COMMISSION MEETING MINUTES
April 24, 2018

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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-15
Lynch, Maurice P.	Commission Vice-Chair	1-15
Glenn, Michael E.	Commissioner	1-15
Lakdawala, Vishnu K.	Commissioner	1-15
Levenston, Jr., Willie	Commissioner	1-15
Rodriguez, Stephen C.	Commissioner	1-15
Taraski, Elizabeth	Commissioner	1-15
Templeman, Ann	Commissioner	1-15

1. AWARDS AND RECOGNITION

Action: No action required.

Brief: Mr. Henifin announced the following awards:

a. HRSD Environmental Improvement Fund Awards

The HRSD Environmental Improvement Fund Awards were presented March 3 during the 67th Annual Tidewater Science and Engineering Fair. The following recipients were selected by a team of HRSD scientists led by Water Quality Director Jim Pletl:

Junior Division (Middle School)

1st Place – Charlotte Gibson; Jolliff Middle School, Chesapeake *"The Effect of Common Pollutants on the Growth of Plants"*

2nd Place – Lois Carpenter; Booker T. Washington, Newport News *"Does Caffeine Affect Radish Plant Growth?"*

Senior Division (High School)

1st Place – Steve Petit; Governor's School for Science and Technology, Newport News *"The Effect of Various Native Plants on the Prevention of Soil Erosion"*

2nd Place – Camryn Young; York High School, York County *"The Effect of Different Nutrient Based Fertilizers on Milkweed Growth and Health"*

The prizes are:

Junior Division: First Place – $400 cash and a trophy; Second Place – $300 cash and a trophy

Senior Division: First Place – $700 cash and a trophy; Second Place – $500 cash and a trophy

HRSD also presents a $75 cash honorarium to the teacher that mentored and supported each winner.

b. American Council of Engineering Companies (ACEC) 2018 Engineering Excellence Awards National Recognition for the HRSD Norchester Pump Station

Mr. Henifin announced the receipt of the ACEC National Award for the design of the Norchester Pump Station. The pump station was nominated for this award by the design engineer, Gannett Fleming.

c. Virginia Tech Academy of Distinguished Alumni

Mr. Henifin announced Dr. Charles Bott was inducted into the Academy of Distinguished Alumni by the Via Department of Civil & Environmental Engineering (CEE) at Virginia Tech. This designation is awarded based on career accomplishments and contributions to the profession, their community, and service to Virginia Tech.

Attachment #1: PowerPoint Presentation

Public Comment: None

2. CONSENT AGENDA

Action: Approve the items listed in the Consent Agenda.

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

Brief:

a. Approval of minutes from previous meeting.

b. Contract Awards

1. Coating and Repair of Secondary Clarifier $214,000

2. South Shore Wet and Dry Well Ventilation Fan Replacement $263,700

c. Task Orders

1. Emerson Ovation Evergreen Program $725,000

d. Sole Source

1. Aqua-Aerobic Systems, Inc. - Aqua® Equipment, Replacement Parts and Service

2. CBS ArcSafe - ArcSafe™ Remote Switch Actuators and Operators

3. Sumo© Process Modeling Support Services

4. Shoap Process Equipment - EIM Submersible Pumps, Replacement Parts, Maintenance and Repairs

5. Williamsburg Treatment Plant Outfall Repairs Underwater Inspection and Repair Services

6. Wolseley Industrial Group - ITT Engineered Fabri Valves, Gates, Seals and Replacement Parts

Item Removed for Discussion: 2.d.6. Wolseley Industrial Group - ITT Engineered Fabri Valves, Gates, Seals and Replacement Parts. Commissioner Lynch abstained from voting on this item due to a conflict of interest.

Moved:	Willie Levenston	**Ayes:**	7
Seconded:	Ann Templeman	**Nays:**	0
		Abstained	1 (Maurice Lynch)

Attachment #2: Consent Agenda

Public Comment: None

3. **Hydrograv GmbH - Hydrograv® Adapt Variable Clarifier Inlet Sole Source (>$10,000) and Briefing**

Action: Approve Hydrograv® Adapt Variable Clarifier Inlet for use at HRSD.

Moved:	Willie Levenston	**Ayes:**	8
Seconded:	Michael Glenn	**Nays:**	0

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 design, fabrication, delivery and installation assistance of a Hydrograv® Adapt Variable Clarifier Inlet. This is a variable height inlet structure that is designed to significantly decrease clarifier effluent turbidity and maintain low turbidity during high flow events. This is achieved by feeding the secondary clarifier within the solids blanket during dry weather conditions, and lifting the inlet structure under wet weather flow conditions to feed above and to avoid disrupting the solids blanket.

This project involves a demonstration test of the technology on a single secondary clarifier at the Nansemond Treatment Plant in parallel with an existing unit, with the potential for installation at other HRSD Treatment Plants. If the clarifier inlet meets performance expectations, the remaining four clarifiers at Nansemond will be upgraded, and the SWIFT Research Center (SWIFTRC) will be modified to potentially bypass the sedimentation process. The SWIFTRC will then be tested in a “direct filtration” mode to evaluate unit filter run volumes and filter effluent turbidity.

If testing is successful, this technology would result in a significant decrease in the capital and operating costs for the full-scale SWIFT installations. This includes a decrease in the need for sedimentation tankage and equipment. Future design, fabrication, and installation of the clarifier inlet on secondary clarifiers would potentially be incorporated into the SWIFT program translating into significant cost savings for HRSD.

Hydrograv GmbH is the sole proprietary manufacturer of this technology. To date this equipment has only been installed in Germany and will be new to North America. The clarifier inlet has been found to be durable and require low maintenance.

Staff provided a briefing on the details of the technology as well as the development and status of this project.

Discussion Summary: Staff explained how existing clarifiers could be modified with this technology. If the demonstration is successful, a savings of $10-20 million per treatment plant could be realized in capital and operating costs. The cost to upgrade each clarifier is approximately $300,000-$400,000. This demonstration project will not affect the timeline for the SWIFT project.

Attachment #3: PowerPoint Presentation

Public Comment: None

4. **Acquisition of Easement – 600 Severn Road, Newport News, VA Resolution**

Action: Adopt the Resolution providing for the acquisition by condemnation, if necessary, of easements with respect to the relocation of HRSD force mains to accommodate the planned Newport News Transportation Center Project.

Moved:	Michael Glenn	**Ayes:**	8
Seconded:	Willie Levenston	**Nays:**	0

Project Description: The City of Newport News is planning to construct a multi-modal transportation center within the Patrick Henry area of Newport News. The planned project will require relocation of two HRSD force mains. The acquisition of a 28,279 SF (+/-) temporary easement and a 4,934 SF (+/-) permanent easement at 600 Severn Road will allow for adequate relocation of HRSD facilities, ingress/egress capabilities and provide a lay down area for construction purposes.

In accordance with Section 15.2-1903.B. of the Code of Virginia, a public hearing was held on March 27, 2018 to review the scope of the project, to define the public need of the project and identify the specific impact to the properties where condemnation was being considered and to receive public input. No public comments were made at this hearing. Attempts to purchase the property from the owner have been unsuccessful. While a purchase is still possible, condemnation will likely be necessary to keep the project on schedule.

A facilities orientation map and plat are provided for clarification purposes.

Analysis of Cost: The cost for the easement, $15,500, is based upon a professional appraisal by Smith and Company Realtors.

Attachment #4: Resolution, Map and Plat

Public Comment: None

5. ANNUAL BUDGET AND RELATED COMPONENTS

Action: No action required.

Brief: The Finance Committee (comprised of Commissioners Rodriguez and Lynch) and other Commissioners attended Capital Improvement Program (CIP) review meetings on March 1 and March 30. A Commission workshop on the draft Fiscal Year-2019 Annual Budget was held on March 27, 2018 and attended by all Commissioners.

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

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

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

The 10-year CIP, a long-range planning tool used to summarize needed projects, includes a description, cost estimate and schedule for each project. The Commission approves the 10-year plan along with the planned expenditures for the first fiscal year in the plan. Each project is reviewed prior to commencement to reevaluate the need, timing, location, capacity, cost and schedule for the project. Individual projects in the approved CIP are presented to the Commission for appropriation of project funding when the first dollar is proposed to be spent. As individual projects proceed, the Commission remains informed through regular reports and briefings. The proposed CIP totals approximately $2.54 billion over the next 10 years.

Discussion Summary: This item was introduced on the agenda as item 5, but was discussed after item 9.

The Commission discussed the impact of technology, growth and water consumption on rates. Staff is looking at ways to reduce the year-over-year volatility of the surcharge rates and will present a revised rate recommendation at the next meeting. Even with the current surcharge rates, which are significantly less than 2012, industrial users are trying to find ways to do things more cost effectively to reduce their surcharge bills.

Installing expensive equipment to reduce the surcharge may not be cost effective for most industrial dischargers. During the discussion of financial metrics, staff compared HRSD's financial forecast ratios with AA and Large entities to show how we are in-line with both. Staff also discussed HRSD's *Days Cash on Hand* and how rating agencies view this metric. Additional information on AAA rated agencies with high Days Cash on Hand will be provided to the Commission at a later date. Staff believes HRSD's financial policies are appropriate for a regional utility of our size and incurring additional costs to achieve a higher rating is not warranted as the interest rate savings, typically, will not fully offset the increased costs. Additionally, HRSD takes advantage of the low interest funding available through the Virginia Resources Authority (backed by the Commonwealth's AAA credit rating) thus gets the benefits of a AAA credit even before applying any revolving loan fund buy-downs.

Commissioner Rodriguez thanked staff for the thorough, well organized and streamlined presentation of the CIP and budget information.

Attachment #5: Draft Fiscal Year-2019 Budget and Presentation

Public Comment: None

6. **MATHEWS COLLECTION SYSTEM VACUUM VALVE REPLACEMENT ADDITIONAL APPROPRIATION AND CONTRACT AWARD (>$200,000)**

Actions:

a. Appropriate additional funding in the amount of $212,597.

b. Award a contract to Walter C. Via Enterprises Inc. in the amount of $206,000.

Moved:	Stephen Rodriguez	**Ayes:**	8
Seconded:	Vishnu Lakdawala	**Nays:**	0

CIP Project: MP011400

Budget	$1,452,000
Previous Expenditures and Encumbrances	$1,638,597
Available Balance	$13,403
Proposed Contract Award to Contractor	($206,000)
Proposed Contingency	($20,000)
Project Shortage/Requested Additional Funding	($212,597)
Revised Total Project Authorized Funding	$1,664,597

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Walter C Via Enterprises Inc.	$206,000
Tidewater Utility Construction Inc.	$247,500
Shaw Construction Corp	$363,000
Bush Construction Corporation	$519,000

HRSD Estimate: $200,000

Contract Description: This contract is an agreement for the installation of 39 Airvac valve pit packages throughout Mathews County. Contractor shall remove and install new valve pit packages and connect piping structure. This is phase six of the ongoing project.

Project Description: This ongoing project will replace a total of 177 failing vacuum valve chambers and sumps per year over eight years. This contract will complete the project and the last of the vacuum valve chambers and sump replacements. The contractor will excavate and remove both the existing orangeburg valve chambers and the existing unreinforced concrete sumps and replace them with new single-piece plastic

valve chamber and sump systems with internal controller vent. The project will require sole source procurement of the systems from Airvac. Sole source procurement of these systems was approved by the Commission on October 26, 2010.

Funding Description: The original 2010 CIP project estimate did not take into account the material cost increases due to the implementation of new technology during later phases and fiscal year budget restraints on each planned phase. This project requires additional funding to account for the costs of material and installation increases incurred over the last six years. The total cost for this award exceeds the balance available under this CIP project.

This request also includes a $20,000 contingency to accommodate any additional unforeseen conditions.

Schedule:		
	PER	July 2010
	Design	July 2010
	Bid	July 2010
	Construction	July 2010
	Project Completion	June 2018

Analysis of Cost: Costs have been compared to previous purchases and bids and determined to be fair and reasonable.

Public Comment: None

7. **SUFFOLK REGIONAL LANDFILL TRANSMISSION FORCE MAIN INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of $7,000,000.

Moved:	Vishnu Lakdawala	**Ayes:**	8
Seconded:	Michael Glenn	**Nays:**	0

CIP Project: AT014100

Background: At the March 2018 meeting, the Commission approved the terms and conditions of the cost sharing agreement with SPSA to construct a force main from the regional landfill to HRSD facilities that ultimately will be part of the Atlantic Treatment Plant service area.

Project Description: This project is for HRSD's preferred alternative of a force main from the Southeastern Public Service Authority (SPSA) landfill to Bainbridge Boulevard to convey SPSA landfill leachate to the Atlantic Treatment Plant. SPSA has a permit allowing leachate discharge into the HRSD collection system. This leachate could have negative impacts on the SWIFT facility at the Nansemond Treatment Plant. This force main will convey the leachate into the Atlantic service area instead of the Nansemond service area.

Funding Description: The total cost of this project is estimated to be $7,000,000 and is based on a CIP-prioritization level estimate. HDR Engineering, Inc. will perform an initial routing study under the General Engineering Services annual contract for a fee of $97,000. This purpose of this phase is to identify the preferred force main alignment from SPSA's facility to the Washington District Pump Station including identifying stakeholders for easement acquisition and required permits.

Schedule:	PER	December 2018
	Design	October 2019
	Bid	January 2020
	Construction	April 2020
	Project Completion	January 2022

Discussion Summary: The SPSA cost share is limited to $3 million (one-third of the first $6 million and one-third of costs above $8 million up to the total of $3 million).

Attachment: None

Public Comment: None

8. **WILLIAMSBURG TREATMENT PLANT OUTFALL REPAIRS 2018 INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of $165,000.

Moved:	Maurice Lynch	**Ayes:**	8
Seconded:	Michael Glenn	**Nays:**	0

CIP Project: WB012800

Project Description: The Williamsburg Treatment Plant Outfall was inspected in February 2018. Identified deficiencies included missing marker buoy, pipe separation, outfall leaks, missing backfill, missing diffusers, buried diffusers, and clogged diffusers. To ensure proper dilution of the treatment plant effluent, the outfall and diffuser system needs to be operating properly. This project will design, construct and execute the necessary repairs to the Williamsburg Treatment Plant Outfall.

Funding Description: The estimated total cost for this project is $165,000. The estimated project cost is based on a construction cost estimate of $95,000 and an engineering services estimate of $20,000 prepared by Collins Engineers, Inc. and reviewed by Design and Construction. The total engineering services include Design, Construction Administration and Inspection Services. A $50,000 contingency has been included in this cost due to the unknown aspects of the repair efforts.

Schedule:	Design	May 2018
	Construction	May 2018
	Project Completion	August 2018

Attachment: None

Public Comment: None

9. **VALUE OF WATER 2018 NATIONAL SURVEY POLL RESULTS BRIEFING**

Action: No action required.

Background: The Value of Water Campaign is an US Water Alliance initiative that educates and inspires the nation about how water is essential, invaluable, and in need of investment. Spearheaded by top leaders in the water industry, the Value of Water Campaign's goal is to build public and political will for investment in America's water infrastructure. HRSD is a member of the US Water Alliance and a supporter of the Value of Water Campaign. One of the Value of Water projects for the past three years has been a national opinion survey regarding investments in water infrastructure.

The 2018 poll results were released during Water Week in Washington, D.C., April 16 through 20. Topline findings and talking points are attached. Staff presented the results of the poll at the April meeting.

Discussion Summary: The results were presented to congressional staff, congressmen and senators at Capitol Hill last week. The Commission discussed the terminology "infrastructure" was mostly focused on water and wastewater, not transportation, in this poll. We continue to partner with other agencies to promote and educate the public on taking the right steps and making the right investments in infrastructure.

Attachment #6: Topline Findings and Talking Points and PowerPoint Presentation

Public Comment: None

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

Action: No action required.

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

Discussion Summary: During the discussion of CIP expenditures, staff said grant reimbursements are not tied to time deadlines and are not affected by project delays. The only active grant is for the Virginia Initiative Plant Nutrient Reduction Improvements project. Deadlines for nutrient compliance may have a secondary impact on grant reimbursements. During the discussion of future CIP delivery, staff explained the structure of Program Management staffing for the SWIFT project.

Attachment #7: PowerPoint Presentation

Public Comment: None

11. **UNFINISHED BUSINESS** – None

Mr. Henifin stated the City of Portsmouth is no longer interested in studying the potential transfer of their collection system to HRSD.

12. **NEW BUSINESS** – None

13. **COMMISSIONER COMMENTS**

Commissioner Levenston said he was looking forward to seeing SWIFT. He believes this project will have a very significant impact on our area. He is pleased with the progress and is very proud of all the hard work that has gone into it.

Commissioner Levenston also commented on the ribbon cutting ceremony hosted by the Elizabeth River Project for the Paradise Creek Nature Trail.

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

15. **INFORMATIONAL ITEMS**

Action: No action required.

Brief: The items listed below were presented for information.

a. Management Reports

b. Strategic Planning Metrics Summary

c. Effluent Summary

d. Air Summary

Attachment #8: Informational Items

Public Comment: None

16. ANNOUNCEMENTS

The ribbon cutting ceremony for the SWIFT Research Center will be held on May 18, 2018.

Next Commission Meeting Date: May 22, 2018 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

Meeting Adjourned: 11:06 a.m.

SUBMITTED:

Jennifer L. Cascio

Jennifer L. Cascio
Secretary

APPROVED:

Frederick N. Elofson

Frederick N. Elofson, CPA
Chair

ATTACHMENT #1

AGENDA ITEM 1. – Awards and Recognition

The Neighbor on Norchester

- American Council of Engineering Companies
  - Annual awards
  - Gannett Fleming nominated project
- Jessica Hou – Gannett PM

The **Norchester Pump Station** is a Showcase of Sanitary Infrastructure Best Practices

THE NEIGHBOR ON NORCHESTER

Norfolk, Va.

No one wants a sewage pump station as a neighbor. But the Norchester Pump Station demonstrates how sanitary infrastructure can seamlessly blend within a residential community.

Built in the 1940s and owned by HRSD, Norchester was a wet well/dry well pump station. As the area's population grew, so too did the wastewater flows processed by the facility. Also, extreme microbial corrosion had rendered its wet well in danger of collapse, creating concern for human and environmental health. These conditions signaled to HRSD that a new pump station was necessary.

Innovations and Outcomes

- New pump station effectively manages average day and wet weather flows, ranging from 2.6 to 10.8 million gallons per day
- First self-cleaning, trench-type wet well in the region's collection systems
- An alternative utility feed, permanent bypass pump, portable generator connection, and portable bypass pump connection provide four levels of enhanced reliability
- Increased reliability means reduced risk of overflows into the Chesapeake Bay, one of the world's most prized ecosystems
- Smart design provides for efficiency, optimum hydraulic conditions, and easy wet well cleaning, an important benefit in the region, where grit accumulation during storms can be problematic
- A first in regional collection system operations, an advanced odor control system with a biological trickling filter and secondary carbon scrubber removes more than 99 percent of the station's hydrogen sulfide
- Thoughtfully designed façade conceals sewer infrastructure and provides aesthetic continuity with the community.

Gannett Fleming Virginia Beach, Va.

HRSD Virginia Beach, Va.

ACEC


2018 ACEC Engineering Excellence Award Winners
ENGINEERING
ACEC
ACEC

ATTACHMENT #2

AGENDA ITEM 2. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – April 24, 2018

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

Recommended Action: Award a contract to New Kent Coatings in the amount of $214,000.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
New Kent Coatings, Inc.	$204,250
Town Hall Painting Corporation	$226,570
W W Enroughty and Son, Inc.	$280,083

HRSD Estimate: $300,000

Contract Description: This contract is an agreement to prepare, coat and perform spot repairs on all immersion/atmospheric ferrous steel on the Secondary Clarifier #5 at the Nansemond Treatment Plant.

Contingency line amount of $10,000 will be applied to the Purchase Order to cover any additional work in excess of the estimated amounts provided during the solicitation advertisement. The cost per unit of measure contingency lines, square foot and linear foot, were received in the bidder's bid amount as a firm fixed price.

CONSENT AGENDA ITEM 2.b.2. – April 24, 2018

Subject: South Shore Wet and Dry Well Ventilation Fan Replacement Contract Award (>$200,000)

Recommended Action: Award a contract to REW Corporation in the amount of $263,700.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
REW Corporation	$263,700

HRSD Estimate: $268,000

Contract Description: This contract is an agreement for furnishing, installing and providing start up and testing services of the wet and dry well ventilation fans at the Dozier's Corner, Steamboat Creek, Willoughby Ave and Seay Ave pump stations.

These fans are appropriately sized for the individual wells and will improve the quality of the air and increase the safety of any person entering the well.

Analysis of Cost: Costs were compared to previous purchases for wet well fan replacement and determined to be fair and reasonable.

CONSENT AGENDA ITEM 2.c.1. – April 24, 2018

Subject: Emerson Ovation Evergreen Program
Task Order (>$200,000)

Recommended Action: Approve a task order with Emerson Process Management in the amount of $725,000.

Contract Status:	**Amount**
Original Contract with Emerson Process Management	n/a
Total Value of Previous Task Orders*	$696,252
Requested Task Order	$725,000
Total Value of All Task Orders	$1,421,252
Revised Contract Value	n/a

*GN016200 (4/24/2017) & AT013500 (12/19/2017)

Project Description: The Ovation Evergreen Program is for specific Ovation software and hardware upgrades. This work is designed to eliminate system obsolescence by ensuring key elements of the control systems are regularly updated with the latest proven software, workstations, networks and input/output (I/O).

Task Order Description: This task order will provide planning and provision for I/O and Windows workstation and software replacements for treatment plants and Interceptor Supervisory Control and Data Acquisition (SCADA) system. Emerson will provide one major software release per network, one replacement of all User Interface/Man Machine Interfaces (MMIs) per network and all minor software releases to modify, enhance or fix minor issues associated with initial release. Specific work will be planned for the Army Base Treatment Plant, James River Treatment Plant, York River Treatment and balance of work remaining at the Nansemond Treatment Plant over a seven year period.

Analysis of Cost: The Emerson Distributed Control System (DCS), previously known as Westinghouse Distributed Process Family (WDPF), was originally procured for the Williamsburg Treatment Plant in the early 1990s. A similar system was installed in the late 1990s at the Nansemond Treatment Plant. Once two similar DCS systems were installed at HRSD, a decision was made to standardize the equipment. The cost for this task order is based on the pre-negotiated discount pricing structure and terms of the HRSD-Emerson Preferred Customer Agreement (PCA). The HRSD-Emerson PCA was previously approved as a sole source in January 2015.

CONSENT AGENDA ITEM 2.d.1. – April 24, 2018

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

Recommended Action: Approve Aqua® brand Equipment, Replacement Parts and Service for use at the Surry County Treatment Plant.

Sole Source Justification:

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

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

Aqua-Aerobic Systems, Inc. provided all original Aqua® equipment as part of a purchase package used by Sussex Service Authority. These are critical inventory replacement parts needed to quickly and efficiently make repairs to the SBR without risk of damage to the equipment or violation of manufacturer warranties.

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

Resource: Steve de Mik

CONSENT AGENDA ITEM 2.d.2. – April 24, 2018

Subject: CBS ArcSafe - ArcSafe™ Remote Switch Actuators and Operators Sole Source (>$10,000)

Recommended Action: Approve ArcSafe™ Remote Switch Actuators and Operators for use at HRSD.

Sole Source Justification:

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

Details: Product includes remote switch actuators (RSA) and remote switch operators (RSO) that allow personnel to safely operate electrical equipment outside of the arc flash boundary to prevent or reduce serve injury if exposed to an arc flash event. The RSA and RSO components are used in conjunction to remotely operate various types and styles of circuit breakers, motor control, switches and control circuits. Each ArcSafe™ RSA is custom built to the electrical equipment and allows personnel to stand outside the arc-flash boundary to operate, trip, and close release circuit breakers from a safe distance reducing the need for a full-body arc-flash hazard suit.

CBS ArcSafe is the proprietary manufacturer of ArcSafe™ equipment. ArcSafe™ is the only equipment compatible with all electrical equipment brand manufacturers used at HRSD.

CONSENT AGENDA ITEM 2.d.3. – April 24, 2018

Subject: SUMO© Process Modeling Support Services
Sole Source (>$10,000)

Recommended Action: Approve Dynamita SARL as the provider of SUMO© Process Modeling Support Services for use at HRSD.

Sole Source Justification:

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

Details: Services include process modeling, development related tasks, and support within the SUMO© model simulator software currently used by HRSD. The SUMO© model is owned, developed and supported exclusively by Dynamita SARL. Dynamaita SARL was approved by the Commission in February 2018 as a provider of SUMO© software licenses and support.

Typically one plant will be chosen per year for an intense modeling study to answer treatment process questions or prepare for an upcoming capital improvement project. The tasks associated with this would include model development/refinement, calibration and scenario evaluation.

CONSENT AGENDA ITEM 2.d.4. – April 24, 2018

Subject: Shoap Process Equipment - EIM Submersible Pumps, Replacement Parts, Maintenance and Repairs
Sole Source (>$10,000)

Recommended Action: Approve EIM Submersible Pumps, Replacement Parts, Maintenance and Repairs for use at James River Treatment Plant.

Sole Source Justification:

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

Details: Product includes purchase of an EIM submersible pump to replace the final pump of four in the grit removal process servicing the four grit tanks at the James River Treatment Plant. This pump will allow for the reuse of the existing piping and will streamline inventory and training required to maintain the pumps. Additionally, this will allow all four pumps to be used interchangeably on each grit tank or motor stator if the need should arise.

Shoap Process Equipment is the only authorized service representative for EIM submersible pumps.

Resource: Bruce Husselbee

CONSENT AGENDA ITEM 2.d.5. – April 24, 2018

Subject: Williamsburg Treatment Plant Outfall Repairs
Underwater Inspection and Repair Services
Sole Source (>$10,000)

Recommended Action: Approve Crofton Diving as the provider of underwater inspection and repair services for the Williamsburg Treatment Plant Outfall Repairs 2018 project.

CIP Project: WB012800

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: In February 2018, Crofton Diving conducted an inspection of the Williamsburg Treatment Plant Outfall. As a result of the inspection multiple deficiencies were discovered and need to be addressed. Crofton Diving had previously conducted an inspection in 2013 in which they identified and successfully repaired similar deficiencies on the outfall. Crofton Diving brings unique knowledge, perspective and subject matter experience at the Williamsburg Treatment Plant. For those reasons, HRSD desires to access this knowledge as we move forward with a collaborative effort between Collins Engineers, Inc. and Crofton Diving to design and execute these necessary and time-sensitive repairs for the Williamsburg Treatment Plant Outfall.

CONSENT AGENDA ITEM 2.d.6. – April 24, 2018

Subject: Wolseley Industrial Group - ITT Engineered Fabri Valves, Gates, Seals and Replacement Parts
Sole Source (>$10,000)

Recommended Action: Approve ITT Engineered Fabri Valves, Gates, Seals and Replacement Parts for use in existing and future Struvite Recovery Facilities (SRF) at HRSD.

Sole Source Justification:

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

Details: Product includes Fabri valves, gates, seals and replacement parts used in the Struvite Recovery Facility to remove nutrients and maintain effluent permit. The SRF reactors are designed specifically around Fabri brand and no other brand of parts will fit. Replacement parts will facilitate repairs without costly modifications to existing system infrastructure.

Wolseley Industrial Group is the only authorized distributor of Fabri Components for Virginia.

ATTACHMENT #3

AGENDA ITEM 3. – Hydrograv GmbH - Hydrograv® Adapt Variable Clarifier Inlet Presentation

HRSD

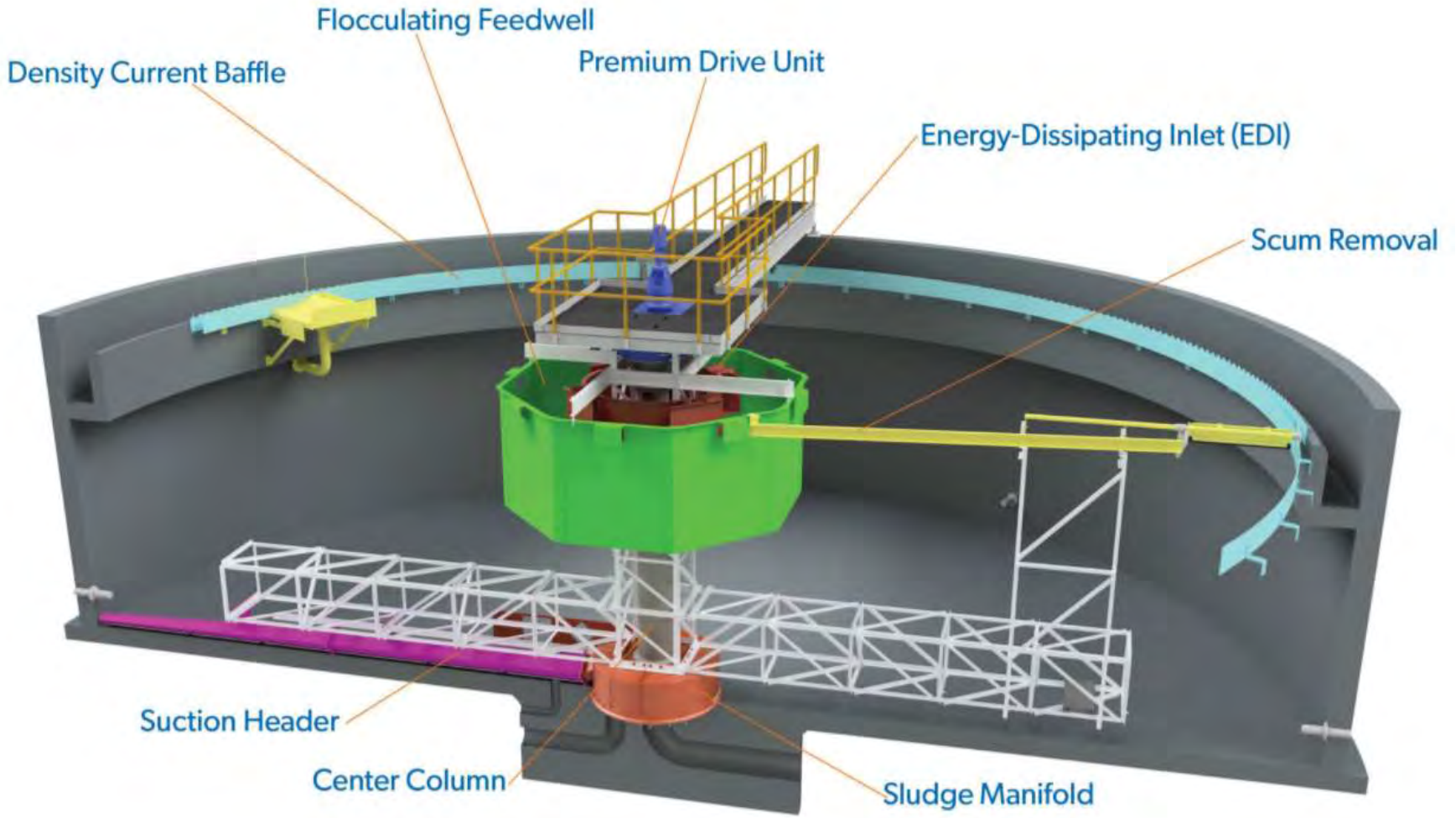
Cleaning wastewater every day for a better Bay.

Hydrograv® Adapt

Pilot Test – Clarifier #5 at Nansemond

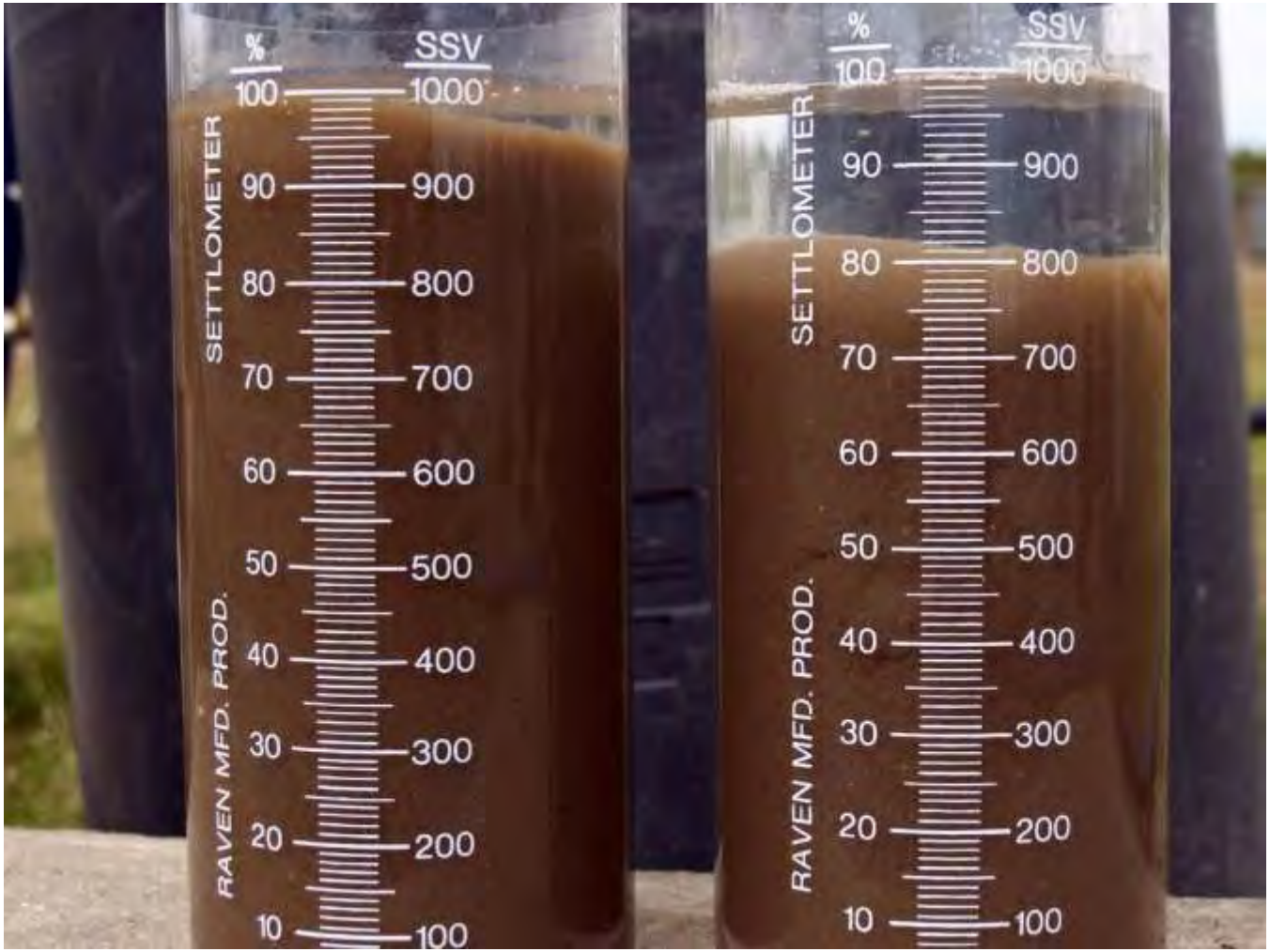
Nansemond Treatment Plant

WesTech Suction Header Clarifier

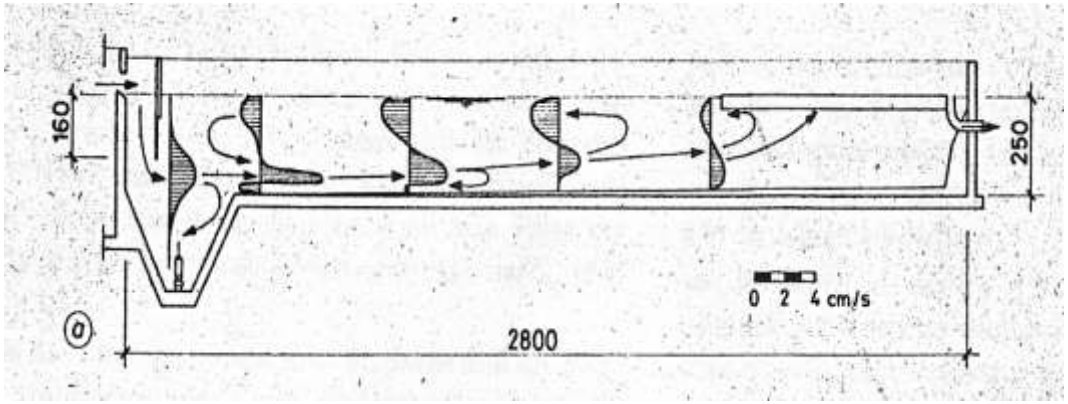


Evoqua Tow-Bro®

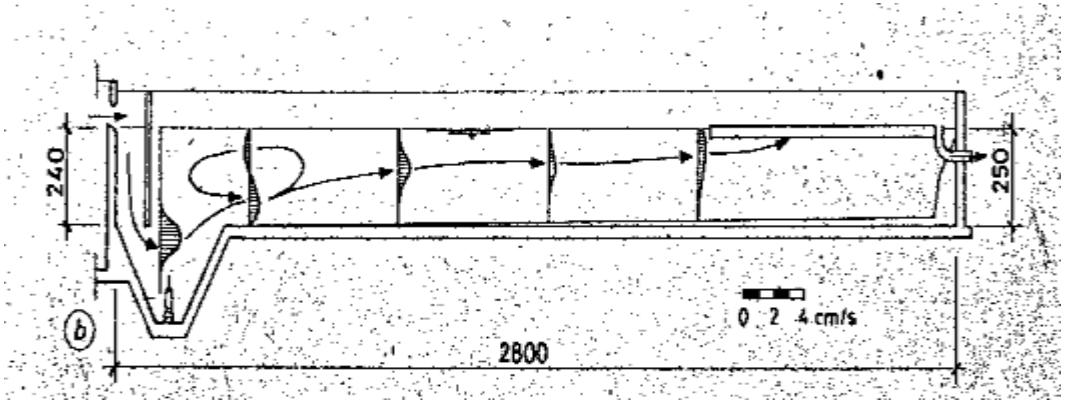
Settling in a Settlometer Versus a Continuous Flow Clarifier



Background



High Inlet Elevation



Low Inlet Elevation

The problem

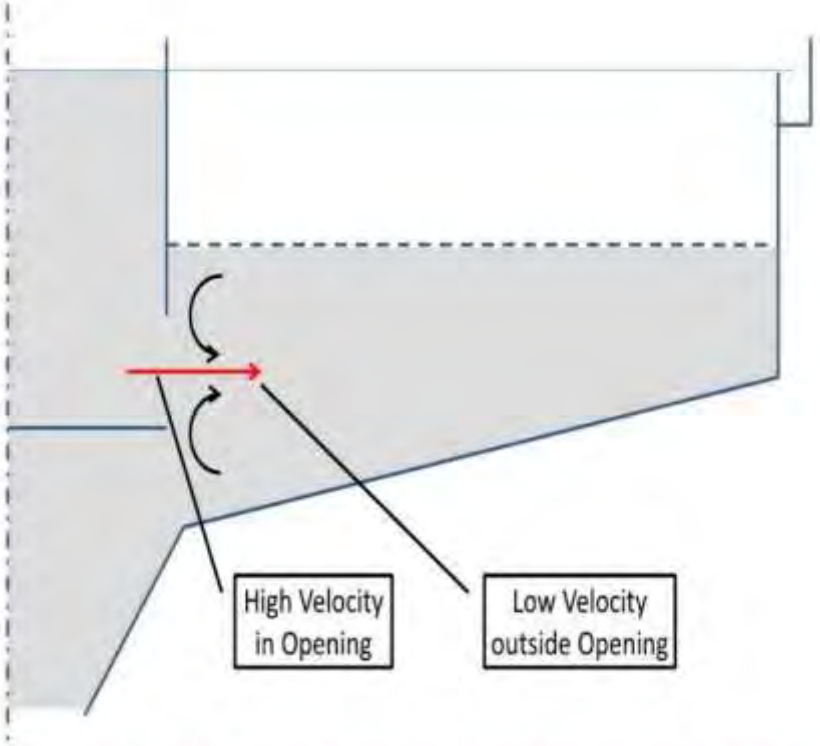


Figure 3. "Venturi-Pump effect" from entrance into clarifier. Internal recirculation of solids will increase the solids loading and solids quantities between the inlet and outlet - causing the blanket to rise.

- Energy dissipation does not work well
- Static inlet performance varies with loading rate

Background

Stess Testing: Moers-Gerdt

Founded in 2005

2000 2010 2020

1st Installation: Kölln-Weiden

Solution: Inlet at Variable Depth (adaptive inlet)

Picture: Dry weather

Wet weather

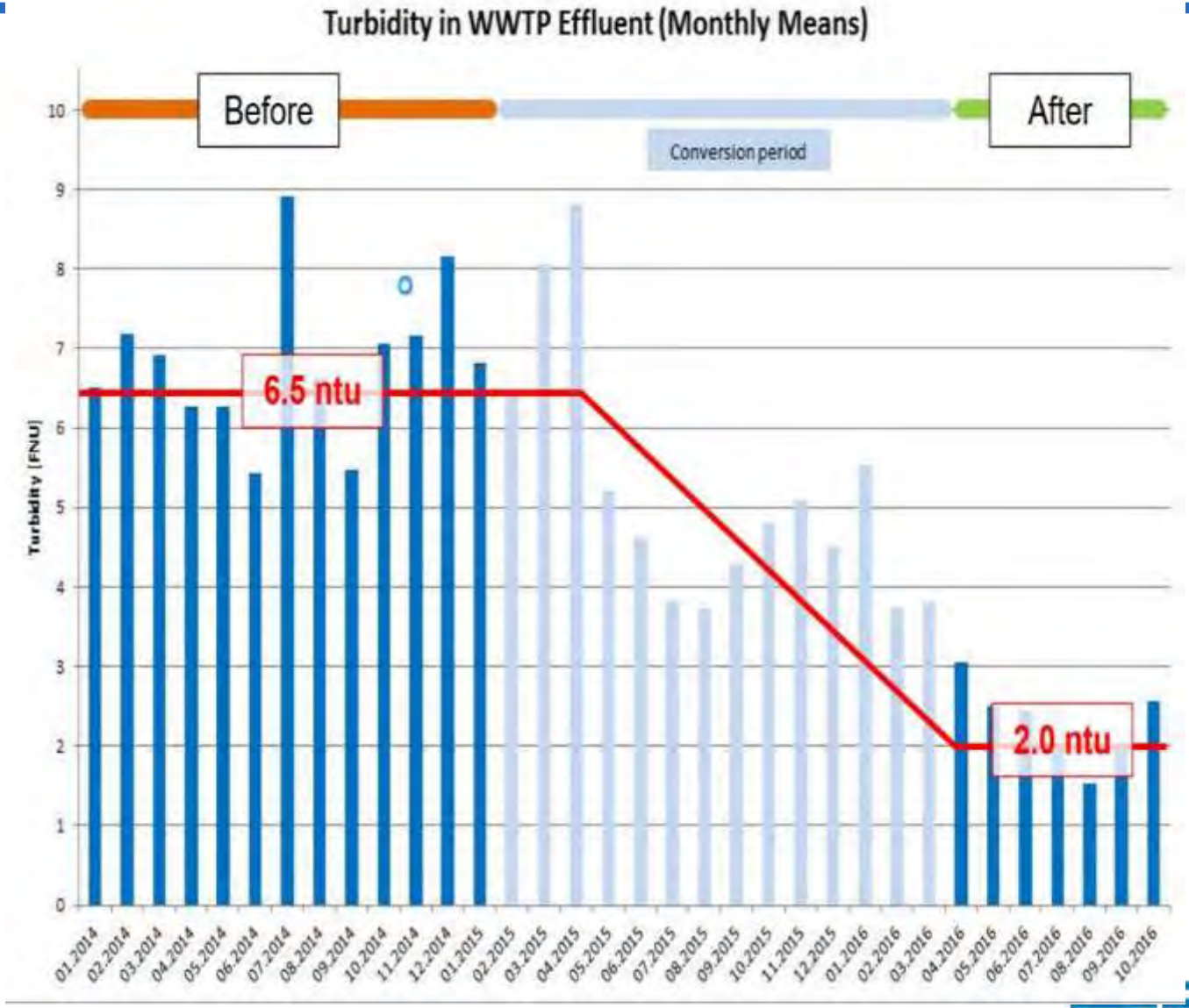
Heavy Storm Water

(Source: M. Armbruster)

Dresden

(Source: M. Armbruster)

Dresden


Turbidity in WWTP Effluent (Monthly Means)
Before
After
Conversion period
6.5 ntu
2.0 ntu
Turbidity [FNU]
0
1
2
3
4
5
6
7
8
9
10
01.2014
02.2014
03.2014
04.2014
05.2014
06.2014
07.2014
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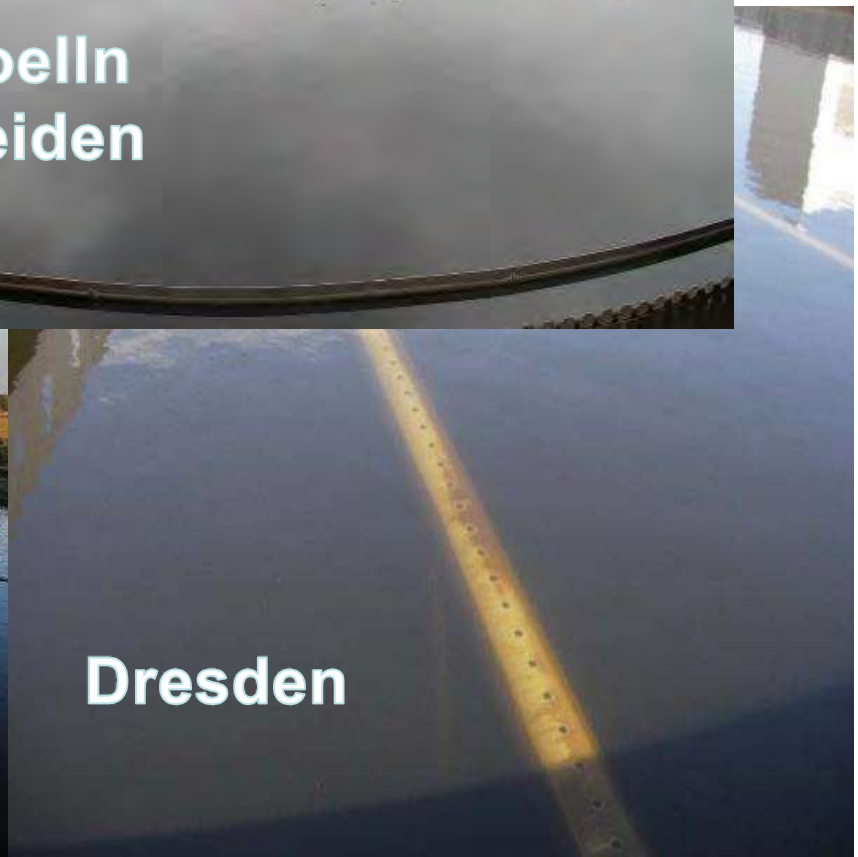
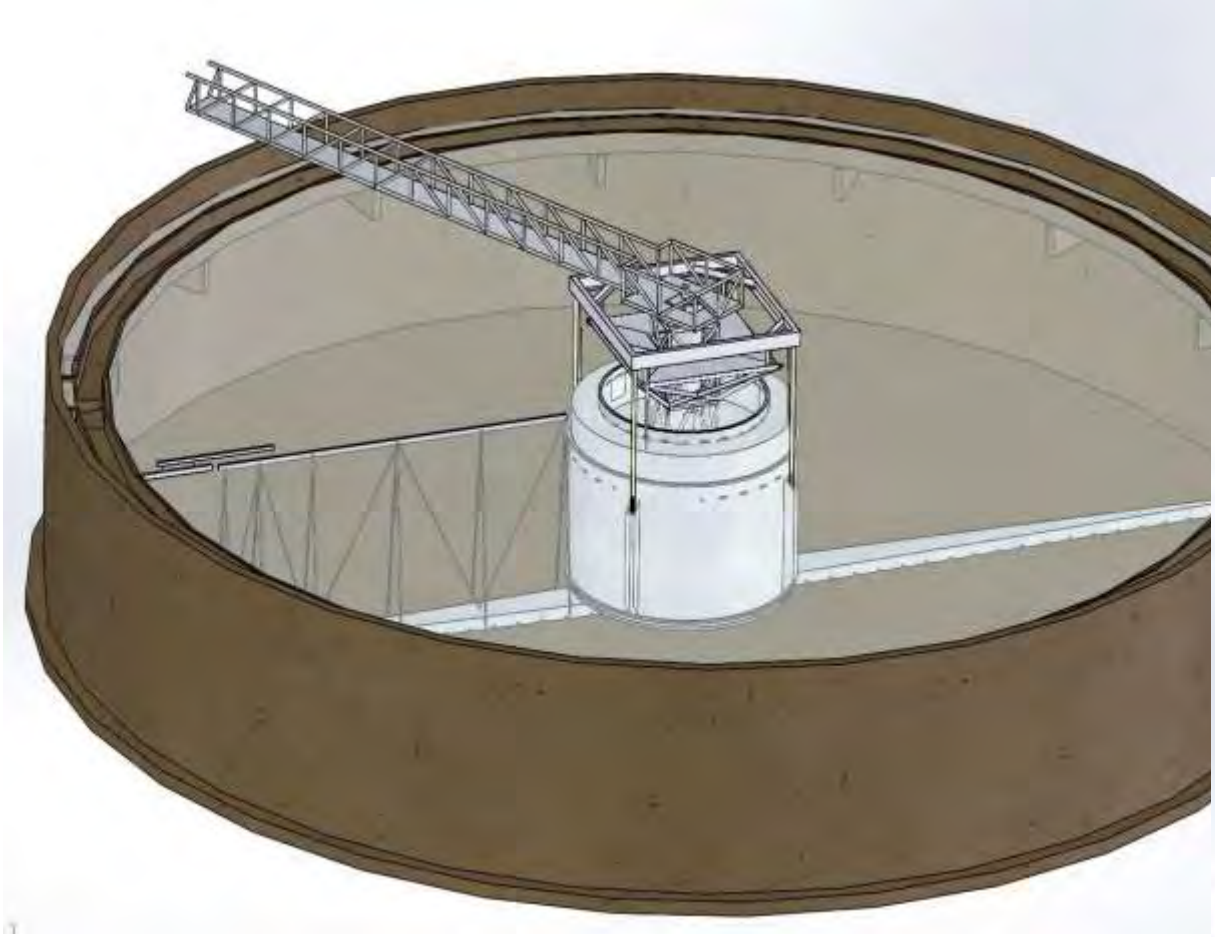
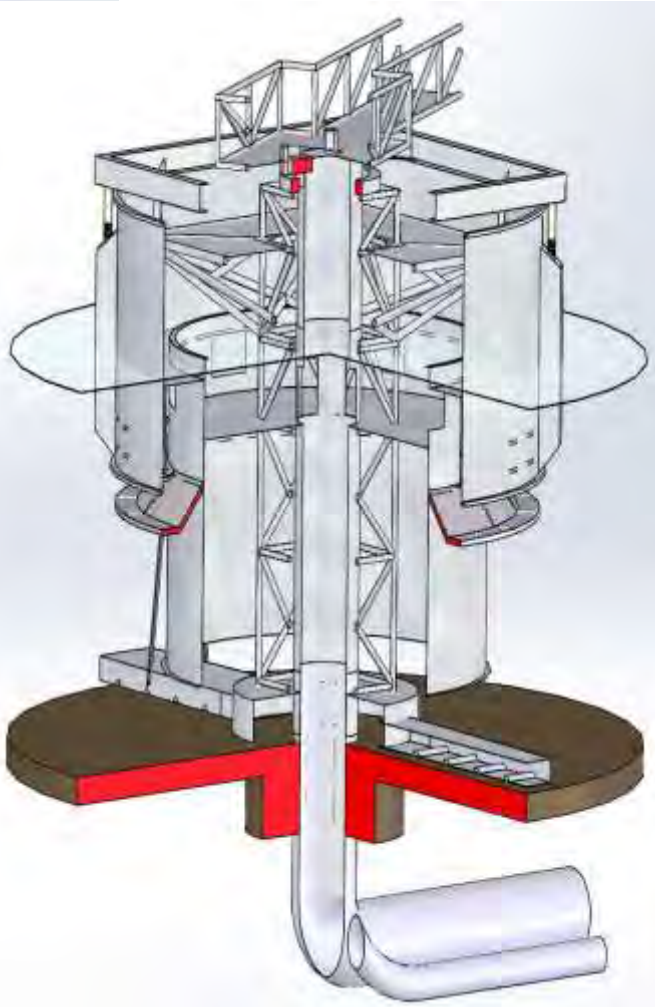
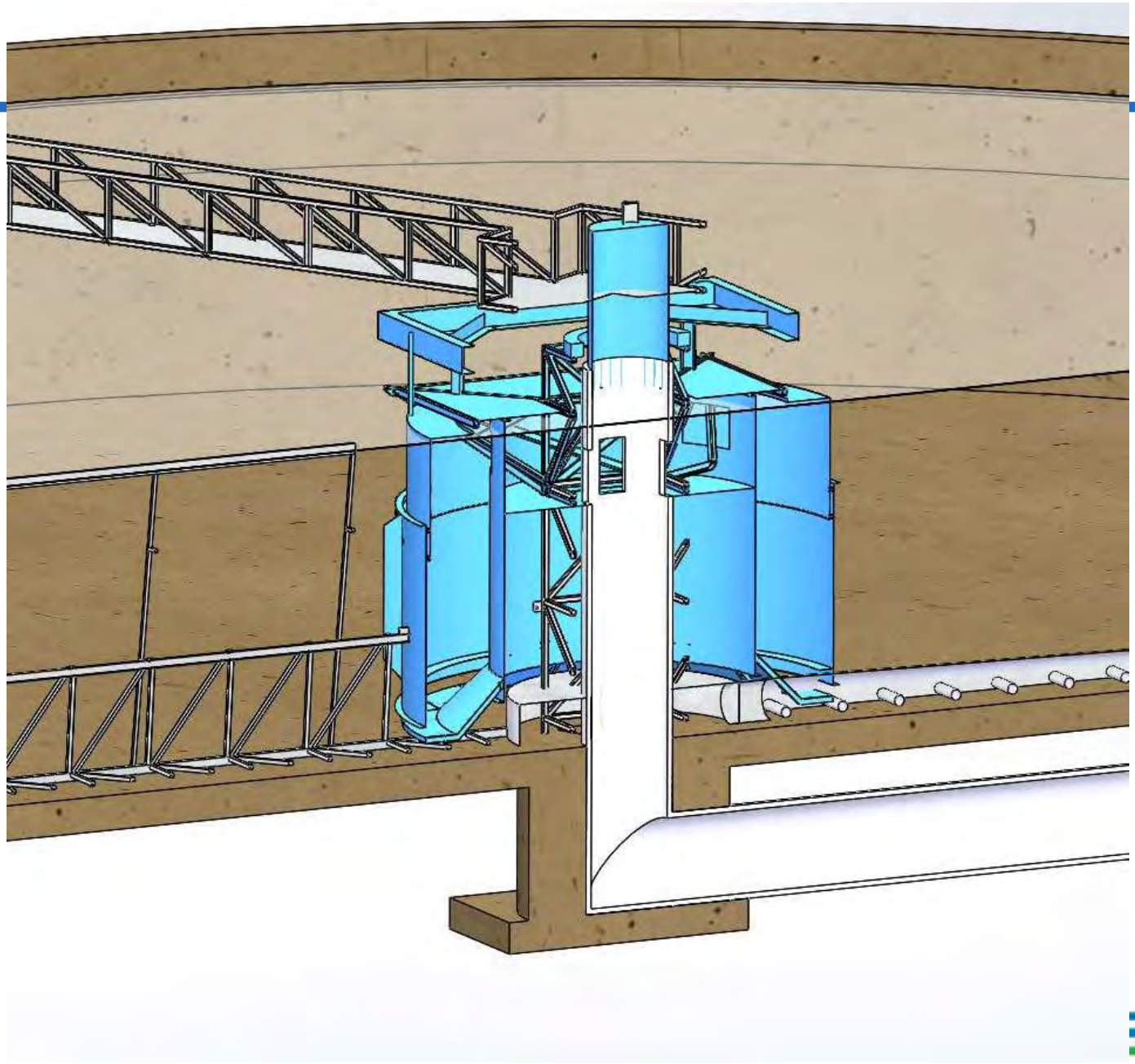
No scum



