



COMMISSION MEETING MINUTES  
December 18, 2018

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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-16
Lynch, Maurice P.	Commission Vice-Chair	1-16
Glenn, Michael E.	Commissioner	2-16
Lakdawala, Vishnu K.	Commissioner	Absent
Levenston, Jr., Willie	Commissioner	1-16
Rodriguez, Stephen C.	Commissioner	1-7
Taraski, Elizabeth	Commissioner	1-16
Templeman, Ann	Commissioner	1-16

1. **AWARDS AND RECOGNITION**

**Action: No action required.**

**Brief:**

a. Service Award

Chair Elofson presented a service award to Ms. Jennifer See who marked her 20th year of service with HRSD on December 3, 2018. Jennifer was hired in September 1991 as a Safety Specialist and worked in that position until January 1996 when she became the Safety Administrator at Southeastern Public Service Authority. She returned to HRSD in March of 2003 as the Safety Manager and that is the position she still holds today.

Jennifer is a graduate of Old Dominion University (ODU) where she received both a Bachelor of Science in Environmental Health and a Master's of Science in Community Health with a concentration in Environmental Health. She has been an ODU Environmental Health Program adjunct Professor since 2005. She also teaches classes for Virginia Tech's Continuing Education Program including the annual Wastewater Short School.

Jennifer is a Certified Safety Professional, an Associate Safety Professional, a Certified Hazardous Materials Manager, a Virginia Asbestos Inspector and Management Planner, and Asbestos Worker and Supervisor. She is certified by both the American Red Cross and American Heart Association as a CPR Instructor; certified to conduct Spirometry by National Institute of Occupational Safety and Health; and certified to conduct audiometric testing by the Council for Accreditation in Occupational Hearing Conservation.



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She oversees the Safety Division, responsible for all Safety Programs. She leads the HRSD Safety Team and has played an integral role in expanding existing programs and implementing new programs, including Safety Recognition, a HRSD Safety SOP, the Electrical Safety Program, Aerial Lift Safety Program, Virginia Department of Transportation Work Zone Training, Emergency Response Procedures for all work centers, and Superfund Amendments and Reauthorization Act Title III Reporting for all work centers. Since implementation of the Safety Recognition Program, the overall number of lost time accidents per year has decreased.

Jennifer is a member of the National Fire Protection Association and the National Safety Council. She represents HRSD on the Former Nansemond Ordnance Depot Board and is also on the ODU Environmental Health Curriculum Board. She was recognized by Virginia Tech's Wastewater Short School in 2014 for 10 years of Outstanding Dedication and Excellent Service. While at Southeastern Public Service Authority, she received the Dedication Award.

b. Awards

Chairman Elofson recognized and congratulated Mr. Travis Stevens, Pump Station Supervisor in South Shore Operations, who was recently recognized by the Virginia Department of Labor and Industry, receiving the Outstanding Apprentice award for 2018. Travis was one of only 25 Virginia Apprenticeship school graduates across the Commonwealth presented with this award at a November 30 ceremony. He was nominated by fellow HRSD staff for excelling during his apprenticeship. Travis has been with HRSD for five years.

**Attachment:** None

**Public Comment:** None





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2. **CONSENT AGENDA**

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

**Moved:** Maurice Lynch **Ayes:** 7  
**Seconded:** Stephen Rodriguez **Nays:** 0

**Brief:**

- a. Approval of minutes from previous meeting.
- b. Contract Awards
  - 1. [Financial Advisor Services](#) \$810,861
  - 2. [HVAC Maintenance and Repair Services for South Shore Complex](#) \$550,000
  - 3. [Mobile Workforce Software, Hardware, Implementation and Support](#) \$1,026,228
- c. Sole Source
  - 1. [Horizon Technology, Inc. SPE-DEX<sup>®</sup> 5000 and Smart Prep II Extractor System Preventative Maintenance, Repairs and Related Parts Contract](#)
  - 2. [Ovivo USA LLC Ovivo<sup>®</sup> Influent Screen Parts, Onsite Installation Assistance and Repairs](#)

**Item(s) Removed for Discussion:** None

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

**Public Comment:** None



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3. **SWIFT RESEARCH CENTER**

**Action: No action required.**

**Background:** The SWIFT Research Center has been in operation for more than six months. During that time we have learned a tremendous amount about advanced water treatment and managed aquifer recharge, critical control points, staffing impacts, operator training needs, sampling and analysis workload management, groundwater response, well operations, and countless other issues. The impact and importance of learning from a demonstration scale research center is much greater than we had anticipated. The SWIFT Research Center has already proven to be an outstanding investment; expanding our knowledge, developing a robust data set, and successfully recharging the Potomac aquifer with over 90 million gallons of SWIFT Water.

Staff recently discovered what appears to be some premature corrosion on some of the steel in several locations throughout the process equipment. Complete investigation into the extent of the corrosion and development of a corrective action plan requires suspension of operations at the SWIFT Research Center. We are moving quickly to get these items addressed during the warranty period. Staff is working with the design-build team to identify the appropriate corrective actions and implement those actions as soon as possible. Staff provided the latest information in a [briefing](#) at the December meeting.

**Discussion Summary:** Staff explained recent modifications of the hazard analysis and critical control points. We do have the flexibility to change those with careful notification and explanation.

Staff explained our monitoring for emerging contaminants is based on the National Water Research Institute's recommendations. We are monitoring for all the items that the State of California is proposing with the addition of one compound recently added into the analyte list. While they are not required as our official indicators, we do maintain monitoring for those compounds. We are considering the same wastewater characterization approach as California and several other states with potable reuse projects in place to determine indicator compounds for our full-scale implementation. We have been characterizing our waste stream over that last several years, and our future indicator compounds will be based on what is currently in our waste stream.

The Research Center has been in operation since April 2018 and staff did not anticipate corrosion issues. Corrosion of several steel tanks and associated equipment has created an elevated level of iron in SWIFT Water requiring a shutdown of recharge operations until the issue is resolved. All the corrosion found appears to be related to coating systems failure and should all be covered by the warranty on the building and equipment. Staff provided detailed explanations of the corrosion issues experienced



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within various pieces of equipment. During a planned shutdown in January, now extended into February, these coating repairs will be made along with other warranty repairs to the biofilters, the ozone injector, and the tasting station chlorination system. Several United States' based vendor representatives are on site at the Research Center today and are beginning their investigation. The biofilters and GAC (Granular Activated Carbon) contactors in the full-scale facilities will be concrete vessels, eliminating the potential for these types of corrosion issues. Due to the scale of the Research Center and with the desire to make it modular and changeable, stainless and coated steel tanks were chosen, which is reasonable for this size range. These designs and shapes have been in use for many years at other locations without these types of corrosion issues. We have received great cooperation from all vendors and parties involved and look forward to an expedient resolution. Staff anticipates the Research Center back in operation by end of February or soon thereafter, and this should not affect the schedule for full-scale implementation. A very good data set is in place based on previous operation of the Research Center, and the only limitation is that the water has not arrived at the conventional monitoring wells. We would like to see the SWIFT Water arrive there prior to submitting the full-scale permit application for Williamsburg SWIFT. We will submit the application on schedule and can submit an addendum with the data to modify as needed.

GAC utilization rate remains an important question. A clear indication of the expected full-scale GAC reactivation frequency may not be available prior to the Williamsburg SWIFT design. This impacts operating cost estimates, but will not affect the capital design. It is important to note the Nansemond Treatment Plant secondary effluent characteristics are different than the Williamsburg Treatment Plant and the prediction may not be exactly transferrable.

The SWIFT pilot system is still in operation and will continue to run during the shutdown.

**Attachment #2:** [Presentation](#)

**Public Comment:** None



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4. **SWIFT WATER RESOURCES ENGINEER  
GRANT AGREEMENT**

**Action:** Approve the terms and conditions of the HRSD SWIFT Water Resources Engineer Grant Agreement with the Virginia Department of Health (VDH) and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

**Moved:** Stephen Rodriguez  
**Seconded:** Willie Levenston

**Ayes:** 7  
**Nays:** 0

**Background:** SWIFT has added workload to HRSD staff as well as to staff at the VDH and the Department of Environmental Quality (DEQ). VDH has provided drinking water and public health expertise that is critical to SWIFT's success and public acceptance. VDH, however, is extremely resource-constrained having suffered through years of budget reductions and expanded duties. To ensure SWIFT continues to receive the appropriate level of review and coordination with VDH, we have proposed to provide funding of up to \$35,000 per quarter to VDH for a water resources engineer performing work directly related to SWIFT and water reuse issues. The initial term of this [agreement](#) is five years with the ability to renew for additional five-year terms.

**Attachment #3:** [Agreement](#)

**Public Comment:** None



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5. **ESTABLISHING THE POTOMAC AQUIFER MONITORING LABORATORY FOR INDEPENDENT THIRD PARTY TECHNICAL OVERSIGHT OF THE HRSD SWIFT INITIATIVE  
MEMORANDUM OF AGREEMENT**

**Action:** Approve the terms and conditions of the Memorandum of Agreement Establishing the Potomac Aquifer Monitoring Laboratory for Independent Third Party Technical Oversight of the HRSD SWIFT Initiative and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary, including deletion of the Coordinating State Agencies as parties to this agreement if their approval is unreasonably withheld.

**Moved:** Stephen Rodriguez **Ayes:** 7  
**Seconded:** Willie Levenston **Nays:** 0

**Background:** Lacking direct state regulatory oversight of aquifer replenishment has been identified as an issue from the first briefing about SWIFT to state regulators. In the summer of 2017 a large stakeholder group was convened to develop a proposal to address this gap in Virginia. That group identified the need to create an oversight structure similar to that created for the Occoquan Reservoir in northern Virginia in the 1970s. That structure calls for an independent monitoring lab and an oversight committee. The monitoring lab was proposed to be a jointly-operated entity within the Virginia university system. The stakeholder group identified Virginia Tech and Old Dominion as the appropriate partners to create and operate a newly established Potomac Aquifer Monitoring Lab (PAML).

The original plan was to create PAML and the related oversight committee through legislative action. With the failure to advance legislation last year, VT, ODU and HRSD moved forward with a separate agreement to establish the PAML. This [agreement](#) does that with a goal of standing up the PAML in July 2019. HRSD is obligated to provide funding for the lab for the initial five-year term.

**Attachment #4:** [Agreement](#)

**Public Comment:** None



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6. **SWIFT OVERSIGHT LEGISLATION**

**Action:** No action required.

**Background:** Lacking direct state regulatory oversight of aquifer replenishment has been identified as an issue from the first briefing regarding SWIFT to state regulators. In the summer of 2017 a large stakeholder group was convened to develop a proposal to address this gap in Virginia. That group identified the need to create an oversight structure similar to that created for the Occoquan Reservoir in northern Virginia in the 1970s. That structure calls for an independent monitoring lab and an oversight committee. The monitoring lab was proposed to be a jointly operated entity within the Virginia university system. The stakeholder group identified Virginia Tech and Old Dominion as the appropriate partners to create and operate a newly established Potomac Aquifer Monitoring Lab (PAML).

The original plan was to create PAML and the related oversight committee through legislative action. With the failure to advance legislation last year, staff has worked with DEQ and VDH to address their concerns and revise the proposed legislation accordingly. The attached [draft](#) has been submitted to Delegate Jones and Senator Mason for introduction in the 2019 session. With companion bills moving through both chambers, we hope to increase our chances of success. Staff will keep you informed regarding the progress of these bills throughout the session.

**Attachment #5:** [Draft Legislation](#)

**Public Comment:** None



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7. **PRETREATMENT AND POLLUTION PREVENTION HIGH STRENGTH SURCHARGE PROGRAM  
MODIFICATIONS FOR NON-PERMITTED COMMERCIAL FACILITIES**

**Action: No action required.**

**Brief:** The Surcharge Program, administered by HRSD's Pretreatment and Pollution Prevention (P3) Division, identifies non-domestic wastewater dischargers and assigns a surcharge rate to Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus and/or Total Kjeldahl Nitrogen (TKN) above domestic levels.

Historically, P3 would directly characterize the wastewater discharged by each non-permitted source whenever feasible. P3 accomplished this by performing an inspection of the facility to identify the business demographics and location of meters and sampling locations. If a sufficient sampling location was available, P3 field staff would perform a week-long monitoring survey. Samples were collected daily and submitted to HRSD's Central Environmental Laboratory (CEL) for analysis. If direct sampling of a non-permitted source was not feasible, an average BOD, TSS, TP and TKN concentration calculated from similar businesses was used.

Of the non-permitted facilities subject to surcharge, approximately half have surcharges applied based on direct sampling of the facility and half based on average values of similar businesses. Given the dramatic reduction in surcharge rates over the last several years, the effort and expense to perform routine surcharge monitoring surveys at non-permitted commercial facilities seem to outweigh the quantifiable benefits.

Program modifications have been developed to attempt to balance cost and benefit in the P3 surcharge program. A [presentation](#) was provided to introduce the Commission to the recommended changes. The new approach includes revised surcharge categories that are based on the North American Industry Classification System (NAICS) industry groupings. NAICS is based on a production-oriented concept, meaning that it groups establishments into industries according to similarity in the processes used to produce goods or services which is a reflection of wastewater quality. This approach changes the number of surcharge categories from 46 to eight. The average values for BOD, TSS, TP and TKN for each category were calculated from actual P3 sampling data from non-permitted facilities during the period 2008 – 2018.

The new categories and average surcharge values would be applied to all current non-permitted commercial customers already subject to surcharge billing effective July 1, 2019. The Rate Schedule and Revenue Policy will also be updated to reflect this change and will be presented for Commission approval in next year's budget cycle.



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**Discussion Summary:** Regular sampling at non-permitted commercial facilities will be discontinued and average surcharge values will be applied. A communication plan will be developed and communicated prior to implementation of the new program to allow customers adequate time to prepare their budgets. Commissioner Glenn stated the new program is defensible and all non-permitted customers will be treated equally. Staff asked Commissioners to provide any additional feedback as soon as possible. We will continue moving forward with development of the modified non-permitted commercial facility surcharge program.

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

**Public Comment:** None





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8. **DISPOSITION OF PUBLICLY HELD REAL PROPERTY TO NEWPORT NEWS GREEN FOUNDATION  
315 CENTER AVENUE, NEWPORT NEWS, VA (PARCEL ID: 268000758)**

**Action:** Authorize the General Manager to execute the Deed of Gift, conveying the parcel to the Newport News Green Foundation, together with such changes, modifications, and deletions as the General Manager may deem necessary.

**Moved:** Willie Levenston **Ayes:** 6  
**Seconded:** Ann Templeman **Nays:** 0

**Project Description:** 315 Center Avenue in Newport News, Virginia is an HRSD-owned parcel that was formerly the site of Center Avenue Pump Station #207. The pump station was decommissioned in early 2018 and the above-ground structures subsequently demolished (with some abandoned infrastructure remaining underground). Because the pump station was relocated to a nearby site on North Avenue, HRSD staff has determined that there is no longer a need for the subject property. The lot is zoned both R4 and C2 and is approximately 10,000 square feet. Current sales and listings in the area indicate a value of approximately \$22,000 to \$32,000.

HRSD staff proposes to donate the parcel to the Newport News Green Foundation, a non-profit organization which seeks to enhance and preserve green spaces in urban corridors throughout the city.

**Agreement Description:** The attached [Deed of Gift](#) was drafted and reviewed by HRSD legal counsel. A [Facilities Orientation Map](#) is provided for clarification purposes.

**Attachment #7:** [Deed of Gift and Map](#)

**Public Comment:** None



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9. **NORTH TRUNK FORCE MAIN PART B REPLACEMENT  
ADDITIONAL APPROPRIATION AND CONTRACT AWARD (>\$200,000)**

**Actions:**

- a. **Appropriate additional funding in the amount of \$1,120,939.**
- b. **Award a contract to T.A. Sheets General Contractors Inc. in the amount of \$1,479,880.**

**Moved:** Ann Templeman **Ayes:** 6  
**Seconded:** Willie Levenston **Nays:** 0

**CIP Project: WB012200**

Budget	\$883,600
Previous Expenditures and Encumbrances	(\$344,659)
Available Balance	\$538,941
Proposed Contract Award to T.A. Sheets General Contractors, Inc.	(\$1,479,880)
Proposed Contingency	\$180,000
Project Shortage/Requested Additional Funding	(\$1,120,939)
Revised Total Project Authorized Funding	\$2,004,539

**Type of Procurement: Competitive Bid**

<b>Bidder</b>	<b>Bid Amount</b>
T.A. Sheets General Contractors Inc.	\$1,479,880
Henry S. Branscome, LLC	\$1,555,096
Shaw Construction Corporation	\$1,939,019
Gaston Brothers Utilities, LLC	\$2,124,310
S. J. Louis Construction Inc.	\$2,618,000
Walter C. Via Enterprises Inc.	\$2,637,734
Tidewater Utility Construction Inc.	\$2,639,291

**HRSD/Engineer Estimate:** \$2,152,250



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**Contract Description:** This contract is for North Trunk Force Main Part B Replacement project. In accordance with HRSD’s competitive sealed bidding procedures, the Engineering Department advertised and solicited bids directly from potential bidders on October 21, 2018. Seven firms submitted bids on November 15, 2018, and were evaluated based upon the requirements for the invitation for bid. T.A. Sheets General Contractors Inc. is the apparent low bidder with a bid amount of \$1,479,880.

**Project Description:** This project is to replace approximately 1,700 linear feet of 24-inch pre-stressed concrete cylinder pipe. The pipe to be replaced is located in Williamsburg, Virginia between Depue Drive and Longhill Road. Condition assessment analysis of this pipeline indicates that it has a material risk of future failure. This project is included in the Inflow and Infiltration Abatement Rehabilitation – Phase 1, which is part of the Federal Consent Decree to address sanitary sewer overflows in the region.

**Funding Description and Analysis of Cost:** The total cost estimate for this project is approximately \$2,004,539. The estimate includes \$344,659 in engineering costs, \$1,479,880 in construction costs, and a 12.1 percent contingency of \$180,000. The contingency amount is to accommodate any potential unforeseen conditions. The original CIP project estimate did not anticipate the addition of 500 linear feet of force main replacement. This additional pipe replacement was added to the project to eliminate two existing valves that were installed using couplings that are problematic and have the potential for leaking and/or failure. The low bid amount of \$1,479,880 exceeds the balance available for this CIP project and requires \$1,120,939 in additional funding.

**Schedule:**            Construction                            January 2019  
                                 Project Completion                    October 2019

**Attachment:** None

**Public Comment:** None



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10. **CARBON FOOTPRINT REDUCTION**

**Action: No action required.**

**Brief:** Last year the Commission adopted a greenhouse gas emission reduction goal to reduce HRSD's emissions by 30 percent from a 2005 carbon footprint baseline by adopting green energy sources and limiting gas emissions. This goal aligned with the Paris Accord, which is a pact sponsored by the United Nations to fight climate change by limiting the rise of global temperatures. Despite growth in the region and expansion of our facilities, HRSD's energy conservation efforts provided a relatively flat consumption curve from 2004 to 2017. To achieve the 30 percent reduction in our carbon footprint we purchased 43,200,000 kilowatt hours of green renewable energy credits (RECs) for \$86,400 in Fiscal Year (FY) 2018.

This past year, (FY 2017 to FY 2018) HRSD's total carbon footprint increased 2.5 percent. For these purposes, the three main sources of HRSD's carbon footprint are mobile sources (vehicular fleet), stationary sources (incinerators and generators) and electricity purchases.

We plan to offset the increase in carbon footprint by purchasing renewable energy credits (RECs) for an additional \$26,000 in FY 2019. At present, purchasing RECs is a cost-effective strategy. Longer-term strategies which include implementation of additional conservation measures and regular evaluation and implementation of other green sources (solar, wind, etc.) are under investigation.

Staff presented the [Strategic Carbon Footprint](#) update at the Commission Meeting.

**Attachment #8:** [Presentation](#)

**Public Comment:** None



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11. **ETHICS POLICY**

**Action:** Approve revised Ethics Policy.

**Moved:** Willie Levenston  
**Seconded:** Maurice Lynch

**Ayes:** 6  
**Nays:** 0

**Brief:** Staff from Human Resources, Organizational Development and Training, Procurement and General Management are working on finalizing the Orientation Training, Bi-annual Training Recertification, Gift Disclosure and Conflict of Interest forms for HRSD's Ethics Policy, based on SC&H audit recommendations. An online training pilot will be conducted in the Spring of 2019 followed by full implementation by July 2019 for all HRSD employees.

In addition, SC&H recommended legal counsel review all conflict of interest disclosure forms submitted by the Commission and staff. The attached [guidelines](#) for legal review were developed by counsel.

Additional changes to the [Ethics Policy](#) to clarify the "Widely Attended Event" definition are presented for approval.

**Discussion Summary:** Ms. Cascio informed the Commission and staff the Annual Financial Disclosure forms had not been published by the Virginia Conflict of Interest and Ethics Advisory Council. These new forms will be forwarded to the Commission and staff in "positions of trust" (as defined by the HRSD Ethics Policy) as soon as they are published for completion no later than February 1, 2019.

**Attachment #9:** [Legal Review Guidelines and Ethics Policy](#)

**Public Comment:** None



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12. **UNFINISHED BUSINESS**

Williamsburg Treatment Plant Land Acquisition - Mr. Henifin informed the Commission of another delay in the condemnation proceedings due to the requirement in the Code of Virginia to file a 90-day notice to the local government because the proposed acquisition of land is within an Agricultural and Forestal District.

Johnson et al. v. City of Suffolk and HRSD - Mr. Henifin discussed Dr. Taraski's recent [letter](#) to the Chair recusing herself of any activities associated with this litigation.

**Attachment #10:** [Dr. Taraski's Letter](#)

13. **NEW BUSINESS – None**

14. **COMMISSIONER COMMENTS**

Vice-Chair Lynch asked staff to evaluate holding a Commission meeting in the new conference room at the Atlantic Treatment Plant. Staff will evaluate and determine if the space meets the needs of holding a public meeting.

Dr. Taraski thanked staff for the informative monthly reports.

Chair Elofson read the following excerpt from Mr. Henifin's November Monthly report "*On the surface, November appears to have been a quiet month; however, the detailed departmental monthly reports reveal the significant efforts of our entire staff to address a multitude of challenges that go largely unnoticed each month. This is the paradox of great service; you are only really appreciated when something goes wrong and you respond quickly and efficiently to resolve the issue. The day-to-day efforts to keep things from "going wrong" in the first place are rarely noticed and celebrated.*" Chair Elofson said this was a great comment and on behalf of the Commission, Chair Elofson thanked the entire staff.

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



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16. **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](#)
- e. [Emergency Declarations – Bowers Hill Force Main Valve Replacement Prompt Repair](#)

**Attachment #11:** [Informational Items](#)

**Public Comment:** None

**Next Commission Meeting Date:** **January 22, 2019** at the HRSD North Shore Operations Center, 2389 G. Avenue, Newport News, VA 23602

**Meeting Adjourned:** 10:27 a.m.

SUBMITTED:

*Jennifer L. Cascio*

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Jennifer L. Cascio  
Secretary

APPROVED:

*Frederick N. Elofson*

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Frederick N. Elofson, CPA  
Chair

HRSD COMMISSION MEETING MINUTES  
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ATTACHMENT #1

AGENDA ITEM 2. – Consent Agenda



## CONSENT AGENDA ITEM 2.b.1. – December 18, 2018

**Subject:** Financial Advisor Services  
Contract Award (>\$200,000)

**Recommended Action:** Award a contract for Financial Advisor services to PFM Financial Advisors LLC in the estimated amount of \$156,110 for year one with four annual renewal options and an estimated cumulative value in the amount of \$810,861.

**Type of Procurement:** Competitive Negotiation

<b>Proposers</b>	<b>Technical Points</b>	<b>Recommended Selection Ranking</b>
PFM Financial Advisors LLC	92	1

**HRSD Estimate:** \$850,000

**Contract Description:** This contract is an estimated use contract for financial advisor services. The Advisor will act as a consultant to assist in all aspects of HRSD's financial strategies, including steps necessary for the successful accomplishment of financings undertaken by HRSD on the most favorable terms obtainable in the financial markets at the time(s) the financing is undertaken.

A Public Notice was issued on September 19, 2018. Only one firm submitted a proposal on October 22, 2018 and was determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Request for Proposal. The proposal was moved forward and technically ranked. The proposal submitted by PFM Financial Advisors LLC was ranked by technical points to be the highest qualified.

**Analysis of Cost:** Rates and associated fees were compared to past contract history including estimated yearly renewal increases and cost was determined to be fair and reasonable.

## CONSENT AGENDA ITEM 2.b.2. – December 18, 2018

**Subject:** HVAC Maintenance and Repair Services for South Shore Complex  
Contract Award (>\$200,000)

**Recommended Action:** Award a contract for HVAC maintenance and repair services at the South Shore complex to Warwick Plumbing and Heating Corporation in the estimated amount of \$110,000 for year one with four annual renewal options and an estimated cumulative value in the amount of \$550,000.

**Type of Procurement:** Competitive Bid

<b>Bidder</b>	<b>Bid Amount</b>
Warwick Plumbing and Heating Corporation	\$110,000
CII Engineered Systems, Inc.	\$145,690
Piedmont Service Group, Inc.	\$161,941
Atlantic Constructors, Inc.	\$189,889

**HRSD Estimate:** \$150,000

**Contract Description:** This contract is an agreement for heating, ventilation, and air conditioning preventative maintenance services which shall include regular maintenance services, repairs, replacements and all required technical operational adjustments for the buildings located at the South Shore Complex. Such maintenance to equipment is associated with the mechanical, heating, ventilating, chillers, RTUs, CRACs and all ancillary equipment within the designated buildings.

**Analysis of Cost:** Costs were compared to past contract history including estimated yearly renewal increases and cost was determined to be fair and reasonable.

## CONSENT AGENDA ITEM 2.b.3. – December 18, 2018

**Subject:** Mobile Work Force Software, Hardware, Implementation and Support Contract Award (>\$200,000)

**Recommended Actions:**

- a. Award a contract to Oracle America, Inc. for purchase of Mobile Work Force program software and hardware solution, training and implementation services in the amount of \$472,040.
- b. Award a blanket purchase contract for Mobile Work Force to Oracle America, Inc. for license, hardware and software support in the estimated amount of \$108,240 for year one with four annual renewal options and an estimated cumulative value in the amount of \$554,188.

**Type of Procurement:** Competitive Negotiation

<b>Proposers</b>	<b>Technical Points</b>	<b>Recommended Selection Ranking</b>
Oracle America, Inc.	79	1
The Confluence Group, Inc.	64	3
Smart Energy Systems LLC DBA Smart Energy Water	68	2

**HRSD Estimate:**

\$300,000

**Contract Description:** This contract is an agreement for a Mobile Work Force (MWF) management solution including software, hardware, implementation and post implementation training and support services. The MWF project consists of an off the shelf solution in support of the Customer Care Center and Account Investigators. The solution will be integrated with the Customer Care and Billing system to provide management of tasks such as field activities, mobile printing, reporting, licenses and related support.

A Public Notice was issued on July 20, 2018. Three firms submitted proposals on August 23, 2018 and all firms were determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Request for Proposals. All three firms were moved forward, interviewed and technically ranked. The proposal submitted by Oracle America, Inc. was ranked by technical points to be the highest qualified.

Oracle presented a more stable product suite and robust support infrastructure with newer technologies, machine learning and a platform solution that is across multiple industries. The proposal and onsite demonstration showed how flexible the product will be for an out of the box implementation. Oracle demonstrated the configuration ability of the product highlighting the fact that a non-technical business user is able to manage the product through straightforward configuration.

**Analysis of Cost:** The cumulative value of the support contract includes a locked in rate for service years one through three and projected renewal increases for years four and five. Review of hourly rates under Oracle's resources roles for implementation, integration and training were found to be fair and reasonable compared to similar consulting service industry rates.

CONSENT AGENDA ITEM 2.c.1. – December 18, 2018

**Subject:** Horizon Technology, Inc.  
SPE-DEX<sup>®</sup> 5000 and Smart Prep II Extractor System Preventative  
Maintenance, Repairs and Related Parts Contract  
Sole Source (>\$10,000)

**Recommended Action:** Approve Horizon Technology, Inc. as a provider of preventative maintenance services, repairs and related parts for the SPE-DEX<sup>®</sup> 5000 and Smart Prep II Extractor Systems in use at the Central Environmental Laboratory.

**Sole Source Justification:**

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

**Details:** Service includes the preventative maintenance and repair of the SPE-DEX 5000 and Smart Prep II Extractor Systems operated by the Central Environmental Laboratory. The service agreement will include annual preventative maintenance, technical support, repairs, related repair parts and labor.

The SPE-DEX 5000 is used for the analysis of pesticides in wastewater in support of HRSD Operations and for the analysis of semi-volatiles in drinking water to support SWIFT. The Smart Prep II Extractor System is used for the analysis and detection of semi-volatile organic compounds in drinking water to support SWIFT.

Horizon Technology, Inc. is the manufacturer of the systems and does not have authorized service providers. Equipment was purchased through a competitive sealed bid in January 2018.

CONSENT AGENDA ITEM 2.c.2. – December 18, 2018

**Subject:** Ovivo USA LLC

Ovivo<sup>®</sup> Influent Screen Parts, Onsite Installation Assistance and Repairs  
Sole Source (>\$10,000)

**Recommended Action:** Approve Ovivo USA LLC as the provider of replacement parts, onsite installation assistance and repairs to Ovivo<sup>®</sup> influent screens in use at all HRSD facilities.

**Sole Source Justification:**

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

**Details:** Services include onsite assistance to install replacement parts on Ovivo<sup>®</sup> influent screen equipment. The influent screen parts are needed to remove solids, grit and other debris from the influent wastewater.

Ovivo<sup>®</sup> is the only authorized service provider for all manufactured equipment.

The Commission previously approved limited sole source authority for Ovivo<sup>®</sup> Influent Screen Parts. This action supersedes previous actions and expands the scope to cover all HRSD applications of Ovivo<sup>®</sup> Influent Screen Parts Installation and Repairs.

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #2

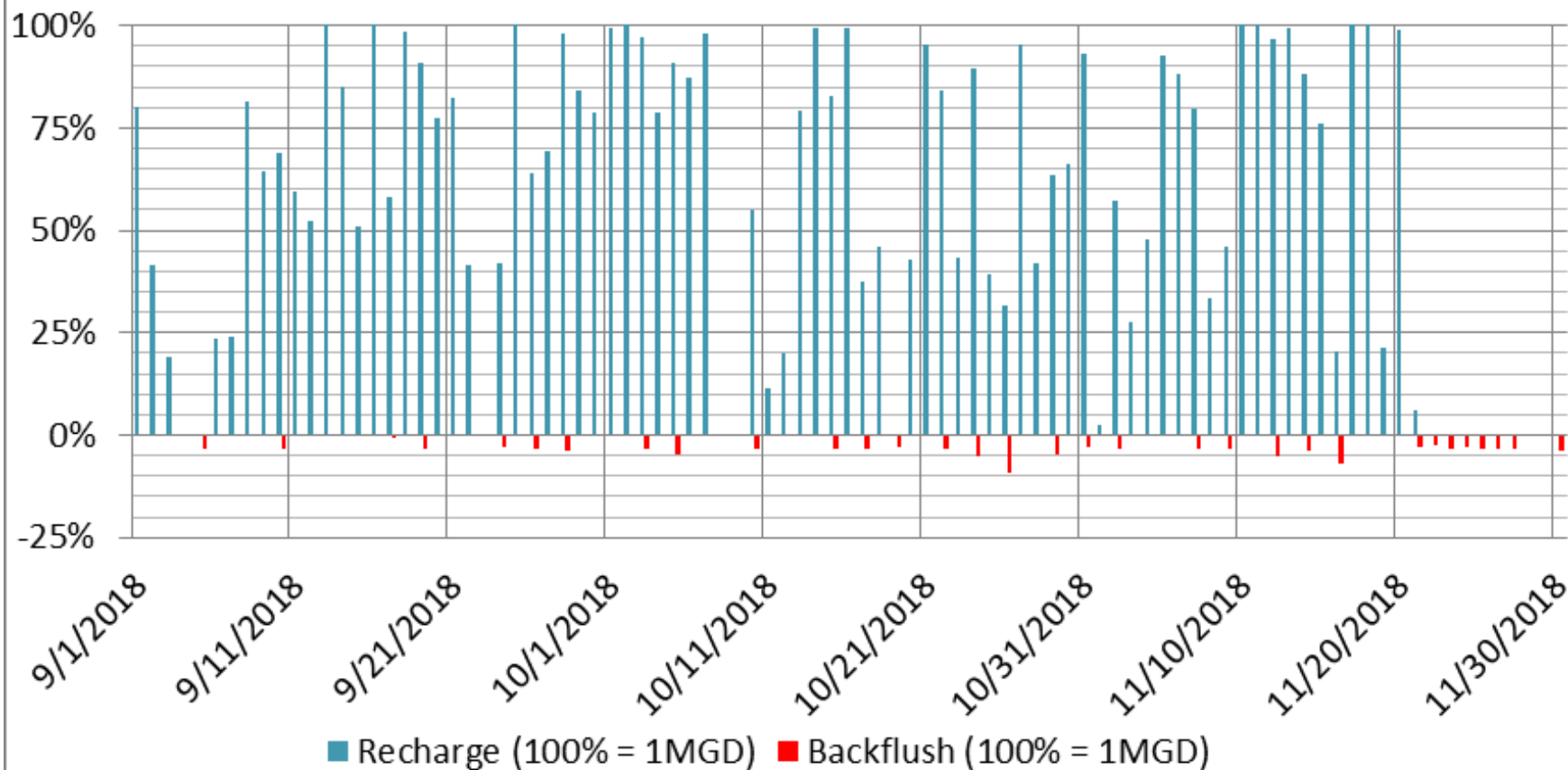
AGENDA ITEM 3. – SWIFT Research Center Presentation

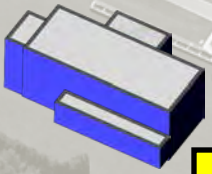
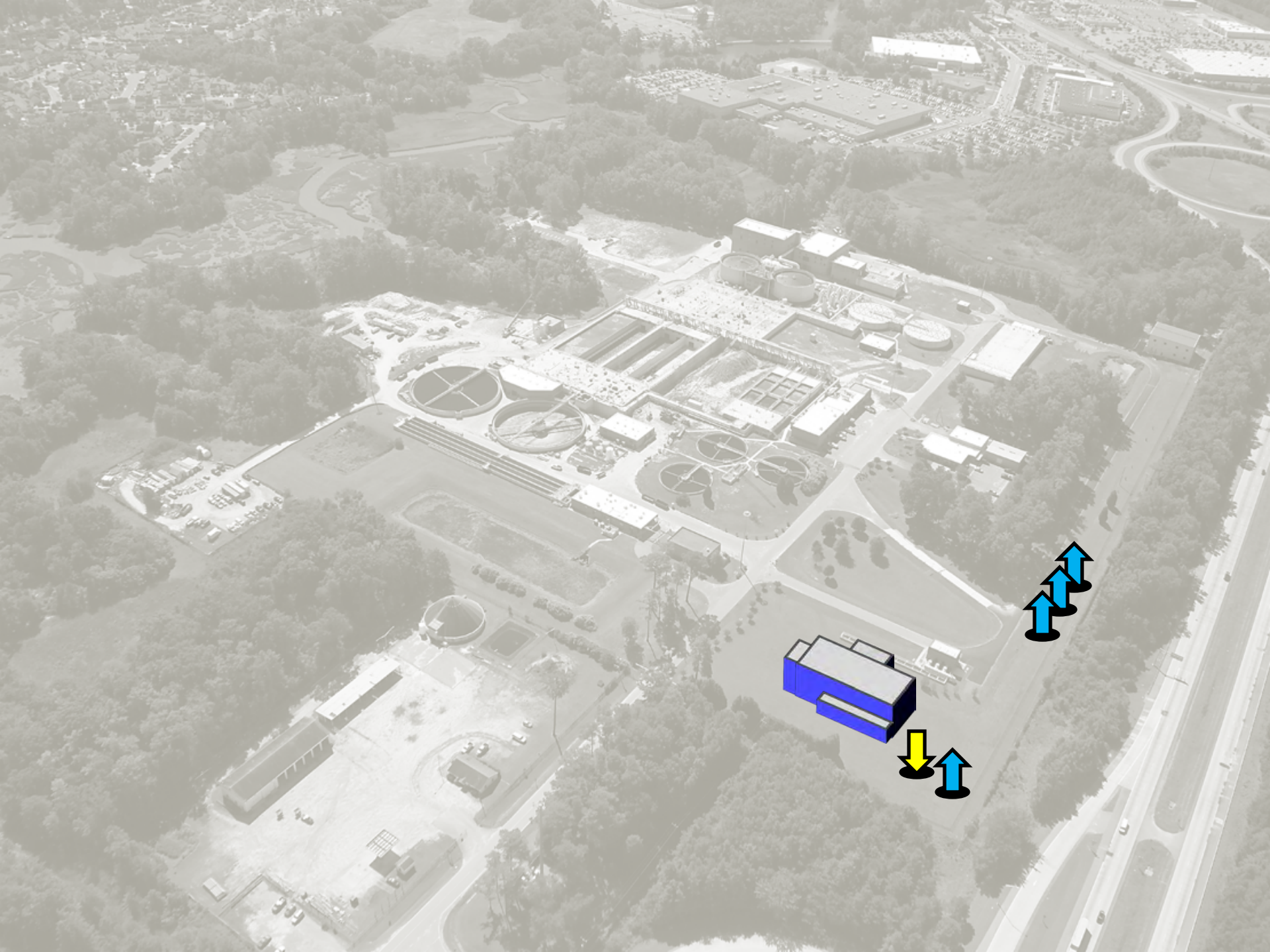
# Update on the Operation of the SWIFT Research Center





**Total Recharge September - November: 52.35 MG**  
**Total Backflush September - November: 1.19 MG**







MAR Well  
TW-1

MW-LPA

MW-MPA

MW-UPA

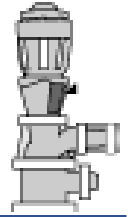
MW-SAT

500'

450'

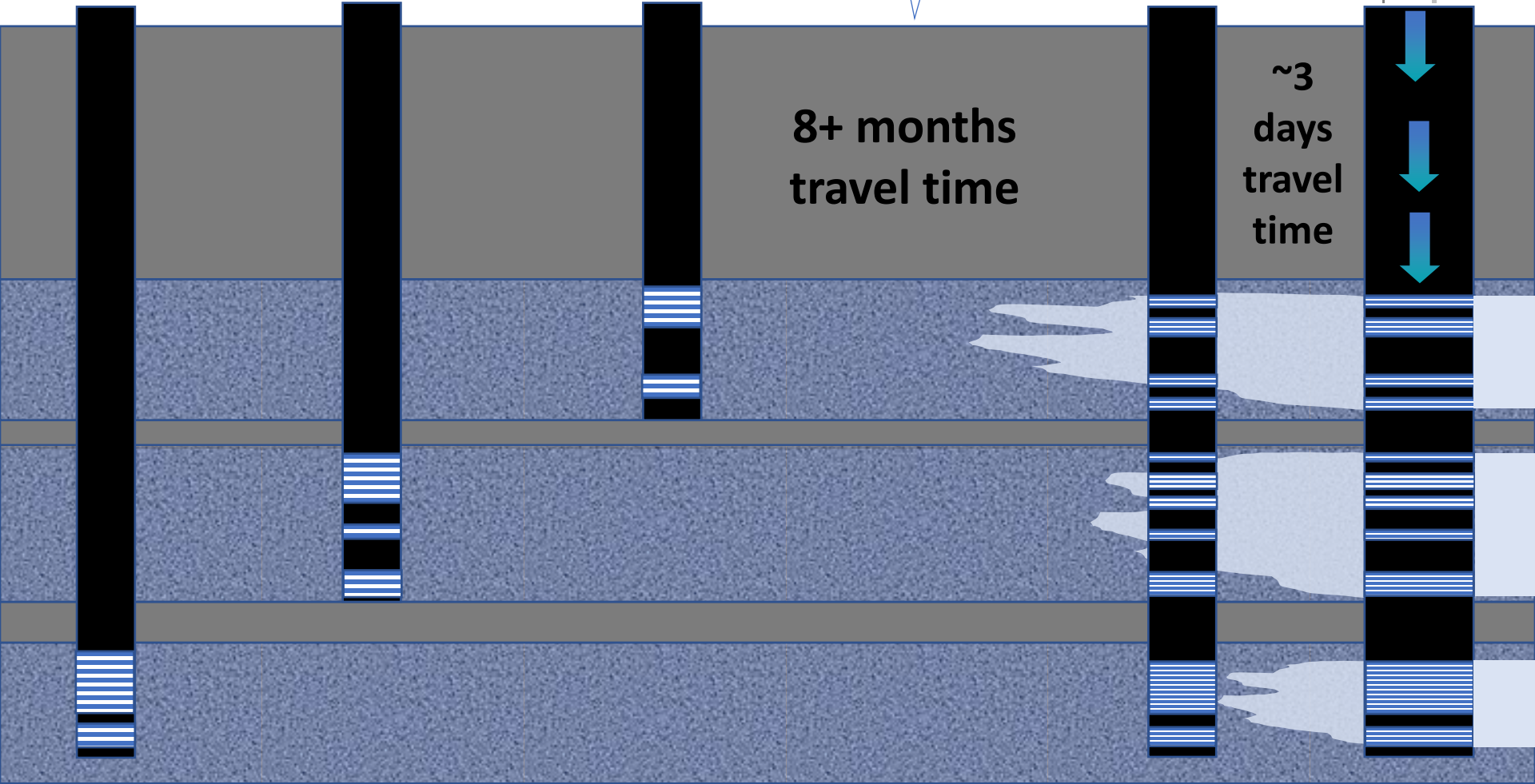
400'

