviest load, compiling the detailed budget and ensuring its accuracy. They do such a good job, it is easy to underestimate the challenge of preparing such a thorough budget that impacts the daily lives of nearly 1.7 million people and directly supports over 800 jobs.

As has been the trend for the past ten years, the budget is largely driven by our investment in our infrastructure. While the rest of the country complains about the lack of investment, HRSD has made investment in our infrastructure a priority, ensuring we pass along a well maintained, updated and fully functional system to future Commissions. It is this future focus that really makes HRSD different from most governmental organizations.

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, April 25, 2017 in Newport News.**

Respectfully submitted,

*Ted Henifin*

Ted Henifin, P.E.  
General Manager



TO: General Manager  
FROM: Director of Communications  
SUBJECT: Monthly Report for March, 2017  
DATE: April 11, 2017

A. Publicity and Promotion

1. [Surry: Go it alone or let HRSD run it?](#) | Smithfield Times, March 8, 2017
2. [Localities, led by Hampton, line up for \\$2B windfall](#) | Virginian Pilot, March 9, 2017
3. [Hampton Roads treating wastewater till its good enough to return to aquifer](#) | Bay Journal, March 15, 2017
4. [Project to remedy falling ground levels](#) | Suffolk News Herald, March 18, 2017
5. [Water Plan A Win-Win?](#) | Daily Press, March 19, 2017
6. [Hampton water bills may lower thanks to partnership with HRSD](#) | ABC Channel 13 News, March 20, 2017
7. [SPSA Talks Leachate Issue](#) | Suffolk News Herald, March 22, 2017
8. [HRSD Looking for New Pump Station in Mathews](#) | Gloucester-Mathews Gazette-Journal, March 29, 2017
9. [HRSD Introduces Two Projects](#) | Suffolk News Herald, March 31, 2017
10. [HRSD Could Be A Jobs-Making Machine, McAuliffe Says](#) | Virginian Pilot, March 31, 2017
11. The communications department also shared the SWIFT Multi-Benefit Celebration event live on Facebook and provided event video and photos to local CBS affiliate, WTKR TV and local NBC affiliate, WAVY TV

## B. Community Engagement

1. Facebook Reach: 5,388
2. Twitter: 6,991 twitter impressions
3. SWIFT website visits: 722
4. Construction Project Page Hits: 6116

## C. News Releases and Project Notices

1. [HRSD Breaks Ground on SWIFT Research Center During Multi-Benefit Celebration in Suffolk](#) - March 31, 2017
2. Three (3) Project Notices

## D. Special Projects

1. The communications department assisted with various activities supporting the SWIFT Groundbreaking event, including:
  - a. Development of the fact sheet, "Land Subsidence- Eastern Virginia's increasing vulnerability to sea level rise"
  - b. Script writing and question development for internally-produced video
  - c. Designing infographics for the SWIFT process and Extensometer
  - d. Media outreach and coordination of interviews for reporters
  - e. Event set-up and logistics coordination with Hazen and Crowder as well as NTP staff and vendors

## E. Internal Communications

1. The retiring Chief of Communications, as her final ceremonial activity, on March 9 sealed the 75<sup>th</sup> Anniversary Time Capsule, to be opened on HRSD's 100<sup>th</sup> Anniversary. During this occasion she presented certificates of commendation to the South Shore Carpenters in recognition of the support provided to the Communications Division over the years.
2. Staff welcomed Ms. Leila Rice as the new Director of Communications on March 13.
3. Director participated in New Employee Orientation and continued with Onboarding process within several HRSD departments.

4. “HRSD in the News” media placement reports featuring HRSD and SWIFT are now shared with all HRSD employees.

F. Metrics

1. Educational and Outreach Activities: 6
  - a. Presented the Washing Water module at the STEM4Girls Conference
  - b. Presented the Washing Water module to 11 classes of 6<sup>th</sup> grade students at Greenbrier Middle School over a three-day period
  - c. Facilitated a combination tour for 20 Cape Henry Collegiate students
  - d. Gave a SWIFT presentation to Little Neck Cove Civic League
  - e. Participated in the Deep Creek Central Elementary School Science Fair
  - f. Participated in the Portsmouth Public Schools STEM Expo Day
  
2. Number of Community Partners: 4
  - a. American Association of University Women (AAUW)
  - b. Discovery STEM Academy
  - c. Chesapeake Public Schools
  - d. Portsmouth Public Schools

Item #	Strategic Planning Measure	Unit	March 2017
M-1.4a	Total Training Hours per Full Time Employee (1) - Current Month	Hours / #FTE	3
M-1.4b	Total Training Hours per Full Time Employee (1) - Cumulative Fiscal Year-to-Date	Hours / #FTE	3
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Number of Community Partners	Number	4

Leila Rice  
 Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for March 2017

DATE: April 11, 2017

A. General

1. Capital Improvement Program (CIP) spending for the eighth month of Fiscal Year-2017 was \$10.7 million, while the planned expenditure for the month was estimated at \$10.9 million. A Water Quality Improvement Fund (WQIF) grant reimbursement of \$1.95 million was received for the Virginia Initiative Plant (VIP) Nutrient Reduction Improvements project.
2. Preparation of the Fiscal Year-2018 CIP continues. CIP Review Meetings were held on March 7 and March 30. Numerous discussions have been held with internal stakeholders to discuss options to balance future year costs and still meet critical infrastructure needs. Numerous coordination meetings have also been held with the Finance Department to review financial constraints and options for funding of the CIP. The final draft CIP document will be submitted to the Commission for consideration in April.
3. HRSD has recently completed a survey from the American Water Works Association (AWWA) related to utility performance. This is a national survey completed by many of the large water and wastewater utilities in the country. The survey addressed such issues as staffing, organizational development, finances, customer service, asset management and sustainability. We should receive a copy of the survey results to see how HRSD compares to other utilities in the coming months.

B. Asset Management Division

1. Staff continues with a pilot study at the Atlantic Treatment Plant (ATP) to evaluate data gaps in the Computerized Maintenance Management System (CMMS) and to assess critical assets. Staff identified the top ten equipment classes that should be addressed in the pilot study. Staff has also begun to assess both the likelihood and consequence of failure for each of these assets. Next, the team will identify the useful remaining life and replacement cost for each critical asset. With this information, the team can then begin to consider a true asset management approach at the ATP and how this approach can be used across HRSD.

2. Staff reviewed the recently prepared internal audit for the Inventory System for Equipment and Spare Parts prepared by SC&H. A cross-departmental team was formed to review this audit and develop action plans for each of the five observations highlighted in the report. A standard operating procedure will be prepared as a result of this audit, which will address roles and responsibilities, physical security guidelines, processes and procedures to be used to improve the management of HRSD inventory.

C. North Shore and South Shore Design & Construction Divisions

1. Construction efforts continue as we complete the Holland Road Interceptor Force Main - Section A project in Suffolk. The project was divided into two Phases (I and II) to expedite the work and to facilitate competition during bidding of the construction. Phase I includes the installation of approximately 13,000 feet of 24-inch force main and Phase II includes the installation of approximately 9,000 feet of 24-inch force main. In addition, Phase I includes 4,000 feet of water line installation, and Phase II includes 2,000 feet of water line and 1,200 feet of gravity sewer installation for the City of Suffolk through a cost sharing agreement. Phase I work is 70 percent complete and Phase II has reached substantial completion with only final restoration work to complete.
2. Progress continues on construction of the VIP Nutrient Reduction Improvements project. Construction efforts are ongoing and the project is on schedule. The first part of the project (Group 1) involves the nutrient reduction portion of the project. This segment of the project reached substantial completion in March. The second part of the project (Group 2) involves construction of the plant peak flow capacity improvements. Ongoing work includes construction of the preliminary treatment facility, equalization basin and Raw Water Influent Pump Station. Electrical improvements and large diameter yard piping installation are also underway as part of this phase. The substantial completion date for this part of the project is July 2018. This is HRSD's largest single CIP project, and work will continue through the end of 2018. The project team is working well together and this effort is an example of good planning and communication. This project is partially funded through a WQIF grant and HRSD should receive \$46 million as part of the cost sharing agreement with the VDEQ.

D. Planning & Analysis Division

1. The CIP Enhancement Team continues their efforts to consider improvements to the overall program. The list of issues under consideration includes those items suggested in the audit prepared last year. Current efforts are focused on a Document Management Policy, refining the

process to prepare project scope/costs, refining the internal QA/QC process and creating a project risk management process. The team met with the Internal Auditors (SC&H) to review the status of the work and agreed to create a tracking spreadsheet to monitor progress.

2. Efforts continue on Phase 4 - SWIFT Concept Feasibility Study. Current work includes preliminary facility layout, regulatory and permitting planning, site-specific groundwater modeling and cost estimating. Phase 4 is intended to inform HRSD of the overall plan that will guide full-scale implementation of the SWIFT Program at each treatment plant location. This phase of the program should be completed later this year.

#### E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 5
  - a. Staff coordinated a meeting with the Hampton Roads Planning Commission (HRPDC) and the Hampton Roads Utility and Heavy Construction Association (HRUHCA) on the topic of the Hampton Roads Regional Construction Standards on March 13.
  - b. Staff conducted a Hydraulics Experiment for students at the Discovery STEM Academy in Newport News on March 17.
  - c. Staff met with students as part of the Old Dominion University (ODU) Civil and Environmental Engineering Speed Networking Event held on March 21.
  - d. Staff moderated a session entitled, "Owners Forum" at the Design-Build Institute of America (DBIA) Water/Wastewater Conference on March 29.
  - e. Staff made a presentation to students at the Hampton Roads Public Works Academy (HRPWA) on Engineering and Surveying Practices for Public Works Projects on March 31.
2. Number of Community Partners: 6
  - a. HRPDC
  - b. HRUHCA
  - c. Discovery STEM Academy - Newport News

d. ODU Civil and Environmental Engineering Department

e. DBIA

f. HRPWA

3. Number of Research Partners: 0

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>March 2017</b>
M-1.4a	Total Training Hours per Full Time Employee (39) - Current Month	Hours / #FTE	5.31
M-1.4b	Total Training Hours per Full Time Employee (39) - Cumulative Fiscal Year-to-Date	Hours / #FTE	30.33
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	6
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 March 2017  
DATE: April 12, 2017

A. General

1. HRSD received our annual pharmacy rebate in the amount of \$315,160. When drug manufacturers provide a rebate, sometimes as a result of Cigna negotiating lower prices, Cigna passes those funds directly to HRSD without any fees.
2. The Federal Reserve raised the Fed funds rate by 0.25 percent in March and two more hikes are expected in 2017. This is bad news for our variable rate debt where the interest rate has increased to 0.93 percent at the end of March. On the other hand, this is good news for the highly liquid funds we have in the Local Government Investment Pool (LGIP), which is now yielding 0.98 percent. This is part of our Plan of Finance where we are able to take advantage of both rising and falling interest rates.
3. The remaining bond proceeds from Series 2016A issued in February 2016 were expended in March. Staff anticipates having to use the Line of Credit as an interim financing vehicle between late summer to fall depending on available liquidity and capital expenditures. It takes approximately two months to reopen the Line of Credit.
4. The Director of Finance attended a newly formed regional utility committee organized by Reinvent Hampton Roads that is focused on economic development opportunities. The other entities that attended were Columbia Gas, Virginia Natural Gas, Dominion Power, Verizon, Cox and other regional partners. This group is tentatively set to meet quarterly.
5. Revenues continue to track slightly higher than budget as water consumption remains flat year-over-year. Municipal Assistance is tracking lower due to projects not materializing in various Localities. Expenses are lower than expected partially due to better than projected health care utilization and lower utility and chemical costs. Personal Services are slightly higher this month since there were three pay periods in March. Staff is projecting revenues to exceed expenses by the end of fiscal year 2017.
6. Quarterly investment reports for [HRSD's Operating Funds](#) and the [Retiree Health Plan Trust](#) are attached.



## B. Interim Financial Report

### 1. Operating Budget for the Period Ended March 31, 2017

	Amended Budget	Current YTD	Current YTD as % of Budget (75% Budget to Date)	Prior YTD as % of Prior Year Budget
<b>Operating Revenues</b>				
Wastewater	\$ 242,810,000	\$ 185,981,317	77%	77%
Surcharge	1,500,000	1,378,371	92%	80%
Indirect Discharge	2,500,000	1,979,260	79%	77%
Norfolk Sludge	90,000	55,460	62%	56%
Fees	2,843,000	2,225,919	78%	71%
Municipal Assistance	1,250,000	674,539	54%	68%
Miscellaneous	750,000	794,166	106%	71%
<b>Total Operating Revenue</b>	<b>251,743,000</b>	<b>193,089,032</b>	<b>77%</b>	<b>77%</b>
<b>Non Operating Revenues</b>				
Facility Charge	5,850,000	4,448,970	76%	69%
Interest Income	1,400,000	560,800	40%	87%
Build America Bond Subsidy	2,400,000	1,193,083	50%	51%
Other	840,000	563,416	67%	81%
<b>Total Non Operating Revenue</b>	<b>10,490,000</b>	<b>6,766,269</b>	<b>65%</b>	<b>69%</b>
<b>Total Revenues</b>	<b>262,233,000</b>	<b>199,855,301</b>	<b>76%</b>	<b>77%</b>
Transfers from Reserves	7,901,331	5,925,998	75%	75%
<b>Total Revenues and Transfers</b>	<b>\$ 270,134,331</b>	<b>\$ 205,781,299</b>	<b>76%</b>	<b>77%</b>
<b>Operating Expenses</b>				
Personal Services	\$ 52,521,153	\$ 40,477,482	77%	68%
Fringe Benefits	24,287,503	18,182,678	75%	69%
Materials & Supplies	7,374,956	5,367,206	73%	92%
Transportation	1,448,541	980,764	68%	64%
Utilities	12,286,132	8,295,964	68%	65%
Chemical Purchases	9,360,735	5,747,212	61%	57%
Contractual Services	31,903,100	18,782,696	59%	63%
Major Repairs	9,846,266	4,481,550	46%	39%
Capital Assets	3,519,171	1,904,257	54%	38%
Miscellaneous Expense	2,378,476	1,692,488	71%	57%
<b>Total Operating Expenses</b>	<b>154,926,033</b>	<b>105,912,297</b>	<b>68%</b>	<b>64%</b>
<b>Debt Service and Transfers</b>				
Debt Service	61,947,000	49,646,481	80%	79%
Cost of Issuance Bonds	900,000	2,809	0%	107%
Transfer to CIP	52,101,298	39,075,973	75%	75%
Transfer to Risk management	260,000	195,009	75%	75%
<b>Total Debt Service and Transfers</b>	<b>115,208,298</b>	<b>88,920,272</b>	<b>77%</b>	<b>78%</b>
<b>Total Expenses and Transfers</b>	<b>\$ 270,134,331</b>	<b>\$ 194,832,569</b>	<b>72%</b>	<b>70%</b>

