



COMMISSION MEETING MINUTES
August 22, 2017

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Attachments (8)



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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	Absent
Lynch, Maurice P.	Commission Vice-Chair	1-24
Glenn, Michael E.	Commissioner	1-21,23
Lakdawala, Vishnu K.	Commissioner	1-24
Levenston, Jr., Willie	Commissioner	1-24
Rodriguez, Stephen C.	Commissioner	1-24
Taraski, Elizabeth	Commissioner	1-24
Templeman, Ann	Commissioner	1-23

1. **AWARDS AND RECOGNITION**

Action: No action required.

Brief: HRSD is proud to be the recipient of the 2017-2020 National Association of Clean Water Agencies (NACWA) Excellence in Management Platinum award. This program was launched in 2003 to acknowledge the significant achievements of NACWA member agencies in the utility management arena.

The Platinum award is given to utilities who have fully implemented, or have taken substantive steps to implement a total of nine of the *Ten Attributes of Effectively Managed Water Sector Utilities*, which include: Product Quality, Customer Satisfaction, Stakeholder Understanding and Support, Financial Viability, Operational Optimization, Employee and Leadership Development, Enterprise Resiliency, Infrastructure Strategy and Performance, Community Sustainability, and Water Resource Sustainability.

A utility can be considered for this award every three years.

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:** 7
Seconded: Willie Levenston **Nays:** 0

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Awards
 - 1. [Carbon-Based Pilot Testing and Soil Aquifer Treatment Study](#) \$240,753
- c. Task Orders
 - 1. [Aquifer Replenishment System Concept Feasibility Evaluation \(SWIFT\)](#) \$2,298,063
- d. Sole Source
 - 1. [Wood Equipment Company - Aurora Pumps, Service and Replacement Parts](#)
 - 2. [Laboratory Balance Equipment Preventative Maintenance, Calibration Services and Parts](#)
 - 3. [Quantitative Microbial Risk Assessment Based Criteria Development Research](#)

Item(s) Removed for Discussion: None

Discussion Summary:

Attachment #1: [Consent Agenda](#)

Public Comment: None



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3. **NEW BILLING AND PAYMENT VENDOR IMPLEMENTATION UPDATE**

Action: No action required.

Brief: On March 28, 2017, the Commission approved contracts with new billing and payment vendors. Utilitec will provide bill generation and printing services. Invoice Cloud will be facilitating online PDF viewing as well as telephone and online payments. Kubra will be the lockbox vendor processing mailed checks.

The go-live date is scheduled in September before the next Commission meeting. This briefing was intended to provide more information on the new vendors and an implementation update.

Discussion Summary: The Commission and staff discussed the strategy for communicating these changes to customers. Due to account privacy concerns, E-bill and autopay customers will need to re-register. The payment address will also need to be changed for those who pay bills online through their bank. Credit card fees are absorbed by HRSD when payment is made through this payment vendor. Other payment vendors may charge a fee. Staff responded to a question regarding locality billing data. The billing data submitted by localities is not submitted in a standardized format. Commissioner Rodriguez encouraged staff to streamline that process.

Attachment #2: [PowerPoint](#)

Public Comment: None



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5. **FOREST HILL AVENUE, GLOUCESTER, VIRGINIA
DISPOSITION OF PUBLICLY HELD REAL PROPERTY
RESOLUTION**

Action: Approve Resolution to declare HRSD-owned property located in Gloucester County, Virginia (Tax Map 32-195B), as “surplus.”

Moved:	Willie Levenston	Ayes:	7
Seconded:	Vishnu Lakdawala	Nays:	0

Project Description: The conveyance of Tax Map 32-187 (.2215 acre/9,649 SF), was approved during the July 19, 2017 Commission meeting. However, because the subject parcel was acquired by condemnation in 1994, HRSD legal staff determined that HRSD must declare the property as “surplus” to satisfy Virginia Code §25.1-108.

Agreement Description: The attached [Resolution](#) was reviewed by HRSD legal counsel. A [map](#) depicting the location of the parcel is also provided for clarification purposes.

Discussion Summary: The parcel is heavily encumbered by a number of obstacles and the valuation of the property was based on the limited economic use of the remaining property.

Attachment #4: [Resolution](#)

Public Comment: None



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6. **ARMY BASE TREATMENT PLANT BIOSOLIDS LOADING FACILITY
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$1,750,000.

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

CIP Project: AB011600

Project Description: This project will provide for the conveyance, storage, and loading of plant solids for offsite distribution by tractor trailer to the Virginia Initiative Plant (VIP). The project will include structural assessment for storage bin, conveyance of solids from the centrifuges to a two-day storage bin, loading solids from the bin to the tractor trailer, all utilities including electrical and controls, VIP hopper access, and capacity improvements.

Funding Description: The total cost of this project is estimated to be \$1,750,000. The existing incinerator operation at Army Base is scheduled to be shutdown. This project will construct a new biosolids loading facility adjacent to the existing dewatering and incineration building to accommodate the solids generated at the plant. HDR Engineering, Inc., will prepare a Design Basis Technical Memorandum under the General Engineering Services annual contract for a fee of \$66,169 to establish the conceptual design.

Schedule:	Study	October 2017
	Design	March 2018
	Bid	June 2018
	Construction	June 2019
	Project Completion	September 2019

Discussion Summary: The existing incinerators will not be dismantled and can be placed back in operation if needed in the future.

Attachment: None

Public Comment: None



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7. **MATHEWS NURSING HOME LINE VACUUM SEWER MAIN IMPROVEMENTS
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$626,000.

Moved:	Vishnu Lakdawala	Ayes:	7
Seconded:	Willie Levenston	Nays:	0

CIP Project: MP012900

Project Description: This project will replace approximately 2,800 linear feet of an undersized four-inch vacuum line with new six-inch vacuum lines in Mathews, along with associated diversion valves and two new buffer tanks to serve the end of line nursing home and courthouse area. The courthouse area installation will remove an existing pump station from the system which will improve overall operations of the Mathews systems.

Funding Description: The total cost for this project is estimated to be \$626,000. The estimated project cost is based on a construction cost estimate of \$415,000 combined with an engineering services estimate of \$129,000 and a 20 percent contingency allowance of \$82,000. Whitman, Requardt and Associates will provide engineering services including preliminary engineering, design and construction phase services.

Schedule:

PER	September 2017
Design	December 2017
Bid	May 2018
Construction	July 2019
Project Completion	April 2019

Discussion Summary: Staff explained how a vacuum system operates.

Attachment: None

Public Comment: None



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8. **NANSEMOND TREATMENT PLANT STRUVITE RECOVERY FACILITY IMPROVEMENTS INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$6,628,400.

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

CIP Project: NP013700

Project Description: This project involves the implementation of the WASSTRIP® (Waste Activated Sludge Stripping to Remove Internal Phosphorous) process and the addition of a fourth struvite recovery reactor at the Nansemond Treatment Plant Struvite Recovery Facility (SRF). The WASSTRIP process consists of the storage of thickened WAS in a tank for a period sufficient to allow phosphorus and magnesium release and transfer of thickened solids to digestion. The thickening filtrate (WASSTRIPate) will be transferred to the SRF separate from the centrate stream. This project would also include the addition of a solids removal step for centrate and a small equalization tank for WASSTRIPate. The SRF upgrades include the addition of a fourth reactor and upgrade of struvite product drying equipment.

Funding Description: The total cost of this project is estimated at \$6,628,400. Hazen and Sawyer has previously provided process modeling support for this project and will prepare a Preliminary Engineering Report under the General Engineering Services annual contract for a fee of \$92,255 to complete the needed design.

Schedule:	PER	August 2017
	Design	October 2017
	Bid	April 2018
	Construction	April 2018
	Project Completion	January 2019

Discussion Summary: This project will increase production of fertilizer while minimizing struvite buildup in the digesters, which causes increased cleaning, operation and maintenance. Since additional magnesium will be recovered, less magnesium chloride will be added per amount of struvite product made.

Attachment: None

Public Comment: None



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9. **PUMP STATION WET WELL REHABILITATION PHASE I
ADDITIONAL APPROPRIATION**

Action: Appropriate additional funding in the amount of \$3,166,428.

Moved: Willie Levenston **Ayes:** 7
Seconded: Ann Templeman **Nays:** 0

CIP Project: GN012140

Project Estimate including Contingency	\$3,519.659
Appropriation from June 2017	(353,231)
Requested Funding	\$3,166,428

Project Description: Rehabilitation of wet wells, and installation of miscellaneous piping, valves, safety rails and decking along with other appurtenances at North Shore Road Pump Station, Norview Avenue Pump Station, Newtown Road Pump Station, Virginia Beach Boulevard Pump Station, Washington District Pump Station, Dovercourt Road Pump Station, Luxembourg Avenue Pump Station, Willoughby Avenue Pump Station and Bainbridge Boulevard Pump Station are referred for action. Each station has unique characteristics for bypassing the pump station so that the rehabilitation work can be completed.

Funding Description: In an effort to maximize flexibility within the multi-year compliance effort for the consent decree, this project was rolled into the Regional Consent Order and Other Consent Order Requirements program budget in January 2015 when we changed the process for funding CIP projects. The program bundled several large CIP projects and on-going compliance efforts and has reported the financial status regularly with the Special Assistant for Compliance Assurance monthly report.

At the June Commission meeting, the Commission approved the award of the construction contract, the related engineering services task order and funding of the difference between the total project (inclusive of a \$200,000 contingency) and the originally programmed CIP amount of \$2,890,000. After the Commission meeting it came to staff’s attention that the programmed amount had been rolled into the larger consent order program and obligated for other consent order work. Additionally, the detailed review found more funds had previously been spent on this project than were included in the agenda item (\$445,655 actually spent to date versus the \$169,227 identified in the June 2017 agenda item).

As a result, the action in June should have been a request for the original CIP funding as well as the projected shortfall. This project and related funding will be tracked as a



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unique CIP project GN012140, unbundled from the Regional Wet Weather Management Plan (RWWMP) project. The requested action is to clear up this error and provide funds required for this project. As a related action, staff will apply the 2015 appropriation to GN12110 Regional Hydraulic Model and Other Consent Order Requirements, where it will be used to fund some of the remaining work under that CIP as we wrap up that effort in the coming year.

Project Budget:

Requested appropriation August 2017	\$3,166,428
Funding appropriated June 2017	<u>\$353,231</u>
Total Project	\$3,519,659

Expenditures		
Design	(Obligated prior to June 2017)	(\$445,655)
Contract Award to Shaw Construction	(Approved June 2017)	(\$2,408,844)
Construction Inspection and Services	(Approved June 2017)	(\$465,160)
Contingency	(Approved June 2017)	<u>(\$200,000)</u>
		(\$3,519,659)

<u>Schedule:</u>	PER	March 2013
	Design	January 2014
	Bid	June 2017
	Construction	July 2017
	Project Completion	March 2019

Attachment: None

Public Comment: None



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- Additional stone bedding and geotechnical fabric has been requested to prevent settlement under the large plug valves that are connecting into old reinforced concrete (RC) pipe. HRSD has learned on recent projects that old RC pipe is highly susceptible to cracking when improperly handled or supported.

Analysis of Cost: The Engineer used unit price items from recent project bids to give a probable construction cost of \$600,000 independent of VDOT and their General Contractor, Branch Civil, Inc.

<u>Schedule:</u>	PER	January 2010
	Design	October 2010
	Bid	January 2015
	Construction	October 2015
	Project Completion	July 2018

Attachment: None

Public Comment: None



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11. SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE II REPLACEMENT AGREEMENT

Action: Approve the terms and conditions of the agreement with the City of Portsmouth for the reconnection of two City water services to a new water line and the abandonment of an old water main and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

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

CIP Project: VP011600

Project Description: This project is to study, design and construct a replacement 24-inch ductile iron force main for approximately 1680 linear feet of 30-inch reinforced concrete force main SF-225. The replacement alignment is in the Elm Avenue right of way and roughly the same length as the original pipe. Additionally, HRSD will enter into a cost-sharing agreement with the City of Portsmouth to abandon a six-inch water line that was constructed in the early 1900s. The old water line parallels the proposed HRSD 24-inch force main.

Agreement Description: The [attached agreement](#) between HRSD and the City of Portsmouth states that HRSD will administer the design and construction phases of the project and the City of Portsmouth will reimburse HRSD for all design and construction costs, in the amount of \$23,165, related to the water line work at substantial completion of said work. The agreement has been reviewed by HRSD legal counsel.

Attachment #5: [Agreement](#)

Public Comment: None



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12. **SHIPPS CORNER INTERIM PRESSURE REDUCING STATION
ADDITIONAL APPROPRIATION, CONTRACT AWARD AND TASK ORDER**

Actions:

- a. **Appropriate additional funding in the amount of \$500,000.**
- b. **Award a contract to REW Corporation in the amount of \$2,097,330.**
- c. **Approve a task order for CH2M Hill Engineers, Inc. under the General Engineering Services contract in the amount of \$318,114.**

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

CIP Project: AT011510

Budget	\$3,150,000
Previous Expenditures and Encumbrances	(\$814,847)
Available Balance	\$2,335,153
Proposed Contract to REW	(\$2,097,330)
Proposed Task Order to CH2M Hill	(\$318,114)
Proposed Contingency	(\$419,709)
Project Shortage/Requested Additional Funding	(\$500,000)
Revised Total Project Authorized Funding	<u>\$3,650,000</u>

Type of Procurement: Competitive Bid

Bidder	Bid Amount
REW Corporation	\$2,097,330
MEB General Contractors, Inc.	\$2,230,700
T.A. Sheets General Contractors, Inc.	\$2,420,000

Engineer Estimate: \$2,507,000

Contract Status:	Amount
Original Contract with CH2M Hill	\$66,000
Total Value of Previous Task Orders	\$168,838
Requested Task Order	\$318,114
Total Value of All Task Orders	\$486,952
Revised Contract Value	\$552,952
Engineering Services as % of Construction	26%



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Project Description: This project is to design and install an interim pressure reducing station at the existing facility in Phase I for short term use until the Wet Weather Management Plan is complete.

Funding Description: This project requires additional funding due to the unanticipated need for advance work done by the prompt repairs on call contractor at a cost of \$520,200. This funding request includes a \$419,709 contingency to provide control panels for the pump station and to accommodate any additional unforeseen conditions.

Contract Description: This construction contract is to improve station reliability in the short term. The existing Shippo Corner Pressure Reducing Station (PRS) was constructed in 1984 and much of the existing equipment is nearing the end of its useful life. Two of the four pumps have failed and the remaining two are obsolete. Manually operated portable Godwin pumps are currently located at the station for reliability purposes. The PRS does not operate effectively when the system is at high flow/peak pressure conditions. Replacement of the existing PRS is expected to be implemented when the Regional Wet Weather Management Plan (RWWMP) is adopted. An interim improvements effort is needed to improve station performance and reliability in the short term. This work replaces the existing pumps within the existing station structure, and replaces failed and obsolete electrical equipment with new equipment that will serve the new pumps.

The project was advertised on May 14, 2017, and three bids were received on July 11, 2017. The design engineer, CH2M Hill, evaluated the bids and recommends award to the lowest responsive and responsible bidder, REW Corporation, in the amount of \$2,097,330.

Task Order Description: This task order will provide contract administration and field engineering and inspection services. A meeting was held to discuss the project and scope of services. A fee of \$318,114 was negotiated, which will provide the required services during construction.

Schedule: Project Completion Fall 2018

Attachment: None

Public Comment: None



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13. **SMALL COMMUNITIES MOBILE DEWATERING FACILITIES INSTALLATION
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$1,205,000.

Moved: Vishnu Lakdawala **Ayes:** 7
Seconded: Stephen Rodriguez **Nays:** 0

CIP Project: MP013100

Project Description: This project involves the purchase of a mobile screw press for dewatering of solids at all of the Small Communities Wastewater Treatment Plant facilities. The work also includes installation of pads, piping, electrical and instrumentation hookups at each facility for quick connection and disconnection of the mobile dewatering unit.

Funding Description: The total cost for this project is estimated to be \$1,205,000. The estimated project cost is based on a construction cost estimate of \$792,000, combined with an engineering services estimate of \$238,000 and a 20 percent contingency allowance of \$175,000. CH2M Hill will provide engineering services including preliminary engineering, design and construction phase services.

Schedule:

PER	September 2017
Design	January 2018
Bid	July 2018
Construction	September 2018
Project Completion	June 2019

Discussion Summary: The Commission expressed concern with the high design fee. Staff explained these facilities are located far apart from each other and involve specialized equipment.

Attachment: None

Public Comment: None



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14. **NUTRIENT COMPLIANCE PLAN UPDATE**

Action: No action required.

Brief: The 2017 update for the HRSD Nutrient Exchange submission is due to the Virginia Nutrient Credit Exchange Association September 1. The Exchange is a voluntary body of more than 100 regulated municipal wastewater treatment plants and industrial facilities discharging nitrogen and phosphorus into the Chesapeake Bay watershed. The purpose of the Exchange is to coordinate and facilitate nutrient credit trading among its members with the goal of improving water quality in the Chesapeake Bay watershed efficiently and cost-effectively.

As set forth by regulation, the Exchange must submit a five-year compliance plan schedule to the Department of Environmental Quality each February on behalf of all members of the Exchange. In order to provide time for compilation and review, the Exchange requires that all members submit their individual plans to the Exchange several months prior to the annual February deadline. The annual update adds a new fifth year (2022), for nitrogen and phosphorus, to the rolling five year compliance plan period.

The HRSD plan for 2022 is consistent with the 2021 plan year with minor changes in flow estimates. The highlights of the plan are noted below.

- Lower James River Basin (Army Base, Boat Harbor, Chesapeake-Elizabeth, James River, Nansemond, VIP and Williamsburg Treatment Plants): The plan includes nutrient removal at each facility with the exception of Chesapeake-Elizabeth and Boat Harbor. The projected nutrient loadings from HRSD's James River Basin facilities are anticipated to meet the nutrient allocations through 2022.
- York River Basin (King William, West Point and York River Plants): Both King William and York River employ nutrient removal. The nutrient reductions at these facilities are sufficient to meet HRSD's nutrient allocations through 2022.
- Rappahannock River Basin (Urbanna Treatment Plant): The plan continues to require HRSD to purchase nutrient credits through the Exchange to meet its allocation. In 2016, the expenditure for credits was approximately \$10,000. The cost to upgrade this facility for nutrient removal far exceeds the cost of credit purchase.



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The Exchange uses the information provided by the annual updates to ensure that the plans in each basin are sufficient to meet the load allocations of nitrogen and phosphorus. HRSD successfully met the nutrient allocations in the James and York River basins for 2016 and anticipates continued compliance with the nutrient allocations in these basins through 2022. Sufficient credits are expected to be available in the Rappahannock River Basin to address the nutrient obligations for the Urbanna Treatment Plant. The updated submission for 2018 – 2022 demonstrates a plan of continued compliance with HRSD James River and York River allocations.

In addition to a discussion on the Exchange submission, a presentation was provided outlining HRSD's historical and projected compliance with each of its permitted nutrient allocations. Future projections will include an evaluation of the HRSD's capacity to assist with locality compliance with Chesapeake Bay Total Maximum Daily Load (TMDL) nutrient and sediment stormwater reduction requirements.

Attachment #6: [PowerPoint](#)

Public Comment: None



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15. **U.S. EPA CONSENT DECREE UPDATE**

Action: Action deferred until after Closed Session discussion.

Project Description: Sanitary sewer overflow enforcement discussions began with DEQ and U.S. EPA in 2005. HRSD and the region did not then nor does it now suffer from significant or chronic water quality or human health threats from the few sanitary sewer overflows that occur in our region on an annual basis. We spent the better part of five years trying to convince the U.S. EPA of this. They were not convinced despite the evidence to the contrary and pushed ahead with their stated national enforcement priority plan of putting every system greater than 100 million gallons per day under federal enforcement regardless of the magnitude or water quality impact of the self-reported sanitary sewer overflows. As a result we entered a consent decree with U.S. EPA and Virginia DEQ in February 2010.

After four amendments and more than seven years, the time has come to submit our Regional Wet Weather Management Plan (RWWMP) integrated with SWIFT for agency review and approval. The integration of SWIFT will be done in accordance with the Fourth Amendment to the Consent Decree which allows projects that have greater environmental benefits to be prioritized when developing the RWWMP schedule. Compliance with SWIFT obligations will not be a regulatory requirement under this concept but will inform the RWWMP schedule, as the environmental benefits of SWIFT far exceed any of the benefits attained through reductions of sanitary sewer overflows.

The plan is due no later than October 1, 2017. We have spent in excess of \$100 million developing this plan and once approved will be committed to implementing the plan in accordance with the approved schedule. This obligation is estimated to be in excess of \$1.8 billion (as proposed) and extends to 2053. Mr. Richard Stahr of Brown & Caldwell provided a briefing of the major elements included in the RWWMP as well as the impact on affordability.

Discussion Summary: Commissioner Rodriguez expressed his concern regarding unfunded federal mandates. The Consent Decree process requires HRSD to commit to significant spending on mandates that may not align with local or regional priorities, and which may divert funding away from projects with greater environmental benefit. Staff explained that to the extent possible, the commitments made to date have been to accomplish work HRSD had already identified as a priority. The draft plan that has been developed in accordance with the Consent Decree's mandates results in extreme financial stress to the region. Commissioners asked staff if it was realistic to commit to such a significant increase in costs over such a long period of time. The Commissioners asked staff if there were any alternatives. Staff explained that a strategy had been developed that may allow a re-evaluation of all of the data in the future, when more was



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known about the impact of climate change, the regional economy, the effectiveness of early measures, growth patterns and other variables. Due to the potential impact on negotiations with EPA, staff could not share that strategy in open session. The Commission decided to defer any action on plan approval until after hearing more about alternatives to be shared by staff in closed session.

Attachment #7: [PowerPoint](#)

Public Comment: None



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16. **RESCHEDULE COMMISSION MEETING DATE – OCTOBER 2017**

Action: Approve changing the date of the regularly scheduled October 24, 2017 Commission meeting to Tuesday, October 31, 2017.

<u>Moved:</u>	Michael Glenn	<u>Ayes:</u>	7
<u>Seconded:</u>	Vishnu Lakdawala	<u>Nays:</u>	0

Brief: Formal action is required to change a regularly scheduled Commission meeting date. This date will accommodate staff's participation in the National Association of Clean Water Agency (NACWA) Board meeting. The Commission meeting time and location would remain as scheduled.

Attachment: None

Public Comment: None



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- 17. **UNFINISHED BUSINESS** – None
- 18. **NEW BUSINESS** – None
- 19. **COMMISSIONER COMMENTS** – None
- 20. **PUBLIC COMMENTS NOT RELATED TO AGENDA** – None
- 21. **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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24. **WORK SESSION – Poverty Simulation**

Action: No action required.

Brief: Commissioners Lynch, Lakdawala, Levenston, Rodriguez and Taraski along with staff and representatives from the Cities of Newport News, Suffolk and Virginia Beach participated in the Poverty Simulation conducted by the Virginia Cooperative Extension through Virginia Tech and Virginia State University. The poverty simulation experience was designed to help participants begin to understand what it might be like to live in a typical low-income family trying to survive from month to month. It was a simulation, not a game. The object was to sensitize participants to the realities faced by low-income people. In the simulation, participants assumed the roles of up to 26 different families facing poverty.

Attachment: None

Public Comment: None

Next Commission Meeting Date: September 26, 2017 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455.

Meeting Adjourned: 2:12 pm

SUBMITTED:

APPROVED:

Jennifer L. Cascio
Secretary

Frederick N. Elofson, CPA
Chair

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ATTACHMENT #1

AGENDA ITEM 2. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – August 22, 2017

Subject: Carbon-Based Pilot Testing and Soil Aquifer Treatment Study
Virginia Tech - HRSD SWIFT Collaboration
Contract Award (>\$200,000)

Recommended Action: Award a contract to Virginia Polytechnic Institute and State University (Virginia Tech) in the amount of \$240,753.

Contract Description: As part of the Sustainable Water Initiative for Tomorrow (SWIFT), HRSD is conducting a study of advanced treatment technologies to allow managed aquifer recharge of highly treated water. The primary goal of this study is to ensure that the treated water meets or exceeds quality requirements and is compatible with the aquifer geochemistry.

The proposed work will build on recent collaboration initiated between Virginia Tech and HRSD to advance understanding and optimize performance of the carbon-based pilot advanced treatment process scheme, which has now been in operation for about one year at the York River Treatment Plant. Carbon-based treatment is an attractive alternative to reverse osmosis, which will produce water that is compatible with the geochemistry of the Potomac Aquifer System. Research will continue on the carbon-based treatment pilot while also expanding investigation into Soil Aquifer Treatment through the construction of soil columns at the York River pilot facility and groundwater modeling. This work will continue at the SWIFT Research Center when that transition is made in early 2018.

CONSENT AGENDA ITEM 2.c.1. – August 22, 2017

Subject: Aquifer Replenishment System Concept Feasibility Evaluation (SWIFT)
Task Order (>\$200,000)

Recommended Action: Approve a task order with CH2M Hill Engineers, Inc. in the amount of \$2,298,063.

CIP Project: GN015700

Budget	\$10,900,000
Previous Expenditures and Encumbrances	(\$8,445,331)
Available Balance	\$2,454,669

Contract Status:	Amount
Original Contract with CH2M Hill	\$386,312
Total Value of Previous Task Orders	\$4,551,162
Requested Task Order	\$2,298,063
Total Value of All Task Orders	\$6,849,225
Revised Contract Value	\$7,235,537
Engineering Services as % of Construction	NA

Project Description: The Aquifer Replenishment System Concept Feasibility Evaluation (SWIFT) will evaluate the feasibility of reusing highly treated wastewater for aquifer replenishment to protect groundwater supplies as well as accomplish wastewater treatment objectives and enhance the region's total groundwater supply.

Task Order Description: This task order will provide Phase 5A services. Phase 5 builds on the work performed in previous phases and focuses on how HRSD can implement the SWIFT program. The Phase 5A scope is intended to provide CH2M support to the program through June 30, 2018. New tasks focusing on full-scale implementation will set HRSD on a path to achieve the SWIFT vision. Tasks include: Hydrogeologic Evaluation, Ongoing Pilot and Research Center Support, Underground Injection Control Package Preparation and Delivery, Program Manager Role Development, Pretreatment Control Program Support, Facility Layout Preparation, Wastewater Treatment Plant Modeling and Support, Williamsburg Treatment Plant Preliminary Design, and SWIFT Management Support. The output of this phase will be used to further develop the full-scale implementation plan and help make SWIFT a reality. A fee of \$2,298,063 was negotiated, which will provide the required services.

Analysis of Cost: The cost for this task order is based on hourly rates of the staff identified to perform the various sub tasks. The hourly rates for this task order are in alignment with those from other firms. Thirty-four percent of the requested funding is for wastewater treatment plant modeling and preliminary design of SWIFT facilities at the Williamsburg Treatment Plant. The other 66 percent of the requested funding is for hydrogeologic evaluation, pilot and research center support, and program management support.

Schedule: Study June 2018

REVISED CONSENT AGENDA ITEM 2.d.1. – August 22, 2017

Subject: Wood Equipment Company - Aurora Pumps, Service and Replacement Parts
Sole Source (>\$10,000)

Recommended Action: Approve Wood Equipment Company as the source for Aurora Pumps including purchase, service and replacement parts.

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: The Army Base Treatment Plant uses four Aurora pumps in their non-potable water process. Replacement parts will allow for the reuse of the existing motor, base and discharge piping and act as a drop-in place replacement.