50'



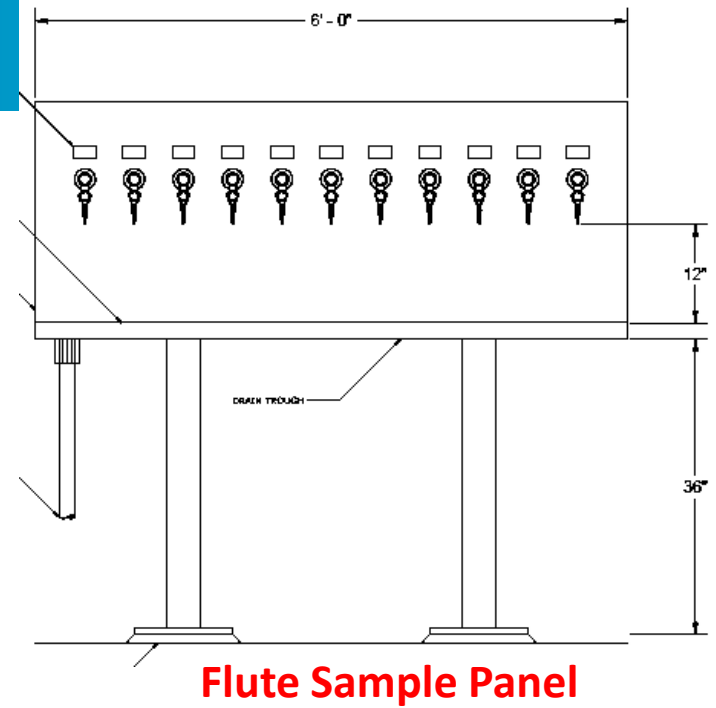
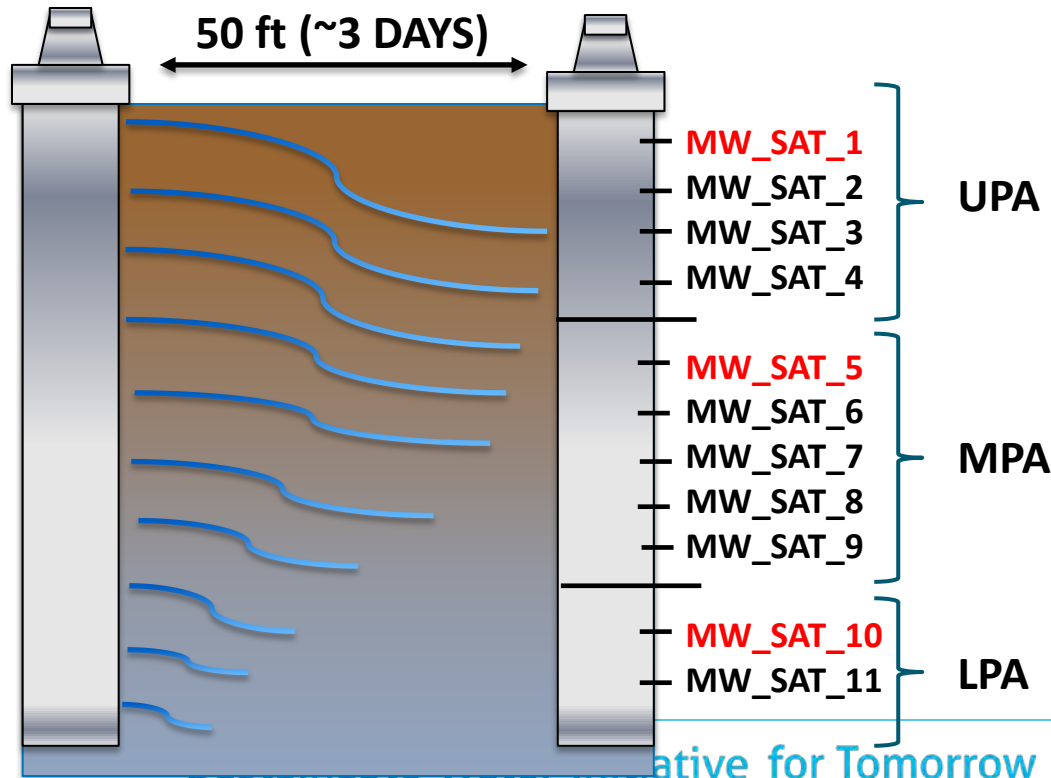
8+ months  
travel time

~3  
days  
travel time



Recharge Well  
(SWIFT Water)

Monitoring Well  
(MW\_SAT)





VENT

PRESSURE

VENT

PRESSURE

VENT

1

2

3

4

5

6

7

8

9

10

11

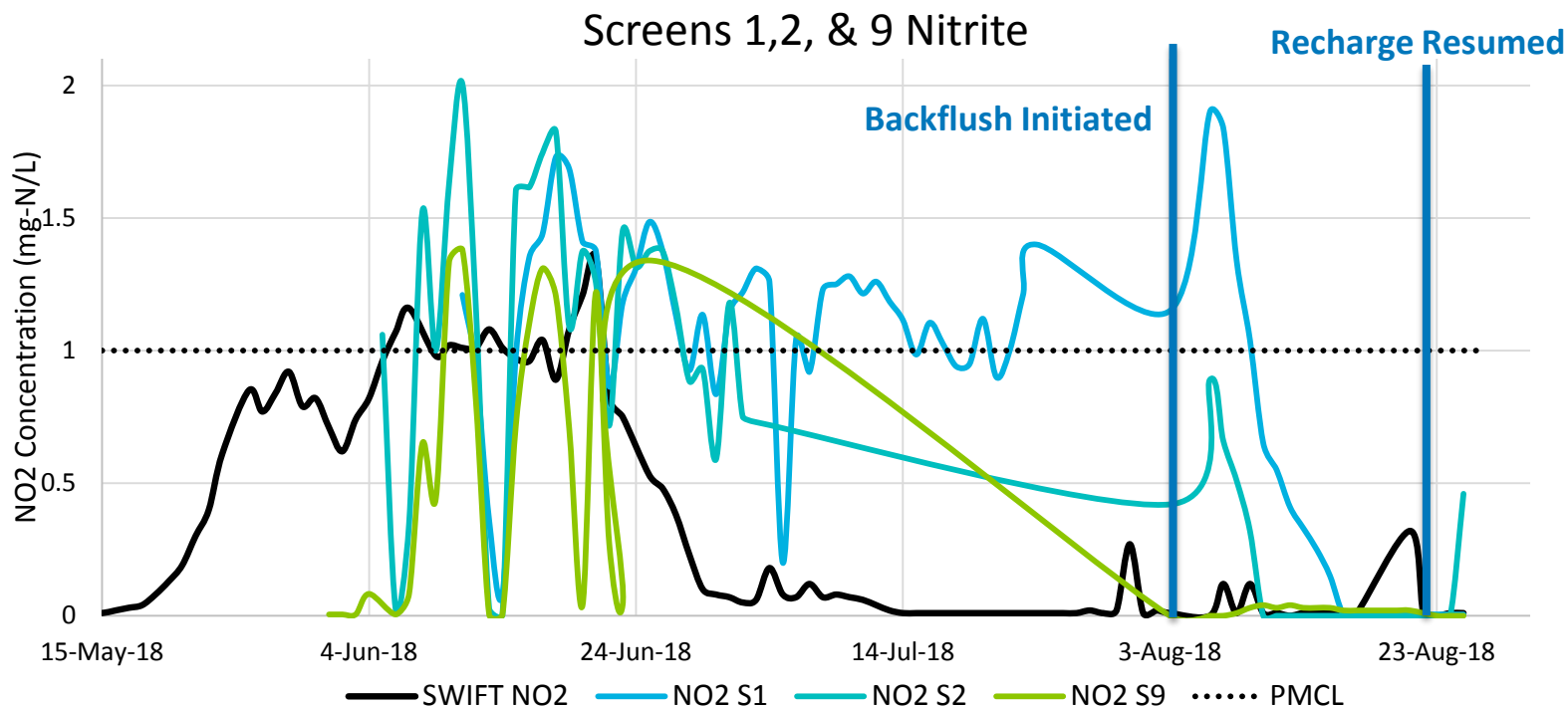
UPPER POTOMAC

MIDDLE POTOMAC

LOWER POTOMAC



# Nitrite in MW-SAT – Screens 1, 2 and 9



- Screen Interval 2 had highest concentration of 2.01 mg/L on June 11
- Concentrations in Interval 1 remained elevated after nitrite was removed from SWIFT Water
- Concentrations in Interval 2 beginning to rise above the detection limit less than a week after recharge resumed

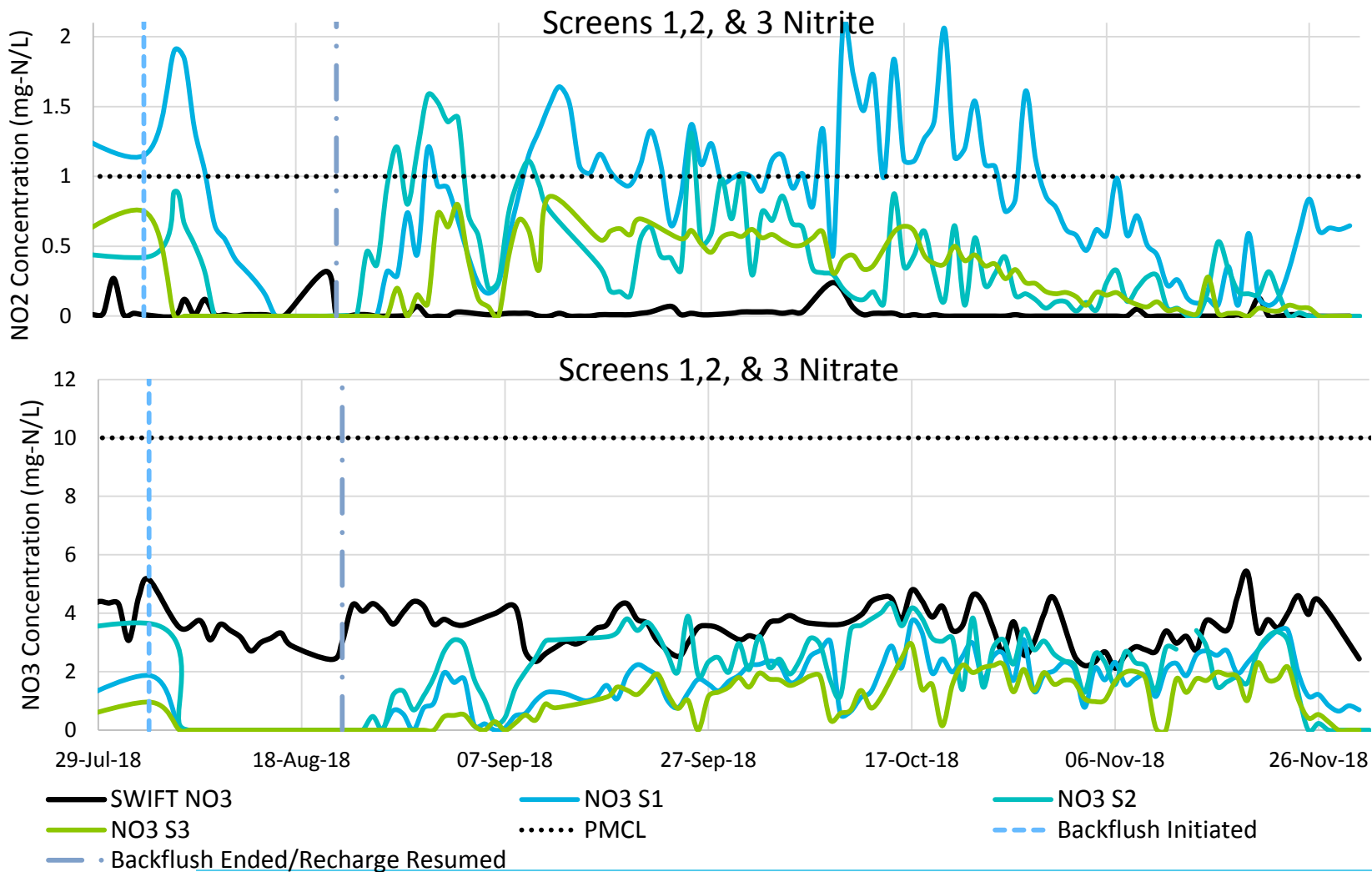
## Corrective Action Measures

- Backflush of the recharge well initiated August 3
  - Monitoring of nitrite in all MW-SAT screen intervals, backflush and conventional monitoring wells
  - Backflush until less than ½ of PMCL
  - Backflush an additional 7 days before resuming recharge
- Recharge resumed August 22
  - Delayed restart due to issues with elevated nitrite
    - Mini start-up conditions with biofilter out of service for two days prior
    - Waited to recharge until nitrite decreased below 0.25 mg/L and was steadily trending down



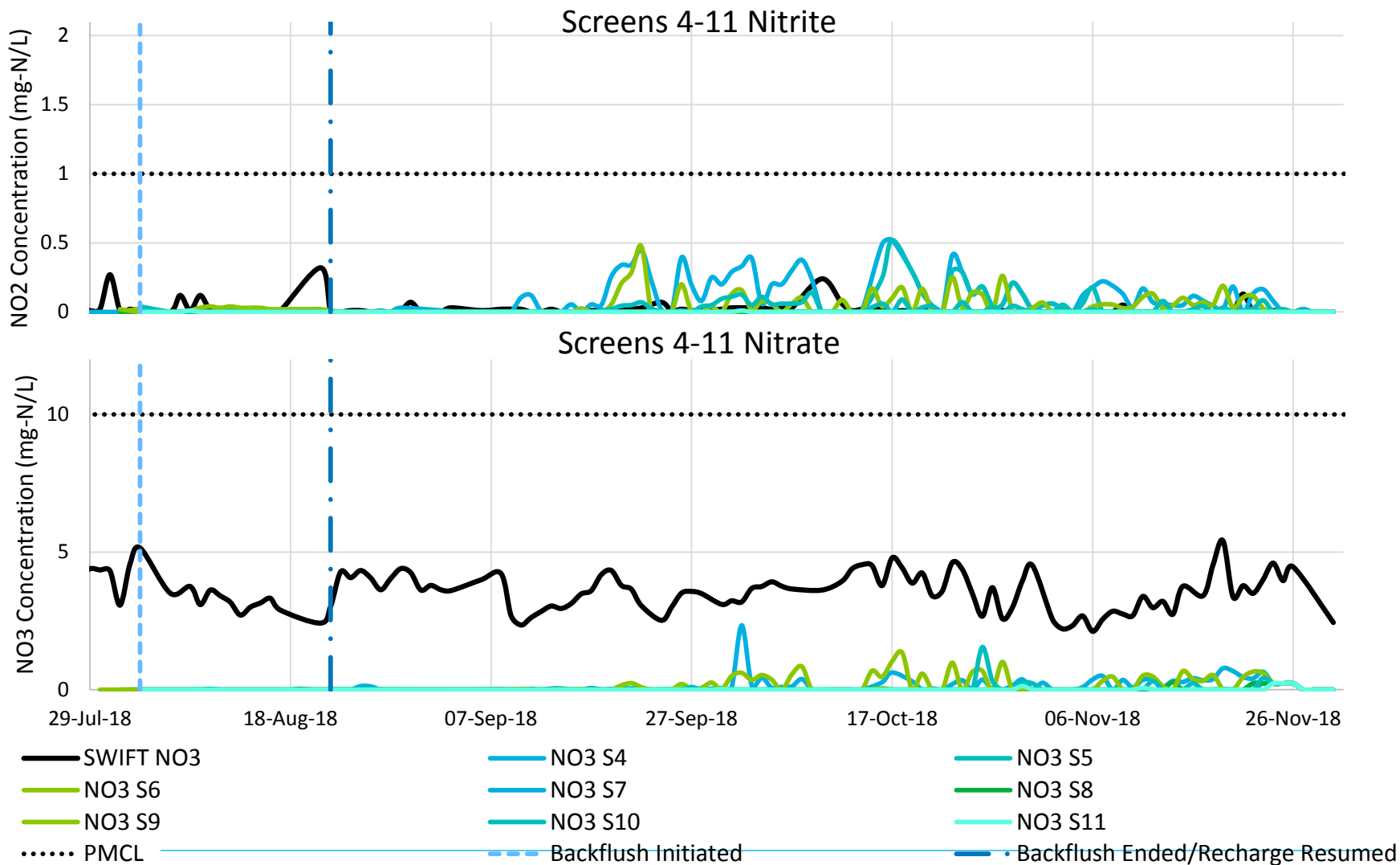
# Partial denitrification of recharge water nitrate to nitrite

- Three screens near or above PMCL for nitrite in 50ft well



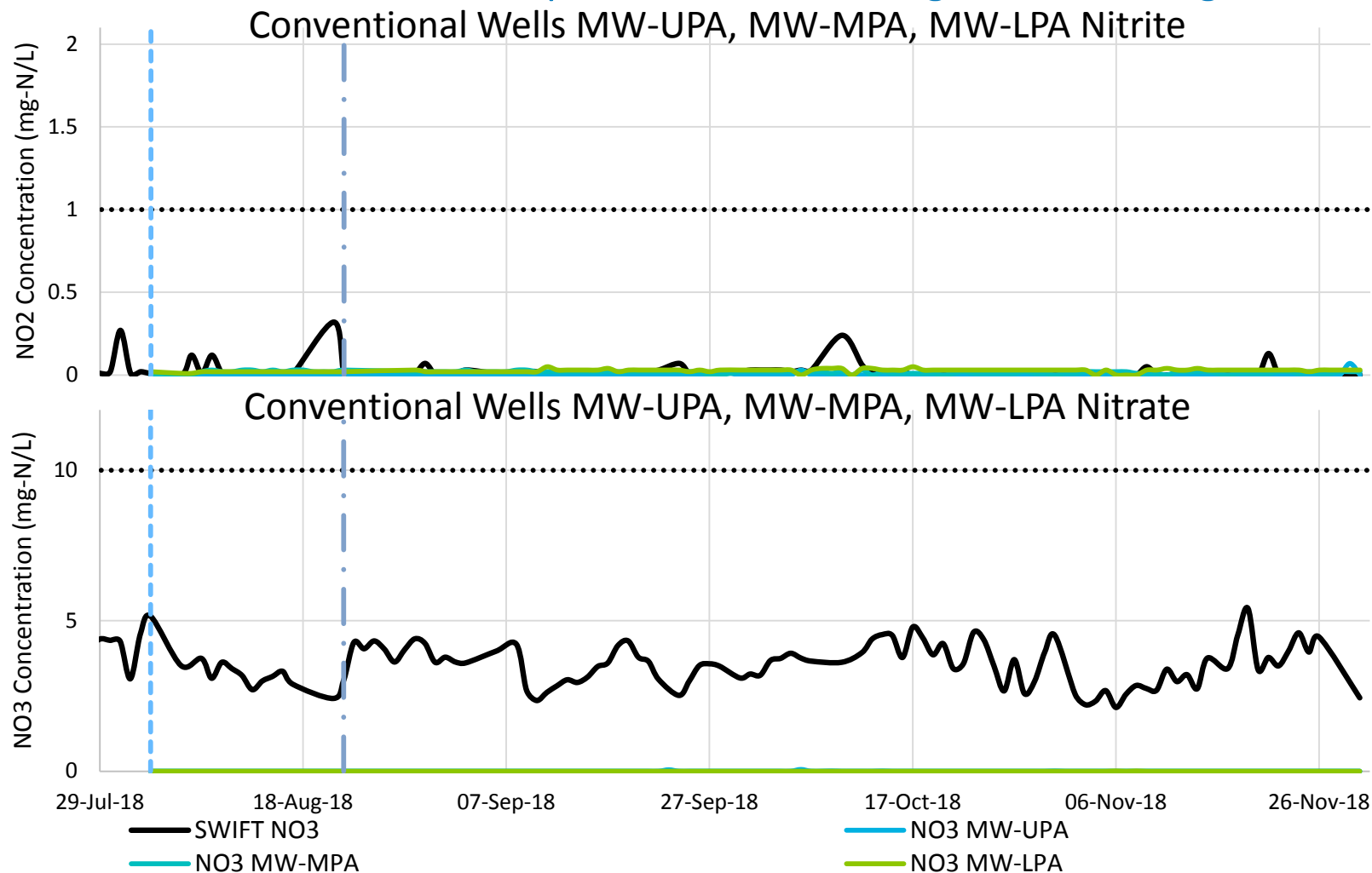


# Less Nitrite Formation in Other Screens of 50ft Well



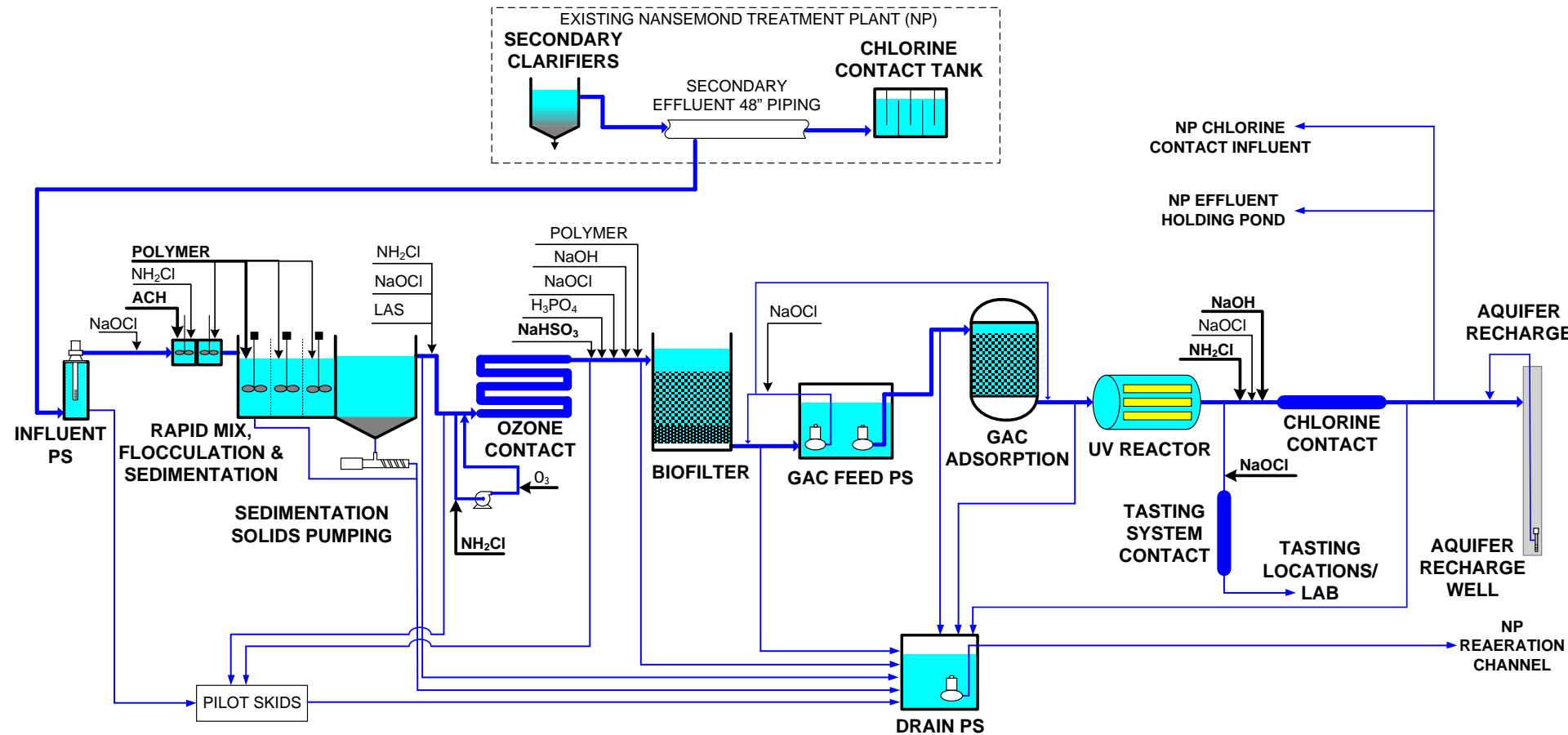
# No Indication of Nitrite Migration to Monitoring Wells

- elevated nitrite not anticipated but still waiting to see recharge water



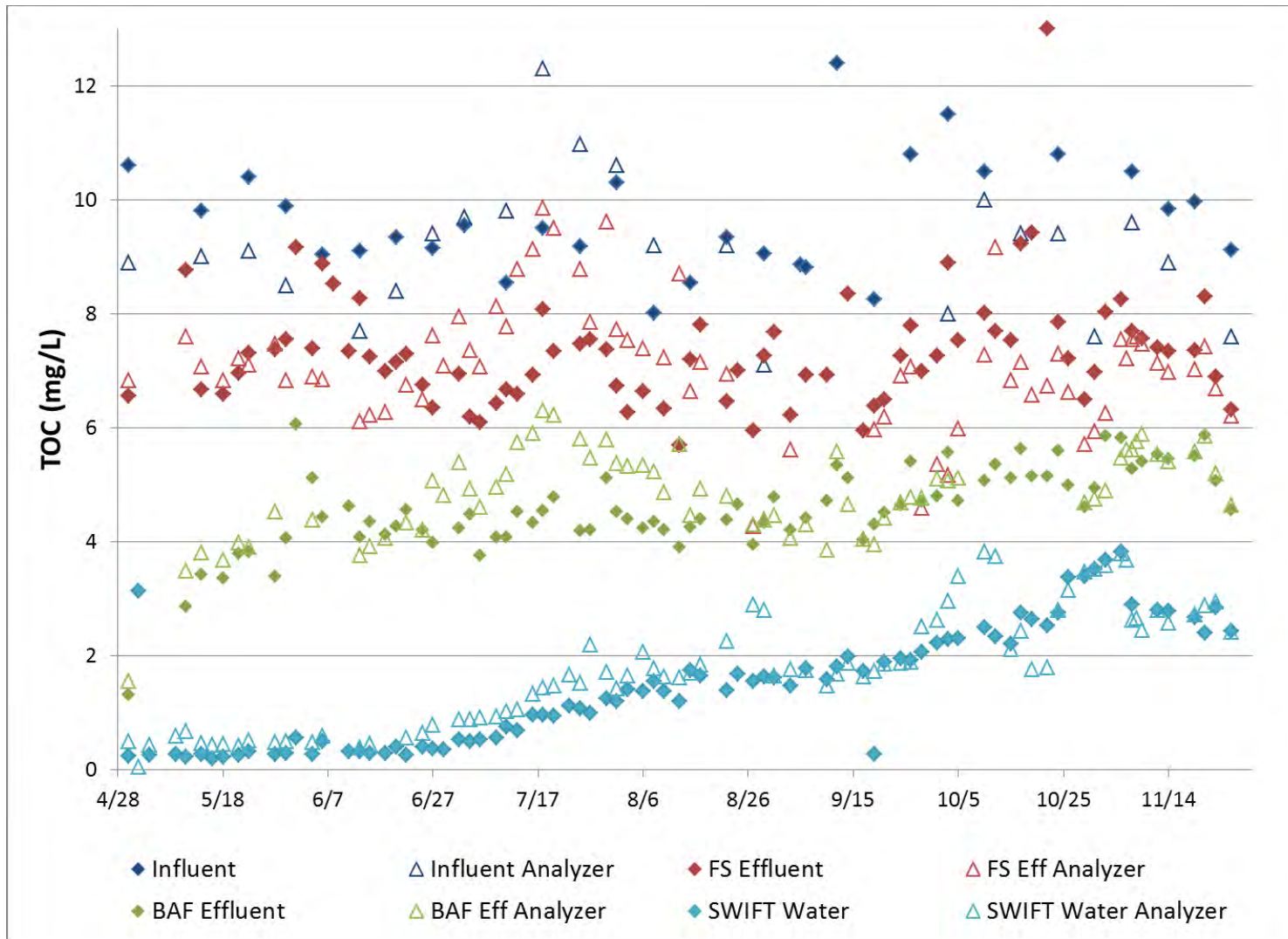


# Process Flow Diagram for SWIFT Research Center

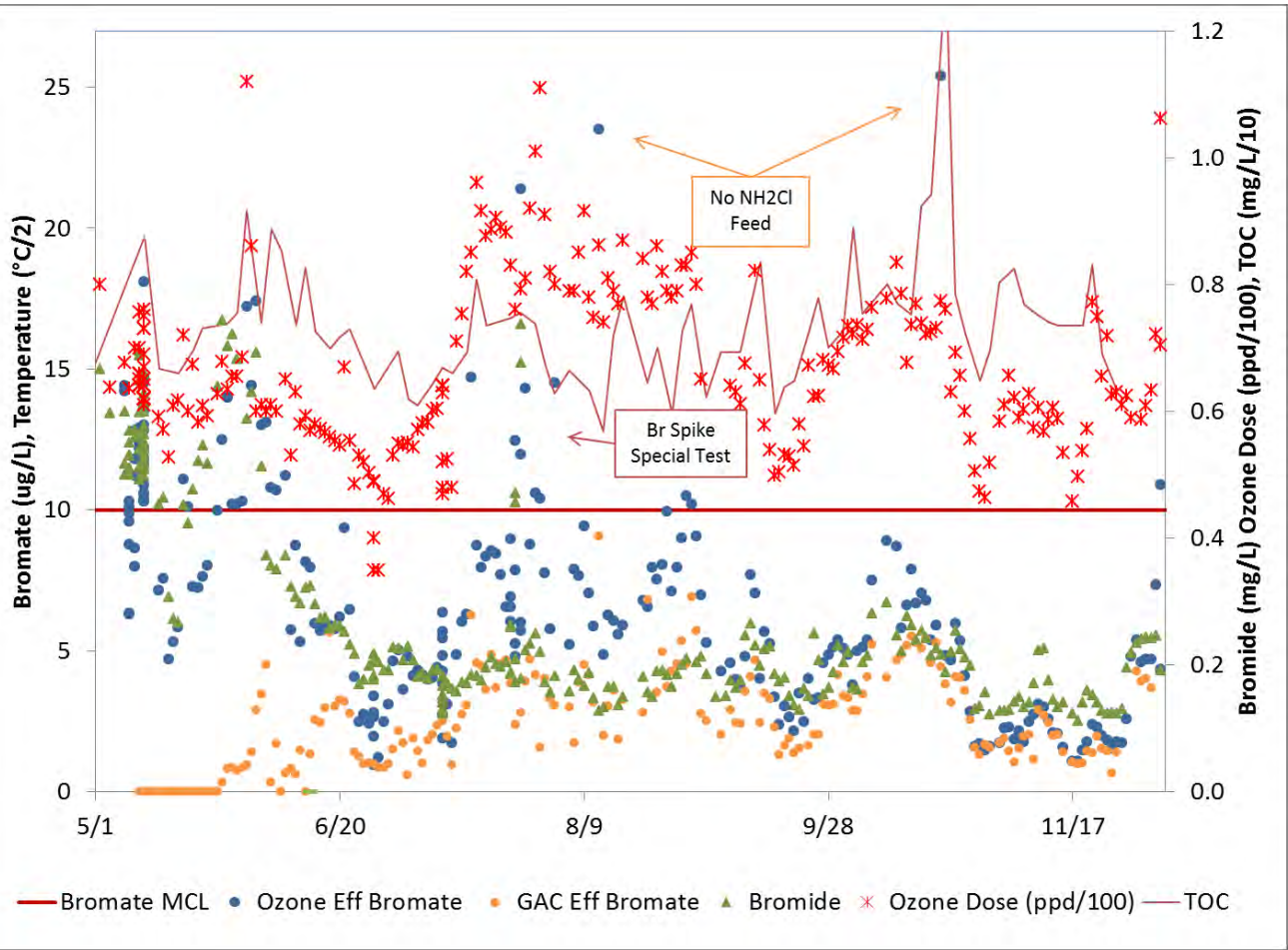


SWIFT RESEARCH CENTER PROCESS FLOW DIAGRAM

# Total Organic Carbon (TOC)

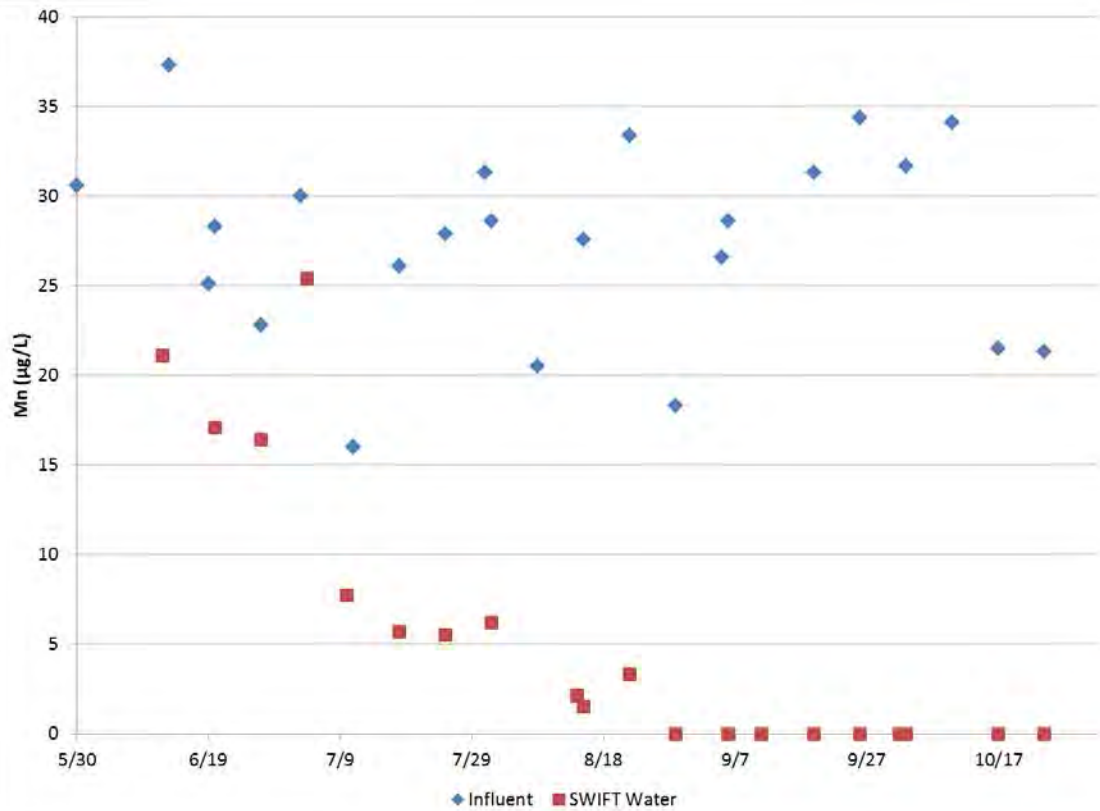


# Bromate



- Bromate MCL = 10  $\mu\text{g/L}$
- 6/1/2018 SPSA stopped discharging leachate
- Bromide has since decreased resulting in bromate below the MCL

# Manganese



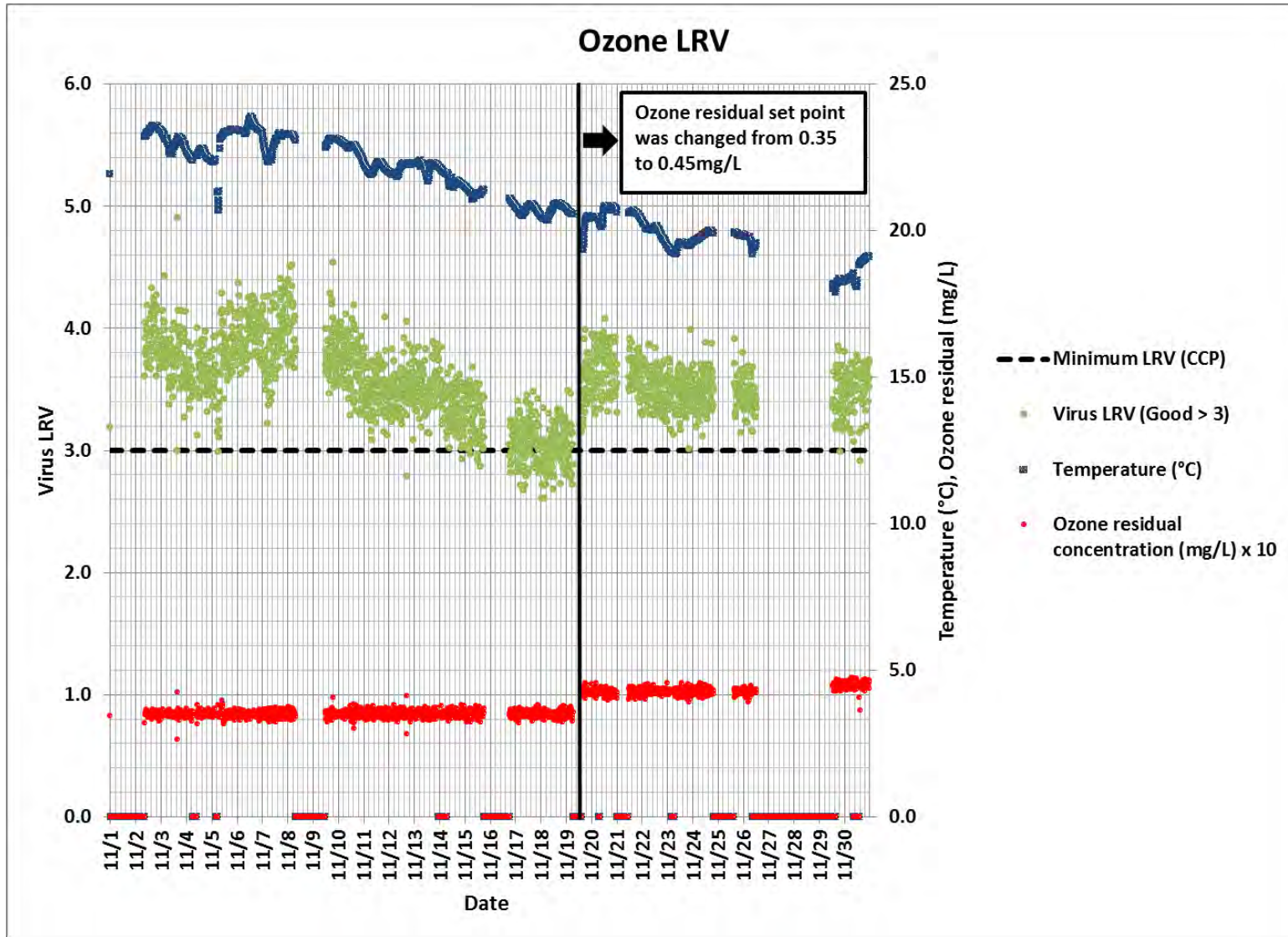
Mn Secondary MCL = 50 µg/L

Bypass Filtering Index (BFI)