## 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 March 31, 2017

	General	Risk Management	Reserve	Capital
<b>Beginning of Period - July 1, 2016</b>	\$ 155,644,784	\$ 2,740,508	\$ -	\$ 124,405,496
<b>Add: Current Year Sources of Funds</b>				
Cash Receipts	205,538,714			
Capital Grants				8,439,521
Line of Credit				-
Bond Proceeds (includes interest)				97,253
Transfers In	-	195,009	31,754,250	39,075,973
<b>Sources of Funds</b>	<u>205,538,714</u>	<u>195,009</u>	<u>31,754,250</u>	<u>47,612,747</u>
<b>Total Funds Available</b>	<u>\$ 361,183,498</u>	<u>\$ 2,935,517</u>	<u>\$ 31,754,250</u>	<u>\$ 172,018,243</u>
<b>Deduct: Current Year Uses of Funds</b>				
Cash Disbursements	161,941,252			95,883,716
Transfers Out	39,270,982			31,754,250
<b>Uses of Funds</b>	<u>201,212,234</u>	<u>-</u>	<u>-</u>	<u>127,637,966</u>
<b>End of Period - March 31, 2017</b>	<u>\$ 159,971,264</u>	<u>\$ 2,935,517</u>	<u>\$ 31,754,250</u>	<u>\$ 44,380,277</u>

4. Capital Improvements Budget and Activity Summary for Active Projects the Period Ended March 31, 2017

Classification/ Treatment Service Area	Expenditures		Year to Date		Total Expenditures	Outstanding Encumbrances	Available Balance
	Budget	prior to June 30, 2016	FY 2017 Expenditures				
Administration	\$ 40,961,073	\$ 35,489,810	\$ 2,504,540	\$ 37,994,350	\$ 1,561,730	\$1,404,993	
Army Base	156,834,000	117,268,663	1,347,448	118,616,111	4,505,492	33,712,397	
Atlantic	91,488,147	37,540,037	2,450,699	39,990,736	9,843,059	41,654,352	
Boat Harbor	86,663,081	33,305,878	5,381,957	38,687,835	10,743,629	37,231,617	
Ches-Eliz	106,363,458	4,781,814	1,063,988	5,845,802	1,079,557	99,438,099	
James River	75,114,256	36,167,539	8,362,245	44,529,784	9,988,326	20,596,146	
Middle Peninsula	38,036,619	5,170,712	566,824	5,737,536	4,174,330	28,124,753	
Nansemond	74,720,570	24,996,903	6,872,594	31,869,497	5,061,778	37,789,295	
VIP	252,394,585	195,724,686	24,023,011	219,747,697	24,749,749	7,897,139	
Williamsburg	11,396,383	7,646,446	454,382	8,100,828	1,133,209	2,162,346	
York River	45,160,886	30,560,270	6,607,424	37,167,694	2,857,927	5,135,265	
General	235,087,960	141,618,472	13,499,425	155,117,897	48,880,977	31,089,086	
	<u>\$1,214,221,018</u>	<u>\$ 670,271,230</u>	<u>\$ 73,134,537</u>	<u>\$ 743,405,767</u>	<u>\$ 124,579,763</u>	<u>#####</u>	

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal February 2017	Principal Payments	Net Refunding	Principal March 2017	Interest Payments
<b>Fixed Rate</b>					
Senior	\$ 434,602	\$ 2,437	\$ -	\$ 432,165	\$ 1,001
Subordinate	302,513	1,044	-	301,469	377
<b>Variable Rate</b>					
Subordinate	50,000	-	-	50,000	24
<b>Line of Credit</b>					
	-	-	-	-	-
<b>Total</b>	<u>\$ 787,115</u>	<u>\$ 3,481</u>	<u>\$ -</u>	<u>\$ 783,634</u>	<u>\$ 1,402</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 03/31/17

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	0.91%	0.93%	0.02%
Average	0.18%	0.17%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 03/31/17	0.91%	0.93%	0.02%

\* Since October 20, 2011 HRSD has averaged 17 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended March 31, 2017

	Current YTD	Policy Minimum
Capital % Cash Funded	40%	15%
General Reserve as % of Operations	103%	75-100%
Risk Management Reserve as % of Projected Claims Costs	25%	25%

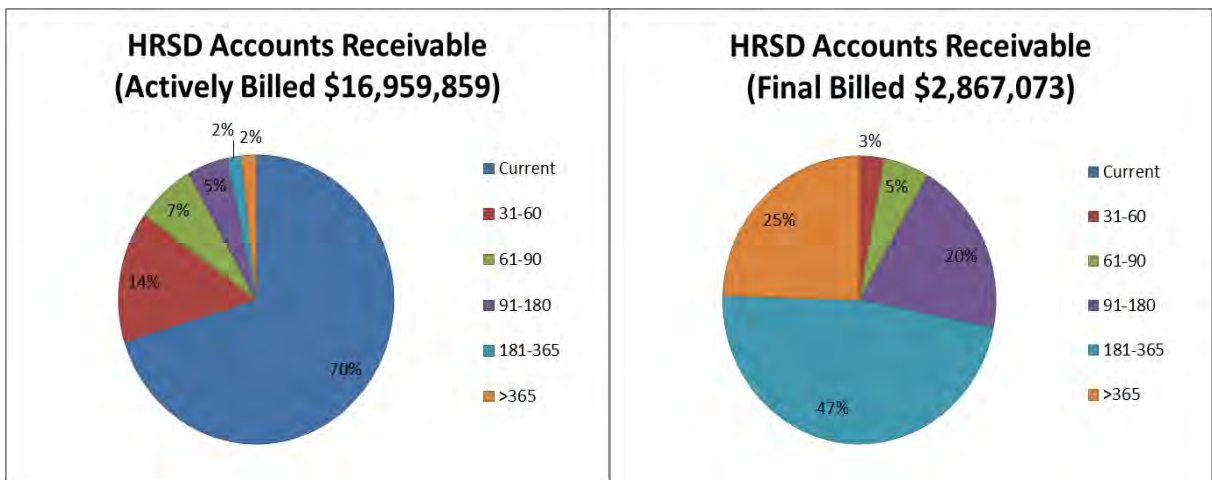
## 7. Summary of Billed Consumption

Summary of Billed Consumption (ccf)							
Month	Cumulative 3 Year Average	Cumulative 2016 Actual	2017		% Difference		
			Cumulative Budget Estimate	2017 Cumulative Actual	From Budget	From 2016	From 3 Year Average
July	4,902	4,819	4,784	4,776	-0.2%	-0.9%	-2.6%
Aug	9,774	9,783	9,382	9,275	-1.1%	-5.2%	-5.1%
Sept	14,337	14,290	13,595	14,227	4.6%	-0.4%	-0.8%
Oct	19,210	18,976	18,284	19,017	4.0%	0.2%	-1.0%
Nov	23,362	23,486	22,761	23,282	2.3%	-0.9%	-0.3%
Dec	27,733	27,627	26,918	27,761	3.1%	0.5%	0.1%
Jan	31,997	31,844	31,009	32,036	3.3%	0.6%	0.1%
Feb	36,132	35,960	34,750	36,263	4.4%	0.8%	0.4%
March	40,991	40,706	40,257	40,516	0.6%	-0.5%	-1.2%
Apr	45,205	44,834	44,861	-	N/A	N/A	N/A
May	49,487	49,022	48,879	-	N/A	N/A	N/A
June	54,069	53,503	52,788	-	N/A	N/A	N/A

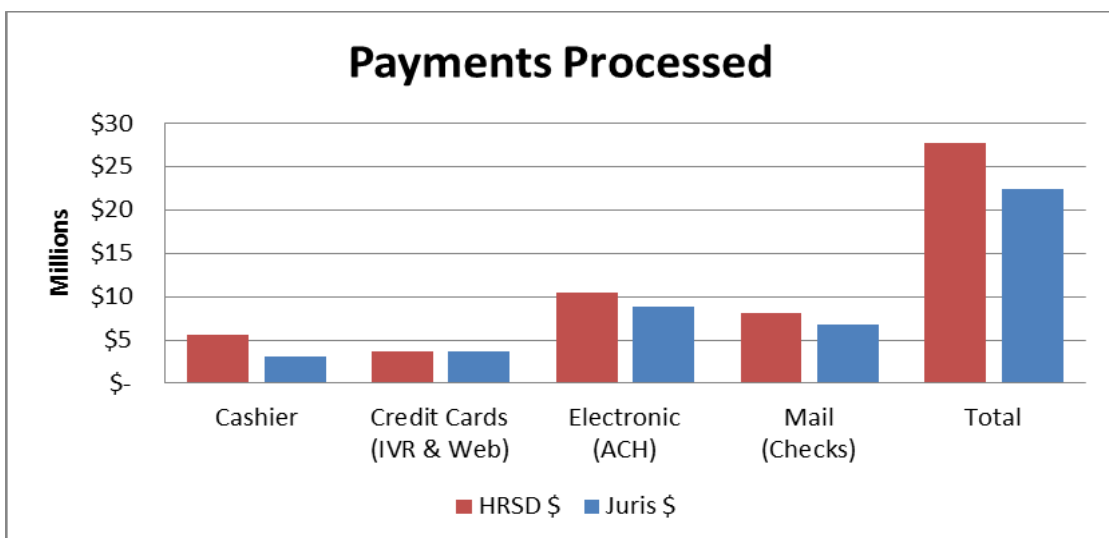
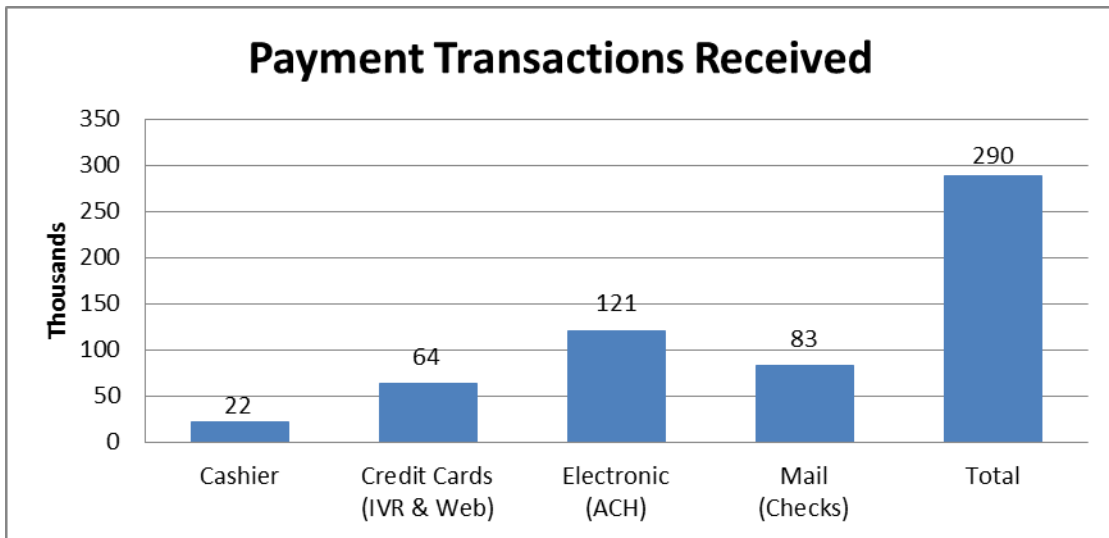
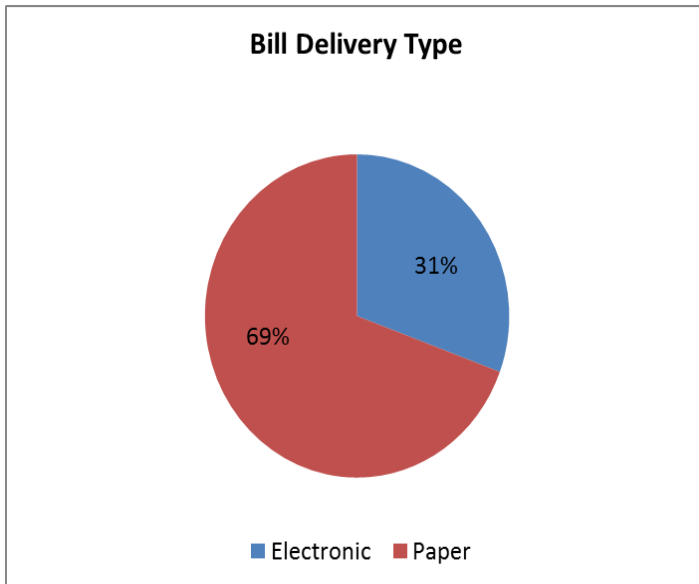
## C. Customer Care Center

### 1. Accounts Receivable Overview

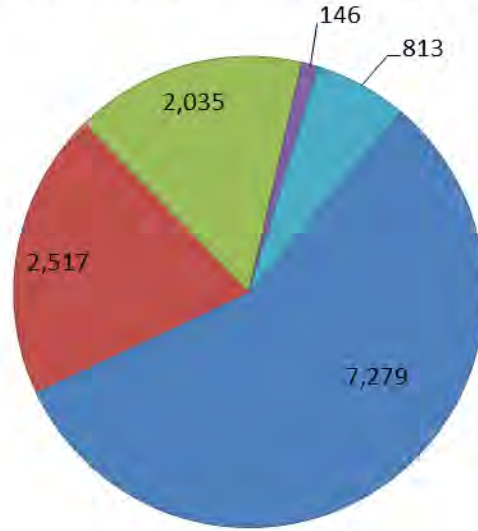
	HRSD	Juris	Total
<b>Roll Forward</b>			
<b>February A/R Balance</b>	\$ 22,904,913	\$ 24,789,820	\$ 47,694,733
Billings	20,847,646	25,668,283	46,515,929
Payments	(28,283,838)	(22,692,944)	(50,976,782)
Delinquency Activity Fees	150,940	-	150,940
Late Payment Charges	81,636	24,588	106,224
Adjustments	4,361,135	(4,620,813)	(259,678)
Balances Written Off	(235,500)	(140,280)	(375,780)
<b>March A/R Balance</b>	<b>\$ 19,826,932</b>	<b>\$ 23,028,654</b>	<b>\$ 42,855,586</b>



