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August 28, 2018

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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	Absent
Lynch, Maurice P.	Commission Vice-Chair	1-20
Glenn, Michael E.	Commissioner	1-20
Lakdawala, Vishnu K.	Commissioner	1-20
Levenston, Jr., Willie	Commissioner	1-20
Rodriguez, Stephen C.	Commissioner	1-20
Taraski, Elizabeth	Commissioner	1-20
Templeman, Ann	Commissioner	1-20

1. **AWARDS AND RECOGNITION**

Action: No action required.

Brief: Vice-chair Lynch presented a service award to Mr. Sami Ghosn who marked his 30th year of service with HRSD on July 11, 2018. Sami was hired in July 1988 as an Interceptor Engineer with the South Shore Interceptors Division and became a Plant Manager at the Pinnars Point Treatment Plant in December 1989. He transferred to the Army Base Treatment Plant in August 1990 and to the Virginia Initiative Plant (VIP) in January 1997. Today he holds the position of Chief of Treatment with oversight of the Army Base, Chesapeake Elizabeth and VIP treatment plants. Sami is a true leader. He excels in understanding the technical aspects of the science and engineering of wastewater treatment as well as being a true servant leader.

Sami managed the 2009 VIP Wet Well Rehabilitation project requiring an 80 MGD flow diversion and the VIP Odor Control Upgrade project including installation of the first bioscrubber at HRSD. Sami is a great asset in the success of the massive VIP construction project scheduled for completion this fall.

Sami earned a Masters of Civil Engineering from ODU, obtained a Professional Engineer license in 1991, and holds a Class I Wastewater Operator license. Sami received a commendation for exemplary work as a Managing Total Quality “MTQ” Facilitator. He has been a member of the Apprenticeship Committee and an apprenticeship instructor for first-year math and supervision and leadership courses for over 20 years. Sami is the past president of the Tidewater Area Toastmasters Club and is a Ping Pong Champion.

Attachment: None

Public Comment: None



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2. **CONSENT AGENDA**

Action: Approve the items listed in the Consent Agenda.

Moved: Vishnu Lakdawala **Ayes:** 7
Seconded: Michael Glenn **Nays:** 0

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Awards
 - 1. [Oracle Unifier Primavera Annual Maintenance and Web Hosting](#) \$1,543,815
 - 2. [Residual Hauling and Recycling Services](#) \$3,726,137
 - 3. [Roof Inspection and Maintenance Services](#) \$327,733
- c. Task Orders
 - 1. [Carbon-Based Pilot Testing and Soil Aquifer Treatment Study, Optimizing Treatment and Assessing Aquifer Impact of Ozone/Biologically Active Filtration Virginia Tech - HRSD SWIFT Collaboration](#) \$271,500
 - 2. [Manhole and Wet Well Rehabilitation](#) \$531,831
 - 3. [Suffolk Pump Station Replacement](#) \$1,703,280
- D Sole Source
 - 1. [Cornell University & Water Research Foundation Collaboration Sidestream Enhanced Biological Phosphorus Removal](#)
 - 2. [Shimadzu Scientific Instruments Inc. Total Organic Carbon Analyzer Preventive Maintenance, Parts and Support](#)
 - 3. [Xylem, Inc. Flygt N-Technology Wastewater Pumps](#)

Item(s) Removed for Discussion: None

Attachment #1: [Consent Agenda](#)

Public Comment: None



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3. **BILLING SYSTEM PROCESSING OF KICK-OUTS**

Action: No action required.

Brief: HRSD's Customer Care and Billing (CC&B) system fails to process bills for specific accounts on occasion due to a variety of data issues. With meter reads, customer account data and meter data all transmitted to HRSD from our partner localities, these data issues are not unexpected and have always been a part of our billing process. We call these "kick-outs" as the bill fails to process without the manual intervention of one of our customer service representatives.

Once a bill "kicks-out" no future bills are generated for that account until the underlying cause of the initial "kick-out" is addressed. This situation can create a backlog of bills for an individual account, which all process upon clearing the initial "kick-out." This can result in an account holder receiving multiple bills for multiple billing periods after an extended period without having received any bill or notification from HRSD.

A backlog of these "kick-outs" accumulated between December 2017 and July 2018. Staff is working to modify automated processes to minimize the number of bills that "kick-out" as well as automate some of the formerly manual processes to address the underlying issues once a bill "kicks-out." Other efforts are underway in Customer Care to work off the backlog of unprocessed bills and prevent a similar occurrence in the future.

Staff briefed the Commission on this issue at the August meeting.

Attachment #2: [Presentation](#)

Public Comment: None



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4. **CUSTOMER ASSISTANCE/FINANCIAL COUNSELING SERVICES
CONTRACT AWARD (>\$200,000)**

Action: Award a contract for customer assistance/financial counseling services to the United Way of the Virginia Peninsula (UWVP) in the estimated amount of \$120,000 for the first year with four annual renewal options and an estimated cumulative value in the amount of \$600,000.

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

Type of Procurement: Sole Source Contract

Contract Description: This contract is an [agreement](#) for providing a customer assistance program focused on financial counseling for HRSD customers struggling to pay HRSD bills. A request for information (RFI) was issued on July 15, 2018 requesting vendors to express interest in providing a customer assistance program. The RFI was published in the local papers on July 17, 2018. Prior to soliciting interest, we received an unsolicited proposal from UWVP dated May 14, 2018. No other firms responded to the RFI by the advertised closing date of July 27, 2018 and as such we moved forward with negotiations with UWVP.