# Virus Disinfection by Ozone



# Hazard Analysis and Critical Control Points

NP - W1: (Nansemond 7914.edf) EDS: Terminal - NP

Background Mark

CCP

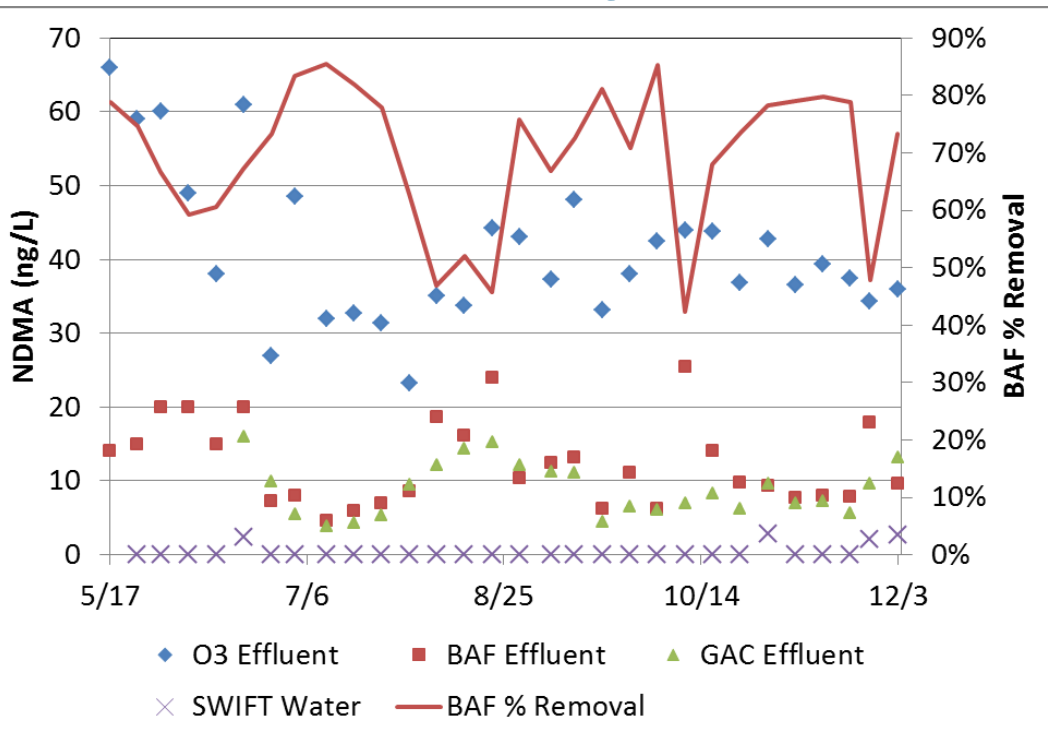
HRSD SWIFT RESEARCH CENTER

INF PMP STATION FLOC / SED OZONE BIOFILTERS GAC P/S  
 GAC ADSORBERS UV RECHARGE WELL DRS CCP / COP  
 CHEMICAL FEED CHEMICAL PUMPS TOTALIZERS RUNTIMES NANSEMOND MENU

CRITICAL CONTROL POINT	CURRENT VALUE	ALERT VALUE	ALARM VALUE	ALARM TIME DELAY	ALARM ACTION & STATUS
INF COND HIGH	1.276 us/c	1.200	1.500	600.0	DIVERT STW <input type="button" value="DISABLED"/>
INF TIN HIGH	4.388 mg/l	5.000	8.000	600.0	DIVERT STW <input type="button" value="ENABLED"/>
INF TURB HIGH	1.157 NTU	15.00	20.00	600.0	DIVERT STW <input type="button" value="ENABLED"/>
STW NH2CL FEED					DIVERT SWIFT <input type="button" value="DISABLED"/>
STW LOW TOTAL CL	2.64 PPM	2.000	1.000	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
STW LOW NH2CL	2.70 MG/L	2.000	1.000	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
					OPEN BAF BWW VLV <input type="button" value="ENABLED"/>
OZONE LOW VIRUS LRV	3.06 LRV	3.500	3.000	600.0	OPEN BAF BWW VLV <input type="button" value="ENABLED"/>
BAF 1 HI EFF TURB STEP 2	0.085 NTU	0.100	0.150	300.0	FILTER TO STANDBY <input type="button" value="ENABLED"/>
BAF 2 HI EFF TURB STEP 2	0.079 NTU	0.100	0.150	300.0	FILTER TO STANDBY <input type="button" value="ENABLED"/>
BAF 3 HI EFF TURB STEP 2	0.085 NTU	0.100	0.150	300.0	FILTER TO STANDBY <input type="button" value="ENABLED"/>
BAF 4 HI EFF TURB STEP 2	0.074 NTU	0.100	0.150	300.0	FILTER TO STANDBY <input type="button" value="ENABLED"/>
BAF CFE HI TURB	0.076 NTU	0.100	0.150	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
GAC COMM HI EFF TOC	2.50 NTU	4.000	2.000	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
UV 1 LOW DOSE	648.9 mJ/c	223.0	195.0	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
UV 2 LOW DOSE	648.9 mJ/c	223.0	195.0	600.0	DIVERT SWIFT <input type="button" value="ENABLED"/>
SWIFT LOW FREE CL CT	0.36 PPM	0.000	0.000	300.0	DIVERT SWIFT <input type="button" value="ENABLED"/>



# N-nitrosodimethylamine (NDMA)



- NDMA is a byproduct of chloramination/ozonation
  - Included on the EPA Contaminant Candidate List 3
  - CA Health Advisory Limit = 10 ng/L
- Primary removal mechanism is biodegradation in the biofilters
- NDMA is consistently below the detection limit on SWIFT Water
  - Adsorption on virgin GAC
  - Direct Photolysis

NDMA detection limit = 2 ng/L

## NDMA Removal by Direct Photolysis in UV:

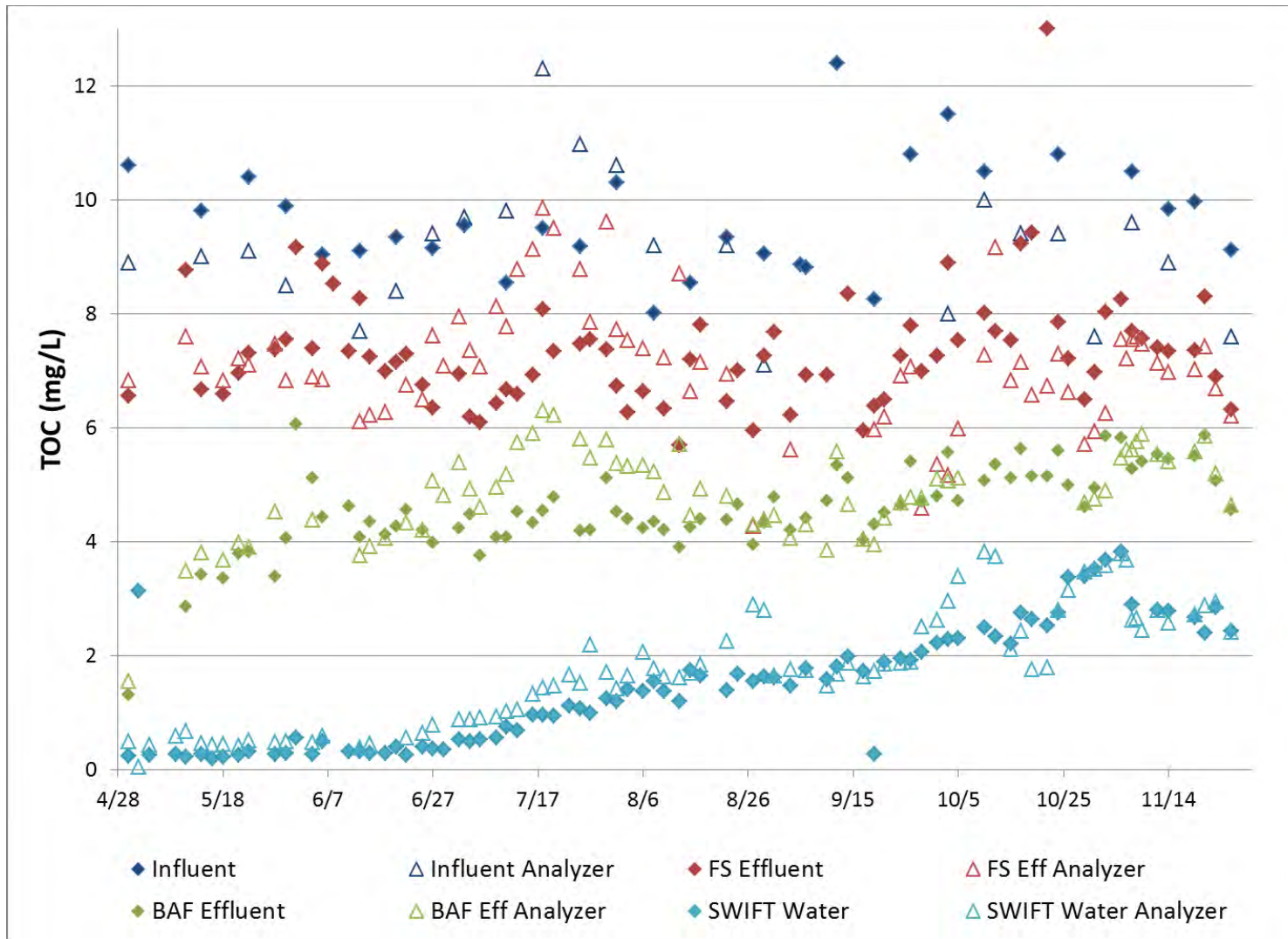
- As long as >97% UVT, expect 97.5% NDMA removal (1.6 log) @ 100% power, 1 MGD, both reactors in service with 50/50 flow split
- 200 ng/L to 10 ng/L requires 95% removal

# Formaldehyde

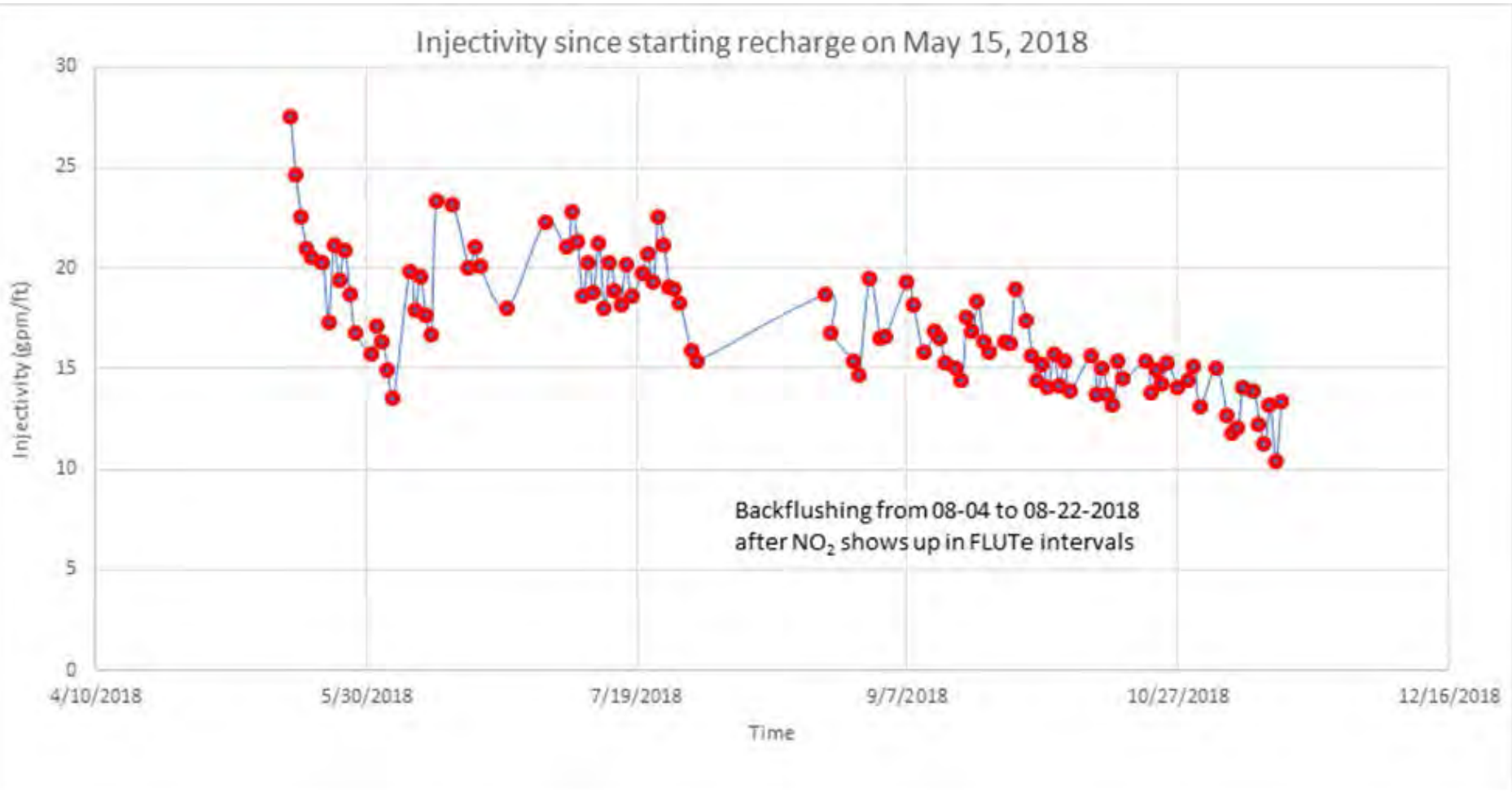
- Ozone can oxidize methanol to formaldehyde

Date	Formaldehyde (ug/L)	Ozone dose PPD	NP SCE TOC mg/L	NP SCE TN mg/L
April 4 <sup>th</sup>	41	~80	No data	~1.8 (SWIFT water)
May 15 <sup>th</sup>	<5	~60	10	~3.5
July 10 <sup>th</sup>	<5	~60	9	~2.2
October 2 <sup>nd</sup>	34	~60	11	~1.8

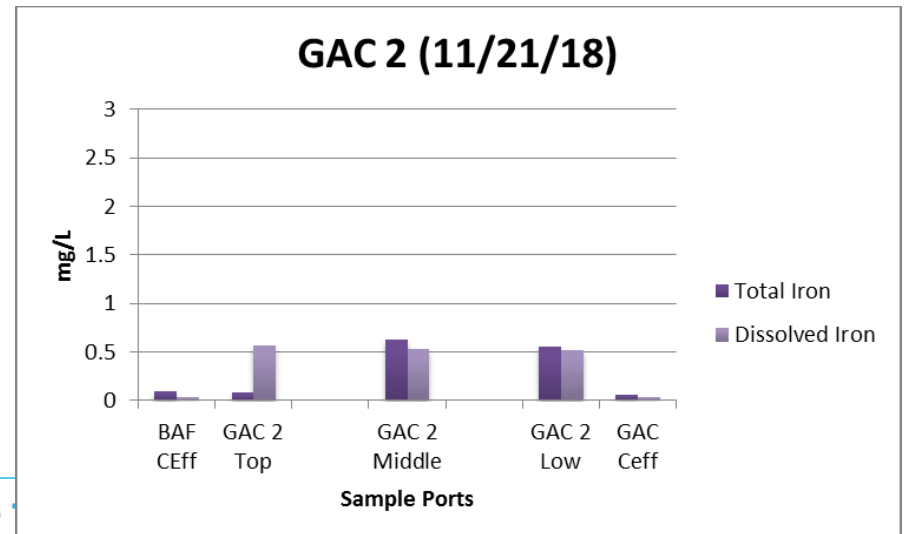
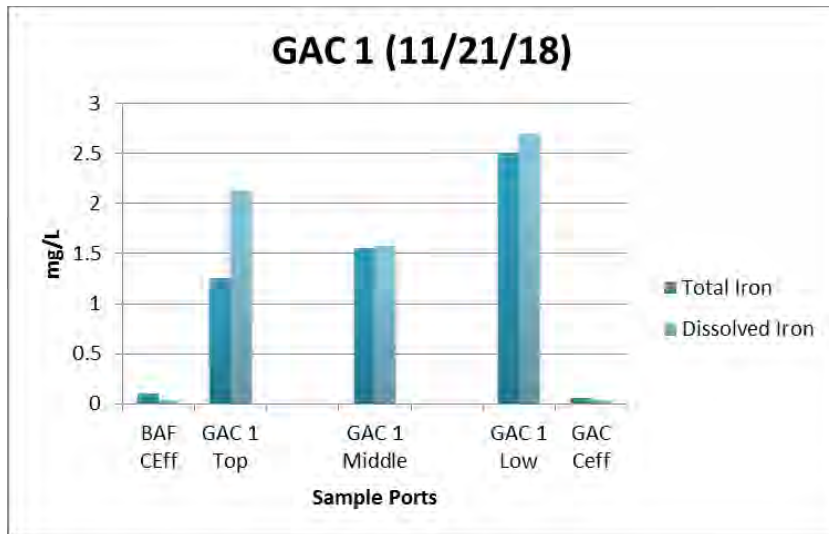
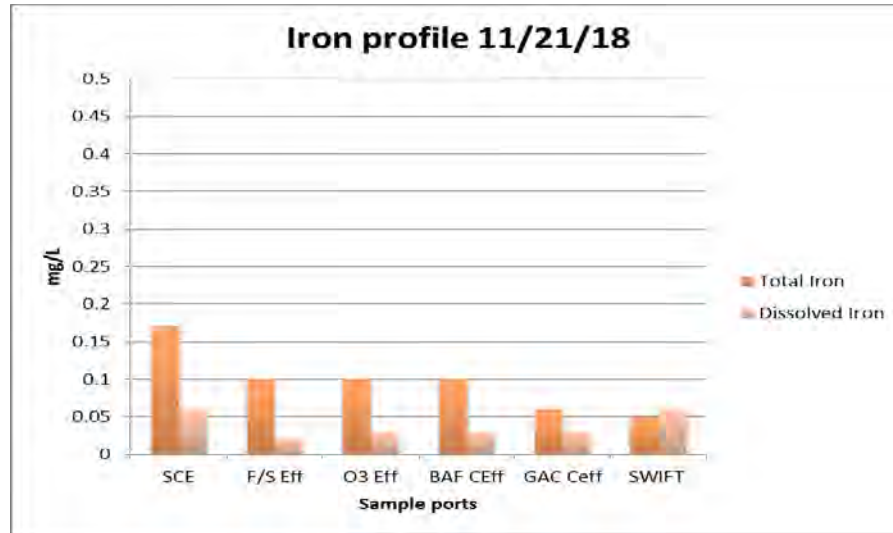
# Total Organic Carbon (TOC)



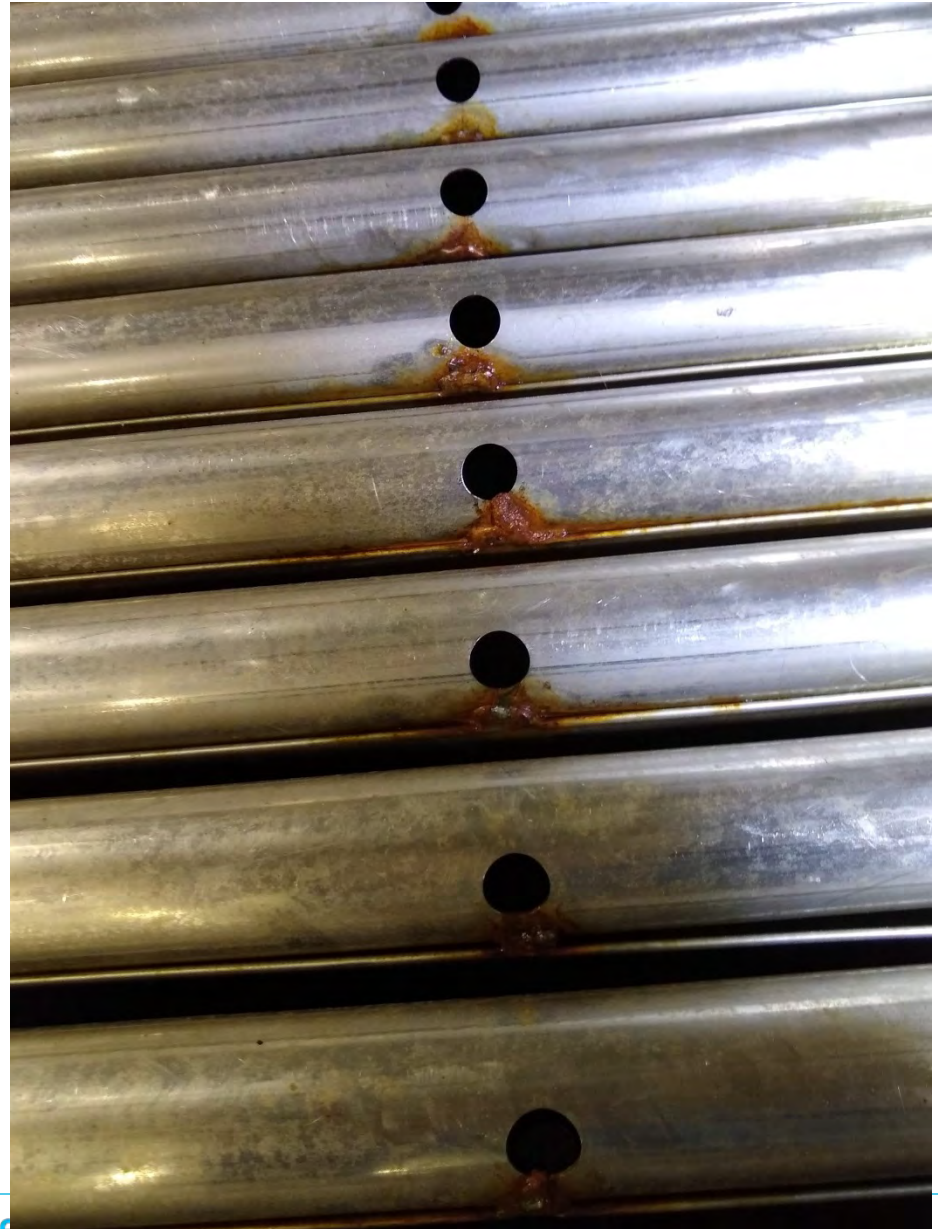
# Recharge Well Specific Injectivity



- An iron profile was performed on Nov 21<sup>st</sup> but everything looked normal, except for the sample ports on the GAC vessels









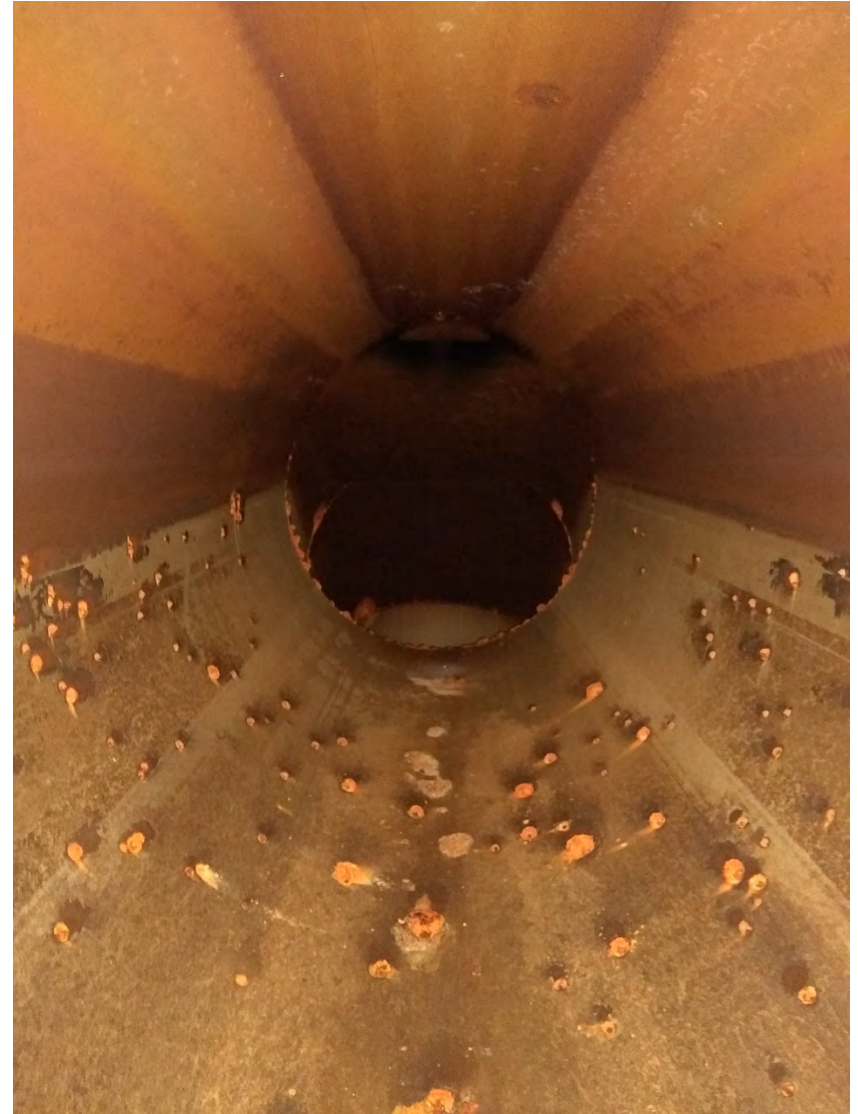


## Ozone Contactor

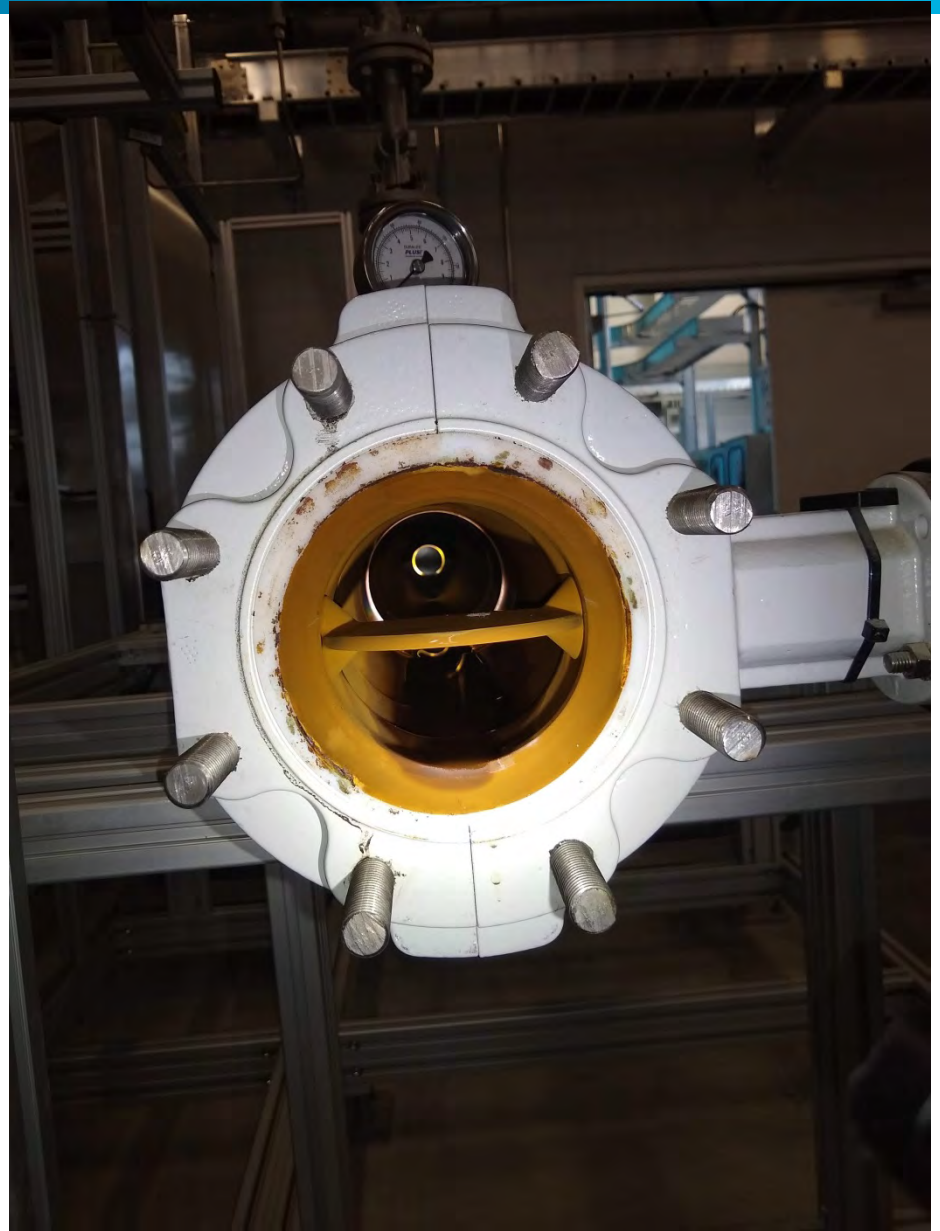




## Ozone Contactor



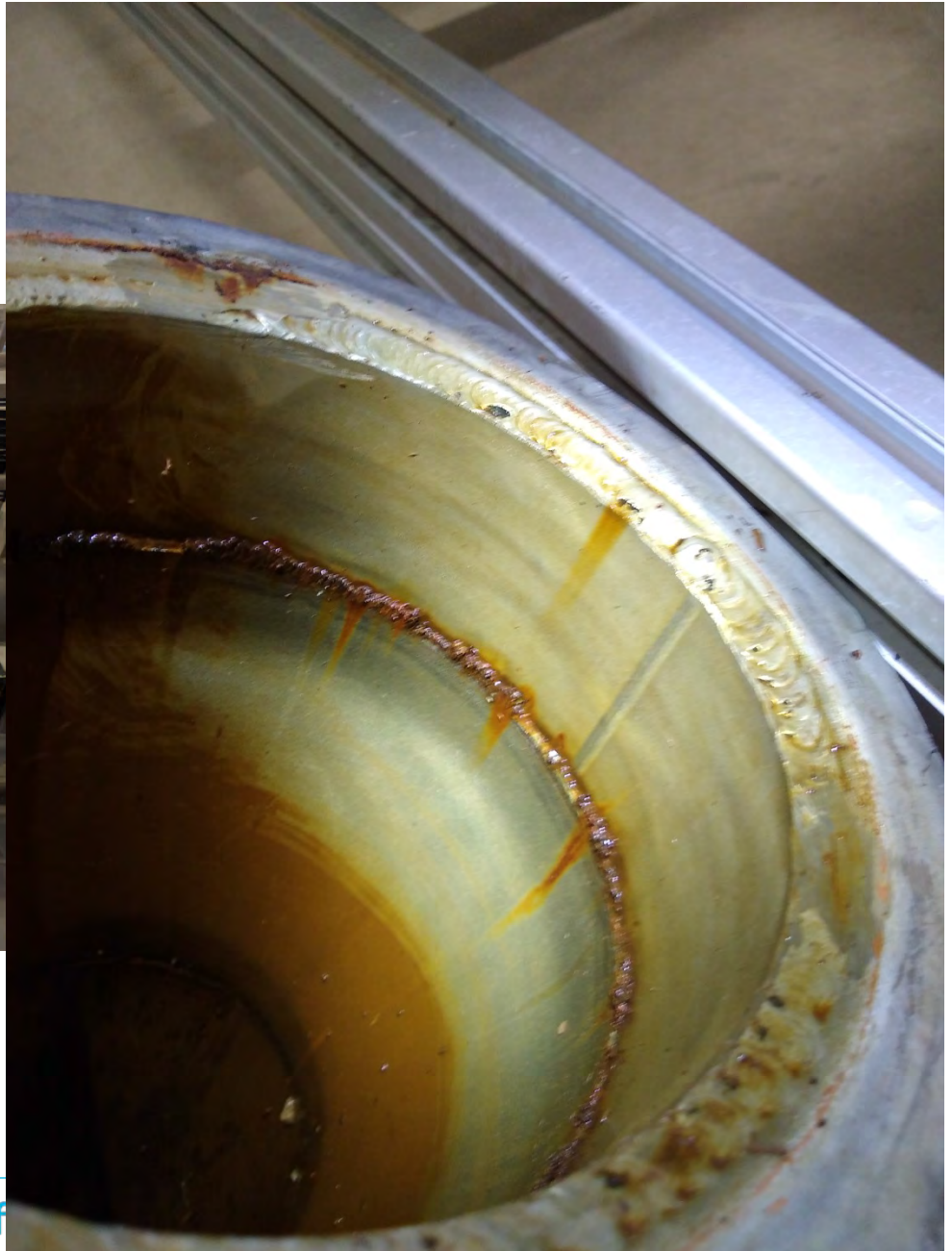
# Ozone Sidestream







## Ozone Sidestream







# Biofilters



tiative for





## GAC Feed Pump Station





## Drain Pump Station





## GAC Contactors

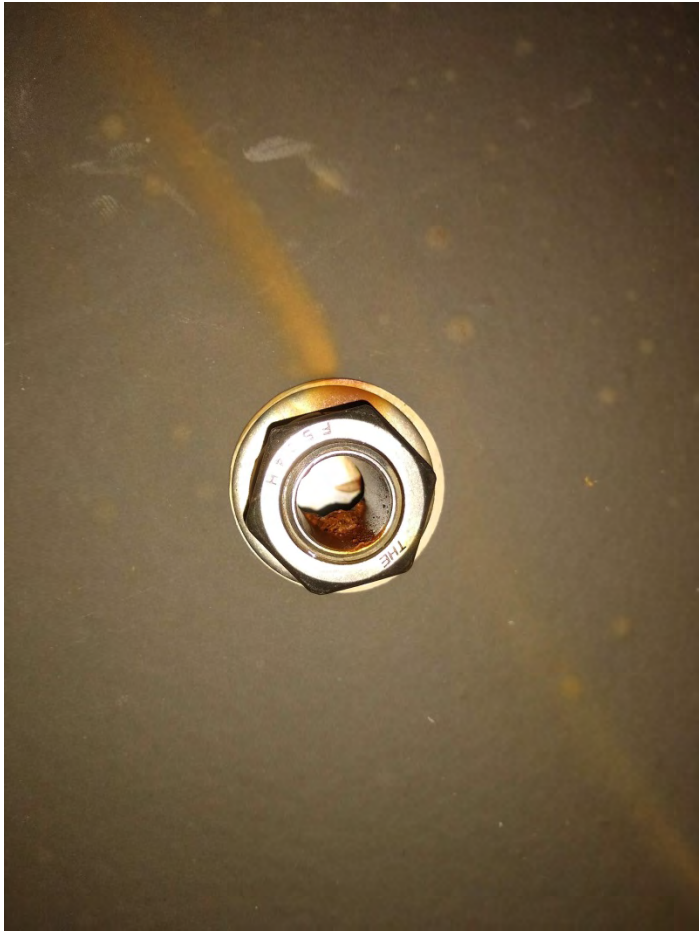


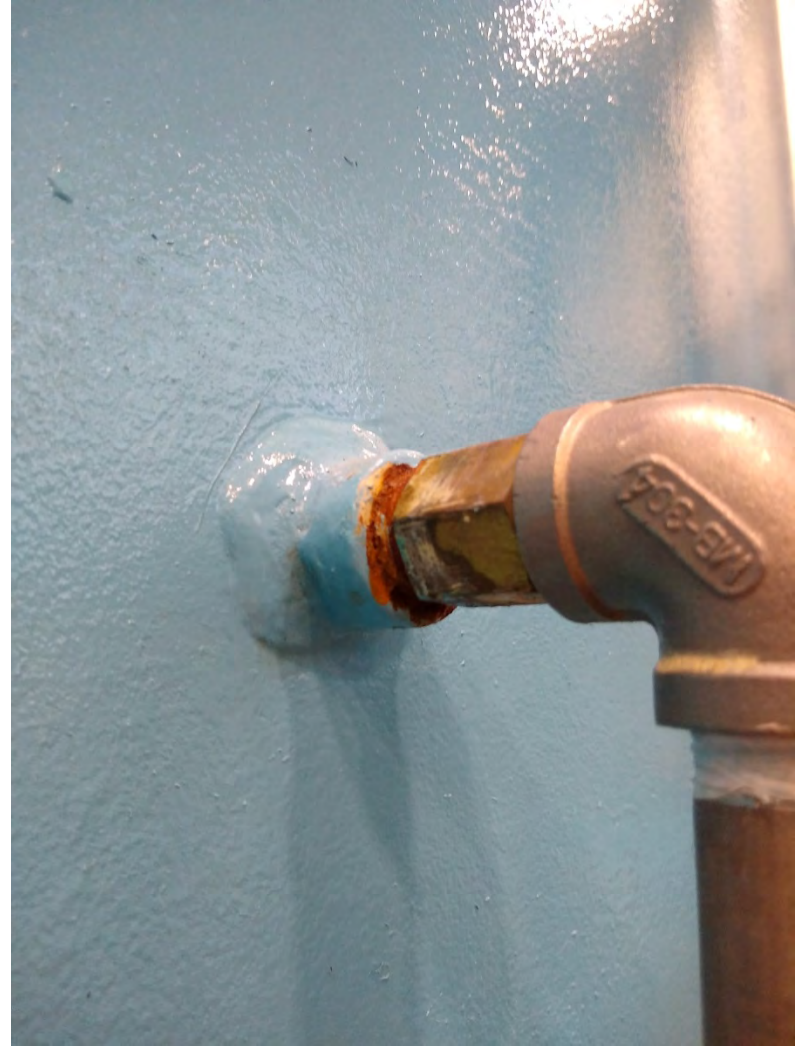
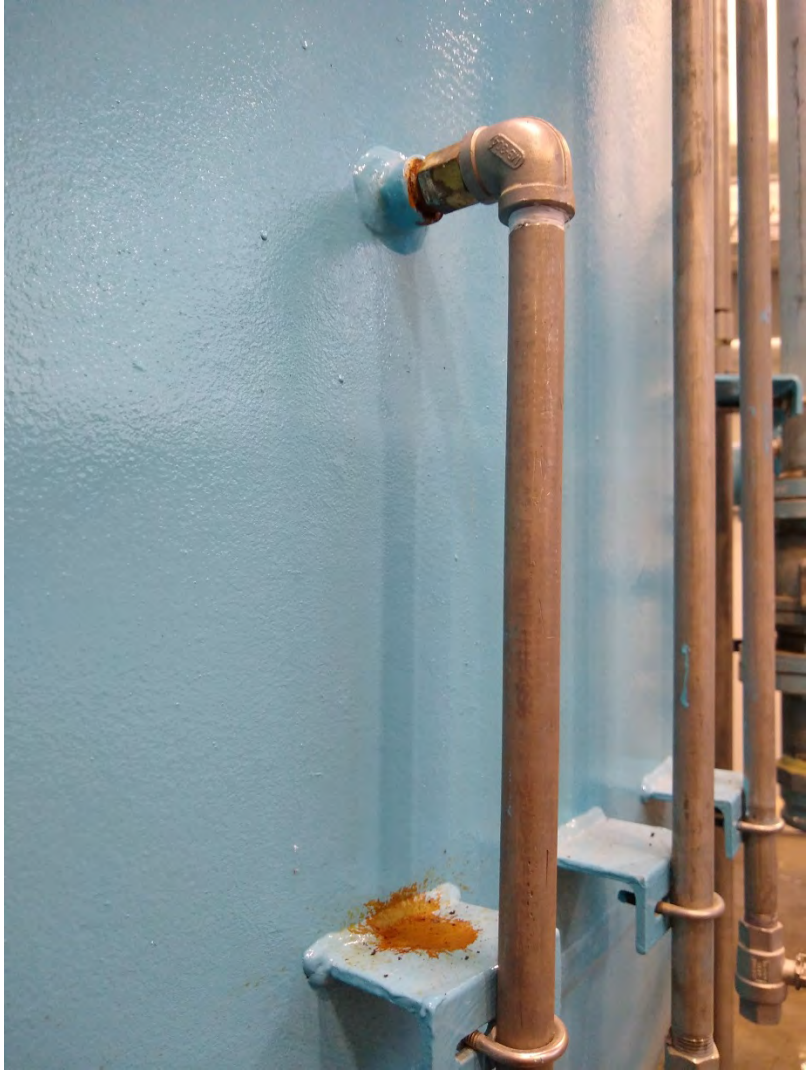
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Sustainable Water Initiative for Tomorrow



# GAC Contactors

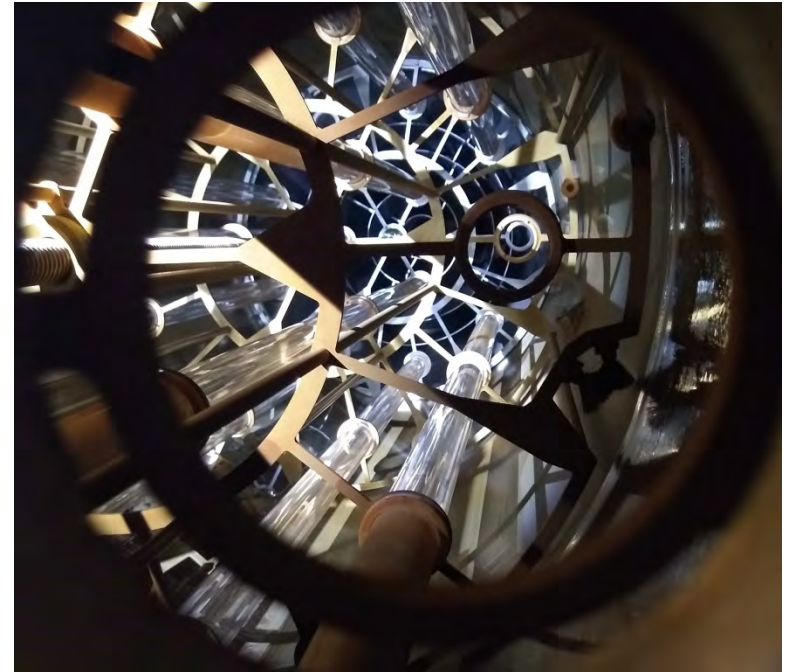








# UV Disinfection Reactors





## Recharge Well





SWIFTVA.COM



HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #3

AGENDA ITEM 4. – SWIFT Water Resources Engineering Grant Agreement



**HAMPTON ROADS SANITATION DISTRICT  
SWIFT - WATER RESOURCES ENGINEER GRANT AGREEMENT**

THIS GRANT AGREEMENT for the funding of a Water Resources Engineer position (the "Agreement") between the Virginia Department of Health ("Department") and the Hampton Roads Sanitation District ("HRSD") (individually each is a "Party" and collectively they are the "Parties"), is entered into this 21st day of May, 2019 (the "Effective Date").