2. Customer Care Center Statistics for the Period Ended March 31, 2017

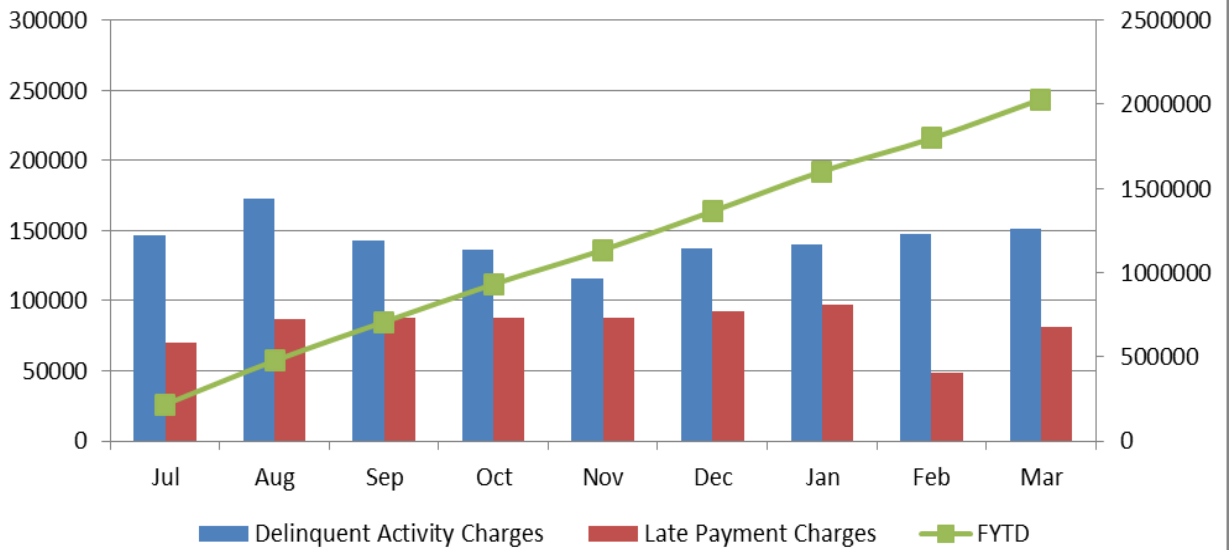


## Delinquent Field Activity

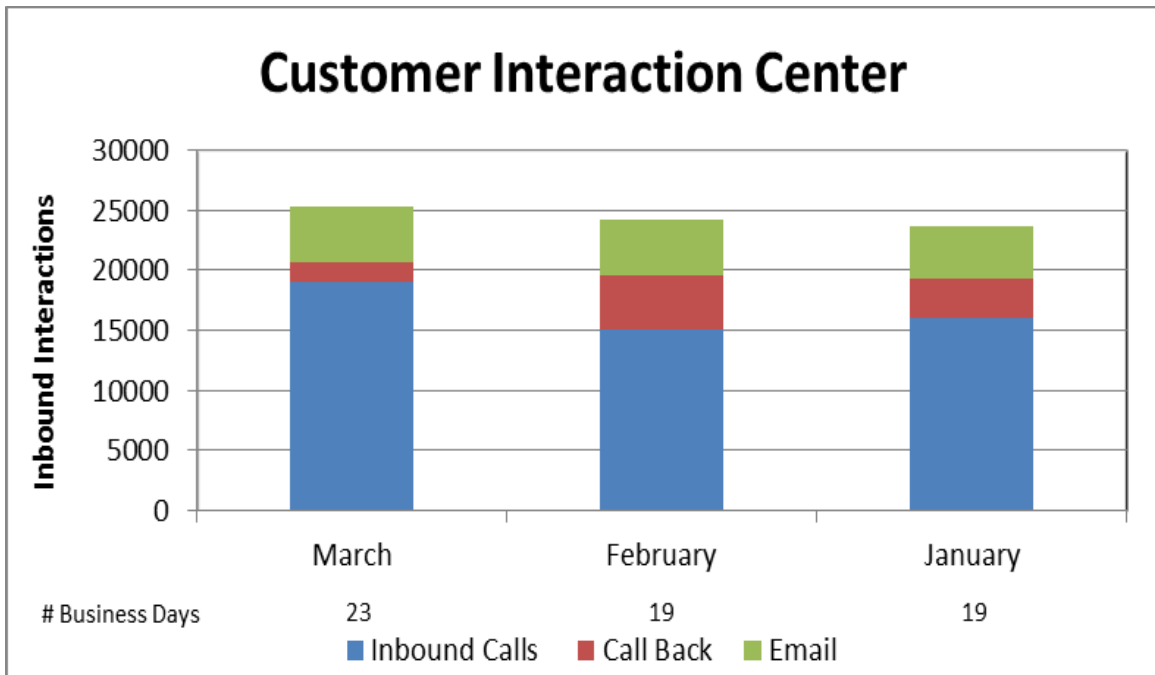


■ Leave Tag   
 ■ Cut off   
 ■ Turn On   
 ■ Lock Meter   
 ■ Back Check

## Delinquent Fees



■ Delinquent Activity Charges   
 ■ Late Payment Charges   
 ■ FYTD



Customer Interaction Statistics	March	February	January
Calls Answered within 3 minutes	74%	53%	69%
Average Wait Time	2:08	4:40	3:03
Calls Abandoned	1,916	3,231	2,550

D. Procurement

1. Procurement Statistics

	Current Period	FYTD
Bid Cost Savings	\$ 116,224	\$4,979,428
Negotiated Cost Savings	\$ 48,825	\$ 116,363
Salvage Revenues	\$ 1,106	\$ 20,251
Corporate VISA Card - Estimated Rebate	\$ 21,999	\$ 164,525

Average Cycle Time (Receipt of Requisition to Award)					
Solicitation Types	Award Amounts	Feb-17		Mar-17	
		No. Days	Count	No. Days	Count
RFQs	< \$10,000	4	11	38	15
	\$10,000 - \$50,000	4	9	46	27
IFBs	\$50,000 - \$100,000	37	3	25	3
IFBs/RFPs	>\$100,000	35	4	96	2

Requisition Volume Comparison

Requisition Amounts	7/1/2015 - 6/30/2016 Requisitions	7/1/2016 - 3/31/2017 Requisitions	Percent Comparison of Past Year
< \$10,000	260	177	68%
\$10,000 – \$50,000	274	192	70%
\$50,000 – \$100,000	47	42	89%
>\$100,000	78	65	83%
<b>Total</b>	<b>659</b>	<b>476</b>	<b>72%</b>

2. Some of the more formal technical competitive bid solicitations for the month include:
  - a. Well Drilling, Installing, Developing & Testing for South Shore Design and Construction Division
  - b. AirVac Vacuum Pit Packages for the Small Communities Division
  - c. Outfall Diffuser Dredging, Inspection and Repair at the James River Treatment Plant
  - d. Continuous Emissions Monitoring System Maintenance Service Contract for the Electrical and Energy Management Division

E. Business Intelligence – Enterprise Resource Planning (ERP)

1. ERP Helpdesk currently has 213 open work orders in the following status: 11 escalated, 74 in progress, 15 on hold, 105 open, 8 waiting on user. ERP Helpdesk received 279 work orders in March. In February, 552 work orders were closed and 98 were closed within one hour.
2. ERP staff began testing for Benefits Open Enrollment in May 2017.
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: 0
2. Community Partners: 0

Item #	Strategic Planning Measure	Unit	March 2017
M-1.4a	Training During Work Hours Per Full Time Employee (100) – Current Month	Hours / #FTE	2.10
M-1.4b	Total Training During Work Hours Per Full Time Employee (100) – Cumulative Fiscal Year-to-Date	Hours / #FTE	27.07
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	103%
	General Reserves	Percentage of Operating Budget less Depreciation	103%
	Accounts Receivable (HRSD)	Dollars	\$19,826,932
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	20%

Respectfully,

*Jay A. Bernas*

Jay A. Bernas, P.E.

Director of Finance

Attachments:

[HRSD Operating Funds Quarterly Investment Report](#)

[Retiree Health Plan Trust Quarterly Investment Report](#)

## Hampton Roads Sanitation District – Operating Funds

Investment Report – Quarter Ended March 31, 2017

### Portfolio Summary

	Yield as of	Market Value	
	March 31, 2017	March 31, 2017	December 31, 2016
Operating Liquidity Strategy	0.48%	\$ 38,962,428	\$ 40,505,746
Total Return Strategy	1.18%	\$ 155,698,603	\$ 155,186,055
Capital Investment Strategy	0.89%	\$ 44,380,277	\$ 58,017,266
<b>Total Portfolio</b>		<b>\$ 239,041,309</b>	<b>\$ 253,709,067</b>

### Investment Recap and Strategies

- The **Operating Liquidity Strategy** is managed to provide liquidity for day-to-day cash needs and unforeseen events. Currently, the Operating Liquidity Strategy funds are held in an account meeting the requirements of the Security for Public Deposits Act (SPDA) and a local government investment pool (LGIP).
- The **Total Return Strategy** consists of operating funds that will not be a major source of day-to-day disbursement requirements and operational needs. The strategy includes a portfolio invested in longer-term securities in order to generate a higher investment rate of return. The strategy also includes funds designated as a reserve that are invested in an LGIP.
- The **Capital Investment Strategy** is managed to provide liquidity for capital projects. Currently, the Capital Investment Strategy funds are held in an LGIP.

### Portfolio Performance Summary

- Performance for the Operating Liquidity Strategy and Capital Investment Strategy is measured by comparing the average current yield of the portfolios to the average yield of a short term index. During the quarter, the Operating Liquidity Strategy had an average yield of 0.64% and the Capital Investment Strategy had an average yield of 0.77%, compared to the Merrill Lynch 3-month Treasury Bill's average yield of 0.59%. The one-year trailing return for the Operating Liquidity Strategy and the Capital Investment Strategy, were 0.39%, and 0.53%, respectively, compared to the benchmark's return of 0.39%.
- Performance for the Total Return Strategy is measured on a total return basis, which captures interest income, realized gains/losses, and unrealized gains/losses. This performance calculation methodology is most appropriate for investment portfolios that have longer-term investment horizons. During the quarter, the Total Return Strategy Portfolio generated a total return of 0.33% (1.33% annualized), outperforming the Merrill Lynch 1 - 3 Year U.S. Treasury Index's return of 0.26% (1.06% annualized).

### Portfolio Summary *(continued)*

#### Total Return Strategy Managed Portfolio

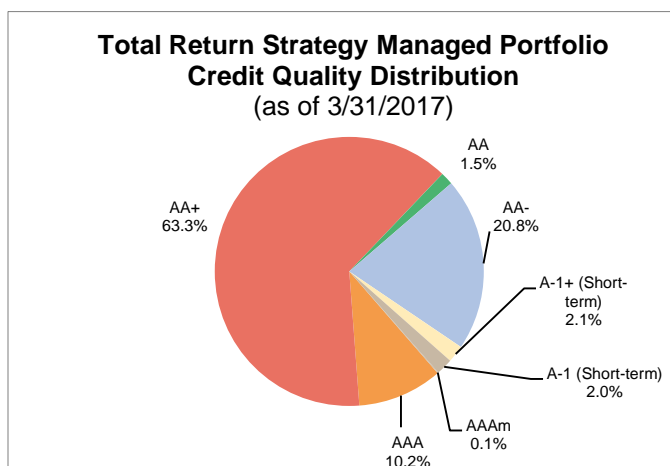
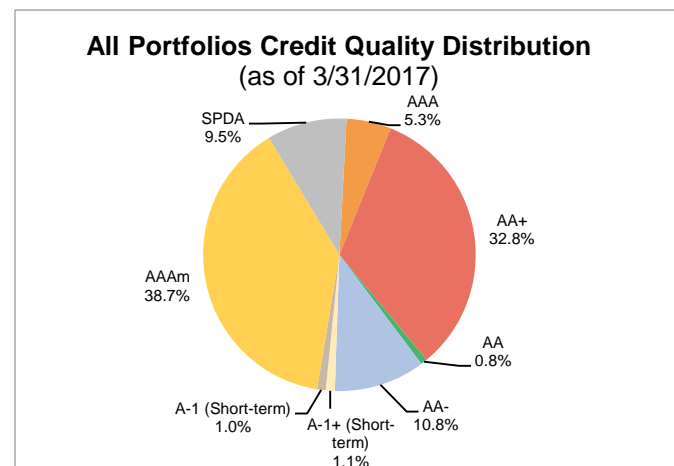
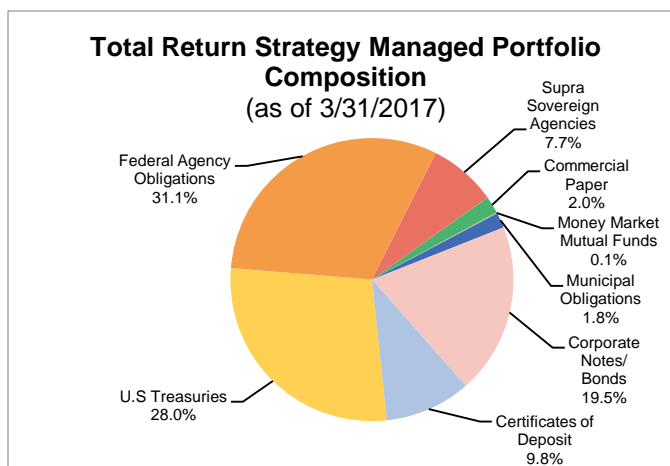
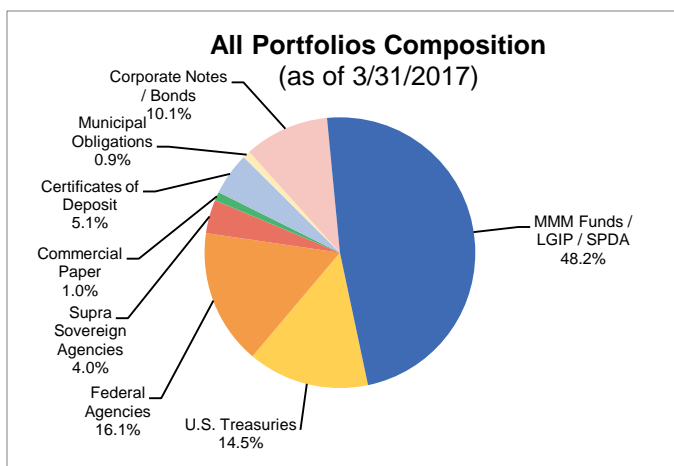
- The Total Return Strategy Managed Portfolio (the “Portfolio”) is well diversified among U.S. Treasury securities, federal agency securities, supra sovereign agencies, certificates of deposit, municipal bonds, corporate notes, commercial paper, and high quality money market mutual funds. The Portfolio’s average credit quality is AA+.
- In the first quarter of 2017, the Total Return Strategy Managed Portfolio, which does not include the reserve fund, generated a total return of 0.36% (1.47% annualized), outperforming the Merrill Lynch 1 - 3 Year U.S. Treasury Index’s return of 0.26% (1.06% annualized). The one-year trailing return for the Portfolio was 0.53% compared to the benchmark’s return of 0.25%.
- Yields remained within a narrow range through the first two months of the quarter before rising strongly in anticipation of the March Federal Open Market Committee (“FOMC”) rate hike as Fed officials made a concerted effort to telegraph expectations. Yields on the short-end of the curve ended the quarter higher, reflecting the rate hike, while long-term yields declined alongside future inflation expectations.
- Since yields are currently stable and it is the expectation of no action at the next FOMC meeting in May, the strategy of the Portfolio will be to target a duration to closely match that of the benchmark. This position will be revisited regularly, especially in light of the potential for higher yields later in the year. As of March 31, 2017 the Portfolio’s effective duration was 1.81 years.
- Agency yield spreads over Treasuries continue to remain historically narrow. As a result, the Portfolio strategy will generally favor U.S. Treasuries over agencies, unless specific issues offer identifiable value. Supranational issues also offer opportunities in the space.
- Although yield spreads on corporate securities drifted wider at the end of the first quarter, they remain near multi-year lows. Identifying incremental return potential in the corporate bond sector requires careful relative value analysis. Improving corporate profits, as well as anticipated pro-business measures from the Trump administration, form a favorable backdrop for the credit sector.