Center Drive with Hydrograv



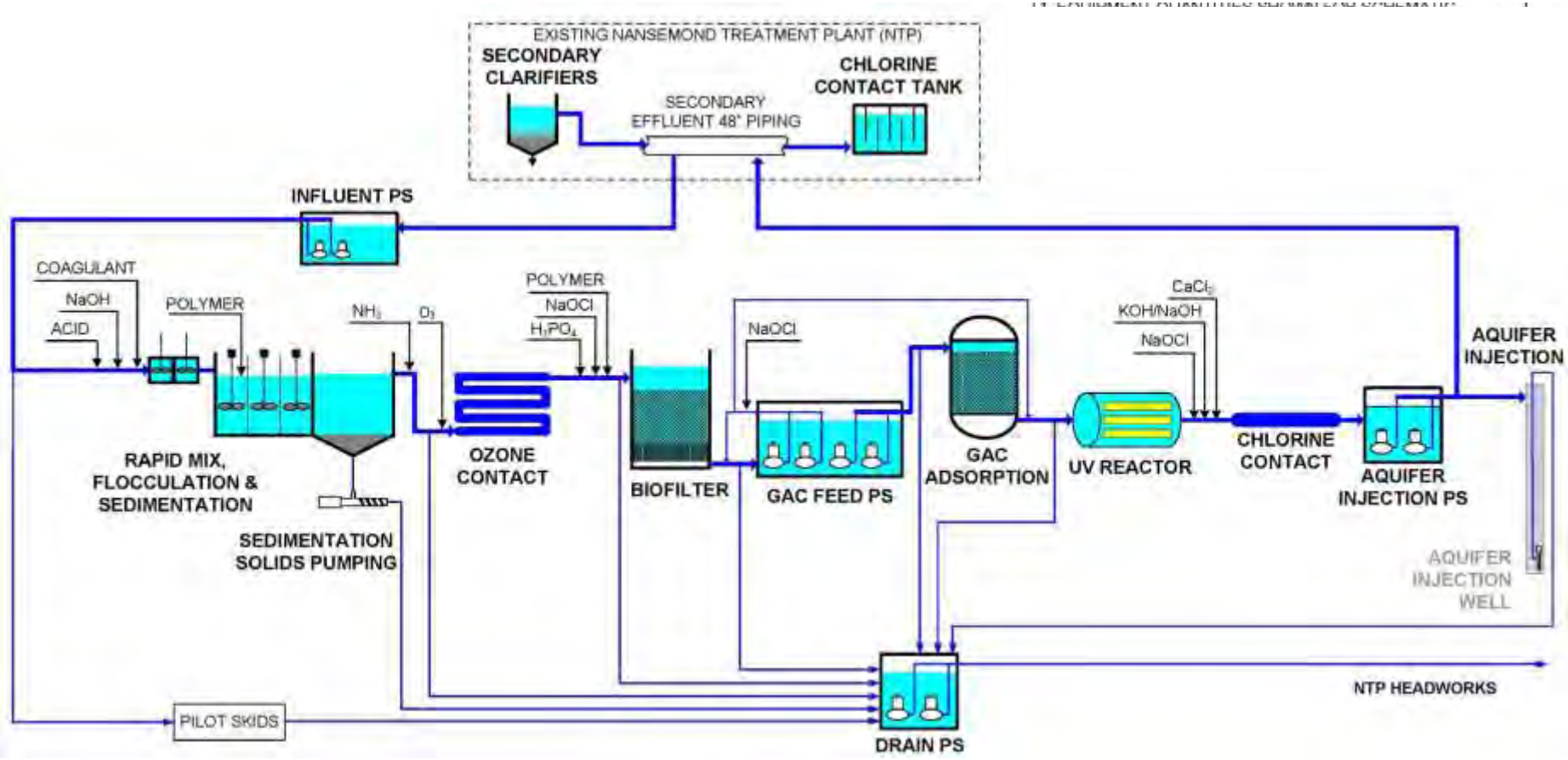




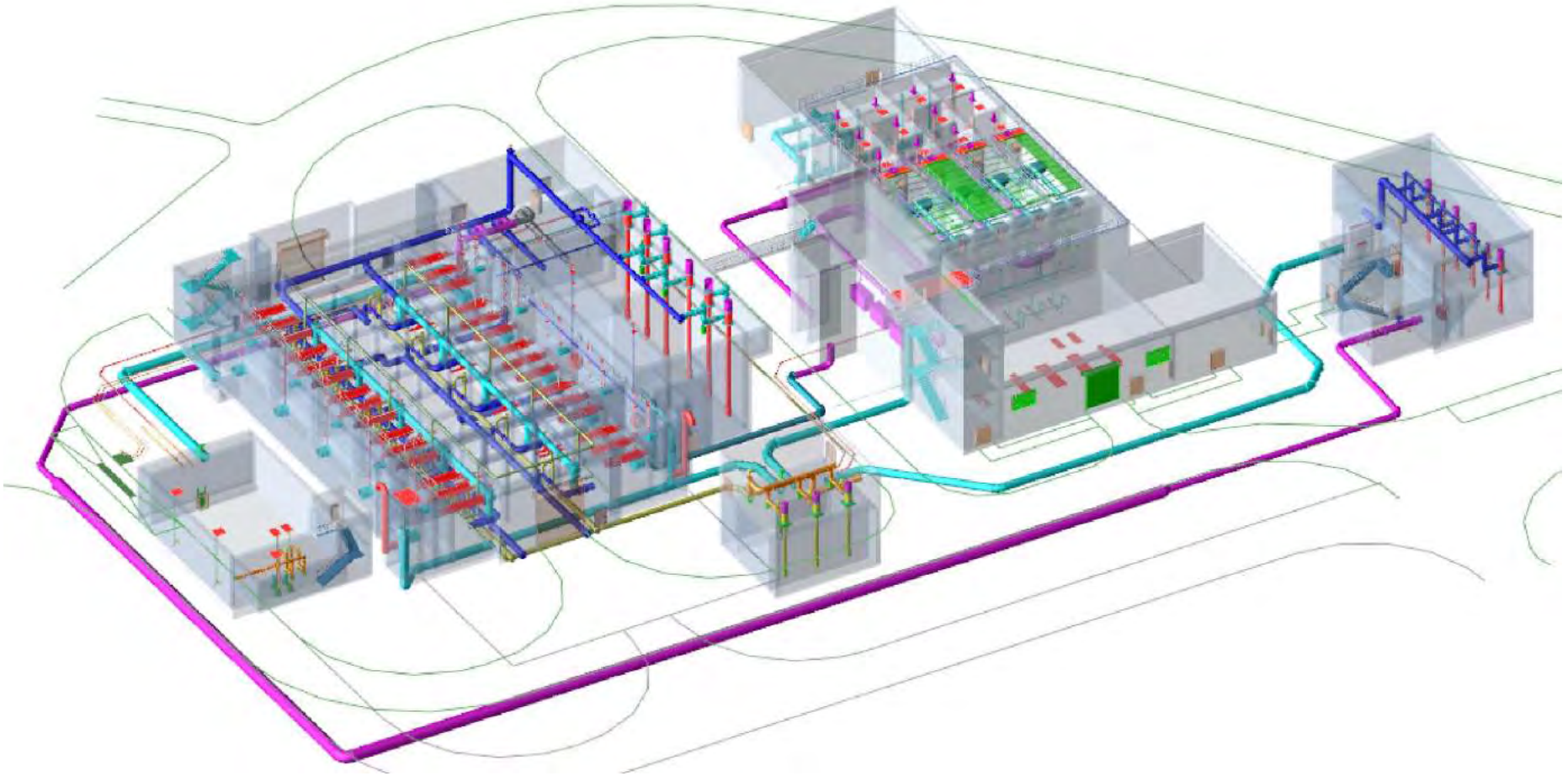
SWIFT Research Center
(1 MGD AWT + recharge well + monitoring wells)

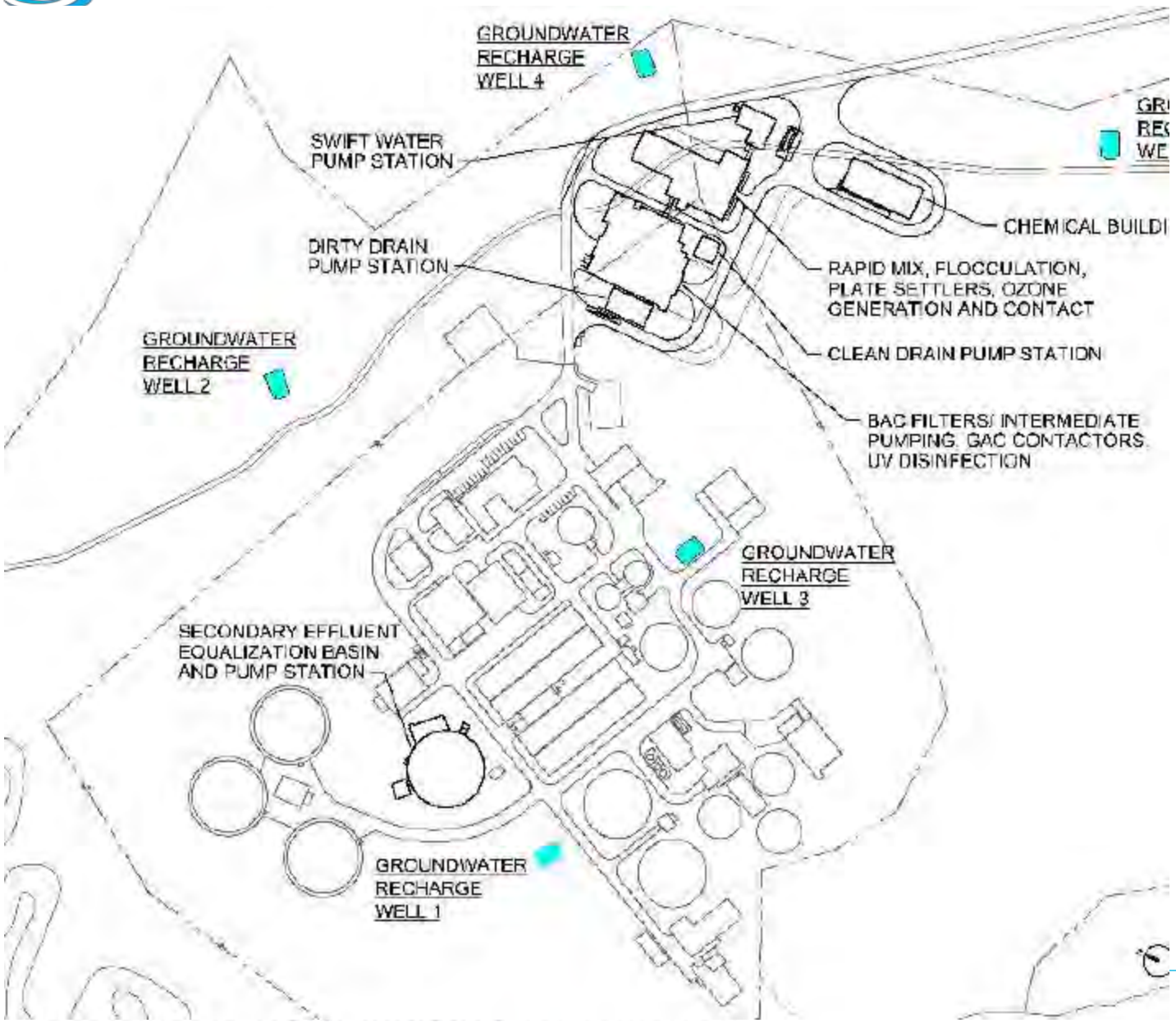
Process Flow Diagram for SWIFT Research Center

- Carbon treatment process selected



Williamsburg SWIFT




GROUNDWATER
RECHARGE
WELL 4
SWIFT WATER
PUMP STATION
DIRTY DRAIN
PUMP STATION
GROUNDWATER
RECHARGE
WELL 2
CHEMICAL BUILDI
RAPID MIX, FLOCCULATION,
PLATE SETTLERS, OZONE
GENERATION AND CONTACT
CLEAN DRAIN PUMP STATION
BAC FILTERS/ INTERMEDIATE
PUMPING, GAC CONTACTORS,
UV DISINFECTION
GROUNDWATER
RECHARGE
WELL 3
SECONDARY EFFLUENT
EQUALIZATION BASIN
AND PUMP STATION
GROUNDWATER
RECHARGE
WELL 1

swift

Sustainable Water Initiative for Tomorrow

HRSD COMMISSION MEETING MINUTES
April 24, 2018

ATTACHMENT #4

AGENDA ITEM 4. – Acquisition of Easement – 600 Severn Road, Newport News, VA

- Resolution
- Map
- Plat

HRSD

RESOLUTION

Providing for the acquisition by condemnation, if necessary, of easements with respect to the relocation of HRSD force mains to accommodate the planned Newport News Transportation Center Project.

WHEREAS, Hampton Roads Sanitation District (hereinafter "HRSD"), will relocate existing HRSD infrastructure to accommodate the planned Newport News Transportation Center Project (the "Project"), and

WHEREAS, as a part of the said Project, HRSD has determined that it is necessary to acquire certain easements by condemnation (or other means) across property commonly known as 600 Severn Road, Newport News, Virginia and designated as GPIN 130000601; and

WHEREAS, HRSD provided proper public notice, duly published in a newspaper of general circulation in the City of Newport News, and held a public hearing on this matter at 1434 Air Rail Avenue, Virginia Beach, Virginia on March 27, 2018; and

WHEREAS, at the public hearing, HRSD heard public input with respect to the proposed condemnation, if any, as well as information provided by HRSD staff, and considered whether the proposed use is a public use and whether the acquisition of the said easements in the said property by condemnation (or other means) should be authorized by the HRSD; and

WHEREAS, after holding a public hearing on the matter, HRSD has determined that a public necessity exists for the acquisition of permanent and/or temporary easements in the property for the Project and that the Project is in the public interest;

NOW, THEREFORE, BE IT RESOLVED, *on the 24th day of April, 2018, by the HRSD Commission that*

1. The relocation of two HRSD force mains in connection with the planned Newport News Transportation Center project is approved as a public use; and said project is further declared to be in the public interest;

2. The acquisition of permanent and temporary easements across the property located at 600 Severn Road, Newport News, Virginia, GPIN 130000601, by purchase or condemnation is necessary for the relocation, installation and operation of said interceptor force main and is hereby approved;

3. This resolution shall take effect immediately upon its adoption.

Adopted by the HRSD Commission on the 24th day of April, 2018.

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

HAMPTON ROADS SANITATION DISTRICT COMMISSION VIRGINIA SIC SEMPER TYRANNIS

Frederick N. Elofson, Chair

Record
Return
Action
E I-64 255 Off Ramp
W I-64 255 On Ramp
Habersham Dr
Knolls Dr
Sharon Dr
Warwick Springs Dr
York River Ln
Severn Rd
Ware Ln
DeWald Cir
Preakness Dr
Garden State Dr
Savage Dr
600
353
325
315
305
337
345
369
367
500
199
13437
3640
12415
12431
12407
12385
451
13380
13379
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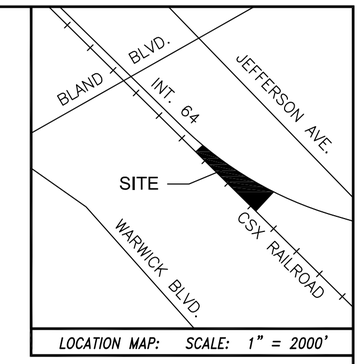
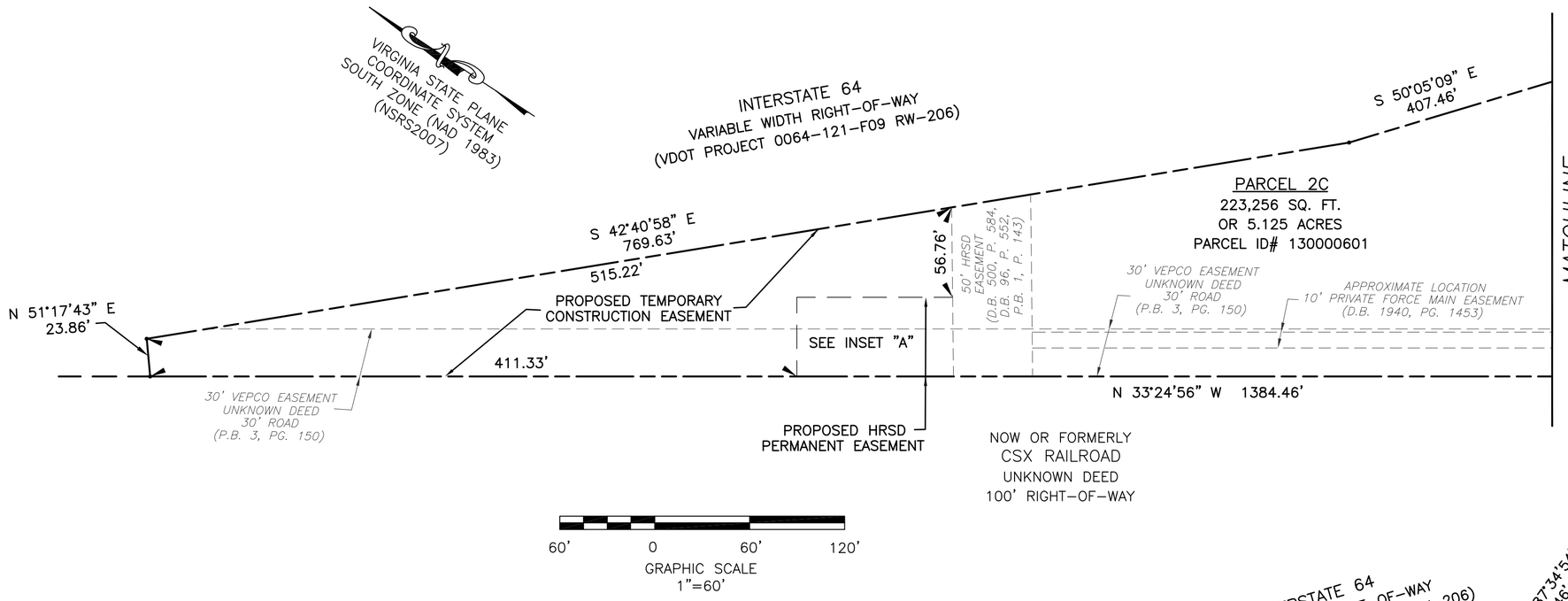
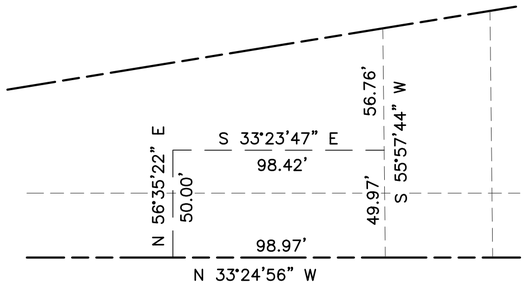
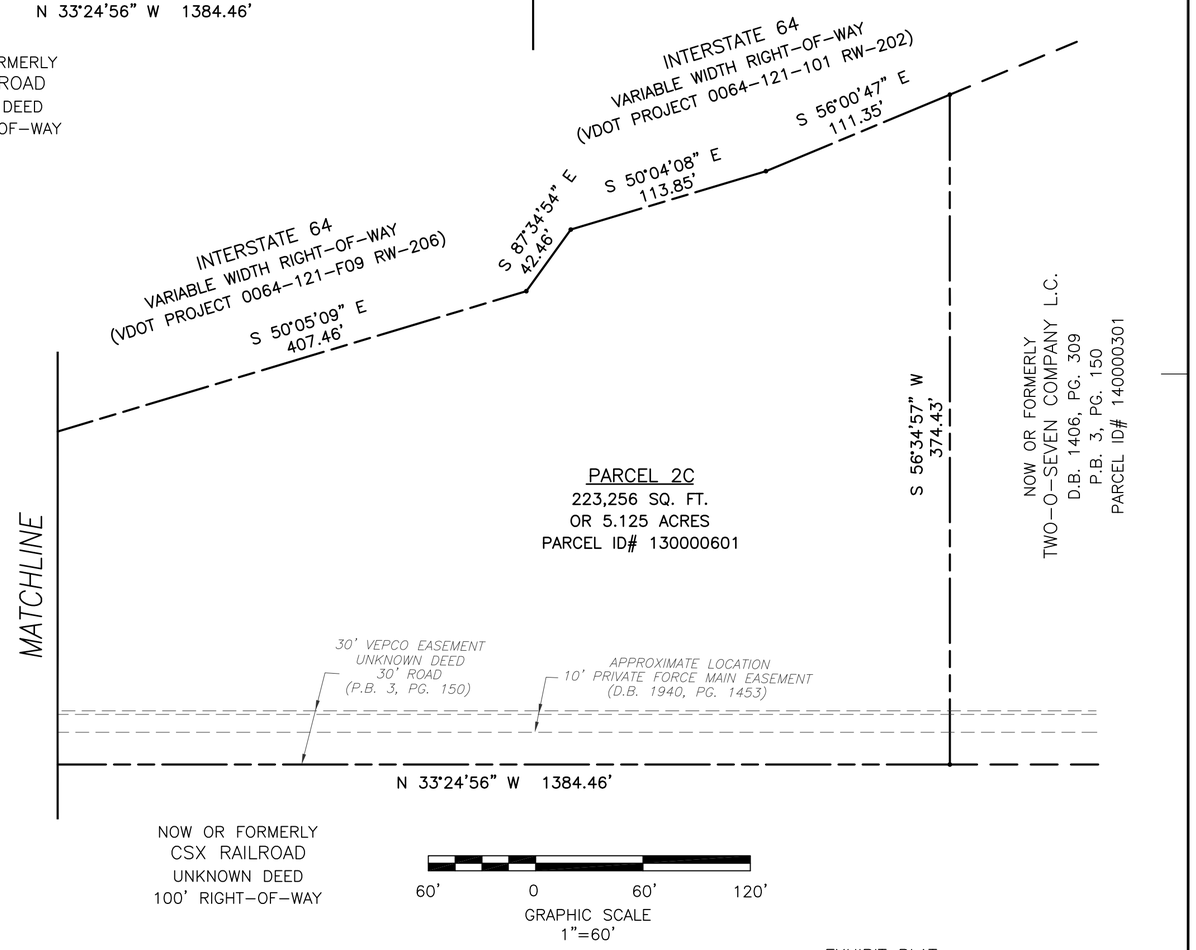






INSET "A"
SCALE: 1"=50'



NOTES:

1. THE MERIDIAN SOURCE, EXISTING EASEMENTS AND BOUNDARY FOR THIS EXHIBIT PLAT ARE BASED ON A SURVEY PERFORMED BY PRECISION MEASUREMENTS, INC. DATED FEBRUARY 5, 2018. JMT DID NOT REVIEW THE TITLE DOCUMENTS ASSOCIATED WITH THIS PROPERTY AND THERFORE THE EXHIBIT PLAT MAY NOT SHOW ALL MATTERS AFFECTING THE SUBJECT PARCEL.
2. THIS EXHIBIT PLAT WAS PREPARED WITHOUT FIELD LOCATION OF SURVEY MONUMENTS OR PROPERTY CORNERS AND DOES NOT REPRESENT A BOUNDARY SURVEY.
3. PLACEMENT OF PROPOSED EASEMENTS AND AREAS SHOWN HEREON ARE BASED ON DESIGN INFORMATION PROVIDED BY WHITMAN, REQUARDT AND ASSOCIATES DATED MARCH 2017.

	SQ. FT.	ACRES
PROPOSED HRSD PERMANENT EASEMENT	4,934 S.F.	0.113 AC
PROPOSED TEMPORARY CONSTRUCTION EASEMENT	28,279 S.F.	0.649 AC

COMMONWEALTH OF VIRGINIA
MARK A. HASKETT
Lic. No. 1728
LAND SURVEYOR

EXHIBIT PLAT
SHOWING PROPOSED EASEMENTS FOR
HAMPTON ROADS SANITATION DISTRICT
ON PROPERTY KNOWN AS
600 SEVERN ROAD
NEWPORT NEWS, VIRGINIA
SCALE: 1" = 60' – MARCH 15, 2018
SHEET 1 OF 1

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
272 Bendix Road, Suite 260 Virginia Beach, VA 23452

JMT PROJECT #17-10162-006

HRSD COMMISSION MEETING MINUTES
April 24, 2018

ATTACHMENT #5

AGENDA ITEM 5. – Annual Budget and Related Components

- Draft Budget
- Presentation

2019
HRSD

Proposed Annual Budget

For Fiscal Year Ended June 30, 2019

DRAFT

HRSD Annual Budget For

Fiscal Year Ended June 30, 2019

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INTRODUCTION

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GM'S LETTER TO
BE PROVIDED

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Principal Officials

June 30, 2018

COMMISSIONERS

Frederick N. Elofson, CPA, Chair

Maurice P. Lynch, PhD, Vice-Chair

Michael E. Glenn

Vishnu K. Lakdawala, PhD

Willie Levenston, Jr.

Stephen C. Rodriguez

Elizabeth A. Taraski, PhD

Ann W. Templeman

COMMISSION SECRETARY

Jennifer L. Cascio

SENIOR STAFF

Edward G. Henifin, PE
General Manager

Jay A. Bernas, PE
Director of Finance
and Treasurer

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

Donald C. Corrado
Director of Information
Technology

Steven G. de Mik, CPA
Director of Operations

Paula A. Hogg
Director of Talent Management

Phillip L. Hubbard, PE
Special Assistant for
Compliance Assurance

Bruce W. Husselbee, PE
Director of Engineering

James J. Pletl, PhD
Director of Water Quality

Leila E. Rice, APR
Director of
Communications

COUNSEL

Kellam, Pickrell, Cox & Anderson, PC
General Counsel

Jones, Blechman, Woltz & Kelly, PC
Associate Counsel

AquaLaw, PLC
Special Counsel

Norton Rose Fulbright US, LLP
Bond Counsel

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Key Facts

Service Area and Operations

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

Operation and Facilities

No. of Positions (FY-2019)	836
Miles of Interceptor Systems	540 Miles
Wastewater Treated	153 million gallons per day average
Wastewater Capacity	249 million gallons per day average

Financial Information

Bond Ratings

Ratings Agency	Senior Debt	Subordinate Long-term	Subordinate Short-term
Standard & Poor's	AA+	AA	A-1+
Fitch Ratings	AA+	AA	F1+
Moody's Investors Service	Aa1	Aa2	n/a

Operating Budget (FY-2019) $310,262,000

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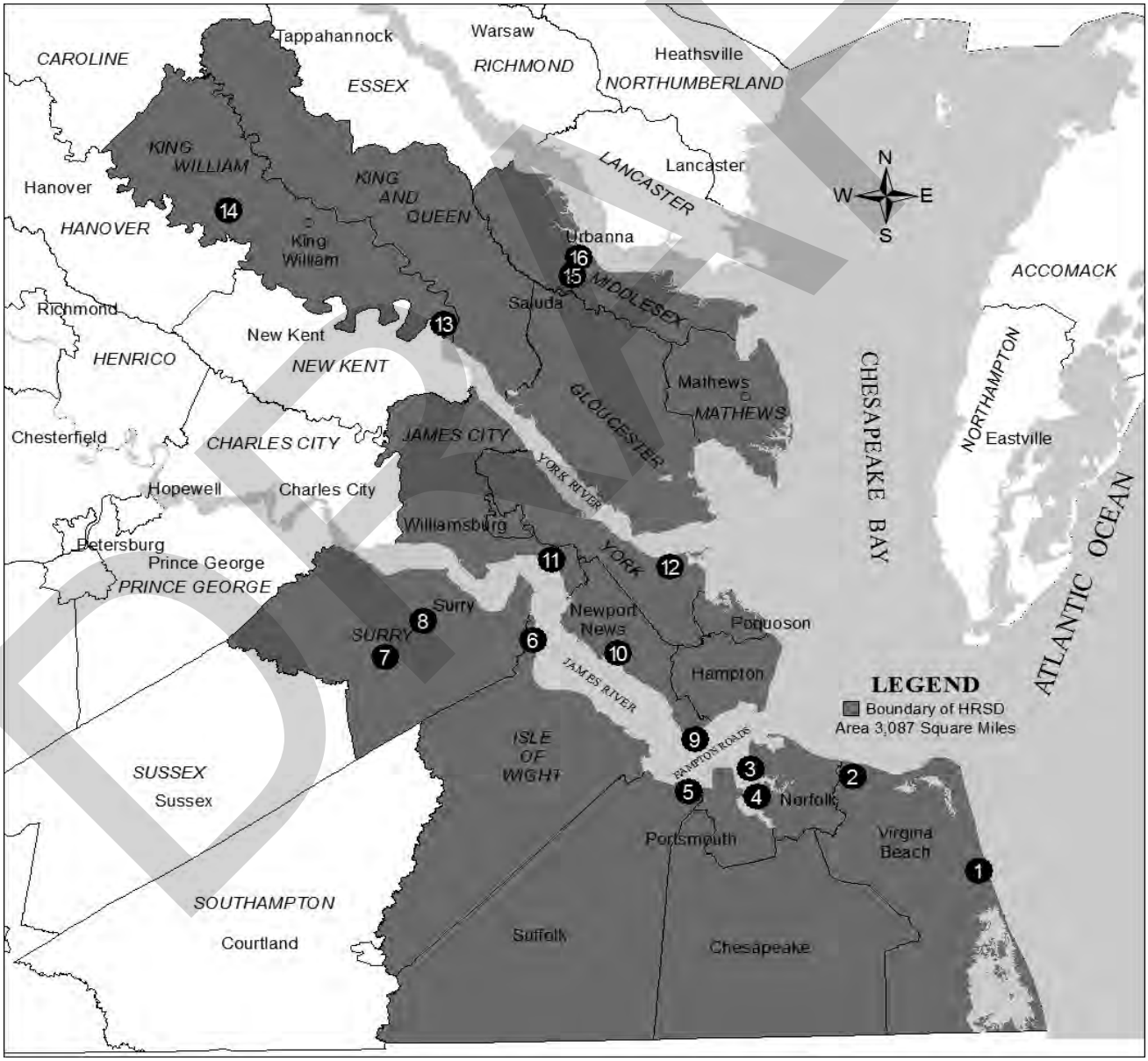
HRSD Service Area

A Political Subdivision of the Commonwealth of Virginia

Facilities include the following:

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

Serving the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg and the Counties of Gloucester, Isle of Wight, James City, King and Queen, King William, Mathews, Middlesex, Surry* and York
*Excluding the Town of Claremont



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05/2017

ORG CHART
TO BE PROVIDED

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History of HRSD

June 30, 2017

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

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

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

HRSD began operations on July 1, 1946, using facilities acquired from the United States Government. The Warwick County Trunk Sewer, HRSD's first construction project, began on June 26, 1946, and was funded by HRSD's $6.5 million Primary Pledge Sewer Revenue Bonds, dated March 1, 1946. The first treatment plant, the Army Base Plant, began operation on October 14, 1947. Since that time, the facilities of HRSD have grown to provide sanitary sewer service to all major population centers in southeastern Virginia. The population served has increased from nearly 288,000 in 1940 to about 1.7 million in 2017.

Throughout its rich history HRSD has earned many of its industry's most prestigious awards. This tradition continued as the National Association of Clean Water Agencies (NACWA) presented Peak Performance Awards for outstanding compliance with National Pollutant Discharge Elimination System (NPDES) permits to every HRSD treatment plant during calendar year 2016. The major treatment plants received the following awards in recognition of their outstanding permit compliance status: Atlantic—Gold, Boat Harbor—Platinum (15 consecutive years), Chesapeake-Elizabeth—Silver, James River—Gold, Nansemond—Platinum (15 consecutive years), Virginia Initiative Plant—Platinum (21 consecutive years), Williamsburg—Platinum (22 consecutive years) and York River— Platinum (9 consecutive years). Three treatment plants in the Small Communities Division, Central Middlesex, King William and West Point, earned Silver Awards while Urbanna received a Gold Award.

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

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Rate Schedules

WASTEWATER TREATMENT CHARGE SCHEDULE

Service		FY-2019	FY-2018
Flow (monthly basis)			
Per CCF *		$ 5.37	$ 4.92
Minimum charge (per day)		0.30	0.30
Surcharge, per milligrams/liter per CCF	In Excess of		
Biochemical Oxygen Demand (BOD)	282 mg/L	$ 0.000174	$ 0.000091
Total Suspended Solids (TSS)	261 mg/L	0.000522	0.000520
Total Phosphorus (TP)	6 mg/L	0.011182	0.011569
Total Kjeldahl Nitrogen (TKN)	47 mg/L	0.002544	0.003156
Surcharge, per 100 pounds			
BOD	282 mg/L	$ 2.79	$ 1.46
TSS	261 mg/L	8.36	8.32
TP	6 mg/L	179.12	185.32
TKN	47 mg/L	40.75	50.56
Septic, per gallon		$ 0.1697	$ 0.1300
Residential flat rate (per 30-day period)		$ 34.91	$ 31.98

* CCF = 100 Cubic Feet (approximately 748 gallons)

VOLUME BASED FACILITY CHARGE SCHEDULE

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

SMALL COMMUNITIES CHARGE SCHEDULE

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

FEES AND SERVICE CHARGES

	FY-2019	FY-2018
Damaged lock	$ 100	$ 100
Service restoration	100	100
Meter reading (customer-owned meter)	75	75
Inaccessible meter	50	50
Returned payments	25	25
Delinquent	15	15
Deduction meter service	2	2

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Reader's Guide to the Annual Budget

PURPOSE

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

- HRSD's mission is to protect public health and the waters of Hampton Roads by treating wastewater effectively.

- HRSD's vision is future generations will inherit clean waterways and be able to keep them clean.

ANNUAL BUDGET OVERVIEW

HRSD's Annual Budget contains the following sections:

Financial Forecast

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

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

Operating Budget

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

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Capital Budget

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

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

A formal, detailed, Capital Improvement Program with more specific project information is available at LINK TO BE PROVIDED IN ADOPTED BUDGET.

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

HRSD's Rate Schedule is available at LINK TO BE PROVIDED IN ADOPTED BUDGET.

BUDGETARY PROCESS

HRSD prepares its Annual Budget under the provisions of its enabling legislation and its Trust Agreement, dated March 1, 2008. In accordance with those provisions, the following process is used to adopt the Annual Budget:

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

The HRSD Commission appoints a Finance Committee which typically consists of two Commissioners. The committee meets in early April to review the budgets. The Commission reviews these budgets during its April meeting.

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

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

BUDGETARY ACCOUNTING AND CONTROL

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

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The Operating Budget is adopted by department, with budgetary controls exercised administratively by management at the department level. The General Manager is authorized to transfer funds among departments without further approval by the Commission. Appropriations lapse at the end of the fiscal year. Valid, outstanding encumbrances (those for which performance under a contract is expected in the next year) are re-appropriated without further approval by the Commission and become part of the subsequent year's budget.

The Capital Budget represents a ten-year plan. Funds for the Capital Budget are adopted throughout a fiscal year on a project basis. Transfers among projects require approval by the Commission. Appropriations for these budgets continue until the purpose of the appropriation has been fulfilled.

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Glossary of Financial Terms

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

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

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

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

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

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

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

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

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

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

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

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

Senior Debt Service Coverage: Current-year revenues available for debt service divided by current-year senior lien debt service. This ratio indicates the financial margin to meet current senior lien debt service with current revenues available. HRSD's Financial Policy requires that Senior Debt Service Coverage will not be less than 1.5 times senior lien debt service. When calculating compliance with this coverage requirement, HRSD may make reasonable adjustments to the net revenues as presented on a basis consistent with generally accepted accounting principles. HRSD's Senior Trust Agreement requires Senior Debt Service Coverage, which is determined by dividing the Income Available for Debt Service by the Maximum Annual Debt Service, will not be less than 1.2 times.

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

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

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

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

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FINANCIAL FORECAST

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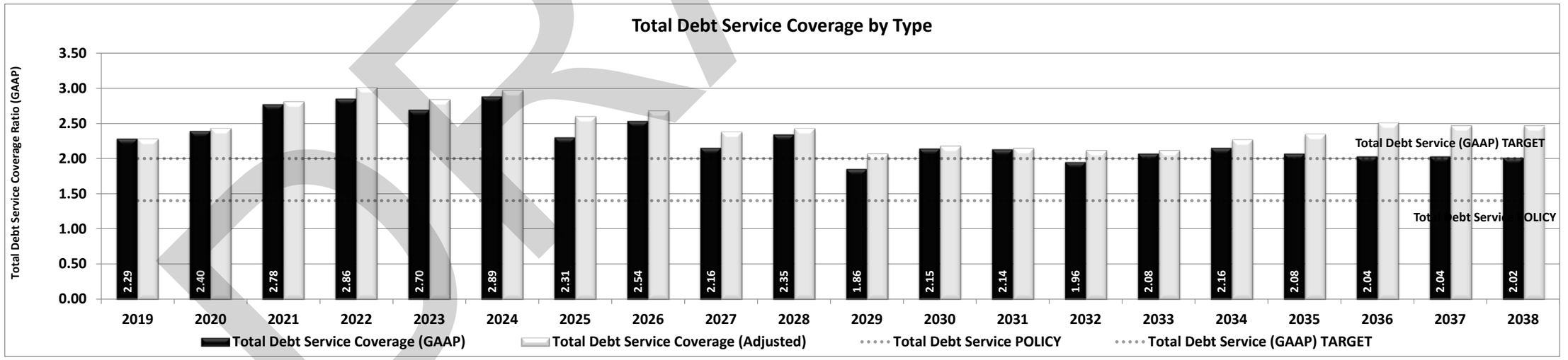
Financial Forecast (in thousands)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Operating Budget Forecast																				
Rate and Fees Increase - %	*9.1%*	*9.1%*	*9.0%*	*9.1%*	*9.0%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*	*3.5%*
Revenues																				
Operating Revenues	$ 298,467	$ 321,299	$ 345,722	$ 372,193	$ 400,643	$ 423,455	$ 447,766	$ 473,523	$ 500,675	$ 524,820	$ 549,870	$ 576,263	$ 603,951	$ 632,887	$ 663,485	$ 695,684	$ 729,428	$ 764,660	$ 801,765	$ 821,001
Non-operating Revenues	11,795	11,631	11,639	11,654	11,837	11,924	12,438	12,905	12,818	13,777	13,685	14,512	14,412	14,726	15,190	15,079	15,500	16,100	16,882	16,956
Total Revenues	**$ 310,262**	**$ 332,930**	**$ 357,361**	**$ 383,847**	**$ 412,480**	**$ 435,380**	**$ 460,204**	**$ 486,428**	**$ 513,493**	**$ 538,597**	**$ 563,555**	**$ 590,775**	**$ 618,364**	**$ 647,613**	**$ 678,675**	**$ 710,763**	**$ 744,929**	**$ 780,760**	**$ 818,648**	**$ 837,956**
Total Operating Appropriations	**$ 159,737**	**$ 165,763**	**$ 172,029**	**$ 175,547**	**$ 188,104**	**$ 195,239**	**$ 210,058**	**$ 218,039**	**$ 234,520**	**$ 243,446**	**$ 278,076**	**$ 288,626**	**$ 320,074**	**$ 332,207**	**$ 344,825**	**$ 357,951**	**$ 371,606**	**$ 385,813**	**$ 400,596**	**$ 415,980**
Debt Service	$ 62,811	$ 67,458	$ 65,191	$ 66,748	$ 77,572	$ 78,617	$ 95,847	$ 97,256	$ 117,148	$ 118,292	$ 138,016	$ 134,904	$ 135,703	$ 148,304	$ 155,640	$ 151,569	$ 156,874	$ 154,467	$ 168,412	$ 169,244
Transfer to Capital Improvement Plan (PAYGO)	87,475	95,078	114,776	124,852	136,138	157,089	122,545	170,815	139,479	176,499	100,942	166,836	141,305	138,052	177,715	173,859	179,907	194,595	238,913	232,716
Transfer to General Reserve (Unrestricted Cash)	-	4,414	5,132	16,453	10,403	4,154	31,455	-	22,007	-	46,136	-	20,846	28,586	-	26,858	35,981	45,288	10,091	19,339
Transfer to Risk Management Reserve	239	218	232	247	263	280	299	318	339	361	384	409	436	464	494	526	560	597	636	677
Total Appropriations	**$ 310,262**	**$ 332,930**	**$ 357,361**	**$ 383,847**	**$ 412,480**	**$ 435,380**	**$ 460,204**	**$ 486,428**	**$ 513,493**	**$ 538,597**	**$ 563,555**	**$ 590,775**	**$ 618,364**	**$ 647,613**	**$ 678,675**	**$ 710,763**	**$ 744,929**	**$ 780,760**	**$ 818,648**	**$ 837,956**
Capital Improvement Budget Forecast																				
Beginning Capital Reserves	$ 75,000	$ 70,862	$ 12,446	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sources of Funds																				
Debt funded (Revenue Bonds and Interim Financing)	-	-	77,572	84,148	163,862	141,011	177,455	129,185	160,521	113,501	159,058	93,164	78,695	61,948	22,285	51,141	105,093	140,405	111,087	117,284
Virginia Clean Water Revolving Loan Fund	38,028	37,296	5,206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRSD - Cash	87,475	95,078	114,776	124,852	136,138	157,089	122,545	170,815	139,479	176,499	100,942	166,836	141,305	138,052	177,715	173,859	179,907	194,595	238,913	232,716
Grants and Other Reimbursements	4,359	210	-	1,000	-	1,900	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Resources	204,862	203,446	210,000	210,000	300,000	300,000	300,000	300,000	300,000	290,000	260,000	260,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000
Uses of Funds - Capital Expenditures	134,000	191,000	210,000	210,000	300,000	300,000	300,000	300,000	300,000	290,000	260,000	260,000	220,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000
Ending Capital Reserves	**$ 70,862**	**$ 12,446**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Reserves Balance Forecast																				
Unrestricted Cash as a % of Operating Expenses	100%	100%	100%	100%	100%	100%	100%	101%	100%	101%	100%	103%	100%	100%	100%	100%	100%	100%	100%	100%
Unrestricted Cash	$ 166,000	$ 170,414	$ 175,545	$ 191,998	$ 202,401	$ 206,555	$ 238,010	$ 238,010	$ 260,017	$ 260,017	$ 306,153	$ 306,153	$ 326,999	$ 355,585	$ 355,585	$ 382,444	$ 418,425	$ 463,713	$ 473,804	$ 493,143
Risk Reserve	3,353	3,571	3,803	4,050	4,313	4,594	4,892	5,210	5,549	5,910	6,294	6,703	7,139	7,603	8,097	8,623	9,184	9,780	10,416	11,093
Total Reserves Balance	**$ 169,353**	**$ 173,984**	**$ 179,348**	**$ 196,048**	**$ 206,714**	**$ 211,149**	**$ 242,902**	**$ 243,220**	**$ 265,566**	**$ 265,927**	**$ 312,447**	**$ 312,856**	**$ 334,138**	**$ 363,188**	**$ 363,682**	**$ 391,067**	**$ 427,608**	**$ 473,494**	**$ 484,220**	**$ 504,236**
Financial Ratios Forecast																				
Senior Debt Service Coverage (GAAP)	4.29	4.84	5.69	6.28	6.26	6.79	8.30	9.53	12.33	13.65	12.65	14.36	28.27	30.58	34.51	35.40	35.79	35.17	39.04	39.57
Subordinate Debt Service Coverage (GAAP)	4.96	4.79	5.46	5.24	4.77	5.03	3.21	3.48	2.62	2.85	2.18	2.53	2.32	2.09	2.21	2.30	2.20	2.17	2.16	2.13
Total Debt Service Coverage (GAAP)	**2.29**	**2.40**	**2.78**	**2.86**	**2.70**	**2.89**	**2.31**	**2.54**	**2.16**	**2.35**	**1.86**	**2.15**	**2.14**	**1.96**	**2.08**	**2.16**	**2.08**	**2.04**	**2.04**	**2.02**
Total Debt Service Coverage (Adjusted)	**2.28**	**2.43**	**2.81**	**3.01**	**2.84**	**2.97**	**2.60**	**2.68**	**2.38**	**2.43**	**2.07**	**2.18**	**2.15**	**2.12**	**2.12**	**2.27**	**2.35**	**2.51**	**2.47**	**2.47**
CIP % Cash Funded (current year contributions)	65%	50%	55%	59%	45%	52%	41%	57%	46%	61%	39%	64%	64%	69%	89%	77%	63%	58%	68%	66%
Debt Service as a % of Total Revenues	20%	20%	18%	18%	19%	18%	21%	20%	23%	22%	24%	23%	22%	23%	23%	21%	21%	20%	21%	20%



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OPERATING BUDGET

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Operating Budget

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

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Operating Budget Summary

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

Full-time Positions:

Current	3	2	101	50	15	510	41	110
Changes	0	1	1	0	1	0	2	(1)
Budgeted	3	3	102	50	16	510	43	109

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Operating Budget Summary

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

Full-time Positions:

Current	832
Changes	4
Budgeted	836

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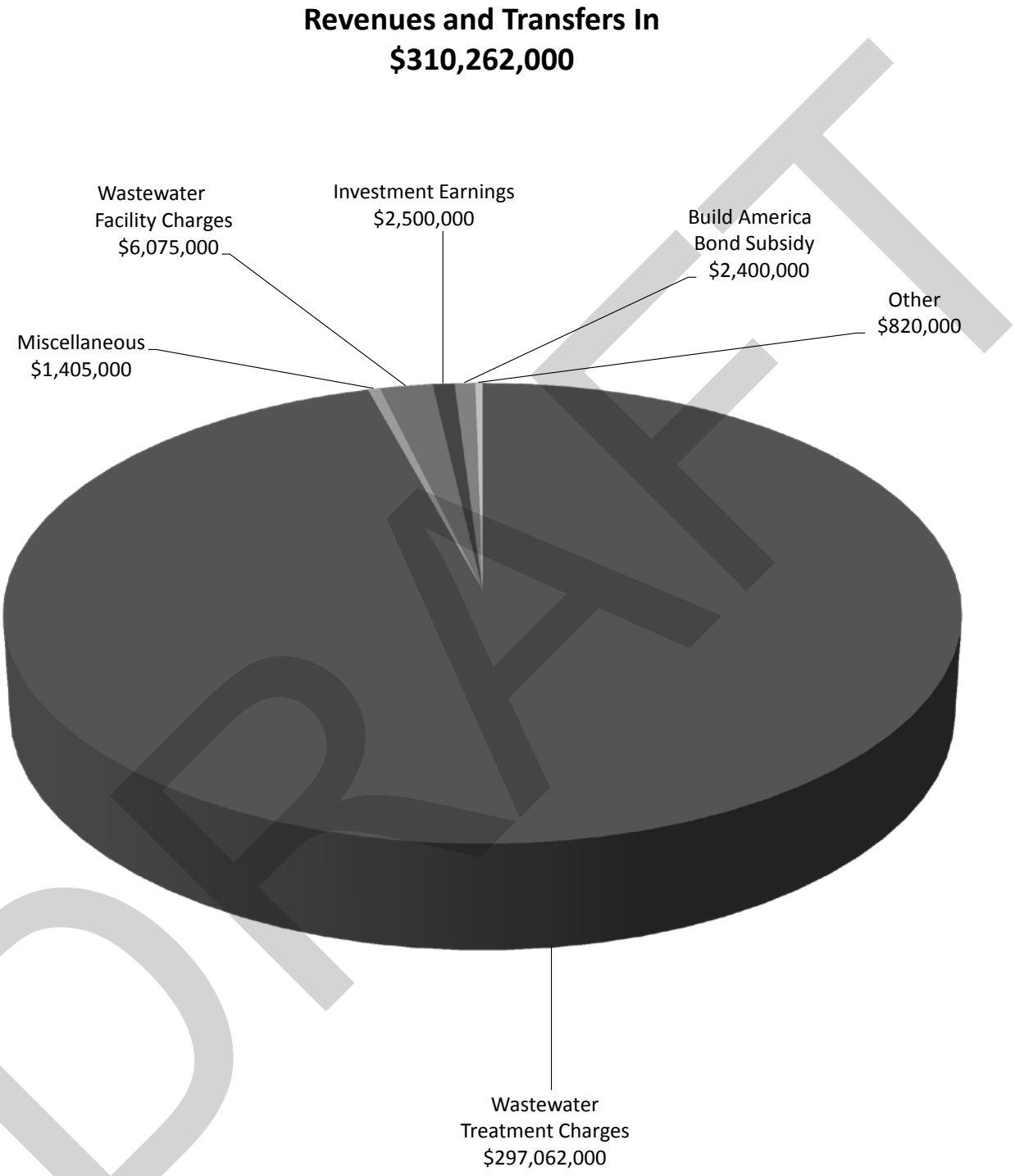
Operating Budget Charts



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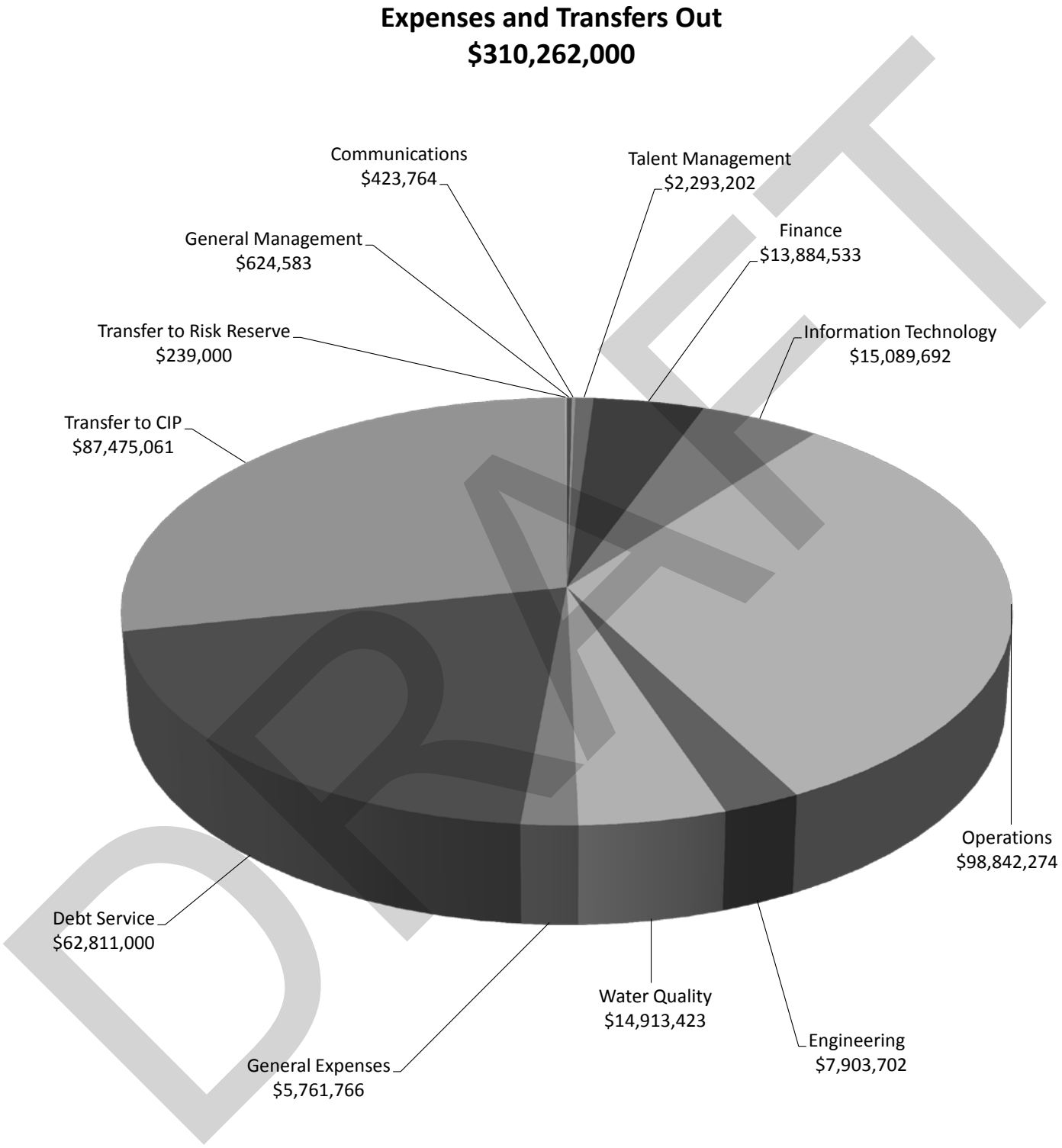
Operating Budget Charts



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General Management

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

Expenditure Budget

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

Positions

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

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Communications

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

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Communications	12	1		1		1
Community Relations Liason	6	1		1		1
Community Educator	3	0		0	1	1
Total		2	0	2	1	3

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Finance Department

The Finance Department is responsible for HRSD's general financial and business functions, including financial reporting, investment portfolio, debt and risk management and customer billing. The Accounting and Finance Division handles fiscal affairs such as preparing statements, budgets, management reports and payroll. The Procurement Division is responsible for purchasing, renting, leasing or otherwise acquiring goods and services, managing vendor relationships and disposing of surplus property. The Customer Care Center Division handles billing, collections, maintenance of customer accounts and liaison with HRSD's customers.