**RECITALS**

**R:1.** HRSD's Sustainable Water Initiative for Tomorrow ("SWIFT") is a complex initiative adding advanced water treatment processes to existing HRSD wastewater treatment facilities to produce water that meets drinking water standards ("SWIFT Water") and using that SWIFT Water to recharge the Potomac aquifer; and

**R:2.** The Potomac aquifer is an important natural resource of the Commonwealth of Virginia ("Commonwealth"), as it is a drinking water source for hundreds of thousands of Virginians; and

**R:3.** The mission of the Department is to protect the health and promote the well-being of all people in Virginia including the oversight of drinking water programs and private wells throughout the Commonwealth; and

**R:4.** HRSD has voluntarily sought the Department's expertise in the review and development of SWIFT Water quality targets, monitoring and reporting requirements, treatment facility design, on-going operations monitoring, and participation in technical reviews; and

**R:5.** HRSD has facilitated a partnership between Virginia Tech and Old Dominion University to establish the Potomac Aquifer Recharge Monitoring Lab ("PARML") as an independent scientific monitoring entity to ensure protection of the Commonwealth's natural resource – the Potomac aquifer. The Department's expertise will be required to support the PARML to ensure protection of public health; and

**R:6.** The Department is resource constrained and in need of additional funding to meet HRSD's technical review needs and schedule as well as support for the PARML; and

**R:7.** The Department requires adequate funding from HRSD for the purposes outlined in this Agreement in order to ensure the Department has sufficient resources to accomplish its mission related to SWIFT, and protecting the health of groundwater users and the supply of groundwater for future generations of Virginians.

NOW THEREFORE, in consideration of the covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is acknowledged, the Parties agree as follows:



**TERMS**

- I. Pursuant to further terms in this Agreement, HRSD shall provide adequate funding to the Department so that the Department may employ a Water Resources Engineer and make that person available for support of SWIFT.
- II. WATER RESOURCES ENGINEER
  - A. QUALIFICATIONS
    1. The Water Resources Engineer to be employed pursuant to this Agreement shall possess the following minimum qualifications:
      - a. Comprehensive working knowledge of environmental engineering, primarily in water reuse, water, and wastewater treatment process technology.
      - b. A Bachelor of Science in Environmental Engineering, Civil Engineering, or a related Engineering Degree.
      - c. Knowledge of advanced water treatment technologies.
      - d. Knowledge of drinking water regulations and their application.
      - e. Knowledge of public health principles and practice.
      - f. Knowledge of national water reuse policies/regulations.
      - g. Basic knowledge of sampling techniques and analytical methods for chemical and microbiological contaminants and indicators.
      - h. Ability to provide sound engineering decisions for complex engineering projects.
      - i. Demonstrated ability to write and orally present technical information.
    2. In addition to the above minimum qualifications, the Water Resources Engineer to be employed pursuant to this Agreement may possess the following preferred qualifications:
      - a. A current and valid professional engineering license issued by the Virginia Department of Professional and Occupational Regulation.



- b. A Master of Science in Environmental Engineering, Civil Engineering, or a related Engineering Degree.
- c. Knowledge of groundwater systems and ground water recharge.

**B. DUTIES**

1. The duties of the Water Resources Engineer employed pursuant to this Agreement shall include but are not limited to the following tasks:

- a. Review quarterly reports concerning the SWIFT injection well.
- b. Review quarterly research concerning the SWIFT Research Project.
- c. Review future monitoring submittals from full-scale operations.
- d. Review future research projects from the SWIFT Research facility.
- e. Inform the Department's upper management of SWIFT-related issues.
- f. Monitor existing reuse projects such as the Upper Occoquan Service Authority, and relevant projects in other parts of the United States and the world.
- g. Serve as technical liaison from the Department to the PARML and the SWIFT Oversight Committee.
- h. Participate in the duties of the PARML as needed, including technical review and input.
- i. Participate in design meetings and review of plans and specifications for full-scale projects.
- j. Serve as the Department's agency lead for water reuse projects and as a technical resource to other Department divisions.
- k. Attend conferences on topics related to this Agreement.
- l. Stay informed of regulatory and technical changes on the topic of water reuse.



- m. Participate in efforts at the state and federal level to advance understanding of emerging contaminant issues as they relate to water reuse and the SWIFT project.
- n. Coordinate with the Department of Environmental Quality and the United States Geological Survey on groundwater management, especially with regard to recharge wells.

C. **AVAILABILITY.** The Water Resources Engineer shall be dedicated to SWIFT-related duties and activities in accordance with the terms of this Agreement. The Water Resources Engineer shall be available for on-site meetings at the SWIFT Research Center in Suffolk, Virginia with 7-days advance notice. The Water Resources Engineer shall be available to consult and work with the PARML on-site as needed. HRSD shall be notified of absences of more than two weeks in length. Should the Water Resources Engineer have excess capacity beyond SWIFT or water reuse related duties, the Department may use the remaining capacity without reservation, as specified in Section III of this Agreement. Should any conflict arise between the Water Resources Engineer's SWIFT duties and other Department requirements, SWIFT duties shall take priority.

D. **EMPLOYMENT.** The Water Resources Engineer shall be an employee of the Department, subject to all policies, procedures, and expectations of the Department, and entitled to all benefits enjoyed by other Department employees in grant restricted positions. HRSD shall participate on the selection panel for this position as a voting member. The co-directors of the PARML may also participate on the selection panel as voting members. The Department may have as many representatives on the selection panel as it desires.

E. **ANNUAL REVIEW.** HRSD and the co-directors of the PARML shall participate in the annual review process of the Water Resources Engineer, conducted in accordance with applicable Department policies. Regular feedback by HRSD to the Department regarding on-going performance is encouraged. HRSD shall notify the Department in writing of any failure by the Water Resources Engineer to meet performance expectations. HRSD shall provide such written notification within 90 days of any failure to meet such performance expectations identified by HRSD so that the Department may address performance deficiencies as necessary. HRSD providing the Department with two notices of a failure of the Water Resources Engineer to meet performance expectations within a 12-month period shall be grounds for HRSD to withhold payment under this Agreement. However, HRSD shall not withhold payment as long as the Department initiates and continues to pursue disciplinary action pursuant to the Commonwealth's policies and regulations. In the event HRSD and the Department disagree as to whether the Water Resources Engineer is failing to meet performance expectations, HRSD's representative and the



responsible Deputy Commissioner for the Department shall discuss the facts and circumstances related to the disagreement and make a good faith effort to resolve the disagreement prior to HRSD withholding payment.

III. GRANT PAYMENTS. The Department shall invoice HRSD for direct and overhead costs at the end of each calendar quarter, not to exceed \$35,000, associated with the Water Resources Engineer if the Water Resources Engineer is/was employed and performing the duties as described in this Agreement or any other SWIFT or water reuse related functions at least 75 percent of the available working hours during the quarter. HRSD shall process and pay the invoice within 30 days of receipt. Each invoice shall include a summary of work accomplished by the Water Resources Engineer during the quarter.

IV. TERM OF THE AGREEMENT. This Agreement shall have an initial term of 5 years at \$35,000 per quarter, for a total annual payment amount of \$140,000, and a total payment amount of \$700,000 over the five year term of the Agreement. The Agreement shall automatically renew for additional 5-year terms unless either Party provides written notice to the other Party that the Party does not wish to renew the Agreement. Such notice shall be provided at least 90 days prior to the end of the current 5-year term, in order to be effective.

V. GOVERNING LAW. This Agreement and all adversarial proceedings arising out of this Agreement shall be governed by the law of the Commonwealth, exclusively. Regardless of where actually delivered and accepted, this Agreement shall be deemed to have been delivered and accepted by the Parties in the Commonwealth. Any legal action concerning this Agreement shall be brought in a court of the Commonwealth with jurisdiction and where venue is proper.

VI. NO THIRD PARTY BENEFICIARIES. This Agreement is made solely for the benefit of the Department and HRSD, and no other person or entity shall have any right, benefit, or interest under or because of this Agreement.

VII. SOVEREIGN IMMUNITY. Nothing in this Agreement shall constitute a waiver of sovereign immunity.

#### VIII. TERMINATION

##### A. Termination for Cause

1. Upon a material breach of the Agreement by a Party (the "Breaching Party"), the other Party (the "Terminating Party") may terminate the Agreement for cause by providing to the Breaching Party a written notice of intent to terminate the Agreement, including an explanation of the basis for the termination ("Notice of Termination").



2. The Breaching Party shall have 60 days from its receipt of the Notice of Termination, or such longer time as agreed to by the Parties, to cure the breach and avoid termination (the "Cure Period"). If the Breaching Party fails to cure such breach by the expiration of the Cure Period, the termination shall be effective the next business day after the expiration of the Cure Period.

3. The Breaching Party may request that the Terminating Party reconsider its Notice of Termination by notifying the Terminating Party in writing of the Breaching Party's request for reconsideration within 10 days of the Breaching Party's receipt of the Notice of Termination. The Terminating Party shall make a final determination within 20 days of receipt of the Breaching Party's request for reconsideration, or such longer time as agreed to by the Parties, not to exceed the Cure Period.

B. Mutual Termination. The Parties may mutually terminate this Agreement by a written instrument signed by both Parties.

#### IX. NOTICE

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

For: HRSD

By U.S. Postal Service:

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

By Overnight Mail:

General Manager  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

For: Virginia Department of Health

By U.S. Postal Service or Overnight Mail:

Director, Office of Environmental Health Services  
109 Governor Street  
Richmond, Virginia 23219  
Telephone: (804) 864-7456

#### X. ASSIGNMENT

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



XI. AMENDMENT

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

XII. SEVERABILITY

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

XIII. DAMAGES

Damages to either Party are limited to the total value of the applicable quarterly payment in the quarter for which payment is due.

XIV. FORCE MAJEURE

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

XV. WAIVER

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

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

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any Party shall not preclude or waive the right to



use any or all other remedies. Such rights and remedies are given in addition to any other rights the Parties may have by law, statute, ordinance or otherwise.

XVI. INTEGRATION

This Agreement and any amendments pursuant to Section XI of the Agreement constitute the entire and exclusive agreement between the Parties relating to all specific matters covered herein. All other prior or contemporaneous verbal or written agreements, understandings, representations, and/or practices relative to the foregoing are hereby superseded, revoked and rendered ineffective for any purpose.

IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on December 18, 2018.

HAMPTON ROADS SANITATION DISTRICT

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

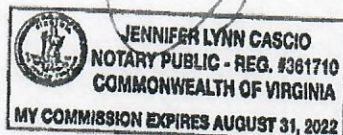
COMMONWEALTH OF VIRGINIA,  
CITY OF VIRGINIA BEACH, to-wit:

The foregoing agreement was acknowledged before me this 30<sup>th</sup> day of April, 2019, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.

*Jennifer Lynn Cascio*  
Notary Public

My commission expires:

Registration No.:





IN WITNESS WHEREOF, the Virginia Department of Health has caused this Agreement to be signed by the Commissioner on its behalf

VIRGINIA DEPARTMENT OF HEALTH

By: M. Norman Oliver MD  
Dr. M. Norman Oliver MD, MA  
State Health Commissioner

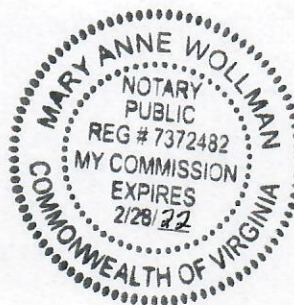
COMMONWEALTH OF VIRGINIA,  
CITY or COUNTY OF Richmond, to-wit:

The foregoing Agreement was acknowledged before me this 21<sup>st</sup> day of May, 2019, by \_\_\_\_\_ [Name], \_\_\_\_\_ [Title], City of \_\_\_\_\_ [LOCALITY], Virginia.  
Richmond M. Norman Oliver

Mary Anne Wollman  
Notary Public

My commission expires: 2/28/2022

Registration No.: 7372482



**MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THIRD PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**THIS MEMORANDUM OF AGREEMENT** (this “Agreement”) is made this 18<sup>TH</sup> day of APRIL, 2019, by and among Old Dominion University (“ODU”), Virginia Polytechnic Institute and State University (“Virginia Tech” or “VT”), and the Hampton Roads Sanitation District (“HRSD”) (each a “Party” and jointly the “Parties”), in coordination with the Virginia Department of Environmental Quality (“DEQ”) and the Virginia Department of Health (“VDH”) (each a “Coordinating State Agency”) and in accordance with §62.1-274 of the Code of Virginia.

**BACKGROUND**

A. SWIFT. The Sustainable Water Initiative For Tomorrow (“SWIFT”) Project is an innovative water treatment project in eastern Virginia designed to further protect the region’s environment, enhance the sustainability of the region’s long-term groundwater supply and help address environmental pressures such as Chesapeake Bay restoration, sea level rise and saltwater intrusion. The SWIFT Project will recycle highly treated water, which would otherwise be discharged into the Elizabeth, James or York rivers, by instead purifying it through additional rounds of advanced water treatment technologies to meet drinking water quality standards. The SWIFT Project water will then be used to recharge the Potomac Aquifer to maintain and augment this primary source of groundwater throughout eastern Virginia.

B. HRSD. HRSD is an innovative clean water utility established by the General Assembly in 1940 as a political subdivision of the Commonwealth with the authority to prevent pollution and protect water resources within its authorized service district, which now consists of 18 cities and counties in southeast Virginia. HRSD conceived of the SWIFT Project as a means of maximizing the environmental and natural resource benefits of its wastewater management infrastructure and operations for its service district and ratepayers while providing substantial ancillary benefits to the Commonwealth. HRSD is voluntarily developing the SWIFT Project and welcomes and encourages independent third party oversight of the SWIFT Project.

C. ODU. As a leading public research university located in the metropolitan Hampton Roads region of Virginia, ODU is capable of and willing to provide independent third party technical oversight of the SWIFT Project, specifically by performing certain technical and related administrative functions necessary for the creation and operation of the Potomac Aquifer Recharge Monitoring Laboratory in accordance with this Agreement.

D. VT. As the Commonwealth’s comprehensive land grant university, VT has operated the Occoquan Watershed Monitoring Laboratory since 1972 to provide independent third party technical oversight of the Occoquan Reservoir indirect potable reuse project involving major water and wastewater utilities in northern Virginia. VT is capable of and willing to assist in providing independent third party technical oversight of the SWIFT Project, specifically by

performing certain technical functions associated with the operation of the Potomac Aquifer Recharge Monitoring Laboratory in collaboration with ODU as provided by this Agreement.

E. DEQ. DEQ is an executive department of the Commonwealth of Virginia whose purpose includes carrying out state policies aimed at conserving the Commonwealth's natural resources and protecting its waters from pollution. DEQ administers the State Water Control Law by which the General Assembly has established that it is the policy of the Commonwealth to promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health.

F. VDH. VDH is an executive department of the Commonwealth of Virginia empowered by the General Assembly with general supervision and control over water supplies insofar as the bacteriological, chemical, radiological, and physical quality of waters furnished for human consumption may affect the public health. The General Assembly has also charged VDH with providing technical assistance to owners of regulated waterworks regarding sources of water supply and methods of assuring drinking water is safe and protective of public health.

G. The Committee. The Potomac Aquifer Recharge Oversight Committee ("Committee") is the committee, established and operating pursuant to §§ 62.1-271 – 62.1-275 of the Code of Virginia, with certain oversight of the SWIFT Project and the Potomac Aquifer Recharge Monitoring Laboratory.

## AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants and conditions herein, the Parties hereby agree as follows.

1. Monitoring Lab Established. The Potomac Aquifer Recharge Monitoring Laboratory ("Monitoring Lab") is hereby established pursuant to §62.1-274 of the Code of Virginia for the purpose of providing independent third party monitoring and oversight of the SWIFT Project's effects on the Potomac Aquifer. The Monitoring Lab shall be located at a suitable location in the Hampton Roads region as selected by ODU and Virginia Tech and as approved by HRSD. Specific responsibilities associated with the operation of Monitoring Lab are set forth below.

2. Key Personnel.

A. ODU Director. ODU agrees to provide a tenured faculty member in the ODU Department of Civil and Environmental Engineering with appropriate management experience and technical and scientific knowledge to serve as one of the Monitoring Lab's two co-directors (the "ODU Director"). The ODU Director shall be appointed by the ODU President with the concurrence of the DEQ Director, and the State Health Commissioner, whose concurrence shall not unreasonably be withheld. The ODU Director shall carry out the administrative and technical duties specified by this Agreement and as required by the relevant laws of the Commonwealth of Virginia. ODU shall remain responsible for all compensation, benefits and supervision of the ODU Director as an employee of ODU and any other ODU employees or students performing Monitoring Lab duties.

B. Virginia Tech Director. VT agrees to provide a tenured faculty member of the VT Charles E. Via, Jr. Department of Civil and Environmental Engineering with appropriate management experience and technical and scientific knowledge to serve as one of the Monitoring Lab's two co-directors (the "VT Director"). The VT Director shall be appointed by the VT President with the concurrence of the DEQ Director, and the State Health Commissioner, whose concurrence shall not be unreasonably withheld. The VT Director shall carry out the administrative and technical duties specified by this Agreement and as required by the relevant laws of the Commonwealth of Virginia. VT shall remain responsible for all compensation, benefits and supervision of the VT Director as an employee of VT and any other VT employees or students performing Monitoring Lab duties.

3. General Administration. ODU and VT, acting through the ODU Director and VT Director (collectively, "Co-Directors"), shall jointly provide general management and administrative support necessary and appropriate for the effective, efficient operation of the Monitoring Lab in accordance with the scope and requirements of this Agreement and subject to available financial resources, including (a) managing the overall operation of the Monitoring Lab; (b) employing or contracting for necessary personnel or services; (c) securing necessary laboratory and office space; (d) accessing or acquiring necessary laboratory and field sampling and analysis equipment; and (e) entering into other necessary and appropriate contracts with third parties. Administration of the Monitoring Lab shall be subject to oversight of the Committee in accordance with §§ 62.1-273 and 62.1-274 of the Code of Virginia and in accordance with any rules and regulations established by the Committee for the Monitoring Lab and as required by the relevant laws of the Commonwealth of Virginia.

4. Financial Management and Contributions. The Co-Directors shall manage the finances of the Monitoring Lab, including requesting start-up funding from HRSD as provided herein for annually budgeted activities, receiving such funds from HRSD and funds from other sources, and managing and disbursing funds only for the specific purposes of this Agreement.

A. Start-Up Funding. To support the establishment and initial operation of the Monitoring Lab, HRSD shall provide guaranteed start-up funding contributions of up to One Million Dollars (\$1,000,000) per year toward that year's budget activities, for a period of five (5) consecutive years running from July 1, 2019 through June 30, 2024, for a maximum potential HRSD obligation of Five Million Dollars (\$5,000,000). HRSD shall have no obligation to provide funding in greater amounts, nor shall HRSD have any obligation to provide funding after the fifth year.

B. Annual Budget. The Co-Directors shall annually adopt a budget for the upcoming fiscal year. With respect to guaranteed start-up funding from HRSD, the Co-Directors shall make any budget request of HRSD by each January 15 prior to the July 1 start of the budget year for which such funds are requested. The Co-Directors may also, subject to the approval of the Committee, apply for, accept and expend appropriations, grants, gifts, and donations from other public or private sources to be applied in accordance with and for the purposes of this Agreement. As HRSD generally encourages grants, gifts, and donations for the Monitoring Lab, HRSD intends to assist the Co-Directors with proposal preparation for the purpose of securing such sources of funding. Any effort to secure such sources shall require the consent of the Co-

Directors and HRSD. In addition, with the consent of the Co- Directors and HRSD, the funding provided by HRSD pursuant to Subparagraph 5.B. may be used as in-kind support or matching funds when necessary or beneficial to do so. By July 1, 2021, the Co-Directors, in consultation with HRSD, shall assist the Committee to develop a plan for funding the operations of the Monitoring Lab beyond June 30, 2024. The conceptual plan for funding shall be submitted to the Committee for incorporation into the Committee’s recharge monitoring funding plan required by Enactment 2 of Chapters 54 and 58 of the 2019 Acts of Assembly for funding such activities beginning July 1, 2022.

C. Accounts and Records. The monies of the Monitoring Lab shall be deposited in any such bank account as ODU and VT shall designate, and all payments by the monitoring Lab (with the exception of those from petty cash) shall be made by checks. The financial records of the Monitoring Lab shall be open to inspection by HRSD upon HRSD’s request during any year within which HRSD provides funding to the Monitoring Lab and for a period lasting for five (5) years after the close of any such year.

5. Independent Third Party Technical Oversight Activities.

A. Initial Focus. The function of the Monitoring Lab shall initially be focused on meeting the demonstration phase needs of the SWIFT Project; however, development of the Monitoring Lab shall be planned in a manner to support future expansion in a timely and cost-effective manner to meet increased needs associated with the phased full-scale implementation of the SWIFT Project.

B. Functions. ODU and VT, acting through the Co-Directors, shall coordinate and cooperate to perform the following functions in a prudent and cost-effective manner in accordance with sound scientific principles:

i. Reviewing and synthesizing relevant water quality data to monitor the impact of the SWIFT Project on the Potomac Aquifer;

ii. Conducting sampling and analysis of SWIFT Water and groundwater on a local scale near SWIFT Project injections to verify monitoring data reported by HRSD;

iii. Identifying needs and options for filling data gaps or improving sampling and analytical techniques, including recommending appropriate changes to monitoring locations and protocols;

iv. Generating, assimilating, interpreting, managing, consolidating, and, as appropriate, disseminating data to provide transparency and help inform decision making related to the impact of the SWIFT Project on the Potomac Aquifer; and

v. Advancing understanding of the Potomac Aquifer, aquifer science, managed aquifer recharge, water reuse treatment technology, and advanced water treatment, through targeted research, analysis, or modeling associated with the SWIFT Project.



C. Access to and Use of SWIFT Research Center and Data. HRSD shall provide access to the Co-Directors (and their designees approved by HRSD, the approval of which shall not be unreasonably withheld) to HRSD's SWIFT Research Center, HRSD's SWIFT Project laboratory data, and to HRSD's wastewater facility operational data. HRSD agrees to host Monitoring Lab research at HRSD's SWIFT Research Center, subject to HRSD's determination as to the availability of space in its facility and to the avoidance of inconvenience to HRSD. HRSD agrees to consider operating or modifying the SWIFT Research Center (full-scale advanced treatment train, advanced treatment pilot systems, recharge well, monitoring wells, etc.) for the purposes of Monitoring Lab research recommended by the Co-Directors. Any proposals for such operation or modification should be developed in a collaborative manner with HRSD staff. At its discretion, HRSD intends to continue to host at the SWIFT Research Center faculty collaborators and graduate student interns from VT, ODU, and other universities, and to host graduate students and other staff members from the Monitoring Lab.

6. Coordinating State Agencies. DEQ and VDH join in this Agreement as Coordinating State Agencies for the limited purpose of expressing their intention to make their best efforts, within their available resources and without limiting their regulatory discretion, to (a) work cooperatively with the Monitoring Lab on all technical issues associated with the SWIFT Project (within the scope of Subparagraph 5.B above), (b) to review in a timely manner all work products provided by the Monitoring Lab for review, and (c) to provide upon request of the Monitoring Lab all relevant public records within their possession or control relevant to the work of the Monitoring Lab that are required to be disclosed under the Virginia Freedom of Information Act (§ 2.2-3700 *et seq.* of the Code of Virginia). This agreement shall not be construed to prohibit or limit DEQ or VDH from taking any lawful action related to the SWIFT Project. None of the obligations of ODU, VT and HRSD under this Agreement shall be enforceable by the Coordinating State Agencies. Each of the Coordinating State Agencies reserves the right to withdraw from this Agreement in its sole discretion in accordance with Paragraph 7.

7. Term and Termination. This Agreement will be in full force and effect until June 30, 2024, and shall continue in full force and effect thereafter unless and until terminated as follows. On or after July 1, 2023, ODU, VT or HRSD may terminate this Agreement by providing one (1) year advance written notice of termination to all Parties, unless a shorter time is mutually agreed to in writing by ODU, VT, and HRSD. The Coordinating State Agencies shall have no right to terminate this Agreement, but each of the Coordinating State Agencies shall have the right to withdraw from this Agreement at any time upon written notice to all Parties.

8. Mutual Cooperation. The Parties shall continue to cooperate with each other as reasonably necessary and appropriate to the furtherance of the purposes of this Agreement.

9. Integration and Modification. This Agreement contains the entire agreement among the Parties as to the subject matter hereof and supersedes all previous written and oral negotiations, commitments, proposals and writings. No amendments may be made to this Agreement except by a writing signed by all Parties.

10. No Third-Party Beneficiaries. This Agreement is solely for the benefit of the



Parties hereto and their permitted successors and assigns and shall not confer any rights or benefits on any other person or entity.

11. No Assignment. No Party may transfer or assign this Agreement, or its rights or obligations hereunder, without the prior written consent of the other Parties, which consent shall not be unreasonably withheld.

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

13. Governing Law; Venue; Severability. This Agreement shall be construed in accordance with and governed for all purposes by the laws of the Commonwealth of Virginia. If any word or provision of this Agreement as applied to any Party or to any circumstance is adjudged by a court to be invalid or unenforceable, the same shall in no way affect any other circumstance or the validity or enforceability of any other word or provision.

14. Change in Law. In the event of any material change in applicable laws or regulations, including without limitation any legislation or regulatory action substantially affecting the oversight of the SWIFT Project, the Parties shall work together to attempt to amend this Agreement to conform to such change, while maintaining as closely as practical the original intent of this Agreement.

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

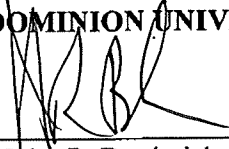
16. Authorization. Each Party represents that its execution, delivery and performance under this Agreement have been duly authorized by all necessary action on its behalf, and do not and will not violate any provision of its charter or enabling legislation or result in a material breach of or constitute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

IN WITNESS WHEREOF, the Parties and Coordinating State Agencies have caused the execution of this Agreement as of the date first written above.

**SIGNATURE PAGE OF MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THRID PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**OLD DOMINION UNIVERSITY**

By: \_\_\_\_\_

  
John R. Broderick  
President

[SIGNATURES CONTINUE ON NEXT PAGE]


**Approved as to form and legal sufficiency**

By: \_\_\_\_\_

  
Office of University Counsel

**SIGNATURE PAGE OF MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THRID PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY**

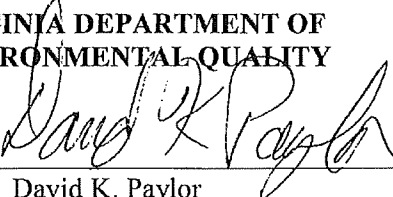
By:  \_\_\_\_\_  
Timothy D. Sands  
President

[SIGNATURES CONTINUE ON NEXT PAGE]

**SIGNATURE PAGE OF MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THRID PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**VIRGINIA DEPARTMENT OF  
ENVIRONMENTAL QUALITY**

By: \_\_\_\_\_

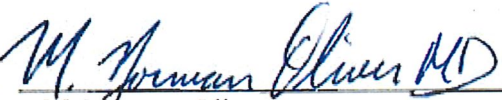
A handwritten signature in black ink, appearing to read "David K. Paylor", written over a horizontal line.

David K. Paylor  
Director

[SIGNATURES CONTINUE ON NEXT PAGE]

**SIGNATURE PAGE OF MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THRID PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**VIRGINIA DEPARTMENT OF HEALTH**


By:   
M. Norman Oliver  
State Health Commissioner

[END OF SIGNATURES]



**SIGNATURE PAGE OF MEMORANDUM OF AGREEMENT  
ESTABLISHING THE POTOMAC AQUIFER RECHARGE MONITORING  
LABORATORY FOR INDEPENDENT THRID PARTY TECHNICAL  
OVERSIGHT OF THE HRSD SWIFT PROJECT**

**HAMPTON ROADS SANITATION DISTRICT**

By:   
\_\_\_\_\_  
Edward G. Henifin  
General Manager

[SIGNATURES CONTINUE ON NEXT PAGE]

## HRSD SWIFT OVERSIGHT

*A BILL to amend the Code of Virginia by adding in Title 62.1 a chapter numbered 26, consisting of sections numbered **62.1-271** through **5**, relating to Potomac Aquifer recharge monitoring; laboratory established; SWIFT Project.*

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding in Title 62.1 a chapter numbered 26, consisting of sections numbered **62.1-271** through **62.1-275**, as follows:

### CHAPTER 26. POTOMAC AQUIFER RECHARGE MONITORING.

§ **62.1-271**. *Definitions.*

*For the purposes of this chapter:*

*"Committee" means the Potomac Aquifer Recharge Oversight Committee established pursuant to § **62.1-272**.*

*"Department" means the Department of Environmental Quality.*

*"HRSD" means the Hampton Roads Sanitation District.*

*"Laboratory" means the Potomac Aquifer Recharge Monitoring Laboratory established pursuant to § **62.1-274**.*

*"SWIFT Project" means the Sustainable Water Initiative for Tomorrow Project conducted by HRSD.*

§ **62.1-272**. *Potomac Aquifer Recharge Oversight Committee.*

*A. The Potomac Aquifer Recharge Oversight Committee is established as an advisory board and shall consist of eight voting members:*

- 1. The State Health Commissioner or his designee, who shall be a full-time employee of the Virginia Department of Health;*
- 2. The Director of the Department of Environmental Quality or his designee, who shall be a full-time employee of the Department;*
- 3. The Executive Director of the Hampton Roads Planning District Commission or his designee, who shall be a full-time employee of the Hampton Roads Planning District Commission;*

4. *The co-Directors of the Potomac Aquifer Recharge Monitoring Laboratory established pursuant to § 62.1-274;*

5. *The Director of the Occoquan Watershed Monitoring Laboratory, established pursuant to regulations adopted by the Board;*

6. *A Virginia citizen who is a full-time employee of a water authority or locality that depends on the Potomac Aquifer as a significant source of public drinking water; and*

7. *A Virginia citizen who is a licensed physician engaged in medical practice within the Eastern Virginia Groundwater Management Area.*

*The two citizen members shall be selected for merit without regard to political affiliation and shall, by character and reputation, reasonably be expected to inspire the highest degree of cooperation and confidence in the work of the Committee. Each citizen member shall be appointed by the Governor, subject to confirmation by the General Assembly, and shall be appointed for an initial term of two years ending July 1, 2021, and for a term of four years thereafter. Any vacancy of the seat of a citizen member other than by expiration of a term shall be filled by the Governor by appointment for the unexpired term.*

*B. The Committee shall have two nonvoting, ex officio members:*

*1. The Regional Administrator of Region III of the U.S. Environmental Protection Agency (EPA) or his designee, who shall be a full-time employee of EPA Region III; and*

*2. The Director of the Virginia and West Virginia Water Science Center of the U.S. Geological Survey (USGS) or his designee, who shall be a full-time employee of USGS.*

*C. The Director of the Department shall be the initial chairman of the Committee and shall serve an initial term as chairman until July 1, 2020. The Committee shall elect a chairman to serve thereafter from among any of the eight voting members. The chairman shall be elected to serve a one-year term ending the next July 1 or until his successor is elected. There shall be no limitation on the number of consecutive terms that a committee member may be elected to serve as chairman.*

*D. The Committee shall convene at least quarterly during the initial three years ending July 1, 2022, and shall convene at least once per calendar year thereafter.*

**§ 62.1-273. Committee duties and functions.**

*A. The Committee shall be responsible for ensuring that the SWIFT Project, including in particular its effect on the Potomac Aquifer, is monitored independently.*

*B. The Committee shall periodically and not less than every five years obtain an evaluation of the work of the Potomac Aquifer Recharge Monitoring Laboratory by an independent panel of national experts convened under the auspices of the National Water Research Institute or a*

*similar organization. The evaluation shall address (i) monitoring parameter selection procedures; (ii) analytical methods and screening techniques; (iii) monitoring locations, frequency, results, and interpretation; (iv) modeling activities; and (v) research activities.*

*C. Additional related activities of the Committee may include:*

- 1. Ensuring that a monitoring program is developed and implemented for monitoring water quality, geological, aquifer pressure, land subsidence, and other SWIFT Project-related impacts;*
- 2. Ensuring independent review of data concerning the quality of the final water produced by the SWIFT Project and upstream process control testing conducted by HRSD in the course of operating the SWIFT Project;*
- 3. Ensuring that a continuous record of monitoring data is maintained and available;*
- 4. Ensuring that projections are made of the effects of the SWIFT Project;*
- 5. Ensuring that the Laboratory operations are separate, distinct, and independent from operations by HRSD;*
- 6. Ensuring that research or modeling on aquifer science, managed aquifer recharge, water reuse treatment, wastewater treatment, and advanced treatment technology is conducted and coordinated with the appropriate stakeholders;*
- 7. Ensuring that data on the status and performance of the SWIFT Project and on any changes in the condition of the aquifer due to the SWIFT Project are synthesized, reported, and submitted at least once a year to the relevant regulatory agencies and made available to localities, water authorities, the general public, and other stakeholders within the Eastern Virginia Groundwater Management Area;*
- 8. Serving as a liaison with stakeholders in the Eastern Virginia Groundwater Management Area;*
- 9. Ensuring that informational material related to the SWIFT Project is readily available to the public;*
- 10. Ensuring that the Laboratory is established to fulfill the above responsibilities;*
- 11. In the event that the Committee finds there to be an imminent danger to the environment, to public welfare, safety or health, or to a public water supply that is related to SWIFT, referring such matter to the State Water Control Board for the potential issuance of an emergency special order to cease injection or make changes pursuant to subdivisions (8a) and (8b) of § 62.1-44.15 or the Virginia Department of Health for the potential issuance of an emergency order to cease injection or make changes pursuant to §§ 32.1-13 or **32.1-175**; and*

12. *In the event that the Committee finds SWIFT Project water does not meet HRSD standards for tasting events, directing HRSD to discontinue its use of SWIFT Project water in water tasting demonstrations or limited demonstration-scale promotional products.*

*D. The Committee may establish an advisory council to provide scientific and technical expertise in fields including aquifer science, managed aquifer recharge, wastewater treatment, advanced water treatment technology, water reuse, geology, geochemistry, hydrogeology, and related fields. The Committee may direct the advisory council to synthesize technical information for the Committee, provide recommendations related to monitoring SWIFT Project impacts, and provide other advice and support.*

*E. The authority granted to the Committee pursuant to this section shall not be construed to prohibit or limit the Department, State Water Control Board, or the State Health Commissioner from taking any lawful action related to the SWIFT Project.*

**§ 62.1-274. Potomac Aquifer Recharge Monitoring Laboratory.**

*A. The Potomac Aquifer Recharge Monitoring Laboratory is established and shall be located at a suitable location in the Hampton Roads region as determined by Old Dominion University (ODU) and Virginia Polytechnic Institute and State University (VT) and approved by HRSD..*

*B. 1. One co-Director of the Laboratory shall be a member of the faculty of ODU (the ODU Director) who has appropriate technical and scientific knowledge and shall be appointed by the President of ODU with the concurrence of the Director of the Department and the State Health Commissioner.*

*2. The ODU Director shall coordinate with the VT Director in efficiently and effectively carrying out the duties of the Laboratory.3. The ODU Director shall be under the general supervision of the President of ODU and shall carry out specific duties imposed upon him by the President. The ODU Director also shall carry out the duties listed in this section and in so doing shall act at the direction of the Potomac Aquifer Recharge Oversight Committee established by § 62.1-272.*

*C. 1. One co-Director shall be a member of the faculty of Virginia Polytechnic Institute and State University (the VT Director) who has appropriate technical and scientific knowledge and shall be appointed by the President of VT, with the concurrence of the Director of the Department and the State Health Commissioner.*

*2. The VT Director shall coordinate with the ODU Director in efficiently and effectively carrying out the duties of the Laboratory.3. The VT Director shall be under the general supervision of the President of VT and shall carry out specific duties imposed upon him by the President. The VT Director also shall carry out the duties listed in this section and in so doing shall act at the direction of the Potomac Aquifer Recharge Oversight Committee established by § 62.1-272.*

*D. Subject to the approval of the Committee, the co-Directors may apply for, accept, and expend grants, gifts, donations, and appropriated funds from public or private sources; employ personnel; and enter into contracts to carry out the purposes of this section.*



*E. The Laboratory shall work cooperatively with relevant technical experts as appropriate and necessary to carry out the purposes of this chapter, including experts at the Virginia Institute of Marine Science, The College of William and Mary in Virginia, Christopher Newport University, the University of Virginia, and other universities, agencies, and departments of the Commonwealth, and the U.S. Geological Survey.*

*F. The Laboratory shall:*

*1. Monitor the impact of the SWIFT Project on the Potomac Aquifer by reviewing and synthesizing relevant water quality data;*

*2. Identify needs and recommend options for filling gaps in the monitoring of the Potomac Aquifer, such as by recommending changes to monitoring locations and protocols;*

*3. Conduct sampling and analysis of SWIFT Project water and groundwater on a local scale near SWIFT Project injections to verify monitoring data reported by HRSD and transmit results of such analyses to the Director of the Department, the State Health Commissioner and HRSD;*

*4. Generate, assimilate, interpret, manage, and consolidate data to help inform decision making related to the impact of the SWIFT Project on the Potomac Aquifer. These actions may include the creation of a clearinghouse for aquifer and SWIFT Project data and the synthesis and dissemination of information to various audiences, including the public and the scientific community; and*

*5. Advance understanding of the Potomac Aquifer, aquifer science, managed aquifer recharge, water reuse treatment technology, and advanced water treatment, through research, analysis, or modeling.*

*G. The Laboratory shall focus initially on meeting the demonstration-phase needs of the SWIFT Project; however, development of the Laboratory shall be planned in a manner to support its timely and cost-effective expansion to meet the increased needs associated with the phased full-scale implementation of the SWIFT Project.*

*§ 62.1-275. Cessation of injection.*

*A. HRSD shall operate and monitor the SWIFT advanced treatment process and recharge operations in accordance with the applicable permit(s) and authorization(s) issued by the United States Environmental Protection Agency at all times, including cessation of injection and implementation of other required measures when applicable in accordance with the terms and conditions of the permitted contingency plan.*

*B. The State Water Control Board may issue to HRSD a special order or emergency special order pursuant to subdivisions (8a) and (8b) of § 62.1-44.15 or the State Health Commissioner may issue to HRSD an emergency order pursuant to §§ 32.1-13 or 32.1-175 to cease injections or make necessary corrections to the SWIFT Project's advanced treatment processes or*

*recharge operations for HRSD's failure to comply with the requirements of the applicable permit(s) and authorization(s) issued by the United States Environmental Protection Agency.*

*This subsection shall not be construed to prohibit or limit the Department, State Water Control Board, or the State Health Commissioner from taking any lawful action related to the SWIFT Project.*

2. That the Potomac Aquifer Recharge Oversight Committee established by § **62.1-272** of the Code of Virginia, as created by this act, shall request from the Hampton Roads Sanitation District funding sufficient to conduct its activities, including the monitoring of the recharge of the Potomac Aquifer, until July 1, 2022, and that no later than July 1, 2021, the Committee shall develop a plan for funding such activities beginning July 1, 2022.