# Hampton Roads Sanitation District – Operating Funds

Investment Report – Quarter Ended March 31, 2017

## Portfolio Composition

Security Type	March 31, 2017	% of Portfolio	December 31, 2016	% of Portfolio	Permitted by Policy
U.S. Treasuries	\$34,652,195	14.5%	\$33,628,145	13.3%	100%
Federal Agencies	38,592,667	16.1%	36,957,996	14.6%	100%
Supra Sovereign Agencies	9,601,896	4.0%	6,950,691	2.7%	15%
Commercial Paper	2,441,366	1.0%	7,327,070	2.9%	25%
Certificates of Deposit	12,196,058	5.1%	12,225,944	4.8%	10%
Municipal Obligations	2,175,704	0.9%	2,183,655	0.9%	15%
Corporate Notes / Bonds	24,155,782	10.1%	24,046,067	9.5%	25%
Money Market Mutual Funds / LGIP / Cash	115,225,641	48.2%	130,389,498	51.4%	100%
<b>Totals</b>	<b>\$239,041,309</b>	<b>100.0%</b>	<b>\$253,709,067</b>	<b>100.0%</b>	

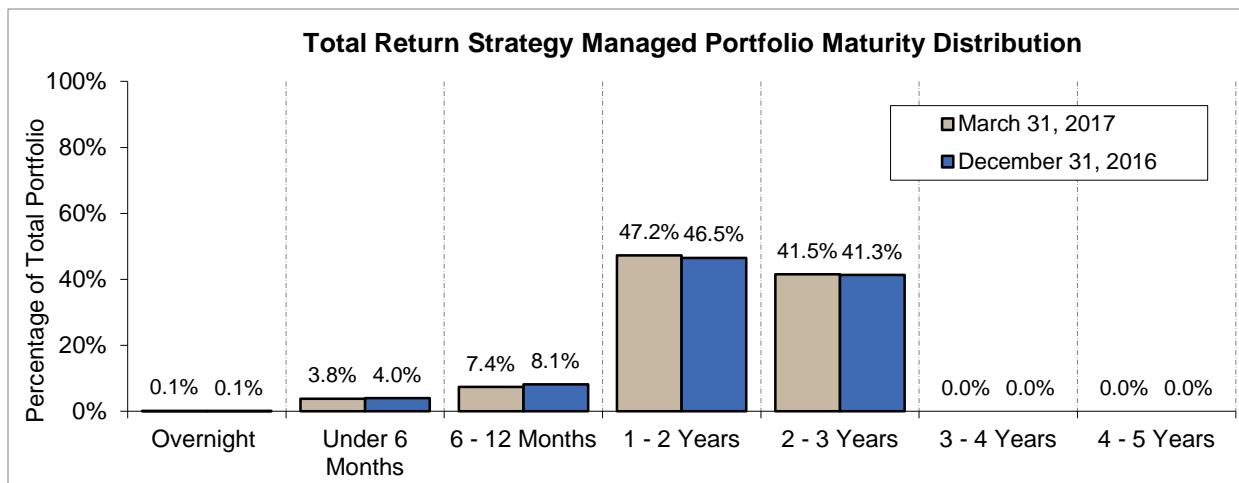
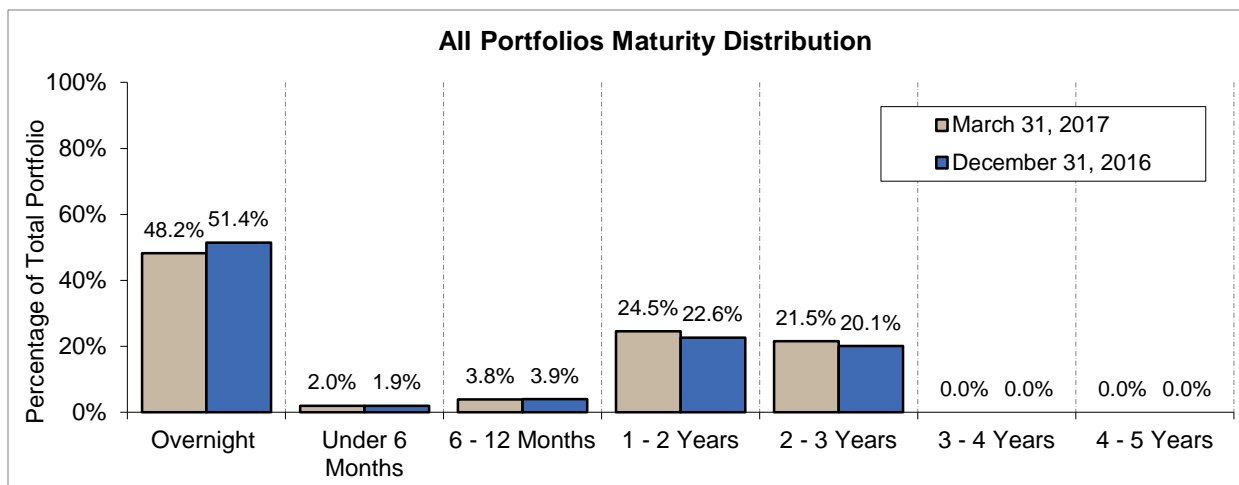


# Hampton Roads Sanitation District – Operating Funds

Investment Report – Quarter Ended March 31, 2017

## Portfolio Maturity Distribution

Maturity Distribution	March 31, 2017	December 31, 2016
Overnight	115,225,641	130,389,498
Under 6 Months	4,695,951	4,894,480
6 - 12 Months	9,132,762	10,009,693
1 - 2 Years	58,532,303	57,407,564
2 - 3 Years	51,454,651	51,007,831
3 - 4 Years	0	0
4 - 5 Years	0	0
5 Years and Over	0	0
<b>Totals</b>	<b>\$239,041,309</b>	<b>\$253,709,067</b>

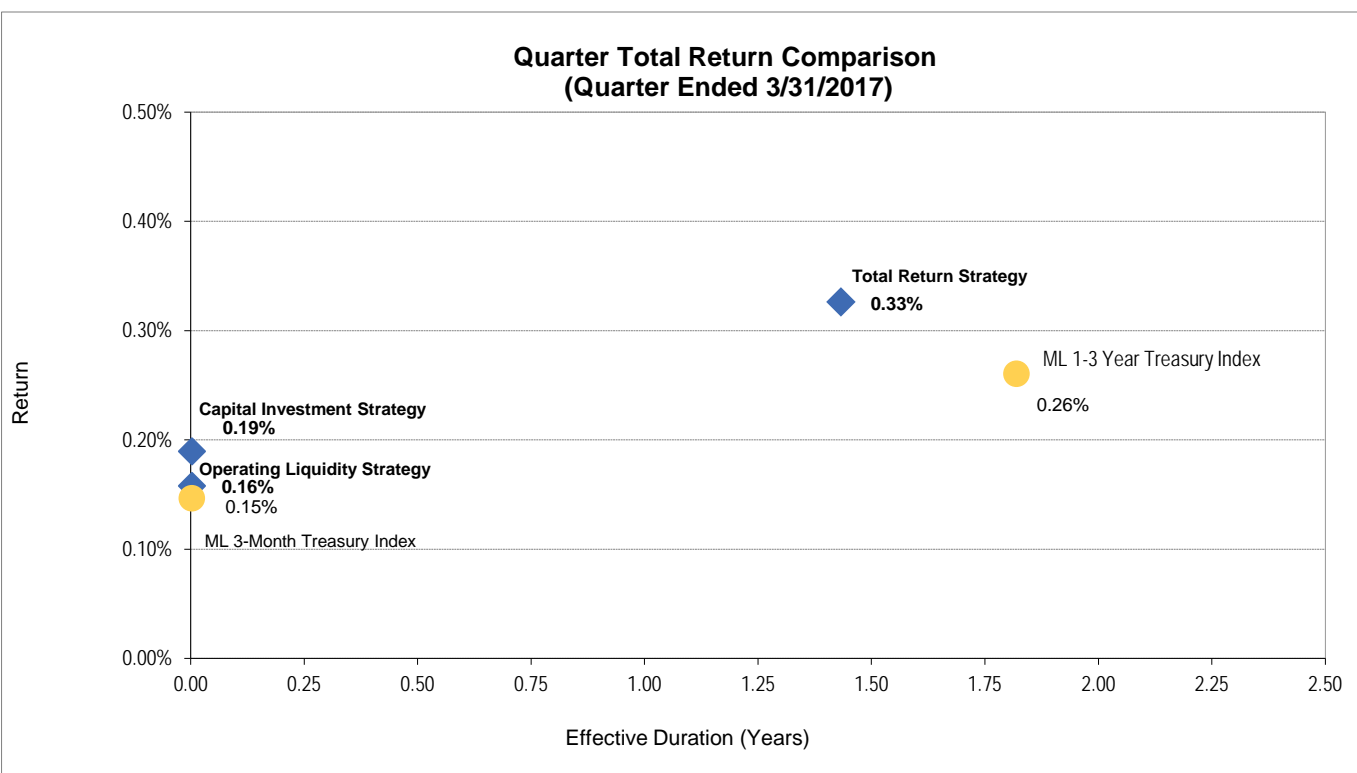


# Hampton Roads Sanitation District – Operating Funds

## Investment Report

### Portfolio Performance

	Quarter Ended March 31, 2017	Annualized Quarterly Return	Last 24 Months	Last 36 Months	Annualized Since Inception*
<b>Total Return Performance</b>					
<b>Total Return Strategy</b>	0.33%	1.33%	0.97%	1.00%	1.13%
Total Return Strategy Managed	0.36%	1.47%	0.88%	0.94%	1.11%
Merrill Lynch 1-3 Year Treasury Index	0.26%	1.06%	0.58%	0.72%	0.93%
<b>Book Value Performance</b>					
<b>Operating Liquidity Strategy</b>	<b>0.16%</b>	<b>0.64%</b>	<b>0.33%</b>	<b>0.30%</b>	<b>0.29%</b>
<b>Capital Investment Strategy</b>	<b>0.19%</b>	<b>0.77%</b>	<b>0.39%</b>	<b>0.32%</b>	<b>0.27%</b>
Merrill Lynch 3 Month Treasury Bill Index	0.15%	0.59%	0.25%	0.17%	0.11%



\*Since inception returns are calculated since September 30, 2009 to present. Performance for the Operating Liquidity Strategy and Capital Investment Strategy is calculated using a weighted average yield of cash and investments, including the monthly bank earnings credit rate and interest rate and the monthly distribution yield of the local government investment pools or money market mutual funds, and book value earnings on short-term fixed income securities. Performance for the Total Return Strategy Managed Portfolio is calculated as the total return, which captures interest income, realized gains/losses, and unrealized gains/losses, on the managed portfolio of short-term fixed income securities. The Total Return Strategy performance is calculated as the weighted average of the total return of the Managed Portfolio and average yield of cash balances. Calculations are based on provided information and are believed to be accurate based upon available data.

## Portfolio Summary

### Total Portfolio Value

	<u>March 31, 2017</u>	<u>December 31, 2016</u>
Investment Assets	<b>\$ 40,972,970</b>	\$ 38,991,439
Combined Assets	<b>\$ 40,983,033</b>	\$ 39,001,976

### Portfolio Recap & Strategy

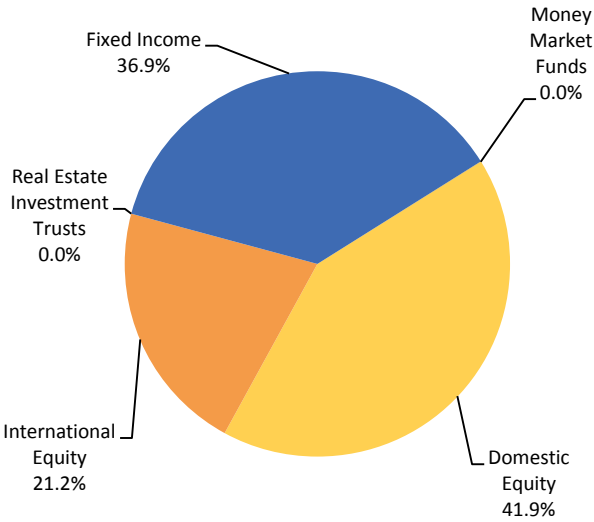
- The Retiree Health Plan Trust portfolio returned 4.29% (combined assets) for the quarter ended March 31, 2017, above the 3.82% return of the blended benchmark of 33% Russell 3000, 21% MSCI ACWI ex US (net), 3% NAREIT Equity REITs, 3% Bloomberg Commodity TR and 40% Barclays Aggregate.\* The one-year trailing return for the Retiree Health Plan Trust portfolio was 9.75% compared to the benchmark return of 9.15%
- Domestic equity markets, as represented by the Russell 3000 Index, extended rallies from the latter half of the fourth quarter into the first quarter of 2017. All told, markets rose 5.7% in part due to continued favorable market opinion of expectations of President Trump’s tax cuts and reform, regulatory reform, and increased infrastructure spending among others. By market capitalizations, large-cap stocks (Russell 1000 Index) led the way on the quarter rising 6.0% followed by mid-caps (Russell Mid Cap Index) rising 5.1%. Following a strong 2016, small-caps (Russell 2000 Index) lagged behind rising 2.5%.
- Developed markets outside of North America, as measured by the MSCI EAFE Index, increased 7.3% in the first quarter with three consecutive months of solid gains. Following a weak 2016, developed markets were bolstered by stronger-than-expected economic data and cheaper valuations relative to U.S. equities. Developed country performance was positive. Spain was the strongest performer with a 14.8% gain after a strong GDP reading fell in line with expectations and contributed to a March rally. Singapore (13.5%) and Hong Kong (13.4%) followed while Norway was the biggest laggard (1.4%).
- Emerging markets (EM) started the year off strongly with an 11.4% gain following a robust 2016. EM equities have been helped by a weaker dollar, cheaper relative valuations and mitigated concerns surrounding the Trump administration’s rhetoric on trade and China. Almost all individual EM country performance was positive. Poland was the top performer, rising 17.8% following years of poor performance, aided in part by a stronger currency. Indian, Korean, Mexican, Chilean, Chinese, Taiwanese, Turkish and Brazilian equities all increased substantially during the quarter, rising between 10 and 18 percent. Russia, last quarter’s top performer, was the worst performer, falling 4.6% amidst geopolitical concerns. Greece (-3.5%) and Hungary (-0.1%) were the only other countries with negative quarterly performance.
- After two consecutive quarters of increasing yields across the U.S. Treasury yield curve, the yield curve flattened during the first quarter of 2017. Maturities of 1 year and less all rose between 0.2% and 0.3% while the 10 and 30 year both dropped a moderate 6 basis points. Investment grade fixed income returns were positive as intermediate to longer-term yields saw moderate declines. The Bloomberg Barclays U.S. Aggregate index rose 0.8% on the quarter while the Bloomberg Barclays U.S. Universal Bond Index, which includes a small High Yield allocation, rose 1.1%. Investment-grade credit continued a strong 2016 with a 1.3% gain during the first quarter.