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Finance	12	1		1		1
Chief of Accounting & Finance	11	1		1		1
Chief of Customer Care Center (CCC)	11	1		1		1
Chief of Procurement	11	1		1		1
Accounting Manager	9	1	1	2		2
Customer Care Manager	9	3	1	4		4
Strategic Sourcing Manager	9	1		1		1
Business Analyst	8	3		3		3
Customer Care Operations Manager	8	1	(1)	0		0
Financial Analyst	8	3	(1)	2		2
Procurement Analyst	8	1		1		1
Customer Care Supervisor	7	4		4		4
Accounts Payable Supervisor	6	1		1		1
Accounts Receivable Specialist	6	2		2		2
Payroll Specialist	6	1		1		1
ProCard & Contract Administrator	6	0	1	1		1
Procurement Specialist	6	4		4		4
Accounting Coordinator	4	1		1		1
Accounts Receivable Technician	4	3		3		3
Customer Care Administrative Coordinator	4	1		1		1
Customer Care Coordinator	4	4		4		4
Procurement Coordinator	4	1	(1)	0		0
Account Investigator	3	14		14		14
Accounts Payable Associate	3	2		2	1	3
Customer Care Account Representative	3	41		41		41
Procurement Administrative Assistant	3	3		3		3
Mail Processing Clerk	2	2		2		2
Total		**101**	**0**	**101**	**1**	**102**

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Information Technology Department

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

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Information Technology	12	1		1		1
Chief of Enterprise Data Services	11	1		1		1
Chief of Industrial Controls	11	1		1	(1)	0
Chief of Information Technology	11	1		1		1
Database Administrator	9	3		3		3
Enterprise Architect	9	3		3		3
Industrial Automation Manager	9	1		1		1
Oracle Developer	9	2		2		2
Programming Development Manager	9	1		1		1
Senior Systems Engineer	9	6		6		6
Systems Analysis Manager	9	1		1		1
Industrial Automation Programmer	8	5		5		5
Senior Programmer Analyst	8	6		6		6
Senior Systems Analyst	8	3		3		3
SharePoint Web Developer	8	1		1		1
Unix Systems Administrator	8	2		2		2
IT HelpDesk Supervisor	7	1		1		1
Desktop Support Analyst	6	5		5	1	6
Web Portal Programmer	5	1		1		1
IT Administrative Coordinator	4	1		1		1
Telecommunications Support Coordinator	4	1		1		1
Computer Operator	3	3		3		3
Total		**50**	**0**	**50**	**0**	**50**

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Talent Management

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

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Talent Management	12	1		1		1
Human Resources Manager	9	1		1		1
Organizational Development and Training Manager	9	1		1		1
Safety Manager	9	1		1		1
Human Resources Business Analyst	8	1		1		1
Industrial Hygienist	8	2		2		2
Training Superintendent	8	1		1		1
Human Resources Specialist	7	3		3		3
Training Specialist	6	0		0	1	1
Human Resources Coordinator	4	2		2		2
Organizational Development and Training Coordinator	4	1		1		1
Safety Coordinator	4	1		1		1
Total		**15**	**0**	**15**	**1**	**16**

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Operations Department

The Operations Department is responsible for operating and maintaining all of HRSD's treatment plants, pump stations, pipelines, buildings and equipment. HRSD provides wastewater treatment services for over 1.7 million people in 18 cities and counties in Hampton Roads. The department also includes the Director of Water Technology and Research developing new technology with a focus on rapid deployment of innovative solutions. Services are delivered through seven divisions. There are three major treatment plant divisions (each with three treatment plants). Services to small communities that are in the HRSD service area are provided by the Small Communities Division (SCD) – Middle Peninsula, which operates four smaller treatment plants and all the associated sewer collection systems for four counties on the Middle Peninsula, including the Town of West Point, and the Small Communities Division – Surry, which includes the operation of two treatment plants and the associated sewer collection systems in the County of Surry. The Electrical and Energy Management Division supports the electrical and instrumentation maintenance and construction needs of all HRSD facilities. The Interceptor Divisions operate and maintain over 500 miles of interceptor pipelines and over 100 pump stations using Supervisory Control and Data Acquisition (SCADA) to monitor wastewater conveyed to each treatment plant. The Support Systems Division is responsible of the maintenance of the HRSD fleet, all buildings and operates two carpentry shops and a full service machine shop.

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Operations	12	1		1		1
Director of Water Technology and Research	12	1		1		1
Chief of Electrical & Energy Management	11	1		1		1
Chief of Interceptor Operations	11	1		1		1
Chief of NS Interceptors & SCD	11	1		1		1
Chief of Process Engineering & Research Manager	11	0	1	1		1
Chief of Treatment	11	0	3	3		3
Senior Plant Manager	11	3	(3)	0		0
SWIFT Project Manager	11	1		1		1
Treatment Process Engineer-2	10	0	3	3		3
Electrical Manager	9	2		2		2
Instrumentation Manager	9	1		1		1
Interceptor Engineer	9	2		2		2
Plant Manager	9	6	(5)	1		1
Process Engineering & Research Manager	9	1	(1)	0		0
Project Manager	9	0	2	2		2
Support Systems Manager	9	1		1		1
Systems Manager	9	2		2		2
Treatment Process Engineer-1	9	0		0	1	1
Automotive Superintendent	8	1		1		1
Condition Assessment Superintendent	8	1		1		1
Electrical & Instrumentation Supervisor	8	4		4		4
Electrical Superintendent	8	1		1		1
Facility Superintendent	8	1		1		1
Interceptor Superintendent	8	2		2		2
Plant Superintendent	8	18		18		18
Chief Foreman	7	2	(2)	0		0
Chief Maintenance Management	7	2	2	4		4
Chief System Operator	7	2		2		2
Coating, Concrete and Roofing Chief Inspector	7	1		1		1
Electrical & Instrumentation Process Specialist	7	1		1		1
Electrical & Instrumentation Specialist	7	58	1	59		59
Lead Operator	7	31	1	32		32
Operations Support Specialist	7	1		1		1
Automotive Foreman	6	2		2		2
Coatings Inspector	6	2		2		2
Condition Assessment Supervisor	6	1		1		1
Engineering Assistant	6	4		4		4
Interceptor Foreman	6	7		7		7

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	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Interceptor Systems Supervisor	6	2		2		2
Machinist Foreman	6	1		1		1
Maintenance Planner	6	0	3	3		3
Maintenance Specialist	6	3	(3)	0		0
Pump Station Supervisor	6	2		2		2
Automotive Technician	5	5		5		5
Carpenter	5	4		4		4
Condition Assessment Technician	5	2	2	4		4
Equipment Technician	5	3		3		3
Facility Maintenance Technician	5	2		2		2
Interceptor Technician	5	29	(1)	28		28
Machinist	5	3		3	(1)	2
Maintenance Operator	5	61	4	65		65
Plant Operator	5	73	1	74		74
Heavy Equipment Operator I	4	21	(2)	19		19
Materials Operations Coordinator	4	2		2		2
Operations Admin Coordinator	4	1		1		1
Operations Coordinator	4	2		2		2
Automotive Administrative Assistant	3	1		1		1
Support Systems Admin Assistant	3	1		1		1
Utility Administrative Assistant	3	1		1		1
SCADA Administrative Assistant	3	1		1		1
Interceptor Assistant	2	27	1	28		28
Maintenance Operations Assistant	2	52	(2)	50	(1)	49
Plant Clerk	2	9		9		9
Facility Assistant	1	11	(5)	6		6
Custodian	1	4		4		4
Subtotal - Operations		**489**	**0**	**489**	**(1)**	**488**
Small Communities						
Systems Manager	9	1		1		1
Systems Superintendent	8	1		1		1
Systems Chief Foreman	7	1		1		1
Systems Lead Operator	7	3		3		3
Systems Operator	5	11		11		11
Administrative Coordinator	4	1		1		1
Heavy Equipment Operator I	4	1		1		1
SCD Lab Assistant	2	0		0	1	1
Facility Assistant	1	1	(1)	0		0
Subtotal - Small Communities		**22**	**(1)**	**21**	**1**	**22**
Total		**511**	**(1)**	**510**	**0**	**510**

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Engineering Department

The Engineering Department is responsible for HRSD facility planning, design and construction and related support. The Asset Management Division is responsible for using the Computerized Maintenance Management System (CMMS) to mange asset information to inform all maintenance, replacement and capital planning decisions. The Design and Construction Division works with consultants and contractors to ensure that work is performed in a manner consistent with our quality standards. The Planning and Analysis Division manages the Capital Improvement Program (CIP), Hydraulic Modeling, Geographic Information System (GIS), Data Analysis, Computer Aided Design (CAD) and Records Management System and plans the capital infrastructure required to meet the region's future wastewater needs. The department is also responsible for all property and land acquisition needed to meet HRSD's needs.

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Engineering	12	1		1		1
Chief of Asset Management	11	1		1		1
Chief of Design & Construction	11	2		2		2
Chief of Design & Construction - SWIFT	11	0	1	1		1
Chief of Planning & Analysis	11	1		1		1
Capital Program Manager	9	1		1		1
Condition Assessment Manager	9	2		2		2
Data Analysis Manager	9	1		1		1
GIS Manager	9	1		1		1
Hydraulic Analysis Manager	9	4		4		4
Project Manager	9	9	1	10	(1)	9
Real Estate Manager	8	1		1		1
CMMS Analyst	7	1		1		1
Data Analyst	7	3	1	4		4
Engineering Specialist	7	0		0	2	2
GIS Analyst	7	2		2		2
Contract Specialist	6	2		2	1	3
GIS CAD Technician	5	3		3	(1)	2
CIP Coordinator	4	1		1		1
Data Analysis Technician	4	1	(1)	0		0
Administrative Coordinator	4	1		1		1
CMMS Administrative Assistant	3	1		1		1
Engineering Clerk	2	0		0	1	1
Total		**39**	**2**	**41**	**2**	**43**

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Water Quality Department

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

Expenditure Budget

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

Positions

	Grade	Adopted FY-2018	Adjustments	Final FY-2018	Adjustments	FY-2019
Director of Water Quality	12	1		1		1
Chief of Lab	11	1		1		1
Chief of P3	11	1		1		1
Chief of TSD	11	1		1		1
Environmental Scientist	9	7		7		7
Lab Manager	9	4		4		4
Lab Quality Assurance Manager	9	1		1		1
P3 Manager	9	4		4		4
Recycling Manager	9	1		1	(1)	0
Lab EDMS Administrator	8	1		1		1
Lab Operations Manager	8	1		1		1
Lab Supervising Chemist	8	11		11		11
P3 Supervising Specialist	8	3		3		3
TSD Operations Manager	8	1		1		1
TSD Supervising Specialist	8	3		3		3
P3 Administrative Supervising Specialist	7	1		1		1
Lab EDMS Analyst	6	1		1		1
Lab Quality Assurance Specialist	6	1		1		1
Lab Specialist	6	13	1	14		14
P3 PIMS Analyst	6	1		1		1
P3 Specialist	6	3		3		3
TSD Specialist	6	10	(1)	9		9
WQ Specialist	6	0	1	1		1
Lab Data Technician	5	1		1		1
Lab Technician	5	5		5		5
P3 Technician	5	11		11		11
Lab Data Coordinator	4	1		1		1
P3 Administrative Coordinator	4	1		1		1
TSD Operations Coordinator	4	1		1		1
WQ Administrative Coordinator	4	1		1		1
P3 Administrative Assistant	3	2		2		2
TSD Investigator	3	7		7		7
Lab Assistant	2	7		7		7
TSD Assistant	2	1		1		1
Total		**109**	**1**	**110**	**(1)**	**109**

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General Expenses, Debt Service and Transfers

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

Expenditure Budget

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

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CAPITAL BUDGET

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Capital Budget

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

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

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

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

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

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Capital Budget

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

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

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Capital Budget

CIP Budget Forecast (in thousands)

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

Capital Expenditures (in thousands)

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

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

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

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Administration							
AD010400	Environmental Data Management System	$ -	$ -	$ -	$ -	$ -	$ -
AD012100	Asset Management Implementation	$ -	$ -	$ -	$ -	$ -	$ -
AD012200	Water Quality Services Building Phase II	$ -	$ -	$ -	$ -	$ -	$ -
AD012300	Central Environmental Laboratory Phase II	$ -	$ -	$ -	$ -	$ -	$ -
AD012400	Capital Program Management Improvements Phase I	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ -	$ -	$ -	$ -	$ -	$ -
Army Base							
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	$ 2,271	$ -	$ -	$ -	$ -	$ -
AB010100	Army Base Treatment Plant Improvements - Phase III	$ -	$ -	$ -	$ -	$ -	$ -
AB010500	Section W Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
AB011700	Army Base Treatment Plant Solids Dewatering and Loading Facility	$ -	$ 413	$ 4,167	$ 8,000	$ -	$ -
	Subtotal	$ 2,271	$ 413	$ 4,167	$ 8,000	$ -	$ -
Atlantic							
AT011510	Shipps Corner Interim Pressure Reducing Station	$ -	$ -	$ -	$ -	$ -	$ -
AT011520	Shipps Corner Pressure Reducing Station Modifications	$ 652	$ -	$ -	$ -	$ -	$ -
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	$ 221	$ 2,036	$ 1,997	$ -	$ -	$ -
AT012000	Atlantic Treatment Plant Administration Building Renovation and Expansion	$ -	$ -	$ -	$ -	$ -	$ -
AT012910	Atlantic Treatment Plant FOG Receiving Station	$ -	$ -	$ -	$ -	$ -	$ -
AT012920	Atlantic Treatment Plant Access Road Extension	$ 3,073	$ -	$ -	$ -	$ -	$ -
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	$ -	$ -	$ -	$ -	$ -	$ -
AT013100	South Norfolk Area Gravity Sewer Improvements	$ 3,126	$ 1,563	$ -	$ -	$ -	$ -
AT013200	Dozier's Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	$ 16	$ 38	$ 196	$ -	$ -	$ -
AT013500	Atlantic Treatment Plant Thermal Hydrolysis Process	$ -	$ -	$ -	$ -	$ -	$ -
AT013600	Atlantic Treatment Plant Motor Control Center Replacements	$ -	$ -	$ -	$ -	$ -	$ -
AT013700	Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)	$ -	$ -	$ -	$ -	$ -	$ -
AT013900	Atlantic Treatment Plant Influent Screen Expansion	$ -	$ -	$ -	$ -	$ -	$ -
AT014000	Lynnhaven-Great Neck IFM (SF-021) Relocation	$ -	$ -	$ -	$ -	$ -	$ -
AT014100	Suffolk Regional Landfill Transmission Force Main	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 7,088	$ 3,637	$ 2,193	$ -	$ -	$ -
Boat Harbor							
BH011600	Bridge Street Pump Station Replacement	$ -	$ -	$ -	$ -	$ -	$ -
BH012700	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
BH013000	Willard Avenue Pump Station Upgrades	$ -	$ -	$ -	$ -	$ -	$ -
BH013400	Bridge Street Siphon and Vent Relocation Replacement	$ -	$ -	$ -	$ -	$ -	$ -
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	$ 2,454	$ 3	$ -	$ -	$ -	$ -
BH014220	Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II	$ 8	$ -	$ -	$ -	$ -	$ -
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	$ 1,414	$ -	$ -	$ -	$ -	$ -
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	$ -	$ -	$ -	$ -	$ -	$ -
BH014700	Boat Harbor Outlet Sewer Improvements	$ -	$ -	$ -	$ -	$ -	$ -
BH014800	Jefferson Avenue Extension Gravity Improvements	$ -	$ -	$ -	$ -	$ -	$ -
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	$ 2,193	$ -	$ -	$ -	$ -	$ -
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	$ -	$ -	$ -	$ -	$ -	$ -
BH015100	Bloxoms Corner Force Main Replacement	$ 1,747	$ -	$ -	$ -	$ -	$ -
BH015300	Boat Harbor Treatment Plant Switchgear and Controls Replacements	$ -	$ -	$ -	$ -	$ -	$ -
BH015500	LaSalle Avenue Interceptor Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
BH015600	Hampton Trunk A and B Replacement – Jefferson Ave. to Buxton	$ -	$ -	$ -	$ -	$ -	$ -
BH015700	Boat Harbor Treatment Plant Effluent Pump Station and Transmission Force Main	$ 9,797	$ 17,219	$ 24,642	$ 24,642	$ 24,642	$ 24,642
	Subtotal	$ 17,612	$ 17,222	$ 24,642	$ 24,642	$ 24,642	$ 24,642
Note:	Fats, Oils, and Grease (FOG) Virginia Department of Transportation (VDOT) Force Main (FM)						

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

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

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Chesapeake-Elizabeth							
CE010400	Independence Boulevard Pressure Reducing Station Modifications	$ -	$ -	$ -	$ -	$ -	$ -
CE010520	Newtown Road Interceptor Force Main Relocation	$ -	$ -	$ -	$ -	$ -	$ -
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	$ 916	$ -	$ -	$ -	$ -	$ -
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	$ 624	$ 962	$ -	$ -	$ -	$ -
CE011700	Western Trunk Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
CE011810	Chesapeake-Elizabeth Treatment Plant Decommissioning	$ 1,722	$ 1,722	$ 1,722	$ 1,004	$ -	$ -
CE011821	Elbow Road Pressure Reducing Station	$ -	$ -	$ -	$ -	$ -	$ -
CE011822	Providence Road PRS Upgrades and	$ -	$ -	$ -	$ -	$ -	$ -
CE011823	Virginia Beach Boulevard Force Main Phase VI	$ -	$ -	$ -	$ -	$ -	$ -
CE011825	Salem Road Interconnect Force Main	$ -	$ -	$ -	$ -	$ -	$ -
CE011826	Providence Road Off-Line Storage Facility	$ -	$ -	$ -	$ -	$ -	$ -
CE011827	Atlantic PRS Reliability Modifications	$ -	$ -	$ -	$ -	$ -	$ -
CE011828	Kempsville PRS Reliability Modifications	$ -	$ -	$ -	$ -	$ -	$ -
CE011829	Laskin Road PRS Reliability Modifications	$ -	$ -	$ -	$ -	$ -	$ -
CE011830	Little Creek Pump Station Modifications	$ -	$ -	$ -	$ -	$ -	$ -
CE011835	Virginia Beach City Pump Station Upgrades, Phase V	$ -	$ -	$ -	$ -	$ -	$ -
CE011840	Oceana Off-Line Storage Facility	$ -	$ -	$ -	$ -	$ -	$ -
CE012000	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	$ -	$ -	$ -	$ -	$ -	$ -
CE012110	Witchduck Road Interceptor Force Main Improvements Phase I	$ -	$ -	$ -	$ -	$ -	$ -
CE012120	Witchduck Road Interceptor Force Main Improvements Phase II	$ 687	$ 172	$ -	$ -	$ -	$ -
CE012200	Pine Tree PRS Reliability Modifications	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 3,948	$ 2,856	$ 1,722	$ 1,004	$ -	$ -
James River							
JR010600	Lucas Creek Pump Station Upgrade	$ -	$ -	$ -	$ -	$ -	$ -
JR011300	Patrick Henry Pump Station Interconnection Force Main	$ -	$ -	$ -	$ -	$ -	$ -
JR011730	Jefferson Avenue Interceptor Force Main Replacement Phase III	$ -	$ -	$ -	$ -	$ -	$ -
JR012100	Huxley to Middle Ground Force Main Extension	$ -	$ -	$ -	$ -	$ -	$ -
JR013000	Morrison Pump Station Discharge Force Main Replacement & Capacity Enhancements	$ -	$ -	$ -	$ -	$ -	$ -
JR013100	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I	$ -	$ -	$ -	$ -	$ -	$ -
JR013200	Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II	$ 838	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 838	$ -	$ -	$ -	$ -	$ -
Middle Peninsula							
MP011400	Mathews Collection System Vacuum Valve Replacement	$ -	$ -	$ -	$ -	$ -	$ -
MP011700	Middle Peninsula Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	$ -	$ -	$ -	$ -	$ -	$ -
MP011800	Kirby Street Sanitary Sewer Rehabilitation	$ -	$ -	$ -	$ -	$ -	$ -
MP012000	King William Treatment Plant Improvements Phase I	$ -	$ -	$ -	$ -	$ -	$ -
MP012400	West Point Treatment Plant Tertiary Filter	$ -	$ -	$ -	$ -	$ -	$ -
MP012500	Mathews Main Vacuum Pump Station Replacement	$ -	$ -	$ -	$ -	$ -	$ -
MP012700	Middle Peninsula Sewer Lateral Improvements	$ -	$ 2,664	$ 2,664	$ -	$ -	$ -
MP012900	Mathews Nursing Home Line Vacuum Sewer Main Improvements	$ -	$ -	$ -	$ -	$ -	$ -
MP013000	Small Communities Collection System Rehabilitation Phase I	$ -	$ -	$ -	$ -	$ -	$ -
MP013100	Small Communities Mobile Dewatering Facilities Installation	$ -	$ -	$ -	$ -	$ -	$ -
MP013200	Middlesex County Sewer Service Expansion Study	$ -	$ -	$ -	$ -	$ -	$ -
MP013300	King William Treatment Plant Improvements Phase II	$ 900	$ -	$ -	$ -	$ -	$ -
MP013400	Small Communities Operation Center Parking and Laydown Area	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 900	$ 2,664	$ 2,664	$ -	$ -	$ -
Note:	Pressure Reducing Station (PRS)						

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

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

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
Nansemond							
NP010620	Suffolk Pump Station Replacement	$ -	$ -	$ -	$ -	$ -	$ -
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	$ -	$ -	$ -	$ -	$ -	$ -
NP012400	Western Branch Sewer System Gravity Improvements	$ 156	$ 2,394	$ -	$ -	$ -	$ -
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	$ -	$ -	$ -	$ -	$ -	$ -
NP012600	Deep Creek Interceptor Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
NP013000	Nansemond Treatment Plant Motor Control Center Replacements	$ 351	$ -	$ -	$ -	$ -	$ -
NP013400	Deep Creek Interceptor Force Main Risk Mitigation Project	$ -	$ -	$ -	$ -	$ -	$ -
NP013500	Nansemond Treatment Plant Land Acquisition-Land Stabilization	$ -	$ -	$ -	$ -	$ -	$ -
NP013600	Nansemond Treatment Plant Land Acquisition-Structure Demolition	$ -	$ -	$ -	$ -	$ -	$ -
NP013700	Nansemond Treatment Plant Struvite Recovery Facility Improvements	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 507	$ 2,394	$ -	$ -	$ -	$ -
Surry							
SU010200	Surry Hydraulic Improvements and Interceptor Force Main	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ -	$ -	$ -	$ -	$ -	$ -
Virginia Initiative Plant							
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	$ 146	$ 554	$ 646	$ -	$ -	$ -
VP014010	Ferebee Avenue Pump Station Replacement	$ -	$ -	$ -	$ -	$ -	$ -
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	$ -	$ -	$ -	$ -	$ -	$ -
VP014700	Ingleside Road Pump Station Replacement	$ 668	$ 1,564	$ 521	$ -	$ -	$ -
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	$ 926	$ -	$ -	$ -	$ -	$ -
VP015310	Larchmont Sanitary Sewer Master Plan Study	$ -	$ -	$ -	$ -	$ -	$ -
VP015320	Larchmont Area Sanitary Sewer Improvements	$ 4,255	$ -	$ -	$ -	$ -	$ -
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	$ 2,752	$ -	$ -	$ -	$ -	$ -
VP016320	Virginia Initiative Plant Nutrient Reduction Improvements Contract B	$ -	$ -	$ -	$ -	$ -	$ -
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	$ 559	$ -	$ -	$ -	$ -	$ -
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	$ 120	$ 1,718	$ 516	$ -	$ -	$ -
VP017100	Central Norfolk Area Gravity Sewer Improvements	$ 205	$ 1,036	$ 1,172	$ -	$ -	$ -
VP017300	Rodman Avenue Pump Station Wet Well Rehabilitation	$ -	$ -	$ -	$ -	$ -	$ -
VP018000	Park Avenue Pump Station Replacement	$ -	$ -	$ -	$ -	$ -	$ -
VP018200	Effingham Interceptor Vault Removal	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 9,631	$ 4,872	$ 2,855	$ -	$ -	$ -
Williamsburg							
WB010700	Williamsburg Interceptor Force Main Contract A Replacement	$ -	$ -	$ -	$ -	$ -	$ -
WB012200	North Trunk Force Main Part B Replacement	$ -	$ -	$ -	$ -	$ -	$ -
WB012400	Williamsburg Treatment Plant Generator and Switchgear Replacement	$ -	$ -	$ -	$ -	$ -	$ -
WB012500	Lodge Road Pump Station Upgrades	$ -	$ -	$ -	$ -	$ -	$ -
WB012600	Kingsmill Pump Station Piping Replacement and Wet Well Rehabilitation	$ -	$ -	$ -	$ -	$ -	$ -
WB012700	Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements	$ -	$ -	$ -	$ -	$ -	$ -
WB012800	Williamsburg Treatment Plant Outfall and Diffuser Repair 2018	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ -	$ -	$ -	$ -	$ -	$ -
York River							
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	$ 1,458	$ 1,353	$ -	$ -	$ -	$ -
YR010520	Magruder Mercury Interceptor Force Main Replacement - Section B	$ 2,383	$ 3	$ -	$ -	$ -	$ -
YR010530	Magruder Mercury Interceptor Force Main Replacement - Section C	$ 56	$ 494	$ 1,555	$ 2,325	$ 969	$ -
YR011900	Bethel-Poquoson Force Main Part III Replacement	$ -	$ -	$ -	$ -	$ -	$ -
YR012220	York River Treatment Plant Digester Cover Replacement Phase II	$ -	$ -	$ -	$ -	$ -	$ -
YR013140	York River Treatment Plant Environmental Studies and Habitat Enhancement	$ -	$ -	$ -	$ -	$ -	$ -
YR013500	Westminster Drive Force Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -
YR013600	York River Treatment Plant Solids Handling Electrical Improvements	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 3,897	$ 1,850	$ 1,555	$ 2,325	$ 969	$ -

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

CIP No	Project Name	Total FY-2019 to FY-2028	FY-2019	FY-2020	FY-2021	FY-2022
General						
GN010730	Horizontal Valve Replacement Phase III	$ 3,136	$ 365	$ 605	$ 605	$ 605
GN011700	Pump Station Generators and Standby Pump Upgrades	$ 4,814	$ 2,027	$ 1,858	$ 929	$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	$ 207	$ 207	$ (0)	$ (0)	$ -
GN012131	Manhole Rehabilitation Phase 1A (North Shore)	$ 712	$ 712	$ -	$ -	$ -
GN012132	Manhole Rehabilitation Phase 1B	$ 1,305	$ 913	$ 391	$ -	$ -
GN012133	Manhole Rehabilitation Phase 1C	$ 1,305	$ -	$ 1,174	$ 130	$ -
GN012134	North Shore Siphon Chamber Rehabilitation Phase 1	$ 1,305	$ 507	$ 797	$ -	$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	$ 2,422	$ 855	$ 855	$ 712	$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	$ 6,745	$ 5,729	$ 1,016	$ -	$ -
GN013300	Treatment Plant Grease Handling Facilities	$ 4,532	$ 867	$ 2,741	$ 924	$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	$ 187,638	$ -	$ -	$ -	$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	$ 4,487	$ 80	$ 222	$ 214	$ 2,477
GN015000	South Shore Gravity Sewer Improvements Phase I	$ 732	$ -	$ -	$ 37	$ 65
GN015100	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	$ 457	$ 457	$ -	$ -	$ -
GN015300	Interceptor System Valve Improvements Phase I	$ 2,592	$ 74	$ 157	$ 539	$ 1,367
GN015400	South Shore Aerial Crossing Improvements	$ 260	$ -	$ 4	$ 15	$ 11
GN015800	North Shore Automated Diversion Facilities	$ 1,422	$ 148	$ 1,040	$ 235	$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	$ 219	$ 188	$ 31	$ -	$ -
GN016300	Sustainable Water Initiative for Tomorrow (SWIFT)	$ 704,021	$ -	$ -	$ -	$ -
GN016310	Integrated Planning of SWIFT	$ 8,500	$ 3,000	$ 2,000	$ 1,500	$ 1,000
GN016320	Program Management of SWIFT Full Scale Implementation	$ 80,000	$ 6,154	$ 6,154	$ 6,154	$ 6,154
GN016330	Well Services for SWIFT	$ 2,500	$ 2,500	$ -	$ -	$ -
GN016341	Virginia Initiative Plant SWIFT Land Acquisition	$ 15,000	$ -	$ -	$ -	$ -
GN016350	Williamsburg SWIFT Facility	$ 124,575	$ 4,560	$ 10,890	$ 15,150	$ 40,550
GN016360	James River SWIFT Facility	$ 173,130	$ -	$ 6,340	$ 20,646	$ 15,534
GN016370	York River SWIFT Facility	$ 163,806	$ -	$ -	$ -	$ 6,000
GN016400	Treatment Plant Dewatering Replacement Phase I	$ 1,848	$ 254	$ 1,594	$ -	$ -
GN016500	James River and Nansemond Treatment Plant Dewatering Building Mod and Centrifuge Replacement	$ 763	$ 763	$ -	$ -	$ -
GN016600	South Shore High Point Air Vent Installation Phase I	$ 450	$ 188	$ 263	$ -	$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	$ 3,315	$ -	$ 721	$ 849	$ 1,496
GN016800	Fleet Management (FY2019 - FY2022)	$ 4,381	$ 612	$ 1,372	$ 1,307	$ 1,090
GN016900	Mobile Workforce Implementation	$ 1,750	$ 1,750	$ -	$ -	$ -
GN017000	Water Quality Department Instrumentation and Monitoring Equipment (FY2019)	$ 285	$ 285	$ -	$ -	$ -
	Subtotal	$ 1,154,062	$ 33,194	$ 40,225	$ 49,945	$ 76,348
Future Improvements						
IP010200	Treatment Plant Expansions and Improvements	$ 16,368	$ -	$ -	$ 752	$ 3,311
IP010300	General Expansions and Improvements	$ 1,653	$ -	$ -	$ -	$ 338
IP010600	Treatment Plant Rehabilitation and Replacement	$ 16,368	$ -	$ -	$ 752	$ 3,311
IP010700	General Rehabilitation and Replacement	$ 1,653	$ -	$ -	$ -	$ 338
IP010800	Regional Wet Weather Improvements	$ 1,800,791	$ -	$ 1,773	$ 3,218	$ 15,553
IP011000	Advanced Treatment Infrastructure Upgrades	$ 529,868	$ 196	$ 3,323	$ 17,185	$ 22,471
	Subtotal	$ 614,318	$ 196	$ 5,096	$ 21,908	$ 45,323
	CIP TOTALS	$ 2,426,017	$ 134,000	$ 187,255	$ 200,000	$ 200,000

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FY-2018 to FY-2028
Cash Flow Projections (in thousands)

CIP No	Project Name	FY-2023	FY-2024	FY-2025	FY-2026	FY-2027	FY-2028
General							
GN010730	Horizontal Valve Replacement Phase III	$ 605	$ 353	$ -	$ -	$ -	$ -
GN011700	Pump Station Generators and Standby Pump Upgrades	$ -	$ -	$ -	$ -	$ -	$ -
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	$ -	$ -	$ -	$ -	$ -	$ -
GN012131	Manhole Rehabilitation Phase 1A (North Shore)	$ -	$ -	$ -	$ -	$ -	$ -
GN012132	Manhole Rehabilitation Phase 1B	$ -	$ -	$ -	$ -	$ -	$ -
GN012133	Manhole Rehabilitation Phase 1C	$ -	$ -	$ -	$ -	$ -	$ -
GN012134	North Shore Siphon Chamber Rehabilitation Phase 1	$ -	$ -	$ -	$ -	$ -	$ -
GN012140	Pump Station Wet Well Rehabilitation Phase I	$ -	$ -	$ -	$ -	$ -	$ -
GN012800	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	$ -	$ -	$ -	$ -	$ -	$ -
GN013300	Treatment Plant Grease Handling Facilities	$ -	$ -	$ -	$ -	$ -	$ -
GN014500	Renewable Energy Facility and Associated Plant Improvements	$ -	$ -	$ -	$ -	$ -	$ -
GN014900	North Shore Gravity Sewer Improvements Phase I	$ 1,493	$ -	$ -	$ -	$ -	$ -
GN015000	South Shore Gravity Sewer Improvements Phase I	$ 236	$ 394	$ -	$ -	$ -	$ -
GN015100	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	$ -	$ -	$ -	$ -	$ -	$ -
GN015300	Interceptor System Valve Improvements Phase I	$ 456	$ -	$ -	$ -	$ -	$ -
GN015400	South Shore Aerial Crossing Improvements	$ 137	$ 94	$ -	$ -	$ -	$ -
GN015800	North Shore Automated Diversion Facilities	$ -	$ -	$ -	$ -	$ -	$ -
GN016200	Sustainable Water Phase 3 – Demonstration Facility (SWIFT)	$ -	$ -	$ -	$ -	$ -	$ -
GN016300	Sustainable Water Initiative for Tomorrow (SWIFT)	$ 12,115	$ 39,827	$ 67,195	$ 122,491	$ 146,312	$ 167,630
GN016310	Integrated Planning of SWIFT	$ 1,000	$ -	$ -	$ -	$ -	$ -
GN016320	Program Management of SWIFT Full Scale Implementation	$ 6,154	$ 6,154	$ 6,154	$ 6,154	$ 6,154	$ 6,154
GN016330	Well Services for SWIFT	$ -	$ -	$ -	$ -	$ -	$ -
GN016341	Virginia Initiative Plant SWIFT Land Acquisition	$ 15,000	$ -	$ -	$ -	$ -	$ -
GN016350	Williamsburg SWIFT Facility	$ 44,510	$ 8,915	$ -	$ -	$ -	$ -
GN016360	James River SWIFT Facility	$ 56,360	$ 61,860	$ 12,390	$ -	$ -	$ -
GN016370	York River SWIFT Facility	$ 19,533	$ 14,697	$ 53,320	$ 58,540	$ 11,716	$ -
GN016400	Treatment Plant Dewatering Replacement Phase I	$ -	$ -	$ -	$ -	$ -	$ -
GN016500	James River and Nansemond Treatment Plant Dewatering Building Mod and Centrifuge Replacement	$ -	$ -	$ -	$ -	$ -	$ -
GN016600	South Shore High Point Air Vent Installation Phase I	$ -	$ -	$ -	$ -	$ -	$ -
GN016700	Treatment Plant Solids Handling Replacement Phase II	$ 249	$ -	$ -	$ -	$ -	$ -
GN016800	Fleet Management (FY2019 - FY2022)	$ -	$ -	$ -	$ -	$ -	$ -
GN016900	Mobile Workforce Implementation	$ -	$ -	$ -	$ -	$ -	$ -
GN017000	Water Quality Department Instrumentation and Monitoring Equipment (FY2019)	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal	$ 157,847	$ 132,294	$ 139,059	$ 187,184	$ 164,182	$ 173,784
Future Improvements							
IP010200	Treatment Plant Expansions and Improvements	$ 1,701	$ 6,124	$ 1,379	$ 407	$ 515	$ 2,178
IP010300	General Expansions and Improvements	$ 138	$ 680	$ 153	$ 45	$ 57	$ 242
IP010600	Treatment Plant Rehabilitation and Replacement	$ 1,701	$ 6,124	$ 1,379	$ 407	$ 515	$ 2,178
IP010700	General Rehabilitation and Replacement	$ 138	$ 680	$ 153	$ 45	$ 57	$ 242
IP010800	Regional Wet Weather Improvements	$ 27,490	$ 29,516	$ 27,012	$ 31,655	$ 32,730	$ 27,926
IP011000	Advanced Treatment Infrastructure Upgrades	$ 50,008	$ 74,387	$ 76,783	$ 30,000	$ 62,048	$ 45,000
	Subtotal	$ 81,175	$ 117,512	$ 106,860	$ 62,560	$ 95,922	$ 77,765
	CIP TOTALS	$ 285,714	$ 285,714	$ 285,714	$ 285,714	$ 285,714	$ 276,190

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HRSD

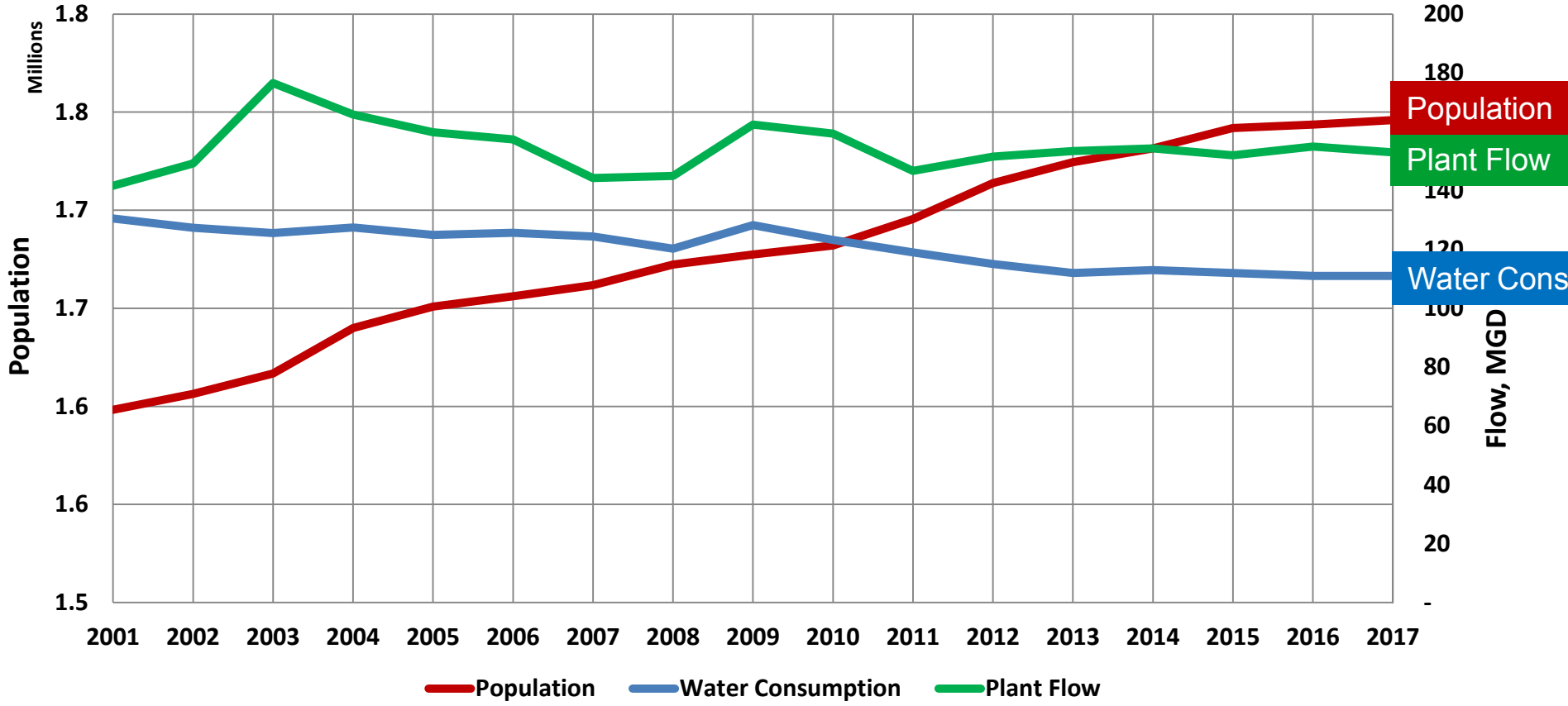
Cleaning wastewater every day for a better Bay.