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #6

Agenda Item 7. - Pretreatment and Pollution Prevention High Strength Surcharge Program Modifications for Non-Permitted Commercial Facilities Presentation



# Surcharge Program Modifications for Non-Permitted Commercial Facilities

December 18, 2018



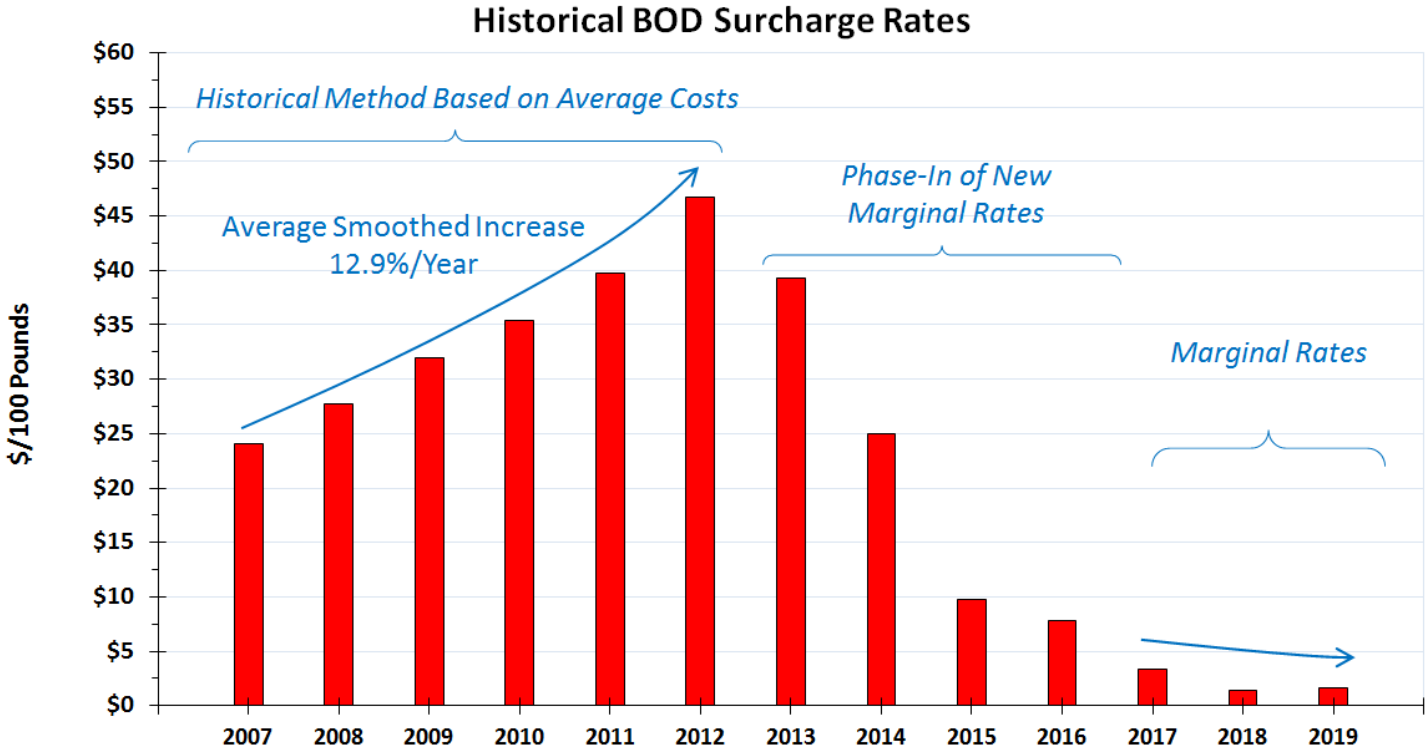
## What is HRSD's Surcharge Program?

- All customers pay the same wastewater treatment rate for volume
  - FY 2019 rate \$5.37 per 100 cubic feet (CCF)
  - This includes the cost to treat domestic strength BOD, TSS, TP and TKN
- High strength users pay a surcharge for these pollutants greater than domestic strength

## FY 2019 Rate Schedule Surcharges

<u>Type</u>	<u>In Excess of</u>	<u>Per mg/L per CCF</u>	<u>Per 100 pounds</u>
Biochemical Oxygen Demand (BOD)	282 mg/L	\$0.000104	\$1.67
Total Suspended Solids (TSS)	261 mg/L	\$0.000592	\$9.49
Total Phosphorus (TP)	6 mg/L	\$0.009535	\$152.74
Total Kjeldahl Nitrogen (TKN)	47 mg/L	\$0.003595	\$57.59

- Prior to 1992: Surcharge applied to BOD and TSS only
- TP added in 1996 and TKN added in 2007
- FY 1989 – FY 2013: Surcharge rates based on all HRSD costs to transport and treat
- FY 2013 – Present: Surcharge rates based on HRSD's marginal costs
- FY 2012 actual surcharge revenue: \$12,200,000
- FY 2019 budget surcharge revenue: \$ 1,425,000





- Surcharge rates at historically low levels
- Reduced surcharge revenue
- High effort and cost to sample, analyze and administer
- Simplification and ease to administer
- Similar approach to other Agencies
- 2016 HDR Study recommendations

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## Permitted and Non-Permitted Industrial Users

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- Approximately 130 permitted direct discharge facilities
- Approximately 3000 non-permitted commercial facilities currently being surcharged
- Both facility types are subject to surcharge billing if their wastewater concentration exceeds domestic levels

- BOD, TSS, TP and TKN concentrations are evaluated at least once per year through week-long monitoring surveys
- Samples are collected each day of the survey and analyzed in HRSD's Central Environmental Laboratory (CEL)
- If concentrations exceed domestic levels, surcharge is applied
- This process will not change

## Non-Permitted Commercial Facilities

- If the facility has sufficient flow, metering and sampling locations, a week-long monitoring survey is performed to determine surcharge parameter concentrations
- If not, average concentrations derived from similar businesses are assigned
- If the real, or assigned average, concentration exceeds domestic levels a surcharge is applied
- The facility will be re-evaluated every 5-10 years



# Surcharge Categories (last updated in 2008)

1. Arby's
2. Bakery/Cafe
3. Bar & Grill
4. Bowling Alley
5. Breakfast
6. Burger King
7. Cafeteria
8. Calz Pizza
9. Chic-Fil-A
10. Chicken
11. Dairy Queen
12. Deli/Sandwich
13. Dunkin Donuts
14. Farm Fresh
15. Food Lion
16. GAS
17. Grocery Store W/Deli
18. Hardees
19. Holiday Inn
20. Ice Cream/Food Bar
21. Kentucky Fried Chicken
22. KFC w/Taco Bell
23. Long John Silvers
24. Major Shopping Mall
25. McDonalds
26. Medical Fac w/Cafeteria
27. Mexican
28. Multi-function Store
29. Asian
30. Pizza
31. Pizza Hut
32. Pizza Take-Out
33. Pollards Chicken
34. Rallys
35. Seafood
36. Seafood Fast Food
37. Sonic
38. Starbucks
39. Steak
40. Strip Mall - Small
41. Taco Bell
42. Variety
43. Wal-Mart
44. WAWA
45. Wendys
46. Seven Eleven (7-11)

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## New Surcharge Categories based on NAICS Code

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- North American Industry Classification System (NAICS)
- Industry groupings based on similarity in the processes to produce goods or services
- NAICS replaced the Standard Industrial Classification (SIC) system in 1997

## New Surcharge Categories (Cont.)

New Category Code	Type of Business
44511	Supermarkets and Other Grocery (except Convenience) Stores
44711_44512	Gas Stations and/or Convenience Stores
452910 (452311)	Warehouse Clubs and Supercenters
721	Accommodation
623	Nursing and Residential Care Facilities
3121	(Alcohol) Beverage Manufacturing
722_53112_311811	Food Service and Drinking Places (including Shopping Centers)
722515	Snack and Nonalcoholic Beverage Bars (Coffee, Ice Cream and Donuts)

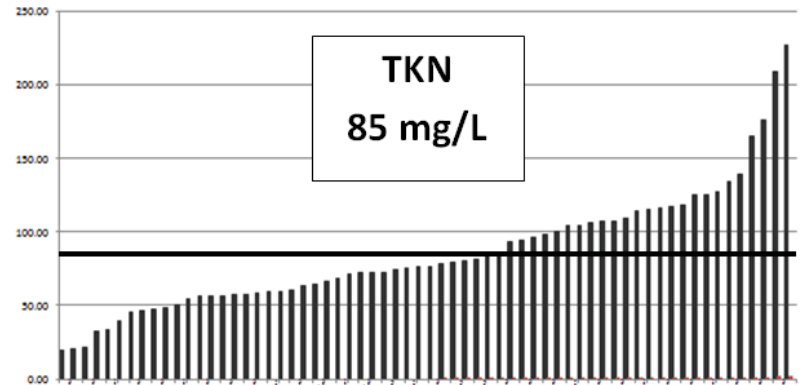
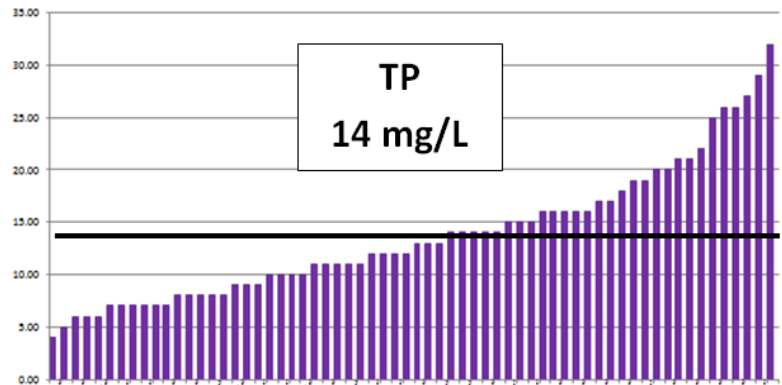
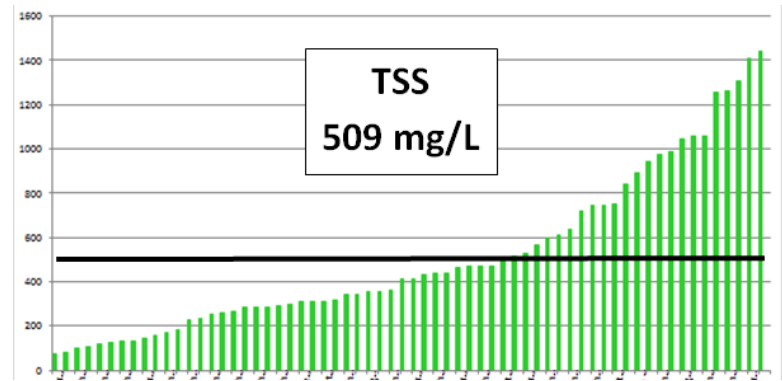
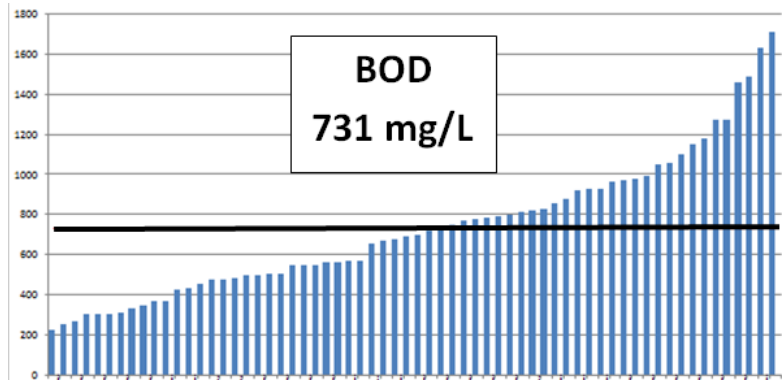
# Surcharge Category Average Values (2008-2018)

HRSD sampling data from non-permitted facilities was used to calculate averages for each of the new surcharge categories

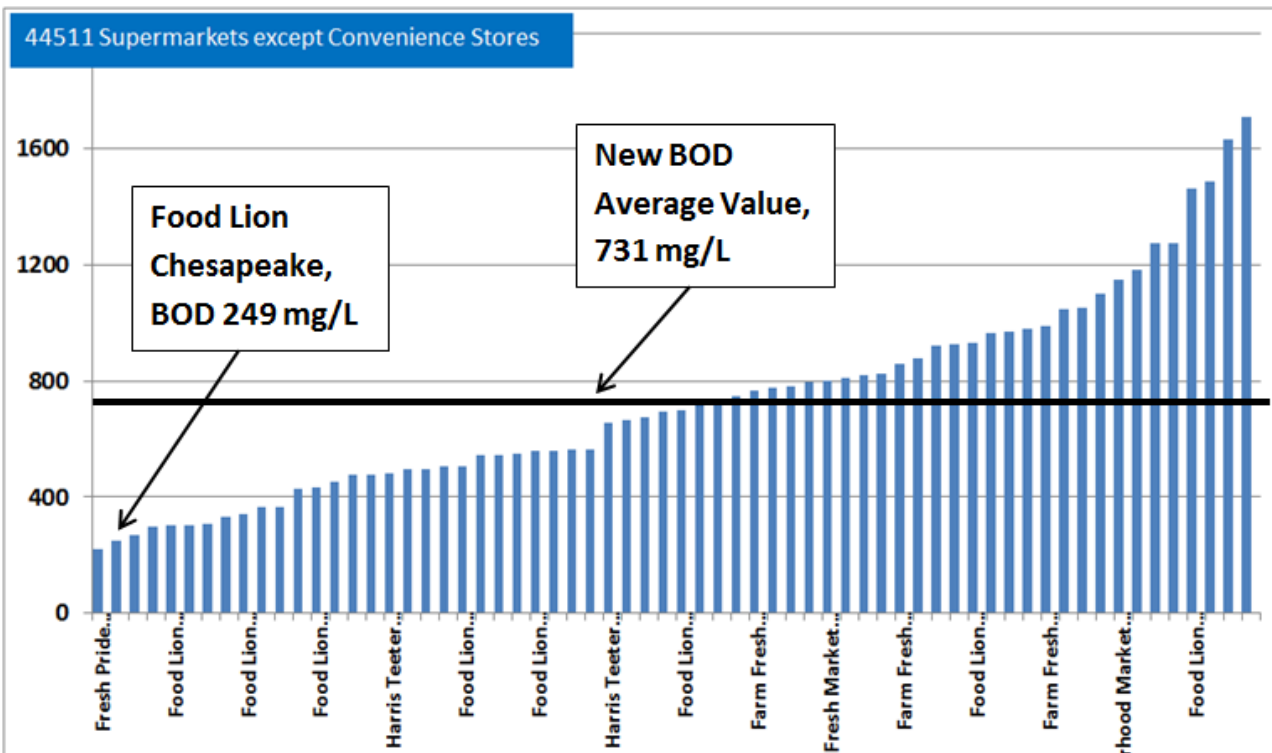
New Category Code	New Category Name	BOD (mg/l)	TSS (mg/l)	TP (mg/l)	TKN (mg/l)
44511	Supermarkets and Other Grocery	731	509	14	85
44711_44512	Gas Stations and/or Convenience Stores	964	389	13	118
452910 (452311)	Warehouse Clubs and Supercenters	1,043	833	20	133
721	Accommodation	261	219	7	54
623	Nursing and Residential Care Facilities	286	222	5	32
3121	(Alcohol) Beverage Manufacturing	2,930	487	26	120
722_53112_311811	Food Service Establishments including Shopping Centers	1,111	388	9	60
722515	Coffee, Ice Cream and Donuts	3,791	691	13	89
<i>Current Domestic Concentration</i>		282	261	6	47



# Supermarket Category Example



# Supermarket Category Example (Cont.)



	BOD	TSS	TP	TKN
2014 Sampling:	249	120	8	50
New Average:	731	509	14	85
Domestic Conc.:	282	261	6	47

# Supermarket Category Example (Cont.)



**HRSD Charges**

*Service from 08/03/18 - 08/31/18*

Wastewater Treatment Charge	75.0 CCF x \$5.37	\$402.75	
TP Charge - CCF Usage X 2.00 TP Value X .009535		\$1.43	} <b>\$2.24</b>
TKN Charge - CCF Usage X 3.00 TKN Value X .003595		\$0.81	

<b>HRSD Subtotal</b>	<b>\$404.99</b>
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<b>Total Current Charges</b>	<b>\$1,174.02</b>
<b>Total Amount Due</b>	<b>\$1,174.02</b>

*Bill continues on back*

**MESSAGES**

BOD Charge - CCF Usage X 449 BOD Value X .000104	\$3.50
TSS Charge - CCF Usage X 248 TSS Value X .0000592	\$11.01
TP Charge - CCF Usage X 8 TP Value X .009535	\$5.72
TKN Charge - CCF Usage X 38 TKN Value X .003595	<u>\$10.25</u>

<b>Proposed Surcharge</b>	<b>\$30.48</b>	←
<b>HRSD Wastewater Treatment Charges</b>	<b>\$402.75</b>	
<b>Revised Total Charges</b>	<b>\$433.23</b>	



- New surcharge categories will be based on NAICS
- BOD, TSS, TP and TKN average concentrations calculated from existing sampling data collected from 2008 – 2018
- Sampling surveys at non-permitted facilities will no longer be the default approach, assigning average concentrations will be
- ~Half of non-permitted commercial customers will see a decrease in surcharge bill, ~half will see an increase
- Surcharge is typically 5% - 15% of HRSD charges
- Permitted facilities will continue to be sampled



HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #7

AGENDA ITEM 8. - Disposition of Publicly Held Real Property to Newport News Green Foundation  
315 Center Avenue, Newport News, VA (Parcel ID: 268000758)

619780(v2)

PREPARED BY AND RETURN TO:  
Conway H. Sheild, III VSB#06893  
JONES, BLECHMAN, WOLTZ & KELLY PC  
701 Town Center Drive, Suite 800  
Newport News, VA 23606

Tax parcel ID: 268 000 758

**THIS DEED IS EXEMPT FROM GRANTOR'S RECORDATION TAX PURSUANT TO SECTION 58.1-811(C)(3) and 58.1-811(D) OF THE CODE OF VIRGINIA (1950) AS AMENDED**

THIS DEED of GIFT, made as of the 9<sup>th</sup> day of January, 2019 (the "Deed"), by and between the HAMPTON ROADS SANITATION DISTRICT, a political subdivision of the Commonwealth of Virginia, (the "Grantor"), and NEWPORT NEWS GREEN FOUNDATION, INC., a Virginia corporation, (the "Grantee"), whose mailing address is P. O. Box 323, Newport News, Virginia, 23607.

WITNESSETH: That for and in consideration of the sum of TEN DOLLARS (\$10.00), cash in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey with GENERAL WARRANTY OF TITLE and ENGLISH COVENANTS OF TITLE unto the said Grantee, its successors and assigns, the following described property (the "Property"), to wit:

**PARCEL ONE:**

All those certain lots, pieces or parcels of land, situate, lying and being in the City of Newport News, Virginia (formerly Newport District, Warwick County), known and designated as Lots Numbered FIFTEEN and SEVENTEEN (15 and 17) in Block Numbered TEN (10) on a certain map entitled, "MAP OF THE LAND OF THE NORTH NEWPORT NEWS DEVELOPMENT COMPANY", made by E. A. Semple, C. E., and recorded in the Clerk's Office of the Circuit Court for the City of Newport News (formerly Warwick County), Virginia.

It being the same property conveyed to the Grantor by deed dated December 13, 1946, from Hugh S. Cuming, et ux, recorded in the aforesaid Clerk's Office in Deed Book 117, page 262.

INSTRUMENT 190000856  
RECORDED IN THE CLERK'S OFFICE OF  
NEWPORT NEWS CIRCUIT COURT ON:  
JANUARY 23, 2019 AT 11:21 AM  
GARY S. ANDERSON, CLERK  
RECORDED BY: LXS

**PARCEL TWO:**

All that certain lot, piece or parcel of land, situate, lying and being in the City of Newport News, Virginia (formerly Newport District, Warwick County), known and designated as Lot Numbered NINETEEN (19) in Block Numbered TEN (10) as shown on a certain map entitled, "MAP OF THE LAND OF THE NORTH NEWPORT NEWS DEVELOPMENT COMPANY", made by E. A. Semple, C. E., which is filed in the Clerk's Office of the Circuit Court for the City of Newport News (formerly Warwick County), Virginia, dated October 19, 1892, in Plat Book 2, page 2, to which reference is here made.

It being the same property conveyed to the Grantor by deed dated December 18, 1946, from Theodore R. Mathews, et vir, duly recorded in the aforesaid Clerk's Office in Deed Book 117, page 281.

Subject to restrictions, covenants, conditions and easements of record.

Together with all and singular the buildings and improvements thereon, rights and privileges, tenements, hereditaments, easements and appurtenances unto the said land belonging or in anywise appertaining

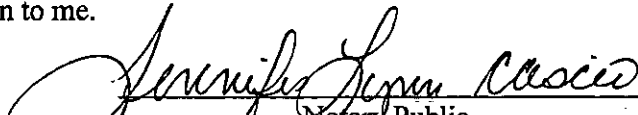
WITNESS the following signatures and seals:

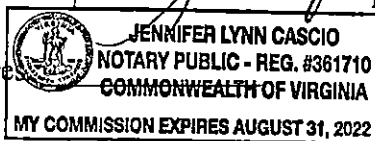
HAMPTON ROADS SANITATION DISTRICT  
a political subdivision of the Commonwealth of Virginia

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

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

I hereby certify on this 9<sup>th</sup> day of January, 2019, that Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District, acknowledged the foregoing document before me. He is personally known to me.

  
Notary Public



My commission expires

Registration No.:

**DISCLOSURE ACKNOWLEDGMENT AGREEMENT**

THIS AGREEMENT made this 4<sup>th</sup> day of <sup>January 2019</sup>~~December 2018~~ by and between HAMPTON ROADS SANITATION DISTRICT, a political subdivision of the Commonwealth of Virginia ("HRSD"), and NEWPORT NEWS GREEN FOUNDATION, INC., a Virginia corporation ("Green Foundation"), hereby agree as follows:

1. That HRSD currently owns a piece of property known as 315 Center Avenue, Newport News, Virginia, upon and in which there was at one point a functioning pump station utilized for the transportation of sewage products through the HRSD system in the City of Newport News, Virginia, and the pump station is no longer needed for its purposes and HRSD no longer needs to carry this as an asset in its inventory in order to fulfill its duties under The Enabling Act which formed it.
2. That HRSD wishes to convey, as a gift, the aforesaid real estate to Green Foundation, and has determined that it needs to have the grantee acknowledge that the aforesaid real estate was in fact formerly constructed and used as a sewage treatment system pump station with attendant infrastructure both on top of and in the ground at the said location, and that currently there is infrastructure in the ground which might impact the development of the said property for purposes other than utilizing it as green space.
3. That Green Foundation acknowledges this disclosure and accepts the property in "as is, where is" condition, acknowledging that the representation has been made that the said property which will be the subject of the gift between HRSD to Green Foundation contains subsurface conditions not readily apparent in the form of buried impervious substances such as concrete, and acknowledges that the same, while it




does not impact the use of the said property as green space, would impact the property as far as development purposes which required subsurface intrusion.

The parties hereto acknowledge that there has been a material disclosure as follows:


**DISCLOSURE:** HRSD DISCLOSES, AND GREEN FOUNDATION ACKNOWLEDGES, THAT THE SAID PROPERTY KNOWN AS 315 CENTER AVENUE, NEWPORT NEWS, VIRGINIA, WHICH IS TO BE GIFTED BY DEED OF CONVEYANCE FROM HRSD TO GREEN FOUNDATION WAS FORMERLY A PUMP STATION USED WITHIN THE HRSD SYSTEM FOR THE TRANSPORTATION OF SEWAGE PRODUCTS IN THE HRSD SYSTEM, AND THAT THE SUBSURFACE CONDITION OF THE PROPERTY IS SUCH THAT THERE ARE IMPERVIOUS PRODUCTS IN THE GROUND WHICH WOULD IMPACT THE USE OF THE PROPERTY FOR USES OTHER THAN AS GREEN SPACE.

WITNESS the following signatures and seals:

**HAMPTON ROADS SANITATION DISTRICT**

By:  (SEAL)  
Edward G. Henifin (Name)  
Its General manager (Title)

**NEWPORT NEWS GREEN FOUNDATION, INC.**

By:  (SEAL)  
Sharyn Fox (Name)  
Its President (Title)




**Legend**

Regional Major Roads	Police Stations	Road Centerlines	Other	Water Bodies
Interstates	Fire Stations	Interstates	Residential Roads	Airport Runways
Primary Roads	Libraries	Primary Roads	Railroads	Parks
Other	Museums	Vehicular Trails	Buildings	Aerial Photo (2016)
Schools	Right of Way	Ramps/Service Roads	Streams	
Hospitals	Parcels			

(cont)

**Center Avenue PS**

**City of Newport News**



Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination.

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #8

AGENDA ITEM 10. – Carbon Foot print Reduction Presentation





Strategic Carbon Footprint  
Reduction Committee Update  
December 18, 2018

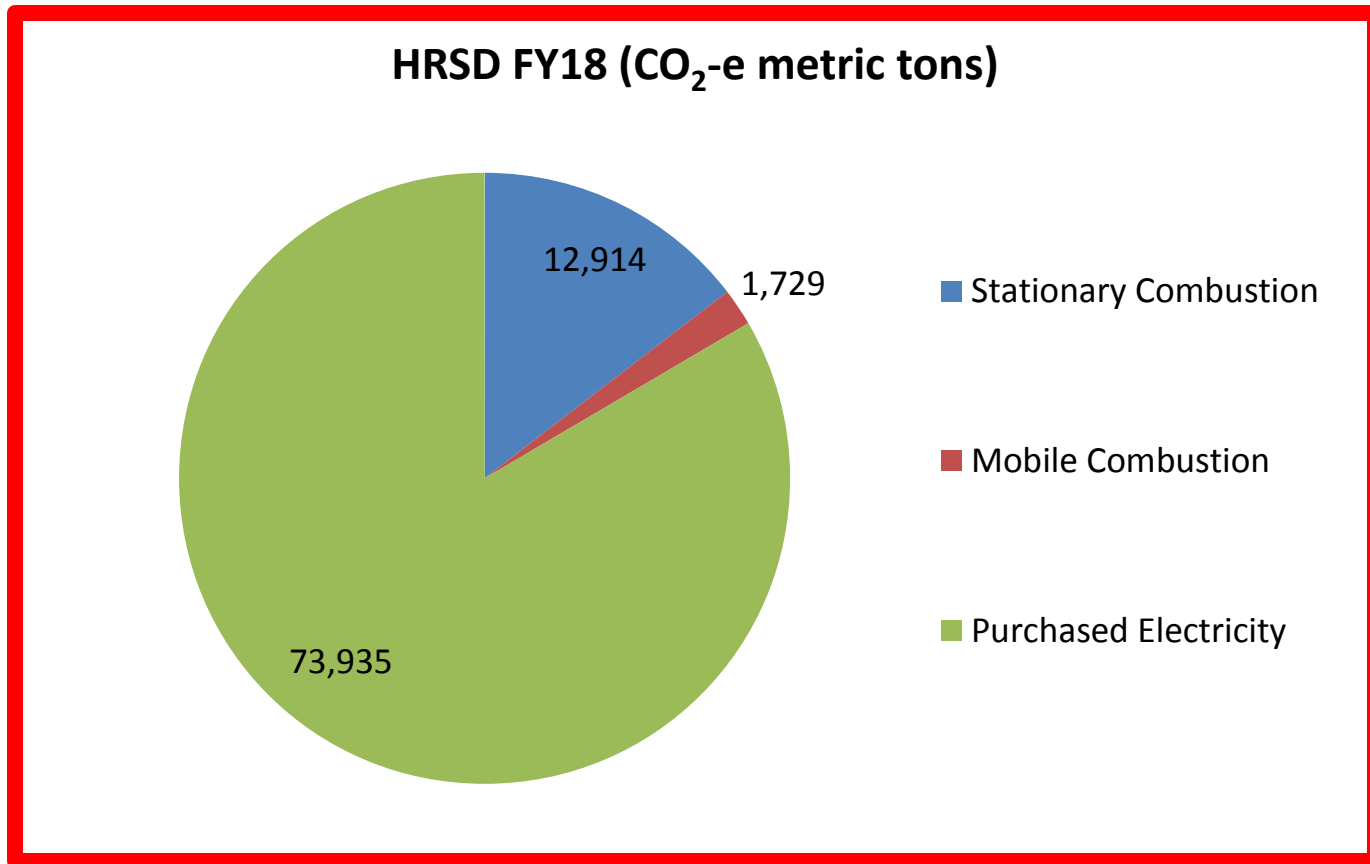


Last September,

- The Commission adopted a greenhouse gas emission reduction goal that is 30% below our 2005 carbon footprint
- To meet that goal, HRSD purchased 42,000,000 kWh's of green power at a cost of \$86,400 from Dominion Energy Virginia

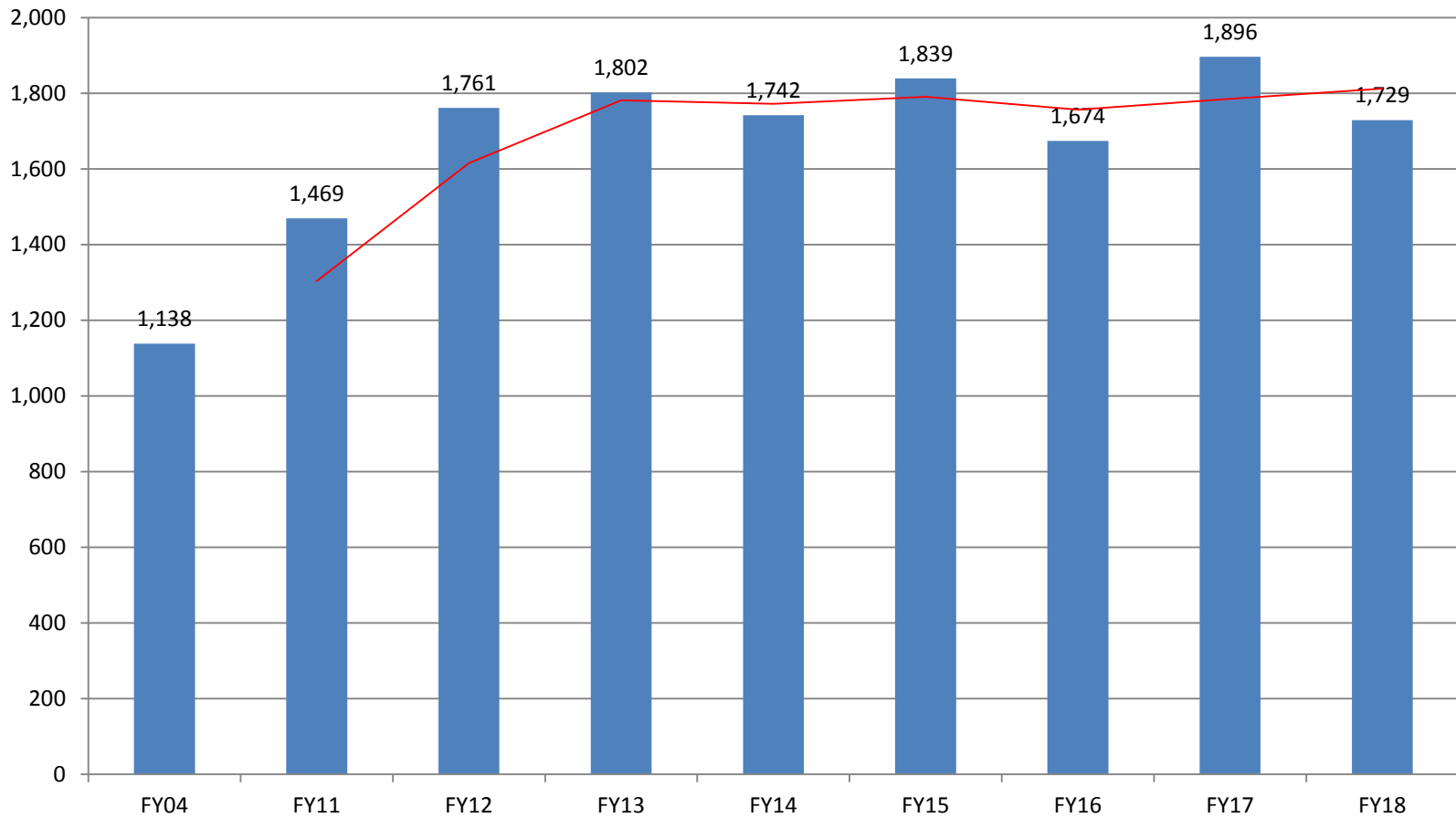
## HRSD Total Carbon Footprint

Use the EPA simple calculator concentrating on the big three:



# Mobile Combustion Increased 52% in 14 years

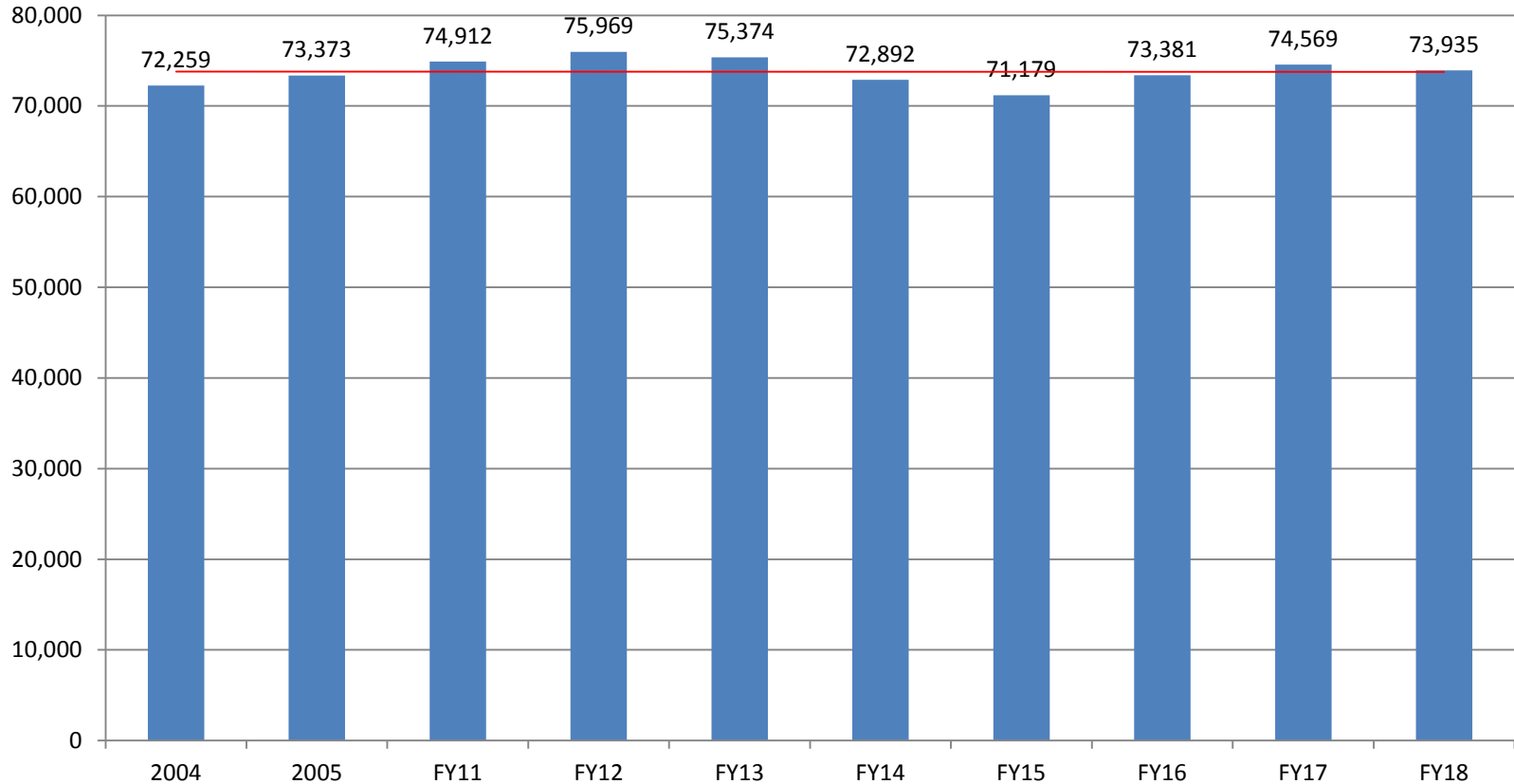
## Mobile Combustion (CO<sub>2</sub>-e Metric Tons)



52% increase from 2004  
9% decrease from 2017

# Purchased Electricity Increased <1% in 14 years

## Purchased Electricity (CO<sub>2</sub>-e Metric Tons)

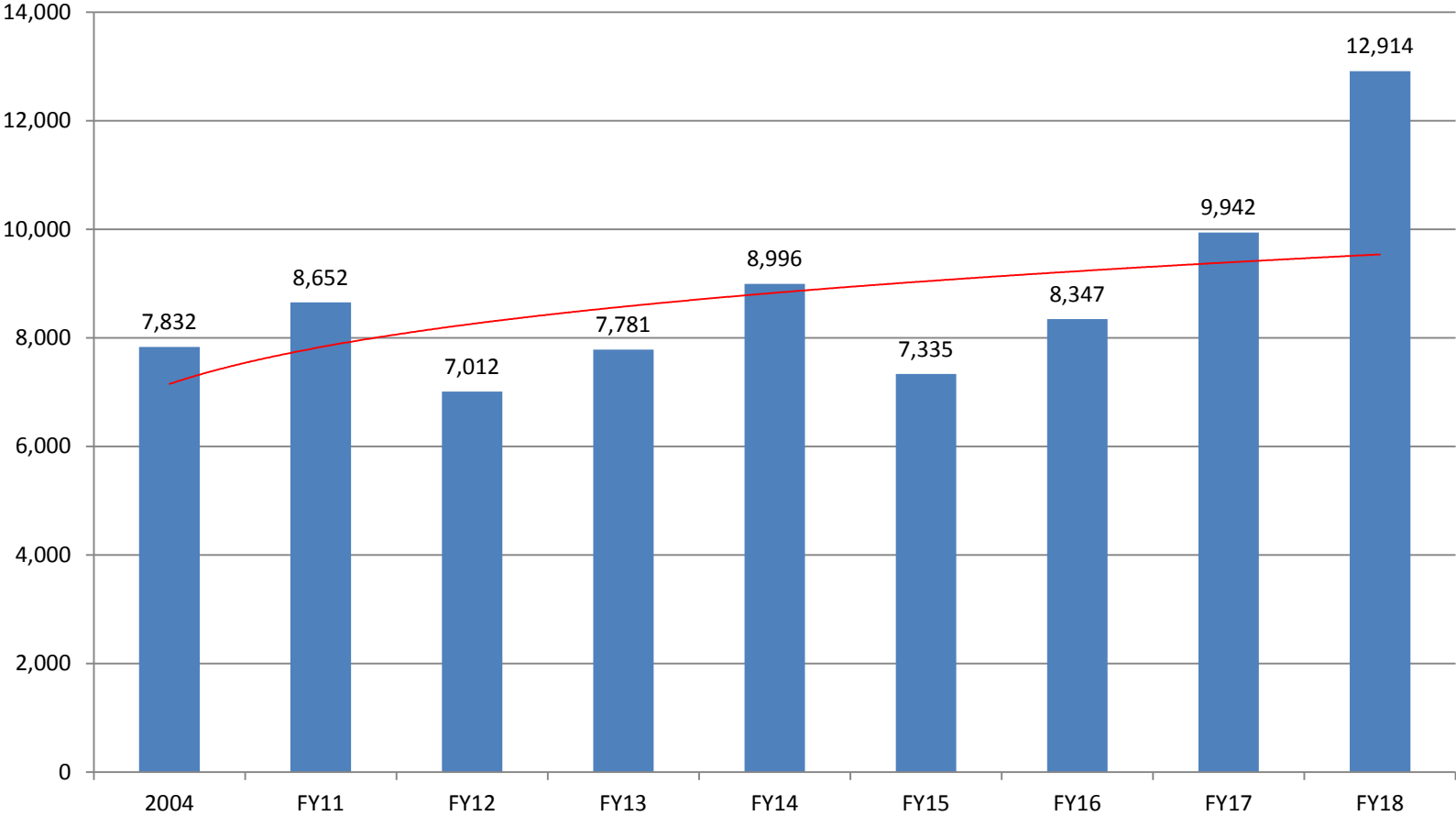


Treatment consumes 90% of all purchased electricity



# Stationary Combustion Increased 65% in 14 years

## Stationary Combustion (CO<sub>2</sub>-e Metric Tons)

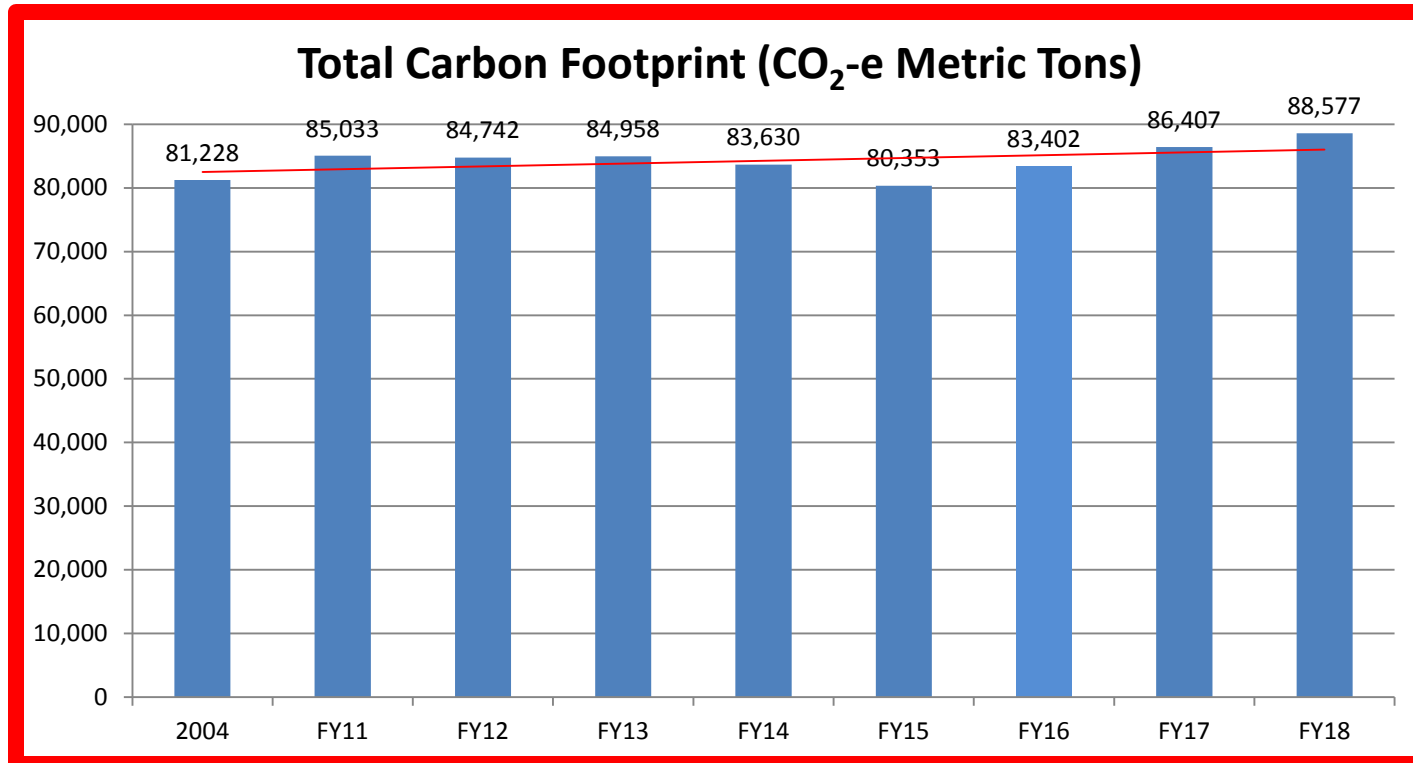


65% increase from 2004  
30% increase from 2017

# HRSD Total Carbon Footprint

## The past 14 years.

- Increased Workforce
- Increased Office Space
- Increased Treatment Capacity and Infrastructure
- The total Carbon Footprint increased 9%