\*Performance is unreconciled

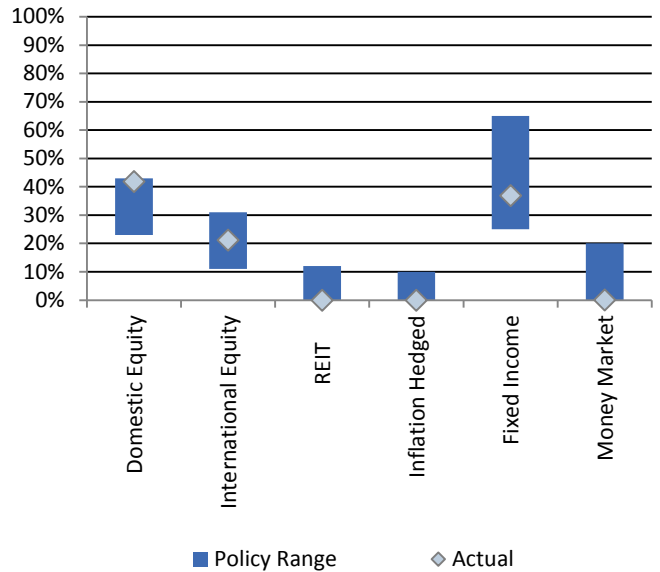
# Portfolio Composition

Security Type	March 31, 2017	% of Portfolio	December 31, 2016	% of Portfolio	Permitted by Policy
Domestic Equity	\$ 17,162,195	41.9%	\$ 16,236,977	41.6%	23% - 43%
International Equity	\$ 8,689,264	21.2%	\$ 5,872,697	15.1%	11% - 31%
Real Estate Investment Trusts	\$ -	0.0%	\$ 1,618,421	4.1%	0% - 12%
Inflation Hedge	\$ -	0.0%	\$ -	0.0%	0% - 10%
Fixed Income	\$ 15,121,496	36.9%	\$ 15,263,343	39.1%	25% - 65%
Money Market Funds	\$ 10,077	0.0%	\$ 10,538	0.0%	0% - 20%
<b>Totals</b>	<b>\$ 40,983,033</b>	<b>100.0%</b>	<b>\$ 39,001,976</b>	<b>100.0%</b>	

**Portfolio Composition**  
(as of 3/31/2017)



**Asset Allocation**  
(as of 3/31/2017)

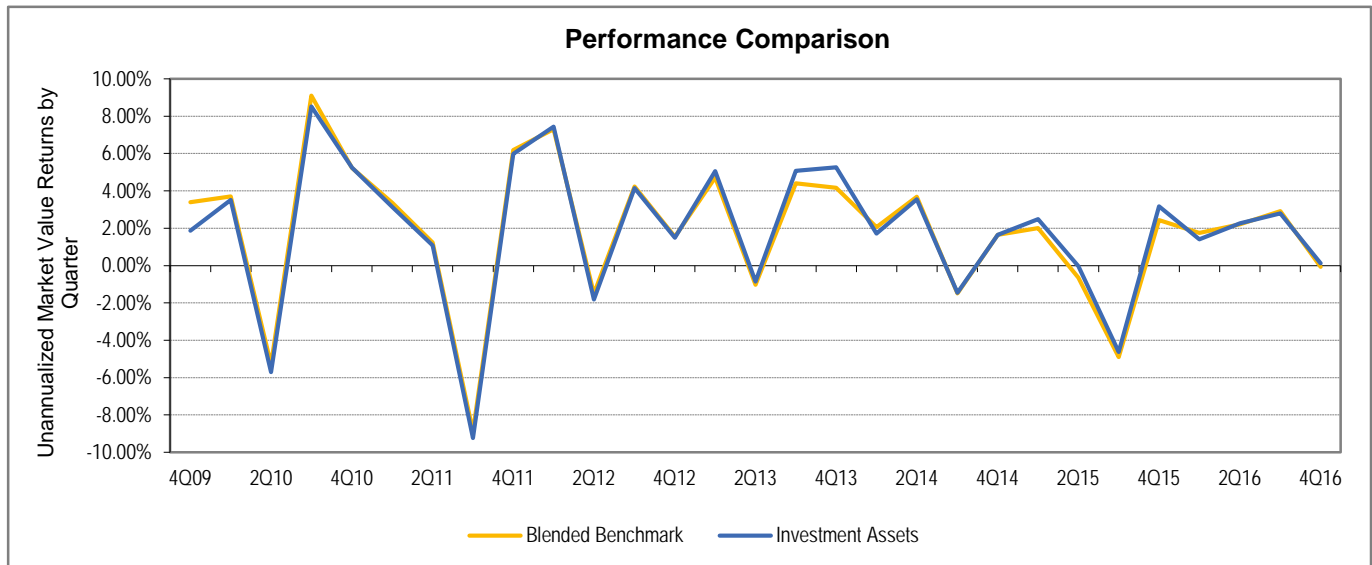




# Portfolio Performance – Investment Assets

Quarter Ended December 31, 2016

Index	Market Values	%	1 Quarter	Year to Date	Trailing 1 Year	Trailing 3 Years	Trailing 5 Years	Apr 2013 to Dec 2016*	Since Inception	Inception Date
<b>Domestic Equity</b>										
Vanguard Total Stock Market Index	\$ 13,271,877	34.0%	4.12%	12.66%	12.66%	8.38%	14.62%	12.03%	13.84%	9/1/2009
<i>Russell 3000 Index</i>			4.21%	12.74%	12.74%	8.43%	14.67%	12.07%	13.82%	9/1/2009
T. Rowe Price Dividend Growth	\$ 1,308,074	3.4%	2.20%	11.62%	11.62%	8.68%	13.95%	11.70%	1.28%	12/1/2016
<i>S&amp;P 500</i>			3.82%	11.96%	11.96%	8.87%	14.66%	12.29%	1.98%	12/1/2016
Vanguard Small Cap Index Fund	\$ 1,657,026	4.2%	6.10%	18.30%	18.30%	7.01%	14.83%	11.35%	6.10%	10/1/2016
<i>Russell 2000 Index</i>			8.83%	21.31%	21.31%	6.74%	14.46%	11.46%	8.83%	10/1/2016
<b>International Equity</b>										
Vanguard Total International Stock Index Fund	\$ 1,761,097	4.5%	-1.93%	4.67%	4.67%	-1.34%	5.50%	1.94%	-1.93%	10/1/2016
<i>MSCI AC World ex USA (Net)</i>			-1.25%	4.50%	4.50%	-1.78%	5.00%	1.54%	-1.25%	10/1/2016
Vanguard International Value	\$ 1,467,685	3.8%	-1.11%	4.46%	4.46%	-3.03%	6.01%	2.34%	2.41%	5/1/2016
<i>MSCI AC World ex USA (Net)</i>			-1.25%	4.50%	4.50%	-1.78%	5.00%	1.54%	2.20%	5/1/2016
J. O. Hambro International Select	\$ 1,763,665	4.5%	-6.25%	5.20%	5.20%	2.07%	11.16%	7.42%	5.20%	1/1/2016
<i>MSCI AC World ex USA (Net)</i>			-1.25%	4.50%	4.50%	-1.78%	5.00%	1.54%	4.50%	1/1/2016
Oppenheimer International Small Company	\$ 880,249	2.3%	-5.29%	-0.24%	-0.24%	4.86%	15.59%	12.02%	4.40%	4/1/2015
<i>MSCI AC World ex USA Small Cap (Net)</i>			-3.41%	3.57%	3.57%	0.29%	6.99%	3.32%	0.00%	4/1/2015
<b>REITs</b>										
Vanguard REIT Index	\$ 1,618,421	4.2%	-2.97%	8.50%	8.50%	13.13%	11.78%	8.80%	2.09%	4/1/2016
<i>MSCI US REIT Index</i>			-2.96%	8.60%	8.60%	13.23%	11.87%	8.89%	2.15%	4/1/2016
<b>Fixed Income</b>										
Metropolitan West Total Return	\$ 3,818,191	9.8%	-2.64%	2.46%	2.46%	2.88%	4.07%	2.16%	2.16%	4/1/2013
<i>Bloomberg Barclays U.S. Aggregate</i>			-2.98%	2.65%	2.65%	3.03%	2.23%	1.89%	1.89%	4/1/2013
Baird Core Plus	\$ 5,034,247	12.9%	-2.37%	4.73%	4.73%	3.78%	3.55%	2.56%	3.02%	5/1/2014
<i>Bloomberg Barclays U.S. Aggregate</i>			-2.98%	2.65%	2.65%	3.03%	2.23%	1.89%	2.39%	5/1/2014
Vanguard Intermediate-Term Investment Grade	\$ 5,048,093	12.9%	-2.96%	3.93%	3.93%	3.81%	3.83%	2.59%	2.59%	4/1/2013
<i>Bloomberg Barclays Capital U.S. Credit: 5 - 10 Yr</i>			-3.28%	5.23%	5.23%	4.39%	4.39%	2.83%	2.83%	4/1/2013
Vanguard High Yield Corporate	\$ 1,362,811	3.5%	0.78%	11.30%	11.30%	4.77%	6.62%	4.56%	8.78%	4/1/2016
<i>Bloomberg Barclays US Corp: High Yield</i>			1.75%	17.13%	17.13%	4.66%	7.36%	4.92%	13.33%	4/1/2016
<b>Aggregate</b>										
Retiree Health Plan Trust	\$ 38,991,439		0.12%	6.73%	6.73%	4.31%	7.84%	6.01%	7.83%	9/1/2009
<i>33% Russell 3000 / 21% MSCI ACWI ex USA (net) / 3% FTSE NAREIT Equity REITs / 3% Bloomberg Commodity TR / 40% Barclays Aggregate</i>			-0.06%	6.99%	6.99%	3.82%	7.13%	5.09%	7.67%	9/1/2009



\*Active Strategy implemented April 1, 2013.

TO: General Manager

FROM: Director of Information Technology (IT)

SUBJECT: Information Technology Department Report for March 2017

DATE: April 12, 2017

A. General

1. The Army Base Treatment Plant NIC/NOT (Nitrate In Control/Nitrate Out Control) platform software was re-written to optimize instrumentation tuning and control.
2. Supervisory control functionality was added to the Nansemond Treatment Plant Centrifuge control system via the Emerson SCADA (Supervisory Control and Data Acquisition) server software. This will allow the centrifuges to be remotely controlled via the Distributed Control System (DCS).
3. Installation and configuration of a consolidated storage and computing platform prototype, euphemistically referred to as a "pod," is being site tested at the York River treatment plant. Once in production, it will replace the existing plant servers, storage drives and routers with a singular, centrally managed, rack mounted, platform.
4. Additional audio visual equipment is being installed within the Small Communities Division conference room. This will enhance distance learning and online collaboration capabilities, while drastically reducing the need for employees' to travel.

B. Strategic Planning Metrics Summary

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

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>March 2017</b>
M-1.4a	Training During Work Hours Per Full Time Employee (48) – Current Month	Total Training Hours / # FTE	0.57
M-1.4b	Total Training During Work Hours Per Full Time Employee (48) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	9.70
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 March 2017  
DATE: April 6, 2017

A. Highlights

Despite the inclement weather, HRSD had a great turnout for the Sustainable Water Initiative for Tomorrow (SWIFT) Demonstration Facility Ribbon Cutting and Groundbreaking Ceremony at Nansemond Treatment Plant (NTP). Staff did an excellent job in preparing and managing the event.

Clarence Minters, Maintenance Operations Assistant in the Small Communities Division) returned home from rehabilitation this month. Clarence suffered injuries in a head-on collision on November 15, 2016 while delivering samples to the HRSD laboratory. Many individuals throughout HRSD generously donated money, which was used by SCD volunteers to do access improvements at Clarence's house prior to him returning home. He is walking again and regaining strength every day.

B. Interceptor Systems

1. North Shore (NS) Interceptor Systems

There was one odor and one interceptor complaint and there were eight system alarms during the month. Each of these issues was fully resolved.

Work commenced on evaluating AquaDisk filter capabilities to treat Lawnes Point Treatment Plant pond discharge to required loadings levels.

Work continued on assessing the implications of taking over ownership of the Surry County Sewer System. Staff initiated property acquisition and easement transfer activities.

Staff spent a significant amount of time on the following projects of significance.

- a. Performed two pump and haul operations of the Lawnes Point Treatment Plant
- b. Assisted in the installation and removal of bag stop at tie-in for York River Outfall and Diffuser
- c. Established bypass pumping system at JRTP to assist an on-going CIP project, and

- d. Performed CCTV inspection of gravity system and manholes for BH0148, Jefferson Avenue Gravity Improvements

## 2. South Shore (SS) Interceptor Systems

There was one Sanitary Sewer Overflow (SSO) reported this month. On March 31, it rained approximately 1.5 inches in an hour over the South Norfolk area of Chesapeake. Staff observed an overflow from two manholes downstream from the Ferebee Avenue Pump Station. The amount spilled is unknown. After the storm, staff cleaned the gravity line and removed approximately ten yards of debris in a 500-foot long section of pipe. Staff has been active in this area over the past several years; the area is continually maintained and monitored. Debris accumulation is a problem in this line, and every few months we remove debris as needed, particularly after significant wet-weather events.

Staff was heavily involved in the Chesapeake-Elizabeth Interceptor System Diversion project. Staff attended a meeting to discuss pump selections as well as a detailed review of the Preliminary Engineering Report scope for the multiple projects included in this project.

## C. Major Treatment Plant Operations

### 1. Army Base Treatment Plant (ABTP)

Solids handling reported one air permit regulatory reportable event when the incinerator did not meet the required twelve-hour pressure drop average.

On March 1, the leak detection system for the methanol storage tank alarmed. Investigations revealed that the tank leaked methanol to the interstitial lining and water leaked from the outer lining to the interstitial. The tank was prepared for leak testing. Given the significant safety concerns associated with methanol, the tank was drained and cleaned several times. The tank subsequently failed a vacuum leak test. A contractor is currently engaged in locating the leaks and evaluating repair options. The tank will possibly have to be replaced.

A contractor raised the surface aerator for Aeration Tank #1 and placed it into service. The surface aerator was too low in the water to be effective. This allowed staff to remove Aeration Tank #2 from service. Aeration Tank #2 requires installation of two support columns to ensure structural integrity.

This month operators competed in a plant-wide scavenger hunt to find over 30 process items throughout the plant. The purpose of the exercise was to enhance teamwork and increase staff knowledge of the plant and its operations.

## 2. Atlantic Treatment Plant (ATP)

Contractors began installing air headers and diffusers in the primary clarifier influent channels. The purpose of this project is to reduce the amount of scum and floatable solids entering the primary clarifiers.

A preconstruction meeting was held for the new administration building.

## 3. Boat Harbor Treatment Plant (BHTP)

On March 3, there was one air permit deviation for low venturi pressure. The cause of the deviation related to staff preparing for the incinerator air permit testing later in the month. For the test, staff secured the feed to the furnace and only Nansemond solids were fed for the day. This resulted in lower than normal solids loading into the furnace. The deviation was unexpected and the plant staff conducted a controlled burnout to avoid further deviations.

On March 18, the plant experienced a loss of power, resulting in a twelve-minute use of the bypass stack.

On March 20, staff discovered a spill/leak of non-potable water (NPW). The estimated total volume released was approximately 15,000 gallons all of which went to the drain system and returned to the plant's headworks. Staff observed the NPW leaking from the seam between the asphalt and concrete at a plant storm drain vault. A six-inch NPW pipe runs under that area. NS Interceptor staff excavated and repaired the line.

Staff continues to optimize its excellent nitrification efforts in order to support the lower James River bubble permit.