FY2019 Budget
April 24, 2018

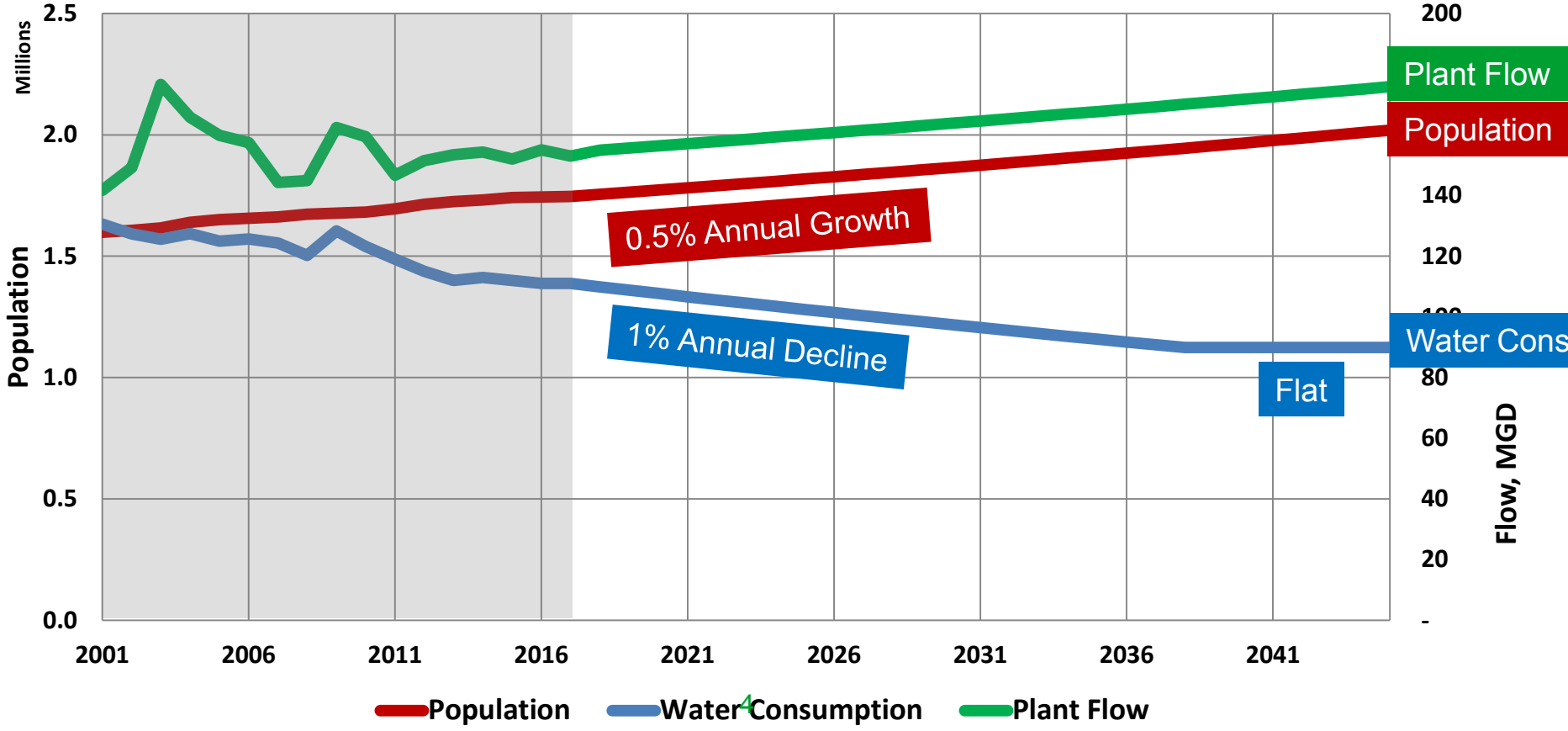
Agenda

- Population vs Flow
- Surcharges
- Budget
- Capital Improvement Program
- Financial Forecast

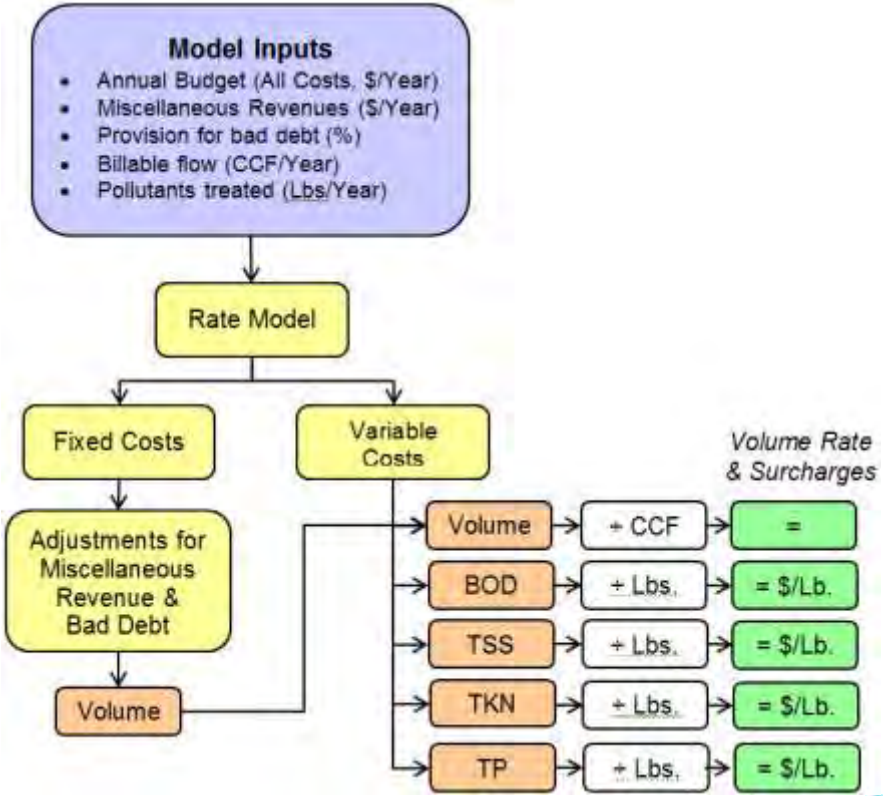
Historical Water Consumption, Plant Flow, Population



Historical and Projected Water Consumption, Plant Flow, Population



Rate Model Schematic



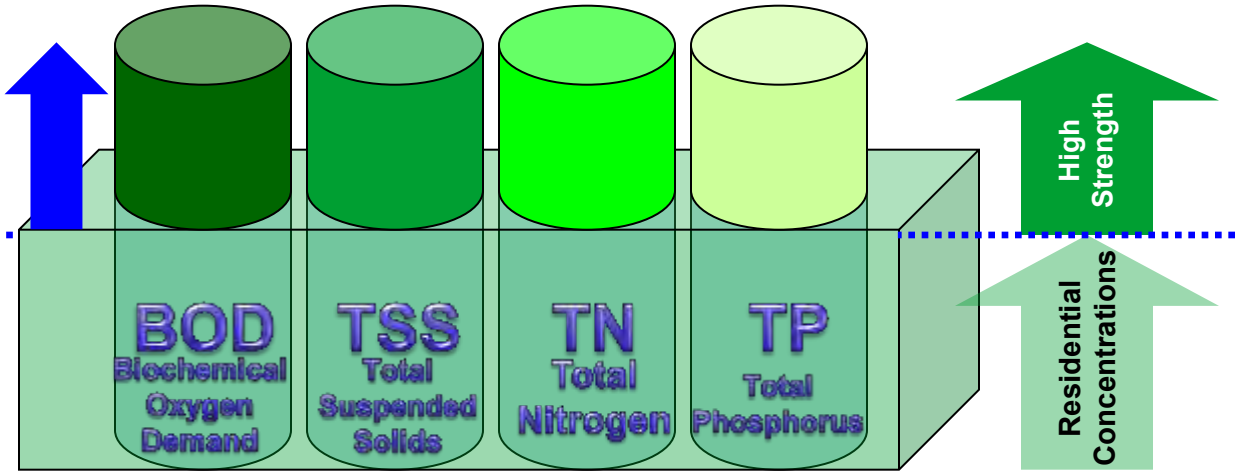
Surcharge Rates

Surcharges for High Strength or Unusual Wastes

- Domestic Quality Wastewater
- High Strength or Unusual Wastes

Surcharge Rates represent Marginal/Incremental Costs

BASE COST includes Fixed and Variable Costs



Proposed Surcharge Rates

Surcharge Rate per 100 lbs Pollutant	FY17 *Calculated*	FY18 *Calculated*	FY19 *Calculated*	FY19 *3-Yr Average*
Biochemical Oxygen Demand (**BOD**)	$ 3.30	$ 1.46	$ 3.60	$ 2.79
Total Suspended Solids (**TSS**)	$ 7.27	$ 8.32	$ 9.50	$ 8.36
Total Phosphorus (**TP**)	$ 186.49	$ 185.32	$ 165.55	$ 179.12
Total Kjeldahl Nitrogen (**TKN**)	$ 26.59	$ 50.56	$ 45.11	$ 40.75

Five Largest Surcharge Bills	FY17 *Calculated*	FY18 *Calculated*	FY19 *Calculated*	FY19 *3-Yr Average*
Anheuser Busch Inc	$ 341,192	$ 237,534	$ 378,845	$ 319,387
37th St Water Treatment Plant	$ 251,317	$ 287,615	$ 328,406	$ 288,997
Smithfield Foods Inc	$ 204,122	$ 202,841	$ 181,202	$ 196,055
Md Va Milk Producers Assoc	$ 50,422	$ 40,998	$ 58,254	$ 49,916
Pepsi Cola Company	$ 25,856	$ 11,773	$ 28,084	$ 21,930

FY19 Budget

Revenues

	FY-2019	Adopted FY-2018	Increase/ (Decrease)	Percent Change
Operating Revenues				
Wastewater Treatment Charges	$ 297,062,000	$ 273,087,693	$ 23,974,307	9%
Miscellaneous	1,405,000	1,545,000	(140,000)	(9%)
Total Operating Revenue	298,467,000	274,632,693	23,834,307	9%
Non-Operating Revenues				
Wastewater Facility Charges	6,075,000	6,000,000	75,000	1%
Investment Earnings	2,500,000	1,800,000	700,000	39%
Build America Bond Subsidy	2,400,000	2,400,000	-	0%
Other	820,000	720,000	100,000	14%
Total Non-Operating Revenues	11,795,000	10,920,000	875,000	8%
Total Revenues	$ 310,262,000	$ 285,552,693	$ 24,709,307	9%

Expenses

	FY-2019	Adopted FY-2018	Increase/ (Decrease)	Percent Change
Operating Appropriations				
General Management	$ 624,583	$ 680,710	$ (56,127)	(8%)
Communications	423,764	470,615	(46,851)	(10%)
Finance	13,884,533	13,593,503	291,030	2%
Information Technology	15,089,692	16,229,457	(1,139,765)	(7%)
Talent Management	2,293,202	2,280,395	12,807	1%
Operations	98,842,274	94,102,651	4,739,623	5%
Engineering	7,903,702	5,731,535	2,172,167	38%
Water Quality	14,913,423	14,205,703	707,720	5%
General Expenses	5,761,766	3,928,399	1,833,367	47%
Total Operating Appropriations	159,736,939	151,222,965	8,513,974	6%
Appropriations for Debt Service and Transfers				
Debt Service	62,811,000	60,849,120	1,961,880	3%
Transfer to Capital Improvement Program (CIP)	87,475,061	58,802,000	28,673,061	49%
Transfer to General Reserve	-	14,418,608	(14,418,608)	(100%)
Transfer to Risk Management Reserve	239,000	260,000	(21,000)	(8%)
Total Appropriations for Debt Service and Transfers	150,525,061	134,329,728	16,195,333	12%
Total Appropriations	$ 310,262,000	$ 285,552,693	$ 24,709,307	9%

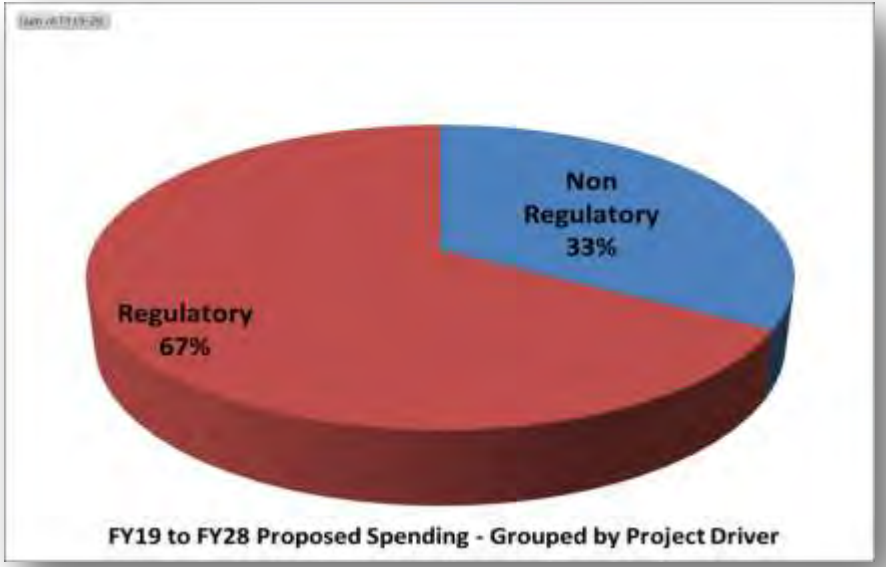
$1.25M

FY18 Adopted Total Operating is slightly different from SMARTview due to $900k Cost of Issuance included within Debt Service, $250k transfer for Surry take-over and $100k for Paradise Creek Park in Portsmouth (Commission approved July 2015)

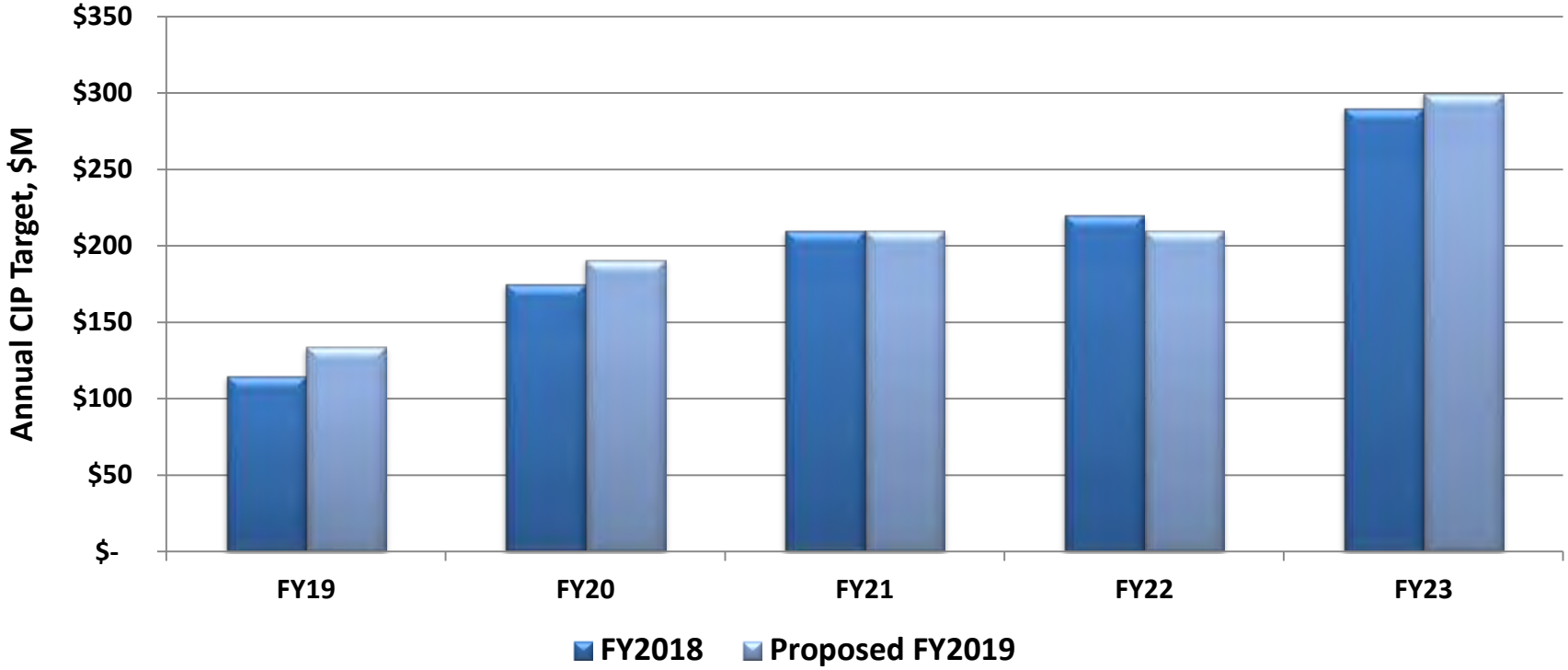
Capital Improvement Program

CIP Stats

- FY19-28 = $2.5B
- 162 projects
- Includes Integrated Plan
  - SWIFT projects through FY2030
  - $200M high priority wet weather improvements in FY20-29
  - Remaining wet weather projects FY30-53



Minor Adjustments to Annual CIP Targets – Net Neutral

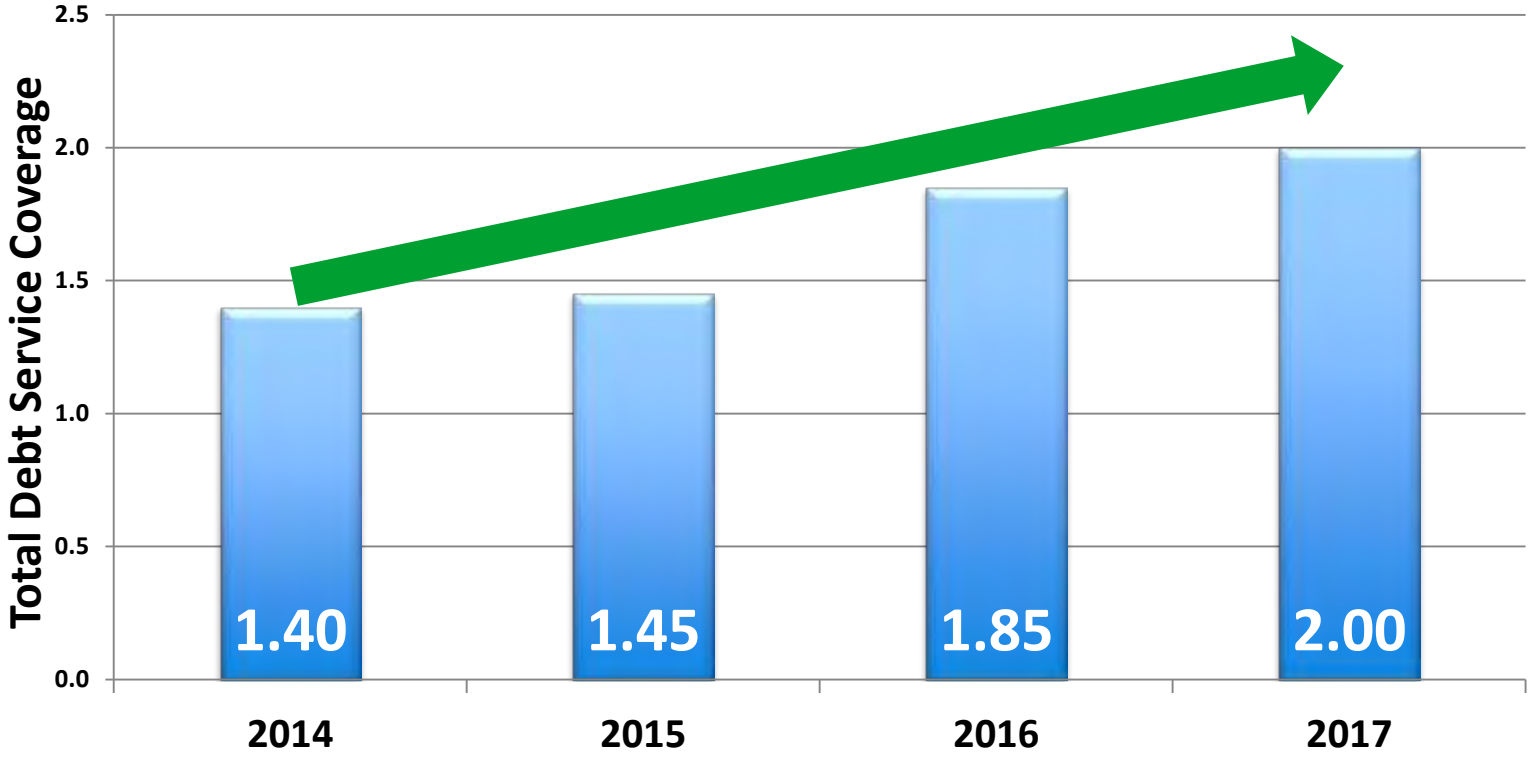


20 Year Financial Forecast

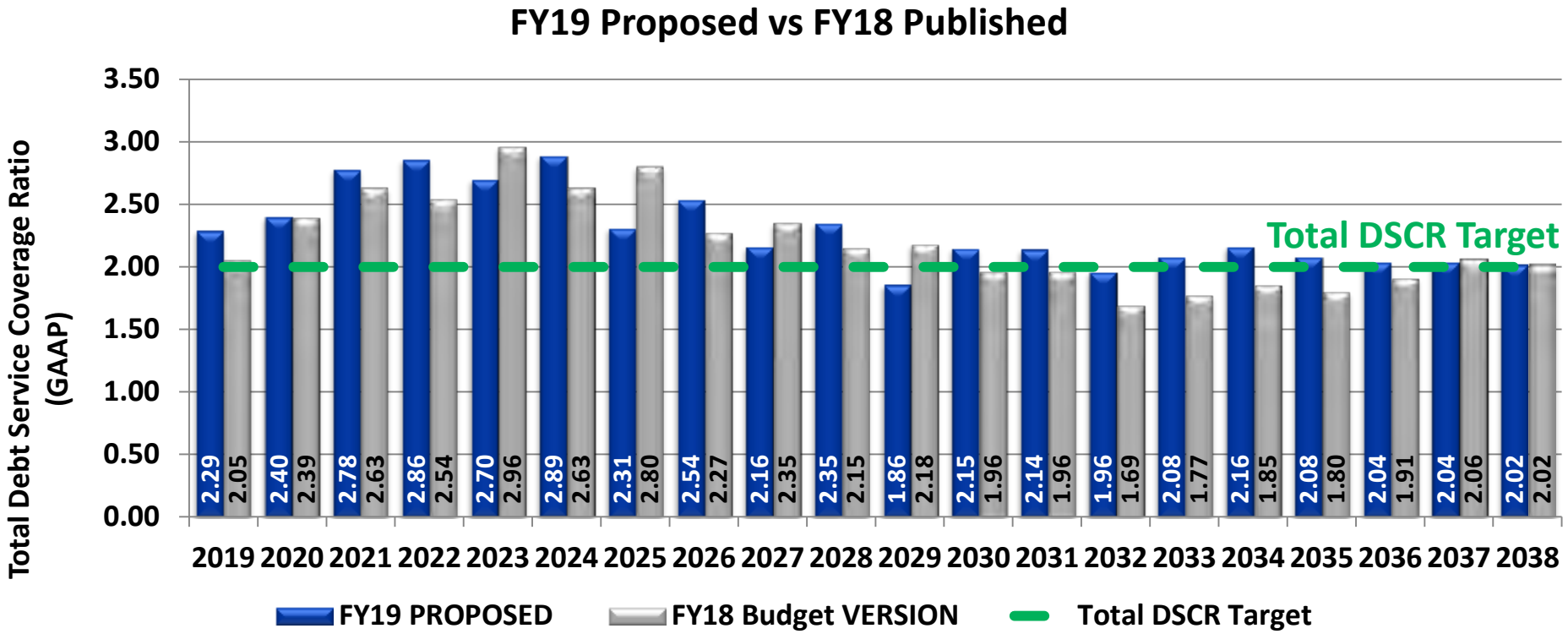
Debt Service Coverage Ratio (DSCR) Example Calculation

	GAAP	Adjusted
Net Operating Income	$210M	$210M
- Locality Projects Expensed	-$70M	-
Net Operating Income	$140M	$210M
Debt Service *(Principal + Interest)*	$70M	$70M
DEBT SERVICE COVERAGE RATIO	$140M/$70 = **2.0**	$210/$70M = **3.0**

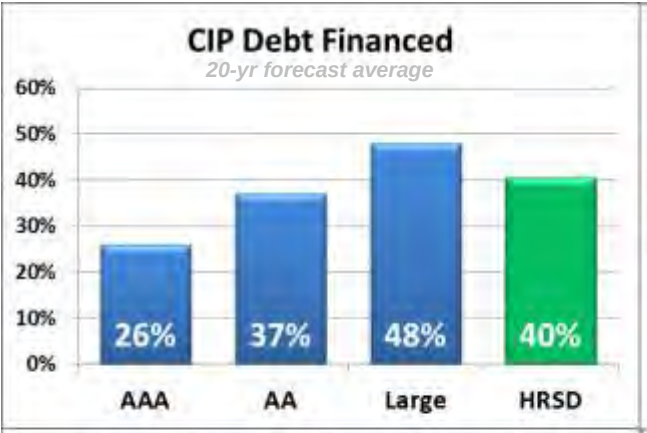
Historical Total Debt Service Coverage Ratio (GAAP)

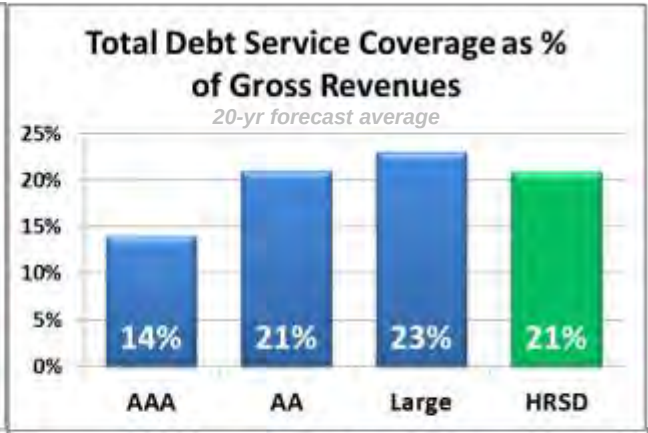


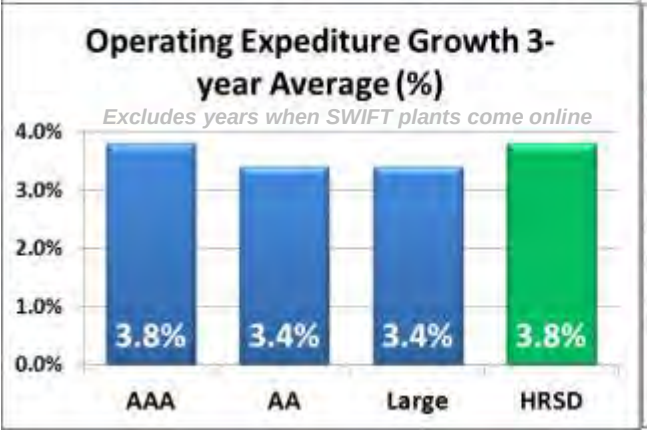
Total Debt Service Coverage Ratio (GAAP) Comparison

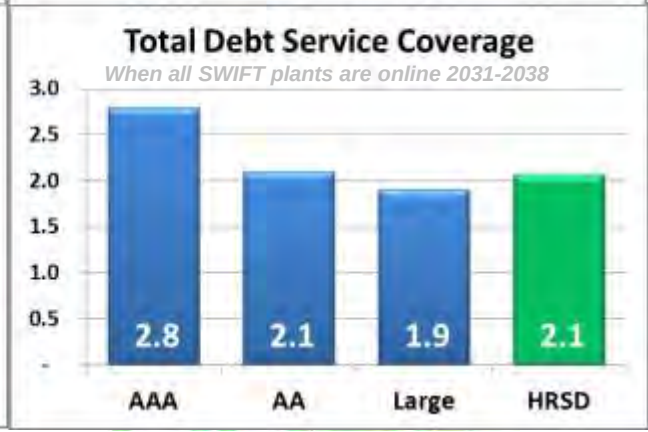


20-yr Financial Forecast Compared to 2018 Fitch Medians









Scenarios – What if…

- We underspend the CIP 10% annually for the next 20 years?
  - Year 2038 DSCR = **3.11x** vs 2.02x
- Water consumption is flat for the next 20 years?
  - Year 2038 DSCR = **4.61x** vs 2.02x
  - Additional $1.3B in revenue
- What if inflation is higher (4.3% vs 3.8%)?
  - Year 2038 DSCR = **1.62x** vs 2.02x
- What if there are no Wet Weather projects after 2030?
  - Year 2053 DSCR = **8.80x** vs 2.18x

Next Steps

- *April 24 – Draft Budget Submittal*
- May 22 – Formal Budget Adoption
- 4 Consecutive weeks – newspaper advertisement for rates and fees
- July 1 – Budget Effective

Questions?

HRSD COMMISSION MEETING MINUTES
April 24, 2018

ATTACHMENT #6

AGENDA ITEM 9. – Value of Water 2018 National Survey Poll Results

- Topline Talking Points
- Presentation

2018 National Survey on Public Opinion on Water Infrastructure

Topline Findings & Talking Points

Topline Findings

1. **Americans support infrastructure investment more than any other national issue.**
    - **Four of five** American voters want Congress and the Trump Administration to focus on rebuilding America's infrastructure.
    - Eighty percent said rebuilding America's infrastructure should be an extremely or very important priority for Congress and the Administration—compared to 54 percent for defense funding, 30 percent for building on wall on the border with Mexico, 38 percent for repealing Obamacare, and 55 percent for providing legal status for Dreamers.
    - Nearly everyone said that infrastructure investment was at least somewhat important.

2. **Rebuilding America's water and wastewater infrastructure is extremely or very important.**
    - **Seventy-eight percent** of American voters believe it is extremely or very important for the President and congress to develop a plan to rebuild the water infrastructure that brings clean drinking water to homes, and removes and treats wastewater.

3. **Even more Americans support increased federal investment to rebuild our water infrastructure.**
    - **Eighty-eight percent** of voters polled support increasing federal investment to rebuild our water infrastructure – including pipes, pumps, reservoirs, treatment plants, and other facilities – to ensure safe, reliable water service for all communities.
    - Over half of all American voters (55 percent) said they strongly supported federal investment.
    - Voters overwhelmingly support a proactive program of water infrastructure upgrades rather than waiting to fix problems with these critical systems as they arise. They maintain this support even when we discuss the costs – which exceed $1 trillion.

4. **No other issue has nearly as much broad and bipartisan support.**
    - These opinions were widely shared across all demographic, geographic, and political subgroups.
    - Across the political spectrum, majorities believe that rebuilding our water infrastructure is extremely or very important—including 66 percent of Republicans, 80 percent of Independents, and 88 percent of Democrats.

About the Poll

- The Value of Water Campaign commissioned this poll to measure how Americans prioritize infrastructure among other federal issues, as well as obtain public opinion data on the state and importance of water infrastructure specifically.

- The bi-partisan polling team of Public Opinion Strategies and FM3 conducted the poll on behalf of the Value of Water Campaign between March 11 and March 15, 2018.
- Respondents were 1,000 registered voters. The margin of error is +/- 3.1% at the 95% confidence level.

About the Value of Water Campaign

- The Value of Water Campaign educates and inspires the nation about how water is essential, invaluable, and in need of investment. Spearheaded by top leaders in the water industry, the Value of Water Campaign is building public and political will for investment in America's water infrastructure. Visit www.thevalueofwater.org for more information.

Value of Water CAMPAIGN

American Support for Investments in Water Infrastructure

Key Findings from a National Voter Survey Conducted
March 11-15, 2018

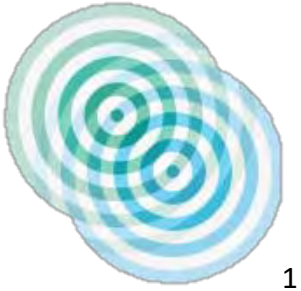
FM3 RESEARCH | OPINION RESEARCH & STRATEGY

GQR PUBLIC OPINION STRATEGIES

320-796

Methodology

- ✓ 1001 telephone interviews with voters nationwide
- ✓ Interviews conducted March 11-15, 2018
- ✓ Interviews on landlines and cell phones
- ✓ Margin of sampling error of +/- 3.1% at the 95% confidence level
- ✓ Some percentages may not sum to 100% due to rounding
- ✓ Select tracks from 2016 and 2017 national research



FM3 RESEARCH GCA

Bipartisan Research Team

Dave Metz – FM3

Fairbank, Maslin, Maullin, Metz & Associates (FM3) – a national Democratic opinion research firm with offices in Oakland, Los Angeles and Madison, Wisconsin – has specialized in public policy oriented opinion research since 1981. The firm has assisted hundreds of political campaigns at every level of the ballot – from President to City Council – with opinion research and strategic guidance. FM3 also provides research and strategic consulting to public agencies, businesses and public interest organizations nationwide.

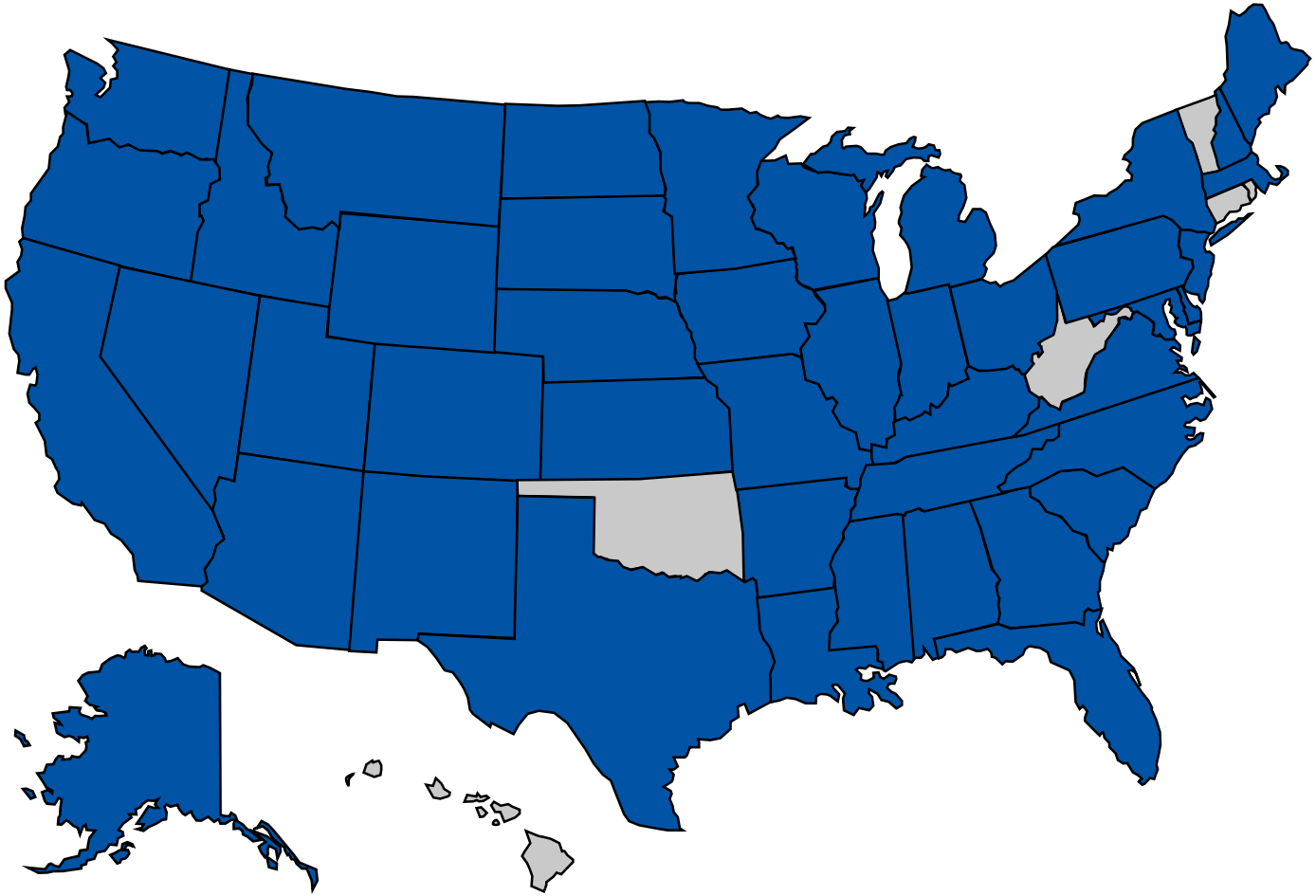
Lori Weigel - POS

Public Opinion Strategies (POS) is the largest Republican polling firm in the country. Since the firm's founding in 1991, they have completed more than 10,000 research projects, interviewing more than five million Americans across the United States. Media outlets, such as *The Wall Street Journal*, NBC News, CNBC, and National Public Radio, rely on Public Opinion Strategies to conduct their polling. The firm conducts polling on behalf of hundreds of political campaigns, as well as trade associations, not-for-profit organizations, government entities and industry coalitions throughout the nation.

As a bipartisan team, FM3 and Public Opinion Strategies have researched a wide range of issues for nearly a decade, in particular on conservation-related initiatives and policies. Together, the two firms have jointly conducted research on behalf of political campaigns, businesses, not-for-profit organizations and public agencies in 44 states and nationally.

FM3 RESEARCH GCA

FM3 and POS have partnered to complete environmental research in 44 states.



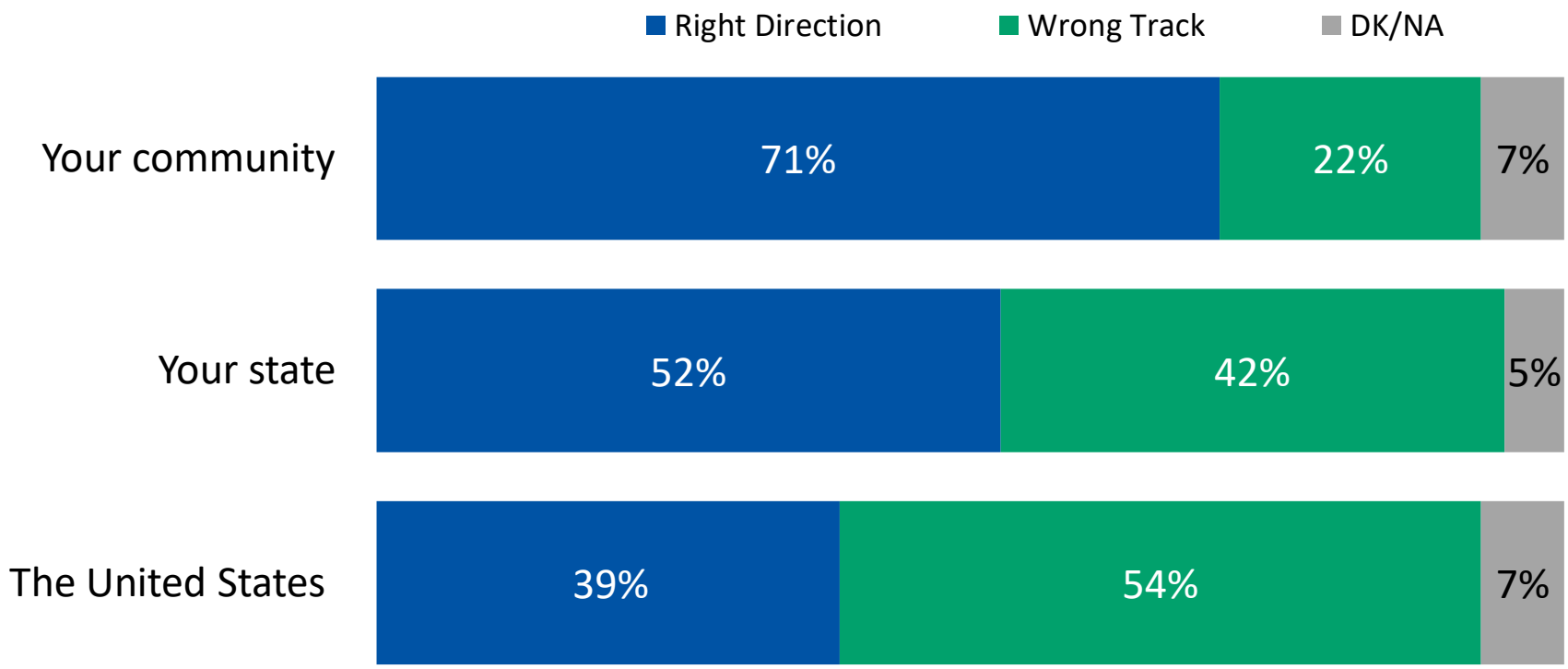
PUBLIC OPINION STRATEGIES

FM3 RESEARCH OPINION RESEARCH & STRATEGY

Issue Context and Attitudes Toward Infrastructure

Voters are much more optimistic about their communities than their state or the country.

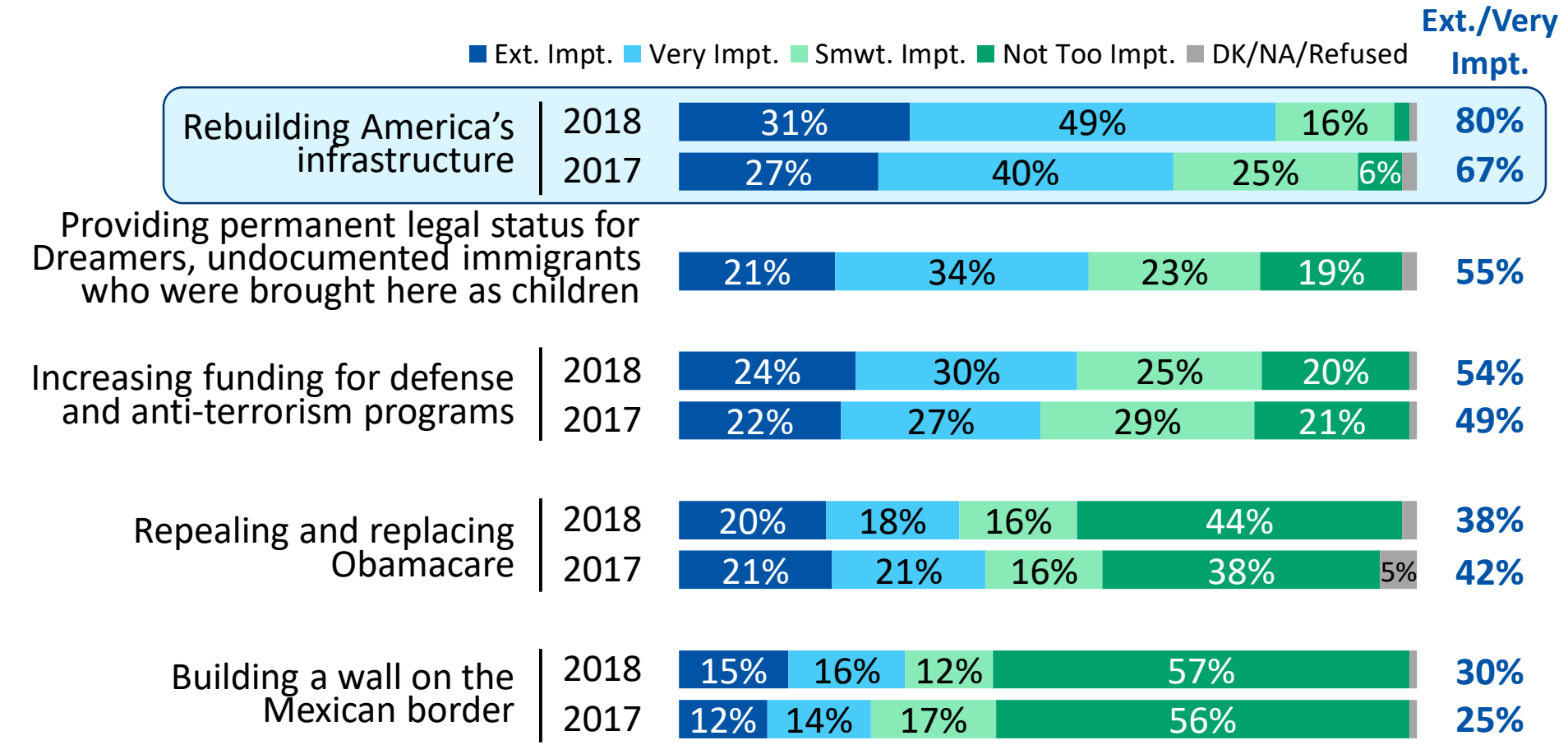
Would you say that things in _____ are generally headed in the right direction, or are they pretty seriously off on the wrong track?



Q1.

Rebuilding America's infrastructure is seen as a top priority, and is gaining urgency.

Here are some issues that President Trump and leaders in Congress have said they may address this year. Please tell me how important you think it is for them to focus on each issue.

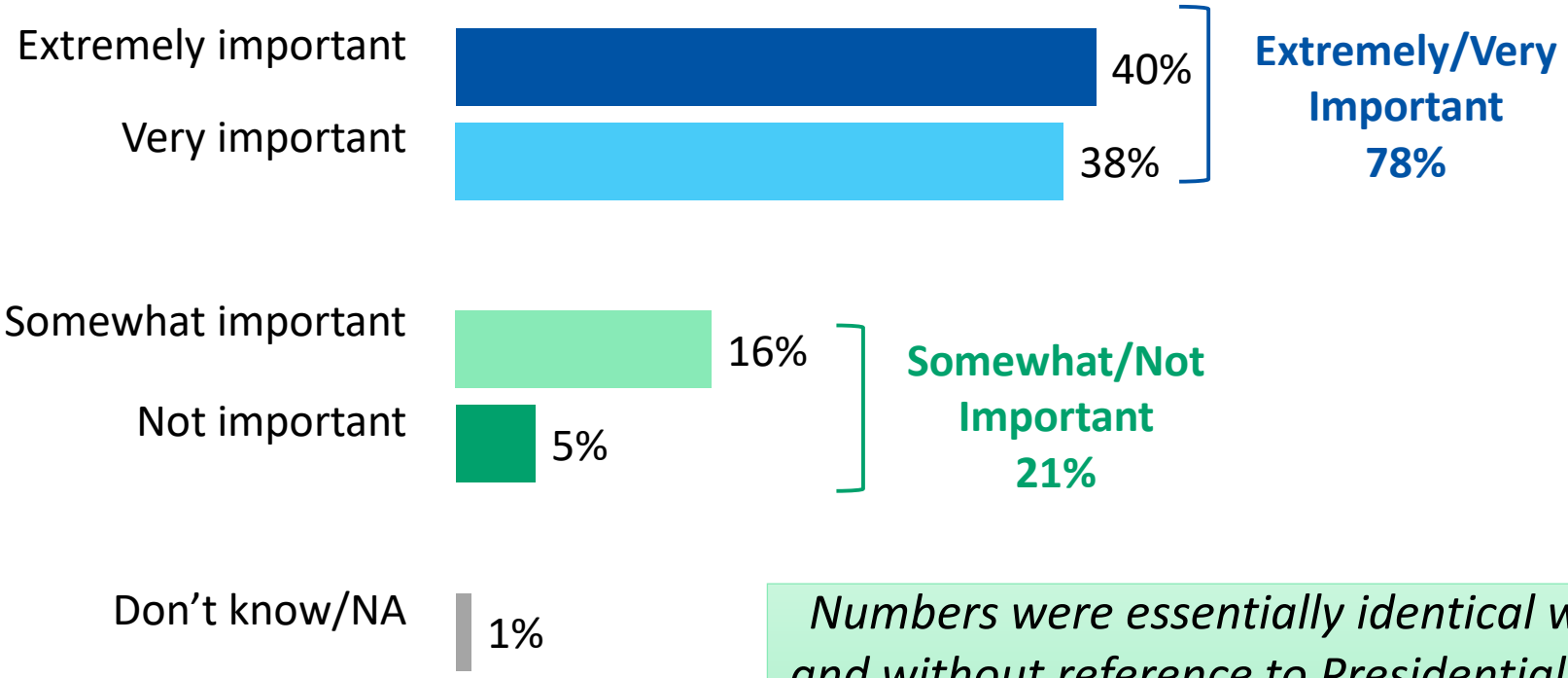


FM3 RESEARCH QCA

Q2.

Nearly four in five see it as "very important" that we rebuild our water infrastructure.

*We mentioned America's infrastructure in the last question. Specifically, how important do you think it is **(Half Sample:** for the President and Congress to develop a plan <u>this year</u>**)** to rebuild our water infrastructure that brings clean drinking water to your home and removes and treats wastewater?*



Numbers were essentially identical with and without reference to Presidential and Congressional action "this year."

FM3 RESEARCH QCA *Q3.*

Democrats, independents, voters under 50, and women are more likely to see this as **"extremely" important.**

Demographic Groups	Extremely/Very Important	Extremely Important	Very Important	Somewhat/Not Important
Party				
Democrats	**88%**	48%	40%	12%
Independents	**80%**	45%	35%	18%
Republicans	**66%**	29%	37%	32%
Age				
18-49	**79%**	45%	34%	20%
50+	**78%**	36%	42%	21%
Gender				
Men	**74%**	38%	36%	24%
Women	**81%**	42%	39%	17%

Q3 (Total). We mentioned America's infrastructure in the last question. Specifically, how important do you think it is ***(SPLIT SAMPLE A ONLY:*** *for the President and Congress to develop a plan this year****)*** *to rebuild our water infrastructure that brings clean drinking water to your home and removes and treats wastewater?*

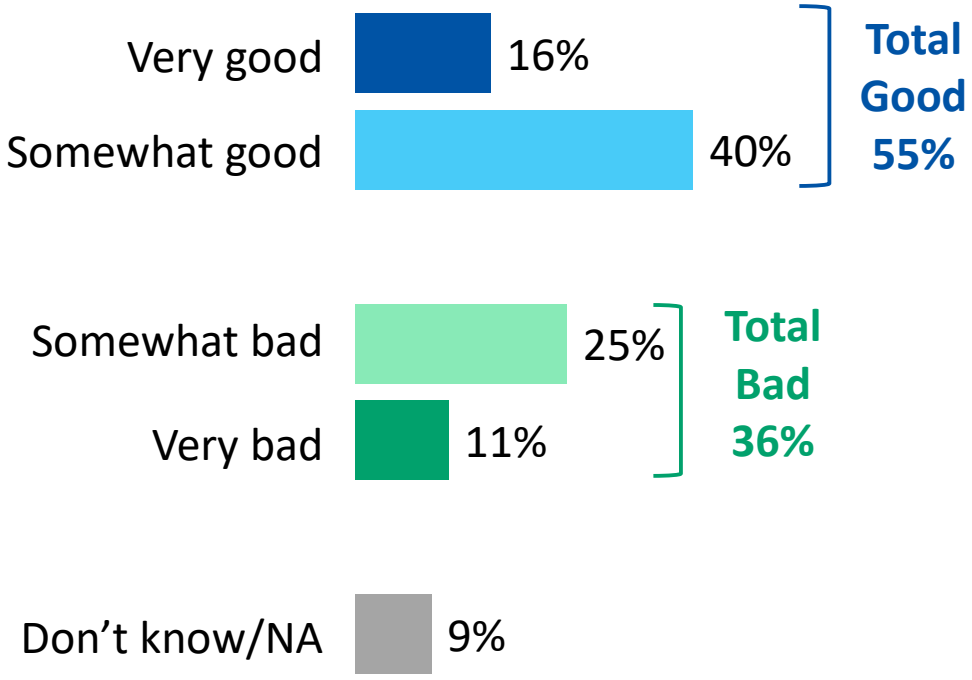
Voters of color and those in the Northeast are most likely to place importance on rebuilding infrastructure.

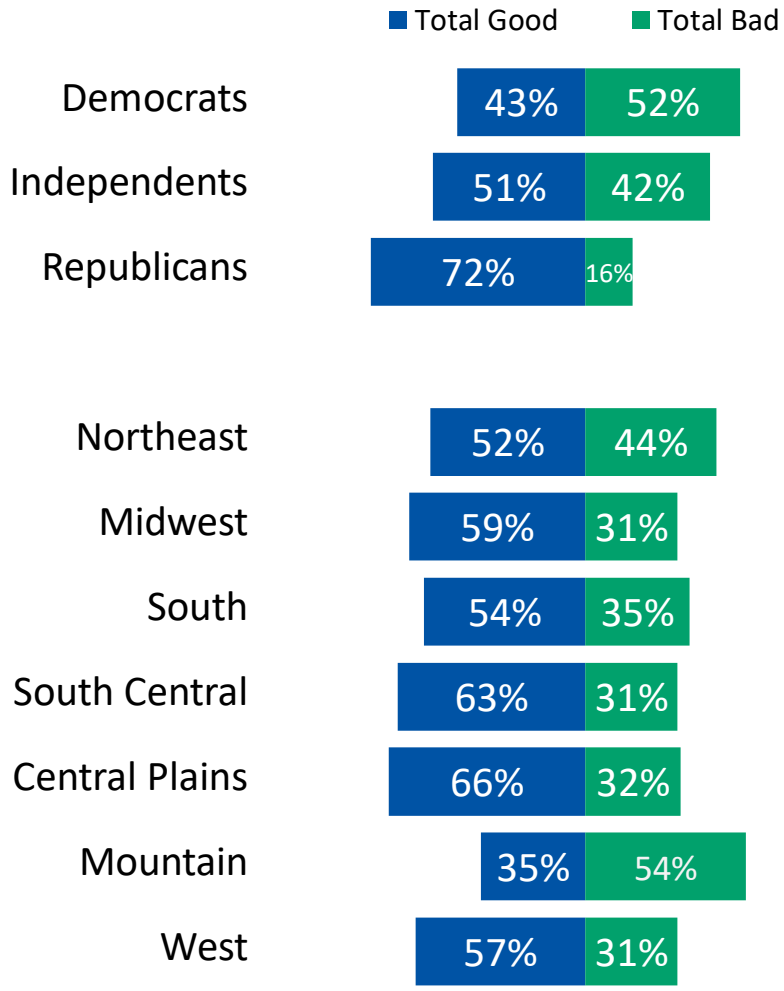
Demographic Groups	Extremely/Very Important	Extremely Important	Very Important	Somewhat/Not Important
Ethnicity				
Latinos	**92%**	47%	45%	8%
African-Americans	**94%**	57%	37%	4%
Whites	**74%**	36%	38%	25%
Voters of Color	**90%**	50%	40%	8%
Region				
Northeast	**81%**	51%	30%	17%
Midwest	**73%**	38%	35%	26%
South	**83%**	37%	46%	16%
South Central	**77%**	35%	42%	23%
Central Plains	**73%**	31%	42%	27%
Mountain	**79%**	38%	41%	18%
West	**75%**	39%	36%	24%

Q3 (Total). We mentioned America's infrastructure in the last question. Specifically, how important do you think it is ***(SPLIT SAMPLE A ONLY:*** *for the President and Congress to develop a plan this year****)*** *to rebuild our water infrastructure that brings clean drinking water to your home and removes and treats wastewater?*

A majority says the condition of the nation's water infrastructure is "good;" Democrats and those in the Mountain region are exceptions.

How would you rate the current condition of the nation's water infrastructure?





FM3 RESEARCH QCA

Q4. Split Sample

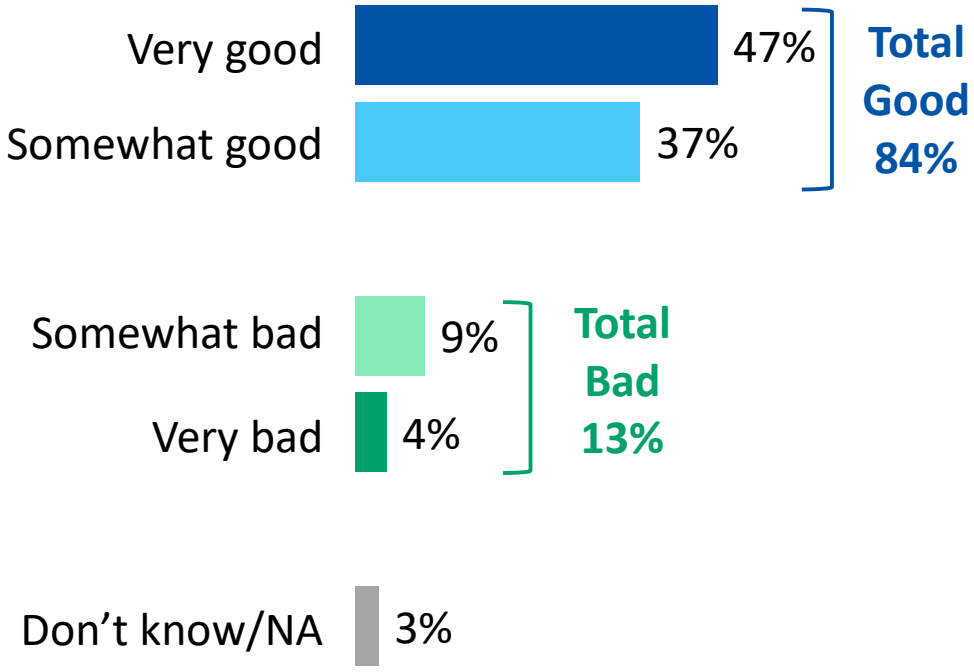
Perceptions of the nation's water infrastructure are consistent with past years.