Wood Equipment Company is the only authorized distributor in Virginia.

CONSENT AGENDA ITEM 2.d.2. – August 22, 2017

Subject: Laboratory Balance Equipment Preventative Maintenance, Calibration Services and Parts
Sole Source (>\$10,000)

Recommended Action: Approve Mettler Toledo Inc. as the provider of preventative maintenance, calibration services and parts for Mettler Toledo® analytical and precision balances in the Central Environmental Laboratory.

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 comprehensive preventive maintenance and balance calibration certificates for 18 analytical and precision balances used in the Central Environmental Laboratory (CEL). Pre-planned and periodic maintenance consists of inspection and cleaning, testing and adjustment, documenting equipment condition and improvement recommendations, all which extend equipment life. Calibration services are provided through proprietary software to determine equipment performance, allowing CEL to measure safely and ensure compliance. These services are required for CEL to meet the National Environmental Laboratory Accreditation Conference standards for analysis of compliance samples.

Mettler Toledo Inc. is the sole provider for the Mettler Toledo products, services and parts.

CONSENT AGENDA ITEM 2.d.3. – August 22, 2017

Subject: Quantitative Microbial Risk Assessment Based Criteria Development
Research
Sole Source (>\$10,000)

Recommended Action: Approve NSF International as the provider of quantitative microbial risk assessment (QMRA) model development research 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 research conducted by the NSF International risk assessment team; along with Dr. Mark H. Weir of Ohio State University to develop site specific criteria appropriate for receiving waters downstream of HRSD wastewater treatment plants. The U.S. Environmental Protection Agency (EPA) has announced intentions to develop a national viral criterion for recreational waters. The Hampton Roads risk paradigm created by NSF International will incorporate HRSD site-specific data with the intent to provide the EPA with time-sensitive information that could be considered while developing the national virus criteria. Additionally HRSD staff will gain key knowledge necessary to review the draft criteria when it is released in December.

Specifically, the end product will establish the worst-case scenario based mass-balance equations or steady-state models of public health during recreational contact. The risk assessors will be responsible for writing the narrative to support the proposed water quality criteria.

NSF International (formerly known as National Sanitation Foundation) is an independent, non-profit organization that provides certification of products and writes standards for food, water, air, etc. NSF International employs key personnel to develop criteria for recreational and shellfish waters like those in Hampton Roads and have various accreditations including American National Standards Institute, Occupational Safety and Health Administration and others both in the United States and Canada.

HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #2

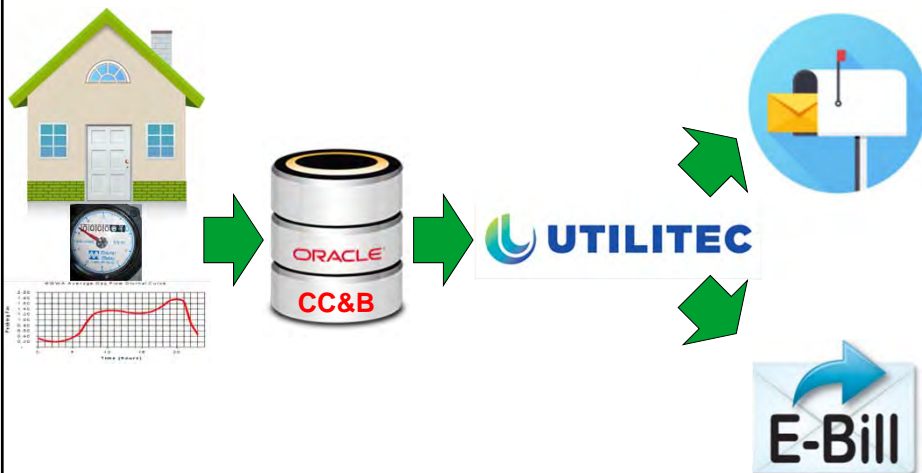
AGENDA ITEM 3. – New Billing and Payment Vendor Implementation Presentation



Customer Billing and Payment Vendor Changes

August 22, 2017

Bill Generation

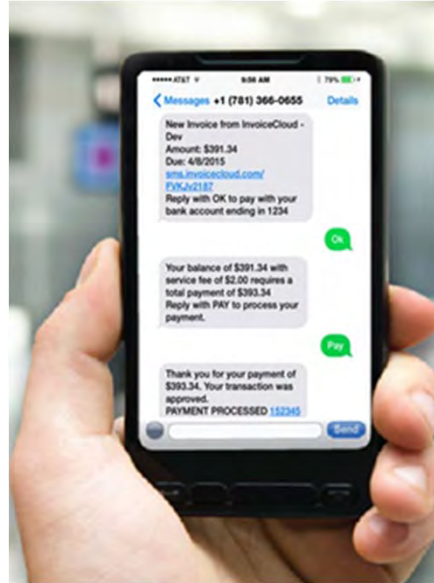


- Focused solely on utilities
- Same design layout for Bills and Notices
- New features
- Significant experience with CC&B
 - HRSD staff can access bills in CC&B
 - Real Time Payment updates in CC&B

Payments



- Responsibilities
 - Online PDF view
 - Online payments
 - Telephone payments
- Benefits
 - Real time balances
 - Text notifications
 - Pay-by-Text
 - Access PDF bill without logging in
 - Set future date payments



5

- Faster Resolution of Exceptions
- *Smart Technology* – Automated corrections



HRSD

6

Implementation Concerns

- E-bill customers may need to re-register
 - Autopay customers may overlook the change
- New Lockbox vendor requires a different payment address (Iowa vs North Carolina)

7



Communication Strategy

- Bill Message
- Emails
- Message while holding for representative
- Envelope message
- Bill Insert
- Websites-
 - HRSD
 - Current payment vendor site
- Cashier payment locations

8



Questions?

HRSD COMMISSION MEETING MINUTES
August 22, 2017

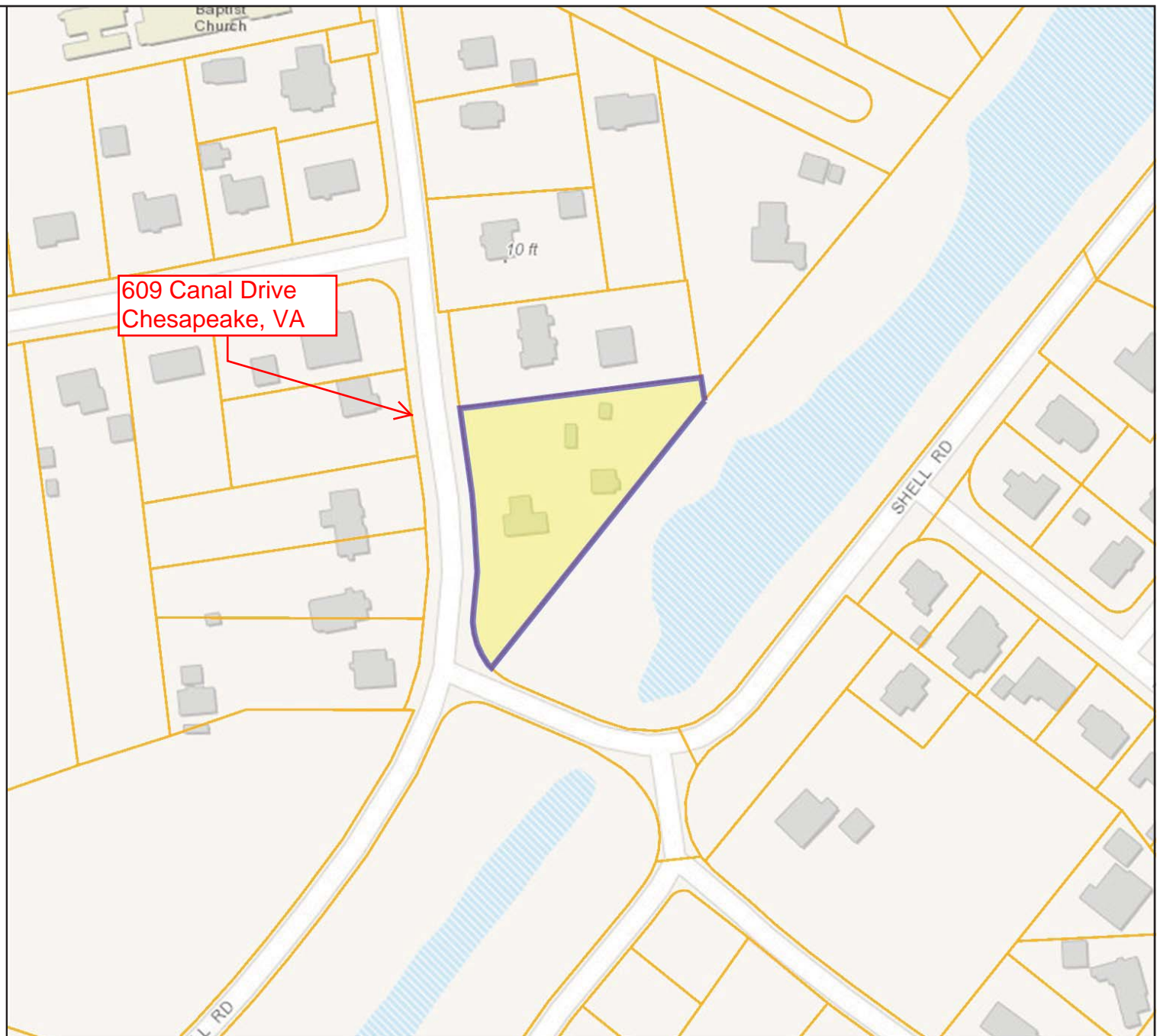
ATTACHMENT #3

AGENDA ITEM 4. – Deep Creek Interceptor Force Main Replacement Property Acquisition Location Map

City of Chesapeake, Virginia

Legend

- Parcels
- City Boundary



609 Canal Drive
Chesapeake, VA

Parcel Number: 034000001840

Date: 7/7/2017

DISCLAIMER: This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information, and data obtained from various sources, and City of Chesapeake is not responsible for its accuracy or how current it may be.

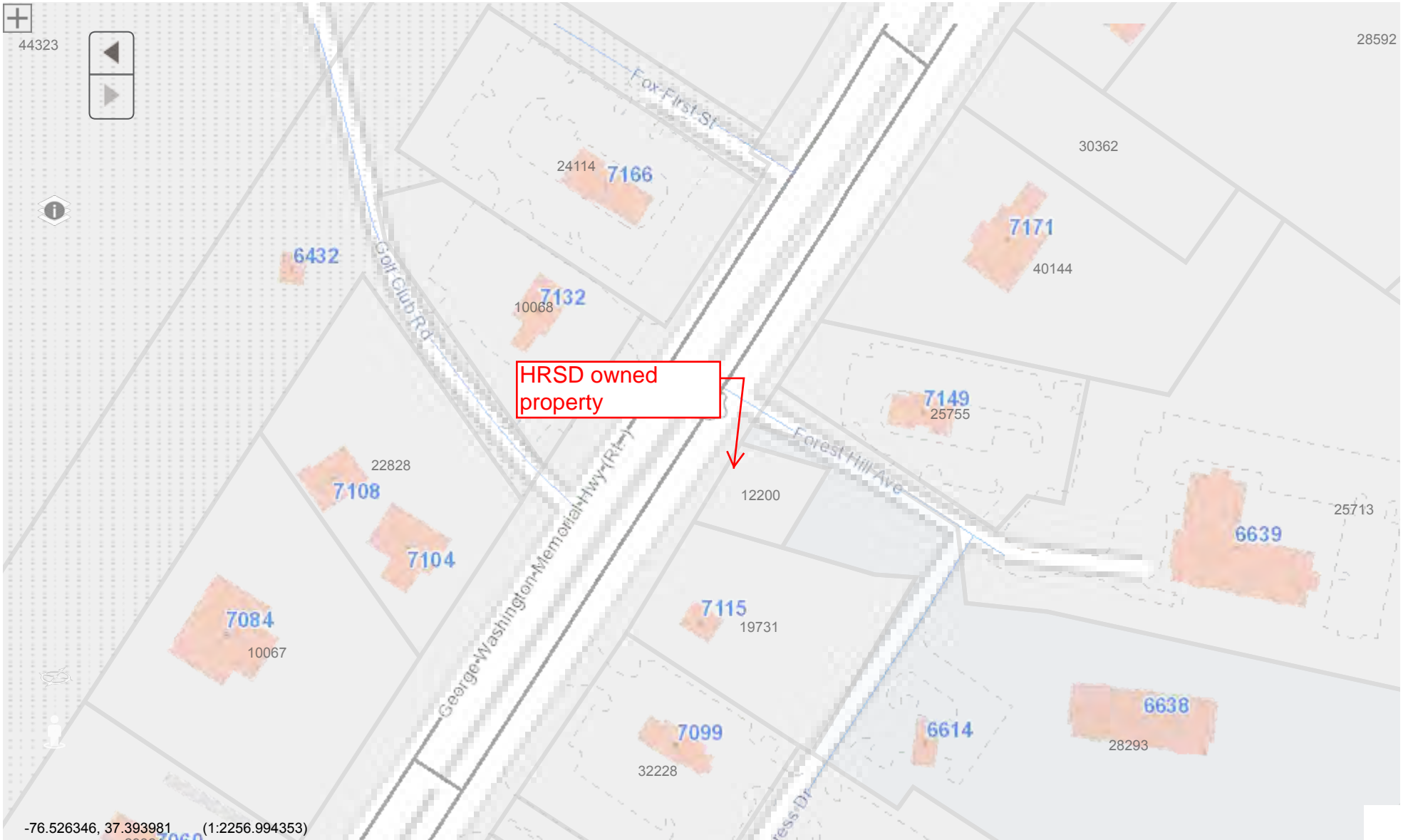
HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #4

AGENDA ITEM 5. – Forest Hill Avenue, Gloucester, Virginia Disposition of Publicly Held Real Property Resolution and Location Map



(<http://gloucesterva.info/>)



-76.526346, 37.393981 (1:2256.994353)



RESOLUTION

Resolution to declare HRSD-owned property located in Gloucester County, Virginia (Tax Map 32-195B), acquired by condemnation on or about January 27, 1994, "surplus" property pursuant to Virginia Code § 25.1-108.

WHEREAS, by Order dated January 27, 1994, the Circuit Court for the County of Gloucester affirmed a Petition for Condemnation filed by the Hampton Roads Sanitation District (hereinafter "HRSD") and vested in HRSD the fee simple interest in and to certain property comprising a 0.2214 acre tract of land fronting 100 feet on U.S. Route 17 in Gloucester County and owned by Annie T. Ruth Watermann (the "Property"), and

WHEREAS, pursuant to the January 27, 1994 Order, HRSD paid to Annie T. Ruth Watermann \$112,500.00, as a total award of just compensation for the Property, and

WHEREAS, the Property was condemned for specific public uses including the construction, operation, and maintenance of a force main through the Property whereby the sewage and sewage treatment products in the said pipeline could be transported to sewage treatment plants owned and operated by HRSD (the "Public Uses"), and

WHEREAS, the Property is no longer utilized or necessary for the Public Uses or any other public purpose within the limitations set forth under Virginia Code § 1-219.1;


NOW, THEREFORE, BE IT RESOLVED, that the Commission has declared the Property to be constitute surplus pursuant to Virginia Code § 25.1-108; and

BE IT FURTHER RESOLVED, that pursuant to Code § 25.1-108, the Commission has determined that the Property must be offered for sale to its former owner, Annie T. Ruth Watermann, her heirs, successors, or assigns.

This resolution shall take effect immediately upon its adoption.

Adopted by the HRSD Commission on the 22nd day of August 2017.

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


Maurice P. Lynch, PhD, Vice-Chair



HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #5

AGENDA ITEM 11. – Sewerage System Improvements Division C, Phase II
Replacement Agreement

AGREEMENT FOR COST SHARING
OF THE
HAMPTON ROADS SANITATION DISTRICT
SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE II REPLACEMENT
(VP011600)

AND
CITY OF PORTSMOUTH
ELM AVENUE 6-IN WATER LINE ABANDONMENT FROM SOUTH STREET TO
COUNTY STREET

THIS AGREEMENT FOR COST SHARING (the "Agreement"), between the CITY OF PORTSMOUTH ("CITY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), is entered into this 22nd day of August, 2017 (the "Effective Date").

RECITALS

R:1. HRSD is constructing its SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE II REPLACEMENT PIPELINE as shown on Exhibit 1 (the "HRSD Facilities"); and

R:2. The CITY is abandoning its own ELM AVENUE 6-IN WATER LINE FROM SOUTH STREET TO COUNTY STREET as shown on the construction documents (the "CITY Facilities") as part of the City of PORTSMOUTH Department of Public Utilities O&M Program]; and

R:3. The design and construction of the HRSD Facilities and the CITY Facilities (collectively referred to as the "Improvements") will necessitate the abandonment of approximately 1000 linear feet of 6-inch water line and the reconnection of two services to another water line on the east side of Elm Avenue.

R:4. HRSD and the CITY agree that it is in the best interest of the parties to have the Improvements designed and constructed together; and

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

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

TERMS

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

I. DESIGN OF IMPROVEMENTS

A. Plans and Specifications

1. HRSD will employ WHITMAN, REQUARDT & ASSOCIATES or such other qualified engineer as HRSD deems appropriate ("ENGINEER"), to prepare plans and specifications for the HRSD Facilities and the CITY Facilities. A location map of the HRSD Facilities and the CITY Facilities is shown on the Construction Documents.
2. ENGINEER, along with HRSD and the CITY, will meet to coordinate, review, and approve a set of final construction documents (the "Final Plans and Specifications") for the Improvements.

B. Payment of the Design Costs

1. HRSD will compensate the ENGINEER for all engineering design costs and any amendments related to the HRSD Facilities. HRSD will also compensate the ENGINEER, on the CITY's behalf, for all engineering design costs and any amendments related to the CITY Facilities, and the CITY shall reimburse HRSD for all such payments.
2. The CITY shall reimburse HRSD for the design costs attributable to the CITY Facilities in one lump sum payment due once the design of the Improvements is complete. HRSD shall provide the CITY with an invoice detailing the CITY's share of the design costs. Within thirty (30) days of its receipt of such invoice, the CITY shall reimburse HRSD for the CITY's share of the design costs as detailed in the invoice. Pursuant to HRSD's agreement with ENGINEER, the current design cost for the CITY Facilities is \$13,665. The CITY will be responsible for any design costs for

additional work for the CITY Facilities beyond what is shown in the project's bid documents.

C. Compliance

1. All design work shall comply with HRSD Standards and Preferences for use in Engineered Construction Projects, latest edition, and the Hampton Roads Planning District Commission Regional Construction Standards, latest edition. Any changes to the Final Plans and Specifications shall be approved by HRSD and the CITY.

II. CONSTRUCTION OF IMPROVEMENTS

A. Cost of Construction

1. The total cost of the Improvements, as more particularly defined by the Final Plans and Specifications, prepared by the ENGINEER for HRSD and the CITY (the "Improvements Costs") shall include:
 - a. Cost of construction of the Improvements;
 - b. Cost of approvals and permits required for the construction of the Improvements;
 - c. Costs of services rendered by ENGINEER, including any additional design or construction administration/inspection for work beyond what is shown in the project's bid documents;
 - d. Any related miscellaneous essential expenses.

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

1. HRSD and the CITY agree that before any construction work is to begin under this Agreement, HRSD and the CITY will jointly review and approve the Final Plans and Specifications. This approval shall be in writing.

Agreement for Cost Sharing of the HRSD SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE
II REPLACEMENT (VP011600) and
CITY OF PORTSMOUTH ELM AVENUE 6-IN WATER LINE ABANDONMENT FROM SOUTH STREET
TO COUNTY STREET

2. HRSD shall acquire all necessary plan approvals and property acquisitions related to HRSD Facilities prior to the award of the construction contract.
3. The CITY shall acquire all necessary plan approvals and property acquisitions related to CITY Facilities prior to the award of the construction contract.
4. HRSD and the CITY shall review and agree upon the qualifications prior to bidding the project and confirm that the construction contract is awarded to a firm that meets the stated requirements.
5. Contractors shall be responsible for all necessary permits and approvals necessary for the Improvements.
6. HRSD will review and approve shop drawings related to the HRSD Facilities. CITY will review and approve shop drawings related to the CITY Facilities.
7. HRSD will review and approve scope of work and fee for the construction contract administration and inspections related to the HRSD Facilities. CITY will review and approve scope of work and fee for the construction contract administration and inspections related to the CITY Facilities.
8. HRSD will review and approve change orders related to the HRSD Facilities. CITY will review and approve change orders related to the CITY Facilities. HRSD will issue final approval on all change orders before the contractor commences additional work.
9. All contracts for the work contemplated hereunder (including the contract with the ENGINEER and the construction contract) shall provide the CITY with the same rights and protections regarding the CITY Facilities and the work related to the CITY Facilities as are provided to HRSD with respect to the HRSD Facilities and the work related to the HRSD Facilities, including: (a) ownership and/or use of plans, specifications and drawings (including construction record drawings); (b) representations and warranties related to the work and materials (including assignment of any warranties regarding equipment to be ultimately owned by the City, as and to the extent applicable); (c) all indemnities; and (d) all insurance coverages.

The CITY shall be contractually designated a third party beneficiary as and to the extent necessary to enforce the foregoing rights and protections.

C. Payment of Improvement Costs

1. The Improvement Costs shall be apportioned among the parties as follows:
 - a. HRSD will be responsible for bearing one hundred percent (100%) of the cost of the HRSD Facilities.
 - b. The estimated cost of the construction of the CITY Facilities was taken from the low bidder's Water Main Abandonment pay item on the bid tab dated March 14, 2017. The City will be responsible for bearing one hundred percent (100%) of the cost of the CITY Facilities.
 - c. HRSD will pay for the road restoration and the CITY will pay for the below grade water main abandonment work for \$9,500
 - d. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - i. HRSD shall be solely responsible for costs due to a Change Order for the HRSD Facilities or otherwise requested by HRSD; and
 - ii. The CITY shall be responsible for costs due to a Change Order for the CITY Facilities or otherwise requested by the CITY.
2. During the course of construction, HRSD shall compensate the

Contractors and other individuals and entities providing materials and/or services related to the Improvements for all Improvement Costs, including those for which the CITY is responsible. The CITY shall reimburse HRSD for all such payments made on its behalf. The CITY shall pay its share of the Improvements Costs to HRSD in one lump sum payment upon substantial completion of construction (as determined by HRSD). HRSD shall provide the CITY with an invoice detailing the CITY's share of the Improvement Costs. Within thirty (30) days of its receipt of such invoice, the CITY shall reimburse HRSD for the CITY's share of the Improvement Costs as detailed in the invoice.

3. In conjunction with the above, and for additional clarity, it is agreed that the CITY shall pay construction administration and construction inspection costs for which it is responsible (the "CA and CI Costs"), if any, to HRSD in one lump sum payment upon substantial completion of construction (as determined by HRSD). HRSD shall provide the CITY with an invoice detailing the CITY's share of the CA and CI Costs. Within thirty (30) days of its receipt of such invoice, the CITY shall reimburse HRSD for the CITY's share of the CA and CI Costs as detailed in the invoice. Notwithstanding the foregoing, the CITY shall only be responsible for CA and CI costs as and to the extent provided in Sections IV.C and D hereof.

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

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

III. SCHEDULE

The construction is anticipated to begin by June 2017 and be complete by January 2018. If the construction commencement date listed herein is

substantially delayed, each party reserves the right to terminate this Agreement.

IV. OBLIGATIONS OF HRSD AND THE CITY

A. Bidding of the Improvements

1. HRSD agrees to issue bidding documents for construction of the Improvements. The CITY agrees to provide administrative support during the bidding phase. In particular the CITY shall:
 - a. Attend the preconstruction meeting.
 - b. Provide timely responses to the ENGINEER for any questions, requests for clarification, or addenda during the bidding phase.
 - c. Provide miscellaneous support to HRSD as required during the bidding phase.
2. HRSD will receive bids for construction of the Improvements. All bids received will be reviewed and approved by the CITY and HRSD prior to award of the construction contract. The CITY and HRSD shall negotiate in good faith to resolve financial matters with regards to bidding the Improvements. The bidding procedure shall be conducted in accordance with the Virginia public Procurement Act and the HRSD Procurement Policy.

C. Administration

1. HRSD shall provide contract administration of the Improvements. The CITY shall reimburse HRSD for the contract administration cost of the CITY Facilities only if and to the extent the CITY requests additional work beyond what is shown in the project's bid documents.

D. Inspection

1. HRSD shall provide full-time inspection for the Improvements. The CITY shall reimburse HRSD for the inspection costs of the CITY Facilities only if and to the extent the CITY requests additional work beyond what is shown in the project's bid documents. The inspector(s)

shall have the authority to assure the Improvements are constructed in accordance with the Final Plans and Specifications.

E. Deeds and Easements

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

F. Correction of Construction Defects in the Improvements

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

G. Construction Record Drawings

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

V. GOVERNING LAW

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

VI. TERMINATION

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

VII. NOTICE

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

For: HRSD

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

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

With Copy to:

William A. Cox, III
Kellam, Pickrell, Cox, Tayloe & Anderson, P.C.
403 Boush Street, Suite 300
Norfolk, VA 23510

For: City of Portsmouth

Erin Trimyer, Director of Public Utilities
Portsmouth, Virginia
801 Crawford Street
Portsmouth, VA 23704
Telephone: (757) 393-8524
Facsimile: (757) 397-6350

With Copy to:

City Attorney

801 Crawford Street
Portsmouth, VA 23704
Telephone: (757) 393-8731
Facsimile: (757) 393-5062

VIII. ASSIGNMENT

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

IX. AMENDMENT

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

X. SEVERABILITY

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

XI. DAMAGES

If by omission that constitutes negligence or willful misconduct or failure to abide by engineering standards or failure to abide by the Final Plans and Specifications described herein, the negligent party shall be responsible for the payments for damages to any other party to this Agreement.

XII. INSURANCE

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

XIII. TERM OF AGREEMENT

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

XIV. FORCE MAJEURE

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

XV. INDEPENDENT CONTRACTOR

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

XVI. SUBCONTRACTOR

If any Contractors or subcontractors are selected by any party to this Agreement for completion of the work contemplated herein, HRSD and the CITY have the right to approve the same.

XVII. WAIVER

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

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

Agreement for Cost Sharing of the HRSD SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE
II REPLACEMENT (VP011600) and
CITY OF PORTSMOUTH ELM AVENUE 6-IN WATER LINE ABANDONMENT FROM SOUTH STREET
TO COUNTY STREET

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

XVIII. INTEGRATION

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

Agreement for Cost Sharing of the HRSD SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE
II REPLACEMENT (VP011600) and
CITY OF PORTSMOUTH ELM AVENUE 6-IN WATER LINE ABANDONMENT FROM SOUTH STREET
TO COUNTY STREET

IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) has caused
this Agreement to be signed on its behalf by its General Manager in accordance with
authorization granted at its regular meeting held on August 22, 2017.

HAMPTON ROADS SANITATION DISTRICT

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

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

The foregoing agreement was acknowledged before me this 22nd day of
August, 2017, by Edward G. Henifin, P.E., General Manager, Hampton
Roads Sanitation District.

Jennifer Lynn Cascio
Notary Public

My commission expires:

Registration No.:



Agreement for Cost Sharing of the HRSD SEWERAGE SYSTEM IMPROVEMENTS DIVISION C, PHASE II REPLACEMENT (VP011600) and CITY OF PORTSMOUTH ELM AVENUE 6-IN WATER LINE ABANDONMENT FROM SOUTH STREET TO COUNTY STREET

IN WITNESS WHEREOF, the City of Portsmouth (CITY) has caused this Agreement to be signed by the City Manager on its behalf pursuant to Resolution adopted by the City Council on _____, 201__.