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## Reasons for Carbon Footprint Changes

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### Stationary combustion – natural gas up 30%

- We found two major contributors to the increase in gas consumption
  - Humidifiers in the Central Environmental Lab were using additional fuel
  - Humidifier purpose
    - Inject steam into the 100% makeup air for the CEL HVAC system
    - Humidifiers were not properly tuned (condensing)
    - The manufacturer's technical representative has modified the units and are back in service

---

## Reasons for Carbon Footprint Changes

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Stationary combustion – natural gas up 30%

- We found two major contributors to the increase in gas consumption
  - Boat Harbor zero hearth afterburner is using additional fuel
  - Afterburner purpose
    - Allows for control of hydrocarbons and carbon monoxide while maintaining low NOx
    - Extends the life of the incinerator
    - Reduces incinerator maintenance costs

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## Future Carbon Footprint Challenges

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- Additional offset of purchased green power
- SWIFT Research Center
  - Contribution 2,000,000 kWh
  - Marginally offset by 60 kWh solar array
- Williamsburg SWIFT
  - Contribution based on initial design estimate 9,000,000 kWh
  - Current plant contribution 11,000,000 kWh
- Other future SWIFT Projects



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## Strategic Carbon Footprint Committee – First Year Goals

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- Identify CIP and Operating budget projects that can reduce carbon footprint
- Summarize treatment plant power audits
- Initiate the last of the first round of energy audits at Army Base Treatment Plant
- Look at developing Best Practices
- Employ green energy power purchases to achieve the reduction in our carbon footprint
  - Estimated FY-20 cost \$116,000 for 58 M kWh

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## Strategic Carbon Footprint Committee – Five Year Goals

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- Look at the next step treatment plant audits
- Establish work center energy dash boarding
- Prioritize up to five CIP Projects with potential improvement areas
  - Compressed Natural Gas      - LED Lighting
  - Treatment Plant FOG            - Centrifuges
  - Nansemond, York River, Williamsburg aeration blower replacements
- Initiate one project with the reduction of the carbon footprint as part of the project justification

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# Discussion

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #9

AGENDA ITEM 11. – Ethics Policy

HRSD Ethics Policy  
Guidelines for Review of Disclosure Forms

1. A Commissioner shall complete and file with the Commission Secretary a Financial Disclosure Statement (“Disclosure Statement”) as prescribed by the Virginia Conflict and Ethics Advisory Council (“Council”) pursuant to § 2.2-3118 of the Code of Virginia (“Code”) and as required by the HRSD Ethics Policy prior to assuming his or her position.
2. Commissioners thereafter shall complete and file with the Commission Secretary a Disclosure Statement as prescribed by the Council pursuant to § 2.2-3118 of the Code and as required by the HRSD Ethics Policy on or before February 1 of each calendar year for the prior calendar year. In no event, shall the Disclosure Statement be dated or submitted prior to January 1.
3. Employees in or designated as “Acting” in HRSD Positions of Trust as defined in the HRSD Ethics Policy shall complete and file with the Commission Secretary a Disclosure Statement as prescribed by the Council pursuant to § 2.2-3117 of the Code and as required by the HRSD Ethics Policy prior to assuming his or her position.
4. Employees in or designated as “Acting” in HRSD Positions of Trust as defined in the HRSD Ethics Policy shall complete and file with the Commission Secretary a Disclosure Statement as prescribed by the Council pursuant to § 2.2-3117 of the Code and as required by the HRSD Ethics Policy on or before February 1 of each calendar year for the prior calendar year. In no event, shall the Disclosure Statement be dated or submitted prior to January 1.
5. Employees who do not hold positions of Trust but are required to file a Disclosure Statement pursuant to Section 4.0 of the HRSD Ethics Policy shall file with the Commission Secretary such Disclosure Statements within 60 days of receiving a qualifying gift, discovery of a personal interest in a business doing business with HRSD or any other potential conflict of interest.



6. The Commission Secretary within ten (10) business days of receipt of a completed Disclosure Statement from a Commissioner or any HRSD Employee shall forward the Disclosure Statement to HRSD Commission Legal Counsel for review in accordance with HRSD Ethics Policy.
7. HRSD Legal Counsel will review promptly each Disclosure Statement to determine:
  - a. Whether the Disclosure Statement has been completed properly and whether corrections or additional information is needed for the Disclosure Statement to be completed properly;
  - b. What further actions, if any, need to be taken by the Commissioner or HRSD Employee, who has disclosed a conflict or potential conflict of interest, in order to ensure compliance with both the Virginia State and Local Government Conflict of Interest Act and the HRSD Ethics Policy; and
  - c. To whom or to which internal stakeholders disclosure of such conflicts should be made and the necessary actions to take to accomplish such disclosures.
8. HRSD Legal Counsel within ten (10) business days of receipt of the Disclosure Statement from the Commission Secretary will complete the review and provide a written report to the Commission Secretary addressing the items referenced in 7 above.
9. Upon receipt of the written report from HRSD Legal Counsel, the Commission Secretary will notify the Commissioner or Employee of any additional needed actions as well as coordinate with the General Manager to take any other recommended actions including notification of necessary internal stakeholders or other parties.
10. All corrections and follow up actions shall be completed and documented in the files of the Commission Secretary within ten (10) business days of receipt of written notice from HRSD Legal Counsel.

## 1.0 Purpose and Need

As a public body, gaining and keeping the trust of the public is paramount. HRSD Commissioners and employees are committed to maintaining high ethical standards in every aspect of their business as members of a public body. As a political subdivision of the Commonwealth, HRSD Commissioners and employees are committed to complying with all applicable laws and regulations governing ethics and conflicts of interest. **This policy is applicable to all HRSD employees.** Additionally, specific disclosure requirements are hereby established for HRSD Commissioners and employees in HRSD Positions of Trust.

## 2.0 Definitions

**HRSD Commissioner** – A non-salaried citizen member of the HRSD Commission

**HRSD Positions of Trust** – Positions requiring annual disclosure filing

- General Manager
- Director of Communications
- Director of Engineering
- Director of Finance
- Director of Information Technology
- Director of Operations
- Director of Talent Management
- Director of Water Quality
- Director of Water Technologies and Research
- Special Assistant for Compliance Assurance
- Chief of Procurement
- Real Estate Manager

**Gift** – Any goods, meals, services, loans, tickets to events, greens fees, travel, lodging or similar items with monetary value or discounts, favors, gratuities, hospitality, forbearance, etc. This includes prizes awarded from drawings or similar games of chance at events attended in an official capacity. This also includes wreaths, candy, cookies, fruit baskets, etc., whether addressed to an individual or to HRSD.

**Not a Gift** – For the purposes of this policy the following are not considered gifts:

- Offer of a ticket, coupon, admission or pass if such item is **not** used
- Honorary degrees
- Food or beverage consumed and mementos received at an event at which an individual is performing official duties or is a speaker
- Registration or attendance fees (not travel costs) at an event at which individual is a speaker or event coordinator
- Unsolicited awards of appreciation or recognition (plaque, trophy, wall or desk memento)
- Gifts from relatives or Personal Friends
- Travel paid for by the government
- Travel, meals and activities directly associated with and paid for by a professional association that HRSD pays dues to on behalf of the agency or individual as part of their official duties
- Scholarships awarded competitively
- Travel related to an official meeting of HRSD
- Travel, lodging, meals, activities and logo clothing and related similar items associated with recruitment activities for permanent employment outside of HRSD while employed in an intern position

**Immediate Family** – Includes spouse and any other person who resides in the same household and who is a dependent of the Commissioner or employee.

**Intern Positions** – *On-the-job experience for high school students, college and university students, or post-graduate adults, hired on a part-time seasonal or part-time temporary basis.*

**Personal Friend** – An individual whose relationship with an HRSD employee or Commissioner pre-dates employment/appointment with HRSD and the relationship has a history of gift exchange or with whom a personal relationship developed totally unrelated to the employee's or Commissioner's position with HRSD.

**Widely Attended Event** – An event to which at least 25 persons have been invited or there is a reasonable expectation that at least 25 persons will attend the event and the event is open to individuals (i) who are members of a public, civic, charitable or professional organization, (ii) who are from a particular industry or profession, or (iii) who represent persons interested in a particular issue. Golf outings are never considered a widely attended event or a part of a widely attended event.

### **3.0 Guiding Principles**

HRSD Commissioners and employees shall conduct themselves beyond reproach. Improprieties or the appearance of improprieties will not be tolerated. All prohibitions herein apply to Commissioners, employees and their immediate families.

Soliciting, accepting or receiving any Gift from a lobbyist, lobbyist's principal or any entity or person seeking to contract with HRSD is prohibited subject to exemptions for Gifts from relatives or Personal Friends.

Personal interest in or benefit from any contract with HRSD other than the employee's own employment contract is prohibited. Where such interest pre-exists, it shall be disclosed and the Commissioner or employee shall refrain from voting on or acting on behalf of HRSD in any manner in relation to the contract.

Participation in a transaction with HRSD where the employee has a personal interest in or may benefit from the transaction is prohibited. Such interest shall be disclosed and the Commissioner or employee shall refrain from voting on or acting on behalf of HRSD in any manner in relation to the transaction.

Engaging in transactions (excluding those associated with connection, payment or maintenance of a sewer service account or related activities available to all HRSD customers) with HRSD is prohibited for a period of six months post employment or appointment (excluding employees in intern positions).

Food, beverages, mementos, entertainment or the cost of admission may be accepted when such a Gift is accepted or received while in attendance at a Widely Attended Event and is associated with the event. Commissioners and employees in HRSD Positions of Trust must disclose Gifts received at Widely Attended Events in excess of \$100 pursuant to Section 4.0.

Gifts received without specific recipients identified shall be returned whenever practicable. If return is not practicable, perishable gifts may be shared with the entire work center. Non-perishable gifts shall be collected and distributed to local charities as appropriate.

#### **4.0 Procedures**

This policy shall be communicated and provided to all HRSD employees and Commissioners upon commencement of employment and an acknowledgement of such shall be retained permanently in each employee's personnel file. Commissioners' acknowledgements shall be retained by the Commission Secretary.

HRSD Commissioners and employees in HRSD Positions of Trust as defined herein shall file disclosure forms as specified in the *Code of Virginia* prior to assuming his or her position and then annually as required. The report on the previous 12 months from January 1 to December 31 may not be dated or filed prior to January 1.

- Commissioners shall file the form found in Virginia Code § 2.2-3118
- Employees in HRSD Positions of Trust shall file the form found in Virginia Code § 2.2-3117.
- Employees who are designated as "Acting" in a Position of Trust in excess of 60 days shall file the form found in Virginia Code § 2.2-3117 prior to assuming their position. Employees in an "Acting" position at the time of the filing deadline shall also file the required forms.
- Any disclosure forms to be filed with HRSD shall be maintained by the Commission Secretary as public records for a period of five years.
- Completed disclosure forms shall be reviewed by legal counsel to include follow-up and necessary actions to communicate potential conflict of interest with internal stakeholders.

Employees who do not hold Positions of Trust and who receive gifts at widely attended events that exceed \$100 in value, or who have a personal interest in a company doing business with HRSD, or believe they have any other conflict requiring disclosure shall disclose those interests and/or gifts on the HRSD Ethics Disclosure Form within 60 days of receiving a qualifying gift, or immediately upon discovery of the personal interest in a company doing business with HRSD or other potential conflict. These forms shall be filed with and retained by the Commission Secretary and reviewed by legal counsel with all required filings herein.

Training on the Ethics Policy and ethics in public contracting for HRSD Commissioners and employees in Positions of Trust shall be conducted in accordance with Virginia Code §2.2-3128 and §2.2-3130. Records of attendance shall be maintained in accordance with Virginia Code §2.2-3129.



**COMMISSION ADOPTED POLICY**  
*Ethics*



Adopted: October 27, 2015

Revised: December 18, 2018

Page 5 of 5

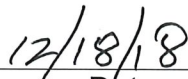
Training on the Ethics Policy shall be provided to all HRSD employees on a biannual basis with records of attendance maintained with individual training records by the Talent Management Department.

**5.0 Responsibility and Authority**

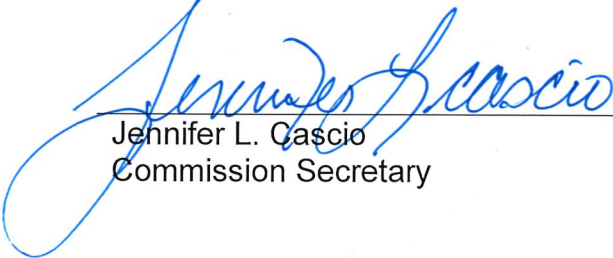
This policy shall be reviewed annually by the Operations and Nominations Committee and revised as required to conform to current law and regulations and changes in positions designated as HRSD Positions of Trust.

Approved:

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

  
\_\_\_\_\_  
Date

Attest:

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

  
\_\_\_\_\_  
Date

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #10

AGENDA ITEM 12. – Dr. Taraski's Letter of Recusal



December 5, 2018

Mr. Frederick ("Rick") N. Elofson, Chair  
Hampton Roads Sanitation District Commission  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

Re: Johnson et al. v. City of Suffolk and Hampton Roads Sanitation District

Dear Mr. Elofson:

I am writing to inform the HRSD Commission pursuant to the State and Local Conflict of Interests Act, Virginia Code § 2.2-3100 et seq., of a potential personal interest related to the above-referenced litigation and my recusal from any HRSD business or other proceedings in this matter to avoid even the appearance of a conflict of interest.

On November 29, 2018, HRSD was served with a Summons and the Petition for Declaratory Judgment in this matter, which is now pending in the Circuit Court of the City of Suffolk. For reasons that are not fully understood, the Petition named me in my capacity as an HRSD Commissioner to be served on behalf of HRSD at the District's business address in Virginia Beach.

Upon learning on November 29 of this filing from the General Manager, I immediately requested a meeting to understand the situation. I met with the General Manager and HRSD's outside legal counsel the very next day. It was explained to me that this new litigation pertains to oyster bed closures in the Nansemond River by the Virginia Department of Health and that the Petitioners seek monetary compensation based on allegations of inverse condemnation by pollution by the City of Suffolk and HRSD. The Petitioners also seek money from Suffolk and HRSD in the form of attorney's fees, costs, expert witness fees, and interest.

As you know, I am currently employed as the President/CEO Director of the Nansemond River Preservation Alliance ("NRPA"), located at 8881 Eclipse Drive, Suffolk, Virginia 23433. While I believe that the clean water interests of HRSD and the NRPA are fully aligned, there are two aspects of this new litigation as related to my employment by NRPA that lead me to believe that the proper course of action is to promptly and fully disqualify myself from any involvement with HRSD and the HRSD Commission in this particular matter.

In accordance with Virginia Code § 2.2-3115(F), please be advised of the following. NRPA's mission is to raise public awareness and encourage environmental stewardship of the Nansemond River and other local waterbodies by developing and implementing programs and initiating collaborative actions with individuals, businesses, civic organizations and governmental agencies. NRPA has an interest in pollution reduction and opening waters to shellfish harvesting. In addition, one of the Petitioners in the litigation, Mr. Thomas A.

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**Water Quality Department • PO Box 5911, Virginia Beach, VA 23471-0911 • 757.460.7004**

**Commissioners:** Frederick N. Elofson, CPA, Chair • Maurice P. Lynch, PhD, Vice-Chair • Vishnu K. Lakdawala, PhD  
Michael E. Glenn • Stephen C. Rodriguez • Willie Levenston, Jr. • Ann W. Templeman • Elizabeth A. Taraski, PhD  
[www.hrsd.com](http://www.hrsd.com)

Hazelwood, is also a member of NRPA's Board of Directors.

As a result of this disqualification, please be further advised that in accordance with Virginia Code § 2.2-3112(A), I will not vote or in any manner act on behalf of HRSD in this litigation. Further, I will not (a) attend any portion of a closed meeting authorized by the Virginia Freedom of Information Act when this litigation is discussed and (b) discuss this litigation with other HRSD Commissioners or employees at any time.

If you have any questions about this disclosure and disqualification, whether now or at any time in the future, please do not hesitate to contact me.

Respectfully,



Elizabeth A. Taraski, Ph.D.

c: Edward G. Henifin, HRSD General Manager

HRSD COMMISSION MEETING MINUTES  
DECEMBER 18, 2018

ATTACHMENT #10

Agenda Item 16. – Informational Items

a. Management Reports

- (1) [General Manager](#)
- (2) [Communications](#)
- (3) [Engineering](#)
- (4) [Finance](#)
- (5) [Information Technology](#)
- (6) [Operations](#)
- (7) [Talent Management](#)
- (8) [Water Quality](#)
- (9) [Report of Internal Audit Activities](#)

b. [Strategic Planning Metrics Summary](#)

c. [Effluent Summary](#)

d. [Air Summary](#)

e. [Emergency Declarations – Bowers Hill Force Main Valve Replacement Prompt Repair](#)





December 11, 2018

Re: General Manager's Report

Dear Commissioners:

On the surface, November appears to have been a quiet month; however, the detailed departmental monthly reports reveal the significant efforts of our entire staff to address a multitude of challenges that go largely unnoticed each month. This is the paradox of great service; you are only really appreciated when something goes wrong and you respond quickly and efficiently to resolve the issue. The day-to-day efforts to keep things from "going wrong" in the first place are rarely noticed and celebrated.

Each month the departmental reports provide a glimpse into the more "routine" items that are foundational to our success. They also reveal hints of things to come; early ideas being investigated, connections being made with future partners, and small issues being resolved that potentially could turn into major problems.

I am fairly confident that few people enjoy sitting down and preparing monthly reports (it is not high on my list of favorite tasks) but I find these reports extremely valuable, especially as the days, weeks, months and years fly past. The discipline to look back and reflect on what was accomplished over the past month and record the key events while they are still fresh memories helps me appreciate the day-to-day effort our talented and dedicated staff make every day throughout the year. I hope you find these reports valuable as well.

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

- A. **Treatment Compliance and System Operations:** All treatment plants met permit and there were no spills within the conveyance systems, remarkable given the amount of rain and high flows during November. The highlights of the month are included in the attached monthly reports.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
  - 1. Two new employee orientation sessions
  - 2. A meeting to discuss property acquisition at Williamsburg

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PO Box 5911, Virginia Beach, VA 23471-0911 • 757.460.7003

**Commissioners:** Frederick N. Elofson, CPA, Chair • Maurice P. Lynch, PhD, Vice-Chair • Vishnu K. Lakdawala, PhD  
Michael E. Glenn • Stephen C. Rodriguez • Willie Levenston, Jr. • Ann W. Templeman • Elizabeth A. Taraski, PhD  
[www.hrsd.com](http://www.hrsd.com)

3. A meeting to discuss reporting and data gathering related to the Consent Decree and the HRSD Maintenance and Operations Management (MOM) program
4. Provided a welcome to the Operations Department leadership retreat
5. A meeting to discuss challenging permit requirements related to biosolids proposed by DEQ in the draft permit for the Atlantic Treatment Plant
6. A meeting to discuss progress on the compensation study
7. Three length of service breakfast celebrations

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

1. Hosted a group from Anne Arundel County, Maryland interested in potentially replicating SWIFT
2. Participated in multiple conference calls as a member of the US EPA Environmental Financial Advisory Board
3. A meeting with SPSA to discuss progress and funding of an interim leachate pumping system to allow some leachate to be pumped to Nansmond at a set volume and flow rate
4. Several calls to plan legislative strategy for the 2019 General Assembly
5. The monthly meeting of the Directors of Utilities Committee of the Hampton Roads Planning District Commission (HRPDC)
6. Addressed questions regarding HRSD's potential nutrient credit contribution to the Watershed Implementation Plan (WIP III) process at the monthly meeting of the HRPDC
7. Attended the regular meeting of the Board of Directors for the James City Service Authority (JCSA) as they took action on an agreement to convey property to HRSD
8. Presented SWIFT on a webinar hosted by the Chesapeake Bay Funders Network (CBFN)
9. Hosted international reuse and water expert from UC Berkley (David Sedlak) at the SWIFT Research Center
10. Participated on a panel at the November session of the Virginia Natural Resources Leadership Institute
11. Hosted staff from Somerset County, Maryland interested in SWIFT

**C. Consent Decree Update:**

1. HRSD received a response from US EPA/Department of Justice (DOJ) regarding our dispute over stipulated penalties related to sanitary sewer overflows rejecting our proposal to not pay penalties for overflows that were beyond our control to prevent. The next step is formal dispute

- resolution but EPA/DOJ have requested a meeting to discuss informal resolution. Those discussions continue between HRSD and EPA/DOJ.
2. HRSD submitted certification that the final interim system improvement project was complete. The final project was the Virginia Initiative Plant improvement project that was substantially complete as of the end of November. Completion of all the interim system improvement projects represents a major milestone in the Consent Decree. The regulatory obligation to complete these 45 projects dates back to February 2010. HRSD spent more than \$395 million to fulfill this obligation over the past eight years, exceeding our obligation by nearly \$90 million.

The General Assembly will convene in January and once again we will be working to get SWIFT oversight legislation passed. Commissioner Rodriguez has been instrumental in getting legislation drafted again this year. We have worked to get DEQ and Virginia Department of Health (VDH) fully on-board with our legislative proposal again this year and believe we are in a better place than we were going into last session. Anything can happen in Richmond, however, so we will be working hard to keep our proposal on track throughout the session. Staff will provide a briefing at the December meeting on the legislation and the associated agreements with VDH, Virginia Tech and Old Dominion.

The leadership and support you provide are the keys to our success as an organization. Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth and the environment. **I wish you and yours all the best in this holiday season and I look forward to seeing you on Tuesday, December 18, 2018 in Virginia Beach.**

Respectfully submitted,

*Ted Henifin*

Ted Henifin, P.E.  
General Manager

TO: General Manager  
FROM: Director of Communications  
SUBJECT: Monthly Report for November 2018  
DATE: December 10, 2018

A. Publicity and Promotion

1. **Issues of The Environment: 'Pee-Cycling' To Create A sustainable Source of Fertilizer** | November 14, 2018 |WEMU 89.1  
<http://www.wemu.org/post/issues-environment-pee-cycling-create-sustainable-source-fertilizer>
2. **Dave Mayfield: How Catch the King is growing** | November 18, 2018 | The Virginian Pilot  
[https://pilotonline.com/opinion/columnist/guest/article\\_281ba946-e787-11e8-8bb4-17b344d4ab7c.html](https://pilotonline.com/opinion/columnist/guest/article_281ba946-e787-11e8-8bb4-17b344d4ab7c.html)
3. **Board gets first look at Main Street pump station** | November 28, 2018 | Gloucester-Mathews Gazette-Journal  
[https://www.gazettejournal.net/index.php/news/news\\_article/board\\_gets\\_first\\_look\\_at\\_main\\_street\\_pump\\_station](https://www.gazettejournal.net/index.php/news/news_article/board_gets_first_look_at_main_street_pump_station)

B. Social Media and Online Engagement

1. Facebook: 13,608 post impressions and Facebook Engagement of 547
2. Twitter: 21,000 impressions
3. SWIFT website visits: 355
4. LinkedIn Impressions: 0
5. Construction Project Page Visits: 617 total (this number does not include direct visits from home page), broken down as follows:
  - a. 318 visits to construction status page
  - b. 299 visits to individual project pages
6. Next Door unique impressions: 543 for one notice to Newport News residents adjacent to and surrounding the Warwick/Lucas Creek to Thorncliff project.

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

1. News Releases/Traffic Advisories/Construction Notices: 3
2. Advertisements: 0
3. Project Notices: 10
  - a. **Hampton:** Sewer Manhole Rehabilitation Project Task Order 2- door-to-door project update notices distributed
  - b. **Newport News:** Warwick Thorncliff to Lucas Creek – door-to-door project update notices
  - c. **Norfolk:** Sewer Manhole Rehabilitation Project Task Order 3 Construction notice to Old Dominion University via campus-wide text blast and 40 door hangers; Pump Station Wetwell Rehabilitation – one-on-one updates to neighboring homes and businesses;
  - d. **Suffolk** – Hickman Branch Survey Notice door hanger to 50 residents
  - e. **Virginia Beach:** Virginia Beach Boulevard Sewer Pipeline– one-on-one meetings with 3 residents/businesses
4. Project/Community Meetings: 0
5. New Project Web Pages/Blogs/Videos: 0

D. Special Projects and Highlights

1. Director participated in providing a tour of the SWIFT Research Center (SWIFT RC) to the Director and staff of Anne Arundel County's department of Public Works.
2. Director provided a tour of the SWIFT RC to the City of Virginia Beach's Mechanical Engineers
3. Staff participated in the Elizabeth River Project Youth Resilience Roundtable Meeting.
4. Staff participated in askHRgreen's Mini Grants conference call and Fats Oils Grease (FOG) meeting.
5. Community Education and Outreach Specialist attended the Help to Others meeting and participated in the Virginia Water Environment Association (VWEA) communications committee meeting.



E. Internal Communications

1. Director participated in the following internal meetings:
  - a. Solids Master Planning alternatives development workshop
  - b. Mathews Vacuum Pump Station Architectural Review meeting
  - c. Senior leadership meeting
  - d. New Employee Orientation
  - e. QST meeting
2. Director conducted bi-weekly communications department status meetings and project update check-ins with staff.

F. Metrics

1. Educational and Outreach Activities: 8
  - a. 11/7/18 – SWIFT RC Tour – City of Virginia Beach Mechanical Engineers (7 attendees)
  - b. 11/14/18 – Treatment Plant (TP) and SWIFT RC Tour, City of Hampton High Schools (20 attendees)
  - c. 11/15/18 – Anthem Eco Fair, Norfolk (250 attendees)
  - d. 11/19/18 – Classroom presentation/Amazing Aquifer activity, Woodstock Elementary, Virginia Beach (70 students)
  - e. 11/20/18 – Classroom presentation/Amazing Aquifer activity, Woodstock Elementary School (45 students)
  - f. 11/28/18 – SWIFT RC Tour, Wild Clover Homeschool Co-Op (seven attendees)
  - g. 11/29/18 – SWIFT RC Tour, Tidewater Collegiate Academy, Virginia Beach (22 attendees)
  - h. 11/29/18 – SWIFT RC Tour, Tidewater Collegiate Academy, Virginia Beach (11 attendees)
2. Number of Community Partners: 7
  - a. City of Virginia Beach Department of Mechanical Engineers
  - b. Hampton Public Schools
  - c. Anthem
  - d. Virginia Beach Public Schools
  - e. Wild Clover Homeschool Co-Op
  - f. Tidewater Collegiate Academy
  - g. Canon Virginia, Inc.

3. Additional Activities Coordinated by Communications Department:

11/08/18 – Canon CVI Annual Safety and Environmental Fair

4. Monthly Metrics Summary

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>November 2018</b>
M-1.4a	Total Training Hours per Full Time Employee (3) - Current Month	Hours / #FTE	0
M-1.4b	Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date	Hours / #FTE	36
M-5.2	Educational and Outreach Events	Number	8
M-5.3	Number of Community Partners	Number	7

Respectfully,

Leila Rice, APR

Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for November 2018

DATE: December 6, 2018

A. General

1. Capital Improvement Program (CIP) spending for the fourth month of Fiscal Year (FY) 2019 was lower than the planned spending target.

CIP Spending (\$M):

	Current Period	FYTD
Actual	5.70	24.73
Plan	11.00	43.40

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

2. The Engineering Department completed a number of recruitment efforts to replace and/or supplement staff in the month of November. Shannon Rice was hired as a new Contract Specialist, Stella Koutoupi and Jamal Booker were hired as Planning Engineers and Amanda Buffington was hired as a Data Analyst. Selection efforts for the final open position, Condition Assessment Manager, will be held in December. Each of these new employees bring new skills and fresh ideas to tackle the many challenges we will be addressing in the coming years.

B. Asset Management Division

1. Building Information Modeling, or BIM, is becoming a common way to design, build and maintain infrastructure. BIM builds on the concept of computer-aided design and drafting (CADD) to create a 3-D design and allows for information to be related using a database for each system or asset included in a project. BIM also allows users to manage the asset after the construction is complete to address long-term operation and maintenance. Staff has been working in recent years to create BIM standards for HRSD. Through various pilot efforts, we are learning how to best use BIM in the design, construction and asset management phases of projects. The BIM standards will eventually be included in the HRSD Design and Construction Standards so that the consulting and contracting community can become familiar with our goals and needs as they relate to BIM.

2. A review of the Interceptor Systems Risk Matrix (ISRM) has recently been completed. This matrix was created as part of the Condition Assessment Program and was used to determine which existing interceptor system assets were in need of repair and/or replacement. The recent review of the ISRM indicated that the assessment was too conservative and did not balance risk in relation to system performance. HRSD's consultant will assist in revising this assessment tool and we will then test the risk matrix against known concerns in the interceptor system.

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

1. Construction of the York River Treatment Plant (YRTP) Digester Cover Replacement Phase II project is nearing completion. The new cover was placed on top of the tank in November and biosolids should be able to be placed in the digester by January. The work was delayed due to additional coating and concrete repair work that was needed to rehabilitate the existing digester tank.
2. Construction of the Atlantic Treatment Plant Administration Building is now complete. Final punch list items are being addressed and record drawings of the facilities are being prepared. Plant staff members are in the process of moving into the space, and furniture and other aesthetic features are being installed. This building will allow plant staff to work in a centralized location with modern features and the latest technologies. The building is also a resource for the entire organization and can be used for meetings and training purposes.
3. The SWIFT Full-Scale Implementation Plan (FSIP) Team continues their efforts to plan for this ambitious effort. Recent work includes the creation of the Program Management Plan, Quality Management Plan, Alternatives Project Delivery Workshop and a Program Scheduling Workshop. These plans and workshops are important as we begin the various individual efforts to make the SWIFT Program a reality. The plans will be used to monitor project quality, schedule and budget. Due to the size of this effort, close monitoring of each individual project is critical so that the larger program goals can be achieved.

D. Planning & Analysis Division

1. Staff presented an analysis of potential interim system improvements that could be used in the case that the proposed Chesapeake-Elizabeth Treatment Plant diversion system improvements are not completed by 2021. This analysis included the following options:

- Temporary storage facilities
- Temporary improvements to city-owned pump stations
- Flow diversions
- Other potential CIP projects

Each alternative included a scope, cost, schedule and risk avoidance summary. The outcome of the analysis indicated that there are several options that can address a potential program delay. Further study is needed to make a final decision and this analysis will be conducted in the coming months.

2. Staff has been coordinating a study to consider a smart sewer algorithm (EmNet) that can assist with real-time decision making to optimize the interceptor system. A presentation was made to the HRSD QST in November and the software tool looks very promising. Further coordination with EmNet will occur in the coming months to better understand how HRSD can leverage this system.

#### E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 3
  - a. Staff participated in the Old Dominion University Civil and Environmental Engineering Speed Networking Event on November 7.
  - b. Staff made a presentation at the Water Reuse Seminar sponsored by the Chesapeake WEA and the Chesapeake Section of AWWA Water Reuse Committee entitled, "Implementing Managed Aquifer Recharge in Eastern Virginia," on November 8.
  - c. Staff participated as a judge as part of the American Council of Engineering Companies – Virginia, Engineering Excellence Awards on November 26.
2. Number of Community Partners: 3
  - a. Old Dominion University Civil & Environmental Engineering Department
  - b. Chesapeake WEA & Chesapeake Section of AWWA
  - c. American Council of Engineering Companies – Virginia



3. Number of Research Partners: 0

4. Metrics Summary

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>November 2018</b>
M-1.4a	Total Training Hours per Full Time Employee (43) - Current Month	Hours / #FTE	2.06
M-1.4b	Total Training Hours per Full Time Employee (43) - Cumulative Fiscal Year-to-Date	Hours / #FTE	12.53
M-5.2	Educational and Outreach Events	Number	3
M-5.3	Number of Community Partners	Number	3
M-5.4	Number of Research Partners	Number	0

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager  
FROM: Director of Finance  
SUBJECT: Monthly Report for November 2018  
DATE: December 7, 2018

A. General

1. Staff asked HRSD's Financial Advisor, PFM, to develop a new financial model that analyzes HRSD's existing debt relative to the amount we are earning on our cash reserves to identify opportunities to defease any debt (i.e. pay it off) with cash. This is analogous to paying off a mortgage early to save on interest, but with consideration to potential interest earned. Since HRSD is currently above our policy for Days Cash on Hand, staff is continuing to look for opportunities to efficiently manage our debt, cash and investments. Unfortunately, the current interest rate HRSD is earning is relatively high as compared to the interest we are paying on debt, so there are no defeasance opportunities at this time. With this tool, we will continue to monitor the changing market conditions to find opportunities to manage our cash effectively.
2. The Director of Finance was asked by the Fitch Ratings Agency to be a panelist at their annual water conference on November 13, 2018. HRSD was one of three water/wastewater utilities invited to speak. The audience included bond investors, bankers, ratings agency staff and other utilities. This was a great opportunity to continue to market our innovative organization and our ground breaking SWIFT program to new audience.
3. Staff met with the U.S. EPA and the SWIFT Program Manager to gain understanding of the environmental requirements related to applying for an EPA Water Infrastructure Finance and Innovation Act (WIFIA) loan. The information gained will help further define the critical path project schedules.
4. Water consumption is flat relative to last year, but slightly higher than budget due to the assumption of a one percent year over year projected decline. As a result, wastewater revenues are slightly higher than budget. Facility charge revenue is lower than budget and lower than the prior year, which may be a sign of the impact of rising interest rates as home sales are starting to decline across the country. Interest Income continues to be strong with our yield optimization strategy and higher interest rates. Personal services and fringe benefit expenses are generally on budget at 43 percent and 41 percent, respectively, and consistent with prior year's 43 percent and 42 percent. Major repairs and capital assets expenses continue to be significantly lower than budget at this time, since many purchases earlier in the fiscal year related to prior year encumbrances. Overall, revenues are above target at 44 percent. Operating expenses are under budget at 36 percent and continue to be controlled, and total expenses are above budget due to debt service payments.

B. Interim Financial Report

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

	Amended Budget	Current YTD	Current YTD as % of Budget (42% Budget to Date)	Prior YTD as % of Prior Year Budget
<b>Operating Revenues</b>				
Wastewater	\$ 289,967,000	\$ 125,675,714	43%	43%
Surcharge	1,425,000	643,130	45%	34%
Indirect Discharge	2,750,000	1,147,975	42%	46%
Fees	2,855,000	1,247,592	44%	41%
Municipal Assistance	875,000	253,306	29%	48%
Miscellaneous	595,000	581,156	98%	71%
<b>Total Operating Revenue</b>	<b>298,467,000</b>	<b>129,548,873</b>	<b>43%</b>	<b>43%</b>
<b>Non Operating Revenues</b>				
Facility Charge	6,075,000	2,410,520	40%	47%
Interest Income	2,500,000	2,319,141	93%	62%
Build America Bond Subsidy	2,400,000	1,145,118	48%	49%
Other	820,000	209,533	26%	94%
<b>Total Non Operating Revenue</b>	<b>11,795,000</b>	<b>6,084,312</b>	<b>52%</b>	<b>53%</b>
<b>Total Revenues</b>	<b>310,262,000</b>	<b>135,633,185</b>	<b>44%</b>	<b>44%</b>
Transfers from Reserves	8,847,824	3,686,593	42%	42%
<b>Total Revenues and Transfers</b>	<b>\$ 319,109,824</b>	<b>\$ 139,319,778</b>	<b>44%</b>	<b>44%</b>
<b>Operating Expenses</b>				
Personal Services	\$ 55,331,886	\$ 23,717,080	43%	43%
Fringe Benefits	24,321,670	9,903,462	41%	42%
Materials & Supplies	7,686,154	2,985,923	39%	40%
Transportation	1,446,906	550,783	38%	32%
Utilities	12,306,952	4,685,228	38%	36%
Chemical Purchases	10,894,183	3,442,319	32%	33%
Contractual Services	42,104,030	11,788,551	28%	31%
Major Repairs	10,315,534	2,544,396	25%	23%
Capital Assets	1,232,144	217,218	18%	41%
Miscellaneous Expense	2,945,304	1,113,103	38%	35%
<b>Total Operating Expenses</b>	<b>168,584,763</b>	<b>60,948,063</b>	<b>36%</b>	<b>37%</b>
<b>Debt Service and Transfers</b>				
Debt Service	62,811,000	35,641,852	57%	46%
Transfer to CIP	87,475,061	36,447,940	42%	42%
Transfer to General Reserve	-	-	0%	42%
Transfer to Risk management	239,000	99,585	42%	42%
<b>Total Debt Service and Transfers</b>	<b>150,525,061</b>	<b>72,189,377</b>	<b>48%</b>	<b>44%</b>
<b>Total Expenses and Transfers</b>	<b>\$ 319,109,824</b>	<b>\$ 133,137,440</b>	<b>42%</b>	<b>40%</b>

2. Notes to Interim Financial Report

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

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

Transfers represent certain budgetary policy designations as follows:

- a. Transfer to CIP: represents current period's cash and investments that are designated to partially fund HRSD's capital improvement program.
- b. Transfers to Reserves: represents the current period's cash and investments that have been set aside to meet HRSD's cash and investments policy objectives.