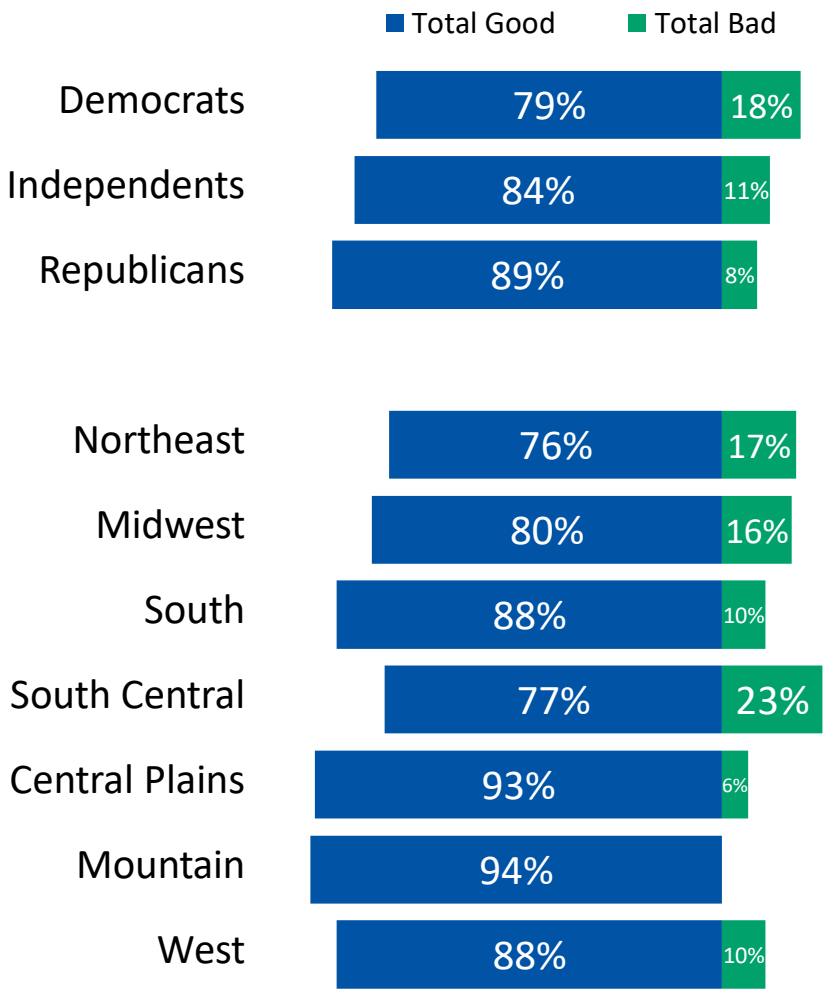
Evaluation of National Water Infrastructure	2016	2017	2018
Very good	10%	8%	16%
Somewhat good	49%	49%	40%
Total Good	**59%**	**57%**	**55%**
Somewhat bad	8%	21%	25%
Very bad	26%	10%	11%
Total Bad	**34%**	**31%**	**36%**
Don't know/NA	7%	12%	9%

Q4. How would you rate the current condition of the nation's water infrastructure? Split Sample

More than four in five say their local **infrastructure is in "good" condition.**

How would you rate the current condition of the water infrastructure in your local community?





FM3 RESEARCH QCA

Q5. Split Sample

The perception of local water infrastructure is also comparable to that of past years.

Evaluation of Local Water Infrastructure	2016	2017	2018
Very good	42%	44%	47%
Somewhat good	44%	40%	37%
Total Good	**86%**	**84%**	**84%**
Somewhat bad	3%	8%	9%
Very bad	10%	3%	4%
Total Bad	**13%**	**11%**	**13%**
Don't know/NA	1%	4%	3%

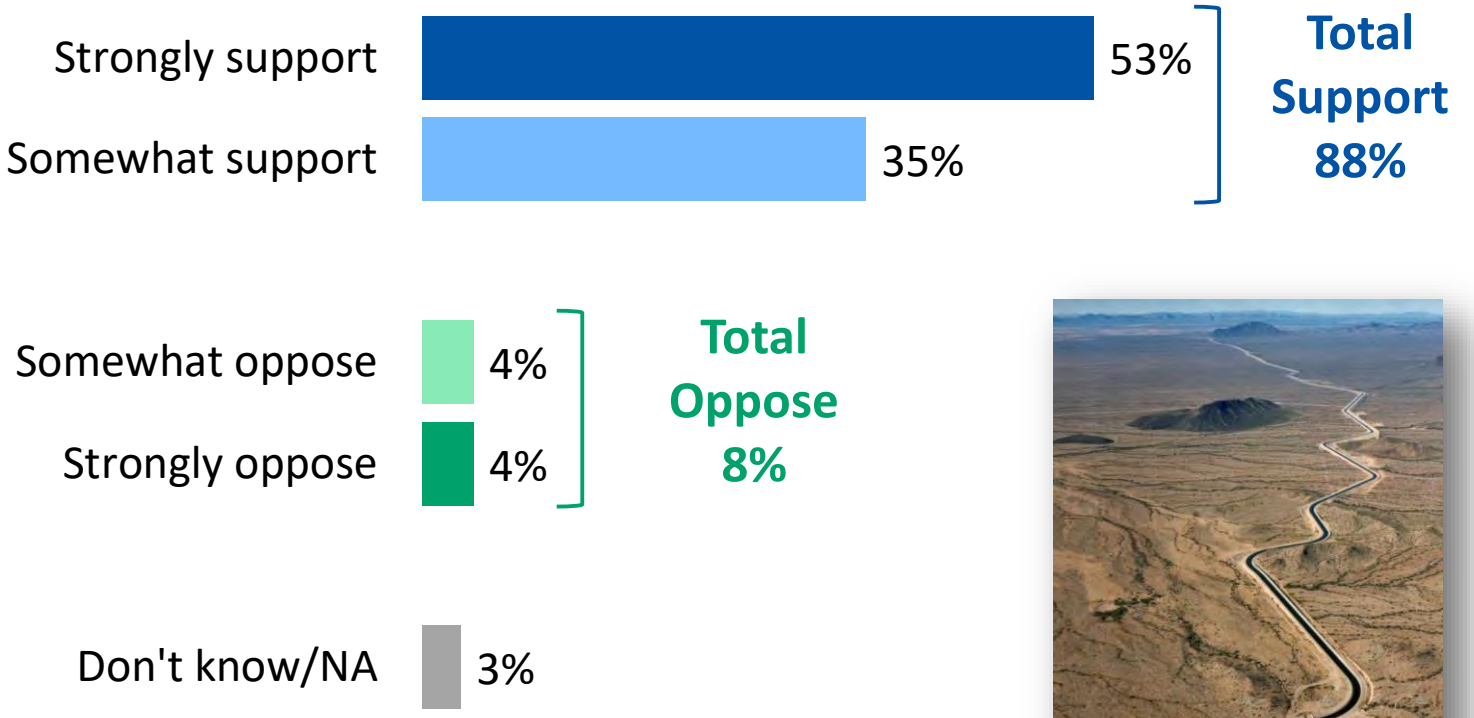
Q5. How would you rate the current condition of the water infrastructure in your local community? Split Sample

Value of Water CAMPAIGN

Support for Water Infrastructure Investments

Nearly nine in ten support increasing federal investments in water infrastructure.

Some people have proposed increasing the federal investment in rebuilding our water infrastructure - including pipes, pumps, reservoirs, treatment plants, and other facilities - to ensure safe, reliable water service for all communities. Does this sound like something you would support or oppose?



Q6.

Support cuts across gender, age, party and ideology.

Demographic Groups	Total Support	Strong Support	Smwht. Support	Total Oppose	DK/NA
Gender					
Men	**86%**	52%	34%	**10%**	4%
Women	**91%**	55%	36%	**6%**	3%
Age					
18-49	**92%**	54%	38%	**6%**	3%
50+	**86%**	53%	33%	**11%**	4%
Party					
Democrats	**95%**	66%	29%	**4%**	1%
Independents	**89%**	56%	33%	**7%**	5%
Republicans	**81%**	38%	43%	**14%**	5%
Ideology					
Liberal	**97%**	66%	30%	**2%**	1%
Moderate	**89%**	53%	36%	**7%**	3%
Conservative	**82%**	42%	40%	**13%**	5%

Q6. Some people have proposed increasing the federal investment in rebuilding our water infrastructure - including pipes, pumps, reservoirs, treatment plants, and other facilities - to ensure safe, reliable water service for all communities. Does this sound like something you would support or oppose?

Voters of color offer stronger support for the proposal than do white voters.

Demographic Groups	Total Support	Strong Support	Smwht. Support	Total Oppose	DK/NA
Ethnicity					
Latinos	**93%**	59%	35%	**7%**	0%
African-Americans	**97%**	71%	26%	**3%**	0%
Whites	**87%**	48%	39%	**9%**	4%
Voters of Color	**93%**	66%	27%	**5%**	2%
Household Income					
<$60,000	**91%**	56%	35%	**6%**	3%
$60,000-$100,000	**90%**	55%	35%	**9%**	1%
$100,000+	**86%**	49%	37%	**9%**	5%

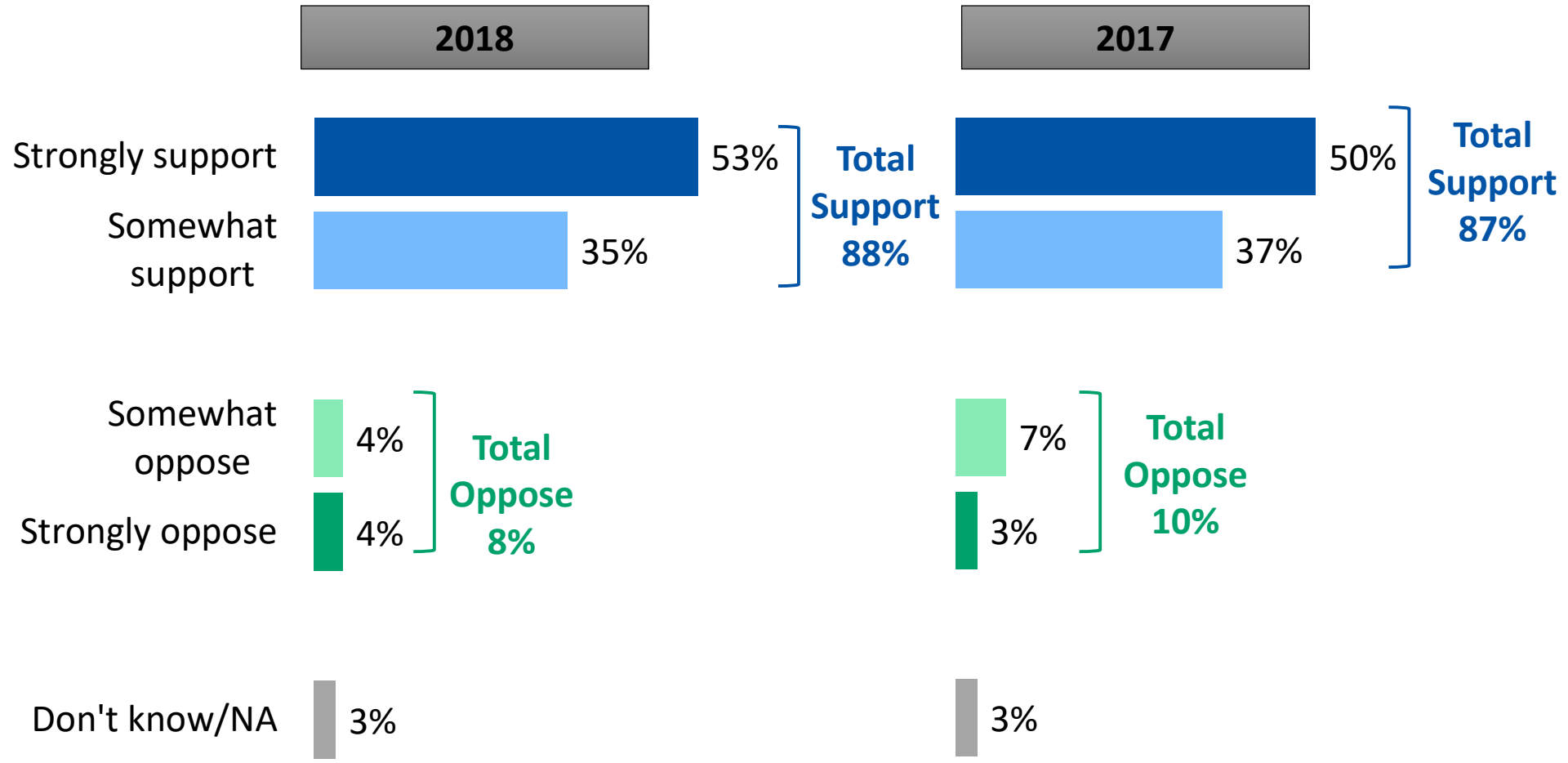
Q6. Some people have proposed increasing the federal investment in rebuilding our water infrastructure - including pipes, pumps, reservoirs, treatment plants, and other facilities - to ensure safe, reliable water service for all communities. Does this sound like something you would support or oppose?

Support also cuts across geographic lines.

Demographic Groups	Total Support	Strong Support	Smwht. Support	Total Oppose	DK/NA
Region					
Northeast	90%	61%	29%	6%	5%
Midwest	88%	48%	40%	9%	3%
South	88%	55%	32%	9%	3%
South Central	89%	59%	31%	8%	2%
Central Plains	91%	42%	49%	7%	2%
Mountain	87%	54%	33%	8%	5%
West	87%	47%	40%	10%	3%

Q6. Some people have proposed increasing the federal investment in rebuilding our water infrastructure - including pipes, pumps, reservoirs, treatment plants, and other facilities - to ensure safe, reliable water service for all communities. Does this sound like something you would support or oppose?

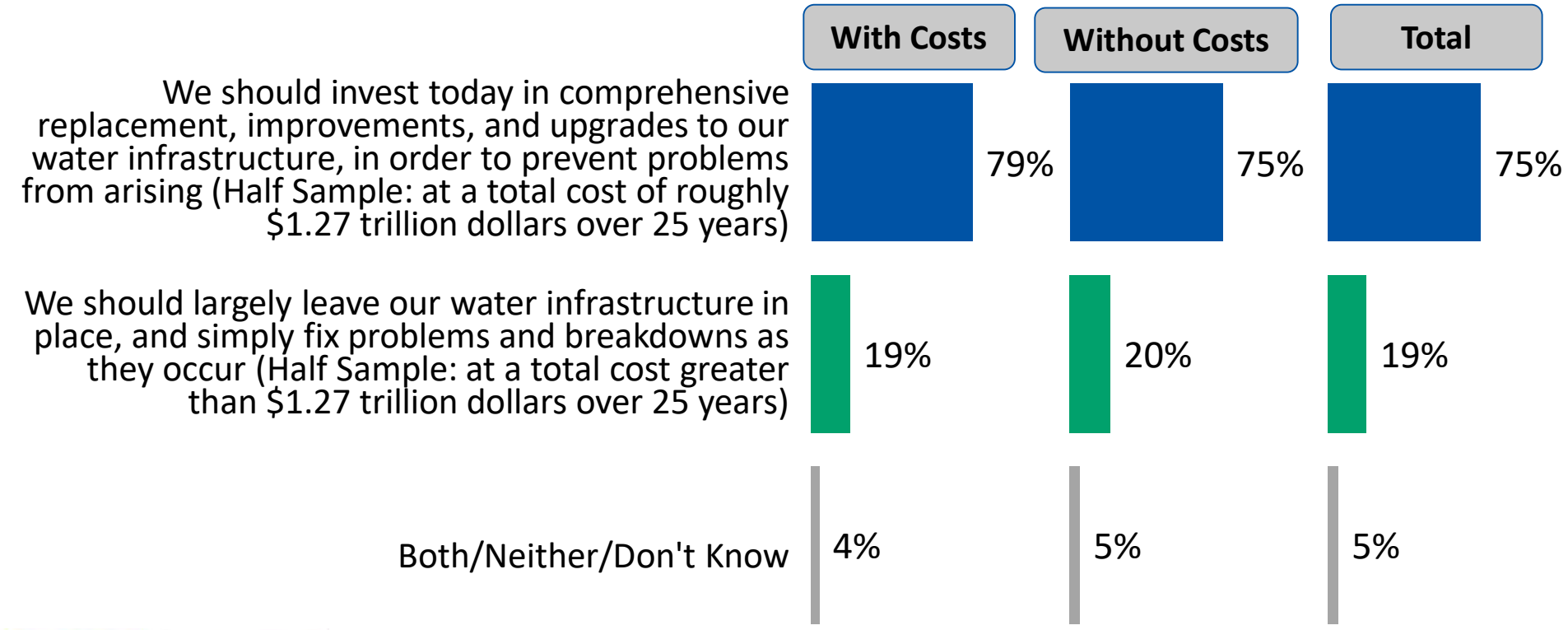
Support for the proposal has not changed since 2017.



Q6.

Three quarters favor investing in water infrastructure today, regardless of cost impacts.

Water systems in many communities across the United States are aging and in need of repair. The American Society of Civil Engineers gives our water and wastewater infrastructure a D grade. They estimate the price tag for repairing and improving America's drinking water and wastewater infrastructure will be $1.27 trillion dollars over the next 25 years. Having heard this, which of these approaches do you think we should pursue as it relates to water infrastructure?



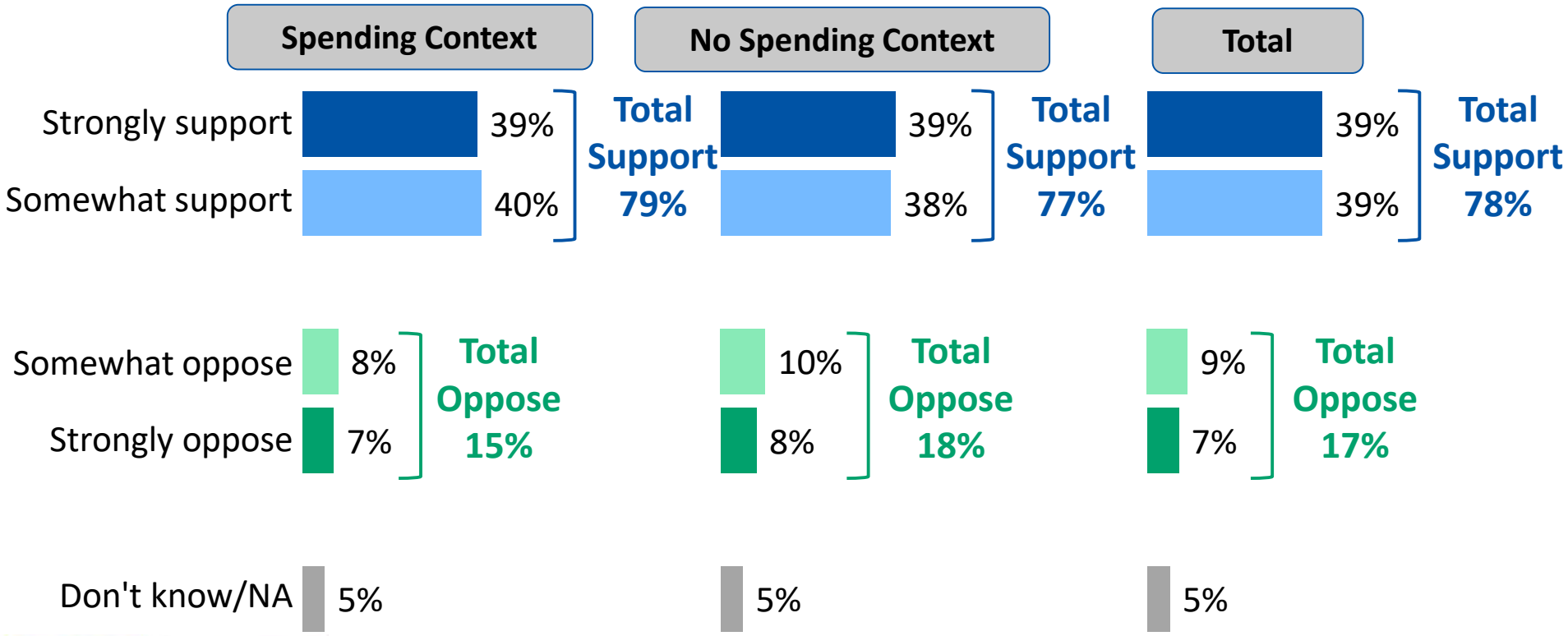
Q7.

Support for making the investment today cuts across partisan lines.

Demographic Groups	Invest Today	Fix Problems	Both/Neither/DK/NA
Party			
Democrats	88%	10%	3%
Independents	79%	18%	4%
Republicans	60%	31%	9%
Age			
18-49	79%	17%	4%
50+	72%	22%	6%
Ethnicity			
Latinos	86%	12%	2%
African-Americans	83%	17%	1%
Whites	72%	21%	6%
Voters of Color	85%	14%	1%
Region			
Northeast	81%	15%	4%
Midwest	75%	15%	10%
South	73%	25%	2%
South Central	69%	25%	6%
Central Plains	72%	22%	6%
Mountain	78%	12%	10%
West	75%	22%	3%

More than three-quarters support the $1.2 trillion investment.

*To withstand threats from storms, wildfires, and more extreme and unpredictable weather and meet growing demand, some people have proposed we begin a decades-long project to ensure our drinking water and wastewater systems are resilient. The cost would be approximately $1.2 trillion dollars over 25 years. (**Half Sample:** For context, Americans spend approximately half that amount each year on Christmas presents alone.) Funding would come from a mix of federal, state, and local sources – some of which would ultimately be paid by ratepayers. Do you think you would support or oppose such a proposal?*

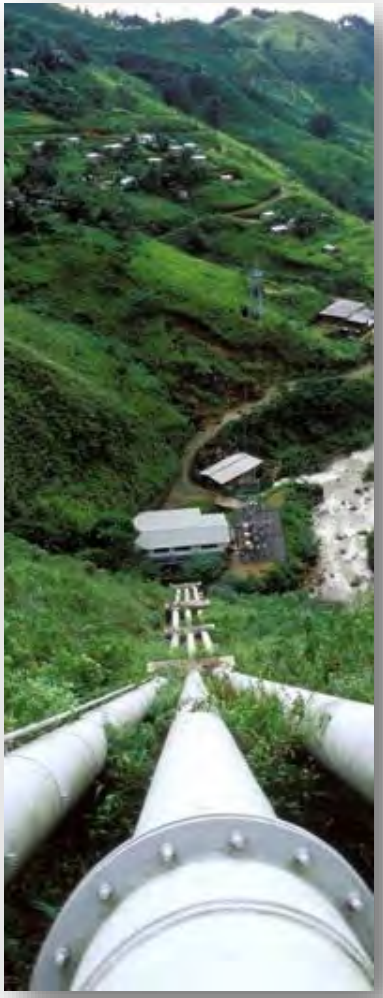


Q8.

Overall support for this investment cuts across all major demographic groups.

While all major demographic groups offer majority support for a $1.2 trillion investment, the intensity of support varies:

- ✓ Liberals and Democrats are more likely to offer *strong* support than are their more ideologically moderate or conservative counterparts;
- ✓ Voters of color, in particular Latino voters, are much more likely than white voters to say they "strongly support" the proposal (51% to 34%);
- ✓ Big city residents offer more intense support than do suburban and rural voters;
- ✓ A majority of voters under age 30 say they would "strongly support" this investment (54%), while voters 30 and over offer less intensity;
- ✓ Voters in the Northeast, South, and Mountain regions support the investment most strongly by geography, while only 17% of voters in the Central Plains say they strongly support the investment.

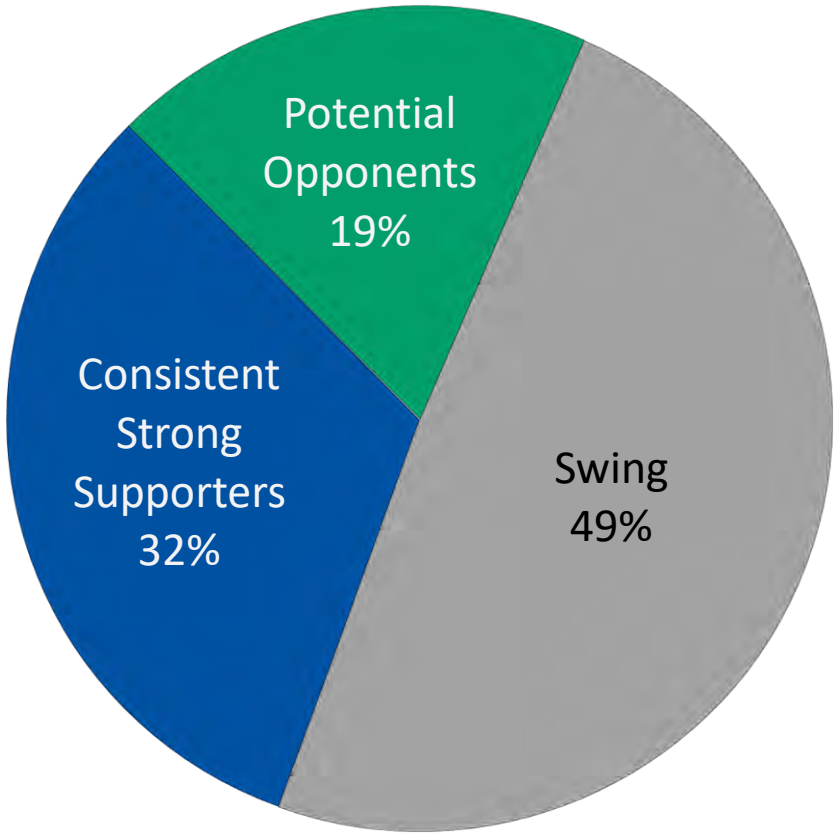


FM3 RESEARCH GCA

Segmenting Voters by Consistency of Support for Water Infrastructure Investment

- **Consistent Strong Supporters:** Voters who consistently indicated they strongly support federal investment in water infrastructure.
- **Potential Opponents:** Voters who at any point in the survey indicated that they would oppose federal investment in water infrastructure.
- **Swing:** Voters who do not fall into any of the other categories – remaining consistently undecided or switching positions

The following slide shows demographic groups that *disproportionately* fall into one category or the other.



Demographic Profile of the Segments

Consistent Strong Supporters	Swing	Potential Opponents
32% of the Electorate	**49% of the Electorate**	**19% of the Electorate**
Democratic Men	Central Plains Region	Republican Men
Ages 18-29	West North Central Census Division	Republicans Ages 50+
Liberal	Women Ages 18-49	Ages 75+
Democrats Ages 18-49	Republican Women	Republicans
Latinos	Midwest Census Region	South Central Region
Democrats	Women	Men Ages 50+
Big City	Ages 40-49	Conservative
African-Americans	Midwest Region	Rural Area
Voters of Color	East North Central Census Division	West South Central Census Division
Mid-Atlantic Census Division	Republicans 18-49	West Region
Northeast Census Region	Small Town	West Census Division
Democrats Ages 50+	Ages 18-49	Republicans Ages 18-49
East South Central Census Division	Ages 30-39	Republican Women
Democratic Women	Independent Women	Men
Independents Ages 50+	Union Households	Ages 50+

Only four in ten voters drink unfiltered tap water.

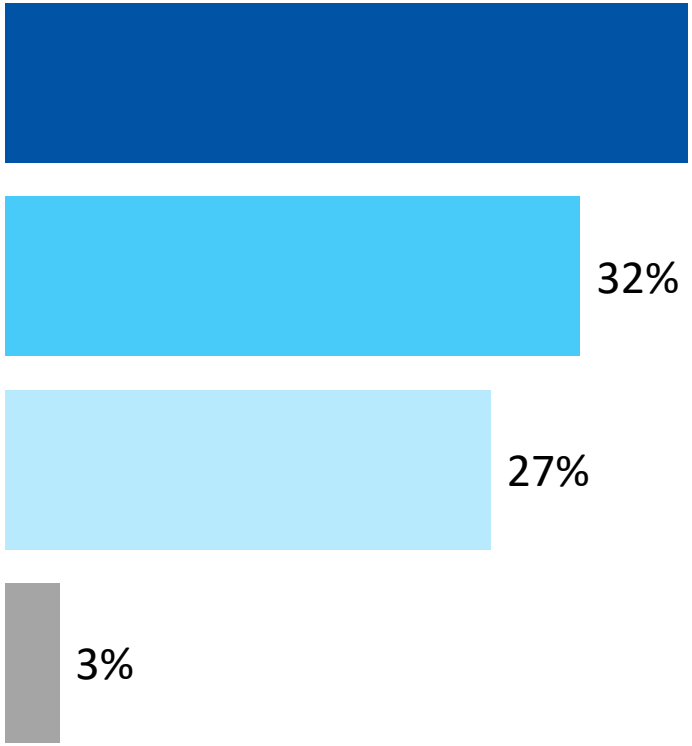
Thinking about the water that you drink at home, do you most often drink:

Tap water that is filtered in your home, either at the sink, through the refrigerator, or through a pitcher

Unfiltered water straight from the tap

Bottled water

Other/DK/NA



FM3 RESEARCH GCA *Q9.*

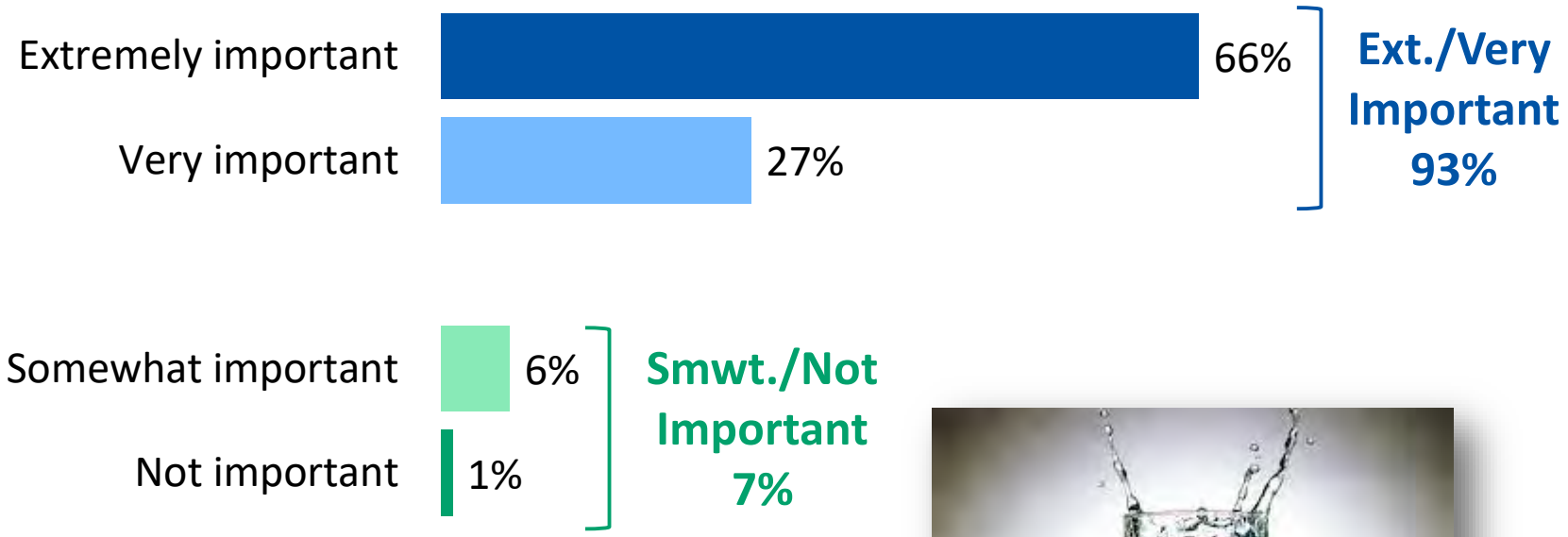
African-Americans are much more likely to drink bottled water than are other ethnic groups.

Demographic Groups	 Filtered Tap Water	 Unfiltered Tap Water	 Bottled Water
Ethnicity			
Latinos	42%	23%	33%
African-Americans	30%	17%	51%
Whites	39%	37%	22%
Voters of Color	36%	18%	43%
Region			
Northeast	34%	36%	28%
Midwest	40%	41%	17%
South	42%	22%	33%
South Central	38%	26%	33%
Central Plains	31%	41%	21%
Mountain	41%	37%	17%
West	37%	27%	33%

FM3 RESEARCH QCA Q9

More than nine in ten say that having safe and **reliable drinking water is "very important."**

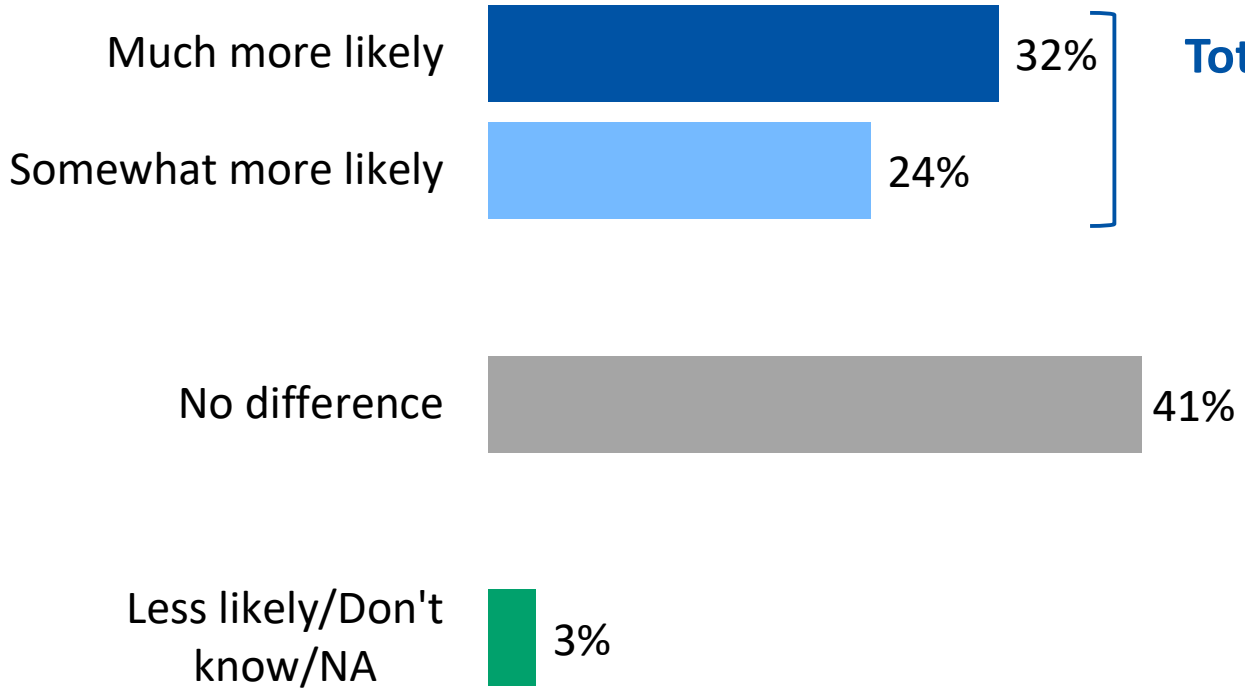
How important is it to you that you have confidence that your drinking water is safe and reliable?



Q10.

A majority of those who do *not* currently drink tap water say they would be more likely to if there were upgrades the local drinking water system.

Would you be more likely to drink unfiltered tap water if you knew that your local water agency was making upgrades to your local drinking water system to ensure its safety, or would it not make a difference? (Asked of Those Who Do Not Drink Tap Water)



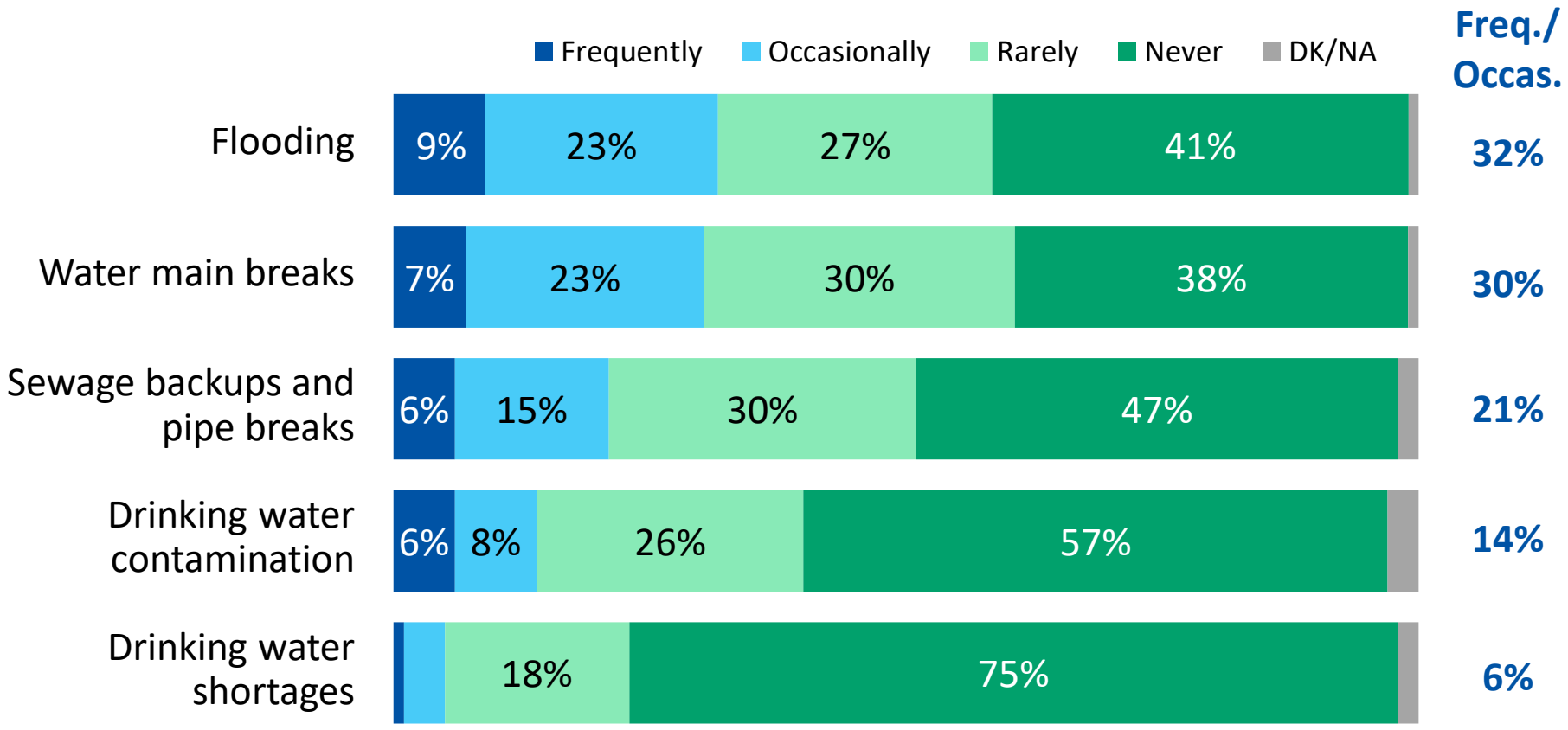
*Those most likely to say they'd be more likely to drink tap water live in **big cities**, are **voters of color**, and live in the **Northeast**, **Central Plains**, and **Mountain** regions.*

FM3 RESEARCH QCA

Q11.

Flooding and water main breaks are the most common water service issues.

Here is a list of problems people have experienced related to water and wastewater service. Please tell me how often you or your community have experienced it: frequently, occasionally, rarely, or never.



FM3 RESEARCH QCA

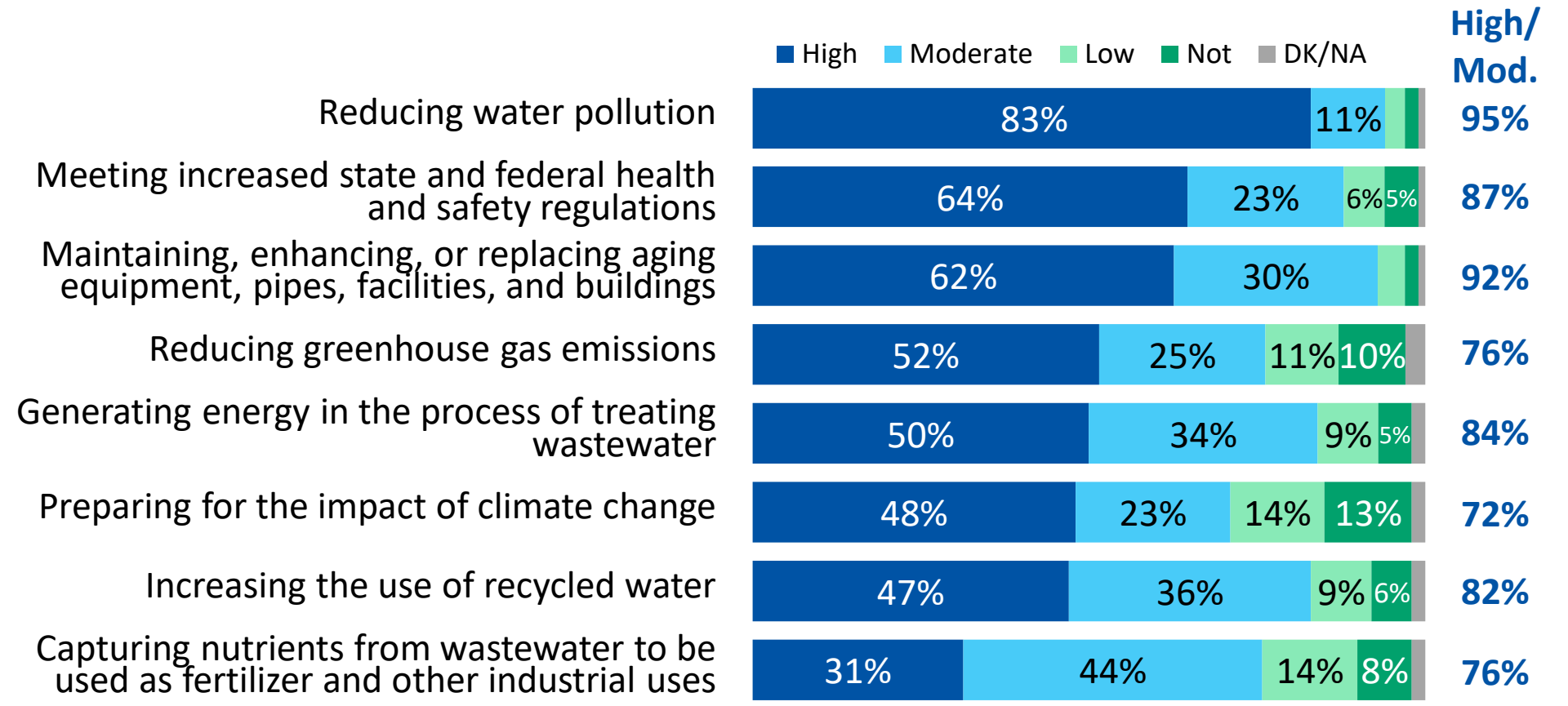
Q12.

The frequency with which voters experience water service issues varies by region and the type of area they live in.

- Those living in urban and suburban areas are more likely to experience water main breaks and sewage backups than are those who live in small towns or rural areas.
- Big city residents are also more likely to experience drinking water contamination than those living in other areas.
- Unsurprisingly, flooding is most common in the Southern Central region of the United States; other issues like sewage backups and water contamination are also more frequent in this area.

Reducing water pollution is most likely to be rated a high priority for local water agencies.

I am going to read you a list of services that your <u>local</u> water agency either provides today or may provide in the future. Please tell me if you think it should be a high priority; a moderate priority; a low priority, or not a priority.



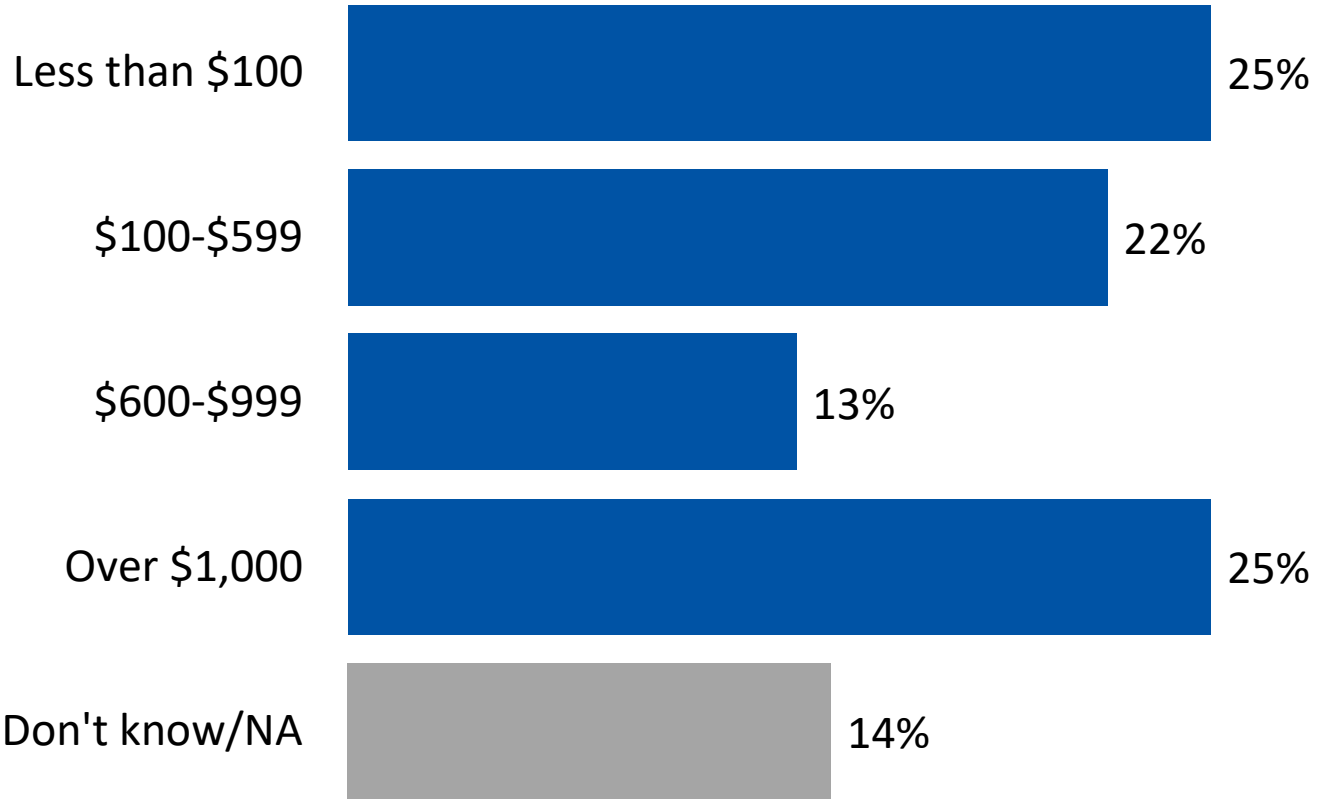
Q13.

The largest partisan differences relate to reducing GHG emissions and preparing for climate change.

Priority	All Voters	Democrats	Independents	Republicans
Reducing water pollution	**83%**	94%	82%	73%
Meeting increased state and federal health and safety regulations	**64%**	79%	64%	49%
Maintaining, enhancing, or replacing aging equipment, pipes, facilities, and buildings	**62%**	73%	63%	50%
Reducing greenhouse gas emissions	**52%**	78%	57%	21%
Generating energy in the process of treating wastewater	**50%**	58%	52%	40%
Preparing for the impact of climate change	**48%**	79%	51%	16%
Increasing the use of recycled water	**47%**	59%	49%	32%
Capturing nutrients from wastewater to be used as fertilizer and other industrial uses	**31%**	39%	34%	22%

On average, voters say they pay $663.60 per year for their water and wastewater service.

About how much do you pay per year for water and wastewater service?

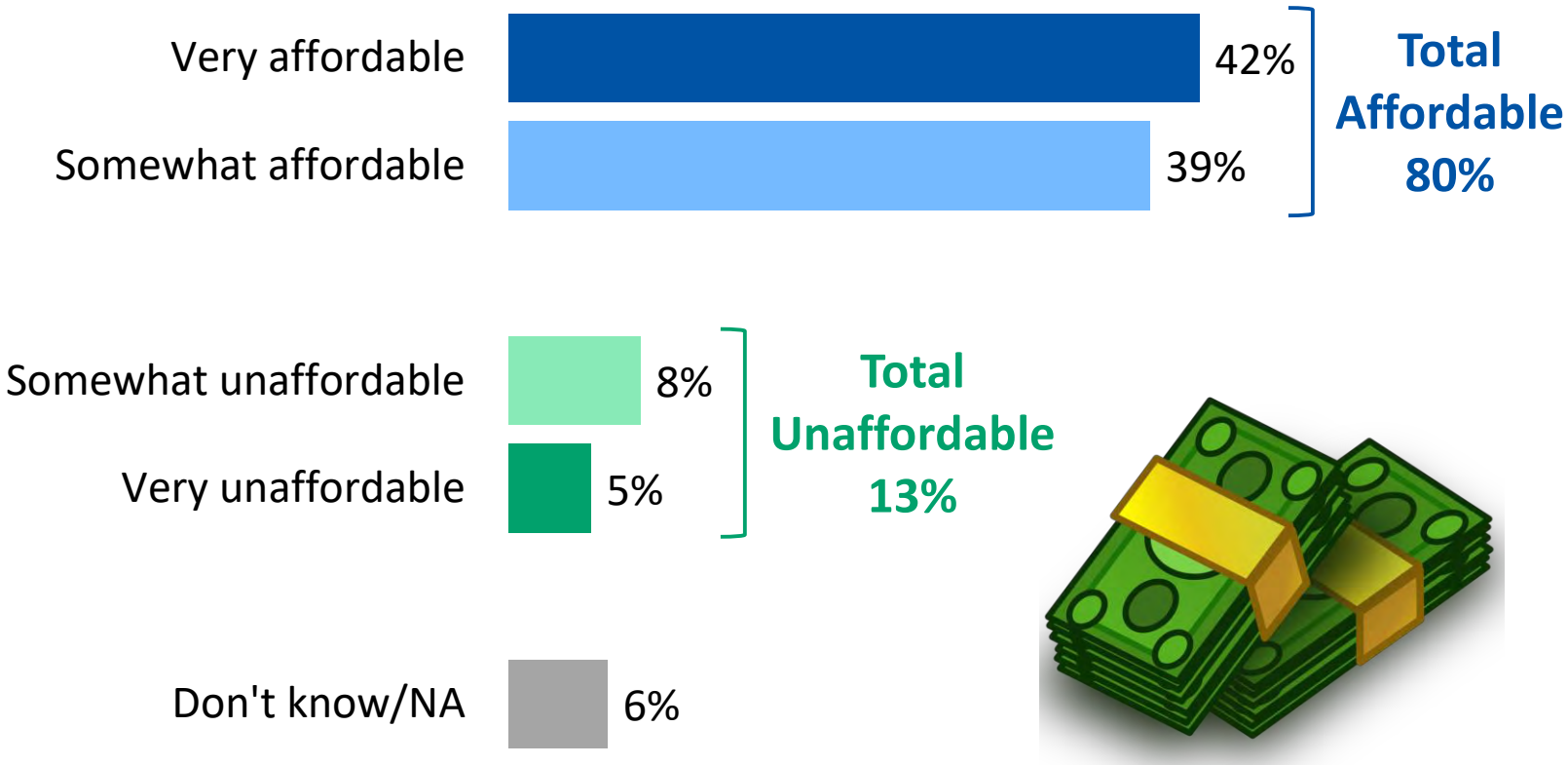


Mean Annual Cost $663.60

Q14.

Four in five say that what they currently pay for water and wastewater is affordable.

Do you think what you pay currently for water and wastewater service is affordable or unaffordable?



FM3 RESEARCH QCA

Q15.

Regardless of income, majorities of voters say that what they pay for their water and wastewater service is affordable.

Demographic Groups	Total Affordable	Total Unaffordable	DK/NA
Household Income			
<$60,000	74%	18%	8%
$60,000-$100,000	86%	9%	4%
$100,000+	85%	9%	5%
Gender			
Men	82%	13%	5%
Women	79%	14%	7%
Region			
Northeast	76%	16%	9%
Midwest	80%	11%	9%
South	83%	14%	3%
South Central	86%	12%	1%
Central Plains	80%	12%	8%
Mountain	93%	4%	2%
West	77%	17%	7%

Q15. Do you think what you pay currently for water and wastewater service is affordable or unaffordable?