CITY OF PORTSMOUTH

By: [Signature]
Name: D. L. Pettis Patton
Title: City Manager

ATTEST:

[Signature]
City Clerk

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

The foregoing Agreement was acknowledged before me this _____ day of _____, 201__, by _____ [Name], _____ [Title], City of [LOCALITY], Virginia.

[Signature]
Notary Public

My commission expires:

Registration No.:

Approved as to Form and Correctness:

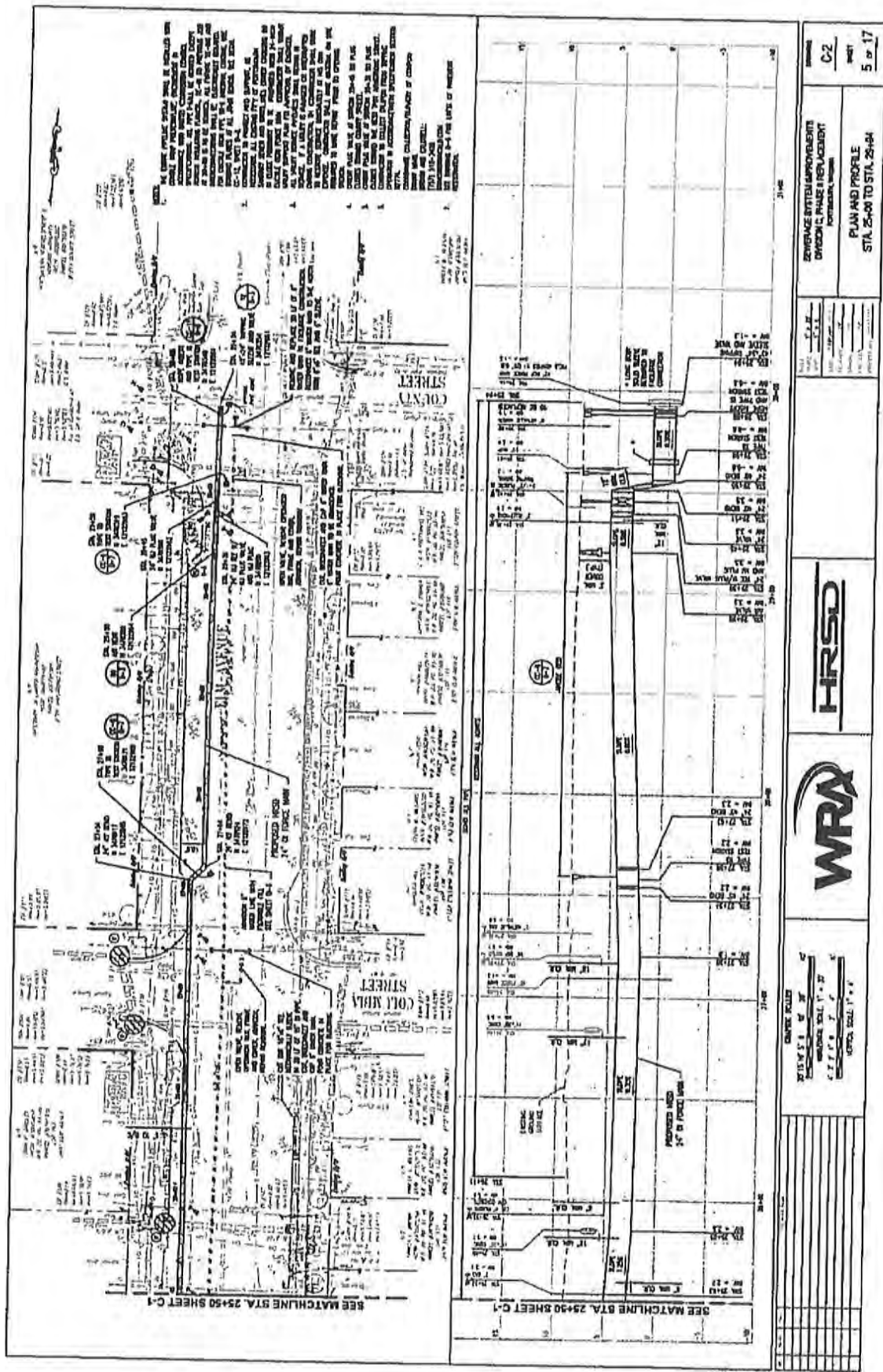
[Signature]
Deputy City Attorney

Approved as to Content:

[Signature]
Director of Utilities

Per Erin Drimyer (P.U. director)
City Council, City Clerk and City Attorney approval
not required. Kenneth Cascio

Exhibit 1 - HRSD and City Facilities Location Map



HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #6

AGENDA ITEM 14. – Nutrient Compliance Plan Update Presentation



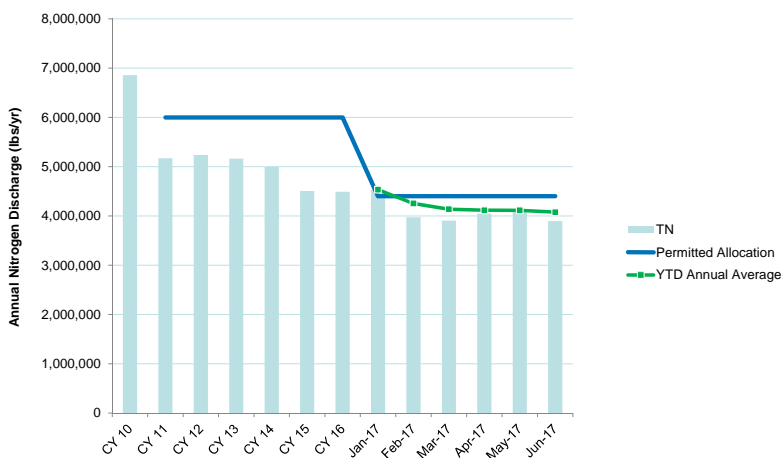
Nutrient Compliance Plan Update Commission Briefing

August 22, 2017

HRSD-River Basin Map



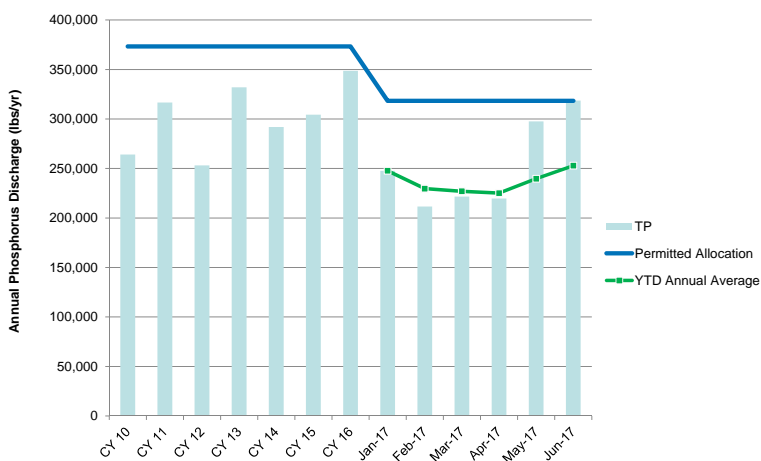
James River Basin: Annual Nitrogen Discharge



3



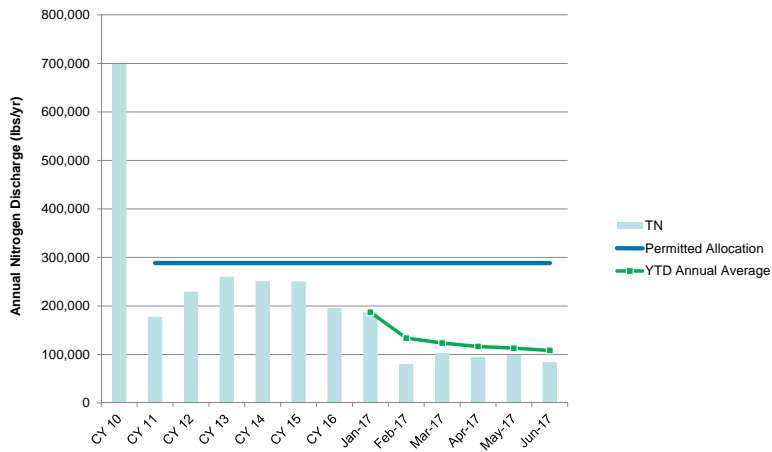
James River Basin: Annual Phosphorus Discharge



4



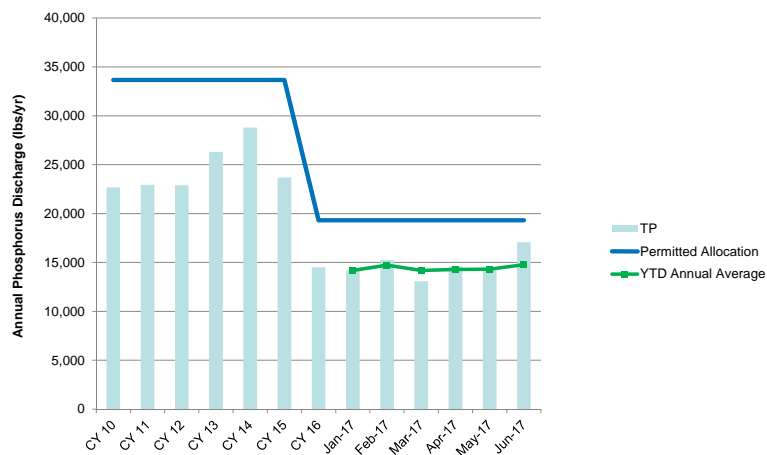
York River Basin: Annual Nitrogen Discharge



5



York River Basin: Annual Phosphorus Discharge



6



Nitrogen Exchange Submission – 5 yr: James River Basin

	2018	2019	2020	2021	2022
Army Base: Flow (MGD)	10.40	10.41	10.42	10.43	10.22
Proj Conc (mg/L)	4.5	4.5	4.5	4.5	4.5
Proj Mass (lbs/yr)	142,515	142,652	142,789	142,927	140,033
Boat Harbor: Flow (MGD)	14.74	14.74	14.74	14.74	14.87
Proj Conc (mg/L)	26.0	26.0	26.0	26.0	29.0
Proj Mass (lbs/yr)	1,166,998	1,167,137	1,167,275	1,167,414	1,313,407
Ches-Eliz: Flow (MGD)	17.86	17.95	18.04	18.13	0.00
Proj Conc (mg/L)	26.5	26.5	26.5	26.5	0.0
Proj Mass (lbs/yr)	1,441,632	1,448,740	1,455,884	1,463,063	0
James River: Flow (MGD)	13.10	13.12	13.14	13.16	13.21
Proj Conc (mg/L)	9.0	9.0	9.0	9.0	9.0
Proj Mass (lbs/yr)	359,014	359,535	360,057	360,580	362,100
Lawnes Point: Flow (MGD)	0.00	0.00	0.00	0.00	0.00
Proj Conc (mg/L)	0.0	0.0	0.0	0.0	0.0
Proj Mass (lbs/yr)	0	0	0	0	0
Nansemond: Flow (MGD)	17.40	17.75	18.10	18.46	19.37
Proj Conc (mg/L)	7.5	7.5	7.5	7.5	5.0
Proj Mass (lbs/yr)	397,486	405,362	413,393	421,584	294,975
VIP: Flow (MGD)	30.76	30.82	30.89	30.95	31.53
Proj Conc (mg/L)	4.5	4.5	4.5	4.5	4.5
Proj Mass (lbs/yr)	421,533	422,420	423,308	424,199	432,080
Williamsburg: Flow (MGD)	8.96	9.07	9.18	9.29	9.10
Proj Conc (mg/L)	10.0	10.0	10.0	10.0	10.0
Proj Mass (lbs/yr)	272,765	276,109	279,494	282,921	277,068
Expected Discharge (lbs/yr)	4,201,943	4,221,955	4,242,201	4,262,687	2,819,664
Permitted Allocation (lbs/yr)	4,553,500	4,553,500	4,553,500	4,553,500	3,553,500
Total Flow (MGD)	113.2	113.9	114.5	115.2	98.3
Safety Factor	7.7%	7.3%	6.8%	6.4%	20.7%

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Phosphorus Exchange Submission – 5 yr: James River Basin

	2018	2019	2020	2021	2022
Army Base: Flow (MGD)	10.40	10.41	10.42	10.43	10.22
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	25,336	25,360	25,385	25,409	24,895
Boat Harbor: Flow (MGD)	14.74	14.74	14.74	14.74	14.87
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	35,908	35,912	35,916	35,920	36,232
Ches-Eliz: Flow (MGD)	17.86	17.95	18.04	18.13	0.00
Proj Conc (mg/L)	0.9	0.9	0.9	0.9	0.0
Proj Mass (lbs/yr)	48,961	49,202	49,445	49,689	0
James River: Flow (MGD)	13.10	13.12	13.14	13.16	13.21
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	31,912	31,959	32,005	32,052	32,187
Lawnes Point: Flow (MGD)	0.00	0.00	0.00	0.00	0.00
Proj Conc (mg/L)	0.0	0.0	0.0	0.0	0.0
Proj Mass (lbs/yr)	0	0	0	0	0
Nansemond: Flow (MGD)	17.40	17.75	18.10	18.46	19.37
Proj Conc (mg/L)	1.2	1.2	1.2	1.2	1.2
Proj Mass (lbs/yr)	63,598	64,858	66,143	67,453	70,794
VIP: Flow (MGD)	30.76	30.82	30.89	30.95	31.53
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	74,939	75,097	75,255	75,413	76,814
Williamsburg: Flow (MGD)	8.96	9.07	9.18	9.29	9.10
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	21,821	22,089	22,360	22,634	22,165
Expected Discharge (lbs/yr)	302,475	304,477	306,508	308,570	263,087
Permitted Allocation (lbs/yr)	318,436	318,436	318,436	318,436	318,436
Total Flow (MGD)	113.2	113.9	114.5	115.2	98.3
Safety Factor	5.0%	4.4%	3.7%	3.1%	17.4%

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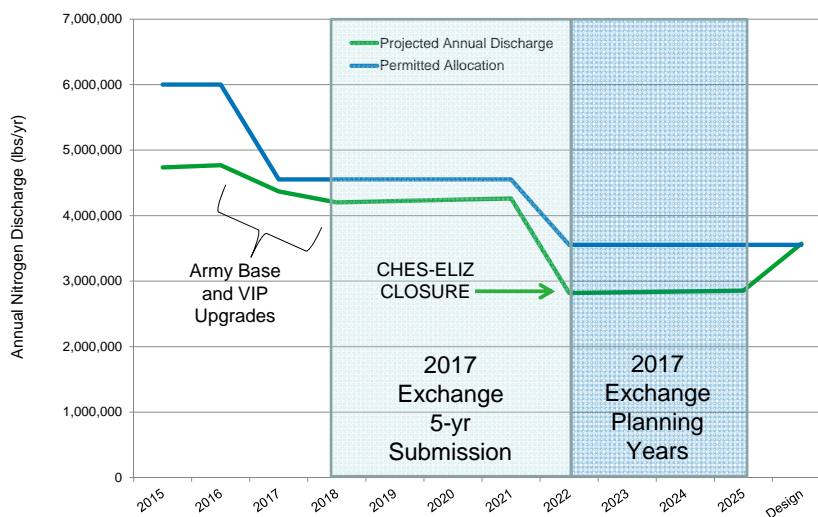
Exchange Submission – 5 yr: York River Basin

		2018	2019	2020	2021	2022
Nitrogen	King William: Flow (MGD)	0.032	0.051	0.051	0.051	0.053
	Proj Conc (mg/L)	4.0	4.0	4.0	4.0	4.0
	Proj Mass (lbs/yr)	392	616	626	615	651
	West Point: Flow (MGD)	0.42	0.47	0.44	0.44	0.46
	Proj Conc (mg/L)	17.5	17.5	17.5	17.5	17.5
	Proj Mass (lbs/yr)	22,189	24,786	23,503	23,682	24,332
	York River: Flow (MGD)	12.3	13.1	13.4	13.1	13.1
	Proj Conc (mg/L)	7.0	6.0	6.0	6.0	6.0
	Proj Mass (lbs/yr)	262,982	239,239	244,975	239,740	239,795
	Expected Discharge (lbs/yr)	285,563	264,641	269,104	264,037	264,778
Permitted Allocation (lbs/yr)	288,315	288,315	288,315	288,315	288,315	
Total Flow (MGD)	12.8	13.6	13.9	13.6	13.6	
Safety Factor	1.0%	8.2%	6.7%	8.4%	8.2%	

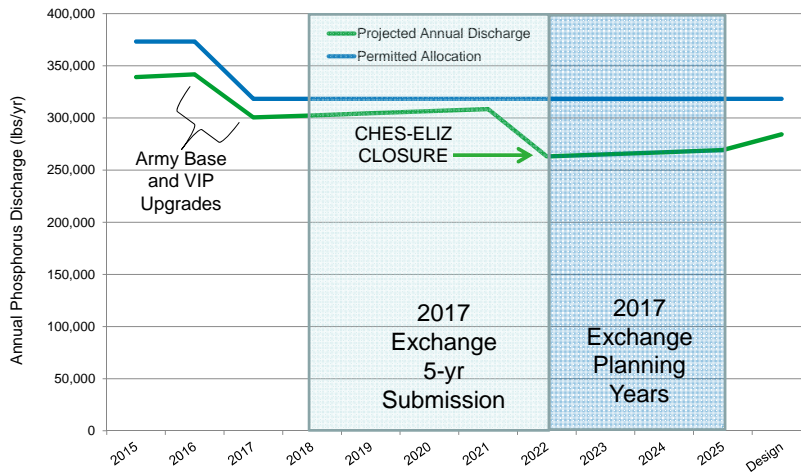
		2018	2019	2020	2021	2022
Phosphorus	King William: Flow (MGD)	0.032	0.051	0.051	0.051	0.053
	Proj Conc (mg/L)	0.3	0.3	4.0	4.0	4.0
	Proj Mass (lbs/yr)	29	46	626	615	651
	West Point: Flow (MGD)	0.42	0.47	0.44	0.44	0.46
	Proj Conc (mg/L)	3.0	17.5	17.5	17.5	17.5
	Proj Mass (lbs/yr)	3,804	4,249	4,029	4,060	4,171
	York River: Flow (MGD)	12.3	13.1	13.4	13.1	13.1
	Proj Conc (mg/L)	0.4	0.35	0.35	0.35	0.35
	Proj Mass (lbs/yr)	15,028	13,956	14,290	13,985	13,988
	Expected Discharge (lbs/yr)	18,861	18,251	18,366	18,091	18,208
Permitted Allocation (lbs/yr)	19,316	19,316	19,316	19,316	19,316	
Total Flow (MGD)	12.8	13.6	13.9	13.6	13.6	
Safety Factor	2.4%	5.5%	4.9%	6.3%	5.7%	



James River Basin Nitrogen Reduction Strategy



James River Basin Phosphorus Reduction Strategy



HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #7

AGENDA ITEM 15. – U.S. EPA Consent Decree Update Presentation

Integrated Plan/RWWMP Update Commission Briefing August 22, 2017

Agenda

- Recap
 - Consent Decree Requirements
 - Fundamentals from AAR
 - Optimization Process
 - High Priority Selection and Impact
- Draft RWWMP Overview
 - Costs
 - Sequencing
 - Schedule
- Draft Affordability Measures
- Proposed Plan

Consent Decree Requirements

- HRSD responsible for designing, funding and building LOS Adequate Capacity **throughout the Regional SS System, regardless of asset ownership**
- Detail the measures to achieve the specified LOS
- Include STP upgrades, specific remedial measures to address capacity limitations on the Regional SS System, Operating Pressures, measures to remove I/I
- Include a Post RWWMP Implementation Monitoring, Performance and Assessment Plan
- Schedule for each major measure including milestones for Design Start, Construction Start and Construction Completion

3



Amendment 4

- Added reference to SWIFT
- May reference the Integrated Plan as necessary to explain the sequencing or schedules in the RWWMP
- Schedule in the RWWMP may accommodate SWIFT **provided** HRSD demonstrates that greater human health or environmental benefits will be gained through SWIFT before completion of the RWWMP
- Identify high priority projects to be implemented concurrently with SWIFT

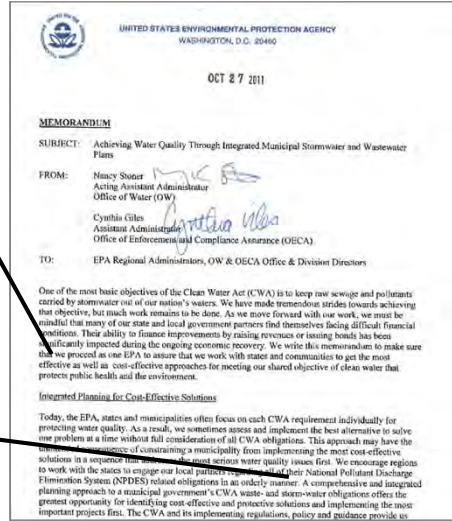
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EPA's Approach to Integrated Planning

"...we proceed as one EPA to assure that we work with states and communities to get the most effective as well as cost-effective approaches for meeting our shared objective of clean water that protects public health and the environment"

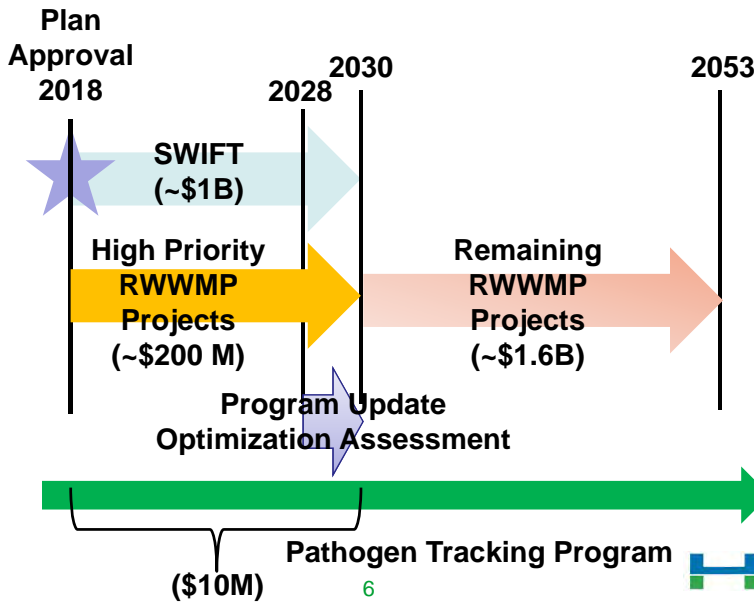
"A comprehensive and integrated planning approach ... offers the greatest opportunity for identifying cost effective and protective solutions and implementing the most important projects first"



5



Sequence Places the Greatest Water Quality Benefits First



6



High Priority Projects

9



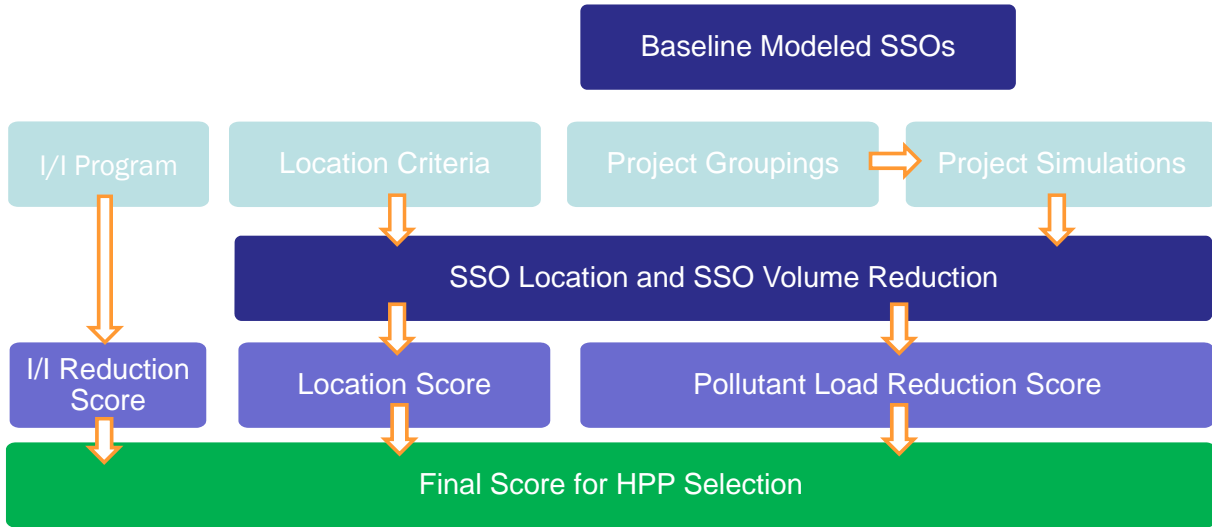
Criteria and Weightings

- Modeled SSO Load Reduction (50%)
- Modeled Location (30%)
 - Proximity to public beaches (VDH)
 - Proximity to public surface drinking water sources
 - Proximity to open shellfish grounds
 - Proximity to high priority waters
 - Drains to bacteriologically impaired water
 - Reduces I/I to SWIFT plant proximate to open shellfish grounds
- I/I Reduction (20%)

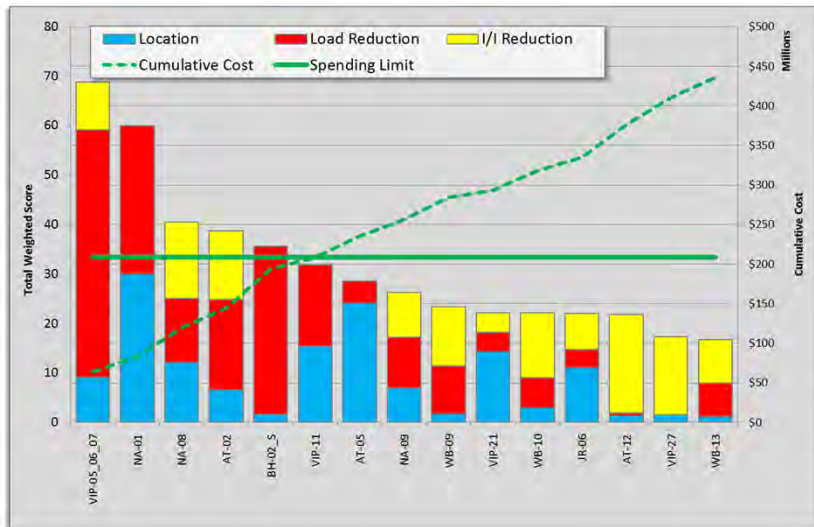
10



Evaluation Process



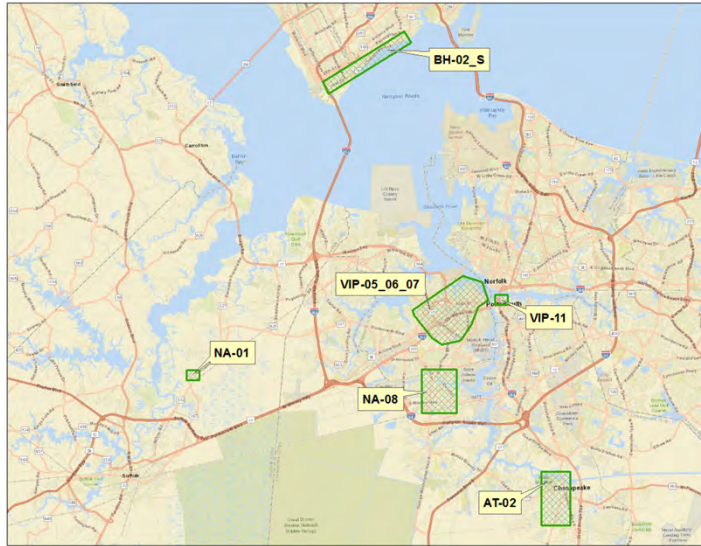
Brown and Caldwell 11



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High Priority Project Areas



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Project Elements

HPP Group ID	Project Type	STP	Locality Code	Element Name	Description
VIP-05_06_07	PS-LOCS	VIP	PORT	PORT-PS-002	PORT-PS-002 (Glasgow St) Capacity Improvement
	II Reduc	VIP	PORT	PORT-01 Comprehensive II Reduction Plan	Includes Catchment HSAID(s): PORT-001
	II Reduc	VIP	PORT	PORT-02 General II Reduction Plan	Includes Catchment HSAID(s): PORT-002-V001; PORT-002-V002; PORT-002-V003; PORT-002-V004; PORT-002-V005
	GM	VIP	PORT	Camden Ave. GM Improvement - I	Upgrade 1,670 LF of 12" GM to 15" GM
	GM	VIP	PORT	Camden Ave. GM Improvement - II	Upgrade 2,170 LF of 17" to 21" and 370 LF of 15" to 18"
	PS-HRSD	VIP	HRSD	Camden Ave. PS	SS-PS-146 Capacity Improvement
	II Reduc	VIP	PORT	PORT-04 General II Reduction Plan	Includes Catchment HSAID(s): PORT-H-146-G001
	II Reduc	VIP	PORT	PORT-04-LOP65-1 Data-Driven II Reduction Plan	Includes Catchment HSAID(s): PORT-H-146-G008
	II Reduc	VIP	PORT	PORT-04-LOP65-2 Data-Driven II Reduction Plan	Includes Catchment HSAID(s): PORT-H-146-G009
	II Reduc	VIP	PORT	PORT-04-LOP65-3 Data-Driven II Reduction Plan	Includes Catchment HSAID(s): PORT-H-146-G010
PS-LOCS	VIP	PORT	PORT-PS-008	PORT-PS-008 (Clifford St PS) Capacity Improvement	

HRSD reserves the right to achieve same performance through alternative solution sets.