On March 14 and 17, staff conducted furnace testing on the number 2 furnace. Testing occurred on two separate days due to high winds. The Virginia Department of Environmental quality (DEQ) air inspector attended the second day of testing. The test appears to have gone well. Final results should be received in April.

Lead Operators, Superintendents and Plant Managers from the Atlantic – Boat Harbor - Nansemond Group attended a Strengths Finders Workshop.

## 4. Chesapeake-Elizabeth Treatment Plant

The plant experienced one air permit deviation. On March 27, staff tested the controls for the bypass stack due to a false reading earlier in the week. This caused the Emergency Bypass Stack to open.

Staff received official notification that #1 furnace passed air permit annual testing.

5. James River Treatment Plant (JRTP)

Staff completed pump replacement and piping of the NPW booster system in the solids handling building. The new system should improve NPW supply and pressures to the gravity belt thickeners and other equipment in the building.

Staff completed construction of the cyclone rack in the solids handling building and mounted two new cyclones. Testing of the cyclones began for its impacts on secondary settling.

Ammonia Based Aeration Control (ABAC) resumed on the Integrated Fixed Film Activated Solids (IFAS) tanks. During this testing of ABAC, the last airdrop leg was kept in its normal dissolved oxygen control mode to prevent media from building on the IFAS effluent screens. Nitrogen removal in ABAC is good and there has been no buildup of IFAS media thus far.

Staff installed 48 cubic meters of IFAS media in IFAS tank #5 to increase the media fill fraction from 45 to 50 percent. IFAS tank #5 will be used to conduct stress testing of the IFAS system to determine if proper media distribution and mixing can be maintained at the 50 percent fill fraction during high flows. The ability to increase the media fill fraction should enhance nitrogen removal.

On the JRTP Hydraulic Improvement Project, low flow period flow diversions were conducted to install line stops at the influent of preaeration tanks #2 and #3. The line stops divert flow from the preaeration tanks into the new bypass pipe around the tanks, allowing the contractor to convert the tanks to centrate equalization tanks. The contractor also performed demolition work on preaeration tank air piping and installed centrate equalization tank feed piping.

6. NTP

On March 7, a treatment upset occurred when staff returned digester #1 to service after completion of the coatings and cleaning project. As a result, the pH levels fell to unacceptable levels. Digester solids are being shipped to the ATP. Since the pH levels remain low, staff plans to gradually add soda ash to the digester. If all goes well, the digester should be fully functional by early to mid-May.

Staff completed the installation of the Final Effluent channel covers. These covers will eliminate algae growth within the channel to provide more accurate readings from the analyzers.

7. Virginia Initiative Plant (VIP)

On March 6, one air permit deviation occurred when an electrical line ground faulted at the return activated solids building motor control center. The power loss interrupted NPW pumping, causing the induced draft fan to shut down and the bypass damper to open.

Staff placed Versatile Biological Reactor (VBR) #2 in service on March 25. Staff will place VBR #1 in service during the month of April. This is the first step towards lowering the TN effluent to below 5 mg/L.

On March 1, staff placed Incinerator #2 in service for air permit compliance testing. Preliminary test data was positive. Incinerator #1 returned to service March 22 while awaiting final data approval for Incinerator #2.

Staff has been working on a residential complaint about machine noise from the plant for several months. Staff determined the source of the sound is related to a new concrete building that is acting as a noise amplifier of a nearby blower. Staff installed a noise barrier around the small blower, which drastically reduced the off-site noise. To further dampen the sound, staff is currently modifying the noise barrier.

8. Williamsburg Treatment Plant (WBTP)

Staff completed the replacement of three aeration tank influent gates and two grit channel influent gates. These aluminum gates were originally installed in 1990 and eventually corroded, causing them to no longer seal properly. The replacement gates are stainless steel.

Staff performed the annual rotation of its incinerators. It has now been a full year of operation under the new air permit. The most challenging part of the permit at WTP is dealing with plant power supply issues and their effect on the induced draft fan.

Staff received official notification that incinerator #1 passed its air permit stack testing. This is the second time this incinerator passed all parameters under 75 percent of the permit parameters, which should mean it will not have to be tested for another 36 months of runtime vs. the current 12-month schedule.

9. York River Treatment Plant (YRTP)



Contractors completed installation of the new final effluent diffuser. Activity in March included inserting a line stop, making the final tie-in and removing line stop. The diffuser is in service with no issues noted.

Progress continues in replacing the current excel-based Daily Plant Operations Report with the EDMS portal product. We hope to begin initial testing in the next four weeks.

#### D. Small Communities Division (SCD)

##### 1. SC Treatment:

- a. West Point Treatment Plant (WPTP) – The new chemical feed systems are working well. The mini-bulk program is a substantial improvement in the reliability and operability of the chemical feed system. The Tertiary Filter is being designed and should move forward into construction sometime this summer. The filter will be another substantial improvement in treatment reliability and performance. The current plant permit was administratively extended while the new permit is being finalized, which is anticipated to be either May or June of this year. The biggest impact of the new permit is anticipated to be the reduction of the current BOD/TSS limits to more stringent concentrations and loadings.
- b. Urbanna Treatment Plant (UBTP) – Restoration continues following completion of the UBTP rehabilitation project. The fine bubble diffuser and anoxic selector extension project is under review. Work will be completed this spring in anticipation of increased flow and loadings from the Bethpage Campground area, as well as continued improvement in settleability and nutrient treatment. The new plant permit will come into effect April 1 with slight variations from the existing.
- c. Central Middlesex Treatment Plant (CMTP) – Staff continued to investigate the cause of the microbiological contamination at the plant and determined it was partly due to decreased reliability of the existing ultraviolet (UV) system in conjunction with dye contaminates stemming from an upstream customer. In order to improve treatment reliability, staff enacted the following temporary and permanent process improvements:
  - 1) A positive displacement blower and coarse bubble diffusers were installed upstream of the UV disinfection system
  - 2) The post UV disinfection re-aeration tank was removed from service to eliminate the possibility of contaminants prior to effluent sampling

- 3) A flow-throttling valve was installed in the UV feed piping to reduce the flow rate to the UV disinfection system in order to allow more contact time for disinfection
- 4) A long-term fix was planned and emergency procured for the installation of two new UV disinfection systems to replace the malfunctioning existing unit and provide treatment redundancy for disinfection

## 2. SC Collections:

- a. King William System – Development continues at a rapid pace for the King William System. An additional five new connections were made this month, bringing the total for the year to 25. Improvements at the KWTP are planned in order to handle the increased flow brought on by planned developments.
- b. Urbanna System – Modifications were made to the Bethpage system to improve pumping efficiency and flow monitoring.
- c. Mathews System – Phase V of the valve replacement design is complete with an anticipated notice to proceed date of May 1. The Main Vacuum PS replacement project continues to progress slowly. Evaluation continues for applicable land sites for the pump station replacement.

## E. Support Systems

### 1. Automotive

- a. Engine repairs on the #2 generator at ABTP continue. Engine startup and testing is scheduled for the third week of April.
- b. Automotive and Electrical Staff performed generator load bank tests at Deep Creek, Ferguson Park, Independence Boulevard, Triton Court, Williamsburg Pump Stations (PSs) and NS and SS Operations Complexes. All generators operated as designed and were returned to service.
- c. Staff witnessed the load bank test for the new 33rd Street Pump Station generator. Generator operated as required. Issues with the day tank and underground storage tank (UST) were documented with notification sent to the Contractor and HRSD Project Manager.

2. Carpentry Shop – Staff completed 21 projects. This included building two wooden tables for the SWIFT ground breaking at Nansemond Treatment Plant

(NTP), the repair and replacement of numerous locksets across the SS Operations Complex, and the construction and reinforcement of countertops in the Technical Services Division (TSD) and the Central Environmental Lab (CEL).

### 3. Coatings and Concrete

- a. Rehabilitation of NTP's Secondary Clarifier #5 effluent trough is 100 percent complete.
- b. Installation of fall protection on the CETP incinerator is complete, as well as repairing fall protection anchor issues at Laskin Road and Roadman Avenue PSs.
- c. Staff inspected all tanks, structural steel, buildings and roofs at the Surry County Treatment Plant.
- d. BHTP concrete and coating rehabilitation of the aeration and secondary clarifier tank's exterior walls and roof decks progresses. Phase II is 50 percent complete.
- e. Rehabilitation of NTP's Triple A/Aeration Tanks continues. Coating of Tank #1 is 100 percent complete. The installation of baffle boxes is underway. The restoration of NTP's #2 digester is on hold until #1 digester is up and running.
- f. Contractor began water-jetting and installing new rebar in the Return Effluent Grit Channel at VIP.

### 4. Facilities Maintenance (FM)

- a. Work continues on the CEL's roof and heating, ventilation, and air conditioning (HVAC) upgrade project. One of the two new 200-ton chillers is now operational. Work on the roof replacement slowed due to inclement weather. Sump pumps are being used to drain the roof of any pooling water.
- b. West Point's Economic Development Authority (EDA) approved HRSD's site plan for the Supervisory Control and Data Acquisition (SCADA) Communications Room. Contractor is moving forward with the application of exterior work with the placement of a new 125kW generator and two new condenser units.

5. Machine Shop – The Machine Shop rebuilt the #1 pump at Taussig Boulevard PS, repaired the suction head for #1 pump at Suffolk PS, fabricated new impeller and base rings for Bayshore PS, and rebuilt a digester pump for NTP.

#### F. Electrical and Energy Management (EEM)

1. Staff repaired 10 Isco samplers for Pretreatment and Pollution Prevention (P3). Staff continues to support construction work for the major upgrade at Virginia Initiative Plant (VIP). Work this month focused on start up for the anoxic and anaerobic zones in the early stages of the vertical shaft bioreactor (VBR) process. While the VBR is not fully functional, it is receiving flow. Staff continues to work with Dominion Virginia Power (DVP) and the contractor to install new utility electrical service to the new Supervisory Control and Data Acquisition (SCADA) control cabinet at Master Metering Program Site (MMPS) -242, Williamsburg Pottery, in James City County.
2. Staff completed the design, programming, installation and startup of the automatic raw influent (RWI) pumps for Urbanna Treatment Plant (TP).
3. Staff repaired the chiller in the Central Environmental Laboratory's (CEL's) metals section. The pressure sensor malfunctioned, which prevented the chiller from operating. The sensor was replaced and the chiller resumed normal operation.

#### G. Water Technology and Research

Treatment improved at WBTP because of some recently completed upgrades to the aeration tanks. There has already been a significant improvement in TN removal. This project should also result in a stabilization of biological phosphorus removal and a reduction in ferric sulfate usage, and we would expect this to become more evident through warmer months. Plant staff self-performed upgrades in three of four aeration tanks at the end of January for a total material cost of less than \$50,000. This work included the installation of two aluminum baffles creating new anaerobic selector and second anoxic zones, modifications of aeration piping and diffusers, modification of NRCY line discharge location, modification and extension of step feed piping and relocation of anoxic zone mixers. The plant has been operating with three upgraded tanks in service during February and March, and average final effluent TN was 4.9 mg/L TN compared to 6.8 mg/L TN for February and March 2016. This improvement in performance comes with no increase in operating cost and in fact, a likely reduction in ferric sulfate usage with continuing optimization of the upgraded process.

The original concepts for this upgrade were presented to the HRSD QST by the WBTP Plant Manager. To further evaluate these ideas, the services of a consulting engineer were solicited to provide a calibrated process model for WBTP that

allowed the staff to better evaluate a wide range of process upgrade concepts and to initiate design of the modifications. After selecting a process concept, the WBTP Plant Manager designed the aeration tank modifications, and staff purchased needed materials and performed all of the construction. It is important to note that the process technology that represents the upgraded plant effectively converted the original MLE process to something similar to a 5-stage Bardenpho process; however the actual arrangement is fundamentally a new technology that has probably never been attempted at another treatment plant.

Over the coming months, the operation of this process will continue to be optimized and the fourth aeration tank will be modified during the spring of 2017. The WBTP Plant Manager has developed several other refinements that will be discussed over the coming months, and we may make some additional modifications in FY18. The other important consideration is that with the implementation of a supplemental carbon feed facility, the upgraded aeration tanks could provide the ability to meet the SWIFT TN requirements at a very large capital cost savings as compared to what was previously envisioned.

#### H. Strategic Measurement Data

1. Education and Outreach Events: 12
  - a. EEM staff participated in Career Day at McIntosh Elementary School, Newport News
  - b. EEM staff participated in the Megagenesis Career Fair at Heritage High School, Newport News
  - c. EEM staff participated in the New Horizons Electrical Advisory Committee at Woodside High School, Newport News
  - d. Charles Bott and Jaime Mitchell presented a SWIFT Briefing to the EPA Region 3 CEC Workgroup and other interested EPA staff
  - e. Charles Bott presented as part of the WEF Innovation Conference
  - f. ATP tour for students from Hampton Roads Public Works Academy
  - g. ATP tour for students from Ocean Lakes High School AP Environmental Science class
  - h. BHTP tour for Hampton University Students
  - i. CETP tour for Cape Henry Collegiate School students
  - j. EEM staff participated in the United Way Fundraiser at Topgolf in Virginia Beach
  - k. WPTP tour for Mathews County Department of Health
  - l. SS Interceptors Systems staff participated in a Hampton Roads Public Works Academy Field Trip
2. Community Partners: 11
  - a. McIntosh Elementary School

- b. Heritage High School
- c. New Horizons
- d. Hampton Roads Public Works Academy
- e. Ocean Lakes High School
- f. Hampton University
- g. Cape Henry Collegiate School
- h. United Way
- i. Virginia Institute of Marine Science
- j. Old Dominion University
- k. Chesapeake Bay Foundation – oyster restoration

Item #	Strategic Planning Measure	Unit	March 2017
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (507) – Current Month-	Hours / FTE	6.94
M-1.4b	Total Training During Work Hours per FTE (507) – Cumulative Year-to-Date	Hours / FTE	36.32
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	33,114.75
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	39.69
M-2.3c	Planned Maintenance -Corrective Maintenance	% of Total Maintenance Hours	24.13
M-2.3d	Planned Maintenance-Projects	% of Total Maintenance Hours	36.18
M- 4.1a	Energy Use: Treatment <b>*reported for February 2017</b>	kWh/MG	2,799
M-4.1b	Energy Use: Pump Stations <b>*reported for February 2017</b>	kWh/MG	205
M-4.1c	Energy Use: Office Building <b>*reported for February 2017</b>	kWh/MG	114
M-5.2	Educational and Outreach Events	Number	12
M-5.3	Number of Community Partners	Number	11

Respectfully submitted,

**Steve de Mik**  
Director of Operations

TO: General Manager  
FROM: Special Assistant for Compliance Assurance  
SUBJECT: Monthly Report for March 2017  
DATE: April 6, 2017

A. General

HRSD continues implementing the hybrid regionalized approach to the Regional Wet Weather Management Plan (RWWMP) with the next major Consent Decree milestone, the submittal of the final RWWMP, scheduled for October 1, 2017.