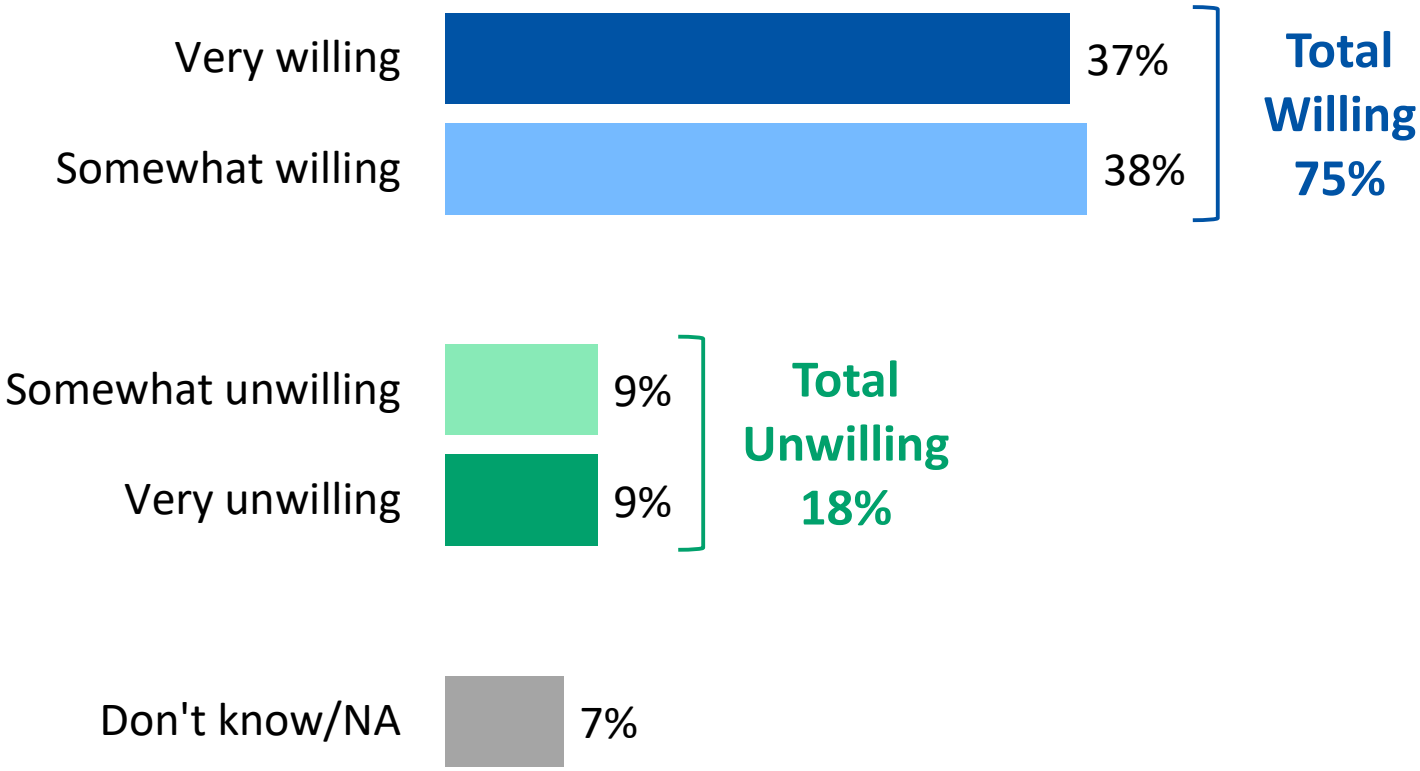
Perceptions of affordability by area and by party are consistent.

Demographic Groups	Total Affordable	Total Unaffordable	DK/NA
Area			
Big City	82%	16%	3%
Suburban Area	82%	12%	5%
Small Town	78%	16%	6%
Rural Area	79%	9%	12%
Party			
Democrats	80%	15%	5%
Independents	81%	12%	7%
Republicans	80%	13%	7%

Q15. Do you think what you pay currently for water and wastewater service is affordable or unaffordable?

Three-quarters say they would be willing to pay a modest rate increase for service improvements.

Suppose your water and wastewater service provider increased rates by a modest amount to pay for infrastructure and water quality improvements. Would you be willing or unwilling to pay a modest rate increase in order to improve your water and wastewater service?



Q16.

There is little variation in willingness to pay by income, gender, and geography.

Demographic Groups	Total Willing	Total Unwilling	DK/NA
Household Income			
<$60,000	74%	20%	7%
$60,000-$100,000	81%	14%	5%
$100,000+	73%	19%	8%
Gender			
Men	75%	17%	8%
Women	75%	19%	6%
Region			
Northeast	75%	16%	10%
Midwest	74%	19%	7%
South	78%	18%	5%
South Central	74%	20%	6%
Central Plains	77%	16%	7%
Mountain	79%	18%	4%
West	70%	22%	7%

Q16. Suppose your water and wastewater service provider increased rates by a modest amount to pay for infrastructure and water quality improvements. Would you be willing or unwilling to pay a modest rate increase in order to improve your water and wastewater service?

Those living in urban areas are more willing to pay a higher rate than are those in rural areas; willingness to pay also varies along partisan lines.

Demographic Groups	Total Willing	Total Unwilling	DK/NA
Area			
Big City	80%	17%	2%
Suburban Area	79%	16%	5%
Small Town	75%	21%	4%
Rural Area	60%	20%	20%
Party			
Democrats	86%	11%	4%
Independents	72%	22%	6%
Republicans	66%	24%	10%

Q16. Suppose your water and wastewater service provider increased rates by a modest amount to pay for infrastructure and water quality improvements. Would you be willing or unwilling to pay a modest rate increase in order to improve your water and wastewater service?

Conclusions

Conclusions

- ✓ Rebuilding America's infrastructure continues to be a top priority for American voters and is gaining intensity.
- ✓ Even though a majority think the nation's water infrastructure is in good condition and 84% say the same for their local infrastructure, nearly four in five say that rebuilding water infrastructure as "very important."
- ✓ Voters strongly support a proposal to invest as much as $1.2 trillion in the nation's water infrastructure system.
  - Overall, support for this idea cuts across demographic and partisan lines.
  - Democrats, voters of color, and those living in urban areas are most likely to consistently support the proposal.
  - Republican women and those living in the Central Plains and Midwest are most likely to be persuadable on this issue.
- ✓ Voters express a distinct preference for making the investment now, rather than fixing problems in the system as they arise.
- ✓ Three-quarters of voters say they would be willing to pay a modest amount more to improve their local water and wastewater system.

For more information, contact:

FM3 RESEARCH | OPINION RESEARCH & STRATEGY

David Metz

Dave@FM3research.com

Lucia Del Puppo

Lucia@FM3research.com

GCA | PUBLIC OPINION STRATEGIES

Lori Weigel

Lori@pos.org

ATTACHMENT #7

AGENDA ITEM 10. – Capital Improvement Program Presentation

HRSD

Cleaning wastewater every day for a better Bay.

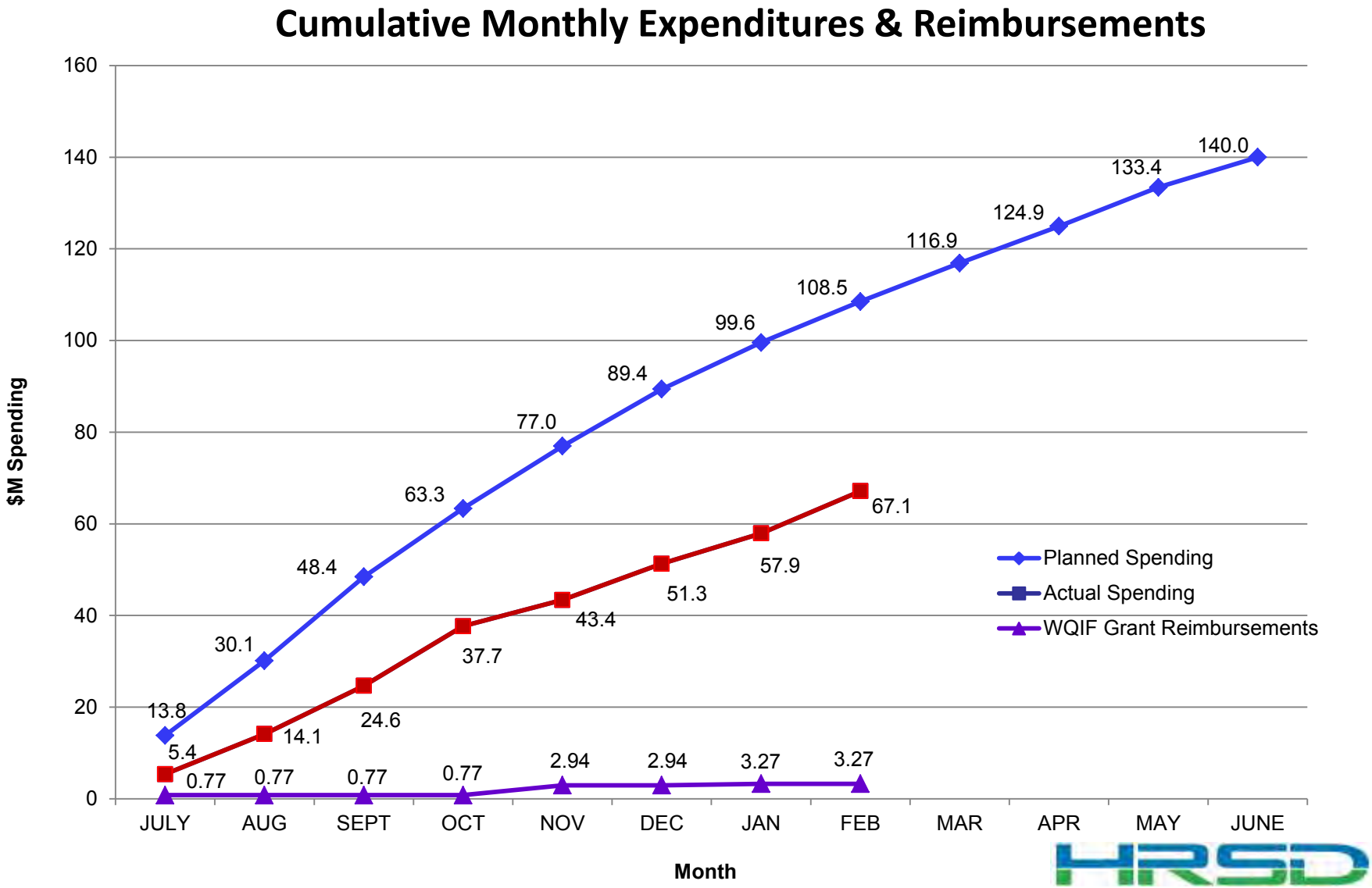
Capital Improvement Program Commission Briefing

April 24, 2018

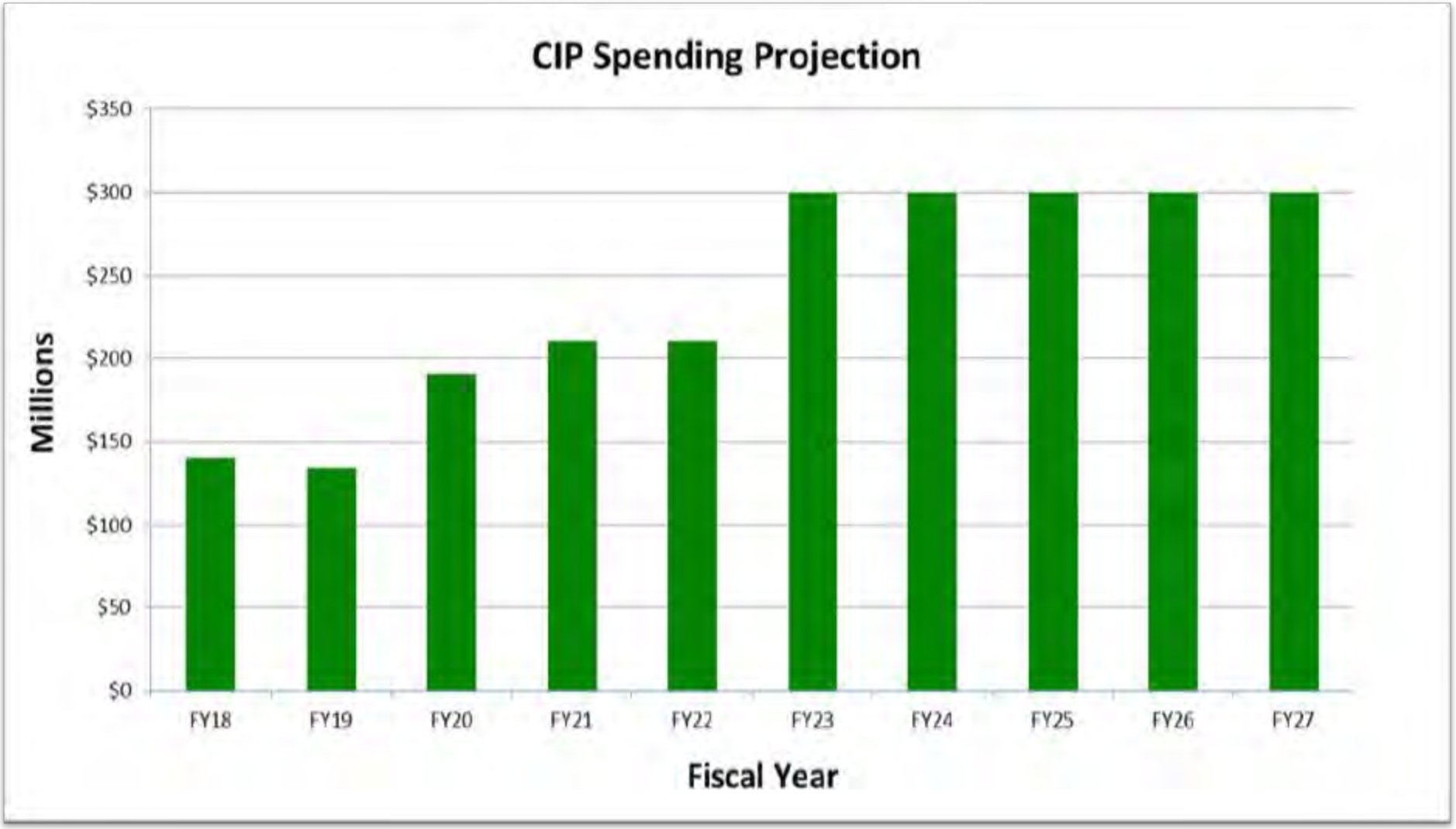
Outline

- CIP Expenditures for FY-2018
- Future CIP Delivery
- Consent Decree/SSO Reduction Project Updates
- Asset Management Program Update
- Project Focus: SWIFT Research Center
  Sustainable Water Phase III –
  Demonstration Facility

CIP Expenditures for FY-2018



Future CIP Delivery



Future CIP Delivery (cont.)

	FY-08 to FY-17	FY-18 to FY-27
Annual CIP Spending	$123M	$239M

Current Staffing:

North Shore

- Chief
- Five (5) Project Managers

South Shore

- Chief
- Four (4) Project Managers

Current Workload:

Project Managers oversee 5-10 projects each.

SWIFT Program Management Staffing:

- Chief of Design & Construction – SWIFT (HRSD)
- Project Managers – 3 to 8 (consultant)

Anticipated Workload:

- Project Managers to oversee a single project due to size and complexity

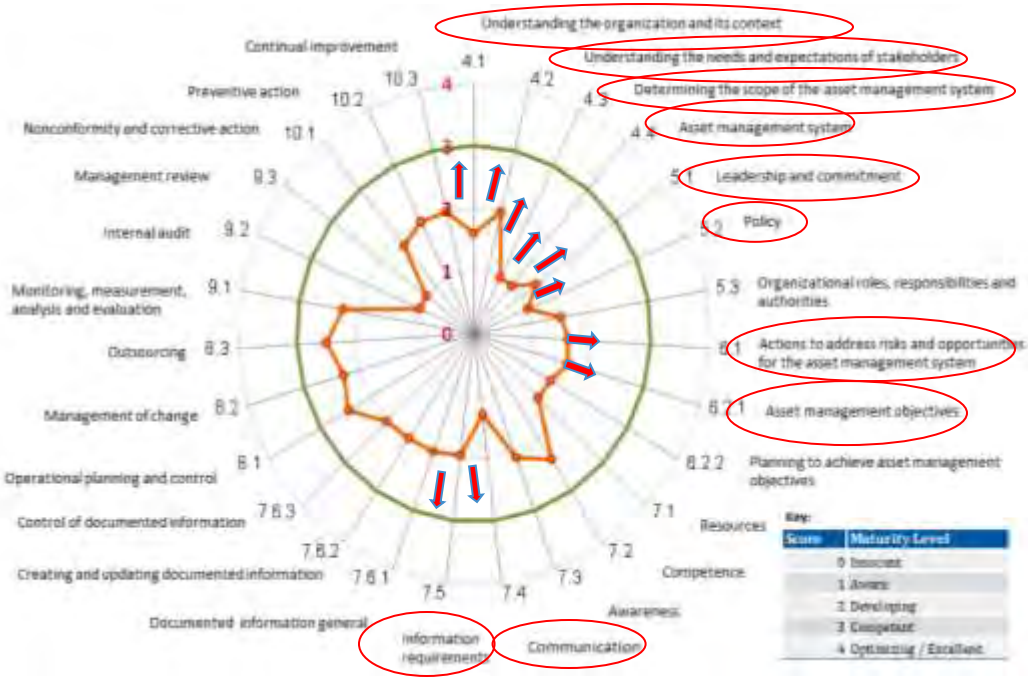
Consent Decree/SSO Reduction Project Updates

- HRSD has until **June 30, 2018** to complete the Bridge Street Pump Station Replacement Project.
- 2 CIP projects were added to the Federal Consent Decree as part of the final negotiation to implement the Regional Wet Weather Program. HRSD has until **Dec. 31, 2018** to complete these projects.

Ref No.	Project Title	Consent Decree Estimate	Authorized/ Completed	Status
52	Virginia Initiative Plant Nutrient Reduction Improvements, Contract A	$18,000,000	$18,343,768	Complete
53	Virginia Initiative Plant Nutrient Reduction Improvements, Contract B	$125,000,000	$135,284,000	Construction

Asset Management Program Update

- Ongoing
  - Communications
    - Management of Change Plan – COMPLETE
    - Director's video – COMPLETE
  - AM Framework
    - AM Policy adopted by Commission – COMPLETE
    - AM Strategy – DRAFT
      - Objectives
  - Risk Management
    - Organizational Risk Management criteria – DRAFT
  - Data Needs Assessment – DRAFT
- Next Steps
  - Asset Risk Analysis criteria
    - Likelihood of Failure
    - Consequence of Failure
  - WWTP Asset inventory
    - Based on gaps identified in data needs assessment
  - Atlantic TP Asset Management Plan (AMP)
    - Template for all other AMP's



Asset Management Program Update (cont.)

Next areas of focus

Asset Management Program Update (cont.)

- Management of Change Plan
  - Who's impacted and how
- Email from General Manager
- Work Center Liaisons
- SharePoint site
- Directors' video

Project Description:

This project will include the design, construction and commissioning of a 1 MGD advanced water treatment facility incorporating a carbon-based approach currently being piloted as part of the SWIFT Program. This facility will support HRSD's outreach and educational efforts and will be located at the Nansemond Treatment Plant.

Owner's Representative:

Jacobs / CH2M

Design Build Team:

Hazen & Sawyer (Designer)
Crowder Construction (Contractor)

SWIFT Research Center (cont.)

Financial Summary:

Study and Project Support (Jacobs/CH2M)	$900,000
Design Phase (Hazen & Sawyer)	$1,973,000
Construction (Crowder)	$22,358,700
Well Drilling (4 Wells)	$2,300,000
Miscellaneous Costs	$800,000
Change Orders	$243,226 (0.85% of Total)
Total Project Cost	$28,574,926

Schedule Summary:

Study Phase	June 2016 to Nov. 2016
Design Efforts	Nov. 2016 to June 2017
Construction Efforts	Feb. 2017 to April 2018
Start-Up Efforts	March 2018 to May 2018
Change Order – Time Extension	2 months
Ribbon Cutting Ceremony	May 18, 2018

SWIFT Research Center (cont.)

SWIFT Research Center (cont.)

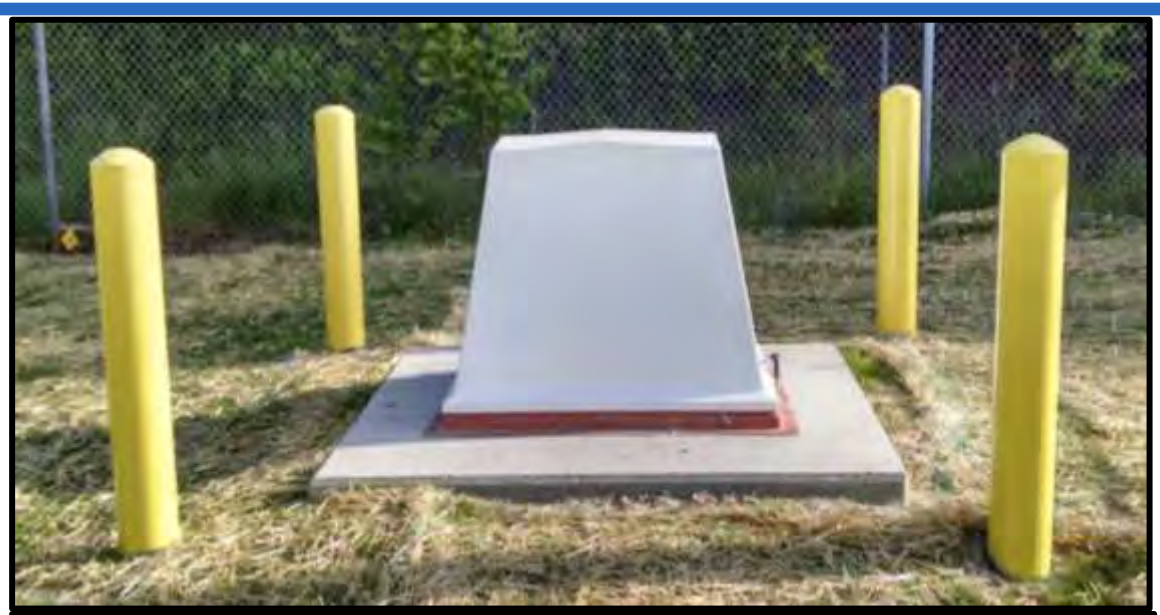
SWIFT Research Center (cont.)

SWIFT Research Center (cont.)

SWIFT Research Center (cont.)

SWIFT Research Center (cont.)

SWIFT Research Center (cont.)



SWIFT Research Center (cont.)

Questions?

HRSD COMMISSION MEETING MINUTES
April 24, 2018

ATTACHMENT #8

AGENDA ITEM 15. – Informational Items

a. Management Reports

(1) General Manager

(2) Communications

(3) Engineering

(4) Finance

(5) Information Technology

(6) Operations

(7) Special Assistant for Compliance Assurance

(8) Talent Management

(9) Water Quality

(10) Report of Internal Audit Activities

b. Strategic Planning Metrics Summary

c. Effluent Summary

d. Air Summary

April 16, 2018

Re: General Manager's Report

Dear Commissioners:

Total combined flow to our treatment plants was up in March, more than 10 percent above the fiscal year average to date. The York River Treatment Plant flow exceeded 95 percent of the plant's design capacity for the second consecutive month. The plant continues to perform very well, even at flows that approach design capacity. The regulations require we send a letter to the Department of Environmental Quality (DEQ) outlining our plan for addressing flows that exceed 95 percent of design capacity should that occur in three consecutive months. We have been working to manage flows to York River to avoid a three month exceedance by diverting flow to the Boat Harbor Treatment Plant. This creates some treatment challenges for Boat Harbor but is an option when necessary and has been done successfully in the past. Staff believes the higher flows to York River are very manageable at this time as the plant performs well, and growth projections do not indicate any need to expand for dry weather flows through our planning horizon. We will continue to manage the flows between the plants, but anticipate there will be winter months were York River flows will exceed the 95 percent threshold in the future.

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

A. **Treatment Compliance and System Operations:** All treatment plants met permit requirements with the exception of the Town of Surry Treatment Plant. While operations continue to improve at the Town of Surry plant, the plant remains unable to reliably meet all permit requirements. Details of these and other issues are included in the Operations Director's report.

B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:

1. Two new employee orientation sessions
2. Two internal training programs

3. Multiple meetings to review options for addressing Surry flows
4. A meeting to discuss capacity planning for small community plants
5. A meeting to review alignment options related to the Newport News Transportation Project
6. Several budget meetings in preparation of the draft Fiscal Year 2019 budget
7. A meeting to review the results of the inspection of the Williamsburg outfall
8. A meeting reviewing the status of the Supervisory Control and Data Acquisition (SCADA) project
9. The architectural review of the Providence Road Pressure Reducing Station (PRS)
10. Two Capital Improvement Program (CIP) review meetings
11. Two length of service breakfast celebrations

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

1. Several meetings and calls to discuss panel presentations and a Sustainable Water Initiative for Tomorrow (SWIFT) booth at the Environment Virginia Symposium
2. A meeting with representatives from W.M. Jordan Company to discuss on-going leaks related to wall flashing defects in the Operations Building at 1434 Air Rail Avenue
3. A meeting with staff the Elizabeth River Project to discuss final text for HRSD sponsored bathrooms at the Paradise Creek Nature Park
4. A conference call with US Water Alliance and partners to plan a convening around utility consolidations
5. Two calls planning the Public Officials Forum for Water Environment Federation Technical Exhibition and Conference (WEFTEC) 2018
6. The monthly meeting of the Hampton Roads Planning District Commission (HRPDC) Directors of Utilities Committee
7. A meeting with senior leadership from Brown and Caldwell to discuss SWIFT outreach expectations
8. The annual American Society of Civil Engineers (ASCE) regional breakfast
9. The Norfolk State of the City luncheon with Commissioner Glenn

10. Presented HRSD and SWIFT at a Virginia Living Museum speaker series event
11. Two meetings to review the City of Portsmouth collection system study
12. A follow-up conference call for the joint association Utility of the Future Today award program
13. A meeting with a Freedom of Information Act (FOIA) requester to understand the intended use of data requested from HRSD
14. A meeting with HRSD staff, consultants and representatives of the owner of the property adjacent to Williamsburg Treatment Plant

Work at the SWIFT Research Center is focused on getting all the treatment processes up and running, with a goal of getting water into the ground the week before the official ribbon cutting on May 18. There is a lot of activity as the building is completed and the educational elements are installed. The team has done an outstanding job on a very complex project in a very compressed time frame. Staff will provide a sneak preview during the CIP update at the April Commission meeting. It will be a facility we can all be proud of and I look forward to putting it to use to educate and inform, discover and learn, motivate and inspire, while building confidence and trust.

Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth and the environment. **I look forward to seeing you on Tuesday, April 24, 2018 in Newport News.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager

FROM: Director of Communications

SUBJECT: Monthly Report for March 2018

DATE: April 10, 2018

A. Publicity and Promotion

1. **"Virginia Beach middle school girls take part in STEM workshop"** | March 10, 2018 | WTKR.com http://wtkr.com/2018/03/10/virginia-beach-middle-school-girls-take-part-in-stem-workshop/

2. **"Norfolk considering deal to sell Lambert's Point Golf Course"** | March 13, 2018 | WAVY.com (same story was also featured on Evanino.com) http://wavy.com/2018/03/13/sale-of-lamberts-point-golf-course/

3. "**Lamberts Point Golf Course could close, but a Navy course is now public**" | March 26, 2018 | The Virginian Pilot and pilotonline.com https://pilotonline.com/news/government/local/article_c7534fe8-2eb2-11e8-9e02-77486c0a26a9.html

4. "**Workers raze trees for sewer project on Warwick Boulevard**" | March 27, 2018 | The Daily Press and dailypress.com http://www.dailypress.com/news/newport-news/dp-nws-newport-news-crepe-myrtles-warwick-20180326-story.html

5. "**States Go to Forefront as EPA Chips Away at Backlog of Decisions**" | March 29, 2018 | Bloomberg News (www.bna.com) https://www.bna.com/states-go-forefront-n57982090533/

B. Social Media and Online Engagement

1. Facebook Reach: 2,589

2. Twitter: 5,569 impressions

3. SWIFT website visits: 605

4. LinkedIn: *unable to generate analytics report for March

5. Google My Business: 353 asked for directions; 2,756 visited website; 1,255 called

6. Construction Project Page Hits: 7,739

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

1. News Releases/Traffic Advisories: 2

2. Advertisements: 1

3. Project Notices: 6

   a. Hampton: Chesapeake Avenue
   b. Newport News: Warwick Thorncliff to Lucas Creek
   c. Portsmouth: Elm Avenue
   d. City of Williamsburg: Survey Notification
   e. Condition Assessment: Survey Notifications (2)

4. Project/Community Meetings: 0

5. New Project Web Pages/Blogs/Videos: 2

   a. Virginia Beach: Atlantic Treatment Plant THP Project
   b. Newport News: Sewer Manhole Rehabilitation Projects

D. Special Projects and Highlights

1. The Director of Communications and Community Relations Liaison met with City of Chesapeake Public Information Officer to discuss partnering opportunities for community involvement, outreach and notification related to upcoming and future HRSD projects within the city.

2. Director and Community Relations Liaison attended the Virginia Government Communicators Conference in Richmond.

3. Staff participated in the Virginia Water Environment Association Communications Committee monthly conference call

E. Internal Communications

1. The Director of Communications and staff continued weekly meetings with web designers, advancing the redesign of the HRSD.com website and made a presentation to the Quality Steering Team (QST) to provide them with an update. New website launch is tentatively expected for late May 2018.

2. Director also participated in the following internal meetings:

    a. Architectural Review meetings for Providence and Elbow Pressure Reducing Station (PRS)
    b. Senior Leadership meeting
    c. New employee orientation meetings
    d. SWIFT interpretive element review and coordination meetings and site visits
    e. Capital Improvement Program (CIP) review meeting
    f. Public outreach planning for Mercury Boulevard/Orcutt Avenue project

3. Director conducted bi-weekly communications department status meetings, monthly social media content development and strategy meetings and project update meetings with staff.

4. Director attended Supervisor Training.

5. Staff participated in Earth Day planning with the Sustainability Advocacy Group (SAG).

F. Metrics

1. Educational and Outreach Activities: 6

    a. Hermitage Elementary School, Virginia Beach, 3/6
    b. Cooper Elementary School, Hampton, 3/7
    c. American Association of University Women (AAUW) STEM4Girls, 3/10
    d. Sierra Club Chesapeake Bay Group Presentation, 3/12
    e. Machen Elementary School, Hampton, 3/22
    f. Deep Creek Central Science Night, Chesapeake, 3/27

2. Number of Community Partners: 5

   a. Virginia Beach Public Schools
   b. Hampton City Schools
   c. AAUW
   d. Sierra Club
   e. Chesapeake Public Schools

3. Additional Activities Coordinated by Department: 5

   a. STEM Expo, Portsmouth Public Schools, 3/10
   b. Western Branch Primary School STEAM Fair, Chesapeake, 3/23
   c. Hoffler Creek Spring Fling, Portsmouth, 3/25
   d. Greenbrier Middle School STEM Day, 3/29
   e. Touch-A-Truck, Lakeview Elementary School, Portsmouth, 3/30

4. Metrics Summary

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Total Training Hours per Full Time Employee (2) - Current Month	Hours / #FTE	21.25
M-1.4b	Total Training Hours per Full Time Employee (2) - Cumulative Fiscal Year-to-Date	Hours / #FTE	68.25
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Number of Community Partners	Number	5

Respectfully,

Leila Rice, APR
Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for March 2018

DATE: April 10, 2018

A. General

1. Capital Improvement Program (CIP) spending for the eighth month of Fiscal Year 2018 has exceeded the planned spending target. CIP project spending has increased in recent months and should continue to increase through the rest of the fiscal year.

   CIP Spending ($M):

	Current Period	FYTD
Actual	9.22	67.14
Plan	8.94	108.51

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

2. The Engineering Department has created a new position to manage the upcoming SWIFT Program in the coming years. Ms. Lauren Zuravnsky will be HRSD's first Chief of Design & Construction SWIFT. Lauren will be working with a Program Manager (to be chosen in the coming months) to assist with the implementation of this effort. Initial efforts will involve hiring the staff necessary to oversee this work; creating the processes and procedures necessary to monitor and assure program success, and creating the communication protocols necessary to keep this very large team working effectively.

3. The Engineering Department is working with the external auditor, SC&H, to conduct an audit of the procurement procedures used for the selection of consultants, contractors and vendors. The audit is focused on a review of the Engineering Department processes, policies and procedures when selecting outside firms to assist with design and construction-related work. The effort will also include a review of the documentation, use of the ERP system, and risk potential for procurement within the Engineering Department. The audit also included a review of the procedures used to acquire necessary property and easements for capital projects and other

HRSD-related real estate needs. The initial audit results have been received and comments provided back to SC&H to describe how the department will address the concerns found as part of the audit. A final audit report is expected in the coming month from SC&H.

B. Asset Management Division

1. Staff has finalized a video highlighting the Directors of Engineering, Finance and Operations discussing the importance of asset management at HRSD. The video will be shared with staff in April and describes the overall program, objectives and benefits to the organization. Each director highlighted how asset management was important to their department to help staff understand how asset management will impact their work centers.

2. Staff has recently updated the HRSD Coatings Manual. This manual was originally prepared in the 1990s to provide staff with information about best practices and acceptable suppliers of coatings systems. The document has evolved over the years and is a valuable reference document for staff as they consider the repair, replacement or new installation of concrete or steel surfaces. Protection of systems exposed to corrosive environments continues to be a significant challenge at HRSD. The HRSD Coatings Manual is also used by others outside of HRSD interested in the subject of coatings for the protection of concrete and/or steel exposed to corrosive environments.

C. North Shore and South Shore Design & Construction Divisions

1. Design efforts are underway for the replacement of the Ferebee Avenue Pump Station in Chesapeake. The existing pump station was constructed in 1951 and has reached the end of its useful life. Potential pump station sites are under consideration and a triple-bottom line approach is being used to consider possible locations. This technique uses social, environmental and financial factors to assist with selection criteria. The project team has determined a few potential pump station sites that meet the triple-bottom line criteria and will refine their analysis in the coming months.

2. Design efforts are also underway for the replacement of the Mathews Main Vacuum Pump Station located in downtown Mathews. A pump station site has been selected and the needed land has been acquired. A conceptual design and architectural renderings have been prepared and shared with representatives from Mathews County. Final design efforts will begin soon and the project should be advertised for construction later this year.

D. SWIFT Design & Construction Division

1. Construction efforts continue as part of the SWIFT Demonstration Facility located at the Nansemond Treatment Plant. Work includes final check-out of instrumentation and control systems, electrical wiring, HVAC system, flooring, painting of interior, and start-up/testing of the biological processes. The final installation effort will be the installation of interpretive elements and educational components within the space. The substantial completion date is now planned for April 13 and the final acceptance and grand opening is planned for May 18.

2. The Request for Proposals (RFP) has been issued for the SWIFT Program Management Services. The RFP was announced on March 18 with proposals due April 11. Final selection of this firm is planned for early June with the goal of having a final recommendation ready for the June 26 Commission Meeting.

E. Planning & Analysis Division

1. Preparation of the Fiscal Year 2019 CIP continues. All review meetings have been held and the final effort to review the scope of projects and balance cost expenditures is underway. There are twenty-seven (27) new CIP projects proposed this year and the 10-Year CIP has a total value of $2.5B.The first draft of the CIP will be presented to the Commission in April with final approval planned for May.

2. Staff has begun preparation of a Small Communities Master Plan. The initial step in this effort is to prepare a Charter for this work. The charter will define the expectations, work to be performed, and the listing of team members to assist in the creation of this plan. HRSD will need to work closely with the various counties and towns impacted by this plan. Population projection data, development priorities and future needs of the various communities must be defined and used to create this plan. Decentralized vs. centralized solutions must also be closely considered. The goal will be to prepare this plan in a one year time horizon.

F. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 2

   a. Staff attended the ASCE Norfolk Branch Principal's Breakfast on March 14.

b. Staff attended the Old Dominion University Speed Networking Event on March 14.

2. Number of Community Partners: 2

   a. ASCE Norfolk Branch

   b. Old Dominion University

3. Number of Research Partners: 0

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Total Training Hours per Full Time Employee (40) - Current Month	Hours / #FTE	7.30
M-1.4b	Total Training Hours per Full Time Employee (40) - Cumulative Fiscal Year-to-Date	Hours / #FTE	26.58
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

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager

FROM: Director of Finance

SUBJECT: Monthly Report for March 2018

DATE: April 11, 2018

A. General

1. Moody's upgraded HRSD to Aa1 (senior) and Aa2 (subordinate) with a stable outlook. From the March 26 report:
The Aa1 senior bond rating reflects the district's strong long-term credit characteristics, as well as its conservative approach to management. The rating additionally incorporates the district's sizable service area and regional importance, healthy financial position, and elevated debt burden that will likely increase in response to state and federal regulatory requirements.

2. Customer Interaction Center statistics improved significantly in March. The average wait time for customers reduced to less than three minutes and the service level improved by 20 percent. The increased number of calls due to the implementation of new online services has subsided and the surge in calls regarding the inclement weather related bills have leveled off. Staff continues to evaluate methods to provide quality customer service and a higher service level.

3. Water consumption is slightly higher than FY17 actual, which is driving revenues higher than budget. Interest Income is substantially higher than budget due to strong cash reserves and higher interest rates. Expenses remain lower than budget but should be closer to budget toward the end of the fiscal year. Personal Services is higher than budget due to the three pay periods in March.

4. Quarterly investment reports for HRSD's Operating Funds and the Retiree Health Plan Trust are attached.

B. Interim Financial Report

1. Operating Budget for the Period Ended March 31, 2018

	Amended Budget	Current YTD	Current YTD as % of Budget (75% Budget to Date)	Prior YTD as % of Prior Year Budget
Wastewater	$ 265,662,693	$ 203,762,153	77%	77%
Surcharge	1,900,000	1,098,060	58%	92%
Indirect Discharge	2,500,000	1,983,161	79%	79%
Norfolk Sludge	90,000	52,012	58%	62%
Fees	2,935,000	2,135,793	73%	78%
Municipal Assistance	700,000	490,095	70%	54%
Miscellaneous	720,000	690,517	96%	106%
Total Operating Revenue	274,507,693	210,211,791	77%	77%
Non Operating Revenues				
Facility Charge	6,000,000	4,962,650	83%	76%
Interest Income	1,800,000	2,306,821	128%	40%
Build America Bond Subsidy	2,400,000	1,168,524	49%	50%
Other	845,000	946,232	112%	67%
Total Non Operating Revenue	11,045,000	9,384,227	85%	65%
Total Revenues	285,552,693	219,596,018	77%	76%
Transfers from Reserves	9,760,286	7,320,215	75%	75%
Total Revenues and Transfers	$ 295,312,979	$ 226,916,233	77%	76%
Operating Expenses				
Personal Services	$ 53,773,327	$ 42,117,770	78%	77%
Fringe Benefits	24,700,569	18,892,263	76%	75%
Materials & Supplies	7,399,704	5,488,231	74%	73%
Transportation	1,423,974	886,954	62%	68%
Utilities	11,973,115	8,399,865	70%	68%
Chemical Purchases	10,620,594	6,138,527	58%	61%
Contractual Services	36,900,038	21,404,505	58%	59%
Major Repairs	10,429,168	4,305,312	41%	46%
Capital Assets	1,716,528	1,411,338	82%	54%
Miscellaneous Expense	2,396,234	1,723,969	72%	71%
Total Operating Expenses	161,333,251	110,768,734	69%	68%
Debt Service and Transfers				
Debt Service	59,949,120	45,412,200	76%	80%
Cost of Issuance Bonds	900,000	831,176	92%	0%
Transfer to CIP	58,802,000	44,101,500	75%	75%
Transfer to General Reserve	14,068,608	10,551,456	75%	0%
Transfer to Risk management	260,000	195,008	75%	75%
Total Debt Service and Transfers	133,979,728	101,091,340	75%	77%
Total Expenses and Transfers	$ 295,312,979	$ 211,860,074	72%	72%

2. Notes to Interim Financial Report

The Interim Financial Report summarizes the results of HRSD's operations on a basis of accounting that differs from generally accepted accounting principles. Revenues are recorded on an accrual basis, whereby they are recognized when billed; expenses are generally recorded on a cash basis. No provision is made for non-cash items such as depreciation and bad debt expense.

This interim report does not reflect financial activity for capital projects contained in HRSD's Capital Improvement Program (CIP).

Transfers represent certain budgetary policy designations as follows:

a. Transfer to CIP: represents current period's cash and investments that are designated to partially fund HRSD's capital improvement program.

b. Transfers to Reserves: represents the current period's cash and investments that have been set aside to meet HRSD's cash and investments policy objectives.

3. Reserves and Capital Resources (Cash and Investments Activity) for the Period Ended March 31, 2018

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2017	$ 169,127,728	$ 3,000,520	$ 30,760,330	$ 37,452,225
Add: Current Year Sources of Funds				
Cash Receipts	220,477,005			273,602
Capital Grants				2,946,739
VRA Draws				3,220,061
Bond Proceeds (includes interest)				75,049,862
Transfers In	494,006	195,008		44,101,500
Sources of Funds	220,971,011	195,008	-	125,591,764
Total Funds Available	$ 390,098,739	$ 3,195,528	$ 30,760,330	$ 163,043,989
Deduct: Current Year Uses of Funds				
Cash Disbursements	162,812,993			81,617,969
Transfers Out	44,296,508		494,006	-
Uses of Funds	207,109,501	-	494,006	81,617,969
End of Period - March 31, 2018	$ 182,989,238	$ 3,195,528	$ 30,266,324	$ 81,426,020

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended March 31, 2018

Classification/ Treatment Service Area	Budget	Expenditures prior to June 30, 2017	Year to Date FY 2018 Expenditures	Total Expenditures	Outstanding Encumbrances	Available Balance
Administration	$ 55,245,711	$ 39,641,464	$ 485,882	$ 40,127,346	$ 554,169	$ 14,564,196
Army Base	158,584,000	120,527,300	1,649,113	122,176,413	4,466,637	31,940,950
Atlantic	120,373,620	42,154,292	6,558,265	48,712,557	54,232,324	17,428,739
Boat Harbor	102,951,544	42,142,558	8,901,920	51,044,478	5,706,360	46,200,706
Ches-Eliz	148,955,317	6,729,890	1,894,616	8,624,506	6,901,763	133,429,048
James River	89,401,802	50,821,444	2,668,711	53,490,155	5,096,319	30,815,328
Middle Peninsula	48,732,269	6,398,032	1,123,791	7,521,823	4,274,021	36,936,425
Nansemond	78,546,570	33,846,838	2,902,885	36,749,723	3,721,763	38,075,084
Surry	3,236,000	-	63,863	63,863	17,354	3,154,783
VIP	272,884,561	229,739,637	14,485,705	244,225,342	11,421,897	17,237,322
Williamsburg	16,156,843	8,937,934	133,783	9,071,717	716,289	6,368,837
York River	45,537,761	39,366,402	661,531	40,027,933	1,723,453	3,786,375
General	248,952,915	166,626,066	25,963,379	192,589,445	23,619,349	32,744,121
	$1,389,558,913	$ 786,931,857	$ 67,493,444	$ 854,425,301	$ 122,451,698	$ 412,681,914

5. Debt Management Overview

6.

	Debt Outstanding ($000's)					
	Principal Feb 2018	Principal Payments	Principal Draws	Principal FY18 Bonds	Principal Mar 2018	Interest Payments
Fixed Rate						
Senior	$ 340,098	$ (2,492)	$ -	$ -	$ 337,606	$ (946)
Subordinate	437,445	(1,076)	-	-	436,369	(346)
Variable Rate						
Subordinate	50,000	-	-		50,000	(39)
Line of Credit	-	-	-	-	-	-
Total	$ 827,543	$ (3,568)	$ -	$ -	$ 823,975	$ (1,331)

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 3/30/18			
	SIFMA Index	**HRSD**	**Spread to SIFMA**
Maximum	1.71%	1.63%	-0.08%
Average	0.30%	0.29%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 3/30/18	1.58%	1.61%	0.03%

* Since October 20, 2011 HRSD has averaged 29 basis points on Variable Rate Debt

7. Financial Performance Metrics for the Period Ended March 31, 2018

	Current YTD	Policy Minimum
Days Cash on Hand	468 days	270-365 days
Days Cash on Hand (Excl Reserve $30.3m and Risk Mgmt $3.2m)	401 days	270-365 days
Risk Management Reserve as % of Projected Claims Costs	25%	25%

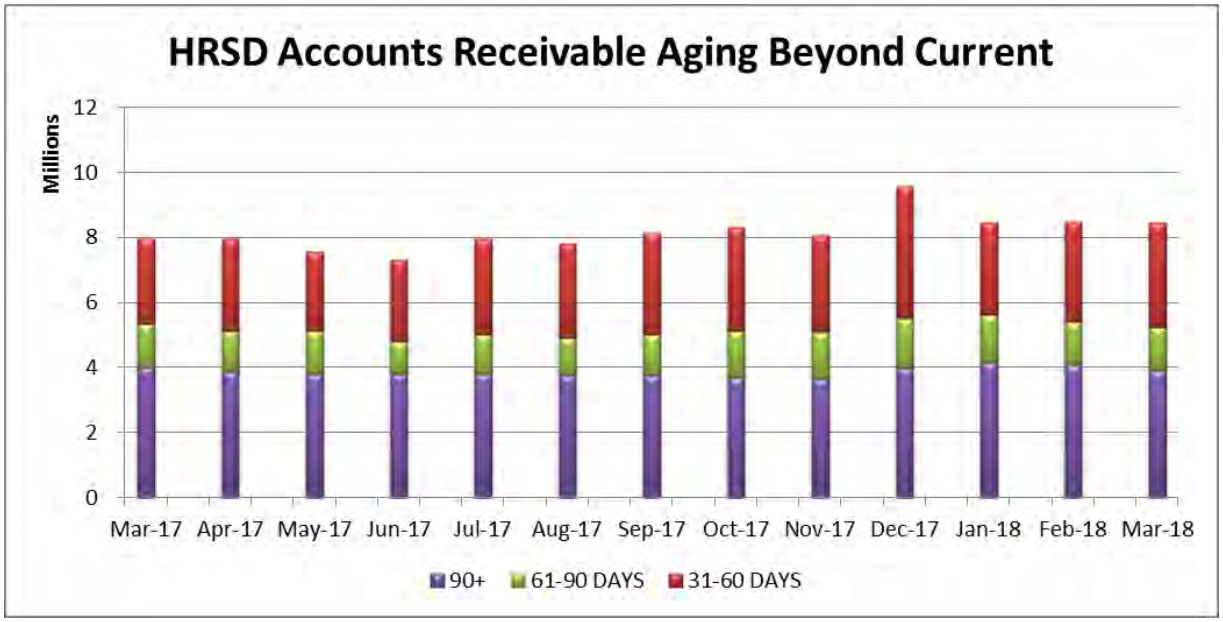
Total Return Strategy	Market Value June 30, 2017	YTD Buy/Sell	YTD Change in Market Value	YTD Adjustments	Market Value March 31, 2018
Investment Activity	$ 123,687,020	$ 1,414,141	$ (1,311,361)	$ -	$ 123,789,800
Investment Cash	157,418	(48,737)			108,681
Unrestricted Reserve Fund	30,760,330			(494,006)	30,266,324
	$ 154,604,768	$ 1,365,404	$ (1,311,361)	$ (494,006)	$ 154,164,805

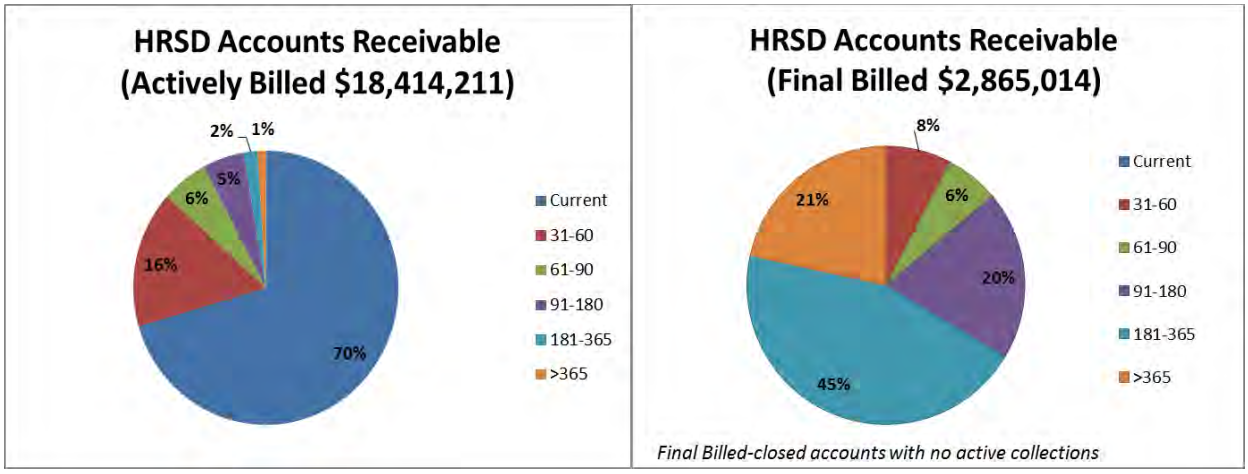
8. Summary of Billed Consumption

Summary of Billed Consumption (,000s ccf)							
			% Difference		% Difference		% Difference
Month	*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	9,939	12.3%	9,275	7.2%	9,525	4.3%
Sept	13,271	14,632	10.3%	14,227	2.8%	14,215	2.9%
Oct	17,689	19,006	7.4%	19,017	-0.1%	18,999	0.0%
Nov	22,104	23,305	5.4%	23,282	0.1%	23,223	0.4%
Dec	26,516	27,462	3.6%	27,761	-1.1%	27,583	-0.4%
Jan	30,925	31,965	3.4%	32,036	-0.2%	31,959	0.0%
Feb	35,331	36,519	3.4%	36,263	0.7%	35,878	1.8%
March	39,734	40,741	2.5%	40,516	0.6%	40,678	0.2%
Apr	44,135	-	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