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Project Elements

HPP Group ID	Project Type	STP	Locality Code	Element Name	Description
NA-01	PRS	NA	HRSD	Wilroy PRS	Install new PRS with 80 ft of assistance - New Location
	Storage	NA	HRSD	Wilroy Storage	Install new 2.9 MG storage tank
NA-08	FM	NA	HRSD	Jumper FM CHES-PS-041	150 LF of 16" Jumper FM along Canal Dr. to S. Military Hwy
	II Reduc	NA	CHES	CHES-016 Comprehensive II Reduction Plan	Includes Catchment HSAID(s): CHES-016
	II Reduc	NA	CHES	CHES-018 Comprehensive II Reduction Plan	Includes Catchment HSAID(s): CHES-018
	II Reduc	NA	CHES	CHES-227 Data-Driven II Reduction Plan	Includes Catchment HSAID(s): CHES-227

HRSD reserves the right to achieve same performance through alternative solution sets.

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Project Elements

HPP Group ID	Project Type	STP	Locality Code	Element Name	Description / II Reduction Plan Type
AT-02	FM	AT	CHES	CHES-PS-067 FM	Discharge force main downstream of CHES-PS067
	PS-LOCS	AT	CHES	CHES-PS-072	CHES-PS-072 Capacity Improvement
	II Reduc	AT	CHES	CHES-032 General II Reduction Plan	Includes Catchment HSAID(s): CHES-032
	II Reduc	AT	CHES	CHES-047 Data-Driven II Reduction Plan	Includes Catchment HSAID(s): CHES-047
	II Reduc	AT	CHES	CHES-067 Comprehensive II Reduction Plan	Includes Catchment HSAID(s): CHES-067
BH-02_S	II Reduc	AT	CHES	CHES-111 General II Reduction Plan	Includes Catchment HSAID(s): CHES-111
	GM	BH	HRSD	Claremont Ave GM Improvement - I	Upgrade 6,490 LF to 42" GM
	GM	BH	HRSD	Claremont Ave GM Improvement - II	Upgrade 2,180 LF of 24" GM to 36" GM
	Storage	BH	HRSD	14th St Storage	Install new 4.0 MG storage tank
	PS-HRSD	BH	HRSD	Claremont PS	NS-PS-208 Capacity Improvement
VIP-11	Siphon	BH	HRSD	Claremont Siphon - Chesapeake Ave	Upgrade inverted siphon
	Siphon	BH	HRSD	Claremont Siphon - Indian River	Upgrade inverted siphon
VIP-11	PRS	VIP	HRSD	State St PRS	Install new PRS with 35ft of assistance
	Storage	VIP	HRSD	State Street Storage	Install new 2.3 MG storage tank

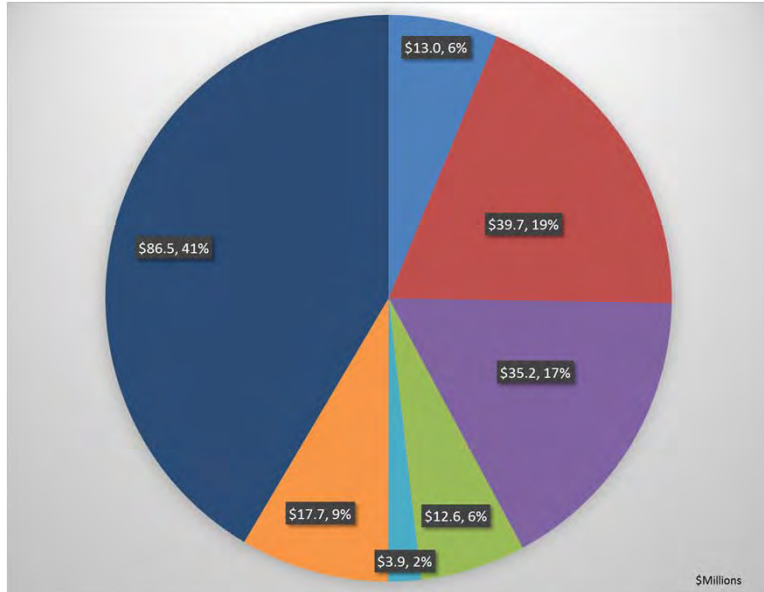
HRSD reserves the right to achieve same performance through alternative solution sets.

16



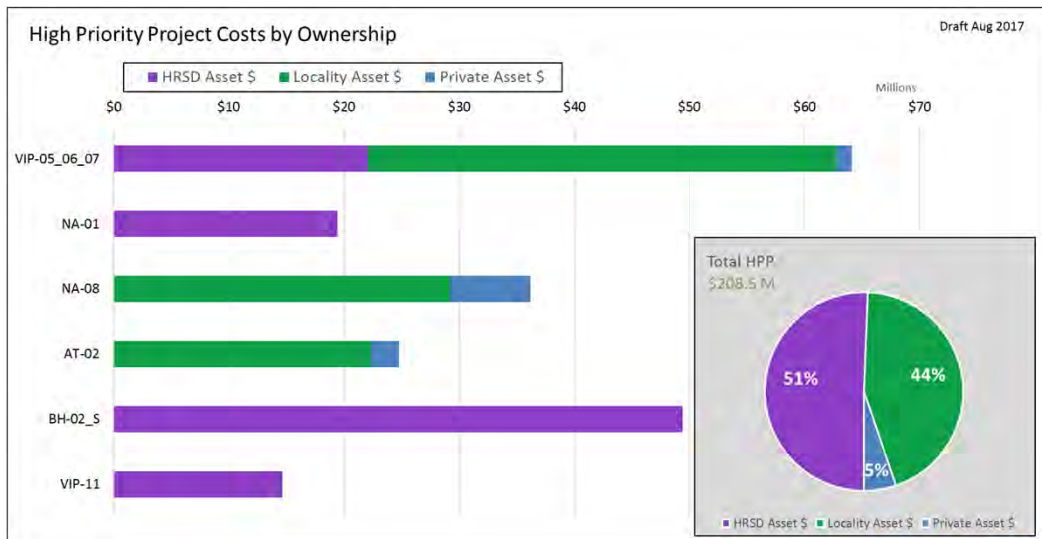
HPP Costs

By Asset Type



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High Priority Project Costs by Ownership



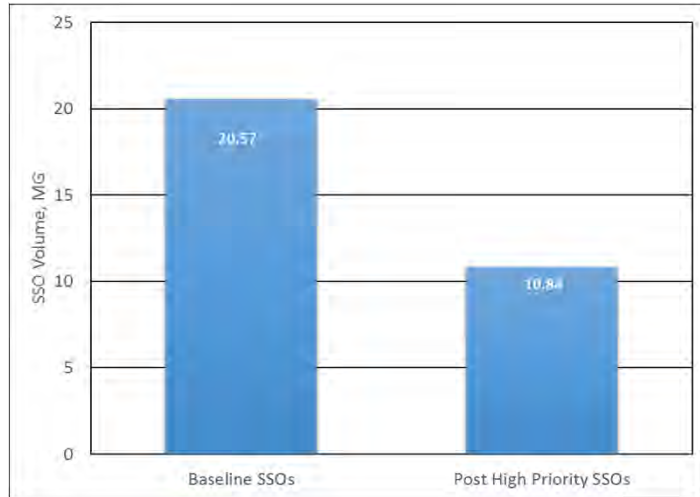
18



Potential High Priority Project Impact

Load reduction as compared to RHM baseline simulation

- Volume Eliminated 9.73MG
- 47% Reduction to modeled baseline



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Overall RWWMP Costs

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Regional Wet Weather Management Plan

- Pre RWWMP CD investment/obligation = \$700M
- RWWMP Overall (going forward) = \$1.816B*
 - Wet Weather Capacity Improvements = \$963.7M*
 - I/I Reduction Program = \$852.3M*
 - Scheduled 176 Projects*
 - 532 Elements grouped and sequenced w/ hydraulic considerations
- Implementation Timeframe
 - 2020-2030 High Priority (6 Projects)
 - 2030-2053 Remaining RWWMP Projects*

*Based on current assumptions, subject to change after 2028 Program Update and Optimization Assessment.

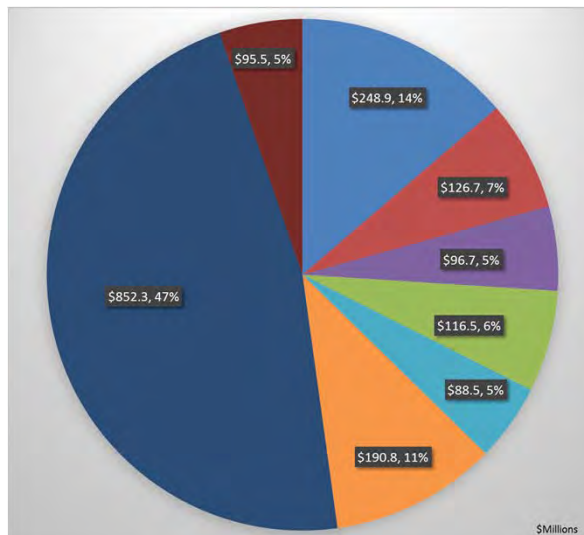


Total Program Costs

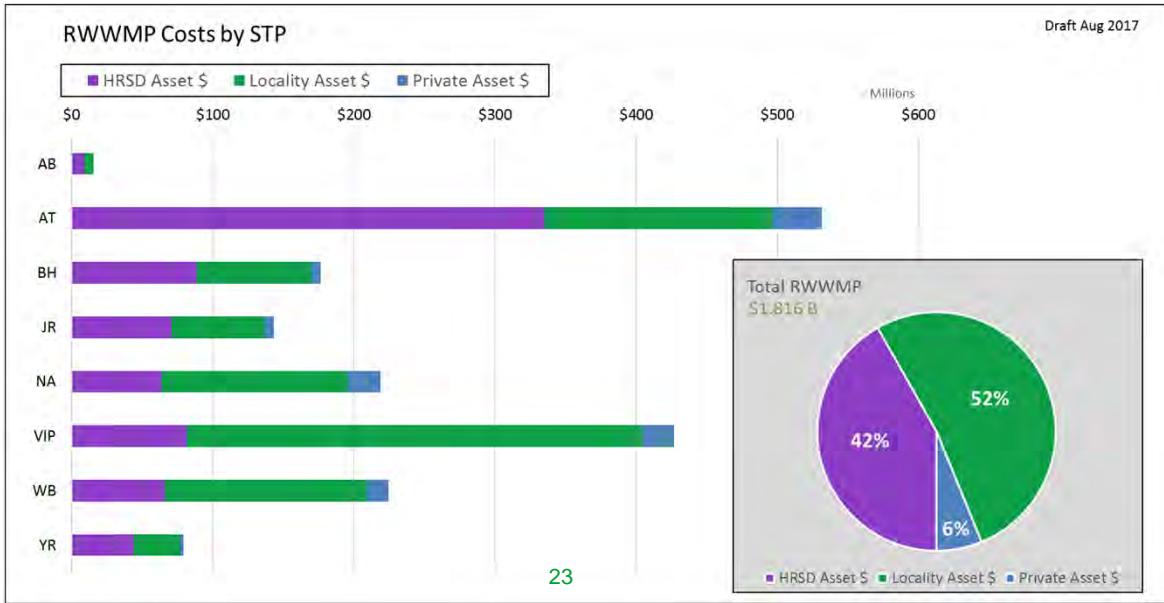
By Asset Type



Includes High Priority \$



RWWMP Costs by STP



Sequencing

Sequencing

- “What needs to come before what”
- Happens at STP level
- Follows hydraulically interconnected projects
- Attempting to keep hydraulics/pressures/SSOs the same or better
- Factoring in growth flows

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HRSD

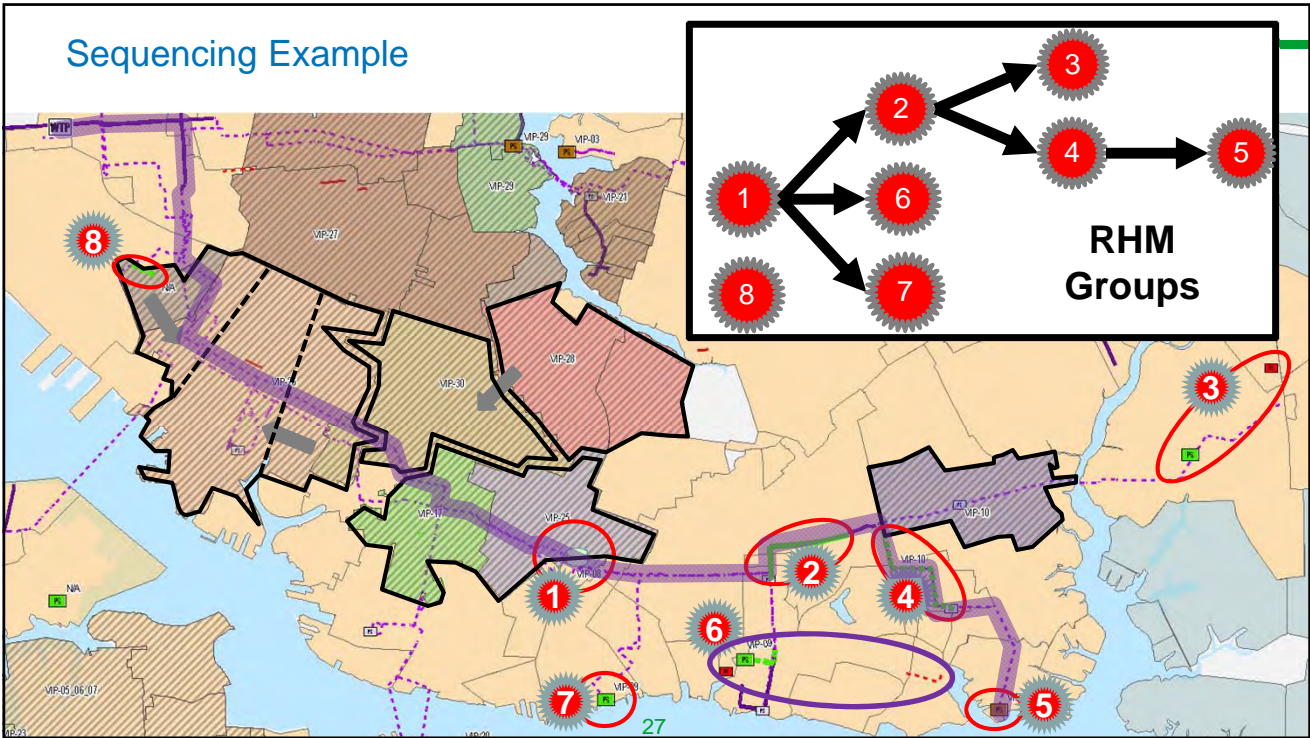
Sequencing

- RAP and HPP projects happen first
- Work from downstream to upstream
 - Big HRSD capacity projects first – Birdneck FM, VAB FM, STP improvements
- Perform I/I reduction prior to assoc. terminal PS improvement
- Tanks can be built at any time
- Pipeline improvements prior to PRS if possible
- LHM projects (hydraulically independent) can be done at any time to fill cash flow gaps

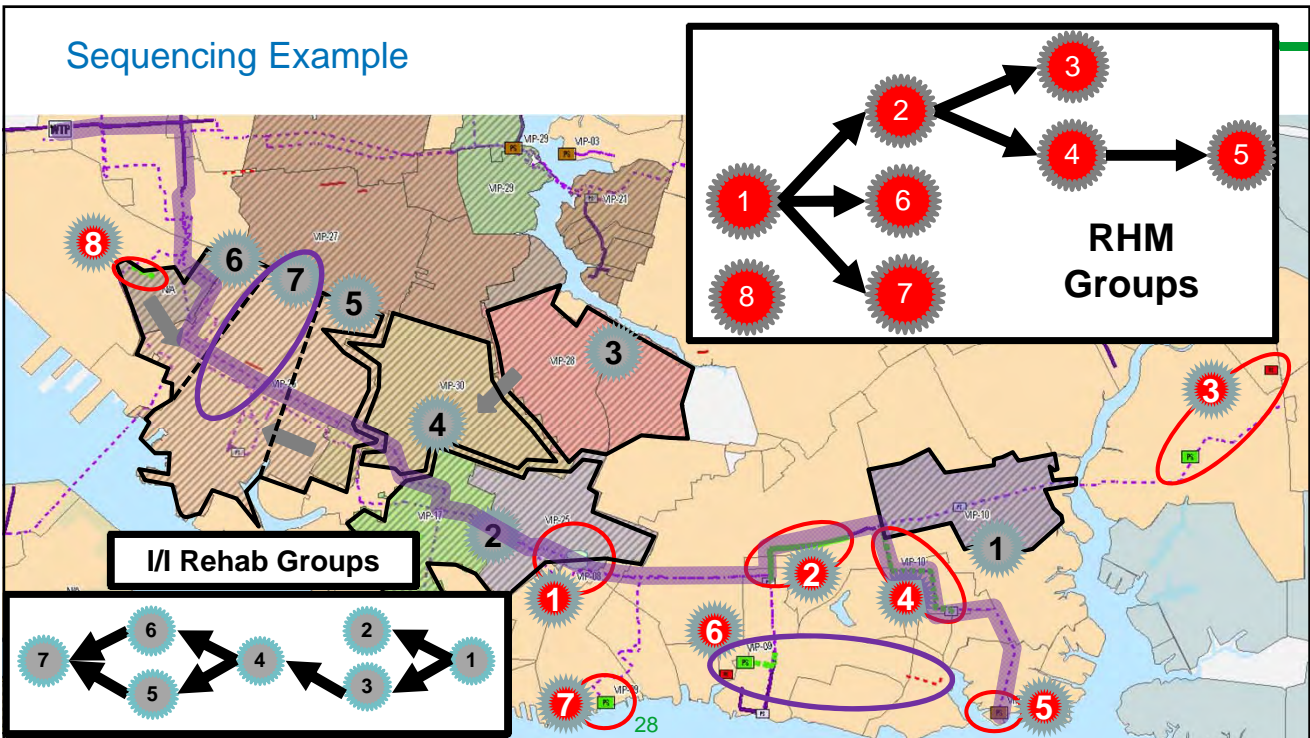
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HRSD

Sequencing Example



Sequencing Example



RWWMP Schedule

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Phasing of Complete Plan

Phase	Timeframe	Number of Projects	Number of Elements	Total RWWMP Project Costs (\$ M)
RWWMP High Priority	2020-2030	6	34	\$208.5
Program Update/Optimization Assessment	2028-2030	NA	NA	NA
RWWMP Phase 1	2030-2037	30	53	\$340.5
RWWMP Phase 2	2038-2045	73	241	\$676.9
RWWMP Phase 3	2046-2053	59	180	\$590.1
Total		176	532	\$1,816

30



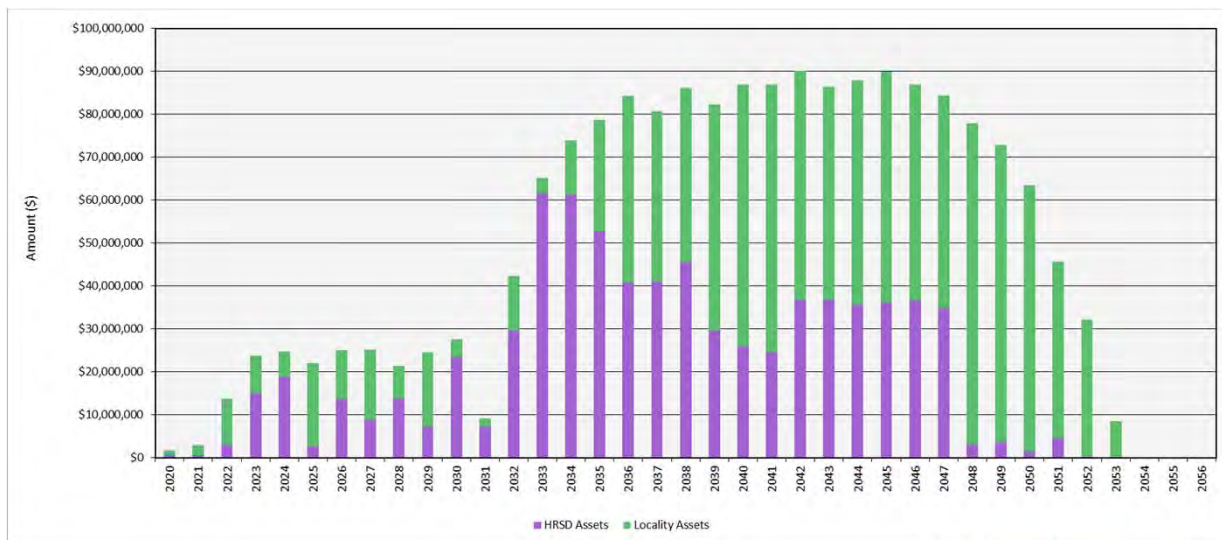
Schedule

- Minimum project duration set at 3 years
- High Priority projects spread between 2020-2030
- RWWMP Projects with full CIP/RAP overlap are shown with completion dates as indicated in FY18 CIP
- STP sequencing results were used to establish project dependencies
- Projects were moved within the implementation period to
 - Match projected cash flows
 - Distribute spending with consideration to project STPs and Asset Ownership
 - Complete work by end of calendar year 2053

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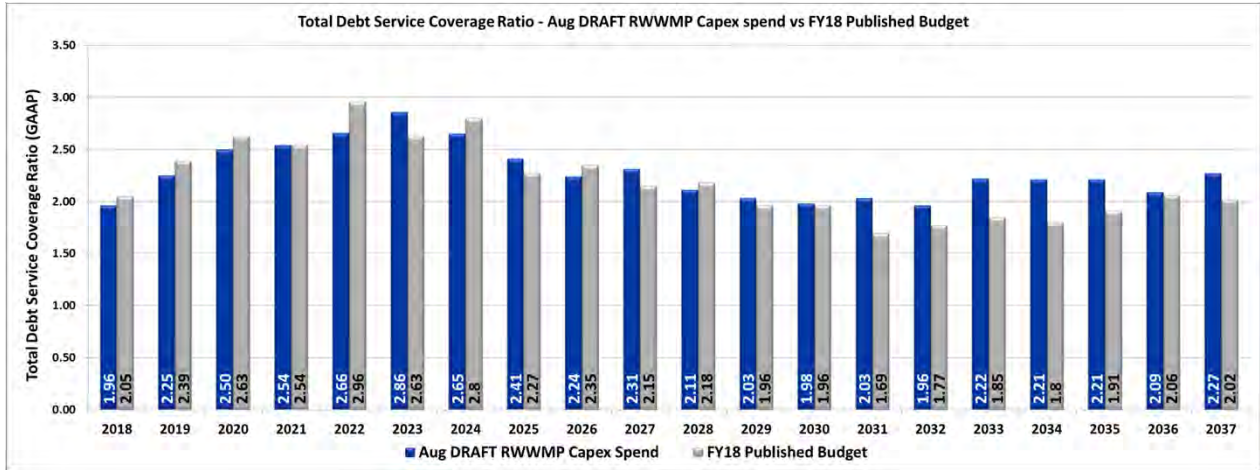
Program Cash Flow by Spending Type



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Latest Debt Service Coverage Ratio (DSCR) Projection



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Project Chart: HPP, Overlap RAP/CIP(1 of 2)