3. Reserves and Capital Resources (Cash and Investments Activity) for the Period Ended November 30, 2018

	General	Risk Management	Reserve	Capital
<b>Beginning of Period - July 1, 2018</b>	\$ 193,623,393	\$ 3,260,531	\$ 15,266,324	\$ 75,874,029
<b>Add: Current Year Sources of Funds</b>				
Cash Receipts	133,820,077			-
Capital Grants				-
VRA Draws				11,567,621
Bond Proceeds (includes interest)				518,970
Transfers In	-	99,585		36,447,940
<b>Sources of Funds</b>	<u>133,820,077</u>	<u>99,585</u>	<u>-</u>	<u>48,534,531</u>
<b>Total Funds Available</b>	<u>\$ 327,443,470</u>	<u>\$ 3,360,116</u>	<u>\$ 15,266,324</u>	<u>\$ 124,408,560</u>
<b>Deduct: Current Year Uses of Funds</b>				
Cash Disbursements	101,762,831			40,771,263
Transfers Out	36,547,525			-
<b>Uses of Funds</b>	<u>138,310,356</u>	<u>-</u>	<u>-</u>	<u>40,771,263</u>
<b>End of Period - November 30, 2018</b>	<u>\$ 189,133,114</u>	<u>\$ 3,360,116</u>	<u>\$ 15,266,324</u>	<u>\$ 83,637,297</u>

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

Classification/ Treatment Service Area	Expenditures		Year to Date		Outstanding Encumbrances	Available Balance
	Amended Budget	prior to June 30, 2018	FY 2019 Expenditures	Total Expenditures		
Administration	\$ 64,885,711	\$ 40,373,105	\$ 216,313	\$ 40,589,418	\$ 1,453,842	\$ 22,842,451
Army Base	158,584,000	124,056,440	435,150	124,491,590	2,171,371	31,921,039
Atlantic	127,413,586	56,021,559	8,898,810	64,920,369	39,452,741	23,040,476
Boat Harbor	128,380,436	55,186,498	1,734,495	56,920,993	9,654,461	61,804,982
Ches-Eliz	155,356,457	10,416,092	2,089,294	12,505,386	37,516,597	105,334,474
James River	89,151,802	55,333,203	1,440,986	56,774,189	2,080,127	30,297,486
Middle Peninsula	49,276,789	7,951,942	955,905	8,907,847	4,975,617	35,393,325
Nansemond	84,434,179	39,238,100	1,197,098	40,435,198	4,284,242	39,714,739
Surry	3,236,000	101,724	217,753	319,477	246,376	2,670,147
VIP	292,496,378	250,845,561	3,708,271	254,553,832	4,742,232	33,200,314
Williamsburg	17,768,032	10,079,626	108,220	10,187,846	988,465	6,591,721
York River	45,712,249	40,864,038	558,808	41,422,846	204,345	4,085,058
General	482,765,843	216,595,238	3,169,572	219,764,810	26,449,204	236,551,829
	<u>\$ 1,699,461,462</u>	<u>\$ 907,063,126</u>	<u>\$ 24,730,675</u>	<u>\$ 931,793,801</u>	<u>\$ 134,219,620</u>	<u>\$ 633,448,041</u>

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal Oct 2018	Principal Payments	Principal Draws	Principal Nov 2018	Interest Payments
<b>Fixed Rate</b>					
Senior	\$ 323,978	\$ (5,265)	\$ -	\$ 318,713	\$ (3,563)
Subordinate	436,740	-	5,585	442,325	-
<b>Variable Rate</b>					
Subordinate	50,000	-	-	50,000	(65)
<b>Line of Credit</b>					
<b>Total</b>	<u>\$ 810,718</u>	<u>\$ (5,265)</u>	<u>\$ 5,585</u>	<u>\$ 811,038</u>	<u>\$ (3,628)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 11/30/18

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	1.81%	1.81%	0.00%
Average	0.41%	0.40%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 11/30/18	1.69%	1.64%	-0.05%

\* Since October 20, 2011 HRSD has averaged 40 basis points on Variable Rate Debt



6. Financial Performance Metrics for the Period Ended November 30, 2018

	Current YTD	Policy Minimum
Days Cash on Hand (Unrestricted)	470 days	270-365 days
Days Cash on Hand (Excl Reserve \$15m and Risk Mgmt \$3.3m)	429 days	270-365 days
Risk Management Reserve as % of Projected Claims Costs	25%	25%

**HRSD - SOURCES OF FUNDS**

November 30, 2018

Primary Source	Beginning Market Value July 1, 2018	YTD Contributions	YTD Withdrawals	YTD Income Earned	Ending Market Value Nov 30, 2018	Allocation of Funds	Credit Quality	Current Mo Avg Yield
BAML Corp Disbursement Account	10,669,597	261,202,408	263,541,100	21,350	8,352,255	7.5%	N/A	0.50%
VIP Stable NAV Liquidity Pool	-	128,000,000	26,000,000	664,040	102,664,040	92.5%	AAAm	2.36%
Va Local Government Investment Pool	68,984,048	5,000,000	74,115,221	131,173	-	0.0%	AAAm	
<b>Total Primary Source</b>	<b>\$ 79,653,645</b>	<b>\$ 394,202,408</b>	<b>\$ 363,656,321</b>	<b>\$ 816,563</b>	<b>\$ 111,016,296</b>	<b>100.0%</b>		

Secondary Source	Beginning Market Value July 1, 2018	YTD Contributions	YTD Withdrawals	YTD Income Earned & Realized G/L	Ending Market Value Nov 30, 2018	Ending Cost	YTD Mkt Adj	Yield to Maturity at Market
VIP 1-3 Year High Quality Bond Fund	-	124,728,039	1,007,559	1,013,542	124,635,903	124,734,022	(98,119)	
<b>Total Secondary Source</b>	<b>\$ -</b>	<b>\$ 124,728,039</b>	<b>\$ 1,007,559</b>	<b>\$ 1,013,542</b>	<b>\$ 124,635,903</b>	<b>\$ 124,734,022</b>	<b>\$ (98,119)</b>	

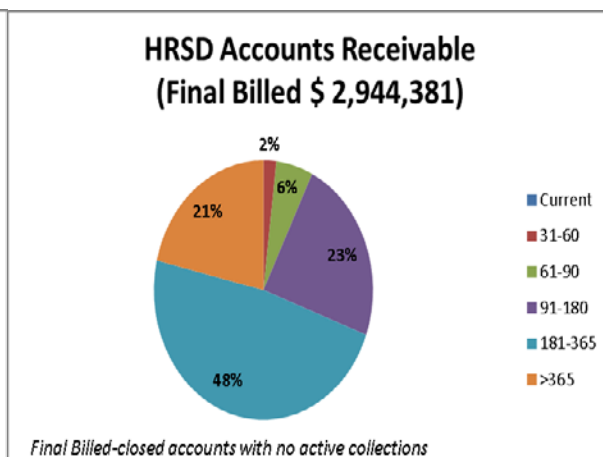
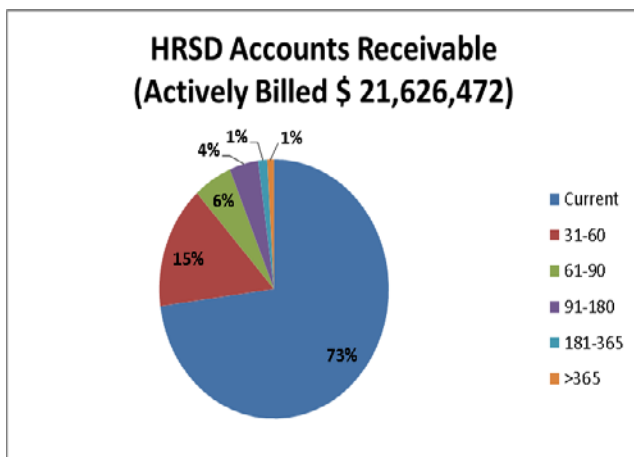
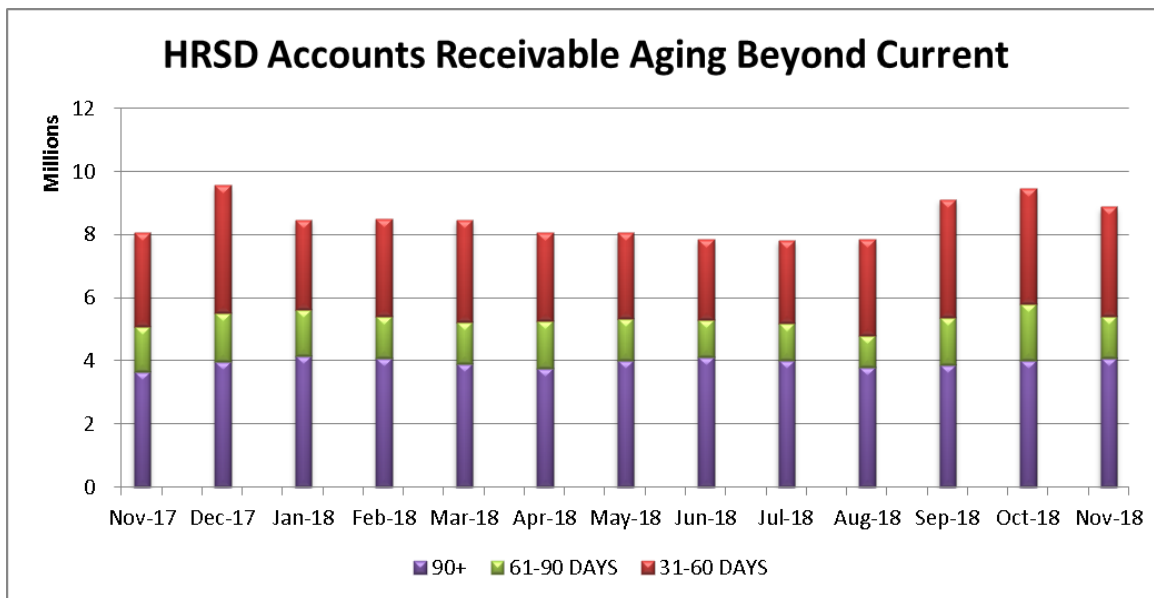
Total Primary Source	\$ 111,016,296	47.1%
Total Secondary Source	\$ 124,635,903	52.9%
<b>TOTAL SOURCES</b>	<b>\$ 235,652,198</b>	<b>100.0%</b>

7. Summary of Billed Consumption

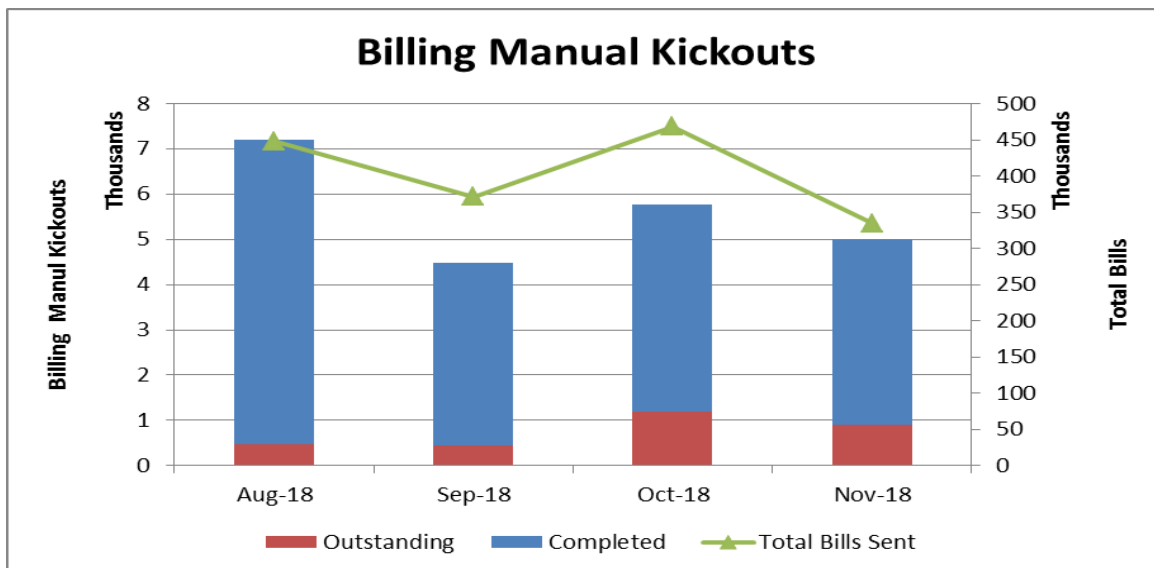
Summary of Billed Consumption (,000s ccf)							
Month	FY2019 Cumulative Budget Estimate	FY2019 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2018 Actual	From FY2018	Cumulative 3 Year Average	From 3 Year Average
July	4,737	5,175	9.3%	4,869	6.3%	4,821	7.3%
Aug	9,595	10,233	6.6%	9,939	3.0%	9,666	5.9%
Sept	14,442	14,294	-1.0%	14,632	-2.3%	14,383	-0.6%
Oct	18,768	19,087	1.7%	19,006	0.4%	18,999	0.5%
Nov	22,834	23,249	1.8%	23,305	-0.2%	23,358	-0.5%
Dec	27,166	-	N/A	27,462	N/A	27,616	N/A
Jan	31,486	-	N/A	31,965	N/A	31,948	N/A
Feb	36,154	-	N/A	36,519	N/A	36,247	N/A
March	40,096	-	N/A	40,741	N/A	40,654	N/A
Apr	43,612	-	N/A	44,732	N/A	44,649	N/A
May	47,887	-	N/A	49,018	N/A	48,864	N/A
June	52,927	-	N/A	53,298	N/A	53,391	N/A

C. Customer Care Center

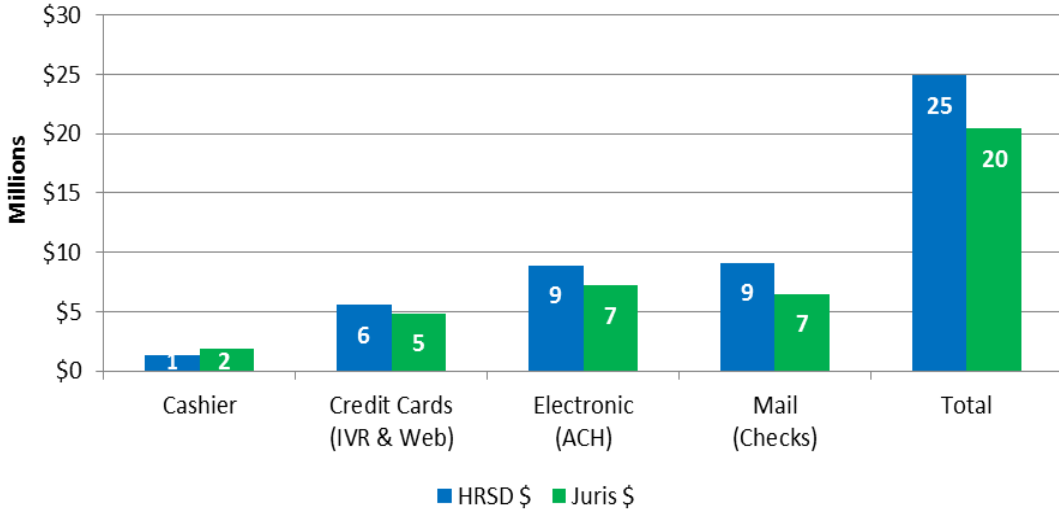
1. Accounts Receivable Overview



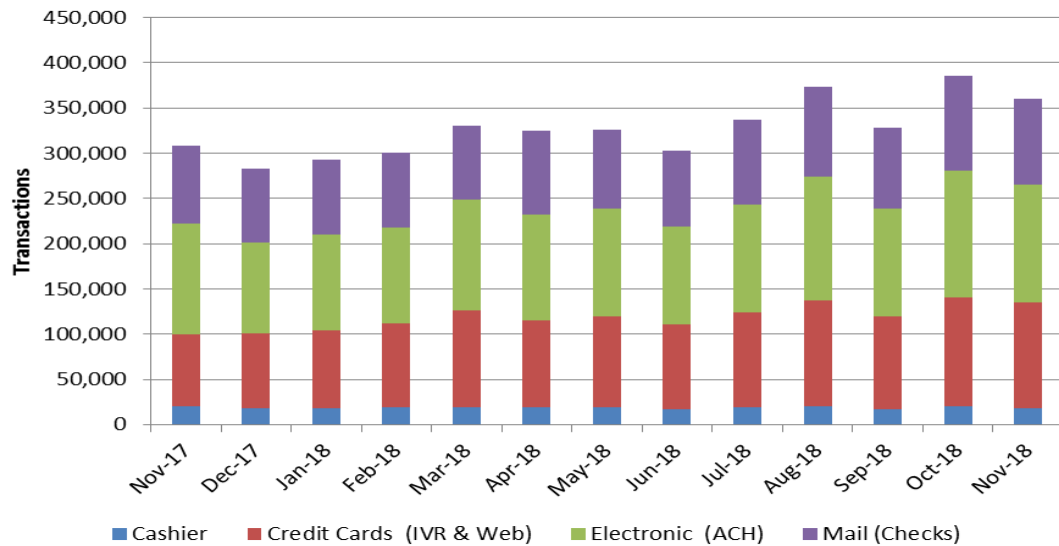
2. Customer Care Center Statistics



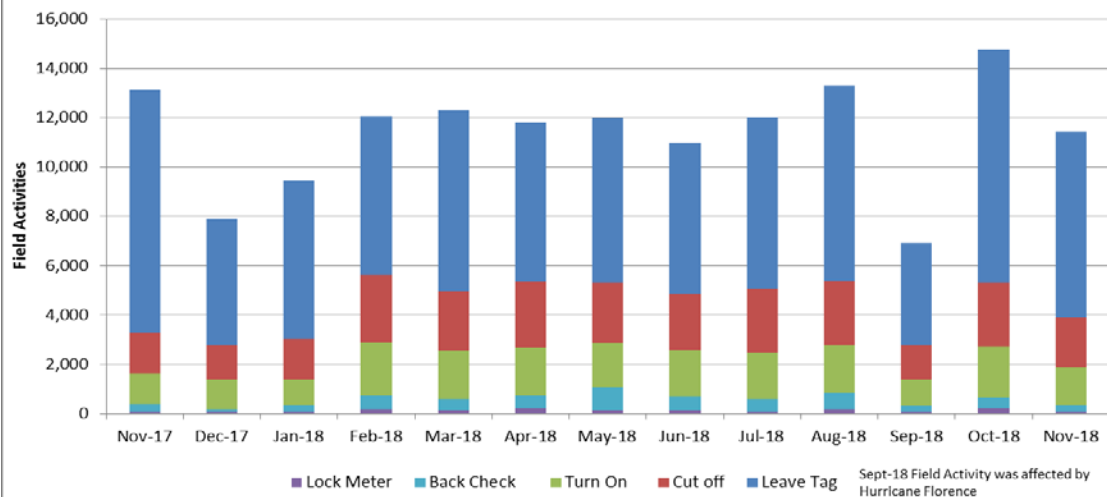
## Payments Processed November 2018

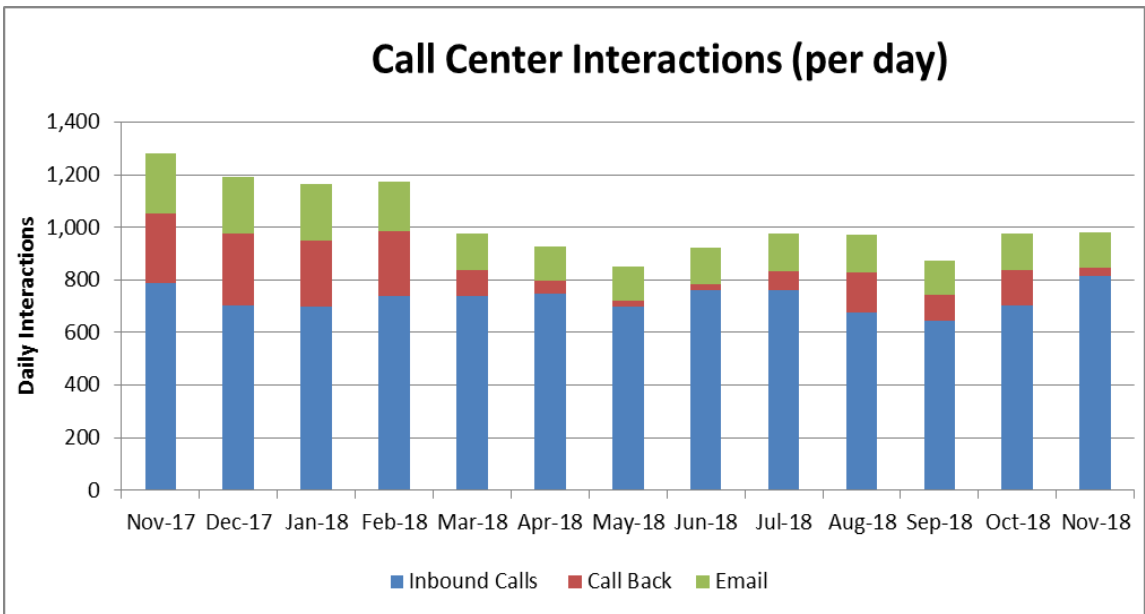
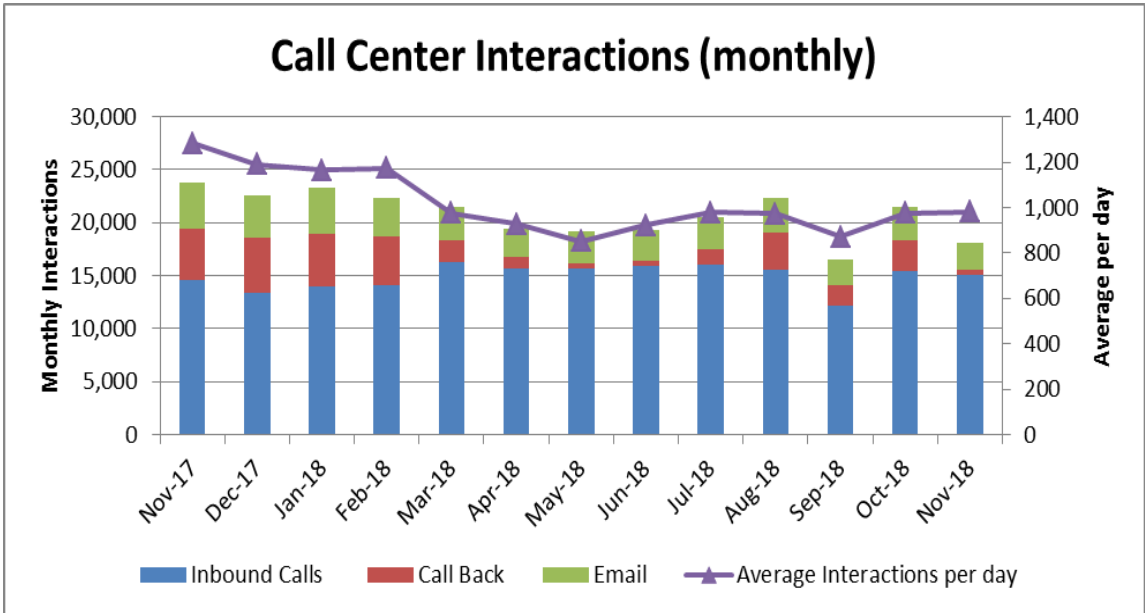
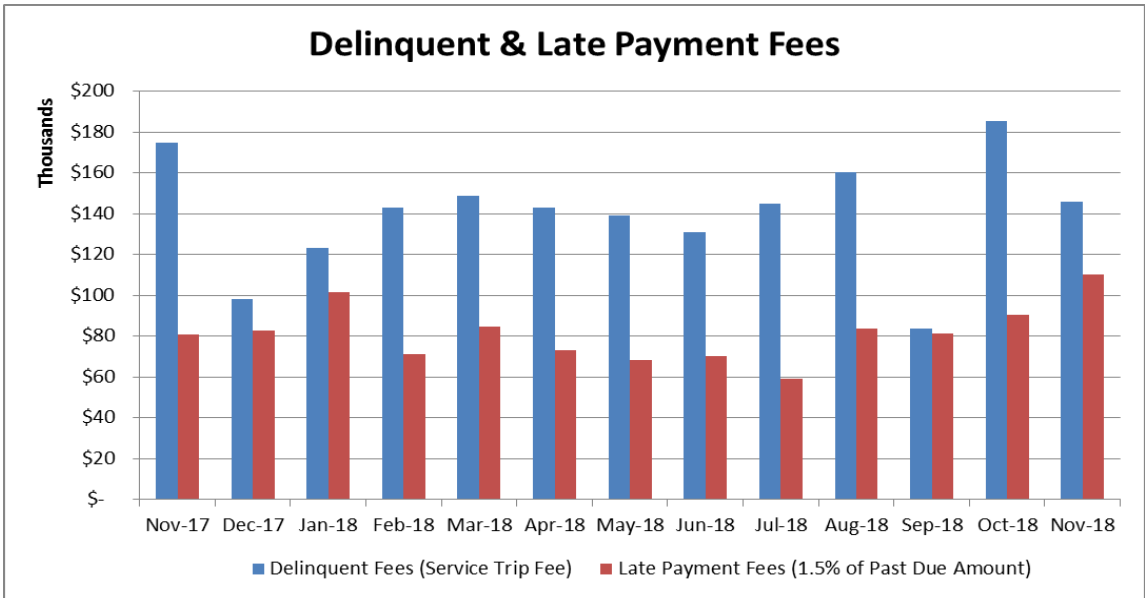


## Payment Transactions



## Field Activity

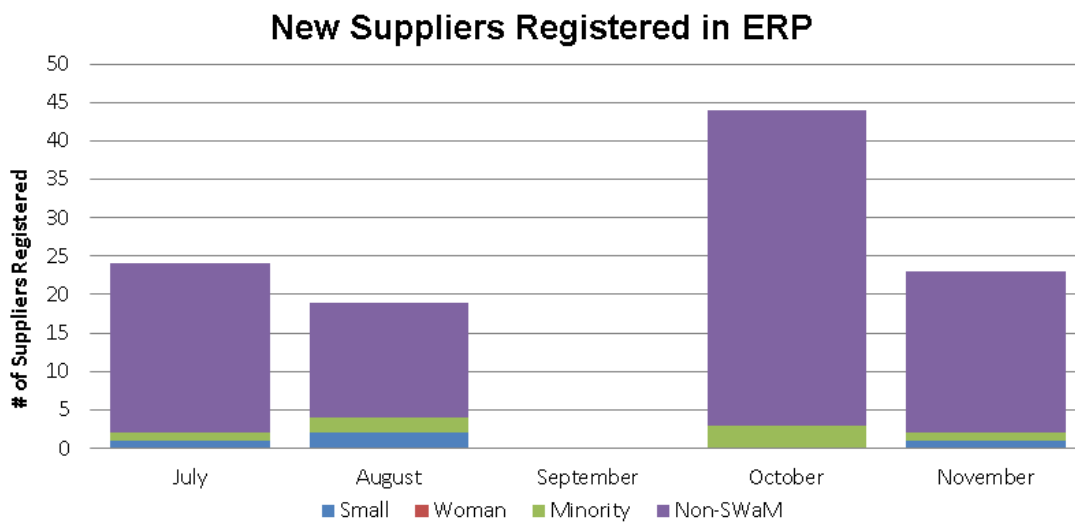




Customer Interaction Statistics	Jun	Jul	Aug	Sep	Oct	Nov
Calls Answered within 3 minutes	87%	76%	56%	68%	61%	89%
Average Wait Time (minutes)	1:09	2:17	4:22	3:02	3:50	1:12
Calls Abandoned	6%	9%	14%	11%	14%	6%

D. Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings <sup>1</sup>	\$29,707	\$608,174
Negotiated Savings <sup>2</sup>	\$3,500	\$93,413
Salvage Revenues	\$4,119	\$134,740
Corporate VISA Card - Estimated Rebate	\$15,563	\$92,022



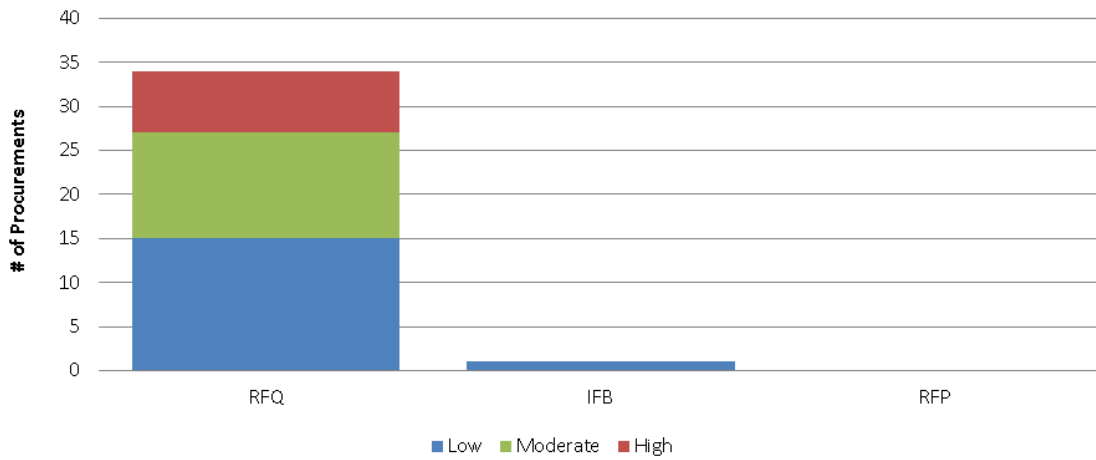
*\*Increased supplier registration due to supplier outreach at NIGP Forum 8/21/18, Water Jam 9/12/18, WEFTEC 10/2/18, VASCUPP® SWaMFest 10/4/18, DGS Public Procurement Forum 10/23/18, CNU SWaM Fair 11/7/18, Virginia Beach Minority Business Council Conference and Expo 11/8/18*

<sup>1</sup> 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.

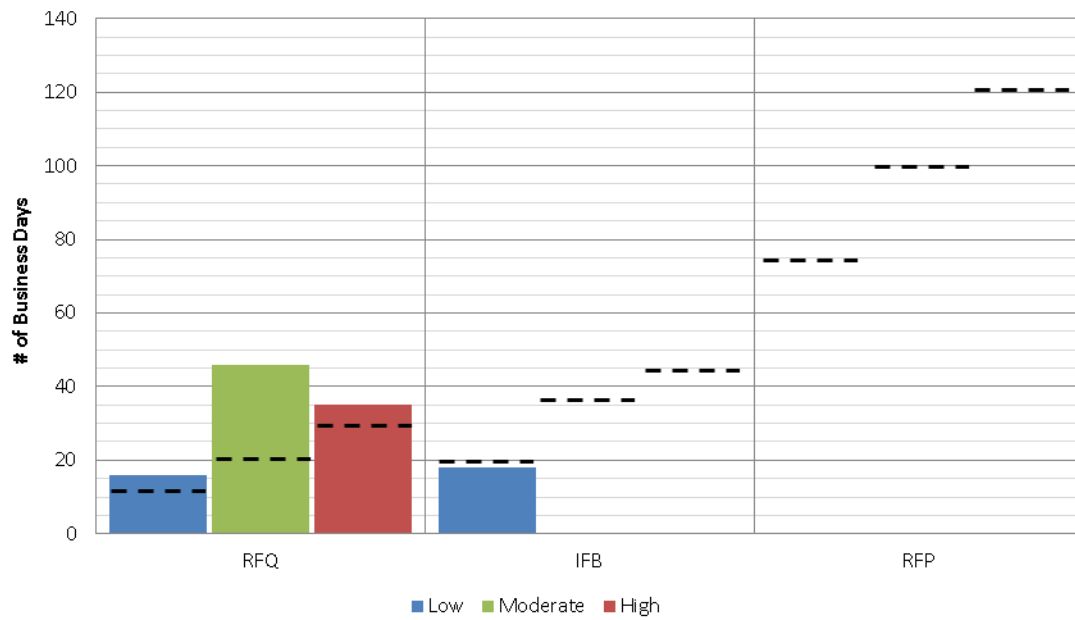
<sup>2</sup> Negotiated savings are savings obtained during a Request for Proposal process, or if all bids received exceed the budgeted amount, or if only one bid is received.



### Procurements Completed Based on Complexity



### Cycle Time per Method of Procurement and Complexity

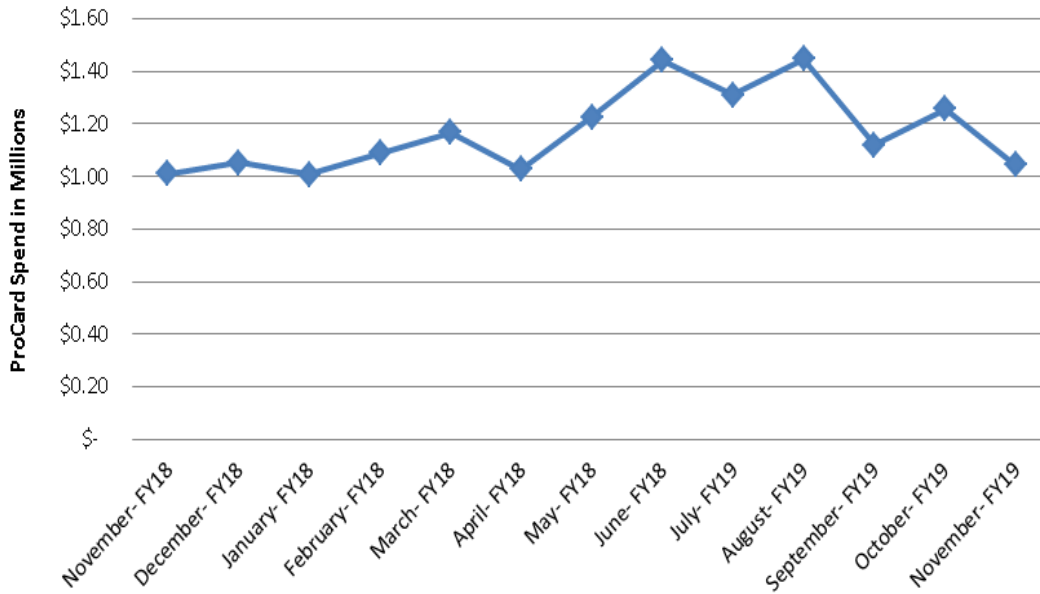


#### Dashed Line: Target Service Level Cycle Time

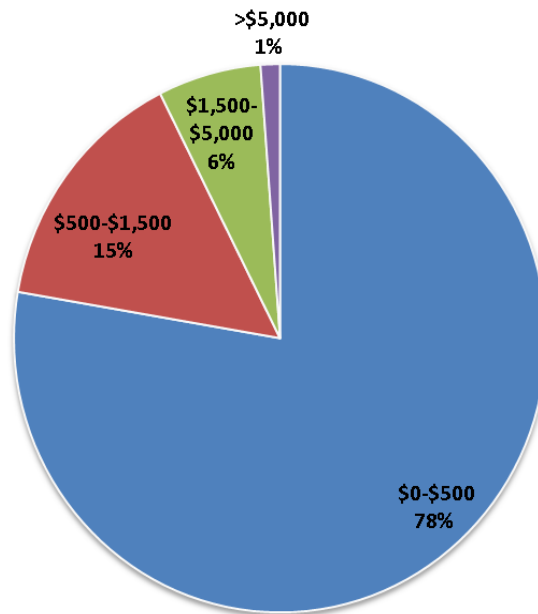
	Low	Moderate	High
RFQ	12	20	30
IFB	20	35	45
RFP	75	100	120

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

### ProCard Spend



### ProCard Transaction Dollar Amounts



ProCard Fraud	External Fraud Transactions *	Comments
July	3	1 Caught by Cardholder; 2 Caught by Bank Immediately
August	0	n/a
September	3	1 Caught by Cardholder; 2 Caught by Bank Immediately
October	1	Caught by Cardholder
November	2	1 Caught by bank immediately; 1 caught by cardholder
<b>Total</b>	<b>9</b>	

\*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 3 transactions (0.14%) out of the 2,122 November ProCard transactions, with a combined total of \$76.41.

Procurement Client Training		
	Current Period	YTD
ProCard Policy and Process	4	17
Procurement Cycle	5	18
<b>Total</b>	<b>9</b>	<b>35</b>

E. Business Intelligence – Enterprise Resource Planning (ERP)

- ERP Helpdesk currently has 156 open work orders in the following statuses:

Escalated	2
In progress	61
On Hold	22
Open	67
Waiting on User	4

- ERP Helpdesk received 289 work orders in November. In November, 261 work orders were closed and 111 were closed within one hour.
- ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

- Educational and Outreach Events: 2
  - 2018 Christopher Newport University SWaM Fair WEFTEC on November 7
  - 2018 Virginia Beach Minority Business Council Conference and Expo on November 8
- Community Partners: 2
  - City of Virginia Beach
  - Christopher Newport University

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	November 2018
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	2.42
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	14.23
M-5.2	Educational and Outreach Events	Number	2
M-5.3	Number of Community Partners	Number	2
	Wastewater Revenue	Percentage of budgeted	102%
	General Reserves	Percentage of Operating Budget less Depreciation	112%
	Liquidity	Days Cash on Hand	470 Days
	Accounts Receivable (HRSD)	Dollars	\$24,570,853
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	17%

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

TO: General Manager

FROM: Chief, Enterprise Data Services

SUBJECT: Information Technology Department Report for November 2018

DATE: December 6, 2018

A. General

1. The Industrial Automation Programmers modified the Distributed Control System (DCS) control logic for the Final Effluent control valves at the York River Treatment Plant to allow the Operations staff to manually control the valves as needed to meet the current process demands and/or for maintenance.
2. Senior System Engineers participated in a Risk Assessment engagement with Microsoft Premier Services to perform an evaluation of the Microsoft Exchange environment in preparation for an upgrade in the near future.
3. Senior System Engineers completed work with Planning & Analysis to redirect network communications for over 300 TELOG devices to improve management and security.
4. Enterprise Data Services staff, along with the Asset Management work center successfully completed the enhanced integrations between the Infor Enterprise Asset Management (EAM) and the Enterprise Resource Planning (ERP) system. This integration streamlines workflows and data exchanges between the two systems and eliminates the use of a third party software.
5. Enterprise Data Service programmers, Industrial Automation programmers and the Asset Management work center continue working together to complete the integration of plant Enterprise Data Server (EDS) equipment runtime data to the Infor EAM system. This enhancement will provide the ability for the Asset Management Software to automatically produce Preventative Maintenance Work Orders based on the equipment runtimes, thus eliminating manual processing of the data.
6. Programming staff is working with the Communications work center to deliver the phase II enhancements to the HRSD.com website.



7. Programming staff has been working with Customer Care Center management on modifications to Customer Care & Billing (CC&B) to enable the implementation of the Financial Wellness Program.
8. Staff participated in Mobile Workforce Program RFP demonstrations for the replacement of Customer Care Center's current mobility product.

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	November 2018
M-1.4a	Training During Work Hours Per Full Time Employee (51) – Current Month	Total Training Hours / # FTE	4.09
M-1.4b	Total Training During Work Hours Per Full Time Employee (51) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	10.33
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,  
*Mary Corby*

TO: General Manager  
FROM: Director of Operations  
SUBJECT: Operations Report for November 2018  
DATE: November 29, 2018

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. The smart sewer pilot study of the NS Interceptor System concluded this month. This study demonstrated a theoretical improvement in the hydraulic performance of the collection system during wet weather events and a potential benefit from flow equalization at treatment plants during dry weather. This flow equalization over a day's diurnal flow pattern could help the treatment plants more consistently meet nutrient reduction objectives and potentially reduce some of the future capital requirements associated with the Sustainable Water Initiative for Tomorrow (SWIFT).
- b. Staff performed one pump and haul operation at the Town of Surry Treatment Plant, and four pump and haul operations of the Lawnes Point Treatment Plant.

2. South Shore (SS) Interceptor Systems

- a. There were 13 system alarms reported this month. Staff responded and resolved all of the alarms.
- b. Staff assisted the Asset Management division with traffic control for the cathodic protection system inspections.
- c. Staff assisted the Chesapeake-Elizabeth Treatment Plant (CETP) by removing approximately seven yards of grease from the septic well and repairing another broken water service line.
- d. Staff assisted the Atlantic Treatment Plant (ATP) by removing approximately 20 yards of material from the septic well and drain pump station.