B. Submittals Completed in March 2017 – No submittals required during this period.

C. Activities

1. **Phase 6 – Rehabilitation Plan.** Work continues on the Rehab Action Plan projects with the next major milestone on May 5, 2018, for Phase 0.
2. **Phase 7 – RWWMP.** Preliminary optimization of the RWWMP solution sets from the Alternatives Analysis Report was completed in early March. The solution sets were reviewed with Operations and Engineering staff on **March 6** and **9**. Comments from Operations staff were incorporated into the solution sets following these meetings.

Development of the approach to High Priority Project selection was underway along with sequencing and scheduling the RWWMP projects.

The Technical Coordination Team met on **March 2, 16 and 30** to review overall progress. The HRSD project manager for the Chesapeake-Elizabeth Treatment Plant Closure continues attending monthly coordination meetings as part of an ongoing effort to ensure that closure of this treatment plant is properly modeled and accounted for in the final RWWMP.

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.

Quarterly progress meeting was held with Design and Construction staff on **March 13** to review the status of the Rehab Action Plan and Interim System Improvement projects.

Preparation of the SSO Response Plan update for the EPA/DEQ is underway.

4. **Phase 9 – Supplemental Services.** A monthly compliance program meeting was held on **March 1** to review overall progress.

Management, Operations and Maintenance (MOM) Program elements are ongoing, including the Hydrogen Sulfide (H<sub>2</sub>S) 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 expected in 2018.

The Flow, Pressure and Rainfall (FPR) monitoring program continued in February, 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 (FMCA) program progressed in March. Force main inspection work order status is as follows:

- FMP2 035 Hampton Trunk: Under development
- FMP2 039 Bowers Hill II: Under development
- FMP2 043 Kempsville Road: Under development
- FMP2 044 Battlefield: Original scope completed, minor follow-up work to occur in April.

Gravity inspection work order status is as follows:

- GMP2 039 Hickman's Branch 1: Completed
- GMP2 040 Hickman's Branch 2: Completed

Other work orders are executed for 14,000 linear feet (LF) of gravity pipe, 1,500 LF of gravity siphons and 110 manholes.

Work on the Fiscal Year-2016 Condition Assessment Annual Report continued in March.



D. Next Submittals

1. SSO Response Plan Update – April 30, 2017
2. Semi-Annual Report – May 1, 2017

E. Program Budget Status

The overall program budget is **\$131,191,858**, excluding the Master Metering Program. A summary of appropriations and expenses is attached.

F. Strategic Planning Metrics Summary

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

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>March 2017</b>
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	44
M-5.2	Educational and Outreach Events	Number	0
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

	<b>Total Appropriation</b>	<b>March 2017 Obligations</b>	<b>Available Balance</b>
<b>Regional Consent Order and Other Consent Order Requirements</b>			
Regional Hydraulic Model	\$104,248,712	\$108,284,573	-\$4,035,861
Manhole Rehab/Replacement Phase I & North Shore Siphon Chamber	\$2,834,000	\$441,822	\$2,392,178
Pump Station Wet Well Rehabilitation Phase I	\$2,890,000	\$341,225	\$2,548,775
Locality System Monitoring and Condition Assessment	\$21,219,146	\$20,384,093	\$835,053
Subtotal - In progress	\$131,191,858	\$129,451,714	\$1,740,144

## 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
<b>Total</b>	<b>\$145,085,488</b>

TO: General Manager  
FROM: Director of Talent Management  
SUBJECT: Monthly Report for March 2017  
DATE: April 12, 2017

A. Human Resources (HR)

1. Recruitment

a. Summary

New Recruitment Campaigns	9
Job Offers Accepted	
Internal Selections	8
External Selections	2
Internal Applications	21
External Applications	215
Average Days to Fill Position	56

b. Recruitment activities began hiring Public Works Academy interns for several work centers.

2. Enterprise Resource Planning (ERP)

a. Staff worked on the following with the managed services vendor:

- (1) Benefit module issues and reconfiguration
- (2) Self-service functionality
- (3) Open enrollment functionality

b. Accounting, Talent Management and Information Technology staff addressed issues related to electronic submission of Affordable Care Act (ACA) to meet Internal Revenue Service (IRS) mandatory reporting requirements. HRSD's submission was "accepted with errors" prior to the March 31 deadline. Staff will continue working to resolve errors.

c. Staff began processing a mock open enrollment in preparation for Open Enrollment in May.

d. The following service requests were addressed with Oracle:

- (1) 2016 ACA reporting errors
- (2) Self-service functionality

- e. Business Analysts began developing Business Intelligence guidelines and procedures.

3. Benefits and Compensation

- a. Fiscal Year-18 Plan Renewal recommendations were finalized including costs and coverage for medical, vision and dental plans.
- b. The Compensation and Classification team continued evaluating several positions based on Department requests and compensation study outcomes.

4. Wellness

- a. Participation Activities

<b>Year 5 Participation Activities</b>	<b>Unit</b>	<b>March 2017</b>	<b>Year to Date (March 2017–February 2018)</b>
Biometric Screenings	Number	0	0
Preventive Health Exams	Number	4	4
Preventive Health Assessments	Number	14	14
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	51	51
Web-MD Online Health Tracking	Number	129	129
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	10	10

- b. Employee Wellness deductible and incentive eligibilities were determined by the Optima Health team. Appeal process letters for incentives were sent to employees and spouses earning the lowest deductible.
- c. Wellness Year 5 information was updated on SharePoint.
- d. The Wellness Committee worked on healthy alternatives for Hurricane Plan menus and reviewed Treatment Plant fitness equipment lists.

5. Workers Compensation

Three new cases were opened. Eight cases remain active.

## 6. Employee Relations

- a. Staff continued partnering and meeting with work center supervisors to support employee relations and address HR issues. Staff provided training to several new supervisors on recruitment, workers compensation, first report of accident, leave and merit review procedures; ERP Manager Self- Serve transactions and HR policies.
- b. Americans with Disabilities Act (ADA) and Reasonable Accommodation training for supervisors was completed.

## 7. General

- a. HR information and data was provided for the American Water Works Association's Utility Benchmarking survey.
- b. Staff attended the following training:
  - (1) International Public Management Association's HR- Virginia conference
  - (2) HRSD Leadership and Ethics training
  - (3) HRSD ADA and Reasonable Accommodation training
  - (4) HRSD Emotional Intelligence training
- c. Staff participated in the following:
  - (1) Water Environment Federation Utility Management Committee's Human Resources and Operations Workgroup to develop a webcast, *Bridging the Human Resources/Operations Gap*. HRSD staff will present information on HRSD Leadership Development and Recruitment initiatives
  - (2) SWIFT Groundbreaking Event at the Nansemond Treatment Plant

## B. Organization Development and Training (OD&T)

1. The HRSD University team continued developing two e-learning pilot projects: *HR Open Enrollment* and *Introduction to Biological Nutrient Removal (BNR)*. Team members met with subject matter experts and vendors to review progress and to work on scripts.
2. Staff continued updating administrative procedures for OD&T programs including Apprenticeship, Leadership and Quality.
3. Quality Refresher training and Leadership and Ethics workshops were held.

4. OD&T, Apprenticeship and HR information was provided for a City of Charlotte survey.
5. The OD&T Manager assisted with the following:
  - a. Facilitated a *Strength Finders* workshop for Army Base, Boat Harbor and Nansmond Treatment Plants.
  - b. Collaborated with Engineering Department to develop *Effective Meeting Training* in response to an annual planning day item. Engineering staff were invited to participate in a Teams and Problem Solving workshop which includes an effective meeting module.
  - c. Worked with Engineering Department to create an organization-wide *Project Management* course.
6. Apprenticeship Program

Staff continued work toward the implementation of a *Train the Trainer* course planned for August for Apprentice instructors. Vendor proposals were received for evaluation.

## C. Safety

1. Mishaps and Work Related Injuries
  - a. HRSD-Wide Injury Mishap Status to Date (OSHA Recordable)

	<u>2016</u>	<u>2017</u>
<b>Mishaps</b>	42	7
<b>Lost Time Mishaps</b>	8	2
<i>Numbers subject to change pending HR review of each case.</i>		

- b. MOM Program Year Performance Measure Work Related Injuries

<b>March 2017 Injuries For Operations</b>	<b>March 2017 Injuries for Other HRSD Departments</b>	<b>Total Lost Time Injuries Since July 2016</b>	<b>Total HRSD Injuries Since July 2016</b>
3	0	5	28

- c. A follow-up investigation was performed on three work related injuries and one minor auto accident.

2. HRSD Safety Training

Strategic Planning Measure	Unit	February 2017
Total Safety Training Hours per Full Time Employee (814) All HRSD – March 2017	697.5 Hours / 814 FTE	0.86
Total Safety Training Hours Per Full Time Employee (814) – Cumulative July 2016	3271.68 Hours / 814 FTE	4.02

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

- a. Four external briefings for contractors working at HRSD treatment plants and pump stations
- b. Updated Respiratory Protection Program training at work centers:
  - (1) Electrical and Energy Management (EEM) Division
  - (2) North Shore Interceptors
  - (3) South Shore Interceptors
- c. Two Overhead Crane Safety classes for North Shore EEM employees
- d. A Water Quality Services fire drill
- e. Two Virginia Department of Transportation Work Zone classes for South Shore Interceptors employees
- f. Follow-up with employees requiring on-line silica dust training

4. Safety Inspections, Testing and Monitoring

- a. Weekly on-site inspections of the following construction sites:
  - (1) Virginia Initiative Plant
  - (2) York River Treatment Plant (TP)
  - (3) James River TP
  - (4) Central Environmental Lab (CEL)

- b. Quarterly safety inspections of the following work centers:
  - (1) South Shore Interceptors
  - (2) South Shore Electrical, Automotive, Carpentry and Machine Shops
  - (3) Small Communities Treatment Plants and Pump Stations
  - (4) Williamsburg TP
  
- c. Monitoring and testing for the following:
  - (1) Monthly Central Environmental Lab hood velocity tests
  - (2) Collected Army Base TP Administration building floor samples for asbestos analysis
  - (3) Annual respirator fit and pulmonary function testing and scheduling of follow-up physicals for employees required to wear respirators
  
- d. Conducted the following safety walk-throughs or evaluations:
  - (1) Surry TP and four pump stations
  - (2) Nansemond TP adjacent property for safety issues
  - (3) Escorted Liberty Mutual's Senior Risk Control Services consultant on inspection of Williamsburg TP
  - (4) Escorted Traveler's Property Insurance Senior Risk Specialist on tours of Virginia Initiative Plant, Nansemond and Atlantic Treatment Plants and the Air Rail Complex
  - (5) Escorted Priority Fire Protection staff on a walk-through of Machine and Carpentry shops

## 5. Safety Programs

- a. The Safety Manager met with the SWIFT contractor at Nansemond TP to review site layout and HRSD safety requirements.
  
- b. Main Office Emergency Response procedures were finalized to incorporate emergencies within the cashier's area.
  
- c. Evaluated sodium hypochlorite sensors for Williamsburg TP.
  
- d. Industrial Hygienist began developing a presentation summarizing employee survey results to evaluate implementing a Prescription Safety Glasses program.



- e. The following was performed for the Confined Space Program:
  - (1) Created and updated York River TP permits
  - (2) Reviewed South Shore Interceptors permits
  - (3) Met with Atlantic TP contractor to evaluate a confined space
- f. The Safety Coordinator continued maintaining Operation's Safety Accident Tracking report.
- g. A hot work permit was completed for a CEL contractor.

6. General

- a. The HRSD Safety Team met to address the following:
  - (1) Options for a prescription safety eyewear program
  - (2) Annual review of the Safety Recognition Program
  - (3) Updates to the Electrical Safety Program
  - (4) Safety Internship
  - (5) Surry TP and pump station safety
  - (6) SWIFT project safety
- b. Safety staff attended the following training:
  - (1) HRSD ADA and Reasonable Accommodation training
  - (2) National Technology Transfer's Arc Flash Electrical training
- c. Safety staff participated in the following HRSD activities:
  - (1) SWIFT Demonstration Project 75% design review meeting
  - (2) Quarterly SharePoint meeting

D. Monthly Strategic Planning Metrics Summary

- 1. Education and Outreach Events: 4
  - a. US Army Corp of Engineers Former Nansemond Ordinance Depot Restoration Advisory Board Meeting
  - b. City of Norfolk's Local Emergency Planning Commission
  - c. Peninsula Chamber of Commerce Workforce Development Career Expo
  - d. Hire Peninsula Job Fair
- 2. Community Partners: 2
  - a. City of Norfolk
  - b. Peninsula Chamber of Commerce

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>March 2017</b>
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.38%
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	3.57
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	37.07
M-5.2	Educational and Outreach Events	Number	4
M-5.3	Community Partners	Number	2

Respectfully submitted,  
**Paula A. Hogg**  
 Director of Talent Management

TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for March 2017

DATE: April 15, 2017

A. General

1. Pretreatment and Pollution Prevention (P3) division staff did not assess civil penalties this month.
2. The Director attended the National Water Policy Fly-In. The National Water Policy Fly-In provides an opportunity to hear about and discuss the most pressing and timely national issues related to all forms of water including wastewater. Input provided by staff of various members of the United States legislature emphasized the uncertainty that exists due to proposed budget cuts for the Environmental Protection Agency (EPA). Attendees also heard from EPA staff about their latest activities regarding the regulation of discharges to surface waters. The question has been raised again of whether bonds used to fund wastewater infrastructure maintenance and improvements should be tax exempt or not.
3. The Director attended the National Association of Clean Water Agencies' (NACWA) Nutrient Summit in Washington, DC. The Nutrient Summit attempted to collect ideas from several interested parties (farm community, environmental groups, states, wastewater treatment facilities) as to what could be done to address nutrient challenges in surface waters. The strength of partnerships between the various sectors seemed to be an overwhelming theme during the Summit. Linking nutrient removal to improvements in surface waters (aquatic life, recreation, and aesthetics) can be very difficult yet EPA continues to push for nutrient water quality standards to be adopted in each state. These standards are used to develop permit limits which typically require facility upgrades and increased costs that are difficult to explain to customers. NACWA advocates for outcome-based management actions which is a different approach than what is currently used by EPA to implement the Clean Water Act (CWA). For example, EPA uses water quality criteria as a surrogate to judge the acceptability of surface water, rather than using actual instream measurements of aquatic life quality. Use of such a surrogate assumes a relationship between water quality criteria and the state of aquatic life health instream that may not exist. NACWA and HRSD Water Quality staff will continue to pursue the outcome-based approach wherever it seems

feasible and is of benefit to the environment and rate payers. This approach supports the concept of targeting funding to achieve the greatest environmental and social benefits possible.

#### B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) reported no activities in the month of March.
2. The Pretreatment Information Management System (PIMS) Team reported limited activity in the month of March.
3. The Technical Services Division (TSD) Technology Team is evaluating the ESRI ArcGIS Data Collector application to see if this will aid in field data capture needs. Availability and support of this software is internal to HRSD. A pilot project has been identified and the Team will be scoping out over the next few months if TSD's needs can be handled by this application.
4. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

#### C. Municipal Assistance

1. HRSD provided sampling and analytical services to the City of Lynchburg, the Town of Lawrenceville, and Hanover County to support their respective Virginia Pollution Discharge Elimination System (VPDES) permit application processes.
2. The [Municipal Assistance Billed Reimbursements](#) per service collected between January 1 and March 31, 2016 are attached.
3. The [Municipal Assistance Invoice Summary](#) for the first quarter of the 2017 calendar year is attached.