Projects ending by 2030

ID	Task Name	Project Name	Start	Finish	Cost (\$M)
Phasing: High Priority					
Project ID: 007 - VIP-B3-C102-I					
363	VIP-PRS-R100	State St PRS	Wed 1/1/20	Fri 3/1/24	\$14.66
364	VIP-ST-R101	State Street Storage	Wed 1/1/20	Fri 3/1/24	\$9.45
Project ID: 009 - NA-B1-C101-II					
236	NA-PRS-R103	Wilroy PRS	Sat 4/1/23	Tue 6/1/27	\$19.42
237	NA-ST-R101	Wilroy Storage	Sat 4/1/23	Tue 6/1/27	\$7.78
Project ID: 010 - NA-B2-C102-II					
273	CHES-016	CHES-016 Comprehensive II Reduction Plan	Mon 1/3/22	Wed 11/29/28	\$15.40
274	CHES-018	CHES-018 Comprehensive II Reduction Plan	Mon 1/3/22	Wed 11/29/28	\$18.06
275	CHES-227	CHES-227 Data-Driven II Reduction Plan	Mon 1/3/22	Wed 11/29/28	\$2.70
276	NA-GM-CHES-016	CHES-016 GM Improvement	Mon 1/3/22	Wed 11/29/28	\$0.00
277	NA-FM-R100	Jumper FM CHES-PS-041	Wed 12/5/12	Sun 11/5/19	\$0.00
Project ID: 011 - VIP-B2-C101-I					
327	PORT-01	PORT-01 Comprehensive II Reduction Plan	Wed 1/1/20	Sat 12/31/22	\$0.61
328	PORT-02	PORT-02 General II Reduction Plan	Wed 3/1/23	Sat 2/28/26	\$14.88
329	PORT-04	PORT-04 General II Reduction Plan	Wed 1/1/20	Sat 12/31/22	\$1.71
330	PORT-04-LOP65-1	PORT-04-LOP65-1 Data-Driven II Reduction Plan	Wed 1/1/20	Sat 12/31/22	\$3.60
331	PORT-04-LOP65-2	PORT-04-LOP65-2 Data-Driven II Reduction Plan	Wed 1/1/20	Sat 12/31/22	\$5.31
332	PORT-04-LOP65-3	PORT-04-LOP65-3 Data-Driven II Reduction Plan	Wed 1/1/20	Sat 12/31/22	\$0.49
333	VIP-GM-PORT-1	Camden Ave. GM Improvement - I	Thu 1/26/23	Sun 1/25/26	\$1.35
334	VIP-GM-PORT-2	Camden Ave. GM Improvement - II	Thu 12/1/22	Sun 11/30/25	\$1.72
335	VIP-PS-PORT-PS002	PORT-PS-002	Mon 5/9/27	Thu 5/2/30	\$4.72
336	VIP-PS-PORT-PS008	PORT-PS-008	Wed 9/1/21	Mon 9/2/24	\$7.64
337	VIP-PS-R110	Camden Ave. PS	Mon 1/3/22	Thu 1/2/25	\$22.08
Project ID: 012 - BH-01-C101-II					
109	BH-GM-R102-1	Claremont Ave GM Improvement - I	Wed 1/1/25	Mon 12/2/30	\$49.42
110	BH-GM-R102-2	Claremont Ave GM Improvement - II	Fri 1/1/27	Mon 12/2/30	\$8.89
111	BH-PS-R100	Claremont PS	Fri 1/1/27	Mon 12/2/30	\$13.10
112	BH-SPH-R101-1	Claremont Siphon - Chesapeake Ave and Robinson Rd	Fri 1/1/27	Mon 12/2/30	\$3.13
113	BH-SPH-R101-2	Claremont Siphon - Indian River	Fri 1/1/27	Mon 12/2/30	\$3.13
114	BH-ST-R100	14th St Storage	Wed 1/1/25	Thu 11/30/28	\$18.62
Project ID: 013 - AT-B6-C101-II					
85	AT-FM-CHES-1	CHES-PS-067 FM	Wed 1/1/25	Mon 12/16/30	\$0.80
86	AT-GM-CHES-067-1	CHES-067 GM Improvement - I	Wed 1/1/25	Mon 12/16/30	\$0.00
87	AT-GM-CHES-067-2	CHES-067 GM Improvement - II	Wed 1/1/25	Mon 12/16/30	\$0.00
88	AT-PS-CHES-PS072	CHES-PS-072	Wed 1/1/25	Mon 12/16/30	\$0.22
89	CHES-032	CHES-032 General II Reduction Plan	Wed 1/1/25	Mon 12/16/30	\$3.45
90	CHES-047	CHES-047 Data-Driven II Reduction Plan	Wed 1/1/25	Mon 12/16/30	\$2.65
91	CHES-067	CHES-067 Comprehensive II Reduction Plan	Wed 1/1/25	Mon 12/16/30	\$12.82
92	CHES-111	CHES-111 General II Reduction Plan	Wed 1/1/25	Mon 12/16/30	\$4.83

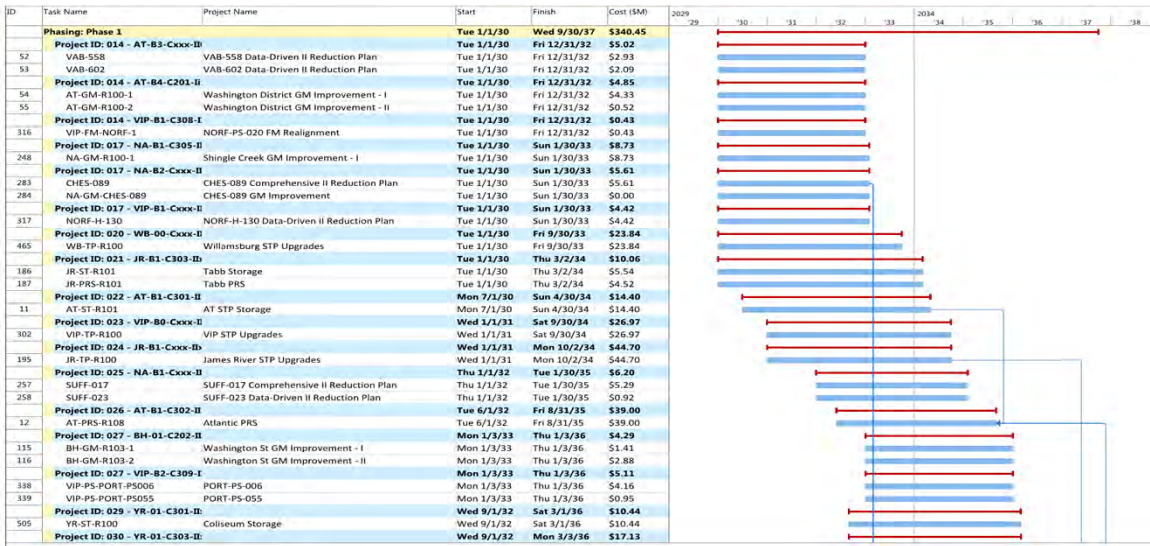
HRSD reserves the right to achieve same performance through alternative solution sets.

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Project Chart: RWWMP Phase 1 (1 of 2)

Project sending by 2037



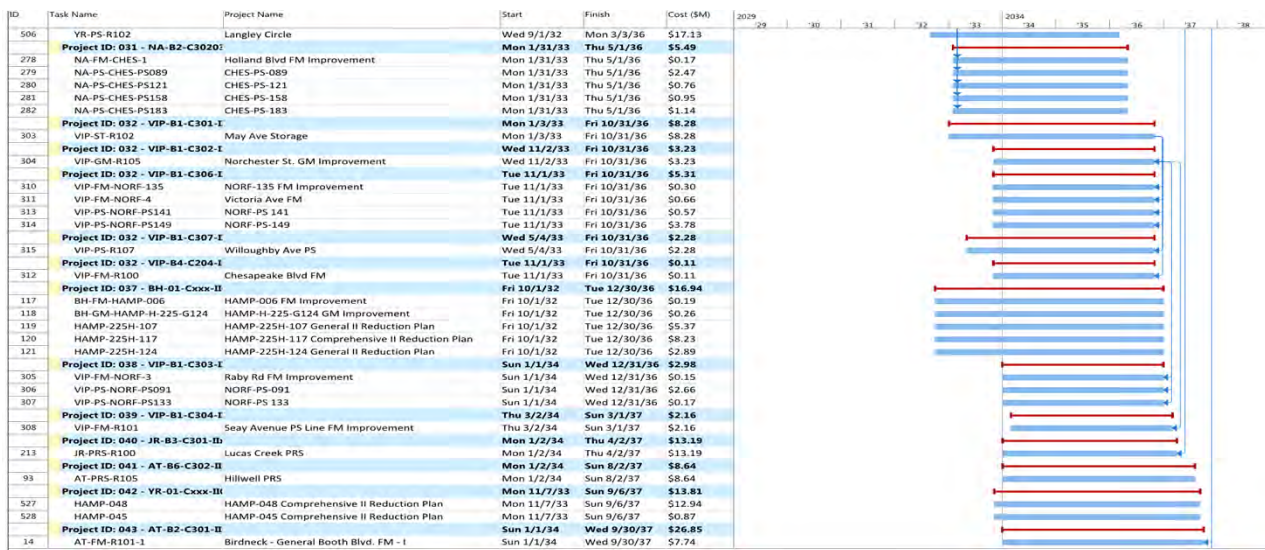
HRSD reserves the right to achieve same performance through alternative solution sets.

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Project Chart: RWWMP Phase 1 (2 of 2)

Projects ending by 2037



HRSD reserves the right to achieve same performance through alternative solution sets.

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Affordability Review

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Data Updates

- Optimized RWWMP Cost Estimates
- Updated HRSD financial information
- Revised Locality information per submittals and public documents
- New Regional Income and Household Data
- RWWMP annual spending restructured to match schedule estimates

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Affordability - Major Cost Items

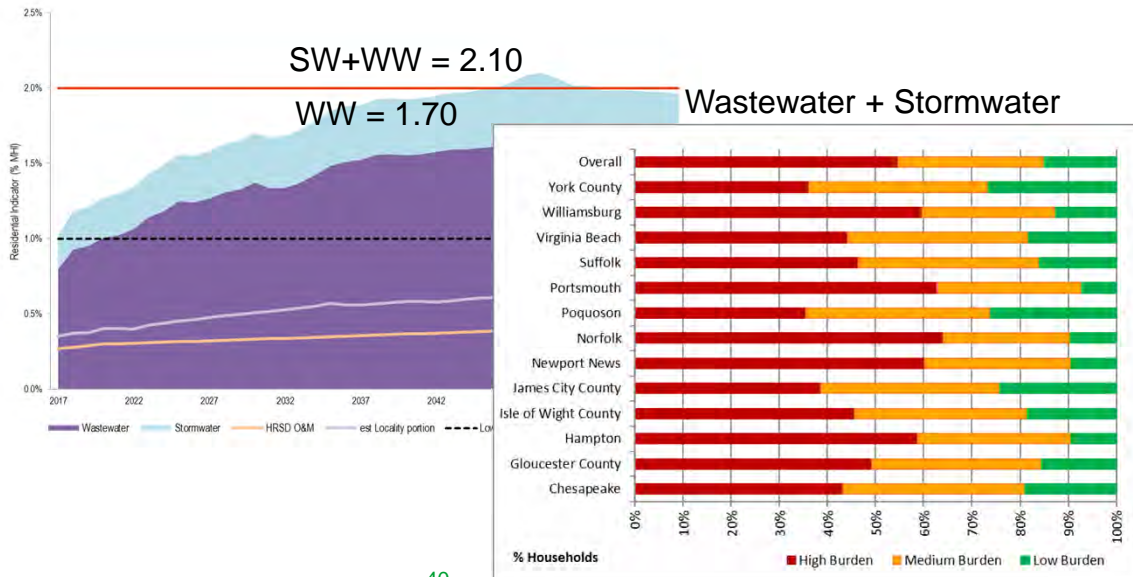
Description	2017 Amounts	Duration	AAR Amounts Integrated Plan
High Priority RWWMP	\$0.2 B	2020-2030	\$0.2 B
RWWMP: Locality Rehab and Capacity Improvements	\$1.1 B	2030-2053	\$1.4 B
RWWMP: HRSD Capacity Improvements	\$0.8 B	2030-2053	\$0.8 B
SWIFT	\$1.1 B	2017-2031	\$1.1 B
HRSD Existing Debt Service	\$1.2 B	2017-2047	\$1.1 B
HRSD Other CapEx	\$3.8 B	2017-2053	\$3.4 B
Locality SW Costs	\$6.9 B	2017-2053	\$6.5 B
HRSD O&M	\$8.7 B	2017-2053	\$8.8 B
Locality WW Costs	\$10.7 B	2017-2053	\$10.1 B
TOTAL	\$34.5 B		\$33.4 B

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High Burden Preliminary Impact

Peak Residential Indicator Year: 2049



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RWWMP Comparison to AAR Results

	Regional MHI Source	Weighted MHI, \$	Adjusted MHI, \$	Peak HHL D Cost, \$/yr	Peak Year	Peak MHI Impact, %	HHLDS >2% HHL D Income *
AAR	2014 ACS 5yr	\$61,073 (2014\$)	\$62,940 (adj to 2016)	\$1,184	2035	1.88	46
Draft RWWMP*	2015 ACS 5yr	\$59,883 (2015\$)	\$61,908 (adj to 2017)	\$1,302	2049	2.10	55

* These households exceed US EPA's "high" burden threshold.

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Income Quintiles

Quintile	Average Income	Upper Limit	Peak RI, Integrated Plan/RWWMP
Lowest	\$14,183	\$26,219	9.2%
Second	\$36,722	\$47,510	3.5%
Third	\$59,118	\$72,168	2.2%
Fourth	\$89,292	\$109,998	1.5%
Highest	\$176,797	N/A	0.7%
Top 5 Percent	\$185,056	N/A	0.7%

Quintile brackets from ACS 5-Year 2015; MSA: Virginia Beach-Norfolk-Newport News, VA-NC Metro Area (part); Virginia

\$1,302 Peak CPH WW+SW

@ Regional MHI: 2.10%

@ Lowest Quintile: 9.18%

Note: One quintile contains ~120,000 households

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Schedule

Activity	Schedule
Brief Commission	August 22, 2017
Brief Capacity Team	August 28, 2017
Brief DUC	September 6, 2017
Submit Integrated Plan	September 29, 2017

HRSD COMMISSION MEETING MINUTES
August 22, 2017

ATTACHMENT #8

AGENDA ITEM 21. – 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](#)



August 15, 2017

Re: General Manager's Report

Dear Commissioners:

The new fiscal year arrived last month without fanfare. It is truly hard to believe that we are now in fiscal year 2018. Two significant dates this fiscal year are October 1, 2017 and February 23, 2018. October 1, 2017 is the due date for the Regional Wet Weather Management Plan (RWWMP) as required by our Consent Decree with US EPA and Virginia DEQ. Staff will present the draft plan to the Commission at the August meeting for review and approval.

February 23, 2018 is the regulatory compliance deadline for HRSD to complete all of the interim system improvement projects included in the Consent Decree. These projects were identified during the initial Consent Decree negotiations and the list has been modified twice in conjunction with negotiations for amendments. The projects total over \$400 million. We are on track to meet this obligation with the possible exception of two projects which we are monitoring closely. I will provide additional updates as we get closer to this compliance date.

While the Consent Decree has had and will continue to have significant impact on HRSD operations and investments for years to come, regular operations continue each day. The highlights of July's activities are detailed in the attached monthly reports.

1. **Treatment Compliance and System Operations:** All plants, with the exception of Urbanna met all VPDES and air permit requirements during the month. Urbanna experienced an exceedance in the weekly Total Suspended Solids (TSS) concentration. The South Shore interceptor system experienced a capacity-related overflow during an intense rain event in Suffolk on July 15. Details of both are included in the Operations Director's report.

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Commissioners: Frederick N. Elofson, CPA, Chair • Maurice P. Lynch, PhD, Vice-Chair • Vishnu K. Lakdawala, PhD
Michael E. Glenn • Arthur C. Bredemeyer • Stephen C. Rodriguez • Willie Levenston, Jr. • Ann W. Templeman
www.hrsd.com

2. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
 - a. A meeting to discuss options for handling Surry flow in the future
 - b. A meeting to discuss long-term strategy for addressing space issues in the Water Quality Department
 - c. A meeting to review signage for the SWIFT Research Center
 - d. An update on the SCADA project status
 - e. A review of the scope and concepts for the education components of the SWIFT Research Center
 - f. Multiple calls to review the draft recommendations of the Eastern Virginia Groundwater Area Committee
 - g. Two SWIFT updates for employees
 - h. Several meetings and calls in preparation for the July 20 oversight and monitoring workshop
 - i. Calls and meetings to review intellectual property commercialization options for IP jointly owned by HRSD and DC Water
 - j. One new employee orientation
 - k. One breakfast with employees celebrating service anniversaries

3. **External Communications:** I participated in the following meetings/activities:
 - a. A briefing for the Elizabeth River Partnership board of directors updating them on SWIFT
 - b. A meeting with King William County officials and VDOT to identify challenges with placement of sewer lines in new development in King William County
 - c. A meeting with Chesapeake officials to discuss service area expansion and timing
 - d. A luncheon visit with the President of the Water Environment Federation
 - e. Several calls to review nominations for the Utility of the Future Today recognition program sponsored by WEF, WE&RF, NACWA, Water Reuse and USEPA
 - f. Hosted the SWIFT Oversight and Monitoring Workshop
 - g. Presented to the Newport News Rotary Club and the Northern Suffolk Rotary Club

- h. Met with Chesapeake City Council regarding the nutrient trading agreement
- i. Met with the York County Board of Supervisors regarding the nutrient trading agreement
- j. Attended the NACWA Summer Conference and quarterly board meeting

We will be recessing and reconvening at the Double Tree Hotel to hold a Poverty Simulation Workshop at the end of the August Commission meeting. We have over 60 HRSD employees participating and a few representatives from our locality billing partners. The goal of the simulation is for the participants to get a better appreciation of the challenges faced by those struggling financially in our community. This appreciation will help inform future Commission discussions on affordability and the role HRSD can play in ensuring services are available for everyone in Hampton Roads.

To enable full participation, we are closing our call center for the day on August 22, 2017. Severance activities will be put on hold ahead of that date to minimize the need to talk directly to an HRSD representative on that day. The staff will use the morning hours (during the Commission meeting) to hold some team building activities that cannot typically be done during regular hours due to staffing demands of the call center.

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, August 22, 2017 in Virginia Beach.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager
FROM: Director of Communications
SUBJECT: Monthly Report for July 2017
DATE: August 9, 2017

A. Publicity and Promotion

1. “Good news, bad news,” July 4, 2017 | Suffolk News Herald (editorial)
<http://www.suffolknewsherald.com/2017/07/04/good-news-bad-news/>
2. “Virginia Water Plant To Be a Multipurpose Unit” | July 6, 2017 | ENR (Engineering News-Record)
<http://www.enr.com/articles/42286-virginia-water-plant-to-be-a-multipurpose-unit>
3. “Can sewage save sinking coastal VA?” | July 6, 2017 | E&E News – ClimateWire (www.eenews.net)
<https://www.eenews.net/climatewire/stories/1060056970/print>

B. Social Media and Online Engagement

1. Facebook Reach: 5,775
2. Twitter: 8,060 impressions
3. SWIFT website visits: 450
4. LinkedIn: 3,470 impressions - this is a significant increase over last month's 816 impressions as we engage more within this platform.
5. Construction Project Page Hits: 7,511

C. News Releases, Advisories and Project Notices

1. [UPDATE: Sanitary Sewer Maintenance Work on Independence Boulevard to be Rescheduled](#)
2. Project Notices:
 - a. [Kecoughtan Road Sanitary Sewer Pipeline Replacement Construction](#) (Hampton)

- b. [Bridge Street Pump Station](#) (Hampton)
- c. [Elm Avenue Sanitary Sewer Pipeline Replacement](#) (Portsmouth)
- d. Ingleside Road Pump Station Incident (Norfolk)

D. Special Projects and Highlights

1. The Director of Communications attended the NACWA Utility Leadership conference to gain a greater understanding of the industry and to connect with industry leaders and develop working relationships for future collaboration. Following the leadership conference, NACWA held their first Strategic Communications: H2O workshops. Workshops included media relations strategies, web and social media best practices and panel presentations featuring crisis communications case studies.
2. The Director of Communications and staff participated in the SWIFT Pilot tour given ahead of the Potomac Aquifer Monitoring workshop. Staff also attended the workshop dinner and participated in the workshop as observers.

E. Internal Communications

1. The Director of Communications and staff participated in the SWIFT educational development workshop to conceptualize and develop interactive educational tools and displays for the SWIFT Research Center.
2. Director coordinated with customer care to develop a customer communications plan and strategy for Surry County and the City of Surry as they join the HRSD service and billing area.
3. Communications Staff provided voiceover for the Enterprise Data System training video.
4. Communications staff developed and produced SWIFT outreach fact sheet, "SWIFT and Industries: Working together for our region's economy and environment."
5. Staff participated in the Strengths Finder workshop.
6. Director and staff participated in several development meetings for the "Environment" and "People" areas of the HRSD Strategic Plan, which is under review and being updated.

F. Metrics

1. Educational and Outreach Activities: 5

- a. NASA/Langley Research Center Child Development Center (Hampton) – What Not to Flush (3 presentations, 15 students each) 7/5
- b. STARBASE Victory Envirobases summer camp (2) – SWIFT, Water Quality and Amazing Aquifers (30 students) – 7/10 & 7/11
- c. Fort Monroe (Hampton) Campfire Talks – SWIFT (25 attendees) – 7/14
- d. Ingleside Recreation Center (Norfolk) – HRSD & Water Quality (50 students) 7/17
- e. Lynnhaven River NOW (Virginia Beach) – Growing a Green Club (20 attendees) – 7/26

2. Number of Community Partners: 6

- a. Fort Monroe
- b. NASA/Langley Research Center
- c. Lynnhaven River NOW
- d. Elizabeth River Project
- e. City of Virginia Beach
- f. Portsmouth Public Schools

3. Additional Activities Coordinated by Department: 0

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Total Training Hours per Full Time Employee (2) - Current Month	Hours / #FTE	3.25
M-1.4b	Total Training Hours per Full Time Employee (2) - Cumulative Fiscal Year-to-Date	Hours / #FTE	3.25
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	6

Leila Rice
Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for July 2017

DATE: August 8, 2017

A. General

1. Capital Improvement Program (CIP) spending for the final month of Fiscal Year 2017 was \$10.2 million, while the planned expenditure for the month was estimated at \$7.9 million. CIP expenditures for FY 2017 were \$106.8 million, which was 82 percent of planned spending for the year. Water Quality Improvement Fund (WQIF) grant reimbursements were \$10.66 million in FY 2017 and are estimated at \$4.2 million in FY 2018 as the work at the Virginia Initiative Plant is completed. CIP expenditures are projected to be \$140 million in FY 2018. Expenditures are projected to average \$11.7 million per month to complete this volume of work. While efforts associated with the nutrient reduction program continue, work associated with improvements to the interceptor sewer system will increase in FY 2018. Numerous interceptor rehabilitation and/or replacement projects and a number of pump station projects will be the focus of work over the coming fiscal year. For example, there will be sixteen projects that will be under design in FY 2018 related to the closure of the Chesapeake-Elizabeth Treatment Plant. All of these projects involve improvements to the interceptor sewer system needed to divert flow to the Atlantic Treatment Plant. The interceptor sewer system projects are typically smaller in scope and cost than treatment plant projects but often have larger direct impacts to the public during the construction efforts. Efforts associated with the SWIFT Program are relatively small at this time but as the effort grows this will become a larger overall part of the CIP. By FY 2023, the SWIFT Program will expend over \$100 million and this level of spending will continue for a number of years beyond FY 2023.
2. Four Virginia Revolving Loan Fund (VRLF) applications were submitted in July. These applications included the following CIP projects:
 - Treatment Plant Dewatering Replacement Phase I
 - Army Base Treatment Plant Biosolids Loading Facility
 - Orcutt Avenue and Mercury Boulevard Gravity Sewer Improvements
 - King William Treatment Plant Improvements

These projects have a total cost of approximately \$12.5 million. Due to the reduced interest rate available through this program, there is the potential for significant savings to HRSD over the life of the loan payback period. HRSD should be notified by the Virginia Department of Environmental Quality (VDEQ) in September if any or all of the projects are accepted.

3. The Commonwealth of Virginia has recently made revisions to the Virginia Public Procurement Act. A number of these changes impact how organizations like HRSD are able to use the Construction Management project delivery method. Some of the more significant changes include:
 - Required advertisement of projects thru the State's eVA website.
 - Prior construction management experience cannot be a mandatory requirement for consideration of proposals.
 - Construction management contracts are limited to a ten percent self-performance maximum.
 - Price shall be a critical basis for award of a contract. The Department of General Services defines the "critical basis" to be at least 50 percent of the weighted scoring criteria.

These new requirements will be added to HRSD's Procurement Policy and submitted to the Commission for approval at the September meeting.

B. Asset Management Division

1. The Asset Management Implementation project is underway. This is a three-year, \$1.7 million effort to enhance the planning process for repair and replacement of capital assets using a risk-based and data-driven methodology. A kick-off meeting was held in July that addressed the project scope, schedule, project plan and deliverables.
2. A meeting was held with the Operations Department to review the need and benefits of failure codes. Failure codes are a key component in understanding the performance of assets by trending how they typically fail. By analyzing the history of failures, we can determine the best performing products for the various systems and when to expect specific types of failures to occur in the future. Failure codes are also critical to optimize the Preventative Maintenance Program by adjusting frequencies from lessons learned using historical data.

C. North Shore and South Shore Design & Construction Divisions

1. Construction efforts continue on the Sustainable Water Recycling Phase 3 (SWIFT Research Center) project. This project is being delivered using a Design-Build method that allows for a fast-track schedule. Final design efforts are underway while the construction efforts continue. Shop drawing reviews are underway for long-delivery equipment items. Most of the concrete foundation has been placed. Placement of the steel frame for the new building has begun. Coordination efforts are underway with Emerson for the automation and controls package. A concept plan for the Research Center's interpretive learning material is under development. The project team is working closely to address issues of concern and planning for each of the upcoming phases of construction.
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 2017. The versatile bioreactor is now in service and the plant is feeding methanol. Excellent total nitrogen removal has been achieved with concentrations averaging slightly below 6.0 mg/l for the last two months. 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. Staff continues to lead an interdepartmental team investigating sources of saltwater entering the interceptor sewer system. The team includes members from the Engineering, Operations and Water Quality Departments. A conductivity sensor will be installed in the coming month at the new 33rd Street Pump Station located in Newport News. This location was chosen to better understand the possibility of saltwater entering the system from Newport News Shipbuilding.

2. Staff is assisting the Design and Construction Division to manage some of the recently approved projects needed as part of the Chesapeake-Elizabeth Treatment Plant closure. Hydraulic Analysis Managers will assist with six different CIP projects. Staff's detailed knowledge of the hydraulics of the HRSD interceptor system is very valuable as the design for each of these projects begins.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 2
 - a. Staff made a presentation on SWIFT to the AWWA/VWEA Joint Information Technology Committee on July 20.
 - b. Staff made a presentation on SWIFT to the Virginia Beach Bayfront Advisory Committee on July 20.
2. Number of Community Partners: 2
 - a. AWWA/VWEA Joint Information Technology Committee
 - b. Virginia Beach Bayfront Advisory Committee
3. Number of Research Partners: 0

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Total Training Hours per Full Time Employee (39) - Current Month	Hours / #FTE	0.72
M-1.4b	Total Training Hours per Full Time Employee (39) - Cumulative Fiscal Year-to-Date	Hours / #FTE	0.72
M-5.2	Educational and Outreach Events	Number	2
M-5.3	Number of Community Partners	Number	2
M-5.4	Number of Research Partners	Number	0

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2017
M-2.1	CIP Delivery – Budget	Percentage	156
M-2.2	CIP Delivery – Schedule	Percentage	173

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for July 2017
DATE: August 9, 2017

A. General

1. During July, seven customers contacted Customer Care Management to share their experience while contacting HRSD for assistance. Customer Care Representatives Terrel Austin, Rob Bittler, Kathy Cleek, Sarah Cuffee, Ronnielle Hill, Lavonda Johnson and Carolyn Porter were recognized as providing exceptional service. The customers described these team members as above and beyond, exceptional, professional, caring, patient, encouraging, helpful and informative. Congratulations to our entire Call Center team and thank you for a job well done!
2. Over the last couple of months, staff has been working on updating components of our monthly report. With July being the start of a new fiscal year, it seemed appropriate to roll out the changes this month. The theme for the changes is to use the appropriate data visualizations to provide insight into a particular topic area. One of the significant Procurement report changes is the development of a qualitative framework for assessing workload and turnaround times. Using dollar values does not accurately capture the complexity of procurement timeframes. This new methodology will provide better insight into internal performance while also defining expectations for our customers. In Customer Care, there is more trend data provided. One of the things we are interested in is how the new billing and payments vendors will impact e-bill and online payment adoption rates. In addition, we will be adding customer comments, as shown above, to highlight customer feedback on our Customer Care staff since they are the primary touch point for our customers. There were only minor changes in the Accounting reports. The line item for Interest Earned previously included both interest earned and market value adjustments, but these items are shown separately in the revised report. The unrestricted Debt Service Reserve Fund will be reduced annually in July to reflect the reduced funding requirement as our senior debt is paid off.
3. The closing for the Atlantic and Ferguson Virginia Clean Water Revolving Loan Fund (VCWRLF) projects was delayed to August 10th, but the Virginia Resources Authority allowed us to hold the July rate as the August rate was 0.05 percent higher.
4. Staff decided that our next new money bond sale to fund capital projects will be done as our first competitive deal as opposed to a negotiated one. In a negotiated deal, underwriters are hired to market and sell our bonds. In a competitive deal, underwriters bid on our bonds similar to eBay and the lowest

interest rate wins. Typically, issuers will do a competitive deal if their name is widely known in the market and their deal is straightforward. Over the past 10-years HRSD has been in the market 6 times and we have established a reputation as a strong credit. Due to the regionalization of the wet weather work requiring our investment in assets we do not own, our plan of finance has been fairly complex with the closure of our senior trust and transition to all subordinate debt for the foreseeable future. Those complexities are now well known and understood and our Financial Advisors believe a competitive deal will get us the best rates at this time.