- e. Staff removed approximately seven yards of material from the Nansemond Treatment Plant (NTP) Regional Residuals Facility (RRF).
- f. Staff assisted the City of Chesapeake with valve operations so they could repair a pump station in Western Branch.
- g. Staff assisted the City of Virginia Beach in repairing a broken force main near South Independence Boulevard.

## B. Major Treatment Plant Operations

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

- a. The nitrogen removal system continues to perform exceptionally well. The final effluent total nitrogen average as of November 28 was 3.34 mg/L.
- b. Failure of #4 flight system on the primary clarifier required replacement of most of the flights and all of the flight chain.
- d. The Environmental Data Management System (EDMS) web portal for daily plant operation reporting is now operational.
- e. Staff rebuilt the mechanical seal for the #2 influent pump and replaced the foam pump on the #3 secondary clarifier.
- f. The October 30 air permit stack test on incinerator #1 did not pass because hydrogen chloride levels were too high. All other tested parameters were within limit. We are currently operating on incinerator #2. A re-test of incinerator #1 is being scheduled.

### 2. Atlantic Treatment Plant (ATP)

- a. Construction of the Thermal Hydrolysis Process (THP) project continues. The contractor began pouring the walls for the pre-dewatering building. Work also continues in preparation for the steam boiler install.
- b. Staff moved into the new administration building.
- c. Both biosolids storage pads are near capacity, so staff is working closely with the Water Quality Department to schedule the hauling of

biosolids to our treatment plants with furnace facilities. Solids levels are high this year as a result of diverting seven million gallons of flow per day from the Chesapeake Elizabeth Treatment Plant (CETP) from July 24 to September 11. Biosolids land application will not be available until the spring, so the pads would most likely overflow if action is not taken now.

3. Boat Harbor Treatment Plant (BHTP)

- a. We had one reportable event on November 24 when an operator was late collecting and analyzing the chlorine residual sample because he was responding to and troubleshooting an alarm in the intermediate pump station basement.
- b. Staff completed the installation of a rotary lobe style positive displacement dewatering feed pump for use in low feed rate operations. This project included modification of the existing piping system and installation of new suction and discharge valves. The purpose of the installation is to improve dewatering operations by better controlling the solids feed to the centrifuge.
- c. The EDMS web portal for daily plant operation reporting is now operational.

4. CETP

- a. Staff repaired the #1 septage pump and filled in several sinkholes that had developed around the plant site.
- b. A contractor assessed and resolved high vibrations that were detected on #3 aeration blower.

5. James River Treatment Plant (JRTP)

- a. Staff rebuilt three progressive cavity pumps, replaced several Integrated Fixed film Activated Solids (IFAS) mixers and nitrified recycle pumps, and replaced a gearbox on a non-potable water strainer.
- b. Staff determined that use of liquid polymer versus a dry polymer was not cost effective by testing both on the centrifuges.
- c. Drilling of the SWIFT test well continued.

6. Nansemond Treatment Plant (NTP)

- a. Staff replaced three cell switches in the utility service for switch gear 1A & 1B.
- b. Staff disassembled the #3 dewatering centrifuge in anticipation of its relocation to ATP as part of the pre-dewatering operation for the THP.
- c. Staff continues to closely monitor nitrification and denitrification processes to consistently meet the stringent total nitrogen (TN) levels required for the successful operation of the SWIFT Research Center (SWIFTRC). Staff has done a great job in overseeing sensor probe maintenance while closely monitoring performance within the Distributed Control System (DCS). They continue to do a great job overseeing the operation of both NTP and the SWIFTRC.

7. Virginia Initiative Plant (VIP)

- a. There was a reportable event on November 30 when staff reported final effluent chlorine residual less than 0.10 mg/L. A construction-related flow diversion into an empty process tank caused an erratic effluent flow pattern, and the control loop for chlorination did not respond quickly enough to prevent this event. The operator switched chlorination to manual mode to prevent any further problems.
- b. A second reportable event occurred on November 28, when contractors working on the classified selector pumping system filled the selector vault with non-potable water (NPW), causing a 180-gallon NPW spill because of a leak in the vault wall.
- c. Staff spent much of November fine-tuning the screenings and pumping operation at the new preliminary treatment facility. This included removal of construction debris from the influent channels, screens and sluices, and adjustments to the wet well operating level, influent pump sequencing protocol, and influent pump check valves.
- d. Staff rebuilt a biosolids transfer pump, a caustic recirculation pump and a NPW strainer. They also replaced several deteriorated primary solids valves.
- e. Staff assisted contractors with the installation of new pipes and valves for the centrate pumping system and cleaning operations for the north and south primary scum vaults.

- f. Contractors began work to configure incinerator #2 for zero-hearth operation for more efficient air quality operation. This work includes installation of new burners and peripheral equipment, removal of half of the top hearth floor, and reconfiguring the conveyor belt and plow.
- g. Staff brought the nitrification enhancement facility back on line after its annual maintenance.

8. Williamsburg Treatment Plant (WBTP)

Staff continued replacing aluminum walls in aeration tank #4 and installed noncorrosive fiberglass and poly vinyl chloride (PVC) walls to enhance nutrient removal efforts. Work also included modifying the nitrified recycle pipe line and running new conduit for various probes that will be used to improve operational control.

9. York River Treatment Plant (YRTP)

- a. The new digester cover was finally set in place by the contractor on November 21 using a large crane erected on site. There were no issues in rigging and moving the large cover.
- b. A contractor completed construction of a concrete pad near the De-ammonification (DEMON) tank. The pad will be used to place two tanks which will be used to store Anammox bacteria while maintenance is performed on the DEMON tank.

10. Minor Incinerator Operations Events Summary

Condition	Cause	ABTP	BHTP	CETP	VIP	WBTP
Use of emergency bypass stack	Power anomaly/loss	1	1	5		
Use of emergency bypass stack	Equipment malfunction	1				
Total Hydrocarbon Emission Failure	Equipment malfunction				1	
Less than the minimum three hour average scrubber pH	Equipment malfunction	1				
Less than minimum pressure drop	Power anomaly/loss			1		
THC Monitor Failure	Unit out of Calibration	2		1		



## C. Small Communities (SC)

### 1. Middle Peninsula SC Treatment and Collections

Treatment and collections operations in the Middle Peninsula were relatively quiet this month with staff efforts focused on maintenance and various meetings about capital improvement projects.

### 2. Small Communities – Surry Systems

Sussex Service Authority (SSA) continued contract operations of the Town of Surry TP and the Surry County TP.

### 3. Small Communities - Lawnes Point

Draining of the two ponds at Lawnes Point Treatment Plant is finally complete. Now that the pond treatment is complete, staff is shutting the facility back down. We plan to continue to pump and haul the plant's raw influent for the foreseeable future. If necessary, we will resume pond water treatment when the ponds fill back up. We do not anticipate that for several years.

## D. Support Systems

### 1. Automotive

- a. Staff continues to install the Fleetistics vehicle information devices on district fleet vehicles weekly. Two hundred and fifty-eight units have been installed to date.
- b. Staff performed load bank tests at Elmhurst Lane, Lucas Creek, and Morrison pump stations (PS), and monthly generator tests at the NS and SS Main Operations Complexes. All generators operated as designed and were returned to service.

### 2. Condition Assessment

- a. Condition Assessment, through the use of Closed-Circuit Television (CCTV), inspected 9,114.9 LF of gravity main.
- b. Staff supported engineering with the Poplar Hall Capital Improvement Project (CIP) by attending progress meetings and providing a CCTV

inspection of line SG-113-13154 (VDOT storm drain crossing on Newtown Road). Staff also continues to support engineering with the Manhole Rehabilitation CIP by inspecting manholes: MH-NG-150-15214 and MH-SG-047-1025.

- c. Contractors performed the annual warranty inspection of the new aeration tanks #5-6 at ABTP. Breakage of top coat was noticed throughout. Repairs to the coating will occur in the spring.
- d. Rehabilitation of BHTP secondary clarifiers #1, 2, 3, and 6 continues. Tank #6 is 50 percent completed. Rehabilitation of the odor control piping throughout the plant resumed. The project is now 90 percent completed.
- e. Contractors completed semi-annual roof inspections at the treatment plants and NS and SS Complexes.

### 3. Facilities Maintenance

- a. Renovation of the NTP solids handling locker room continues.
- b. Contractors replaced a 7.5-ton rooftop heating, ventilation and air conditioning unit in the administration building at JRTP.
- c. Staff continues to work on the remodel of West Point office areas and on the construction of a printer workstation for the administration office at NTP.
- d. Staff completed routine maintenance work orders and various projects for the treatment plants and pump stations to include repairing entry locks and installing a new door to Powhatan PS; replacing wood walls and door assemblies in the primary storage area at ATP, and fabricating an acrylic battery cover for electrical staff also at ATP.
- e. Staff rebuilt five pumps: the #2 pump at Suffolk PS, the #1 pump at Pughsville PS, the #1 and #3 pumps at Lucas Creek PS, and one IPS Intermediate Pump Station (IPS) pump at BHTP. Staff completed ten other projects which included repairing a fiberglass shaft impeller combination for VIP; repairing a check valve at Quail PS; and making a new nose ring, boring out coupling, and keying a shaft for fit at JRTP; and fabricating 40 poly cones for expandable plugs for SS Interceptors.

## E. Electrical and Energy Management (EEM)

1. Staff responded to 18 Supervisory Control and Data Acquisition (SCADA) communication failures and seven Telog communication failures this month. A communication failure requires staff to respond to the site where the failure occurred.
2. Staff assisted a medium voltage (MV) electrical contractor to complete testing and maintenance on two large, oil-filled transformers at NTP. The transformers tested satisfactorily and were returned to service.
3. Staff installed time delay switches on the emergency generator switchgear main buss tie circuit breakers at ATP. The switches are designed to delay the breaker closing time until the plant operators can move out of the arc flash danger zone.
4. Staff replaced cell switches on the switchgear at NTP. This required the coordination of low and MV switches and several outages across the plant to facilitate the replacement. Multiple portable generators were required to maintain temporary power on the effected equipment during the outages.
5. Staff assisted SCD and YRTP with completion of numerous instrumentation-related repairs.
6. An electrical contractor completed two lighting projects at BHTP - the installation of light-emitting diode (LED) fixtures in the Maintenance Shop tool room, and the installation of LED fixtures on the outdoor mast poles.
7. Staff assisted a contractor with a harmonic filter upgrade for the Neuros blowers at BHTP.
8. Staff continues to work with several contractors to support the major upgrade at VIP. Work this month focused on fine tuning the pumps and screenings controls in the new Preliminary Treatment Facility (PTF)/Raw Wastewater Influent (RWI) Building. The team is also assisting with decommissioning the old PTF equipment.
9. Staff completed and tested modifications to hardware and programmable logic control (PLC) programming on the King William Treatment Plant (KWTP) control systems, which allows for automatic restart of both treatment trains on the utility or generator after a power outage.

10. Staff finished disconnecting the centrifuge control cabinet at NTP and started disconnecting the centrifuge control cabinet at JRTP. The centrifuges will be refurbished to support the CAMBI process at ATP.
11. Staff continues to research, design and construct a PLC-based analyzer platform that can be modified to measure a variety of chemicals at very low concentrations. Initial PLC communication challenges were solved, and ladder logic program development is near completion. The prototype is under construction while miscellaneous issues are being resolved.

#### F. Water Technology and Research

**Highlighted Project:** Total organic carbon (TOC) is measured throughout the SWIFTRC process to quantify treatment performance in terms of gross organics removal. The SWIFT Water TOC requirements include a daily maximum of 6 mg/L and a monthly average of 4 mg/L. TOC has not exceeded these limits for the duration of plant operation. SWIFT influent TOC fluctuations may be attributed to operational anomalies at NTP related to methanol feed issues associated with denitrification, as well as recent efforts to degrade the performance of the primary clarifiers in an attempt to decrease methanol demand. The TOC removal provided by coagulation, flocculation and sedimentation is highly dependent on the coagulant and polymer doses, as was demonstrated by jar testing performed at the SWIFTRC. The coagulant and polymer doses determined by these tests are 50 mg/L aluminum chlorohydrate as product and 0.75 mg/L as product, respectively. After sedimentation, ozone oxidation produces assimilable organic carbon that is biologically degraded in biofilters (BAFs), and the granular activated carbon (GAC) contactors provide additional TOC removal via adsorption.

GAC effluent TOC is important to monitor in order to understand when the adsorption capacity of the carbon media is exhausted. Breakthrough curves for both GAC vessels have been compared to pilot data to project when media replacement/regeneration may be required. This projection was made while accounting for decreased biological removal that will be expected through BAF with colder temperatures. TOC breakthrough projection and continuous online monitoring are crucial in order to plan for the significant cost associated with replacing GAC media.

Another challenge encountered during startup has been the formation of bromate, a regulated disinfection byproduct (DBP) with a maximum contaminant level of 10 µg/L. Bromate forms during ozonation of bromide-containing waters. This is of particular concern at the SWIFTRC due to the high bromide load from landfill leachate that is discharged to NTP. At the SWIFTRC, preformed

monochloramine is added prior to ozonation to suppress bromate formation. A correlation has been observed between applied ozone dose and bromate formation, which has motivated testing to reduce ozone demand via preoxidation. Testing has shown that preoxidizing with subresidual free chlorine is effective in reducing the ozone demand, thereby further suppressing bromate formation. However, prechlorination also poses the risk of forming DBPs such as trihalomethanes and haloacetic acids. Preliminary testing suggests that subresidual chlorination at a dose range of 2-4 mg/L as Cl<sub>2</sub> to the secondary effluent results resulted in minimal DBP formation and these compounds are subsequently well removed through biofiltration.

BAF performance has been evaluated since startup, and this analysis includes a review of BAF effluent turbidity, ripening volume, unit filter run volume, and filter efficiency. Improvements in the backwash sequence have been made in order to improve filter efficiency. Biological nitrification was observed in the BAF after approximately three months of operation, suggesting that a biological community was established at this time. The observation of nitrification coincided with observed removal of compounds such as N-nitrosodimethylamine (NDMA) which is primarily removed via biodegradation in the BAFs. NDMA removal is important to monitor, as this compound is formed in the SWIFT process as a disinfection byproduct of ozonation at an average concentration of 43 ng/L. This compound is included in the Unregulated Contaminant Monitoring Rule (UCMR), and while it is not regulated in the United States, several states have established notification limits (e.g. California notification limit = 10 ng/L). NDMA is also removed by direct photolysis by a relatively high dose of UV irradiation, however the operational concern is that biological treatment must be established in the BAFs prior to the time when the UV system is unable to deliver the high dose required for NDMA removal (due to GAC utilization and increases in GAC effluent UVT).

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	2	3	3	2							
2.7	# of PS Annual PMs Performed (SS)	6	3	5	4	6							
2.7	# of Backup Generator PMs Performed (Target is 4.6)	6	19	7	8	10							
2.8	# of FM Air Release Valve PMs Performed (NS)	128	33	124	268	213							
2.8	# of FM Air Release Valve PMs Performed (SS)	193	221	222	275	161							
2.9	# of Linear Feet of Gravity Clean (NS) (Target is 2,417 for HRSD)	7,548	5,980	3,241	7,880	2,739							
2.9	# of Linear Feet of Gravity Clean (SS) (Target is 2,417 for HRSD)	5,990	7,971	2,460	11,882	3,938							
2.9	# of Linear Feet of Gravity CCTV Inspection (HRSD Target 3,300 LF)	8,637	16,671	5,816*	5,062	9,115							

\*Adjusted monthly total



## H. Strategic Measurement Data

### 1. Education and Outreach Events: 11

- a. 11/15-16/18 DuPont Sustainable Solutions used the York River Plant site to film a safety video
- b. 11/13/18, 11/28-29/18 The North Shore (NS) Material Operations Coordinator (MOC) attended United Way HRSD CARES Home Renovation Project meetings
- c. 11/1/18 NCDEQ Visit (SWIFT tour)
- d. 11/2/18 Anne Arundel County (SWIFT tour)
- e. 11/7/18 City of Virginia Beach Public Works(SWIFT tour)
- f. 11/13/18 NS Carpentry attended meetings in support of the United Way, Williamsburg Carmichael House Project
- g. 11/14/18 Hampton City High Schools (SWIFT tour)
- h. 11/15/18 Staff met with City of Suffolk Public Utilities Operations staff to collaborate and discuss locality issues
- i. 11/16/18 Somerset County MD (SWIFT tour)
- j. 11/20/18 Support Systems Administrative Assistant coordinated the South Shore Blood Drive
- k. 11/29/18 Tidewater Collegiate Academy (SWIFT tour)

### 2. Community Partners: 7

- a. DuPont Sustainable Solutions
- b. United Way HRSD Home Renovation Project
- c. Ocean Lakes High School, Surf Rider Club
- d. Chesapeake Bay Foundation - oyster cage maintenance at BHTP for oyster gardening program
- e. United Way – Williamsburg House
- f. American Red Cross
- g. City of Suffolk Public Utilities

### 3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	November 2018
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (510) – Current Month	Hours / FTE	2.86
M-1.4b	Total Training During Work Hours per FTE (510) – Cumulative Year-to-Date	Hours / FTE	13.65
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	21,912.80
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	55%
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	20%
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	25%
M- 4.1a	Energy Use: Treatment *reported for November 2018	kWh/MG	2,593
M-4.1b	Energy Use: Pump Stations *reported for November 2018	kWh/MG	172
M-4.1c	Energy Use: Office Building *reported for November 2018	kWh/MG	126
M-5.2	Educational and Outreach Events	Number	11
M-5.3	Number of Community Partners	Number	7

Respectfully submitted,  
Steve de Mik  
 Director of Operations

TO: General Manager  
FROM: Director of Talent Management (TM)  
SUBJECT: Monthly Report for November 2018  
DATE: December 5, 2018

A. Human Resources (HR)

1. Recruitment

a. Summary

New Recruitment Campaigns	9
Job Offers Accepted – Internal Selections	6
Job Offers Accepted – External Selections	5
Internal Applications	23
External Applications	158
Average Days to Fill Position	67

b. An HR Specialist updated interview questions for selection of Hampton Roads Public Works Academy interns.

2. Enterprise Resource Planning (ERP)

a. HRSD worked with the Managed Services consultant on:

- (1) Benefit programs setup and updates
- (2) Benefit interface updates

b. Staff worked with TM and Information Technology (IT) staff to identify learning management system requirements.

c. Employee Leave Balance and Loss Reports were generated and sent to work center supervisors.

3. Benefits and Compensation

a. Staff worked with the benefit consultant on:

- (1) A meeting with Cigna to gather information for evaluation of a Diabetes Prevention Program offering

- (2) Options for voluntary benefits
  - (3) Delta Dental Annual Utilization meeting to review claims and cost trends in preparation for the annual renewal process
- b. Staff continued work with the consultant on the custom and market-based compensation study.
4. Wellness
- a. Participation Activities

Year Six Participation Activities	Unit	November 2018	Year to Date (March 2018–February 2019)
Biometric Screenings	Number	7	21
Preventive Health Exams	Number	10	44
Preventive Health Assessments	Number	23	247
Coaching Calls	Number	0	0
Online Health Improvement Programs	Number	67	478
Web-MD Online Health Tracking	Number	68	1,008
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	5	71

- b. The quarterly Wellness Committee meeting was held. Topics discussed include the December wellness challenge “*Be Kind to Your Mind*”, a community supported agriculture group lunch and learn program and an idea for a massage chair for Air Rail complex employees, initially set up for Customer Care Center employees as part of Customer Service Week .
- c. An updated YMCA membership referral program was distributed. For a week in November, employees had the option to join as a current HRSD member and receive a discount membership.
- d. The Wellness Specialist attended Sentara’s *Diabetes Symposium and Nutrition as Medicine* conference.
- e. In observance of the *Great American Smokeout®*, pledge information to be tobacco-free for 24 hours and Tobacco Cessation program information was provided.

5. Workers Compensation

One new case was opened with seven cases remaining active.

6. Employee Relations

Staff continued partnering with work center supervisors and employees to support employee relations and address HR issues. Staff worked on updating a job description for Engineering.

7. General

- a. HR and Accounting staff continued to meet to streamline and improve HR and payroll processes.
- b. HR Staff developed and facilitated a module for Operation's Workforce of the Future workshop.
- c. Reorganization of the HR file room and storage areas continued. Storage area items were relocated to the new facility.
- d. Staff participated in the following HRSD activities:
  - (1) Operations' Workforce of the Future Workshop
  - (2) Leadership Day planning meeting
  - (3) Facilitated *Your Role in Quality* training
  - (4) Leadership Forum
  - (5) Senior Leadership Meeting
- e. Staff participated in the following training:
  - (1) ProCard Recertification Training
  - (2) Wilcox Savage's Employment Law Update
  - (3) *Society of Human Resources Conducting Workplace Investigations - Part 1* webinar
  - (4) Emotional Intelligence Intensive
  - (5) Virginia Eastern Regional Diversity and Inclusion Conference
  - (6) Kaufman and Canoles' Employment Law Update

## B. Organization Development and Training (OD&T)

### 1. Training

- a. Work continued with HR, Procurement and General Management staff to address HRSD Ethics Policy training needs based on internal audit recommendations. A draft e-learning course, training documentation and disclosure forms are in development.
- b. Staff are compiling Work Center Planning Day results and creating a Parking Board listing for QST review.
- c. Staff continued to update and categorize training program procedures.
- d. Meekins building storage items were reorganized, salvaged or relocated to the new storage facility.
- e. The following programs were conducted:
  - (1) Beginning and Advanced Coaching
  - (2) Emotional Intelligence Intensive
  - (3) Your Role in Quality training
  - (4) Teams and Problem Solving (TAPS) workshop

### 2. Apprenticeship Program

- a. The Learning Management System (LMS) team met to define needs and specifications.
- b. A Math Standardization Workshop was held to discuss curriculum revisions and implementation of a standardized math course based on Apprenticeship Committee recommendations.
- c. Staff continued to enter historical training and program information and scan historical records into ERP.
- d. The following activities took place as part of National Apprenticeship Week:
  - (1) Apprentice Appreciation luncheons were held on both the North Shore and South Shore
  - (2) Apprenticeship Program information was published and 2018 Apprentice Graduates were recognized on SharePoint



- (3) Attended the Department of Labor and Industry (DOLI) Outstanding Apprentice Award Ceremony. Travis Stevens, Interceptor Technician, was one of 25 Virginia apprentices to receive the award. His accomplishment was also recognized on SharePoint.

3. General

- a. Staff assisted with planning and facilitation and also participated in Operations' *Workforce of the Future Workshop* at the KROC center.
- b. Work continued with Procurement on a ProCard Recertification e-learning project. A training course was deployed using *BizLibrary* as a Learning Management platform. Overall, participant feedback has been positive.
- c. Staff participated in the following training:
  - (1) Mentor Coach's *Executive Coaching*
  - (2) ProCard Recertification

C. Safety

1. Mishaps and Work Related Injuries

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

	<u>2017</u>	<u>2018</u>
<b>Mishaps</b>	42	39
<b>Lost Time Mishaps</b>	10	6
<i>Numbers subject to change pending HR review of each case.</i>		

- b. MOM Program Year Performance Measure Work-Related Injuries

<b>November 2018 Injuries For Operations</b>	<b>November 2018 Injuries for Other HRSD Departments</b>	<b>Total Lost Time Injuries Since July 2018</b>	<b>Total HRSD Injuries Since July 2018</b>
1	0	2	17

- c. Follow-up investigations were performed on one reported work-related injury and two auto accidents.

2. HRSD Safety Training

Strategic Planning Measure	Unit	November 2018
Total Safety Training Hours per Full Time Employee (836) All HRSD – November 2018	370.25 Hours / 836 FTE	0.44
Total Safety Training Hours Per Full Time Employee (836) – Cumulative July 2018	1942.56 Hours / 836 FTE	2.32

- 3. In addition to regularly scheduled safety training and medical monitoring, the following sessions were conducted:
  - a. Four external briefings for contractors working at treatment plants and pump stations
  - b. Aerial Lift Safety Training for Army Base Treatment Plant (TP) employees
  - c. Chainsaw Safety training for Small Communities employees
  - d. Lock Out/Tag Out training for Army Base TP employees
  - e. Forklift Safety training for Nansmond TP employees
  - f. Material Safety Data Sheet and updated Hazard Communication Plan training at the following work centers:
    - (1) North Shore Operations
    - (2) North Shore Pretreatment and Pollution Prevention (P3)
    - (3) South Shore Operations
    - (4) South Shore P3
    - (5) South Shore Interceptors
    - (6) Technical Services Division

#### 4. Safety Inspections, Testing and Monitoring

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

- (1) Army Base TP
- (2) Atlantic TP
- (3) Newtown Road Pump Station
- (4) Rodman Pump Station
- (5) Shippo Corner Pump Station
- (6) Virginia Initiative Plant
- (7) Willoughby Avenue Pump Station
- (8) York River TP

b. Quarterly safety inspections of the following work centers:

- (1) Air Rail Avenue Complex
- (2) Central Environmental Lab (CEL)
- (3) James River TP
- (4) North Shore Pump Stations
- (5) South Shore P3
- (6) South Shore Pump Stations
- (7) Technical Services Division
- (8) York River TP

c. Monitoring and testing for the following:

- (1) Monthly velocity tests on CEL and Technical Services lab hoods
- (2) Air sampling for chloroform at the SWIFT Research Center
- (3) Conducted ventilation surveys of drywells at 29 pump stations

d. Safety walk-throughs and evaluations:

- (1) Escorted Marine Chemist's staff on an asbestos and lead inspection of the Town of Surry TP
- (2) Escorted vendor on fire extinguisher inspections of North Shore Automotive, Carpentry and Electrical shops
- (3) Coordinated and oversaw truck crane inspections for North Shore Interceptors
- (4) Escorted City of Chesapeake's Fire Marshall on annual inspections of five pump stations and addressed discrepancies identified during the inspections
- (5) Escorted consultants on the Nansemond Former Ordnance Depot property

- (6) An Industrial Hygienist escorted Virginia Occupational Health and Safety Administration (VOSHA) Compliance Officer on a contractor inspection of the Army Base TP construction site.

## 5. Safety Programs

- a. The following was performed for the Electrical Safety Program:
  - (1) Installed new arc flash labelling on Air Rail Complex electrical panels
  - (2) The Safety Manager evaluated a training presentation on start-up of emergency generators
- b. Various hot work permits were issued for contractors working at the following pump stations:
  - (1) Bridge Street
  - (2) Dozier's Corner
  - (3) Rodman Avenue
  - (4) Seay Avenue
  - (5) Shipps Corner
  - (6) Steamboat Creek
  - (7) Willoughby
- c. The 2019 Safety Calendar was completed.
- d. Staff worked on updates to the Chemical Hygiene Plan.
- e. An Industrial Hygienist assisted a safety training video film crew at the Nansemond and York River TP sites.
- f. Review of audiometric testing results and data entry continued as part of the Hearing Conservation and Protection Program.
- g. An Industrial Hygienist worked on finalizing the Medical Request for Proposal requirements for selection of an employee physicals and medical monitoring program provider.
- h. Prescription Safety Glasses program implementation continued. Order forms were distributed to interested employees.

6. General

- a. The Safety Manager worked with Operations on chemical delivery procedures and signage.
- b. An Industrial Hygienist developed learning management system needs for Safety Training programs.
- c. Staff attended the following training:
  - (1) The Safety Technician attended training and successfully completed 40-Hour Asbestos Worker/Supervisor certification
  - (2) The Safety Manager attended training and successfully completed 8-Hour Asbestos Worker/Supervisor re-certification

D. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: (6)

- a. University of Virginia's *Hire Virginia* Recruiting Fair at Norfolk Marriott Waterside, November 5
- b. City of Chesapeake's Employment Service's National Apprenticeship Week Career Event, November 14
- c. Hampton Roads Public Works Academy Meeting, November 16
- d. City of Virginia Beach Ocean Lakes High School Career Fair, November 16
- e. Water Environment Federation Utility Management HR/Operations Subcommittee conference call meeting, November 28
- f. Tidewater Community College Portsmouth Campus Fall Career Fair, November 29

2. Community Partners: (4)

- a. City of Chesapeake Employment Services
- b. City of Virginia Beach Public Schools
- c. Hampton Roads Public Works Academy

d. Tidewater Community College

3. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>November 2018</b>
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.50
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.25
M-1.4a	Total Training Hours Per Full Time Employee (17) – Current Month	Total Training Hours/ FTE	6.91
M-1.4b	Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date	Hours / FTE	28.68
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Community Partners	Number	4

Respectfully submitted,  
**Paula A. Hogg**  
Director of Talent Management



TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for November 2018

DATE: December 10, 2018

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.
2. The Director attended the National Association of Clean Water Agencies (NACWA) Clean Water Law and Enforcement Seminar in San Diego, California. This year's seminar focused on two issues relevant to HRSD operations - the taking of private property and/or resources for public use, and the increasingly stringent water quality standards being adopted state-by-state and nationwide. With the first issue, recent case law has documented a significant increase in challenges to such property takings and their justifications. It remains to be seen whether these challenges will be successful, but if they are it will be more important to understand the "why" behind a court decision and how HRSD can operate given these legal precedents. The water quality standards issue is of particular concern to HRSD as a driver for the Sustainable Water Initiative for Tomorrow (SWIFT). HRSD's treatment of wastewater to provide a product meeting drinking water quality standards will largely circumvent the impact of this trend while providing an additional significant benefit to HRSD rate payers as well as other citizens of the Virginia Commonwealth.
3. The Director led a conference call of the NACWA Water Quality Committee as its Chairman. Topics covered in the call included the application of variances where water quality standards cannot be met instream, various nutrient-related activities nationwide, EPA's efforts to develop water quality criteria for harmful algal bloom toxins, and a permittee challenge in California to that state's approach to National Pollution Discharge Elimination System permit toxicity testing. The Committee will follow-up with these issues at its next meeting scheduled for February, but the Director, with NACWA staff, will monitor these issues and respond where necessary, between now and February.

B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy Group (SEA) reported no activities for the month of November.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to the City of Hopewell to support their Virginia Pollution Discharge Elimination System (VPDES) permit monitoring.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Community Partners: 5
  - a. City of Norfolk
  - b. City of Suffolk
  - c. Elizabeth River Project
  - d. Virginia Department of Environmental Quality
  - e. Virginia Department of Health Division of Shellfish Sanitation
3. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>November 2018</b>
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	4.67
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	16.5
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>November 2018</b>
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	1:25,366
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	80,213,895
M-3.5	Pollutant Discharge	% Pounds Discharged/ Pounds Permitted	16%
M-5.2	Educational and Outreach Events	#	0
M-5.3	Community Partners	#	5
	Average Daily Flow	Total MGD for all Treatment Plants	144.11
	Industrial Waste Related System Issues	#	0

Respectfully submitted,  
*James Plett, PhD*  
 Director of Water Quality



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

## ***I. Projects in Process***

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### **Business Continuity and Disaster Recovery**

- **Tasks Completed (November 2018)**
  - Discussed report findings and next steps at November QST meeting
- **Upcoming Tasks (December 2018)**
  - Work with process owners to draft management action plans

### **Customer Care**

- **Tasks Completed (November 2018)**
  - Conducted walkthrough discussions (11/7-11/8)
  - Drafted project flowchart documentation for each of the four Call Center functional areas and communicated to process owners for review
  - Drafted process risk and control matrix and performed process analysis
- **Upcoming Tasks (December 2018)**
  - Finalize process understanding documentation
  - Identify audit fieldwork objectives and discuss with process owners
  - Develop audit plan documentation
  - Communicate fieldwork documentation requests
  - Begin fieldwork testing procedures

### **2018 Risk Assessment Refresh**

- **Tasks Completed (November 2018)**
  - Contacted risk assessment participants and provide background of project
  - Communicated risk assessment questionnaire
  - Scheduled risk assessment discussions
- **Upcoming Tasks (December 2018)**
  - Conduct risk assessment discussions
  - Document discussion points
  - Incorporate update risk considerations into risk assessment analysis

## ***II. Upcoming Projects (FY2019)***

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SC&H's next audit will pertain to the Safety function at HRSD and is scheduled to begin in Q1 of calendar year 2019.



**III. Management Action Plan (MAP) Monitoring**

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

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

The following describes the current project monitoring status.

Audit	Report Date	Next Follow-up	Recommendations		
			Closed	Open	Total
<b>D&amp;C: CIP Project Management</b>	5/11/2016	Dec-18	11	2	13
<b>Biosolids Recycling</b>	10/8/2016	Q4 2018- Pending Permit	7	1	8
<b>HR Benefits</b>	11/22/2016	Dec-18	15 (3 pending final verification)	0	15
<b>Inventory</b>	4/20/2017	May-19	1	4	5

Annual Metrics												
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%	6.66%	9.99%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%	1.01%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%	85.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67	67
M-1.4	Training Hours per Employee - cumulative fiscal year-to-date	Hours	> 40		30.0	43.8	37.5	35.9	42.8	49.0	48.4	41.1
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	< 3.5	6.57	6.15	5.8	11.2	5.07	3.87	7	5.5	5.7
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	< 1.1	0.74	1.13	1.33	0.96	1.4	0.82	1.9	1	1.1
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	< 0.8	3.72	4.27	2.55	4.5	2	1.76	3.6	2.8	2.8
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%	160%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%	167%
M-2.3a	Total Maintenance Hours	Total Available Mtc Labor Hours Monthly Avg			16,495	22,347	27,615	30,863	35,431	34,168	28,786	28,372
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%	44%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%	24%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	5%	5%
M-3.3	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.45	1.58	1.66
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142	5,862,256
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205	2,294	2,395
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173	170
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104	104
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%	1.3%	1.4%
M-4.3	Total Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow		\$1,028	\$1,095	\$1,174	\$1,232	\$1,249	\$1,279	\$1,246	\$1,285	\$1,423
M-4.4	Affordability	8 CCF Monthly Charge/ Median Household Income	< 0.5%		0.48%	0.48%	0.41%	0.43%	0.53%	0.55%	0.59%	0.60%
M-4.5	Total Operating Cost/MGD	Total Operating Expense/ 365/5-Year Average Daily Flow		\$2,741	\$2,970	\$3,262	\$3,316	\$3,305	\$3,526	\$3,434	\$3,592	\$3,959
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A	53%
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%	114%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15	20
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24	152.8
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66	49.24
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	73%	76%	76%
	Senior Debt Coverage	Net Revenue/Senior Annual Debt Service	> 1.5	2.51%	2.30%	2.07%	1.88%	1.72%	1.90%	2.56%	3.10%	3.59%
	Total Debt Coverage	Net Revenue/Total Annual Debt	>1.4	1.67%	1.67%	1.46%	1.45%	1.32%	1.46%	1.77%	1.93%	2.03%

Monthly Updated Metrics													FY-19	FY-19
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18	Oct-18	Nov-18
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	145.8	132.3	144.1
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	4	2	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	106%	102%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	115%	112%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$17,013,784	\$17,359,488	\$18,795,475	\$20,524,316	\$20,758,439	\$22,444,273	\$22,572,788	\$22,243,447	\$25,584,670	\$24,570,853
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	16%	17%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	10	0	0
M-3.1	Permit Compliance	# of Exceedances to # of Permitted Parameters	0		12:55,045	1:51995	2:52491	1:52491	2:52491	2:52,491	9:53236	9:58338	1:20293	1:25366
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	6	2	0
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	190,536,910	64,547,756	80,213,895
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	17%	15%	16%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	432	68	33
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	381	28	26



**EFFLUENT SUMMARY FOR NOVEMBER 2018**

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBI	ENTERO #/UBI	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	TKN mg/l	NH3 mg/l	CONTACT TANK EX
ARMY BASE	10.46	58%	3	4.0	2	1	0.53	0.61	3.3	4.5	NA	NA	17
ATLANTIC	25.22	47%	11	6.8	2	1	NA	NA	NA	NA	NA	NA	4
BOAT HARBOR	14.39	58%	7	7.2	4	2	0.50	0.58	25	16	NA	NA	3
CENT. MIDDLESEX	0.009	37%	<2	<1.0	<1	<1	NA	NA	NA	NA	NA	NA	NA
CHES-ELIZ	16.64	69%	16	17	11	2	1.7	0.99	34	30	NA	NA	8
JAMES RIVER	13.93	70%	2	2.7	1	<1	0.65	0.42	8.6	8.1	NA	NA	0
KING WILLIAM	0.069	69%	<2	<1.0	NA	<1	0.025	0.048	0.57	0.77	0.12	NA	NA
NANSEMOND	15.78	53%	4	4.4	1	1	1.4	1.1	4.0	4.2	NA	NA	1
SURRY, COUNTY	0.084	129%	3	1.6	NA	1	NA	NA	NA	NA	<0.50	NA	0
SURRY, TOWN	0.089	148%	4	10	NA	61	NA	NA	NA	NA	0.65	0.17	NA
URBANNA	0.051	51%	12	28	13	12	3.7	4.4	31	25	NA	0.07	NA
VIP	24.00	60%	3	3.4	1	1	0.88	0.80	4.2	6.2	NA	NA	2
WEST POINT	0.648	108%	14	13	1	2	1.5	2.6	9.9	16	NA	3.03	0
WILLIAMSBURG	9.51	42%	3	2.7	3	3	0.45	0.59	3.1	3.0	NA	NA	7
YORK RIVER	13.23	88%	2	0.49	<1	<1	0.26	0.28	4.5	4.2	NA	NA	4
	<u>144.11</u>												

	% of Capacity
North Shore	62%
South Shore	55%
Small Communities	95%

Tributaries	Tributary Summary					
	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection CY18		YTD	Projection CY18	
	%	Lbs	%	%	Lbs	%
James River	72%	3,589,150	79%	73%	261,492	82%
York River	60%	191,915	67%	67%	14,485	75%
Rappahannock	268%	NA	NA	690%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY19 to Date: 1:25,366  
Pounds of Pollutants Removed in FY19 to Date: 80,213,895  
Pollutant Lbs Discharged/Permitted Discharge FY19 to Date: 16%

	Rainfall (inch)		
	<u>North Shore (PHF)</u>	<u>South Shore (ORF)</u>	<u>Small Communities (FYJ)</u>
Month	7.00"	4.13"	5.69"
Normal for Month	3.19"	3.00"	3.19"
Year to Date Total	53.89"	52.79"	57.99"
Normal for YTD	47.37"	46.79"	45.21"

## AIR EMISSIONS SUMMARY FOR NOVEMBER 2018

MHI PLANT	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	BZ Temp	Venturi(s) PD	Precooler Flow	Spray Flow	Venturi Flow	Tray/PBs Flow	Scrubber	Any	THC	THC	BZ Temp
	12 hr ave (F)	12 hr ave (in. WC)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	pH 3 hr ave	Bypass Stack Use	Mo. Ave (PPM)	DC (%)	Daily Ave Days >Max
ARMY BASE	0	0	0	0	0	0	1	2	26	96	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	17	100	0
CHES-ELIZ	0	1	0	0	0	0	0	5	27	96	0
VIP	0	0	0	n/a	0	0	0	0	74	98	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	0	9	100	0

### ALL OPERATIONS

DEQ Reportable Air Incidents:	0
DEQ Request for Corrective Action (RCA):	1
DEQ Warning Letter:	0
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	0
Odor Complaints Received:	0
HRSD Odor Scrubber H2S Exceptions:	0

## AGENDA ITEM 16.e. – December 18, 2018

**Subject:** Bowers Hill Force Main Valve Replacement Prompt Repair  
Emergency Declaration

**Recommended Action:** No action is required. Information Only

**Brief:** On September 5, 2018, the contractor, T.A. Sheets General Contractors, Inc., while performing an inspection of our Bowers Hill force main discovered a valve no longer secure on the force main. The bolts on the connection to the pipe had completely corroded away leading to a high risk of force main failure at this location. Given that a hurricane was in the forecast for the next week, HRSD directed the contractor to start work immediately.

Hazen and Sawyer, our consultant providing support on both the force main inspections contract and the on-call sewer repair contract, was directed to begin drafting a work order for this prompt repair. Their original estimate for the work was \$188,560. Since the original estimate was under \$200,000 and we had a contract in place to handle these types of repairs, a formal emergency declaration was not declared. Staff, however, inadvertently failed to submit a requisition for the work at that time.

Upon completion of the work in November, the final estimate was adjusted to account for all work performed. The revised work estimate was \$210,100. Normally this would have been processed as a change order (11 percent of the estimate) to the original purchase order.

The estimated cost of this work is funded from the Operations Department budget.

However, given that staff didn't follow the normal purchasing process for the work performed, an emergency declaration for the work was declared by the General Manager on December 10, 2018.