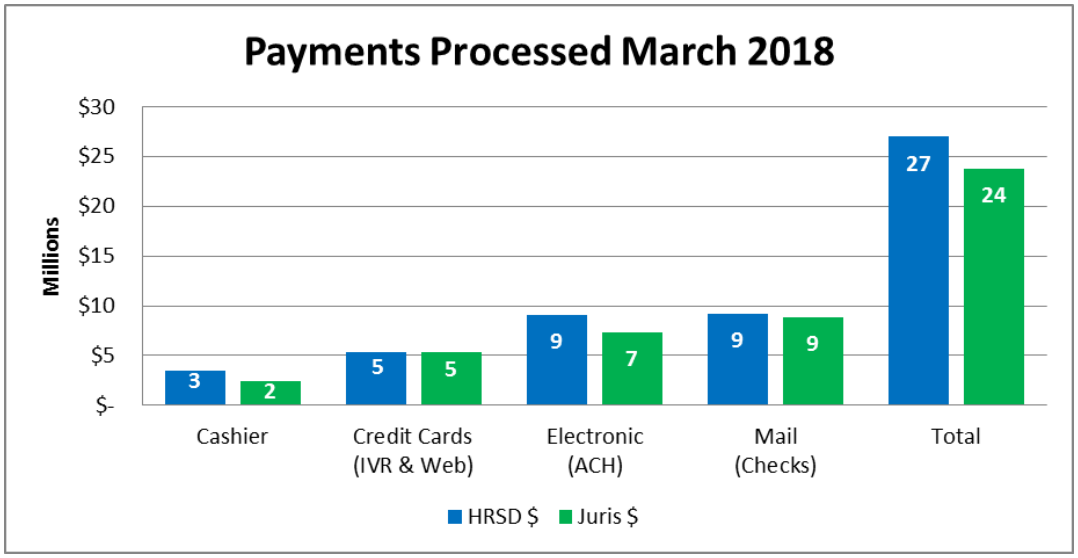
C. Customer Care Center

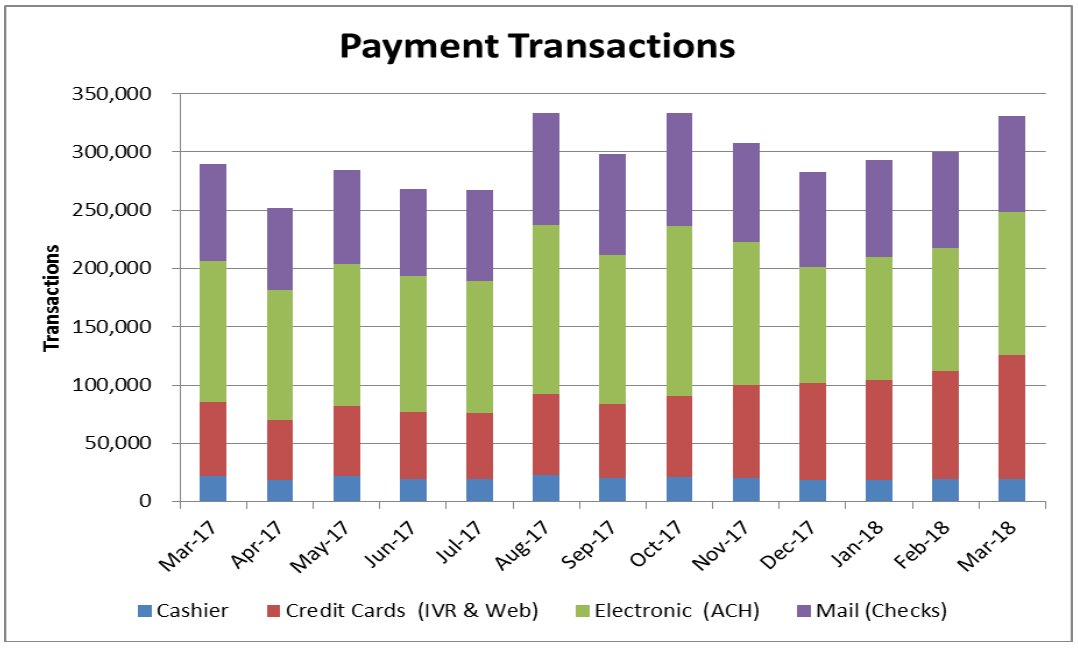
1. Accounts Receivable Overview

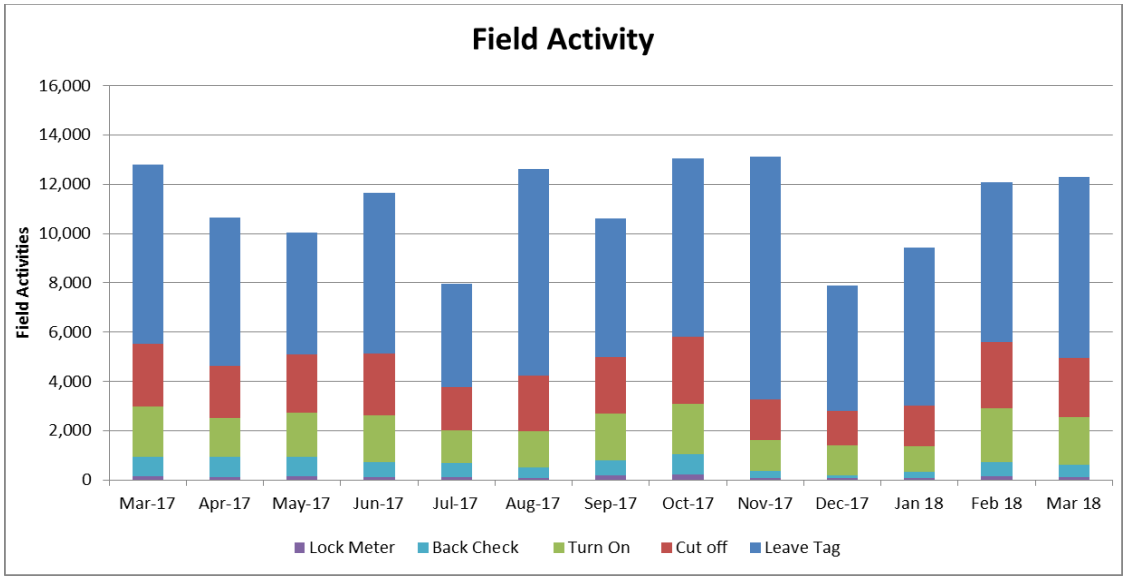


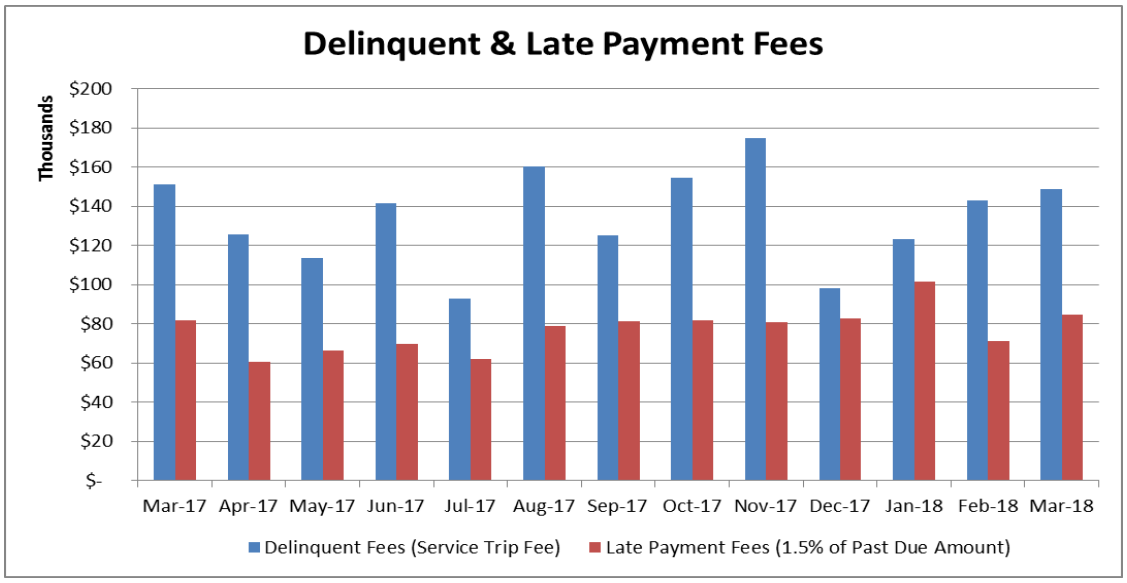


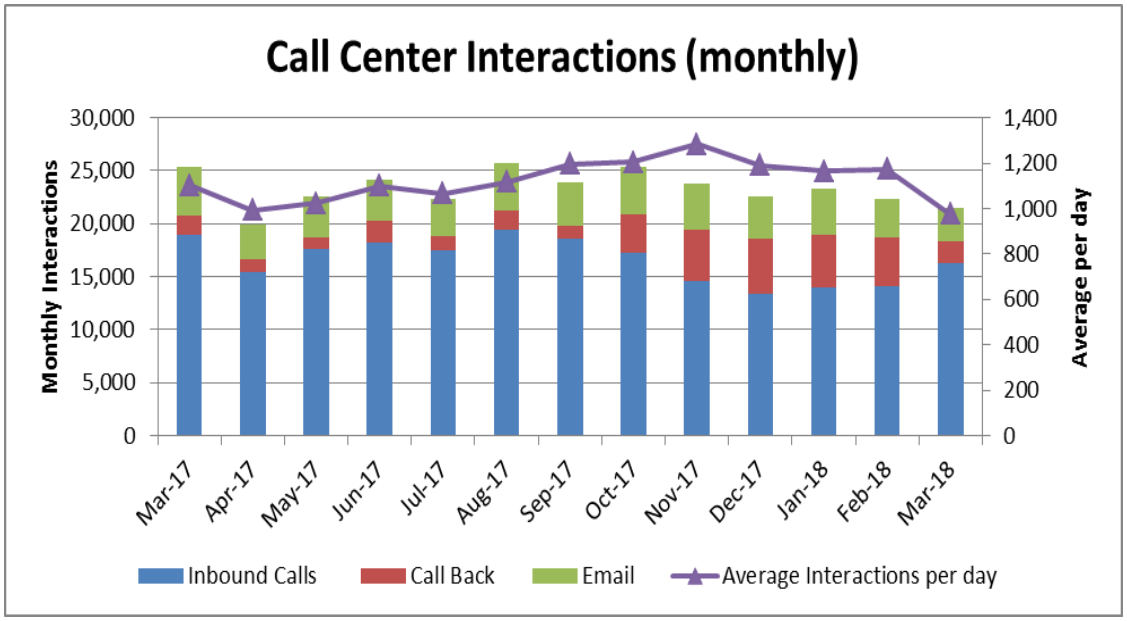
2. Customer Care Center Statistics

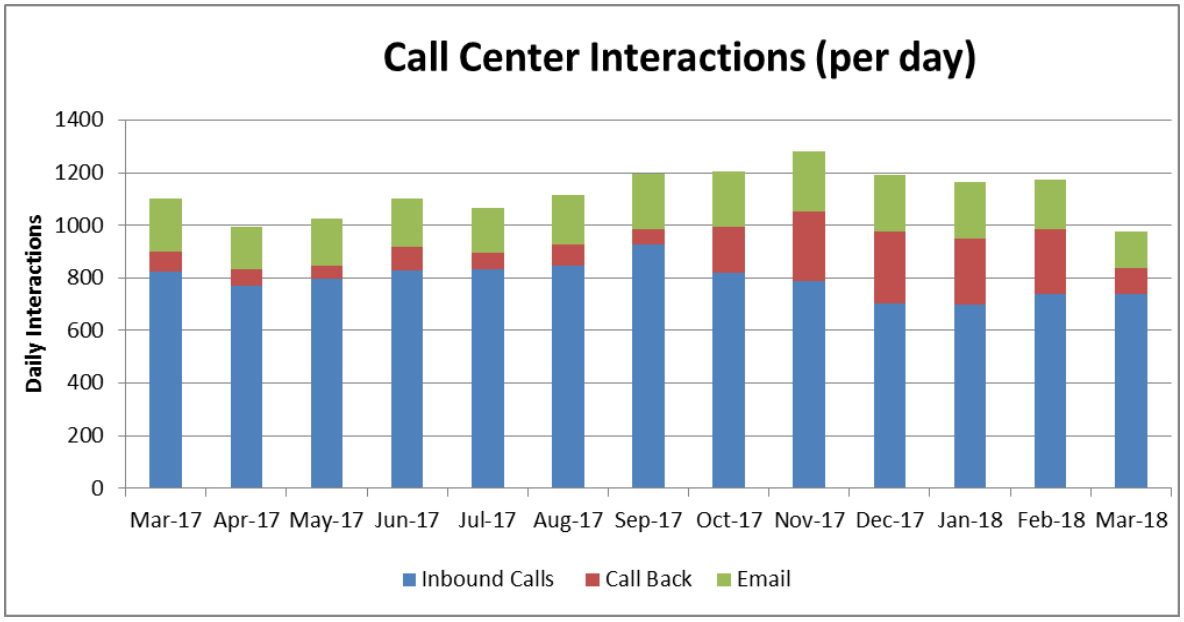





Field Activity
Field Activities
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan 18
Feb 18
Mar 18
Lock Meter
Back Check
Turn On
Cut off
Leave Tag


Delinquent & Late Payment Fees
Thousands
$200
$180
$160
$140
$120
$100
$80
$60
$40
$20
$-
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Delinquent Fees (Service Trip Fee)
Late Payment Fees (1.5% of Past Due Amount)


Call Center Interactions (monthly)
Monthly Interactions
30,000
25,000
20,000
15,000
10,000
5,000
0
Average per day
1,400
1,200
1,000
800
600
400
200
0
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Inbound Calls
Call Back
Email
Average Interactions per day



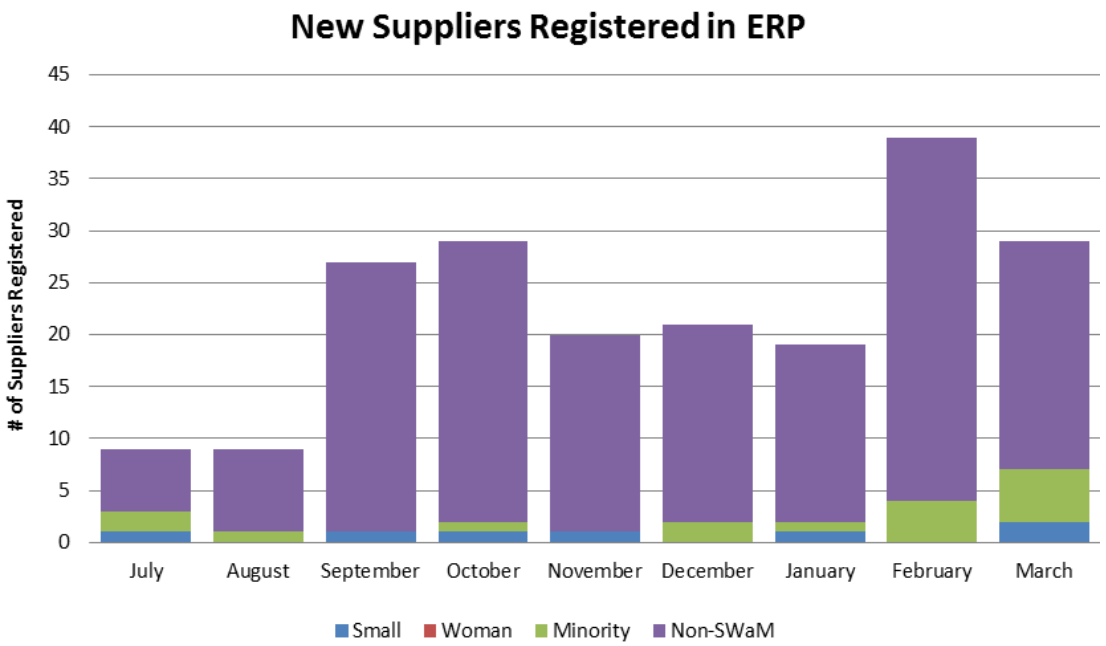
Customer Interaction Statistics	Oct	Nov	Dec	Jan	Feb	Mar
Calls Answered within 3 minutes	58%	45%	45%	49%	48%	68%
Average Wait Time (minutes)	3:51	5:50	6:39	5:41	5:31	2:51
Calls Abandoned	13%	18%	18%	17%	16%	10%

D. Procurement Statistics

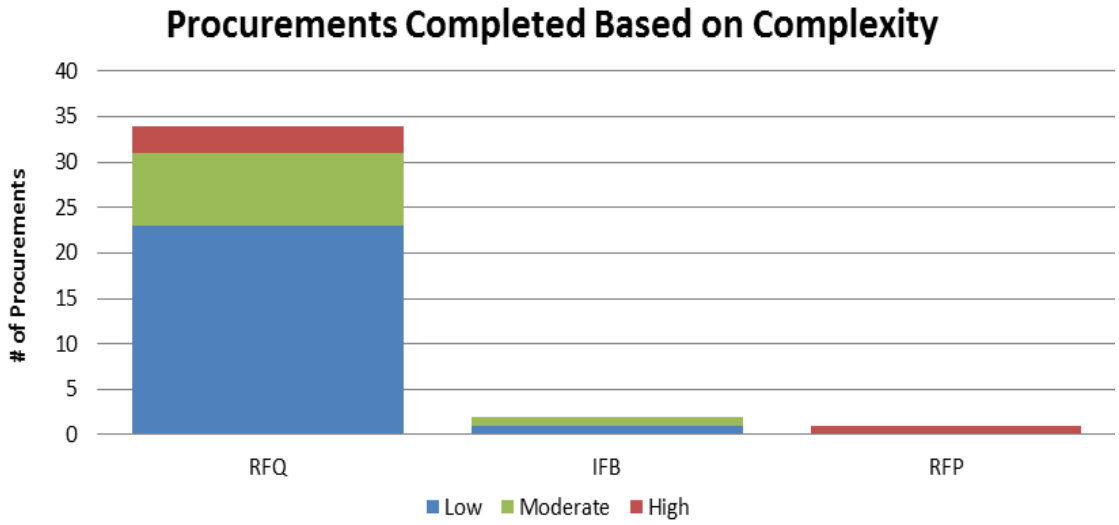
Savings	Current Period	FYTD
Competitive Savings[1]	$93,874	$832,781
Negotiated Savings[2]	$17,481	$2,125,370
Salvage Revenues	$1,884	$41,798
Corporate VISA Card - Estimated Rebate	$17,374	$161,572

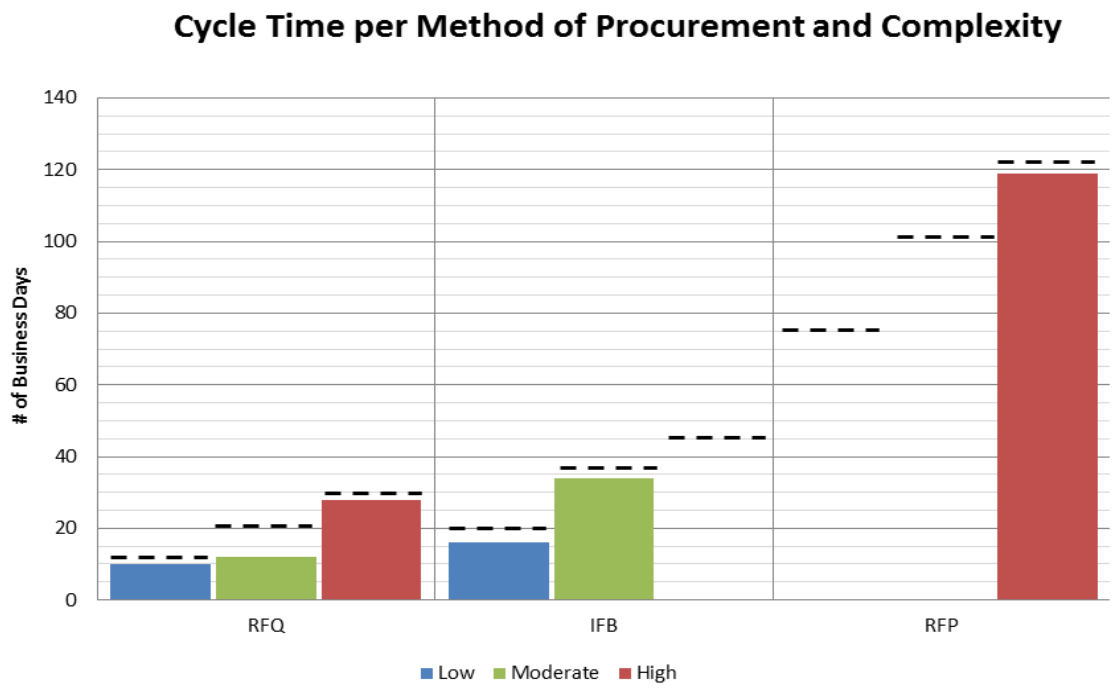
[1] Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

[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.



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

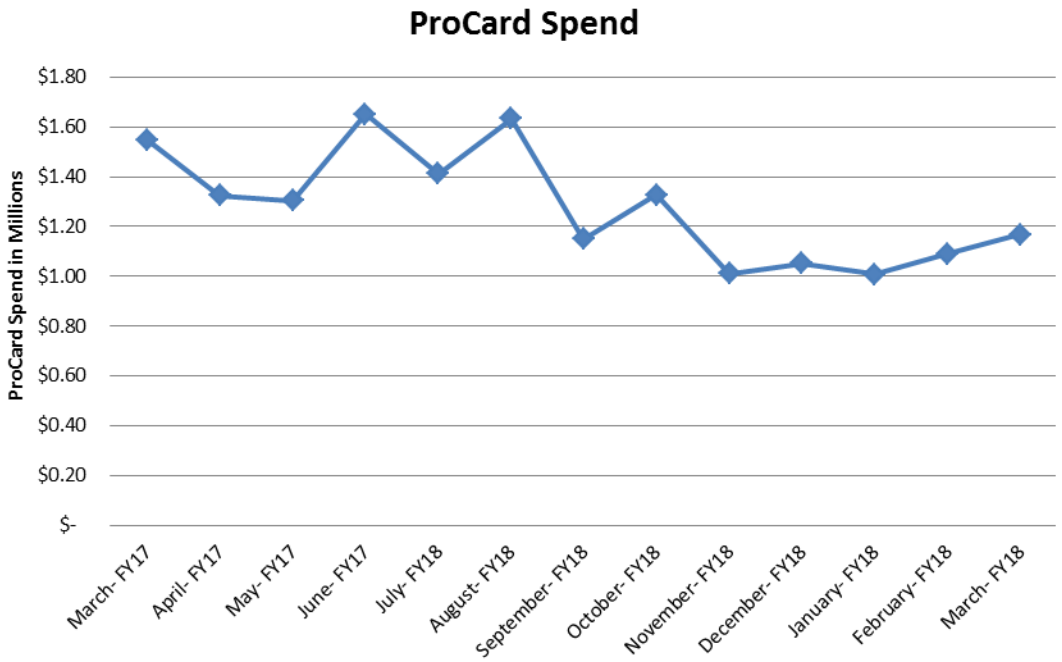




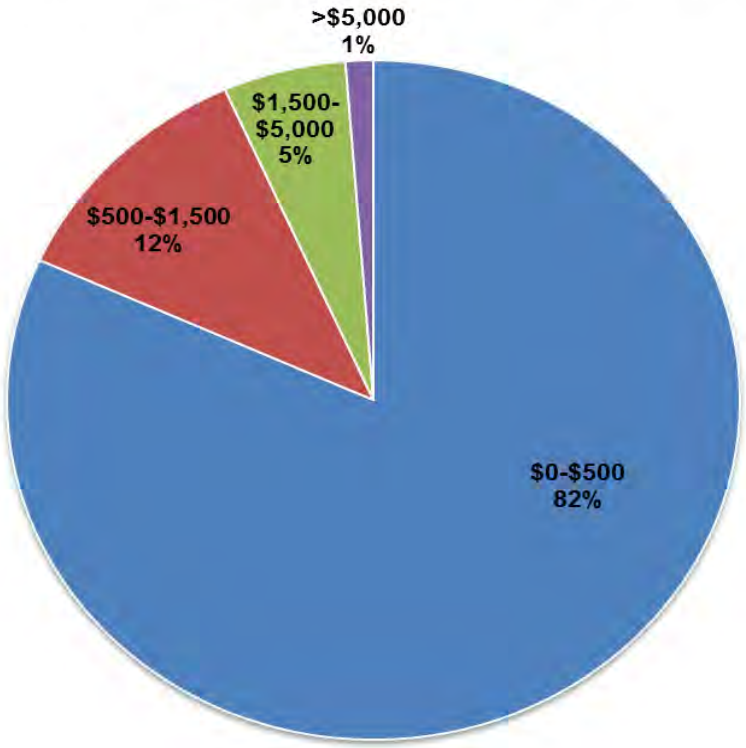
Dashed Line: Target Service Level Cycle Time

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

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



March ProCard Transaction Dollar Amounts



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

*__External Fraud:__ Fraud from outside HRSD (i.e.: a lost or stolen card, phishing, or identity theft)

Accidental Use, which is anything that is not purchased for use and ownership by HRSD, was at 0% of March's ProCard transactions.

Procurement Client Training		
	Current Period	**YTD**
ProCard Policy and Process	6	43
Procurement Cycle	4	19
Specification Building Workshop	70	70
Total	**80**	**132**

E. Business Intelligence – Enterprise Resource Planning (ERP)

1. ERP Helpdesk currently has 302 open work orders in the following statuses: 4 escalated, 70 in progress, 16 on hold, 210 open, 2 waiting on user. ERP Helpdesk received 309 work orders in March. In March, 265 work orders were closed and 66 were closed within one hour.

2. ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

   a. 2018 Virginia Association of Governmental Purchasing (VAGP) Vendor Expo

2. Community Partners: 1

   a. Virginia Association of Governmental Purchasing

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	5.57
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	36.49
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	1
	Wastewater Revenue	Percentage of budgeted	103%
	General Reserves	Percentage of Operating Budget less Depreciation	113%
	Liquidity	Days Cash on Hand	468 Days
	Accounts Receivable (HRSD)	Dollars	$21,279,225
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	19%

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

Portfolio Summary

	Market Value	
	March 31, 2018	December 31, 2017
Operating Liquidity Strategy	**$ 61,902,839**	$ 59,528,285
Total Return Strategy	**$ 154,548,251**	$ 154,704,589
Capital Investment Strategy	**$ 81,426,020**	$ 16,378,510
Total Portfolio	**$ 297,877,110**	$ 230,611,384

Investment Recap and Strategies

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

Portfolio Performance Summary

- HRSD maintains sizeable balances in overnight investment vehicles, such as bank deposits and LGIPs. These allocations are carefully managed to allow HRSD to generate the highest rate of return while preserving daily liquidity and operational efficiency. As of March 31, 2018, $73.6 million was held in the Virginia LGIP, earning 1.66%, compared to $24.9 million in bank deposits, earning 0.13%. Additionally, HRSD invests its $75 million in bond proceeds in the SNAP Fund, earning 1.78% as of March 31, 2018. The yield on overnight investments is compared to the Merrill Lynch 3-month Treasury Bill's yield, which was 1.71% as of March 31, 2018.

- Performance for the Total Return Strategy is measured on a total return basis, which captures interest income, realized gains/losses, and unrealized gains/losses. This performance calculation methodology is most appropriate for investment portfolios that have longer-term investment horizons. During the quarter, the Total Return Strategy Managed Portfolio generated a total return of -0.13% (-0.51% annualized) matching the Merrill Lynch 1 - 3 Year U.S. Treasury Index's return of -0.13% (-0.53% annualized).

Portfolio Summary *(continued)*

Total Return Strategy Portfolio

- The Total Return Strategy includes $124 million invested in the Total Return Strategy Managed Portfolio (the "Managed Portfolio"), an actively-managed diversified portfolio of securities. In addition to this Managed Portfolio, the Total Return Strategy includes $30.3 million that has been set aside as a reserve available in case HRSD is required to establish a Debt Service Reserve Fund. This reserve is expected to decline annually. The reserve has been invested in the Virginia LGIP in order to protect the funds from any potential market value fluctuations and to provide liquidity if needed.

- The Total Return Strategy Managed Portfolio is well diversified among U.S. Treasury securities, federal agency securities, supra sovereign agencies, certificates of deposit, corporate notes, commercial paper, and high quality money market mutual funds. The Portfolio's average credit quality is AA+.

- In the first quarter of 2018, the Total Return Strategy Managed Portfolio generated a total return of -0.13% (-0.51% annualized), matching the Merrill Lynch 1 - 3 Year U.S. Treasury Index's return of -0.13% (-0.53% annualized). The one-year trailing return for the Total Return Strategy Managed Portfolio was 0.27% compared to the benchmark's return of 0.03%.

- New Fed Chair Jerome Powell made his first public address at February's semi-annual monetary policy report to Congress. His maiden testimony hinted at a continuance of gradual rate hikes, while acknowledging that "the economic outlook remains strong" and the expectation for inflation to increase and closely approach the FOMC's 2% objective remains intact.

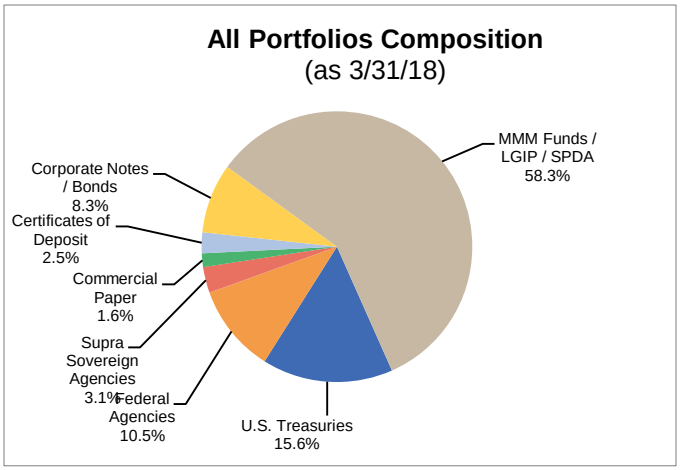
- The Fed remained true to its stated course, raising short-term rates by ¼ percent in March, and interest rates continued their ascent over the quarter. During the quarter, the 2-year U.S. Treasury yield increased by 0.39% from 1.88% to 2.27%. As a result, a defensive duration strategy was taken relative to benchmarks to help insulate market values in the rising interest rate environment. As of March 31, 2018, the Managed Portfolio's duration was 1.72 years compared to the benchmark's duration of 1.80 years.

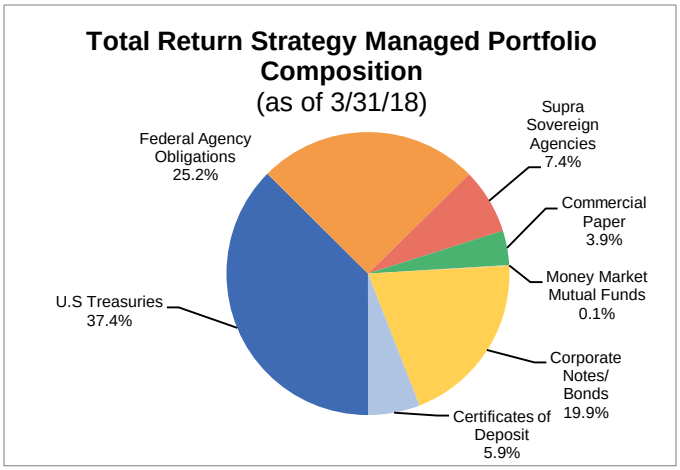
- Federal agency yield spreads remained very narrow throughout the quarter. Occasional new issue agencies continued to be the preferred outlet to add exposure at relatively attractive yields. Generally, the agency sector added modest positive excess returns in the quarter (returns in excess of similar duration Treasuries) across much of the yield curve, benefitting performance.

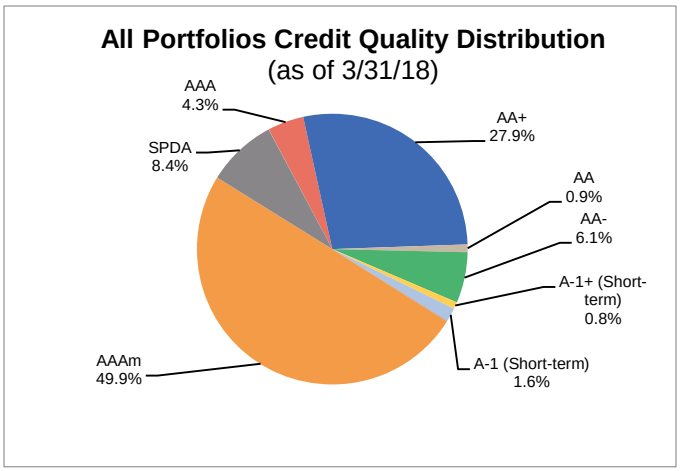
- Yields on corporate securities increased more rapidly than on U.S. Treasuries, causing corporate investments to underperform for the quarter. In the latter half of the quarter, market volatility pushed credit spreads markedly wide through the quarter-end, offering an attractive opportunity to add corporate exposure to the Managed Portfolio. Purchases included $2.5 million in 2-year Nordea Bank negotiable certificates of deposit yielding 2.72% and $2.5 million in 6-month JP Morgan Securities LLC commercial paper yielding 2.47%.

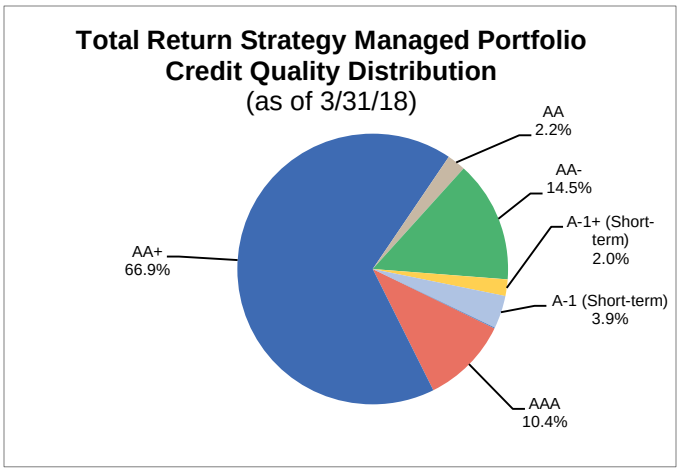
Portfolio Composition

Security Type	March 31, 2018	% of Portfolio	December 31, 2017	% of Portfolio	Permitted by Policy
U.S. Treasuries	$46,531,922	15.6%	$44,869,656	19.5%	100%
Federal Agencies	31,355,714	10.5%	33,671,243	14.6%	100%
Supra Sovereign Agencies	9,244,492	3.1%	7,244,619	3.1%	15%
Commercial Paper	4,888,137	1.6%	4,905,389	2.1%	25%
Certificates of Deposit	7,379,218	2.5%	9,848,631	4.3%	25%
Municipal Obligations	0	0.0%	0	0.0%	15%
Corporate Notes / Bonds	24,773,762	8.3%	23,694,404	10.3%	25%
Money Market Mutual Funds / LGIP / Cash	173,703,863	58.3%	106,377,443	46.1%	100%
Totals	**$297,877,110**	**100.0%**	**$230,611,384**	**100.0%**	



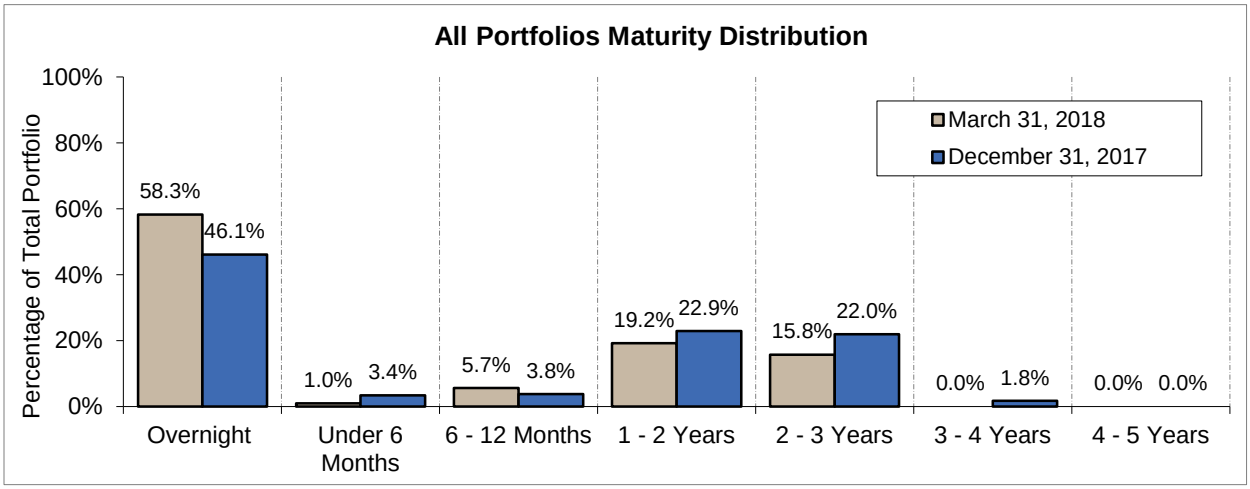


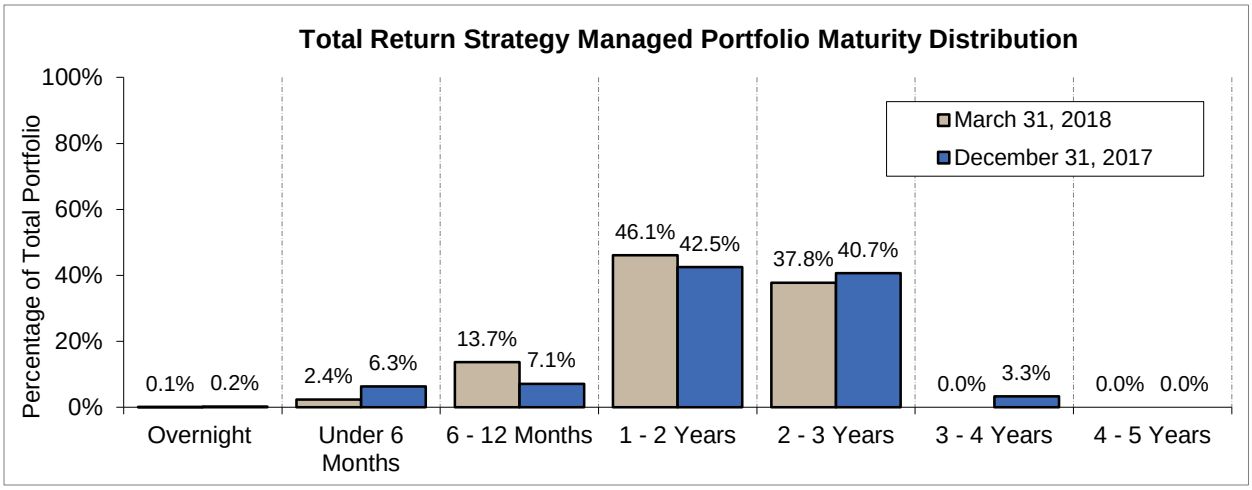




Portfolio Maturity Distribution

Maturity Distribution	March 31, 2018	December 31, 2017
Overnight	173,703,863	106,377,443
Under 6 Months	2,922,639	7,843,495
6 - 12 Months	16,989,494	8,834,103
1 - 2 Years	57,311,123	52,857,594
2 - 3 Years	46,949,990	50,627,058
3 - 4 Years	0	4,071,691
4 - 5 Years	0	0
5 Years and Over	0	0
Totals	**$297,877,110**	**$230,611,384**



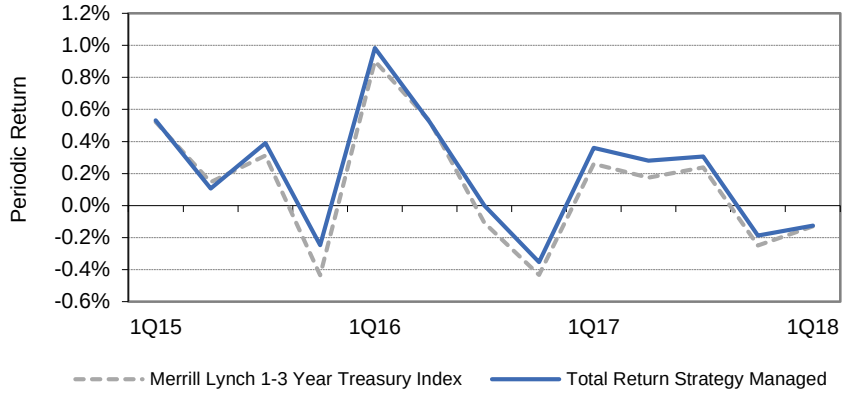


Portfolio Performance

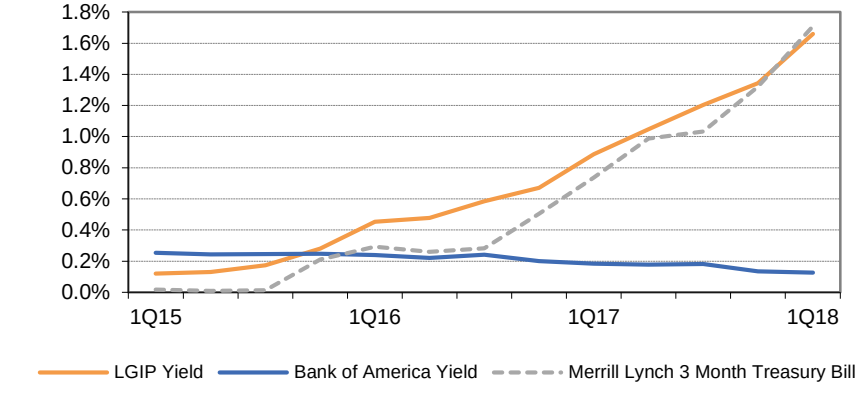
	Quarter Ended March 31, 2018	Annualized Quarterly Return	Last 24 Months	Last 36 Months	Annualized Since Inception*
Total Return Performance					
Total Return Strategy Managed	-0.13%	-0.51%	0.40%	0.68%	1.01%
Merrill Lynch 1-3 Year Treasury Index	*-0.13%*	*-0.53%*	*0.14%*	*0.40%*	*0.83%*

	Balance as of March 31, 2018	Yield as of March 31, 2018	Balance as of December 31, 2017	Yield as of December 31, 2017
Other Funds				
Virginia LGIP	$ 73,595,400	1.66%	$ 83,280,004	1.34%
Virginia SNAP	$ 75,049,862	1.78%	$ -	1.44%
Bank of America	$ 24,949,921	0.13%	$ 22,893,115	0.13%
Merrill Lynch 3-Month Treasury Bill		*1.71%*		*1.32%*

Performance Comparison



Historical Yield Comparison



**Since inception returns are calculated since September 30, 2009 to present. Performance for the Total Return Strategy Managed Portfolio is calculated as the total return, which captures interest income, realized gains/losses, and unrealized gains/losses, on the managed portfolio of short-term fixed income securities. Calculations are based on provided information and are believed to be accurate based upon available data. The yield for the Virginia LGIP is the average monthly yield. The yield for Bank of America is the weighted average yield between the earnings credit rate less a balance based fee assessed by Bank of America and the hard-dollar interest rate at Bank of America, less the balance based fee.*

Portfolio Summary

Total Portfolio Value

	March 31, 2018	December 31, 2017
Investment Assets	**$ 46,436,510**	$ 46,393,513
Combined Assets	**$ 46,509,919**	$ 46,510,305

Portfolio Recap & Strategy

- The Retiree Health Plan Trust portfolio returned -0.57% (combined assets) for the quarter ended March 31, 2018, above the -1.02% return of the Blended Benchmark.* The one-year trailing return for the Retiree Health Plan Trust portfolio was 10.32% compared to the Blended Benchmark return of 9.01%. The weighted average credit quality of fixed income holdings for the Retiree Health Plan Trust portfolio is A.

- Domestic Equity markets, as represented by the S&P 500 Index (S&P), started the year strongly, boosted by tax reforms and strong growth; however the equities markets ended the quarter lower amid concerns over inflation, the impact of US-China trade sanctions, and the potential acceleration of Fed funds rate increases. The markets turned down sharply at the beginning of February and have experienced volatility in the months since the downturn. The S&P 500 posted a negative return of -0.76% for the quarter, the first negative quarterly return in three years. Mid-cap stocks (Russell Mid Cap Index) were the best performers during the period, returning -0.46%, while small-caps (Russell 2000 Index) fell 0.76% and large-caps (Russell 1000 Index) returned -0.69%. Growth-oriented indices outperformed value-oriented indices across all market capitalizations.

- Developed markets outside of North America, as measured by the MSCI EAFE Index, fell -1.53% during the first quarter. Uncertainty in monetary policy, leadership, and potential tariffs negatively impacted the European markets with Germany, the United Kingdom, and Spain all posting losses for the quarter. Japanese equities followed other major markets posting losses for the quarter.

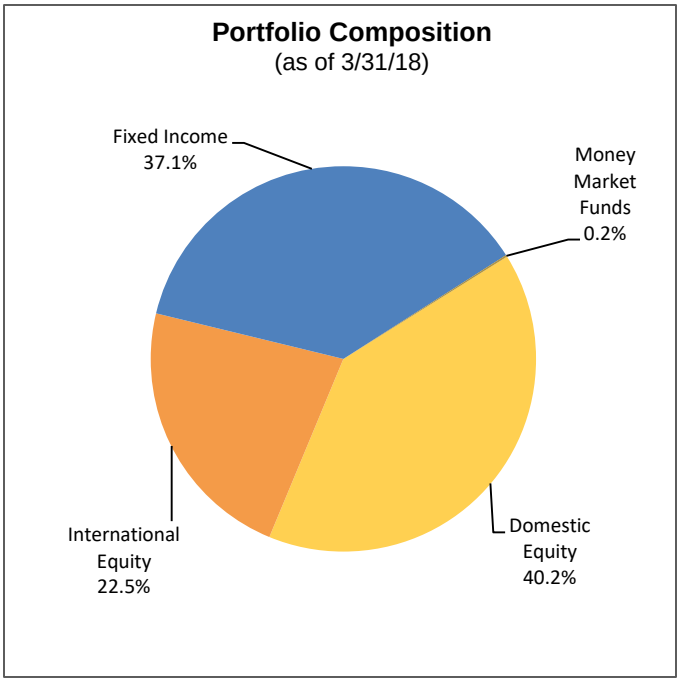
- Emerging markets (EM), as measured by the MSCI Emerging Markets Index, continued to show positive growth during the first quarter, rising 1.42%. This outperformance is a continuing theme after their stellar year in 2017 where EM returned 37.28%. Latin America was the best performing segment within the emerging market index, returning 8.02% in the first quarter.

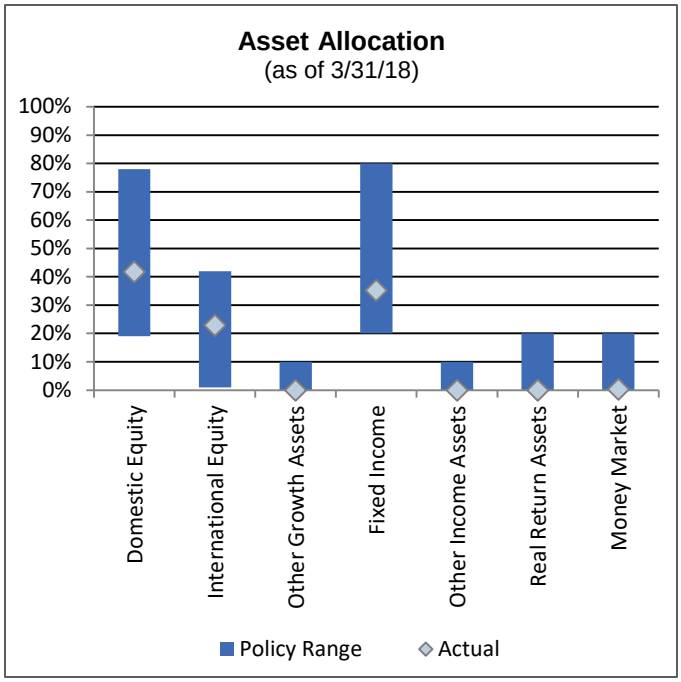
- The US bond market, represented by the Bloomberg Barclays US Aggregate Index, returned -1.46% in the first quarter, as yields across the Treasury curve rose to multi-year highs. This slip follows a year of consecutive positive quarters where the index generated a return of 3.54% for full year 2017. During the quarter, the yield curve flattened and the spread between the 2 year U.S. Treasury yield and 10 year U.S. Treasury yield tightened to 0.47%. There were many factors that led to these changes in the yield curve including nearly $530 billion in new Treasury issuance, repatriation of short-term debt, market volatility regarding trade policy, and increased expectations of tightening monetary policy.

**Performance is unreconciled. See page 3 for detailed information about the Blended Benchmark.*

Portfolio Composition

Security Type	March 31, 2018	% of Portfolio	December 31, 2017	% of Portfolio	Permitted by Policy
Domestic Equity	$ 18,673,774	40.2%	$ 19,396,579	41.7%	19% - 59%
International Equity	$ 10,487,246	22.5%	$ 10,641,061	22.9%	1% - 41%
Other Growth Assets	$ 0	0.0%	$ 0	0.0%	0% - 10%
Fixed Income	$ 17,275,489	37.1%	$ 16,355,872	35.2%	20% - 60%
Other Income Assets	$ -	0.0%	$ -	0.0%	0% - 10%
Real Return Assets	$ -	0.0%	$ -	0.0%	0% - 20%
Money Market Funds	$ 73,410	0.2%	$ 116,792	0.3%	0% - 20%
Totals	**$ 46,509,919**	**100.0%**	**$ 46,510,305**	**100.0%**	

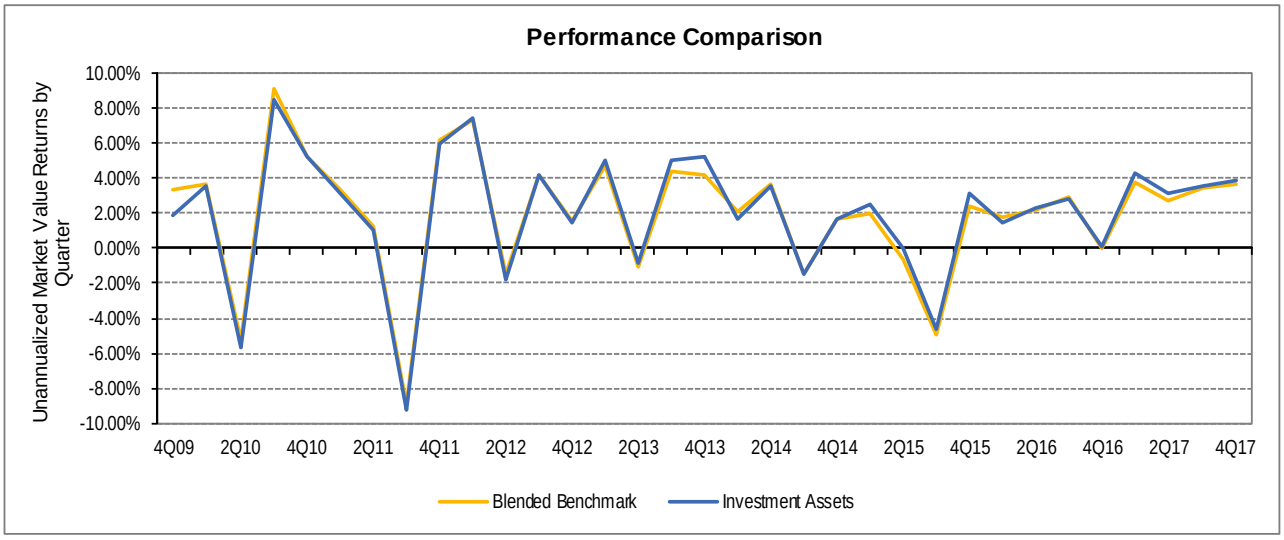




Portfolio Performance – Investment Assets

Quarter Ended December 31, 2017

Index	Market Values	%	1 Quarter	Year to Date	Trailing 1 Year	Trailing 3 Years	Trailing 5 Years	Apr 2013 to Dec 2017*	Since Inception	Inception Date
Domestic Equity										
Vanguard Total Stock Market Index	$ 17,843,699	38.5%	6.34%	21.17%	21.17%	11.08%	15.55%	13.89%	14.70%	9/1/2009
Russell 3000 Index			*6.34%*	21.13%	21.13%	11.12%	15.58%	13.92%	14.67%	*9/1/2009*
T. Rowe Price Dividend Growth	$ 1,552,880	3.3%	5.83%	19.32%	19.32%	10.88%	14.83%	13.27%	19.10%	12/1/2016
S&P 500			*6.64%*	21.83%	21.83%	11.41%	15.79%	14.24%	22.18%	*12/1/2016*
International Equity										
Vanguard Total International Stock Index Fund	$ 3,441,121	7.4%	4.88%	27.55%	27.55%	8.53%	7.12%	6.86%	19.61%	10/1/2016
MSCI AC World ex USA (Net)			*5.00%*	27.19%	27.19%	7.83%	6.80%	6.47%	20.00%	*10/1/2016*
Vanguard International Value	$ 2,570,228	5.5%	4.90%	27.96%	27.96%	7.74%	7.35%	7.27%	17.62%	5/1/2016
MSCI AC World ex USA (Net)			*5.00%*	27.19%	27.19%	7.83%	6.80%	6.47%	17.04%	*5/1/2016*
J. O. Hambro International Select	$ 2,975,520	6.4%	4.05%	22.89%	22.89%	7.44%	12.55%	10.51%	13.70%	1/1/2016
MSCI AC World ex USA (Net)			*5.00%*	27.19%	27.19%	7.83%	6.80%	6.47%	15.29%	*1/1/2016*
Oppenheimer International Small Company	$ 1,654,192	3.6%	6.25%	38.30%	38.30%	16.68%	18.30%	17.10%	15.64%	4/1/2015
MSCI AC World ex USA Small Cap (Net)			*6.07%*	30.35%	30.35%	10.69%	9.14%	8.50%	10.11%	*4/1/2015*
Fixed Income										
Baird Core Plus	$ 5,438,444	11.7%	0.56%	4.65%	4.65%	3.15%	2.91%	3.00%	3.46%	5/1/2014
Bloomberg Barclays U.S. Aggregate			*0.39%*	3.54%	3.54%	2.24%	2.10%	2.24%	2.70%	*5/1/2014*
DoubleLine Core Fixed Income	$ 2,409,445	5.2%	0.47%	4.66%	4.66%	3.12%	2.97%	3.03%	0.97%	8/1/2017
Bloomberg Barclays U.S. Aggregate			*0.39%*	3.54%	3.54%	2.24%	2.10%	2.24%	0.81%	*8/1/2017*
Prudential Total Return Bond Fund	$ 1,625,952	3.5%	1.12%	6.71%	6.71%	3.84%	3.54%	3.62%	1.86%	8/1/2017
Bloomberg Barclays U.S. Aggregate			*0.39%*	3.54%	3.54%	2.24%	2.10%	2.24%	0.81%	*8/1/2017*
Vanguard Intermediate-Term Investment Grade	$ 5,425,748	11.7%	0.19%	4.26%	4.26%	3.27%	2.86%	2.94%	2.94%	4/1/2013
Bloomberg Barclays Capital U.S. Credit: 5 - 10 Yr			*0.44%*	5.57%	5.57%	3.81%	3.30%	3.40%	3.40%	*4/1/2013*
Vanguard High Yield Corporate	$ 1,456,284	3.1%	0.11%	7.13%	7.13%	5.58%	5.21%	5.10%	9.14%	4/1/2016
Bloomberg Barclays US Corp: High Yield			*0.47%*	7.50%	7.50%	6.35%	5.78%	5.46%	11.95%	*4/1/2016*
Aggregate										
Retiree Health Plan Trust	**$ 46,393,513**		**3.85%**	**15.72%**	**15.72%**	**7.58%**	**8.64%**	**7.99%**	**8.75%**	**9/1/2009**
*Blended Benchmark**			*3.66%*	*14.33%*	*14.33%*	*6.49%*	*7.60%*	*6.97%*	*8.45%*	*9/1/2009*



**Active Strategy implemented April 1, 2013. Since inception to June 30, 2017 , the Blended Benchmark was 33% Russell 3000 / 21% MSCI ACWI ex USA net) / 3% FTSE NAREIT Equity REITs / 3% Bloomberg Commodity TR / 40% Bloomberg Barclays Aggregate. From July 1, 2017 to present, the Blended Benchmark was 39% Russell 3000 / 21% MSCI ACWI ex USA net) / 40% Bloomberg Barclays Aggregate.*

TO: General Manager

FROM: Director of Information Technology (IT)

SUBJECT: Information Technology Department Report for March 2018

DATE: April 11, 2018

A. General

1. Testing of the cellular 4G secure communications circuits for the new Supervisory Control and Data Acquisition (SCADA) platform is nearing completion. Starting next month, individual site assessments will be conducted to determine and document the optimal installation locations for placement of the 4G antennas.