5. Revenues are exceeding expenses to start the new fiscal year. Water consumption was higher than expected. July is typically the highest consumption month of the year. Municipal Assistance is higher than budget, but this is due to uneven cash flows as projects are completed. Facility Charges are higher with the summer building season and the strong regional economy. Expenses are generally in-line with budget.

B. Interim Financial Report

1. Operating Budget for the Period Ended July 31, 2017

	Amended Budget	Current YTD	Current YTD as % of Budget (8% Budget to Date)	Prior YTD as % of Prior Year Budget
Wastewater	\$ 265,662,693	\$ 23,342,753	9%	8%
Surcharge	1,900,000	144,789	8%	12%
Indirect Discharge	2,500,000	252,407	10%	9%
Norfolk Sludge	90,000	6,150	7%	5%
Fees	2,935,000	176,328	6%	8%
Municipal Assistance	700,000	126,716	18%	2%
Miscellaneous	720,000	29,259	4%	1%
Total Operating Revenue	274,507,693	24,078,402	9%	8%
Non Operating Revenues				
Facility Charge	6,000,000	838,250	14%	15%
Interest Income	1,800,000	224,343	12%	0%
Build America Bond Subsidy	2,400,000	-	0%	0%
Other	845,000	33,291	4%	4%
Total Non Operating Revenue	11,045,000	1,095,884	10%	9%
Total Revenues	\$ 285,552,693	\$ 25,174,286	9%	8%
Operating Expenses				
Personal Services	\$ 53,773,327	\$ 4,133,719	8%	8%
Fringe Benefits	24,691,453	2,004,259	8%	7%
Materials & Supplies	7,088,092	392,585	6%	5%
Transportation	1,419,385	87,135	6%	3%
Utilities	11,947,481	664,648	6%	5%
Chemical Purchases	10,324,400	514,745	5%	4%
Contractual Services	31,094,210	2,708,881	9%	9%
Major Repairs	7,831,219	225,806	3%	3%
Capital Assets	814,100	-	0%	0%
Miscellaneous Expense	2,339,298	160,536	7%	3%
Total Operating Expenses	151,322,965	10,892,314	7%	7%
Debt Service and Transfers				
Debt Service	59,949,120	4,855,549	8%	8%
Cost of Issuance Bonds	900,000	-	0%	0%
Transfer to CIP	58,802,000	4,900,167	8%	8%
Transfer to General Reserve	14,318,608	1,193,217	8%	0%
Transfer to Risk management	260,000	21,668	8%	8%
Total Debt Service and Transfers	134,229,728	10,970,601	8%	8%
Total Expenses and Transfers	\$ 285,552,693	\$ 21,862,915	8%	7%

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 July 31, 2017

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2017	\$ 169,127,098	\$ 3,000,520	\$ 30,760,330	\$ 37,452,225
Add: Current Year Sources of Funds				
Cash Receipts	29,471,074			
Capital Grants				-
Line of Credit				-
Bond Proceeds (includes interest)				88,899
Transfers In	494,006	21,668		4,900,167
Sources of Funds	<u>29,965,080</u>	<u>21,668</u>	<u>-</u>	<u>4,989,066</u>
Total Funds Available	<u>\$ 199,092,178</u>	<u>\$ 3,022,188</u>	<u>\$ 30,760,330</u>	<u>\$ 42,441,291</u>
Deduct: Current Year Uses of Funds				
Cash Disbursements	20,697,027			10,106,400
Transfers Out	4,921,835		494,006	-
Uses of Funds	<u>25,618,862</u>	<u>-</u>	<u>494,006</u>	<u>10,106,400</u>
End of Period - July 31, 2017	<u>\$ 173,473,316</u>	<u>\$ 3,022,188</u>	<u>\$ 30,266,324</u>	<u>\$ 32,334,891</u>

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

Classification/ Treatment Service Area	Expenditures		Year to Date		Total Expenditures	Outstanding Encumbrances	Available Balance
	Budget	prior to June 30, 2017	FY 2018 Expenditures				
Administration	\$ 42,661,073	\$ 39,190,854	\$ -	\$ 39,190,854	\$ 1,240,375	\$ 2,229,844	
Army Base	156,834,000	119,868,900	50,847	119,919,747	5,107,303	31,806,950	
Atlantic	116,079,479	41,761,333	-	41,761,333	62,364,032	11,954,114	
Boat Harbor	86,813,683	41,705,426	-	41,705,426	8,120,074	36,988,183	
Ches-Eliz	136,647,317	6,752,397	111,320	6,863,717	2,635,315	127,148,285	
James River	75,114,256	50,348,019	-	50,348,019	3,586,189	21,180,048	
Middle Peninsula	38,036,619	6,174,832	57,480	6,232,312	4,237,903	27,566,404	
Nansemond	76,560,570	33,514,465	95,255	33,609,720	5,464,875	37,485,975	
Surry	2,686,000	-	-	-	-	2,686,000	
VIP	271,381,603	225,845,835	(2,658)	225,843,177	20,112,713	25,425,713	
Williamsburg	11,396,383	8,607,181	790	8,607,971	896,757	1,891,655	
York River	45,160,886	38,699,490	1,036	38,700,526	1,688,767	4,771,593	
General	240,112,369	164,501,764	34,610	164,536,374	50,470,451	25,105,544	
	\$ 1,299,484,238	\$ 776,970,496	\$ 348,680	\$ 777,319,176	\$ 165,924,754	\$ 356,240,308	

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal June 2017	Principal Payments	Net Refunding	Principal July 2017	Interest Payments
Fixed Rate					
Senior	\$ 429,165	\$ -	\$ -	\$ 429,165	\$ 4,769
Subordinate	300,347	42	-	300,305	10
Variable Rate					
Subordinate	50,000	-	-	50,000	35
Line of Credit	-	-	-	-	-
Total	\$ 779,512	\$ 42	\$ -	\$ 779,470	\$ 4,814

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 08/04/17

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	0.92%	0.93%	0.01%
Average	0.21%	0.21%	0.00%
Minimum	0.01%	0.01%	0.00%
As of 08/04/17	0.79%	0.77%	-0.02%

* Since October 20, 2011 HRSD has averaged 215 basis points on Variable Rate Debt

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

	Current YTD	Policy Minimum
Capital % Cash Funded	42%	15%
General Reserve as % of Operations	115%	75-100%
Risk Management Reserve as % of Projected Claims Costs	25%	25%

**Total Return Strategy - Investment Market Value
For the Period Ending July 31, 2017**

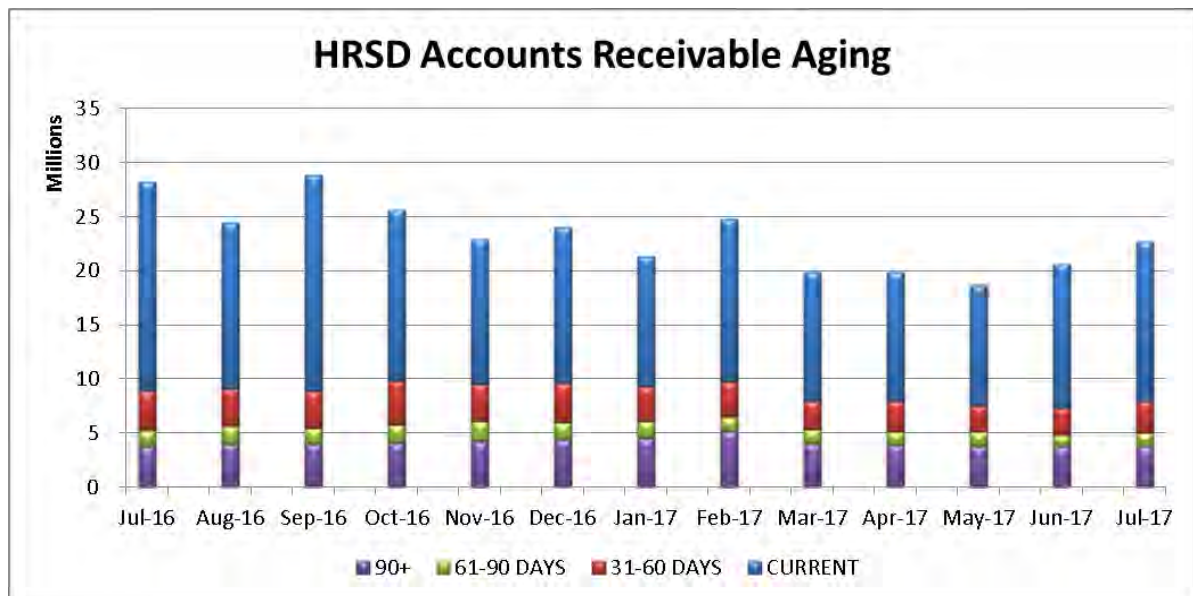
	Market Value June 30, 2017	YTD Buy/Sell	YTD Change in Market Value	YTD Adjustments	Market Value July 31, 2017
Investment Activity	\$ 123,844,438	\$ 121,004	\$ 138,880	\$ -	\$ 124,104,321
Unrestricted Debt Service Reserve Fund	30,760,330	-	-	(494,006)	30,266,324
	<u>\$ 154,604,768</u>	<u>\$ 121,004</u>	<u>\$ 138,880</u>	<u>\$ (494,006)</u>	<u>\$ 154,370,645</u>

7. Summary of Billed Consumption

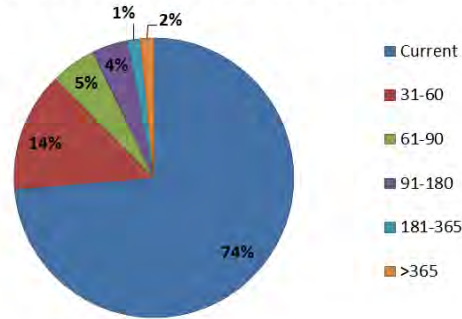
Summary of Billed Consumption (,000s ccf)							
			% Difference		% Difference		% Difference
	2018 Cumulative Budget Estimate	2018 Cumulative Actual	From Budget	Cumulative 2017 Actual	From 2017	Cumulative 3 Year Average	From 3 Year Average
July	4,427	4,869	10.0%	4,776	1.9%	4,798	1.5%
Aug	8,850	-	N/A	9,275	N/A	9,525	N/A
Sept	13,271	-	N/A	14,227	N/A	14,215	N/A
Oct	17,689	-	N/A	19,017	N/A	18,999	N/A
Nov	22,104	-	N/A	23,282	N/A	23,223	N/A
Dec	26,516	-	N/A	27,761	N/A	27,583	N/A
Jan	30,925	-	N/A	32,036	N/A	31,959	N/A
Feb	35,331	-	N/A	36,263	N/A	35,878	N/A
March	39,734	-	N/A	40,516	N/A	40,678	N/A
Apr	44,135	-	N/A	44,383	N/A	44,834	N/A
May	48,532	-	N/A	48,553	N/A	49,058	N/A
June	52,927	-	N/A	53,373	N/A	53,644	N/A

C. Customer Care Center

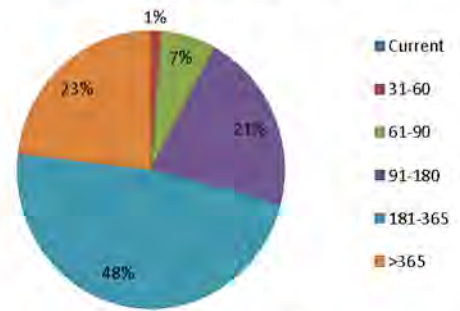
1. Accounts Receivable Overview



HRSD Accounts Receivable (Actively Billed \$20,085,351)

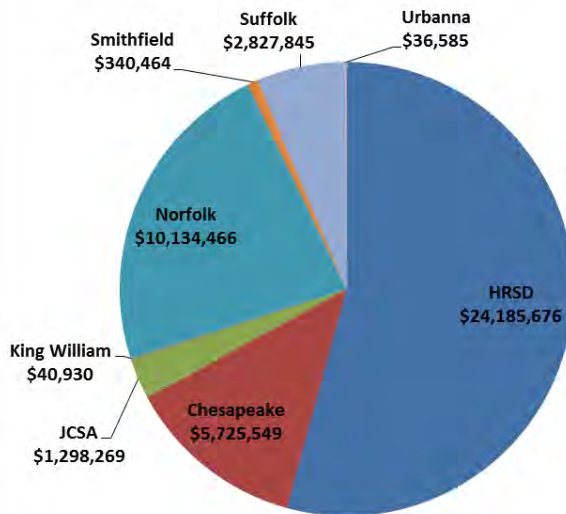


HRSD Accounts Receivable (Final Billed \$2,553,583)

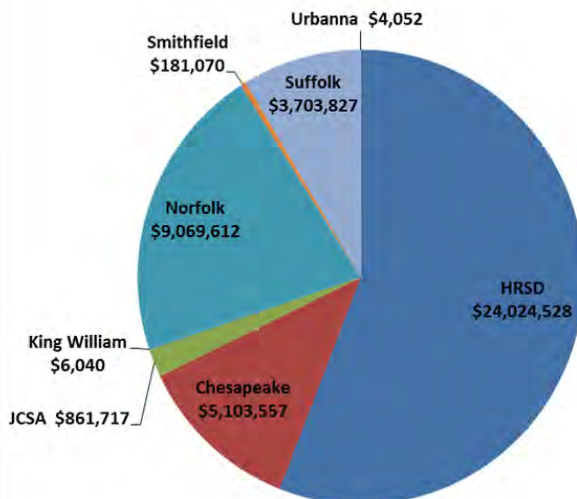


Final Billed-closed accounts with no active collections

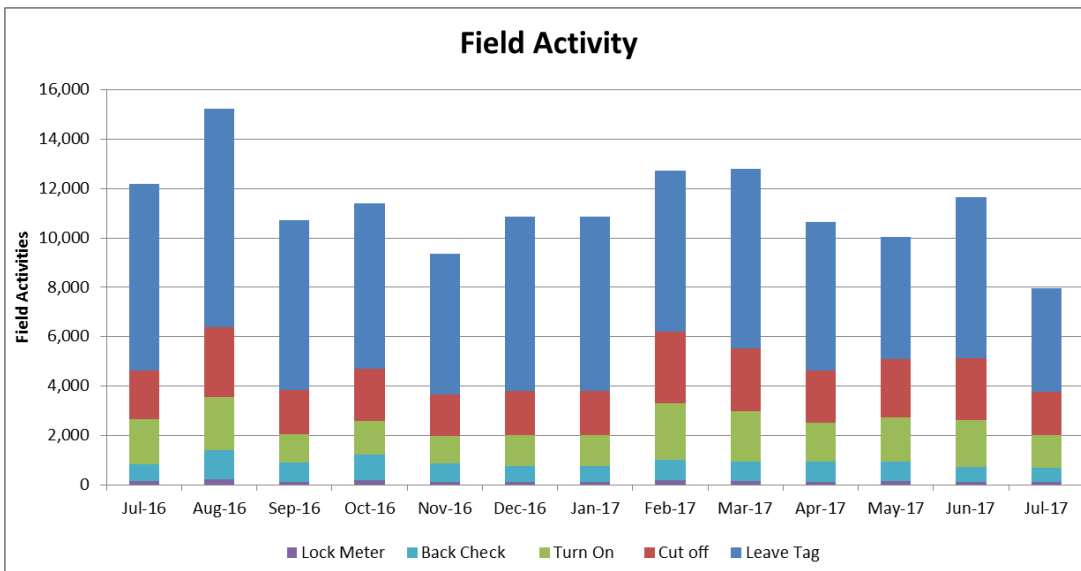
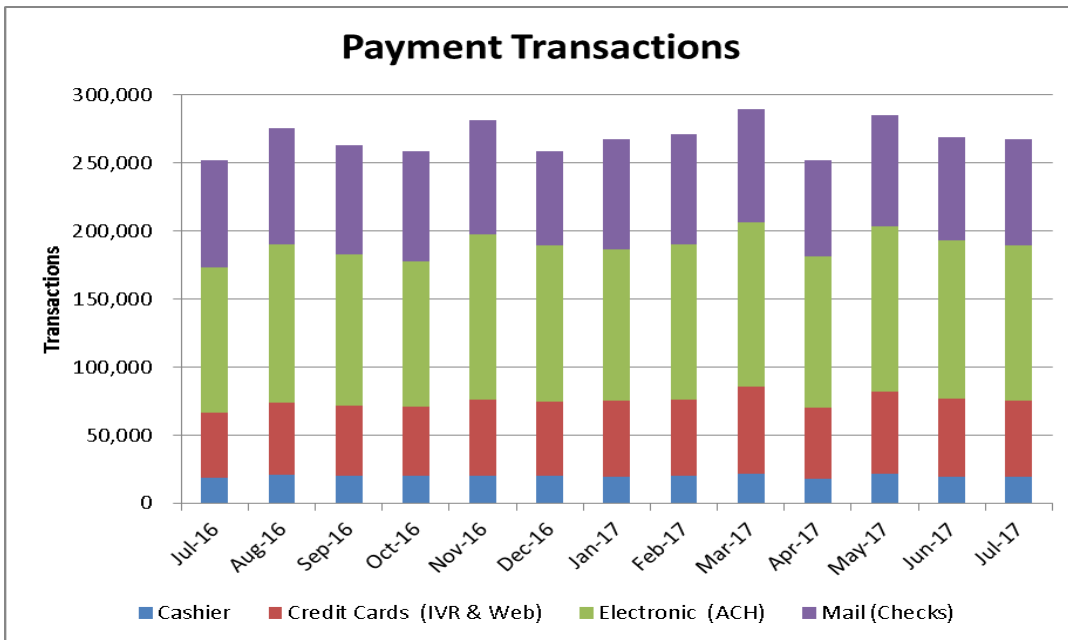
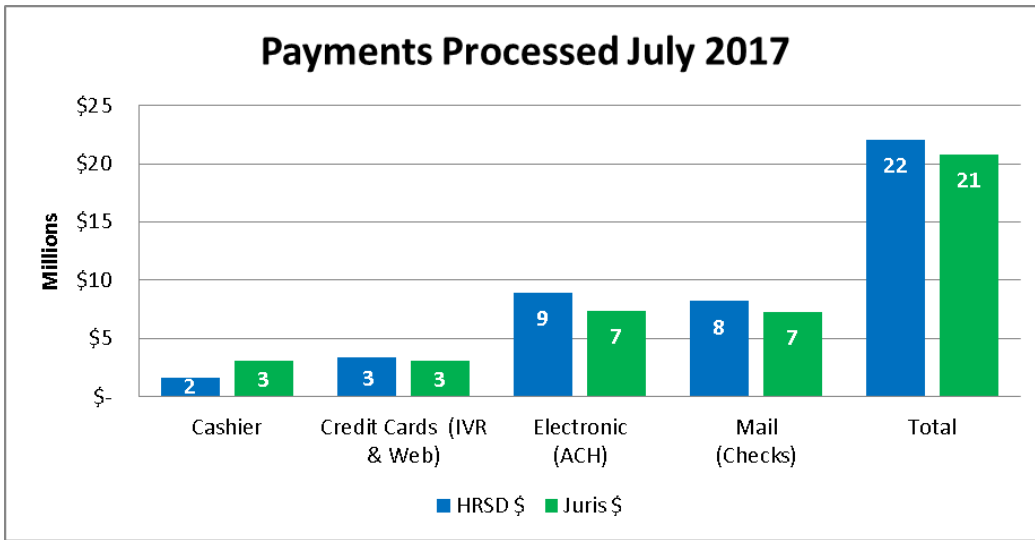
Billing

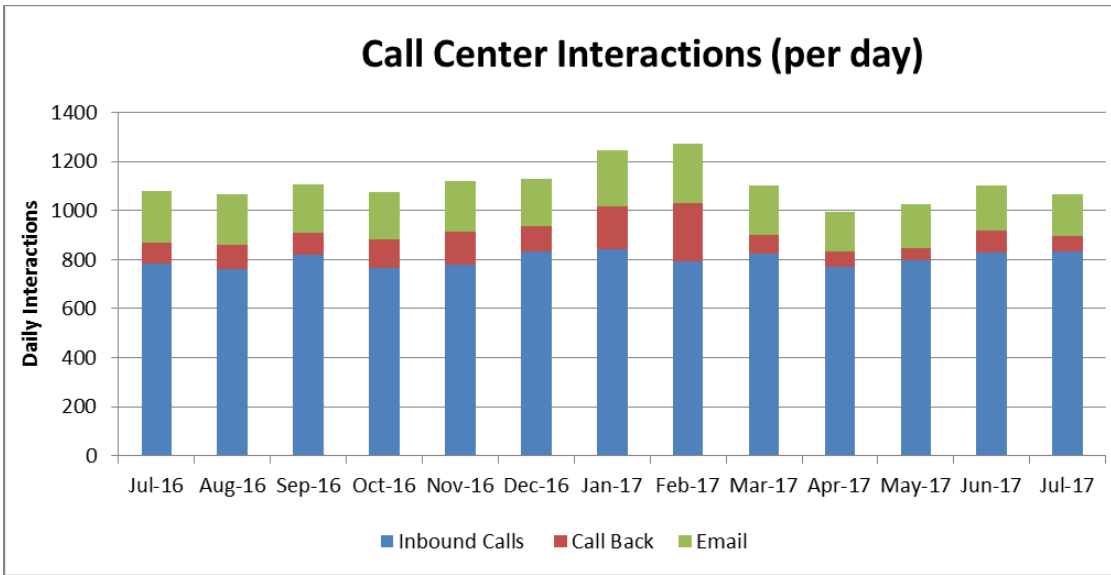
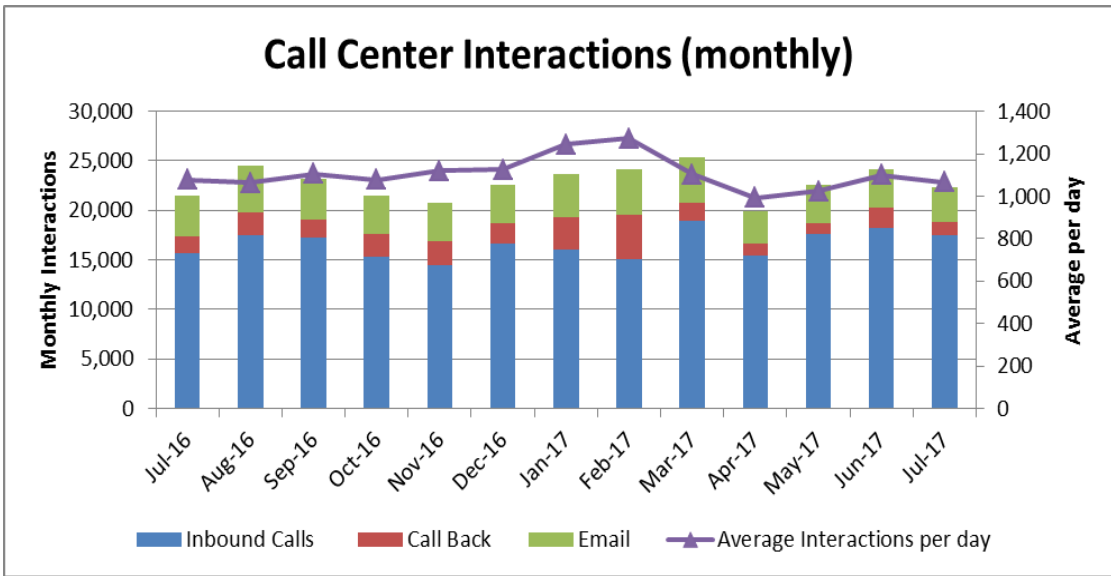
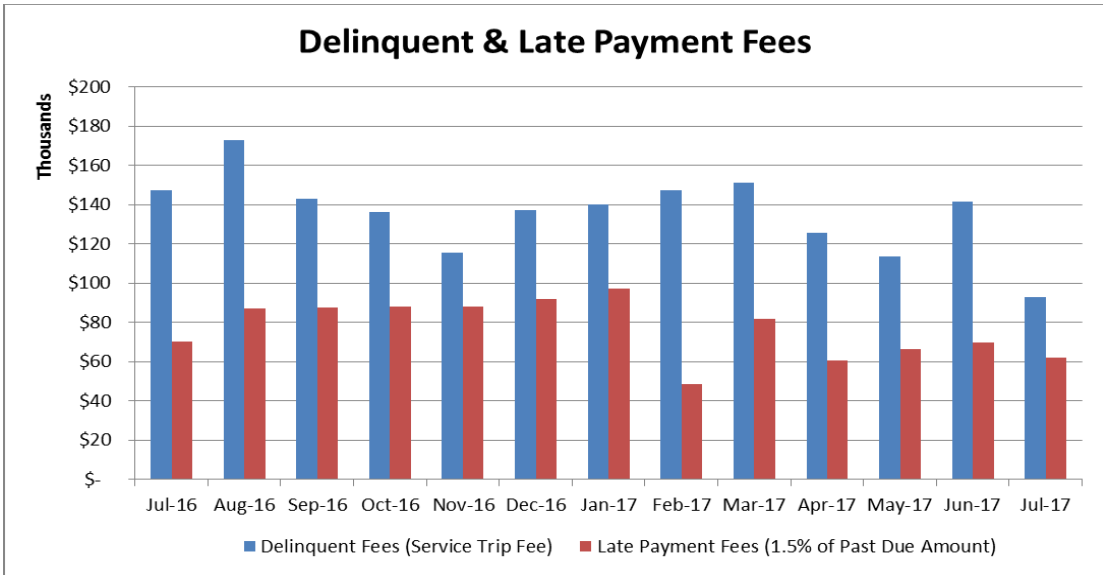