#### D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 6
  - a. Laboratory Division staff hosted a laboratory tour for advanced science students from Cape Henry Collegiate High School.
  - b. TSD staff conducted a tour of the Nansemond Plant with Suffolk Christian Academy 8th and 9th grade science classes.
  - c. TSD staff represented HRSD at the Old Dominion University Spring

- Career Fair.
- d. TSD staff represented HRSD at the Norfolk State University Career Fair.
  - e. P3 staff participated in a Hampton Roads Public Works Academy field trip to the Atlantic Plant for Virginia Beach Technical & Career Education Center (VBTCEC) students.
  - f. P3 staff conducted Regional Residuals Facility training for the City of Norfolk and a locality contractor.

2. Community Partners: 7

- a. P3 staff participated in an askHRgreen.org (Fats, Oils, Grease) FOG Committee meeting.
- b. TSD and the Laboratory Division assisted the City of Newport News with a microbial source tracking project at Hilton Beach.
- c. TSD and the Laboratory Division assisted the City of Virginia Beach in its bacteria study in Mill Dam Creek watershed.
- d. TSD staff collaborated with the Virginia Department of Health Division of Shellfish Sanitation and the City of Suffolk with a fecal source identification project in the Nansemond River.
- e. TSD and the Laboratory Division provided Chlorophyll Monitoring and Assessment Program support to the Virginia Department of Environmental Quality in monitoring the James River.
- f. TSD and the Laboratory Division assisted the City of Chesapeake and the Elizabeth River Project with bacterial monitoring and fecal source identification in the Indian River.
- g. TSD and the Laboratory Division assisted the City of Norfolk with a microbial source tracking project at Knitting Mill Creek.

3. Industrial Waste Related System Issues: 2

- a. Unusual color influent was observed at the Central Middlesex Treatment Plant. P3 staff investigated and the color appeared to be due to the washing of new orange jumpsuits at the Middle Peninsula Regional Security Center. P3 and Small Communities staff is working on requirements for the security center to prevent recurrence.
- b. Small communities notified P3 of a pump impeller failure in the West Point service area. P3 staff investigated and located an inflow/infiltration (I/I) source that was depositing sand and mud in the system. This load of sand and mud is suspected of being the cause of the impeller failure. The Wet Weather Management Program Leadership Team was advised of the observed I/I.

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>March 2017</b>
M-1.4a	Training During Work Hours Per Full Time Employee (105) (Current Month)	Total Hours / # FTE	4.25
M-1.4b	Total Training During Work Hours Per Full Time Employee (105) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	44.49
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	1
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	7:39,927
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	143,731,031
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	23%
M-5.2	Educational and Outreach Events	#	6
M-5.3	Community Partners	#	7
	Average Daily Flow	Total MGD for all Treatment Plants	143.15
	Industrial Waste Related System Issues	#	2

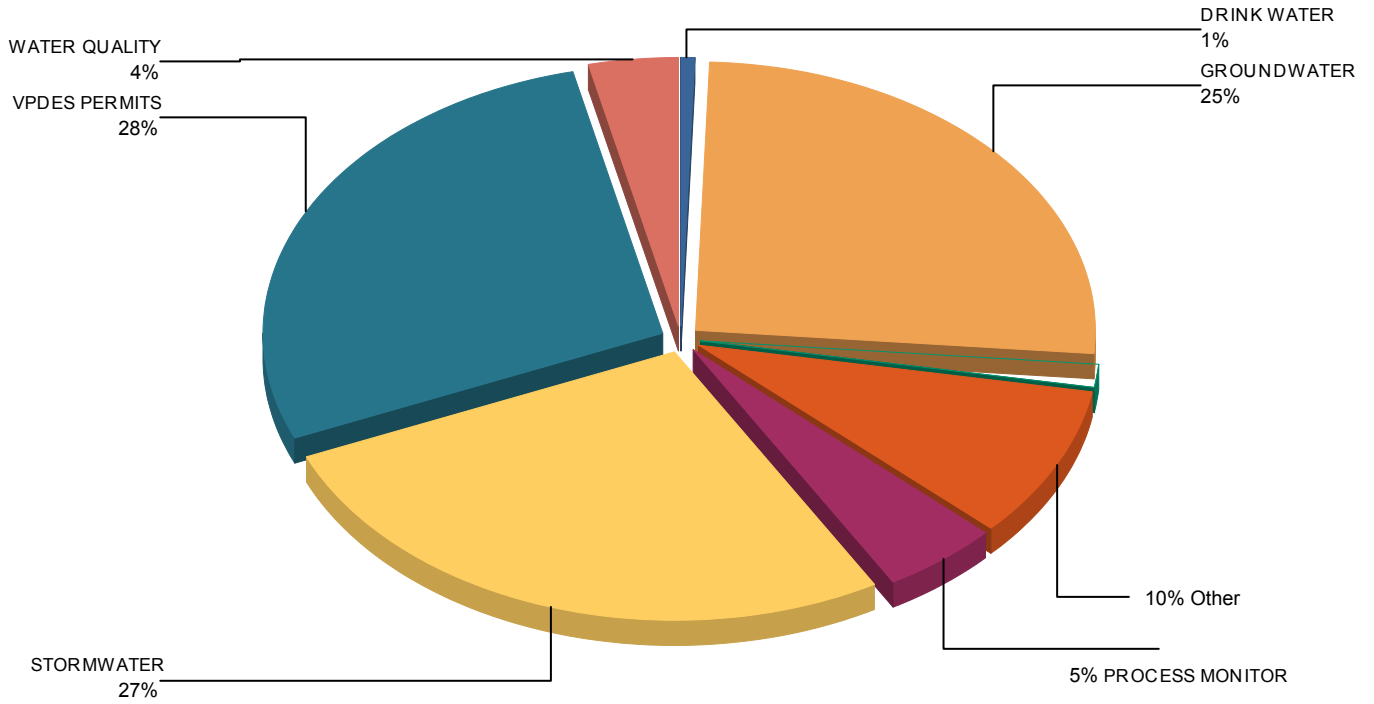
Respectfully submitted,

*James Plett, Ph.D*

Director of Water Quality

**Municipal Assistance Billed Reimbursements per Service  
From 01/01/2017 to 03/31/2017**

**Attachment 1**



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

**Municipal Assistance Invoice Summary**  
**From 1/1/2017 - 3/31/2017**

<b>Municipality</b>	<b>Reimbursements</b>
Accomack County	\$66,904.45
Bedford County PSA	\$7,350.43
Buckingham County	\$714.11
City of Chesapeake	\$5,640.98
City of Emporia	\$431.20
City of Franklin	\$2,606.01
City of Fredericksburg	\$5,886.31
City of Nampa WWTP	\$3,734.80
City of Norfolk	\$4,738.71
City of Portsmouth	\$2,746.48
City of Richmond	\$4,950.38
City of Suffolk	\$7,898.28
City of Virginia Beach	\$6,320.93
Frederick County	\$6,267.12
HRPDC	\$69,052.24
Hanover County	\$14,644.75
Henrico County	\$6,119.54
Metro Wastewater Reclamation District	\$665.18
New Kent County	\$7,538.88
Prince William County	\$27.54
South Central Wastewater Authority	\$9,473.02
Stafford County	\$129.78
Town of Cape Charles	\$5,608.06
Town of Lawrenceville	\$1,487.96
Virginia Department of Health	\$14,290.40
Warsaw WWTP	\$533.64
Western VA Water Authority	\$1,894.04
Westmoreland County	\$1,398.57
<b>Total Reimbursements 1st Quarter</b>	<b>\$259,053.79</b>





## **Engagement Background**

Our team is continuing to progress with the planned internal audit assignments. During March, worked to finalize the Inventory Process Review. We also continued work on Procurement/ P-Card Process Review. This included working with process owners to complete documentation of process flowcharts, preparation of the audit program, and communication of initial requests for testing documentation.

In addition, we conducted our first Management Action Plan (MAP) follow-up meeting with the Engineering Department to discuss the implementation status of the recommendations noted in the Design and Construction (D&C) Capital Improvement Program (CIP) Project Management audit report dated May 11, 2016. SC&H met with Engineering process owners to discuss the current status of action plans which is captured in a status tracking document, along with estimated dates for completion. Note: MAP monitoring is noted as the 4<sup>th</sup> phase in the audit process and has been added to the below summary to indicate its commencement.

Our audit process consists of four phases:

1. **Planning**: Reviewing relevant background information, gaining an understanding of, and documenting the key areas to be reviewed
2. **Fieldwork**: Testing and examining pertinent documents, reports, transactions, and information to confirm the strength of the processes and related controls
3. **Reporting**: Discussing the conclusions of our audit work and ultimately issuing a written report with suggestions being provided (if identified)
4. **Management Action Plan Monitoring**: Following up with process owners on the status of recommendation implementation from previous audit reports and performing periodic monitoring

## **Project Accomplishment Summary**

During the month of March, our team performed the following:

- **Inventory Process Review**:
  - Finalized Inventory Process review and communicated final report and deliverables
  - Met with process owners to discuss report observations and recommendations
  - Reviewed draft management action plans
- **Procurement/ P-Card Process Review**:
  - Prepared process flowcharts and audit documentation
  - Drafted audit program and project objectives
  - Requested audit documentation to begin testing
  - Progressed from planning to fieldwork
- **Management Action Plan Monitoring**:
  - Met with Engineering D&C process owners and discussed implementation status
  - Updated action plan tracking document and reviewed with Engineering point of contact

## **Projected Tasks for April**

During the month of April, our team will:

- **Inventory Process Review**:
  - Work with process owners to finalize management action plan responses
  - Present finalized Inventory Process Review report to the HRSD



- 
- Procurement/ P-Card Process Review:
    - Finalize process flowcharts and audit documentation
    - Perform testing to achieve the objectives detailed in the audit program
    - Begin to draft audit report, including observations and recommendations
  
  - Management Action Plan Monitoring:
    - Incorporate updates to the MAP tracking document based on feedback from process owners
    - Prepare status document to present to the Commission

**Engagement Notes/ Delays**

SC&H has noted delays in the receipt of documentation review responses and audit information requests in the performance of the Procurement/ P-Card Process review that were the result of timing and availability constraints for process owners. These delays have not been significant and SC&H is continuing to work with the team to move this project forward.

**Annual Metrics**

Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56
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
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
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
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
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%
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
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%
M-3.3	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.45
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%
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
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%
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
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%
	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%
	Total Debt Coverage	Net Revenue/Total Annual Debt	>1.4	1.67%	1.67%	1.46%	1.45%	1.32%	1.46%	1.77%

**Monthly Updated Metrics**

Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	Feb-17	Mar-17
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	139.7	143.2
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	0	2
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	101%	103%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	103%	103%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$ 17,013,784	\$ 17,359,488	\$ 18,795,475	\$ 20,524,316	\$ 20,758,439	\$ 22,444,273	\$22,904,913	\$19,826,932
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	19%	20%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	0	1
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	7:34994	7:39927
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	1	0
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	126,727,227	143,731,031
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	23%	23%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	46	45
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	30	41

**EFFLUENT SUMMARY FOR MARCH 2017**

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	8.09	45%	4	3.8	4	3	0.62	0.65	4.6	4.4	NA	NA	3
ATLANTIC	26.21	49%	14	13	2	1	NA	NA	NA	NA	NA	NA	3
BOAT HARBOR	12.83	51%	7	5.7	1	<1	0.45	0.35	11	13	NA	NA	0
CENT. MIDDLESEX	0.010	41%	<2	1.7	6	8	NA	NA	NA	NA	NA	NA	NA
CHES-ELIZ	17.24	72%	18	18	71	5	1.1	0.99	33	31	NA	NA	9
JAMES RIVER	12.48	62%	5	3.9	2	<1	0.42	0.56	9.6	10	NA	NA	1
KING WILLIAM	0.044	44%	<2	<1	NA	<1	0.03	0.03	0.58	1.6	0.42	NA	NA
NANSEMOND	18.02	60%	6	4.8	2	1	0.58	0.74	6.7	8.0	NA	NA	2
URBANNA	0.039	39%	14	30	9	14	4.5	4.4	28	29	NA	0.62	NA
VIP	27.39	68%	8	7.8	2	2	0.89	0.76	9.7	8.8	NA	NA	1
WEST POINT	0.459	77%	25	16	1	2	2.6	2.8	16	17	NA	7.1	0
WILLIAMSBURG	7.61	34%	3	3.4	3	2	0.44	0.41	5.1	5.2	NA	NA	4
YORK RIVER	12.71	85%	4	2.8	2	1	0.24	0.26	2.1	2.4	NA	NA	6
	<u>143.15</u>		<u>10</u>	<u>9</u>									

	% of Capacity
North Shore	55%
South Shore	58%
Mid Peninsula	65%

Tributaries	Tributary Summary					
	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection	CY17	YTD	Projection	CY17
	%	Lbs	%	%	Lbs	%
James River	23%	4,178,672	92%	18%	273,654	86%
York River	11%	227,075	79%	18%	15,602	81%
Rappahannock	65%	NA	NA	143%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY17 to Date: 7:39,927  
Pounds of Pollutants Removed in FY17 to Date: 143,731,031  
Pollutant Lbs Discharged/Permitted Discharge FY17 to Date: 23%

	Rainfall (inch)		
	<u>North</u>	<u>South</u>	<u>Small</u>
	<u>Shore</u>	<u>Shore</u>	<u>Communities</u>
	(PHF)	(ORF)	(FYJ)
Month	5.15"	4.61"	4.23"
Normal for Month	3.82"	3.25"	3.47"
Year to Date Total	10.90"	9.68"	10.01"
Normal for YTD	9.82"	8.89"	9.41"

**AIR EMISSIONS SUMMARY FOR MARCH 2017**

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 (F)	12 hr ave (in. WC)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	pH 3 hr ave	Bypass Stack Use	Mo. Ave (PPM)	DC (%)	Daily Ave Days >Max
ARMY BASE	0	1	0	0	0	0	0	0	38	100	0
BOAT HARBOR	0	1	0	n/a	0	0	0	1	45	99	0
CHES-ELIZ	0	0	0	0	0	0	0	0	29	100	0
VIP	0	0	0	n/a	0	0	0	1	79	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	0	9	99	0

**ALL OPERATIONS**

DEQ Reportable Air Incidents:	0	No. of Permit Deviations/Possible No. of Permit Deviations (3/17) = 4/3069
DEQ Request for Corrective Action (RCA):	0	No. Permit Deviations/No. Possible Permit Deviations (CY17 to date) = 22/8828
DEQ Notice of Violation (NOV):	0	Total Time on Bypass/Total Time Operating (3/17) = 0.6 hrs/3324 hrs Total Time on Bypass/Total Time Operating (CY17 to date) = 3.75 hrs/9940 hrs
Other Air Permit Deviations:	0	Dry Tons Solids Processed (3/17) = 2380
Odor Complaints Received:	0	Total Dry Tons Solids Processed (CY17 to date) = 7137 Monthly average Dry Ton per Day (DTD) per MHI unit = 15.7
Odor Scrubber HRSD Exceptions:	1	