2. Instrumentation staff completed Programmable Logic Controller (PLC) programming and graphics to the Chesapeake-Elizabeth Pilot Plant in support of moving bed biofilm reactor glycerol dosing project. The pilot effort was accomplished in conjunction with DC Water and GrayMatter, a Canadian operational technology firm.

3. Following positive results from initial software testing of the virtualized desktop and laptop initiative, application testing is being expanded to include mobile and cloud-based applications. Upon completion of this testing phase, a broader group of HRSD computer users will participate in validating the full functionality and performance of the virtualized applications.

4. The newly redesigned HRSD web site will go-live in May.

B. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0

2. Number of Community Partners: 0

C. Monthly Metrics

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Training During Work Hours Per Full Time Employee (50) – Current Month	Total Training Hours / # FTE	4.36
M-1.4b	Total Training During Work Hours Per Full Time Employee (50) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	31.12
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,
Don Corrado

TO: General Manager

FROM: Director of Operations

SUBJECT: Operations Report for March 2018

DATE: April 5, 2018

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

a. North Shore System

1) There were four system alarms during the month; all were investigated and resolved.

2) Staff coordinated with a company located on Terminal Avenue in Newport News after they reported problems with their connection to our force main. After investigating, we determined that in 1998 HRSD completed a force main slip lining rehabilitation project. As part of that project, customers were reconnected to the force main at HRSD's expense. In this case, the connection to the company's line was missed and not properly secured to the slip lining. Consequently, since 1998, the company discharged its wastewater into the area between the lining and the original pipe. HRSD is working directly with the company to reestablish a proper connection.

3) Staff participated in Supervisory Control and Data Acquisition (SCADA) testing at the Victoria Boulevard Pump Station (PS) and the Coliseum Pressure Reducing Station (PRS) and Off-line Storage, along with several remote sites.

4) Staff continued the GPS locating of appurtenances and infrastructure recently received from the Town and County of Surry. These activities have uncovered a number of conditional issues that will need to be corrected over time.

5) Staff continued to implement corrective actions and repairs to the Surry systems. HRSD is slowly getting these facilities into proper operational condition.

2. South Shore (SS) Interceptor Systems

a. Staff repaired an inoperable mainline valve on Jamestown Avenue in Portsmouth. Staff from the Support Services Division fabricated new gears for the broken gearbox.

b. Staff completed the pouring of a concrete pad at the Chesapeake-Elizabeth Treatment Plant (CETP) on which they will construct a storage shed for the Water Technology and Research division.

c. Staff continued cleaning the Regional Residuals Facility at the Nansemond Treatment Plant (NTP) as well as cleaning the septic well at the CETP.

B. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

a. On March 8, the analyzer for the incinerator stack's continuous emissions monitoring (CEMS) unit failed. A backup unit was installed. The CEMS unit monitors the incinerator's total hydrocarbons.

b. On March 22, there was an air permit deviation when the average pressure differential across the induced fan dropped below the minimum level permitted. Staff discovered a partially blocked draft tube that created the issue. The draft tube was cleared and the pressure differential returned to normal.

c. On March 31, there was a similar air permit deviation when the air flow was short-circuited through the incinerator feed chute doors and the sand seal. Staff corrected the issue by cleaning the feed chute doors and re-filling the sand seal.

d. On March 23 an odor exception of 4.5 parts per million (PPM) hydrogen sulfide (H2S) was observed at odor control station A which a pH probe malfunctioned.

e. The aeration mixing system in #1 aeration tank was not operating correctly. Staff identified the root cause of the issue and corrected the problem. By correcting this problem and putting the tank in service, a contractor is now able to complete the structural work needed in aeration tank #2.

f. Work at the methanol tank continues with some minor setbacks delaying the startup of this system to mid- April.

g. Staff replaced the air compressor control module for incinerator #1. The air compressor was not restarting when the air pressure dropped below the set point. This new module is designed to allow the restart of the air compressor when it drops below air pressure set point.

2. Atlantic Treatment Plant (ATP)

a. On March 15 there was a non-potable water (NPW) line break when contractors exposed the six-inch line for the construction of the Thermal Hydrolysis Process (THP) project. The spill resulted in a 10,000 gallon spill. 9,500 gallons were recovered and only 500 gallons were absorbed into the ground.

b. There were 12 odor exceptions over two days March 15-16. They occurred on the same day when caustic feed was turned off to make a repair to the supply line coming from the storage tanks and supply of non-potable water (NPW) was shut down due to the line break. Exhaust readings returned to normal once NPW and chemical feed were restored.

c. Construction of the THP and the administration building continues.

d. Contractors and staff overhauled barscreen #3. Parts replaced included 160 side plates, back supports, upper and lower side seals and new foot brush and new bucket system designed to help remove large rags from the influent channel. This was the second of three screens to be completed and should improve rags screening at the headworks.

e. Staff from Electrical and Energy Management (EEM) Division completed replacement of primary 1- 4 MCC (Master Control Center). This project replaced the old water-damaged MCC with controls and breakers.

f. Testing began on the EDS (Enterprise Data Server) system. Data continues to be collected and compared against the current Daily Plant Operations Report (DPOR). After two to three months of successful parallel recordings, the new EDS system will go live and will replace the outdated Excel based DPOR.

3. Boat Harbor Treatment Plant (BHTP)

a. On March 2, a power loss caused by high winds resulted in an air permit deviation for use of bypass stack for 18 minutes. The strong winds would not allow the induced draft fan to create a negative draft in the incinerator.

b. Nitrification suffered this month. As expected, the seasonally low temperatures began to climb, until multiple rain events brought cooler influent to the plant. Along with the cooler temperatures, we experienced multiple days of elevated conductivity/salt water in the influent as a result of abnormally high tidal events. The spikes in saltwater caused erratic readings on the various probes. This required a significant amount of staff time to maintain and troubleshoot the instrumentation and controls for the aeration process responsible for the nitrification and denitrification.

c. Staff completed the rehabilitation of the #4 primary clarifier. This project included replacement of upper flight brackets and tracks with fiberglass material.

d. Staff replaced the drive unit and rake assembly on # 2 bar screen due to damage from broken track bolts.

4. CETP

a. An air permit deviation occurred on March 5th, as the result of a scheduled burnout when the less- than-minimum average pressure dropped below required level.

b. Staff repaired two ferric pumps, one septic pump and one grit classifier.

5. James River Treatment Plant (JRTP)

a. Staff completed piping modifications on the #2 grit cyclone-classifier to provide grit slurry feed options to all three cyclone-classifier units.

b. Staff replaced the #2 gravity thickened solids pump, rebuilt two primary solids pumps, and installed a the repaired #2 centrate side stream treatment feed pump.

c. Last month, staff completed the installation of a lobe pump with the idea they would create less turbulence when pumping struvite. Turbulent environments tend to promote struvite formation. We were pleased to find that there was no struvite accumulation this month on lobe pumps

installed to transfer centrifuge centrate from the centrate wet well to the centrate equalization tanks.

d. Piping from the magnesium hydroxide injection and mix tank to the centrifuge feed pumps on the magnesium hydroxide feed project is complete.,

e. A contractor continued work on coating steel and concrete on the grit tanks. Grit tanks #3 and #4 are complete. The contractor will move on to grit tanks #1 and #2.

f. A contractor erected the new digester MCC building. The building will allow for removal and replacement of old breakers in the digester basement.

g. On March 12 the plant lost utility power that resulted in a subsequent electrical problem at odor control station A requiring the shutdown of the system for 14 hours. Once the electrical repairs were completed the system was returned to service.

6. NTP

a. Staff from the Electrical and Energy Management Division replaced the MCC for #1 & #2 primary clarifiers that were badly corroded.

b. Staff from the machine shop fabricated three new stainless steel connecting blocks for the influent bar screen gates that were corroded and prone to failure. New slide gates and stems were purchased and are in the process of installation.

c. Staff is in the process of rebuilding the Regional residual Facility (RRF) failed bar screen.

7. Virginia Initiative Plant (VIP)

a. Three separate power loss events on March 6 and a brief power anomaly on March 19 resulted in four air permit deviations when the ID shut down.

b. A damaged NPW line leaked onto the ground near the aeration tanks on March 15. Less than 300 gallons of NPW were lost onto the ground.

c. Contractors installed three of six new Anoxic Recycle (ARCY) pumps. These pumps will provide reliable operation and increase flow.

d. Staff prepared for air permit stack testing, conducted on March1. Preliminary field results for Incinerator #1 look promising.

e. Staff developed and implemented a plan to safely clean the incinerator off-gas scrubber tower media and mist eliminator.

8. Williamsburg Treatment Plant (WBTP)

a. There were two reportable odor events for odor control system shutdowns. One unplanned shutdown was caused by instrumentation failure and the second was due to a planned shutdown of an odor station in order to perform maintenance on an electrical substation.

b. Staff conducted a nighttime flow diversion to an empty primary clarifier to conduct maintenance on an electrical substation. Due to the loss of nonpotable water during shutdown of the substation, the incinerator was also taken off line.

c. Staff replaced a large screw conveyor in the dewatering building.

9. York River Treatment Plant (YRTP)

a. Mobilization by the contractor began for replacement of the digester cover.

b. Vibration analysis of equipment was performed by a contractor.

c. Staff from North Shore Interceptor Services cleaned out the centrate line of solids.

C. Small Communities

1. Small Communities Division – Middle Peninsula

a. SC Treatment:

1) West Point Treatment Plant (WPTP)
In-house design work continues on the WPTP Tertiary Filter, Aerobic Digester aeration upgrade and the Pond pumping and mixing upgrade.

2) Urbanna Treatment Plant (UBTP)
The construction of the new lab is almost complete. The beautification phase of the plant rehabilitation is also almost complete. The fine bubble diffuser installation in train 2 was completed this month and both trains are now operational.

3) King William Treatment Plant (KWTP)
Staff is planning to make train #1 operational by the end of June.

4) Central Middlesex Treatment Plant (CMTP)
The new VDOT Saluda office is nearing completion and will tie into the existing sanitary sewer system.

b. SC Collections:

1) King William System
The Main Plant influent pump station continues to utilize the bypass pump as the primary station pump while we wait for the new engineered pump to arrive. Staff will install this new pump and piping when delivered.

2) Urbanna System
The Cross-Street PS rehabilitation construction has commenced and is progressing well.

2. Small Communities – Surry Systems

a. Town of Surry

1) The Rotating Biological Contactor (RBC) #1 was taken out of service for the month when a bearing failed. All flow was therefore shifted to RBC #2. With only one unit running, effluent levels had elevated TKN numbers. RBC #1 is scheduled for repair in early-to-mid April.

2) The chemical tubing ruptured, forcing staff to suspend chemical feed for metals removal in the month of March.

3) One of the drum filters was repaired, but not yet placed back into service. Additional work on the backwashing improvements are still needed to get the filter working properly. The second drum filter will need to be completely rebuilt in the future as well.

4) The following exceedances were reported for the month of March:

	Limit Type	Unit	Permit Limit	Reported Value	Number of Exceedances
TSS	Monthly average	MG/L	3.0	3.3	1
	Weekly loading	G/Day	1,000	1,060	1
Copper	Monthly average	UG/L	3.8	5.0	1
	Weekly average	UG/L	3.8	5.0	1
				Total	4

b. County of Surry

Operations of the County of Surry TP continued without issue during the month.

D. Support Systems

1. Automotive

a. Atlantic Treatment Plant's (ATP) #1 combined heat and power (CHP) generator unit remains out of service. The turbocharger was refurbished and the expected delivery date is April 3, at which time the turbocharger will be installed and tested.

b. On March 6, the Central Environmental Laboratory (CEL) generator was tested with a load bank in accordance with the National Fire Protection Association's guidelines for stand-by generators. Staff conducted the test. A contractor's technician was on hand and monitored the engine and generator for issues. No issues were noted. The engine operated as designed.

c. Staff performed load bank tests at Camden Avenue, Ferguson Park, Triton Court, and Williamsburg PSs and at the NS and SS Main Office Complexes. All generators operated as designed and were returned to service.

2. Condition Assessment

a. Condition Assessment (CA), through use of Closed-Circuit Television (CCTV), inspected 3,816 LF of gravity force main, completing the inspection of lines SG-196 and SG-072. Staff supported SS Interceptor Operations with CCTV of line at Victory Boulevard and Ivy Home Road (NG-142) and supported the Small Communities Division (SCD) with CCTV of line on 2nd Street in West Point.

b. Staff coordinated with the City of Norfolk for the shutdown of Woodland Avenue for a contractor to complete work in the new manhole. Staff re-inspected manholes on Bayshore Lane after rehabilitation work was complete.

c. The coatings work continues on the interior walls and ceiling of NTP digester #2. Coating of the interior piping and last touch-ups remain.

3. Facilities Maintenance

a. The construction of new condition assessment offices began at NTP.

b. Contractors installed a 2-ton mini-split air-conditioning unit for additional cooling requirements for the Information Technology Department (ITD) pod at the BHTP.

c. Staff finished carpentry work at the new lab at the UBTP and completed fabricating and installing cabinets in box truck #526 for the Water Quality Department.

d. Staff rebuilt the #1 pump at Arctic Avenue PS, a grit pump at WBTP, the #2 pump at NTP and the #3 Returned Activated Solids (RAS) pump at CETP.

e. Staff completed other projects to include fabricating a valve operator for SS Interceptor Operations, re-designing sluice gate brackets for ACME shafting at NTP, fabricating 80 shear pins for BHTP, and fabricating drive and tail shafts for a screw conveyor at WBTP.

E. Electrical and Energy Management (EEM)

1. Staff worked with the medium voltage contractor to perform a condition assessment on the emergency switchgear at BHTP. Replacing breakers and appurtenances in the existing switchgear frame in lieu of new switchgear and a new building will extend the life of the existing switchgear until more is known about the plant's future electrical needs.

2. Staff completed the installation of Schweitzer Engineering Laboratories (SEL) power meters at ABTP last month at the main switchgear and solids handling building MCC. The team worked with Information Technology (IT) this month to install software on a virtual server to interface with the power monitoring equipment at the plant. The software captures power anomaly data details, sends out alarm notifications to viewers and allows remote viewing.

3. Staff completed the installation of MCC's at ATP and MCC 102 at NTP this month. The team continues to prepare for the installation of MCC 600 and MCC 800 at NTP. These projects require many hours of preparation because the old MCCs have to stay in service until all feeders and controls for critical equipment are installed and the loads transferred to the new MCCs.

4. Staff is providing technical support to help reduce TKN influent levels at the the Sustainable Water Initiative for Tomorrow (SWIFT) Research Center at NTP. The team is evaluating HACH (manufacturer) Nitratax nitrate sensor probes for improved monitoring and control of methanol pumping as well as other instrumentation equipment.

5. Staff participated in the design, construction and installation of air blast systems for nitrogen probes at VIP. Staff also assisted with PH control, phosphorus testing and installation of a 14-channel data recorder for the Biological Nitrogen and Phosphorous Removal (BNR) CETP.

6. Staff assisted with redesigning the hydrogen sulfide (H_2S) sampling system at NTP.

7. Staff coordinated with an electrical contractor and SS Interceptor Operations to replace the obsolete Flomatchers (manufacturer) with new variable frequency drives (VFD's) at Arctic Avenue PS. Additionally, a new SCADA control panel, motors, motor controls and the control wiring were interfaced with the equipment while the station was bypassed.

8. Thermographic inspections were completed this month at ABTP, BHTP, NTP, VIP, WTP and SS PSs. These inspections identify abnormal heat signatures in the electrical equipment before they become a serious problem.

9. Strong winds were responsible for damaging a solar panel on a temporary conductivity site at BHTP. Staff replaced the solar panel and returned it to service.

10. Staff assisted a contractor with MV transformer oil sample removal/testing at ATP, CETP and WTP. The contractor pulled oil samples for testing and returned nitrogen pressure levels in the transformers to proper levels. The transformer providing power to the substation, US – 1, at WTP is showing signs of degradation and may have to be replaced. Reports are pending.

F. Water Technology and Research

The SWIFT Research Center is currently in startup mode with considerable activity occurring in the main process area. Equipment commissioning, water testing, control system functional testing, instrument installation, and final construction

activities occurred in March. At this stage, the significant deadline is to be injecting water into the aquifer and to have the water quality at a point that will allow tasting before May 18. While other tasks are also important in terms of substantial and final completion, the critical path is centered on water treatment and auxiliary process functionality. Those other tasks include remaining building structures, well head connection, finish and interpretive element work, landscaping, and final cleaning. After getting the treatment train successfully operating on Nansemond plant secondary effluent, our efforts will be directed at optimizing treatment as the biofilter slowly acclimates with needed bacterial biomass, and collecting samples to confirm that water quality is acceptable for injection.

G. MOM Reporting numbers

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

H. Strategic Measurement Data

1. Education and Outreach Events: 12

    a. ATP tour by Smithfield Foods employees
    b. CETP Staff attended STEM Event at Wilson High School
    c. CETP tour for ODU students
    d. NTP Plant Tour for Thomas Nelson Community College
    e. SS Interceptor Systems staff participated in Touch-A-Truck with Portsmouth Public Schools
    f. Hampton Roads Public Works Academy – Virginia Beach Technical and Career Education Center - 2
    g. Tidewater Community College Diesel Advisory Committee
    h. Charles Bott conducted a workshop presentation on Modeling Needs at WRRmod2018 Conference
    i. Alexandria Gagnon conducted a workshop presentation on Control System Needs at WRRmod2018 Conference
    j. Charles Bott hosted a visitor from Environmental Protection Agency Office of Groundwater and Drinking Water for tours and SWIFT briefings
    k. The NS Electrical Manager assisted Human Resources with the Career Fair at Huntington Middle School in Newport News on March 29.

2. Community Partners: 8

    a. Chesapeake Bay Foundation – oyster cage maintenance at BHTP for oyster gardening program
    b. Virginia Institute of Marine Science
    c. Old Dominion University
    d. Wilson High School
    e. Portsmouth Public Schools
    f. Hampton Roads Public Works Academy (HRPWA)
    g. Tidewater Community College
    h. Huntington Middle School

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (510) – Current Month	Hours / FTE	2.88
M-1.4b	Total Training During Work Hours per FTE (510) – Cumulative Year-to-Date	Hours / FTE	28.96
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	30,931.4
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	48.23
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	19.52
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	32.25
M- 4.1a	Energy Use: Treatment *reported for February 2018	kWh/MG	2,663
M-4.1b	Energy Use: Pump Stations *reported for February 2018	kWh/MG	177
M-4.1c	Energy Use: Office Building *reported for February 2018	kWh/MG	92
M-5.2	Educational and Outreach Events	Number	12
M-5.3	Number of Community Partners	Number	8

Respectfully submitted,

Steve de Mik
Director of Operations

TO: General Manager

FROM: Special Assistant for Compliance Assurance

SUBJECT: Monthly Report for March 2018

DATE: April 6, 2018

A. Submittals Completed in March 2018 – None required in March.

B. Activities

1. **Phase 6 – Rehabilitation Plan**. Ongoing system rehabilitation work associated with Prompt Repairs or other items in the Sewer Repair (SR) contract is as follows:

   - SR 037 – Bayshore Lane: Addressing manhole repair issues prior to closing out project.
   - SR 040 – Woodland Avenue: Construction underway to replace sections of gravity sewer and rehabilitate manholes.
   - SR 055 – Hampton University: Draft work order developed to repair influent gravity to HRSD pump station.
   - SR 069 – Powhatan Manhole: Work being scheduled for construction.

2. **Phase 7 – Regional Wet Weather Management Plan.** Several rounds of comments and requests for additional information have been exchanged with the EPA on the Integrated Plan/Regional Wet Weather Management Plan mainly regarding HRSD's financial capability. The latest response was provided on March 23 regarding use of the financial model. .

3. **Phase 8 – EPA Consent Decree Services.** HRSD continues sharing information with the localities through the regional SharePoint site and flow, pressure and rainfall data portal. A Capacity Team meeting was held on **March 19** to review overall program status, MOM efforts of the localities, and the revision to the Memorandum of Agreement with the localities.

4. **Phase 9 – Supplemental Services.**

   The deadline of February 23 for completion of all Consent Decree Interim System Improvement (ISI) projects (except Bridge Street PS and VIP Improvements due later this year) was achieved. A Quarterly Interim System Improvement /Rehab Project Plan Update meeting was held on **March 12**.

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

on the next major update. MOM Update workshops were held on **March 19, 21, 22, 26, 28 and 29** with North and South Shore staff to update various MOM sections.

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

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

- FMP2 039 Bowers Hill: Work is in progress to inspect the force main.
- FMP2 049 Shore Drive (Reservoir Group): Ground penetrating radar (GPR) field scanning is underway. Refinement of proposed dig site locations will follow based on profile results.
- FMP2 050 Laskin Road: Follow-up potholing based on GPR results has been completed to more precisely identify location of high spots. Evaluation of pothole results in context of GPR is ongoing.
- FMP2 051 Independence Blvd: Rescan with GPR from Broad St. to Jeanne St. is planned for the first week of April. Follow-up potholing based on GPR results is planned to more precisely identify location of high spots.

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

- The following draft work orders are under review:
    - GMP2 056 Jefferson Avenue Closed Circuit Television (CCTV)
    - GMP2 059 NS Siphons FY18
    - GMP2 060 SS Siphon FY18

- The following Small Communities Division (SCD) work orders in King William have been signed and work in this area is anticipated to start in FY19:
    - GMP2 SCD 026 Main Pump Station
    - GMP2 SCD 027 Commerce Pump Station
    - GMP2 SCD 028 Central Crossing
    - GMP2 SCD 029 McCauley Park Pump Station
    - GMP2 SCD 030 Kennington Pump Station
    - GMP2 SCD 033 School Pump Station
- Additional work orders are under development:
    - GMP2 SCD 031 Urbanna Manholes
    - GMP2 SCD 032 King William Manholes
    - GMP2 SCD 034 Matthews

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

C. Next Submittals

1. Sanitary Sewer Overflow Response Plan – April 2018

2. Semi-Annual Report – May 1, 2018

D. Program Budget Status

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

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

   a. Monthly calls continue with the three co-chairs, Kyle Logue (Brown and Caldwell), Steve Motley (Virginia Beach Public Utilities), and Phil Hubbard (HRSD), coordinating the national VWEA/WEF Collections Specialty Conference, which will be at the Virginia Beach Convention Center, April 8-11, 2018. A social Event will be held at the Virginia Aquarium located at 717 General Booth Boulevard.

2. Number of Community Partners: 0

Item #	Strategic Planning Measure	Unit	March 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	40
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	0

Respectfully submitted,

Phil Hubbard, P.E.

Attachments: Consent Order State & EPA Expenditures

Consent Order State & EPA Expenditures

	Total Appropriation	March 2018 Obligations	Available Balance
Regional Consent Order and Other Consent Order Requirements			
Regional Hydraulic Model	$109,541,497	$108,866,204	$675,293
Locality System Monitoring and Condition Assessment	$20,609,636	$20,294,563	$315,073
Subtotal - In progress	$130,151,133	$129,160,767	$990,366
Completed Work			
Regional Consent Order and Other Consent Order Requirements		(Included in subtotal above)	
Master Metering Program III		$2,005,140	
Master Metering Program IV		$13,628,635	
Total		$144,794,542	

TO: General Manager

FROM: Director of Talent Management

SUBJECT: Monthly Report for March 2018

DATE: April 11, 2018

A. Human Resources (HR)

1. Recruitment

a. Recruitment Summary

New Recruitment Campaigns	12
Job Offers Accepted – Internal Selections	4
Job Offers Accepted – External Selections	4
Internal Applications	29
External Applications	104
Average Days to Fill Position	58

b. The Commonwealth of Virginia Science, Technology, Engineering and Math Industry Intern Program staff presented a program overview to the QST, including participation requirements and program benefits.

2. Enterprise Resource Planning (ERP)

a. HRSD worked with the Managed Services consultant on:

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

b. Accounting, Talent Management and Information Technology staff worked on 2017 Internal Revenue Service Affordable Care Act reporting. The electronic file was submitted and "accepted with errors." Minor corrections will be made and re-filed by the deadline.

c. Several ERP refresher training sessions were held at the main office.

3. Benefits and Compensation

a. HR and Finance staff worked with the benefit consultant on Fiscal Year 2019 medical plan renewal including cost projections and evaluation of new benefits. Staff participated in information meetings and webinars on health advocate and second opinion services.

b. Administrative issues with MD-Live services were resolved.

4. Wellness

a. Participation Activities

Year Six Participation Activities	Unit	March 2018	Year to Date (March 2018–February 2019)
Biometric Screenings	Number	2	2
Preventive Health Exams	Number	5	5
Preventive Health Assessments	Number	23	23
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	57	57
Web-MD Online Health Tracking	Number	148	148
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	19	19

b. Year-Five Wellness data was compiled and evaluated to identify employees earning the lowest deductible and incentives. Incentive payout information and appeal forms were sent to employees.

c. Employees and spouses completing the Diabetes 2 Risk Assessment earned health improvement credits to promote American Diabetes Association's Alert Day.

d. A five-week Outdoor Boot Camp class began at the Air Rail complex.

e. HR, Optima Employee Assistance Program and Wellness Program staff met to discuss stress management programming.

5. Workers Compensation

   Four new cases were opened with 14 cases remaining active.

6. Employee Relations

   a. Staff continued to partner with work center supervisors and employees to support employee relations, address HR issues, and assist with job descriptions and interview processes.

   b. HR, Accounting and Payroll staff continued to identify roles and outline ERP procedures for overlapping work processes.

7. General

   Staff participated in the following training:

   a. *Refresh Renew and Remember*
   b. Association of Training and Development (ATD) *Train the Trainer* Course
   c. Oracle Business Intelligence Report training
   d. Emotional Intelligence Training
   e. ERP Refresher Training
   f. Virginia Retirement System Process Changes webinar

B. <u>Organization Development and Training (OD&T)</u>

1. Several training classes were held including Refresh, Renew and Remember, Supervisor Training, Coaching Forum, Leadership Forum and Emotional Intelligence intensives. All of the trainings were well attended, received positive feedback and achieved course objectives.

2. The Leadership Facilitators continued to revamp the Leadership and Management Program (LAMP) to further engage learners based on feedback and observations made during previous LAMP sessions.

3. The OD&T Manager continued working with Operations on an abridged Supervisor Workshop for Lead Operators.

4. The *Creating Effective Collaborative Meeting* pilot was presented to the QST and received concurrence to add to OD&T's course offerings. The class will also be developed an e-learning format.

5. The Project Management workshop team continued to make progress and gather information to create relevant training examples.

6. Staff continued cross-training to improve e-learning software skills.

7. The Training Manager was selected for the International Public Management Association's (IPMA) 2018 Benchmarking Committee. The committee will design a survey to address national membership needs in relation to hiring, developing and retaining millennials, expanded use of data, work-life balance and employee wellness, and workplace issues including harassment and diversity and inclusion.

8. Apprenticeship Program

    a. Exam Proctoring procedures were revised and implemented.

    b. Staff continued to enter historical training and apprenticeship program information into ERP and scanned historical records.

    c. The Training Superintendent conducted the quarterly Apprenticeship Representative meeting to obtain feedback for program improvement.

    d. Updates to the Apprenticeship Manual continued. Pay policies for day class attendance were clarified based on HR input.

    d. The Training Superintendent performed the following in relation to Apprenticeship courses:

        (1) Evaluated *Wastewater Analysis and Wastewater Laboratory* course for conversion to an online format and revision of the Laboratory component to align with Plant Operator functions
        (2) Revisions to *Disinfection* curriculum
        (3) Revisions to *Collection System Maintenance* curriculum

9. General

    Staff participated in the following training:

    a. Sacramento State Office of Water Program's Online wastewater treatment training
    b. Articulate Storyline e-Learning Certificate
    c. Coaching Ethics and Risk Management
    d. Coaching Individual Intensive

e. ATD *Train the Trainer* Course
f. Virginia IPMA Conference
g. e-Learning Brothers' *Games & Gamification* Webinar
h. Schoology's webinar, *The What, How, & Why of Digital Citizenship*
i. Edward Tufte's *Presenting Data & Information* course

C. Safety

1. Mishaps and Work Related Injuries

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

	2017	**2018**
Mishaps	42	7
Lost Time Mishaps	10	1
Numbers subject to change pending HR review of each case.		

b. MOM Program Year Performance Measure Work Related Injuries

March 2018 Injuries For Operations	**March 2018 Injuries for Other HRSD Departments**	**Total Lost Time Injuries Since July 2017**	**Total HRSD Injuries Since July 2017**
2	2	7	29

c. A follow-up investigation was performed on four reported work-related injuries and one auto and/or property damage incidents.

d. Required rapid response investigation information for a work-related incident was submitted to Virginia Occupational Safety and Health Administration (VOSHA). The submittal received a satisfactory response.

2. HRSD Safety Training

Strategic Planning Measure	Unit	March 2018
Total Safety Training Hours per Full Time Employee (830) All HRSD – March 2018	501.7 Hours / 830 FTE	0.60
Total Safety Training Hours Per Full Time Employee (830) – Cumulative July 2017	3165.03 Hours / 830 FTE	3.81

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

   a. Five external briefings for contractors working at treatment plants (TP) and pump stations

   b. Forklift Safety Training for North Shore Operations employees

   c. Two Methanol Safety classes for Army Base TP employees

   d. Chain Saw Safety Training for North Shore Electrical and Energy Management (EEM) employees

   e. Overhead Crane and Aerial Lift Safety Training for South Shore EEM employees

   f. First Aid, Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED) Training Class for Technical Division (TSD) employees

4. Safety Inspections, Testing and Monitoring

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

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

b. Quarterly safety inspections of the following work centers:

(1) Atlantic TP
(2) Chesapeake-Elizabeth TP
(3) James River TP
(4) Small Communities TPs and Pump Stations
(5) South Shore Automotive, Carpentry, Electrical and Machine Shops
(6) South Shore Interceptor Systems
(7) Surry TPs
(8) Williamsburg TP

c. Monitoring and testing for the following:

(1) Monthly hood velocity tests on Central Environmental Laboratory and TSD lab hoods
(2) Air sampling within the CEL
(3) Air sampling within the CEL Hazardous Waste Storage Area during waste transfer
(4) Air sampling within TSD clean room
(5) Radiation screening of Army Base, Boat Harbor, Chesapeake Elizabeth, VIP and Williamsburg TPs incinerator ash samples
(6) Asbestos and lead survey of the Lee Hall pump station

d. Safety walk-throughs and evaluations

(1) Evaluated a new liquid oxygen tank installed at the SWIFT Research Center
(2) Evaluated Nansemond TP Methanol building equipment
(3) Reviewed safe handling practices for usage, storage and transport of compressed gases for TSD
(4) Evaluated Virginia Department of Transportation Personal Protective Equipment (PPE) requirements for Design and Construction (D&C)
(5) Reviewed safety records of construction management firms and provided feedback to D&C as part for a selection process

5. Safety Programs

a. Industrial Hygienist met with VIP staff to address Emergency Response Procedures and training.

b. Safety Manager met with Chesapeake-Elizabeth TP employees working in the incinerator facility to evaluate fall protection and develop a safe work practice.

c. The HRSD Safety Team planned the 2018 Safety Innovation Award.

d. The annual summary of work related injuries, vehicle accidents, workers compensation, auto claims and Safety Recognition Program results was presented to the QST.

e. The Methanol Safety Training program was updated to incorporate changes at Army Base TP.

f. Annual Respirator and Pulmonary Function testing began.

g. Workcenters began inventory of Hurricane supplies.

h. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

6. General

a. A pre-proposal meeting was held for the Prescription Safety Glasses Program Request for Proposal.

b. Staff participated in the following HRSD activities:

(1) HRSD Safety Team
(2) HRSD Uniform Committee
(3) HRSD MOM Workshop
(4) HRSD Strategic Planning team

D. <u>Monthly Strategic Planning Metrics Summary</u>

1. Education and Outreach Events: 13

a. City of Suffolk Local Emergency Planning Commission (LEPC)

b. Old Dominion University (ODU) Environmental Health Program Advisory Board meeting

c. City of Chesapeake Public Schools Career 2018 Fair

d. City of Suffolk Center for Technical Education Mock Interviews

e. City of Newport News Hines Middle School Career Pathways Fair

f. City of Newport News Huntington Middle School Career Day

g. New Horizons Career and Technical Education Center Career Awareness Day

h. Norfolk State University Career Fair

i. City of Norfolk Technical Education Center Mock Interviews

j. ODU Spring Career Fair

k. Peninsula Chamber of Commerce Youth Career Expo

l. Regent University Career Fair

m. Youth Career Center of Hampton Roads and Opportunity Incorporated NextGen Career Fair

2. Community Partners: 9

a. City of Newport News Public Schools

b. City of Norfolk Technical Education Center

c. City of Suffolk Technical Education Center

d. New Horizons Career and Technical Education Center

e. Norfolk State University

f. ODU

g. Peninsula Chamber of Commerce

h. Regent University

i. Youth Career Center of Hampton Roads

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	March 2018
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.76
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.00
M-1.4a	Total Training Hours Per Full Time Employee (15) – Current Month	Total Training Hours/ FTE	7.87
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	36.82
M-5.2	Educational and Outreach Events	Number	13
M-5.3	Community Partners	Number	9

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for March 2018

DATE: April 10, 2018

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.

2. The Director attended a meeting in Washington, DC, organized by the Water Research Foundation, focused on concerns regarding rising chloride levels relative to potable water sources. Many of the meeting participants expressed concern over the unregulated use of salts on roads to reduce icing and improve safety for vehicular traffic. These salts eventually wash off from the roads and reach groundwater and surface waters that feed into potable water sources. There is growing awareness nationally that the total dissolved solids of salts, including but not exclusive to road salts, are increasing in concentration gradually in surface waters. This can be problematic because these dissolved solids can cause instream toxicity to aquatic life, increase the corrosive nature of water, and affect the acceptability of water for human consumption. Further complicating this issue is the fact that the removal of dissolved solids can only be achieved through expensive reverse osmosis technologies. This issue is important not only for utilities and localities providing drinking water, but any facility that conveys water or wishes to reuse water. The Director will continue to participate in activities related to this topic to ensure that HRSD can adequately communicate the challenges associated with this issue and to help the organization address this issue where and when needed.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) did not report activity for the month of March.

2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

1. HRSD provided sampling and analytical services to Bedford, Stafford, and Westmoreland Counties to support their Virginia Pollution Discharge Elimination System (VPDES) permit application processes.

2. The Municipal Assistance Billed Reimbursements per service collected between January 1 and March 31, 2018 are attached.

3. The Municipal Assistance Invoice Summary for the first quarter of the 2018 calendar year is attached.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 8

   a. The Central Environmental Laboratory (CEL), P3, and Technical Services Division (TSD) staff participated as judges in the Tidewater Regional Science Fair.
   b. CEL staff hosted an environmental science college student for a day of job shadowing in all sections of the laboratory.
   c. CEL staff provided tours to both high school and college students studying environmental science or other related fields.
   d. CEL, P3, and TSD staff conducted a laboratory tour for Old Dominion University students.
   e. P3 staff participated in the STEAM Fair at Western Branch Primary school.
   f. P3 staff participated in the STEAM Fair at Greenbrier Middle School.
   g. P3 staff participated in the STEAM Expo at Wilson High School.
   h. P3 staff performed work as lead coordinators for the Water Quality Department for Clean the Bay Day 2018.

2. Community Partners: 10

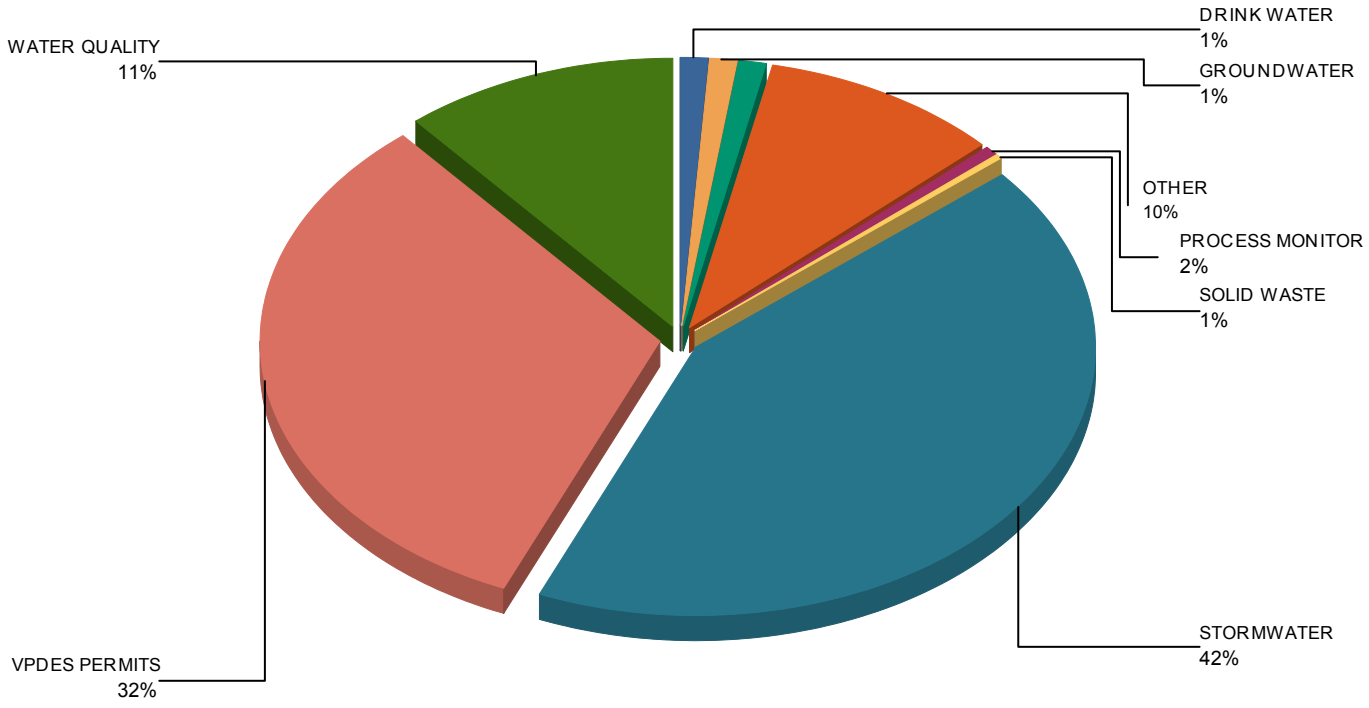
   a. City of Norfolk
   b. City of Newport News
   c. Virginia Department of Health Division of Shellfish Sanitation
   d. Virginia Department of Environmental Quality
   e. Occoquan Laboratory
   f. City of Suffolk
   g. Elizabeth River Project
   h. Virginia Department of Health Office of Epidemiology
   i. United Way
   j. City of Chesapeake

Item #	Strategic Planning Measure	Unit	March 2018
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	5.63
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	38.61
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	9:43,412
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	141,929,484
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	18%
M-5.2	Educational and Outreach Events	#	8
M-5.3	Community Partners	#	10
	Average Daily Flow	Total MGD for all Treatment Plants	163.02
	Industrial Waste Related System Issues	#	0

Respectfully submitted,
James Plettl, PhD
Director of Water Quality

Municipal Assistance Billed Reimbursements per Service
From 01/01/2018 to 03/31/2018

Attachment 1



Notes: Other = Equipment purchase, consultation, validation studies, boater pump-out program, etc.

Municipal Assistance Invoice Summary
From 1/1/2018 - 3/31/2018

Municipality	Reimbursments
Accomack County	$1,446.87
Bedford County PSA	$10,234.20
Buckingham County	$575.49
City of Chesapeake	$2,346.38
City of Emporia	$243.09
City of Fredericksburg	$632.95
City of Lynchburg	$2,780.56
City of Norfolk	$5,210.55
City of Portsmouth	$4,225.96
City of Suffolk	$5,628.70
City of Virginia Beach	$5,083.66
HRPDC	$50,402.71
Hanover County	$490.86
New Kent County	$8,258.38
Northampton County WWTP	$1,537.44
Northumberland Co. - Callao WWTP	$1,365.69
Spotsylvania County	$628.68
Stafford County	$95.51
Town of Cape Charles	$5,736.16
Town of Lawrenceville	$504.12
Town of South Hill	$237.50
Virginia Department of Health	$8,714.71
Warsaw WWTP	$462.18
Western VA Water Authority	$5,747.78
Westmoreland County	$965.02
Total Reimbursements 1st Quarter	**$123,555.15**

Hampton Roads Sanitation District
Internal Audit Status
March 31, 2018

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

I. *Projects in Process*

Engineering Procurement Process Review

- **Tasks Completed (March 2018)**
  - Received and reviewed management action plans
  - Presented audit results to HRSD management and Commission

- **Upcoming Tasks (April 2018)**
  - Work with management to complete action plans and finalize report

IT: Network Security/ Cybersecurity

- **Tasks Completed (March 2018)**
  - Presented audit results to HRSD management and Commission

- **Upcoming Tasks (April 2018)**
  - Address management and Commission questions, as necessary

Corporate Governance: Ethics Function

- **Tasks Completed (March 2018)**
  - Received and reviewed management action plans
  - Presented audit results to HRSD management and Commission

- **Upcoming Tasks (April 2018)**
  - Work with management to complete action plans and finalize report

Risk Assessment: Year 3 Refresh

- **Tasks Completed (March 2018)**
  - Provided risk assessment results and proposed audit plan details to HRSD management and Commission

- **Upcoming Tasks (April 2018)**
  - No additional tasks related to this project are planned for April

Treatment Plant Operations

- **Tasks Completed (March 2018)**
  - Conducted walkthrough and follow-up meetings with process owners
  - Documented process understanding flowchart and narrative documentation
  - Prepared project risk and control matrix
  - Finalized project objectives and began preparation of audit program

- **Upcoming Tasks (April 2018)**
  - Finalize audit program details
  - Obtain process documentation and perform fieldwork
  - Begin drafting audit report

Customer Care: Assessment and Test of Design

- **Upcoming Tasks (April 2018)**
  - Identify key process owners
  - Prepare audit planning and entrance meeting materials
  - Schedule and conduct audit entrance meeting

II. Upcoming Projects (FY2018)

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

- Q4- Finance and Accounting: Customer Care: Assessment and Test of Design

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.

			Recommendations		
Audit	**Report Date**	**Next Follow-up**	**Closed**	**Open**	**Total**
D&C: CIP Project Management	5/11/2016	Dec-18	11	2	13
Biosolids Recycling	10/8/2016	Aug-18	7	1	8
HR Benefits	11/22/2016	May-18	12	3	15

Annual Metrics

Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%	6.66%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67
M-1.4	Training Hours per Employee - cumulative fiscal year-to-date	Hours	> 40		30.0	43.8	37.5	35.9	42.8	49.0	48.4
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	< 3.5	6.57	6.15	5.8	11.2	5.07	3.87	7	5.5
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	< 1.1	0.74	1.13	1.33	0.96	1.4	0.82	1.9	1
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	< 0.8	3.72	4.27	2.55	4.5	2	1.76	3.6	2.8
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%
M-2.3a	Total Maintenance Hours	Total Available Mtc Labor Hours Monthly Avg			16,495	22,347	27,615	30,863	35,431	34,168	28,786
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	5%
M-3.3	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.45	1.58
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2205	2294
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%	1.3%
M-4.3	Total Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow		$1,028	$1,095	$1,174	$1,232	$1,249	$1,279	$1,246	$1,285
M-4.4	Affordability	8 CCF Monthly Charge/ Median Household Income	< 0.5%		0.48%	0.48%	0.41%	0.43%	0.53%	0.55%	0.59%
M-4.5	Total Operating Cost/MGD	Total Operating Expense/ 365/5-Year Average Daily Flow		$2,741	$2,970	$3,262	$3,316	$3,305	$3,526	$3,434	$3,592
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	73%
	Senior Debt Coverage	Net Revenue/Senior Annual Debt Service	> 1.5	2.51%	2.30%	2.07%	1.88%	1.72%	1.90%	2.56%	3.10%
	Total Debt Coverage	Net Revenue/Total Annual Debt	>1.4	1.67%	1.67%	1.46%	1.45%	1.32%	1.46%	1.77%	1.93%

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

Monthly Updated Metrics

Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18 Feb-18	FY-18 Mar-18
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	155.6	163.0
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	0	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	103%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	113%
	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	$24,142,328	$21,279,225
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	17%	19%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	0	0
M-3.1	Permit Compliance	# of Exceedances to # of Permitted Parameters	0		12:55,045	1:51995	2:52491	1:52491	2:52491	2:52,491	9:53236	9:38588	9:43412
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	0	0
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	125,287,756	141,929,484
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	18%	18%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	37	46
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	30	35

EFFLUENT SUMMARY FOR MARCH 2018

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBl	ENTERO #/UBl	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	TKN mg/l	NH3 mg/l	CONTACT TANK EX
ARMY BASE	11.79	65%	5	6.6	8	2	0.51	0.66	7.0	7.8	NA	NA	11
ATLANTIC	27.25	50%	13	8.8	2	<1	NA	NA	NA	NA	NA	NA	1
BOAT HARBOR	17.72	71%	8	11	3	3	0.63	0.50	19	16	NA	NA	2
CENT. MIDDLESEX	0.010	38%	<2	1.2	1	<1	NA	NA	NA	NA	NA	NA	NA
CHES-ELIZ	18.86	79%	17	13	21	3	0.71	0.83	30	30	NA	NA	6
JAMES RIVER	14.99	75%	4	5.4	1	1	0.26	0.33	9.9	9.3	NA	NA	2
KING WILLIAM	0.043	43%	<2	<1.0	NA	<1	0.020	0.018	1.0	1.5	0.80	NA	NA
NANSEMOND	18.22	61%	5	5.8	3	4	1.1	1.5	4.1	4.9	NA	NA	4
SURRY, COUNTY	0.061	94%	1	1.7	NA	1	NA	NA	NA	NA	<0.5	NA	0
SURRY, TOWN	0.049	81%	9	9.0	NA	13	NA	NA	NA	NA	3.33	0.81	NA
URBANNA	0.038	38%	6	7.5	1	3	3.3	3.4	26	27	NA	0.08	NA
VIP	30.95	77%	6	3.9	2	1	0.63	0.50	7.7	8.5	NA	NA	1
WEST POINT	0.441	74%	21	17	1	2	2.5	2.6	18	19	NA	NA	0
WILLIAMSBURG	7.77	35%	3	3.2	3	1	0.48	0.39	3.0	3.3	NA	NA	1
YORK RIVER	14.84	99%	4	1.5	1	<1	0.20	0.21	3.3	3.5	NA	NA	4
	163.02												

	% of Capacity
North Shore	67%
South Shore	64%
Small Communities	64%

Tributary Summary

	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged YTD	Operational Projection CY18		Discharged YTD	Operational Projection CY18	
Tributaries	%	Lbs	%	%	Lbs	%
James River	23%	4,003,536	88%	19%	278,913	88%
York River	16%	240,338	83%	16%	15,203	79%
Rappahannock	64%	NA	NA	111%	NA	NA

Permit Exceedances:Total Possible Exceedances, FY18 to Date: 9:43,412
Pounds of Pollutants Removed in FY18 to Date: 141,929,484
Pollutant Lbs Discharged/Permitted Discharge FY18 to Date: 18%

Rainfall (inch)

	North Shore (PHF)	South Shore (ORF)	Small Communities (FYJ)
Month	2.89"	3.88"	2.63"
Normal for Month	3.77"	3.29"	3.42"
Year to Date Total	9.87"	9.12"	8.42"
Normal for YTD	9.83"	8.91"	9.35"

AIR EMISSIONS SUMMARY FOR MARCH 2018

	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
MHI PLANT	BZ Temp 12 hr ave (F)	Venturi(s) PD 12 hr ave (in. WC)	Precooler Flow 12 hr ave (GPM)	Spray Flow 12 hr ave (GPM)	Venturi Flow 12 hr ave (GPM)	Tray/PBs Flow 12 hr ave (GPM)	Scrubber pH 3 hr ave	Any Bypass Stack Use	THC Mo. Ave (PPM)	THC DC (%)	BZ Temp Daily Ave Days >Max
ARMY BASE	0	2	0	0	0	0	0	1	33	97	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	3	100	0
CHES-ELIZ	0	1	0	0	0	0	0	0	29	98	0
VIP	0	0	0	n/a	0	0	0	4	53	100	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	0	12	99	0

ALL OPERATIONS

DEQ Reportable Air Incidents:	0
DEQ Request for Corrective Action (RCA):	0
DEQ Warning Letter:	0
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	0
Odor Complaints Received:	0
HRSD Odor Scrubber H2S Exceptions:	13