Payments



2. Customer Care Center Statistics



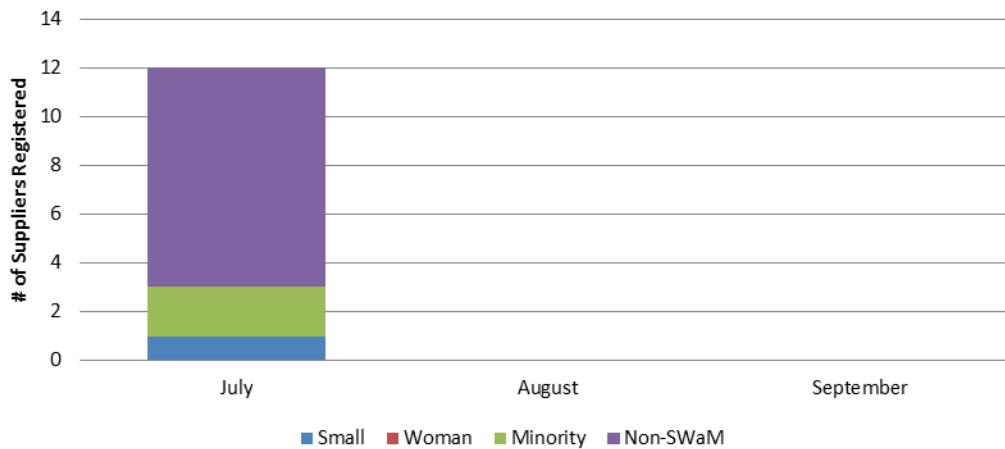


Customer Interaction Statistics	Feb	Mar	Apr	May	Jun	Jul
Calls Answered within 3 minutes	53%	74%	79%	80%	70%	78%
Average Wait Time (minutes)	4:40	2:08	1:44	1:37	2:25	1:46
Calls Abandoned	14%	8%	7%	7%	9%	8%

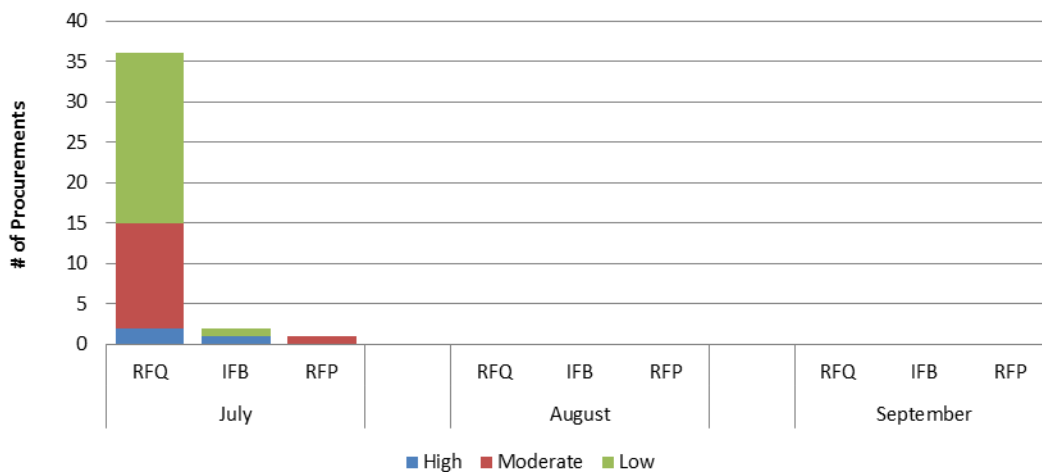
D. Procurement

Savings	Current Period	FYTD
Competitive Savings ¹	\$102,301	\$102,301
Negotiated Savings ²	\$114,746	\$114,746
Salvage Revenues	\$15,463	\$15,463
Corporate VISA Card - Estimated Rebate	\$21,016	\$21,016

New Suppliers Registered in ERP



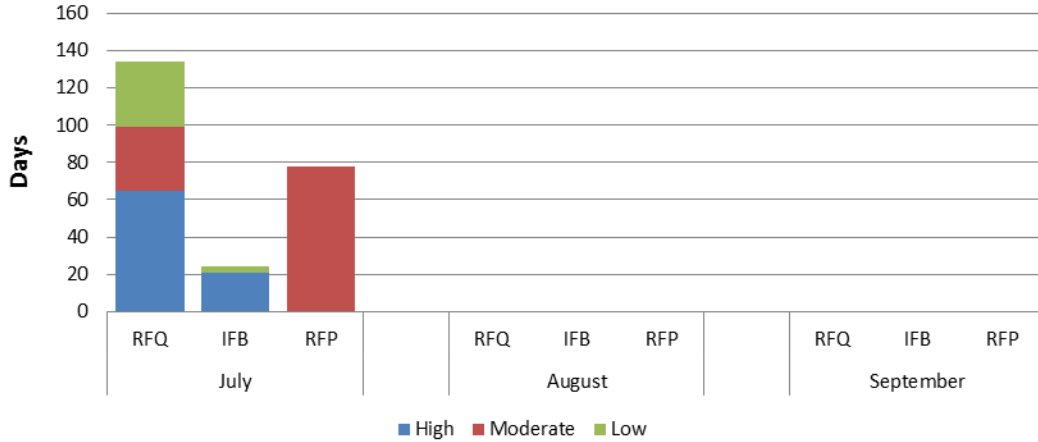
Procurements Completed Based on Complexity



¹ Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

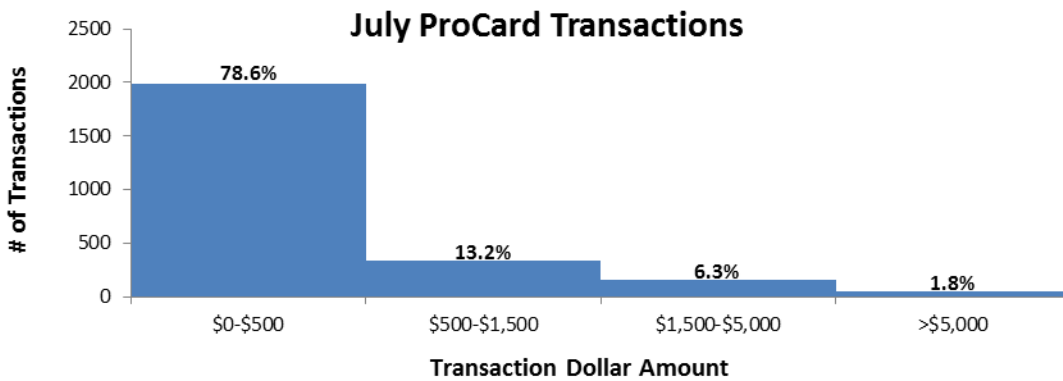
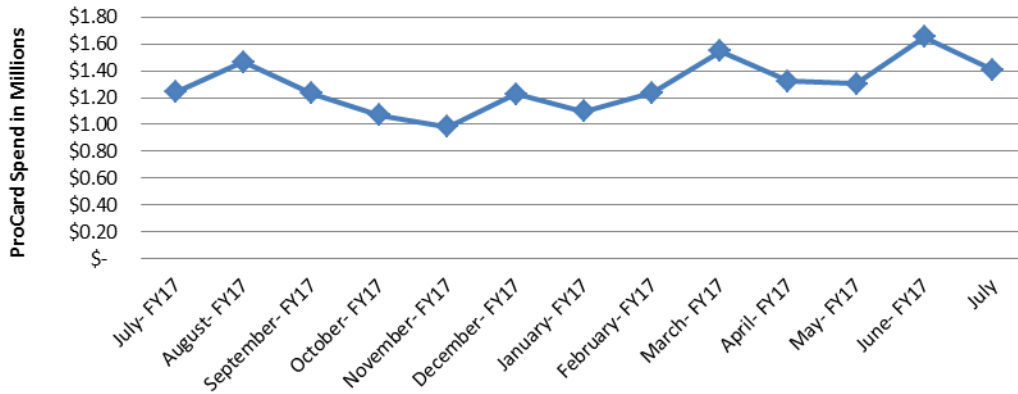
² Negotiated savings are savings obtained during a Request for Proposal process, or if all bids received exceed the budgeted amount, or if only one bid is received.

Cycle Time Per Method of Procurement and Complexity

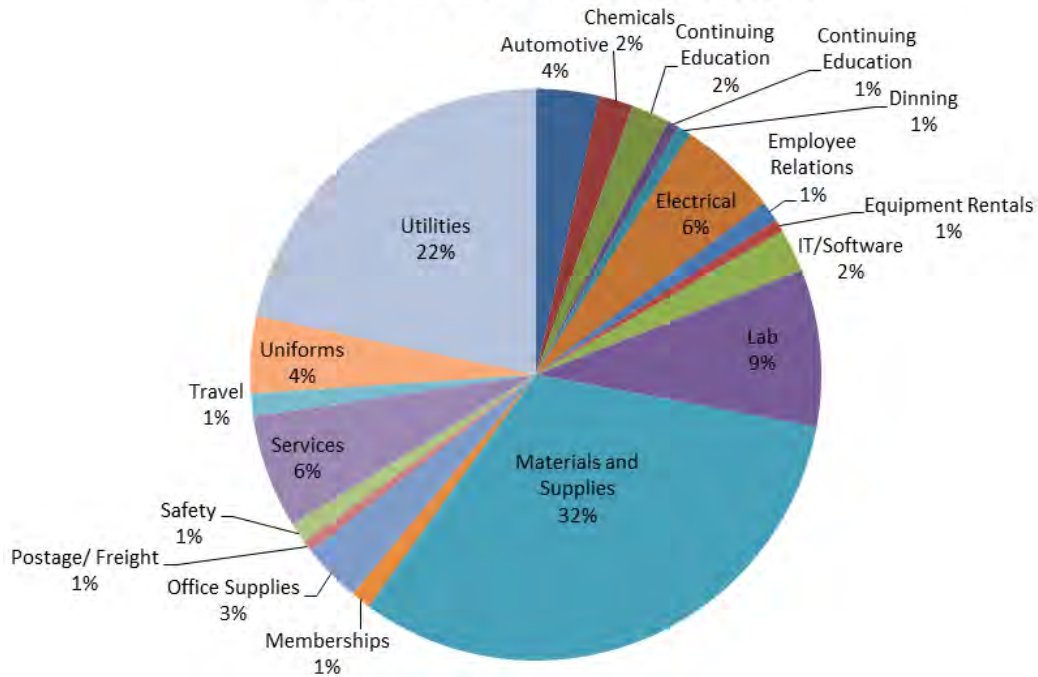


High: Highly technical, time intensive, **Moderate:** Technical, routine, **Low:** Low technical, quick turnaround

ProCard Spend



July ProCard Spend by Category



Procurement Client Training		
	July 2017	YTD
ProCard Policy and Process	5	5
Procurement Cycle	7	7
Additional Training Provided	0	0
Total	12	12

E. Business Intelligence – Enterprise Resource Planning (ERP)

ERP Helpdesk currently has 268 open work orders in the following statuses: 5 escalated, 71 in progress, 16 on hold, 171 open, 5 waiting on user. ERP Helpdesk received 215 work orders in July. In July, 201 work orders were closed and 24 were closed within one hour.

F. Strategic Planning Metrics Summary

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

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	2.02
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	2.02
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	100%
	General Reserves	Percentage of Operating Budget less Depreciation	115%
	Accounts Receivable (HRSD)	Dollars	\$22,638,934
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	17%

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2017
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	*
M-4.3	Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow	*
M-4.4	Affordability	6.5 CCF Monthly Charge/Median Household Income ³	*
M-4.5	Operating Cost/MGD	Total Operating Expense /365/5-Year Average Daily Flow	*
	Billed Flow	Percentage of Total Treated	*
	Senior Debt Coverage	Cash Reserves/Senior Annual Debt Service	*
	Total Debt Coverage		*

* These metrics will be reported upon completion of the annual financial statements.

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

³ Median Household Income is based on the American Community Survey (US Census) for Hampton Roads

TO: General Manager

FROM: Director of Information Technology (IT)

SUBJECT: Information Technology Department Report for July 2017

DATE: August 10, 2017

A. General

1. The Operations and IT Departments are researching available technologies and providers of applied artificial intelligence and smart devices consistent with existing and future wastewater treatment processes and infrastructure. Findings and recommendations will form the basis of how the Internet of Things (IoT) impacts future operations and process enhancements.
2. Staff continues its work installing and testing broadband cellular and private data circuits in support of the new Supervisory Control And Data Acquisition (SCADA) platform. Installation and testing has been delayed by approximately thirty days and is now scheduled to begin in September. The delay is due to internal coordination issues between Verizon Business Services and Verizon Wireless Communications as they work through contractual issues with the Virginia Information Technology Agency.
3. The network servers and supporting connectivity hardware and software were upgraded at the Williamsburg, York River, and Atlantic treatment plants.
4. The Small Communities Division network and communications facility is now complete and will be ready for the relocation and installation of business networking and industrial automation hardware and software, in August.
5. In response to emerging security threats, additional cyber security upgrades to the main campus wireless network are being performed.

B. Strategic Planning Metrics Summary

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

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Training During Work Hours Per Full Time Employee (50) – Current Month	Total Training Hours / # FTE	2.95
M-1.4b	Total Training During Work Hours Per Full Time Employee (50) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	2.95
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 July 2017
DATE: August 5, 2017

A. Highlights

Water Technology and Research - There is a great deal of contemporary discussion on items including big data, the Internet of Things, predictive analytics, artificial intelligence, machine learning, etc. HRSD is preparing to take a careful approach into this area with a new project that will encompass control systems improvements in our interceptor system and treatment plants. This will build on our implementation of the Supervisory Control and Data Acquisition (SCADA) system currently being deployed for interceptor system monitoring and control, and our existing and relatively sophisticated treatment plant distributed control systems (DCS). The exact scope of these two parallel efforts remains in development, but the eventual future intent is to connect these two systems so that there is feedback to SCADA based on treatment plant performance optimization, as well as feedback to DCS based on interceptor needs (e.g., to minimize overflow events). This is particularly relevant as we contemplate Sustainable Water Initiative for Tomorrow (SWIFT) and the desire to stabilize nitrogen removal and equalize diurnal flow profiles. On the treatment plant side, the likely starting place is the optimization of an existing plant control system using a data-driven, model-based controller. On the interceptor side, the intent will be to use elements of predictive control to move flow in real time between James River Treatment Plant (JRTP), Boat Harbor Treatment Plant (BHTP) and the York River Treatment Plant (YRTP) and the Coliseum storage tank. This will help achieve treatment performance improvements, avoid a potential expansion at YRTP, maximize nitrogen removal among the James River bubble plants, potentially dampen diurnal flow peaks and minimize overflow events.

B. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. Staff resolved one interceptor complaint and two system alarms during the month.
- b. Staff performed a single caustic injection to relieve pressures in the Gloucester interceptor system.

- c. Staff installed a temporary suction and discharge pumping and piping system for injecting polymer for Total Suspended Solids (TSS) control at the Lawnes Point Treatment Plant holding ponds.

2. South Shore (SS) Interceptor Systems

- a. On July 15, it rained approximately 4.2 inches in the Suffolk Pump Station service area, which contributed to overflows in the upstream gravity system. After the rainstorm, we noticed multiple manholes with displaced lids and debris along the gravity system pipeline that suggested an overflow occurred. The amount spilled is unknown. We have been active in the area over the last several years; the area is frequently maintained and monitored. A Capital Improvement Project (CIP) to remove this gravity pipeline is currently in the design phase. In the interim, staff is working to modify the manholes to help limit future overflows.
- b. Staff worked on completing major electrical work at the Suffolk Pump Station as well as replacing antiquated equipment with new Variable Frequency Drives (VFDs).
- c. Staff assisted the Chesapeake-Elizabeth Treatment Plant (CETP) by removing 20 cubic yards of grease from the headworks junction chamber and 10 cubic yards of grease from the septic well.

C. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. A non-potable water spill occurred when an automatic strainer malfunctioned; staff repaired the strainer.
- b. Staff reported five air permit deviations involving use of the bypass stack. All five incidents resulted from power anomalies during storms. There was one total hydrocarbon-recording incident when the system failed to calibrate properly.
- c. The temporary glycerin storage tank and pumps we purchased because of the failed methanol tank are ready for operation.
- d. Contactors installed new raw influent pump platforms and secondary clarifier ladder platforms.

2. Atlantic Treatment Plant (ATP)

- a. Two chlorine contact tanks, the first of six secondary clarifiers, are being re-coated.
- b. Staff assisted the City of Raleigh (City) in determining staffing requirements for their upcoming Thermal Hydrolysis Process (THP) and Combined Heat and Power (CHP) projects. The City will be constructing a new THP Cambi system very similar to the Atlantic plant's THP project.

3. BHTP

- a. The following air permit deviations occurred during the month:
 - 1) On July 12, a power anomaly resulted in the loss of the Induced Draft (ID) fan and use of the bypass stack for 13 minutes.
 - 2) On July 13, a low biosolids inventory level resulted in an incinerator pressure drop. Staff performed an incinerator burnout in anticipation of receiving loads from the Nansemond Treatment Plant (NTP).
 - 3) On July 14, a deviation occurred when a combustion air fan failed and pressures dropped. Staff replaced the fan impeller.
 - 4) On July 29, a deviation occurred in both the burn zone temperature and pressure levels during incinerator startup. The Biosolids loading was lower than normal due to internal plant solids being low in the holding tanks, as well as the plant not receiving the normal number of truckloads from NTP. To correct the low feed, the operator increased the solids feed rate to the centrifuge from the holding tanks before a stable burn was established. Staff performed a partial burnout, and restarted biosolids feed to regain control.
 - 5) On July 30, a deviation in the burn zone temperature occurred due to burner DCS control output issues. The DCS was showing a burner output at 110 percent when the actual output was 0 percent. Staff corrected the instrumentation control issue.
- b. Staff replaced the combustion air fan impeller when it failed.
- c. Staff performed major repairs to the # 5 primary clarifier flight system. They replaced 6 broken flights and 32 attachment links and performed chain alignment.

4. CETP

- a. There were four air permit deviations when a VFD malfunctioned twice causing the ID fan to shut down and the emergency bypass stack to open. These disruptions also caused the less-than-minimum pressure drop and burn zone conditions, creating two more deviations.
- b. Staff has completed replacement of the stone diffusers in all twelve aeration tanks with membrane diffusers.

5. JRTP

- a. Staff took #5 secondary clarifier and all three contact tanks out-of-service, cleaned the tanks and performed annual maintenance tasks.
- b. Staff continued construction on the digested solids, magnesium hydroxide feed system that will aid with phosphorus removal. Construction focused on welding pipe and fittings and finishing the magnesium hydroxide feed tank.
- c. Integrated Fixed Film Activated Solids (IFAS) tanks were in dissolved oxygen mode for the entire month with the nitrified recycle pumps controlled mainly by nitrate probes. This resulted in very good nitrogen removal.
- d. On the Warwick Boulevard to James River Influent Force Main Project, the contractor laid pipe on the plant site and constructed bypass piping, which will allow for connection between the new influent pipe and the existing influent pipe.
- e. On the JRTP Hydraulic Improvement Project, the contractor finished work on the project by completing pipe installations, installing and testing of control systems, paving and landscaping. Centrate lines pipe, pumps, valves and controls were tested using non-potable water.
- f. Staff performed stress testing of the #5 IFAS tank, with a fifty percent media fill fraction to determine hydraulic limitations across the IFAS tank at a plant influent flow rate of 57 MGD. To accomplish testing, primary effluent flow was diverted to IFAS tanks #2, #5 and #8. Testing determined no hydraulic limitations across the IFAS tanks. It appears that hydraulic limitations of the secondary clarifier piping and tanks caused the high tank levels in the IFAS tanks.

6. NTP

- a. Recovery efforts of digester number 1 continues. Staff gradually increased the feed to the digester to 60 percent and diverted the remaining solids to two tanks for temporary storage and direct feed to the centrifuge. A contractor began cleaning digester 2 in early July for planned coatings work. To clean the digester, the solids must be pumped through a belt filter press then sent to the landfill.
- b. Due to the aforementioned abnormalities in solids processing at the NTP, the liquid produced during the dewatering operations is challenging. There are currently three liquid streams produced that the staff must treat; (1) the digester number 1 centrate (liquid produced in dewatering); (2) the frac tank centrate; (3) and the digester number 2 filtrate from the contractor's filter press. The three liquid waste streams are then combined in the centrate tanks and directed to the Struvite Recovery Facility (SRF) for processing and phosphorus recovery. This process results in a much darker than normal liquid feeding the SRF and a lower than normal percent capture on total phosphorus is for the facility. Staff will continue to optimize operations to address these issues.
- c. Staff continues to address high solids concentrations at the Lawne's Point Treatment Plant. Staff initiated a polymer feed to one pond in early July, in hopes to reduce the suspended solids. The goal is to achieve permit discharge limits and begin discharging the holding pond contents through the plant's outfall by the middle of August.
- d. Staff continues to work on multiple plant improvement projects. Those assigned to the SRF have done an excellent job in cleaning and painting the facility. The aesthetic improvements are noticeable.
- e. Staff drained, cleaned and inspected the number 2 primary and number five aeration tanks.
- f. Administration building renovations began, including new paint and installation of tile, carpet and furniture. The lunchroom renovation will begin in late August with completion by the end of the calendar year.

7. Virginia Initiative Plant (VIP)

- a. The plant experienced two air permit deviations when the incinerator bypass damper opened during power outages.

- b. The flight and chain mechanism in a Primary Clarifier (PC) misaligned, causing a major failure. Staff took the PC out of service when solids and grit accumulated to unacceptable levels. Removal of the solids and repairs to the flight and chain system should take about four weeks. While cleaning the clarifier, staff received an offsite odor complaint from the Old Dominion University Sailing Center during a sailing event. When the PC is in service, the odor control system scrubs the air; however, during periods of maintenance, to ensure employee safety, access hatches are opened and portable fans are used to introduce fresh air into the tank. This often creates offsite odors. Upon receiving the complaint, staff stopped maintenance work and closed the access hatches. In the future, staff will coordinate the cleaning of the tank with the Sailing Center.
- c. Staff conducted emergency generator black start training. Staff checked the system and found that it properly assumed the plant's electrical load after utility loss. The utility power loss simulation confirmed that the system is functioning correctly. In addition, when the plant lost power this month, the generator system functioned correctly at that time as well.

8. Williamsburg Treatment Plant (WBTP)

- a. On July 5, a tree fell across the plant's incoming power line, resulting in a loss of power and a two-minute use of the incinerator bypass stack. Use of the stack resulted in an air permit deviation.
- b. Staff finished modifying the fourth aeration tank to include an anaerobic selector zone.
- c. Staff completed a coatings project in the gravity thickener basement. It has been about 15 years since this basement was last coated.
- d. Staff started a coatings project in the secondary clarifier that is expected to take a few months to complete. This clarifier was last coated about 25 years ago.

9. YRTP

- a. Staff reported one odor incident when the odor scrubber fan was off for longer than one hour. The outage occurred during a transformer preventive maintenance (PM) procedure. Future oil analyses will not require de-energizing the transformer because the sample ports will be modified to facilitate the PM requirement.

- b. Staff started populating the Environmental Data Management System (EDMS) with current Daily Plant Operations Report (DPOR) data. This is the first step to migrating over to the new system.

D. Small Communities Division (SCD)

1. SC Treatment

The Urbanna Treatment Plant (UBTP) experienced a permit exceedance in its weekly TSS concentrations limits during the week of July 2, 2017. Higher than normal loading throughout the weekend preceding the Independence Day holiday and insufficient aeration system capacity to manage such increases in plant loading caused this plant upset.

Staff took corrective actions to prevent further weekly or monthly exceedances, including chemical flocculent addition, shifting influent loading to a less impacted treatment train and importing settled activated sludge from YRTP.

The plant is currently in the process of procuring and installing a new air distribution and diffuser system that will replace the existing coarse bubble system with more efficient fine bubble diffusers. This upgrade will allow UBTP to provide treatment that is more effective during similar high loading events in the future. Installation of the new diffusers is expected to occur in November 2017.

The new laboratory construction continues; SCD Operations staff is doing this work in house with assistance from the two NS carpenters.

2. Collections System

SCD experienced one minor line break this month on an unused connection to the Mount Olive drain field grinder pit system this month. An incorrectly installed fitting pushed out causing a minor spill of less than 25 gallons. SCD staff quickly repaired the fitting and applied lime to the affected area.

3. Operations Center

- a. The new SCADA room HVAC improvements are complete.
- b. Construction continues on the new mezzanine.

E. Surry - County of Surry

1. Staff installed signs on the fence around the plant and performed minor maintenance. Staff also repaired the cover on the sand filter unit, power washed walls in most of the building spaces, and performed minor maintenance throughout the plant
2. Contractors made repairs to two tanks to stop leaks and repaired the perimeter fence.
3. HRSD has not yet assumed responsibility for the County or Town systems. In both cases staff is waiting on finalization of property transfers before commencing.

F. Support Systems

1. Automotive

- a. Staff sampled fuel from the SS Main Office building generator. The test reported a high amount of water in the fuel sample. The vent seal had failed, allowing water to enter tank. Staff installed a new vent and treated the fuel to remove water and contaminants.
- b. Staff performed generator load tests at the NS Operations Center and the SS Main Office Complex and at Bower's Hill, Ferebee Avenue, Patrick Henry, Rolling Hills, and Suffolk Pump Stations (PSs). All generators operated as designed and returned to service.

2. Carpentry Shop

The SS Carpenters completed 13 projects to include the construction of frames for the mural wall, fabrication of a new water-bath for Technical Services Division (TSD), an odor-control blower cover for Norchester PS, and fuel tank covers for automotive.

3. Condition Assessment (Coatings and Concrete)

- a. The SCADA project continues. Condition Assessment (CA), through use of Closed-Circuit Television (CCTV), inspected 9,186 lineal feet (LF) of gravity force main, completing 9 lines and 51 manholes.
- b. Staff conducted inspections at BHTP, NTP, VIP and coating failures on Bayshore Lane manholes.

- c. A contractor completed 1,400 linear feet of crack repairs in the new aeration tanks and restoration of a steel tank exterior at the ABTP.

4. Machine Shop

The Machine Shop completed 17 projects to include rebuilding the #3 pump at Kingsmill PS, fabricating mechanical seal adapters for YRTP, battery brackets for the SCADA, flanges for the SWIFT project's soil columns, and stub shafts for CETP and VIP.

G. EEM

1. Project Teams continue to work with Treatment staff, manufacturers, contractors and testing organizations to understand operational problems with the new harmonic filters for the aeration blowers at ABTP. The new filters were replaced with a newer generation of harmonic filters after failure, but problems persist. Staff coordinated thermographic inspections of the equipment and is currently monitoring the filters with a power monitor in an effort to better understand the problem.
2. Part of the SCADA radio communications was lost when a contractor cut a piece of Verizon's fiber optic cable at VIP. Staff rerouted radio communication for 26 sites and restored communications through VIP.
3. Staff responded to and repaired multiple SCADA power and equipment failures this month.
4. A large amount of salt water continues to infiltrate the 33rd Street PS. Newport News shipyard periodically discharges salt water into the interceptor system through the 33rd PS. Staff will install a conductivity analyzer and probe at the PS to monitor salinity.
5. Staff continues to investigate energy efficiency opportunities and explore the development of a comprehensive electrical energy management plan or policy.
6. Staff is building a panel to monitor the effluent and influent hydrogen sulfide (H₂S) levels on the odor control scrubber at State Street PS
7. Staff installed a new Hach® chloramine (NH₂Cl) analyzer and flow meter at YRTP's aquifer pilot site.

H. Strategic Measurement Data

1. Education and Outreach Events: 14

- a. The NS Electrical Manager conducted an electrical theory workshop at the Cooperating Hampton Roads Organization for Minorities in Engineering (CHROME) high school summer camp at Old Dominion University (ODU) on July 14.
- b. The NS Electrical Manager discussed the wastewater treatment process and engineering careers at the CHROME middle school summer camp at Norfolk State University (NSU) on July 18.
- c. The NS Electrical Manager and NS Material Operations Coordinator (MOC) participated in a United Way planning meeting for the 2017 campaign on July 24.
- d. Charles Bott and Jaime Mitchell gave a SWIFT briefing to staff from the Virginia Department of Health (VDH)
- e. Charles Bott hosted Water Environment Federation (WEF) President Rick Warner and provided a SWIFT Briefing
- f. Charles Bott participated in the Potomac Aquifer and SWIFT Oversight Monitoring Program
- g. Ramola Vaidya and Peter Buehlmann gave a podium presentation at the International Water Association Reuse Conference
- h. CETP Lynnhaven River NOW Floating Wetlands Project
- i. CETP Virginia Tech Wetlands Group – To Study Our Wetlands
- j. YRTP SWIFT tour with WEF group
- k. YRTP SWIFT tour for Oversight Workshop
- l. ATP Plant Manager participated in a staffing discussion with staff from the City of Raleigh for their new CHP and THP project
- m. NTP tour for Newport News Shipyard staff
- n. VIP tour US Navy Environmental Engineering Group

2. Community Partners: 8

- a. Virginia Institute of Marine Science
- b. Old Dominion University
- c. United Way
- d. Chesapeake Bay Foundation – oyster restoration
- e. Cooperating Hampton Roads Organization for Minorities in Engineering (CHROME)
- f. Norfolk State University (NSU)
- g. Virginia Department of Health (VDH)
- h. Lynnhaven River NOW

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (511) – Current Month-	Hours / FTE	2.59
M-1.4b	Total Training During Work Hours per FTE (511) – Cumulative Year-to-Date	Hours / FTE	2.59
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	26,238.3
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	41.87
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	24.68
M-2.3d	Planned Maintenance-Projects	% of Total Maintenance Hours	33.45
M- 4.1a	Energy Use: Treatment *reported for June 2017	kWh/MG	2,324
M-4.1b	Energy Use: Pump Stations *reported for June 2017	kWh/MG	170
M-4.1c	Energy Use: Office Building *reported for June 2017	kWh/MG	112
M-5.2	Educational and Outreach Events	Number	14
M-5.3	Number of Community Partners	Number	8

3. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2017
M- 4.1a	Energy Use: Treatment	kWh/MG	2,294
M-4.1b	Energy Use: Pump Stations	kWh/MG	173
M-4.1c	Energy Use: Office Building	kWh/MG	104

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager
FROM: Special Assistant for Compliance Assurance
SUBJECT: Monthly Report for July 2017
DATE: August 7, 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 Integrated Plan/RWWMP, scheduled for October 1, 2017.

B. Submittals Completed in July 2017 – A written briefing summary was provided to the US Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) on **July 28** in lieu of the normal Quarterly Briefing.

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. Several projects are underway with completions reported in the Semi-Annual and Annual Report. Other work associated with Prompt Repairs or other items in the Sewer Repair contract are as follows:

- SR 037 – Bay Shore Lane: Addressing manhole repair issues prior to closing out project.
- SR 040 – Woodland Ave: Construction underway to replace sections of pipeline.
- SR 054 – Beach Road: Pipelining work completed and project nearly complete.
- SR 072 – Ingleside Road PS Hatches: Hatches have been repaired and project is complete.

2. **Phase 7 – RWWMP.** Sequencing and scheduling the RWWMP projects is underway. A review meeting to discuss the approach was held on **July 20**. Additional meetings with North Shore and South Shore Chiefs of Interceptors to review HRSD facility improvements were held on **July 25 and 26**.

The Technical Coordination Team met on **July 20** to review overall progress. The HRSD program 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.
4. **Phase 9 – Supplemental Services.** A compliance program meeting was held on **July 5** to review overall progress.

Management, Operations and Maintenance (MOM) Program elements are ongoing, including the Hydrogen Sulfide (H₂S) Monitoring Program and implementation of a Business Intelligence (BI) system for the Small Communities Division (SCD). This includes a MOM update manual guidance document for use on the next major update, expected in 2018.

The Flow, Pressure and Rainfall (FPR) monitoring program continued in July 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 July. Force main inspection work order status is as follows:

- FMP2 035 Hampton Trunk: Draft Work Order under development.
- FMP2 039 Bowers Hill: Commission approved contractor authorization. Final Work Order signed and issued to contractor. Work is scheduled for early August.
- FMP2 043 Kempsville Road: Work is in progress. Work order will be completed early August.
- FMP2 044 Battlefield: Follow-up field work completed. Final lab report on pipe samples is complete.

Gravity inspection work order status is as follows:

- Work order GMP2 043 FY17 SS Manhole Inspection: completed in July with the exception of several manholes due to permit delays and access issues. These manholes are scheduled to be inspected in August.
- GMP2 044 Berkley Trunk Sect SS: the follow up work to inspect three

pipe segments (SG 202-13703, SG 202-13704, and SG 202-19923) upstream the State Street PS is complete.

- Due to ongoing repairs at PS 148, GMP2 052 Ingleside Road is scheduled for CCTV inspection in August.

Work on the Fiscal Year 2016 Condition Assessment Annual Report continued in July. A draft has been completed and is being reviewed.

D. Next Submittals

RWWMP – Due October 1, 2017

E. Program Budget Status

The overall program budget is **\$133,338,364**, 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

Item #	Strategic Planning Measure	Unit	July 2017
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	0
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

	Total Appropriation	July 2017 Obligations	Available Balance
Regional Consent Order and Other Consent Order Requirements			
Regional Hydraulic Model	\$106,041,987	\$109,387,103	-\$3,345,116
Manhole Rehab/Replacement Phase I & North Shore Siphon Chamber	\$2,834,000	\$463,323	\$2,370,677
Pump Station Wet Well Rehabilitation Phase I	\$3,243,231	\$3,327,750	-\$84,519
Locality System Monitoring and Condition Assessment	\$21,219,146	\$20,654,073	\$565,073
Subtotal - In progress	\$133,338,364	\$133,832,249	-\$493,885

Completed Work

Regional Consent Order and Other Consent Order Requirements	(Included in subtotal above)
Master Metering Program III	\$2,005,140
Master Metering Program IV	\$13,628,635
Total	\$149,466,024

TO: General Manager
FROM: Director of Talent Management
SUBJECT: Monthly Report for July 2017
DATE: August 10, 2017

A. Human Resources (HR)

1. Recruitment Summary

New Recruitment Campaigns	14
Job Offers Accepted – Internal Selections	1
Job Offers Accepted – External Selections	2
Internal Applications	128
External Applications	186
Average Days to Fill Position	57

2. Enterprise Resource Planning (ERP)

- a. Work continued in order to complete required Affordable Act filings with the Internal Revenue Service.
- b. HRSD worked with the Managed Services consultant on the following:
 - (1) Benefit plan setup
 - (2) Appraisal Notifications
 - (3) Cigna Interface
- c. HR Manager Business Intelligence (BI) Dashboard training began for supervisors and administrative staff.

3. Benefits and Compensation

- a. Staff worked with Procurement to begin the Request for Proposal process for Benefit Consulting Services.
- b. The Compensation and Classification team evaluated several Information Technology (IT) Department positions.
- c. The Employee Assistance Program's quarterly utilization meeting was held.

4. Wellness

a. Participation Activities

Year 3 Participation Activities	Unit	July 2017	Year to Date (March 2017–February 2018)
Biometric Screenings	Number	0	3
Preventive Health Exams	Number	1	13
Preventive Health Assessments	Number	48	100
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	123	224
Web-MD Online Health Tracking	Number	125	657
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	6	59

- b. The Wellness provider partnered with PNC bank to provide a financial wellness presentation, *To Your Credit* at all work centers.
- c. Information was distributed to employees regarding the upcoming Mobile Mammography Van visit at the Air Rail complex.
- d. The October flu and tetanus clinic schedule was finalized for all work centers.
- e. Information was provided to employees regarding free Diabetes Prevention Programs in Hampton Roads.

5. Workers Compensation

No new cases were opened with 12 cases remaining active.

6. Employee Relations

Staff continued to partner and meet with work center supervisors and employees to support employee relations and address HR issues. Several job descriptions were updated for Engineering and Operations Departments. Leave Donation and Standby policies were clarified.

7. General

- a. Information was compiled for a Water Agency Leaders Alliance Workforce Development survey.
- b. HR worked with Pretreatment and Pollution Prevention (P3) and operations managers to address several administrative issues associated with transitioning to the new Defense Biometric ID System (DBID) for HRSD employee access to military installations.
- c. Staff attended the following training:
 - (1) HR Manager BI Dashboard training
 - (2) EAP's Generational Dynamics pilot training
 - (3) Financial Wellness
- c. Staff participated in the following HRSD activities:
 - (1) HRSD – *People* Strategic Planning workgroup

B. Organization Development and Training (OD&T)

1. The Quality Facilitators prepared for Fiscal Year 2018 Work Center Planning Days. This year facilitators will conduct 29 planning meetings.
2. The Teams and Problem Solving (TAPS) team developed a presentation for the Quality Steering Team (QST) to highlight and demonstrate changes to TAPs training including *Natural Planning and Five Dysfunctions of a Team*.
3. The HRSD University team worked with IT staff on an accessible storage site for the Biological Nutrient Removal (BNR) training module. The final phase of the Benefits Project was reviewed with the vendor.

4. The OD&T Manager worked with the Chesapeake- Elizabeth Treatment Plant (TP) Manager on an abridged Supervisor Workshop to provide specific skills for Lead Operators. A series of abbreviated lessons from several quality and leadership training programs will be provided through various training delivery methods.
5. A team building workshop was developed with Virginia Initiative Plant (VIP) leadership.
6. Work continued with Engineering on development of an *Effective Collaborative Meeting Workshop*. A pilot will be presented to the QST.
7. The Project Management training work group kick-off meeting was held. The work group is gathering case study materials to prepare for an intensive development meeting next month.
8. Apprenticeship Program
 - a. The Training Superintendent continued working on curriculums: *Wastewater Analysis, Wastewater Laboratory, Disinfection, and Collection System Maintenance*.
 - b. The Training Superintendent, along with other Talent Management and Operations staff, presented information on the Apprenticeship Program to James City County Service Authority representatives.
 - c. Preparations continued for the 2017/2018 Apprenticeship School Year start-up. This year an expanded class size of 19 Apprentices is anticipated.
9. Staff attended the following training:
 - a. Intensive Coaching by Mentor Coach
 - b. EAP Generational Differences pilot training
 - c. Improvisation Workshop
 - d. HRSD Business Writing
 - e. HR Manager BI Dashboard training

C. Safety

1. Mishaps and Work Related Injuries

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

	<u>2016</u>	<u>2017</u>
Mishaps	42	21
Lost Time Mishaps	8	4
<i>Numbers subject to change pending HR review of each case.</i>		

b. MOM Program Year Performance Measure Work Related Injuries

July 2017 Injuries For Operations	July 2017 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2017	Total HRSD Injuries Since July 2017
2	0	0	0

c. Follow-up investigations were performed on two work related injuries and one property damage accident.

2. HRSD Safety Training

Strategic Planning Measure	Unit	July 2017
Total Safety Training Hours per Full Time Employee (830) All HRSD – July 2017	839.22 Hours / 830 FTE	1.01
Total Safety Training Hours Per Full Time Employee (830) – Cumulative July 2017	839.22 Hours / 830 FTE	1.01

3. In addition to regularly scheduled safety training and medical monitoring, the following sessions were conducted:
 - a. Fourteen external briefings for contractors working at HRSD treatment plants and pump stations
 - b. Two Chemical Hygiene training classes for Water Quality and Water Technology and Research employees
 - c. Two Aerial Lift Safety training sessions for South Shore Electrical and Energy Management and Atlantic TP employees
 - d. Electrical Safety Program training at the following work centers
 - (1) Facilities Maintenance Division
 - (2) North Shore Automotive, Electrical and Machine Shops
 - (3) Small Communities Division
 - (4) South Shore Automotive, Electrical and Machine Shops
 - (5) South Shore Interceptor Systems
 - (6) VIP
 - (7) York River TP
4. Safety Inspections, Testing and Monitoring
 - a. Weekly on-site inspections of the following construction sites:
 - (1) Sustainable Water Initiative for Tomorrow (SWIFT) Demonstration at Nansemond TP
 - (2) VIP
 - (3) Washington Pump Station
 - (4) James River TP
 - b. Quarterly safety inspections of the following work centers:
 - (1) Army Base TP
 - (2) Boat Harbor TP
 - (3) Lawnes Point TP
 - (4) North Shore Apprenticeship Classrooms
 - (5) North Shore Maintenance Center
 - (6) North Shore Automotive, Carpentry, and Electrical Shops
 - (7) North Shore P3

- c. Monitoring and testing for the following:
 - (1) Monthly hood velocity tests on Central Environmental Laboratory and Technical Services lab hoods
 - (2) Conducted a hood velocity test on a North Shore P3 lab hood
 - (3) Conducted a sound level survey of non-potable water pumps at VIP

- d. The following safety walk-throughs or inspections were conducted:
 - (1) Escorted City of Suffolk's Fire Department Training Manager on a tour of the Nansemond TP and provided information on HRSD's Safety Training programs.

5. Safety Programs

- a. Thirteen work centers received full safety recognition for no work related injuries or auto accidents. Ten work centers received partial recognition.

- b. The Safety Manager submitted required information to the Virginia Occupational Safety and Health Administration as a result of a serious finger injury which occurred at the Quail pump station in June.

- c. The Safety Manager taught three Methanol Safety classes for the City of Norfolk's Fire Department staff in conjunction with a VIP Methanol facility tour.

- d. Staff participated in a loss control phone survey with a HRSD insurance carrier.

- e. A meeting was held with Customer Care Center supervisors to discuss field emergency response and security training needs.

- f. HRSD Silica Safe Work Practices and training information was provided to Chesapeake Bay Bridge Tunnel staff.

- g. Staff addressed asbestos removal at a pump station for Interceptor systems.

- h. The Safety Manager presented recent injury and property and auto accident data trends to the Operations QST.

- i. Staff conducted Respirator Fit testing for SWIFT interns at the York River TP and continued to coordinate follow-up physicals for Operations employees.
- j. Safety and Operations staff continued to evaluate implementation of an on-line Material Safety Data Sheet program.
- k. A confined space permit was updated for Surry County TP.
- l. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

6. General

- a. Staff participated in the following HRSD activities:
 - (1) HRSD Strategic Planning Infrastructure Work Group
 - (2) HRSD Strategic Planning Operations Work Group

D. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: 3

- a. Attended Water Environment Research Foundation's workshop, *Workforce Skills of the Future*
- b. The Director of Talent Management served as a panelist for a Water Environment Federation's Water Leadership Institute webinar
- c. Attended the SWIFT Oversight Workshop Participants dinner.

2. Community Partners: 2

- a. International Public Management Association's Regional Training Workgroup
- b. Public Works Academy

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2017
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.51
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.25
M-1.4a	Total Training Hours Per Full Time Employee (15) – Current Month	Total Training Hours/ FTE	1.97
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	1.97
M-5.2	Educational and Outreach Events	Number	3
M-5.3	Community Partners	Number	2

4. Annual Strategic Planning Metrics Summary

Item #	Strategic Planning Measure	Unit	FY-2017
M-1.1a	Employee Turnover Rate (Total)	Percentage	6.66
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.77
M-1.1c	Employee Turnover Rate within Probationary Period	Percentage	0.90
M-1.2	Internal Employee Promotion Eligible	Percentage	68
M-1.3	Average Time to Fill a Position	Calendar Days	67
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	5.5
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	1.0
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	2.8

Respectfully submitted,

Paula A. Hogg

Director of Talent Management

TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for July 2017

DATE: August 10, 2017

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.
2. The Director attended the National Association of Clean Water Agencies' (NACWA) Utility Leadership meeting. As Chair of NACWA's Water Quality Committee, I introduced the idea of using a different approach to addressing water quality impairments within the current construct of the Clean Water Act's Total Maximum Daily Load (TMDL) program. The TMDL program essentially identifies water segments that do not meet respective water quality standards, potential reasons why the standards are not met, and a schedule to complete a TMDL study. TMDLs often result in new or more stringent permit limits for Publically Owned Treatment Works (POTWs) like HRSD; sources like agriculture are rarely regulated. A TMDL forms the basis for almost all of HRSD's plant permit nutrient requirements. However, there are numerous examples nationally of where this approach does not result in attainment of standards; particularly when POTWs represent a minority of the total pollutant load to a water segment. The typical TMDL scenario requires significant expenditures by POTWs to reduce loads, yet water quality standards instream continue to be exceeded. The federal Environmental Protection Agency recently created a new TMDL category that allows for restoration approach alternatives to the TMDL approach. This restoration approach would, presumably, focus first on the pollutant loads that are the most significant and can be reduced at the lowest cost to our customers. Such an approach would formally and legally enable HRSD's pathogen source tracking studies as an acceptable path to addressing pathogen exceedances of water quality standards instream. This approach could also be used for nutrients at some point in the future. Given its potential, I will pursue this concept within Virginia as well as nationally through NACWA. Such an approach would directly support HRSD's interest in using limited funds to derive the most significant environmental and public health benefits.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) did not report activity for the month of July.
2. The Technical Services Division (TSD) Technology Team is currently evaluating the ESRI ArcGIS Data Collector application to see if this will aid in our field data and post laboratory data capture needs. Efforts continue in understanding the various computer programs and how they will interact with one another to produce the results we are seeking.
3. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to King George County and the City of Franklin to support their respective Virginia Pollution Discharge Elimination System (VPDES) permit application processes.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 2
 - a. Central Environmental Laboratory (CEL) staff gave three presentations and a workshop at the Good Lab Practices Conference.
 - b. CEL and TSD staff gave a tour of the Water Quality Services Building to the Occoquan Laboratory staff.
2. Community Partners: 9
 - a. City of Norfolk
 - b. City of Newport News
 - c. Virginia Department of Health Division of Shellfish Sanitation
 - d. Virginia Department of Environmental Quality
 - e. City of Chesapeake
 - f. City of Suffolk
 - g. Elizabeth River Project
 - h. Virginia Department of Health Office of Epidemiology
 - i. Hampton Roads Planning District Commission

3. IWD Related System Issues: 2

- a. Virginia Initiative Plant staff notified P3 of an elevated influent pH. Industries were contacted and nothing unusual was noted. HRSD Interceptors staff checked pump station wastewater pH values and did not observe elevated pH values. Treatment was not affected and a cause for the elevated influent pH was not identified.
- b. Boat Harbor Treatment Plant (BHTP) plant staff notified P3 of high influent conductivity readings. Field measurements confirmed high conductivity associated with discharge from the Newport News Shipyard. The river water source was located and isolated and conductivity levels dropped at BHTP. A repeated occurrence two weeks later again confirmed the Shipyard as the source. The river water source was again isolated as it appears the previous valve repair did not work. BHTP lost nitrification but cannot confirm that the conductivity spike from the Shipyard was the sole reason. The Operations Department is working to install a conductivity sensor at the new 33rd Street Pump Station, which will send alerts to appropriate staff as soon as an elevated reading is observed.

4. Odor Complaint: 1

- a. HRSD received an odor complaint on July 28. The Old Dominion University (ODU) Sailing Center complained about an offsite odor. Staff was maintaining an out of service primary clarifier that had an unusually large amount of solids in it. When in service, the odor control system scrubs air from the clarifier but during maintenance access hatches are opened and portable fans introduce fresh air into the tank for safety purposes. Staff immediately stopped maintenance work and closed the access hatches upon receipt of the complaint. Staff visited the Sailing Center to reassure them that plant personnel identified and abated the odor source. Maintenance of the tank will be coordinated with the Sailing Center in the future. The Sailing Center staff was very appreciative of HRSD's response and resolution of the odor.

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	5.99

Item #	Strategic Planning Measure	Unit	July 2017
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	5.99
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	1:4,436
M-3.2	Odor Complaints	#	1
M-3.4	Pollutant Removal	Total Pounds Removed	15,727,825
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	17%
M-5.2	Educational and Outreach Events	#	2
M-5.3	Community Partners	#	9
	Average Daily Flow	Total MGD for all Treatment Plants	139.20
	Industrial Waste Related System Issues	#	2

Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2017
M-3.3	Carbon Footprint	Tons per MG	*
M-4.2	R & D Budget	Percentage of Total Revenue	*
M-5.4	Value of Research	Number	*
M-5.5	Number of Research Partners	Number	*
	Rolling 5 Year Average Daily Flow	MGD	154.24
	Rainfall reported at Norfolk International Airport	Number	66.66"

*These metrics will be reported upon closeout of fiscal year financials.

Respectfully submitted,

James Plett, PhD

Director of Water Quality



The following Internal Audit Status document has been prepared by SC&H for the HRSD Commission. Below is a summary of projects in process, upcoming projects, and the status of current management action plan (MAP) monitoring.

I. Projects in Process

Procurement/ ProCard Process Review

- **Tasks Completed (July 2017)**
 - Obtained and reviewed management action plan responses to recommendations

- **Upcoming Tasks (August 2017)**
 - Finalize report and provide to management for distribution to HRSD Commission

Engineering Procurement Process Review

- **Tasks Completed (July 2017)**
 - Finalized project objectives
 - Drafted and finalized audit work program
 - Requested testing documentation
 - Conducted comprehensive walkthroughs of various solicitations with Engineering staff

- **Upcoming Tasks (August 2017)**
 - Conduct testing to complete steps outlined in the audit work program
 - Schedule fieldwork exit conference with process owners
 - Draft final project report

IT: Network Security/ Cybersecurity

- **Tasks Completed (July 2017)**
 - Conducted audit entrance meeting
 - Communicated initial document request list
 - Reviewed process documentation as received

- **Upcoming Tasks (August 2017)**
 - Continue to review process documentation
 - Draft and finalize audit work program
 - Perform walkthroughs for in-scope areas
 - Request testing documentation
 - Conduct fieldwork

****Engagement Notes/ Delays***

SC&H has noted delays in the scheduling of process walkthrough meetings in the performance of the Engineering Procurement 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.



II. Upcoming Projects (FY2018)

The following projects are scheduled to be performed during FY2018 based upon the risk assessment previously performed by SC&H.

- Q2- Corporate Governance: Ethics Function
- Q2- Risk Assessment: Year 3 Refresh
- Q3- Operations: Treatment Plants
- Q4- Finance and Accounting: Customer Care (Billing, Mail Center & Payments, A/R & Delinquent Accounts)

III. Management Action Plan (MAP) Monitoring

SC&H is performing on-going MAP monitoring for internal audits previously conducted for HRSD. SC&H begins MAP follow-up approximately one year following the completion of each audit and will assess bi-annually.

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

The following describes the current project monitoring status and upcoming monitoring timeframes.

Design and Construction: CIP Project Management Review MAP Status

- Audit Report Date: May 11, 2016
- Next Follow-up: September 2017
- Total Recommendations: 13
- Recommendations Closed: 10
- Recommendations Open: 3 (Anticipated to be closed by December 2017)

Upcoming MAP Monitoring

- Biosolids
 - Report Date: October 8, 2016
 - Anticipated MAP Follow-up: October 2017

- HR Administration of Employee Health Insurance
 - Report Date: November 22, 2016
 - Anticipated MAP Follow-up: December 2017

- Inventory Management
 - Report Date: April 20, 2017
 - Anticipated MAP Follow-up: April 2018

Annual Metrics											
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%	6.66%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67
M-1.4	Training Hours per Employee - cumulative fiscal year-to-date	Hours	> 40		30.0	43.8	37.5	35.9	42.8	49.0	48.4
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	< 3.5	6.57	6.15	5.8	11.2	5.07	3.87	7	5.5
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	< 1.1	0.74	1.13	1.33	0.96	1.4	0.82	1.9	1
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	< 0.8	3.72	4.27	2.55	4.5	2	1.76	3.6	2.8
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	*
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	28,786
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	*
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	6,052,142
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205	2,294
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%	*
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	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	154.24
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	*
	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%	*

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

Monthly Updated Metrics												FY-17	FY-18
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	Jun-17	Jul-17
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	153.2	139.2
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	2	2
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	101%	100%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	107%	115%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$ 17,013,784	\$ 17,359,488	\$ 18,795,475	\$ 20,524,316	\$ 20,758,439	\$ 22,444,273	\$ 22,572,788	\$20,634,365	\$22,638,934
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	17%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	2	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	9:53236	9:53236	1:4436
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	0	1
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	189,765,922	15,727,825
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	22%	17%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	41	34
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	30	31

EFFLUENT SUMMARY FOR JULY 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	8.52	47%	3	4.5	3	1	0.64	0.64	8.3	7.0	NA	NA	24
ATLANTIC	28.83	53%	13	4.3	14	1	NA	NA	NA	NA	NA	NA	2
BOAT HARBOR	10.23	41%	5	4.9	6	<1	1.4	0.57	20	14	NA	NA	14
CENT. MIDDLESEX	0.015	60%	<2	<1.0	1	1	NA	NA	NA	NA	<0.50	0.05	NA
CHES-ELIZ	17.90	75%	12	12	22	2	1.6	1.3	28	31	NA	NA	8
JAMES RIVER	11.20	56%	0	1.8	2	1	0.20	0.46	6.2	9.4	NA	NA	2
KING WILLIAM	0.044	44%	<2	<1.0	NA	3	0.07	0.04	0.25	0.88	<0.50	NA	NA
NANSEMOND	18.18	61%	8	4.1	1	2	1.3	0.89	8.4	7.3	NA	NA	10
URBANNA	0.055	55%	10	27	7	14	7.6	5.5	23	23	NA	0.05	NA
VIP	26.02	65%	0	2.2	2	1	0.79	0.75	7.8	7.8	NA	NA	5
WEST POINT	0.312	52%	20	13	15	5	3.8	2.9	19	17	NA	8.5	0
WILLIAMSBURG	7.62	34%	1	2.1	7	1	1.1	0.60	4.3	4.8	NA	NA	2
YORK RIVER	10.27	68%	2	1.9	1	2	0.24	0.27	1.9	2.1	NA	NA	12
	<u>139.20</u>												

	%
	of
	Capacity
North Shore	48%
South Shore	60%
Mid Peninsula	49%

Tributary Summary						
Tributaries	<u>Annual Total Nitrogen</u>			<u>Annual Total Phosphorus</u>		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection	CY17	YTD	Projection	CY17
	%	Lbs	%	%	Lbs	%
James River	51%	4,013,528	88%	48%	294,939	93%
York River	22%	169,603	59%	43%	15,026	78%
Rappahannock	145%	NA	NA	525%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY18 to Date: 1:4,436
Pounds of Pollutants Removed in FY18 to Date: 15,727,825
Pollutant Lbs Discharged/Permitted Discharge FY18 to Date: 17%

	Rainfall (inch)		
	<u>North</u>	<u>South</u>	<u>Small</u>
	<u>Shore</u>	<u>Shore</u>	<u>Communities</u>
	<u>(PHF)</u>	<u>(ORF)</u>	<u>(FYJ)</u>
Month	2.10"	4.41"	4.79"
Normal for Month	5.71"	6.26"	5.36"
Year to Date Total	26.81"	29.50"	27.05"
Normal for YTD	28.39"	27.48"	28.15"

AIR EMISSIONS SUMMARY FOR JULY 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	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	pH	Bypass	Mo. Ave	DC	Daily Ave
(F)	(in. WC)	(GPM)	(GPM)	(GPM)	(GPM)	(GPM)	3 hr ave	Stack Use	(PPM)	(%)	Days >Max
ARMY BASE	0	0	0	0	0	0	0	5	29	99	0
BOAT HARBOR	2	3	0	n/a	0	0	0	1	70	100	0
CHES-ELIZ	1	1	0	0	0	0	0	2	25	100	0
VIP	0	0	0	n/a	1	0	0	2	68	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	11	100	0

ALL OPERATIONS

DEQ Reportable Air Incidents:	1
DEQ Request for Corrective Action (RCA):	0
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	0
Odor Complaints Received:	1
Odor Scrubber HRSD Exceptions:	1