Last year staff and several Commissioners participated in a poverty simulation that highlighted the struggles some of our customers have in meeting their daily living expenses. As a result, staff has been working to develop a customer assistance program that would address those with chronic issues paying their HRSD bill on time. For these purposes we identified those as customers who have been shut-off twice in 12 months. There were over 6,000 customers in 2017 that were shut off twice. A program that can address 6,000 is too ambitious to start-up without a pilot. For that reason we are limited the initial work to customers of Newport News Waterworks (NNWW) (various localities on the Peninsula are served by NNWW).

The contract provides services for up to 1,000 customers. The basic service will be focused on financial counseling but UWVP will connect customers with other issues to appropriate service providers. While engaged with the program, HRSD will suspend collection efforts for past due bills. Once the customer is deemed capable of making regular bill payments in the future and has made at least two consecutive bill payments, paying current amount due in full, their past due balance will be written off provided the financial counselor deems it uncollectable without imposing undue financial hardship.

Once the program is running efficiently, staff will explore how to expand to other customers in the region. This contract allows for expansion to serve the entire HRSD service area.



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Discussion Summary: The United Way has offered a lot of financial counseling services through their agencies. They have not previously focused on customers who may have had their service shut off. The service offered will provide guidance not only on payment of water and sewer bills, but on all areas of financial budgeting. Staff hopes to partner with other utilities and federal programs in the future. Staff will monitor the number of people in the program as compared to the number of shut-offs to measure program impact.

Attachment #3: [Agreement](#)

Public Comment: None



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5. **EFFINGHAM INTERCEPTOR VAULT REMOVAL
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$989,500.

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

CIP Project: VP018200

Project Description: This project will remove a galvanized air vent installed in a reinforced concrete vault on a 36-inch reinforced concrete pipe on Effingham Street.

Funding Description: The total cost for this project is estimated to be \$989,500 and will address an air vent originally included in CIP project GN013900. During the original project work, staff was made aware this air vent was installed directly into the top slab of a concrete vault. The condition of the vault is suspected to be compromised due to its age, exposure to hydrogen sulfide gas and a possible leak discovered during initial field investigation. Both the vault and the air vent will be removed from the force main system during the project. Rummel Klepper & Kahl, LLP will provide the Design Services under the Interceptor System Projects annual services contract for a fee of \$96,800.

Schedule:	PER	September 2018
	Design	October 2018
	Bid	December 2018
	Construction	March 2019
	Project Completion	June 2019

Attachment: None

Public Comment: None



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6. **KINGSMILL PUMP STATION PIPING REPLACEMENT AND WET WELL REHABILITATION INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$1,345,000.

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

CIP Project: WB012600

Project Description: This project involves the rehabilitation of the Kingsmill Pump Station wet well and will require complete bypass of the pump station. Additionally, yard piping, interior and exterior/buried valves, and a portion of the interceptor force main upstream and downstream of the pump station will be replaced as part of this project.

Funding Description: The total cost for this project is estimated to be \$1,345,000. The estimated project cost is based on a construction cost estimate of \$900,000 combined with an engineering services estimate of \$175,000 and a 30 percent contingency allowance of \$270,000. Engineering services will be provided by Rummel, Klepper and Kahl, LLP and include preliminary engineering, design and construction phase services.

Schedule:	Pre-Planning	July 2018
	PER	September 2018
	Design	December 2018
	Bid	June 2019
	Construction	October 2019
	Project Completion	January 2021

Attachment: None

Public Comment: None



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7. NANSEMOND TREATMENT PLANT LAND ACQUISITION - STRUCTURE DEMOLITION INITIAL APPROPRIATION

Action: Appropriate total project funding in the amount of \$1,992,820.

<u>Moved:</u>	Stephen Rodriguez	<u>Ayes:</u>	7
<u>Seconded:</u>	Willie Levenston	<u>Nays:</u>	0

CIP Project: NP013600

Project Description: The project is to demolish 16 building structures on the HRSD-owned land adjacent to the Nansemond Treatment Plant.

Funding Description: The estimated total project cost of \$1,992,820 is based on a construction cost estimate of \$1,524,849 combined with an engineering services estimate of \$315,486 and a 10 percent contingency allowance of \$152,485. Engineering design and construction phase services will be provided by Tetra Tech under the Environmental Services Professional Service Agreement.

<u>Schedule:</u>	Pre-Planning	July 2018
	Design	September 2018
	Bid	February 2019
	Construction	May 2019
	Project Completion	October 2019

Attachment: None

Public Comment: None



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8. **PROVIDENCE ROAD OFF-LINE STORAGE FACILITY
ADDITIONAL APPROPRIATION AND CONTRACT AWARD**

Actions:

- a. **Appropriate additional funding in the amount of \$6,401,140.**
- b. **Approve a comprehensive agreement with Crowder Construction Company including a Contract Cost Limit of \$29,953,000.**

Moved: Vishnu Lakdawala **Ayes:** 7
Seconded: Elizabeth Taraski **Nays:** 0

CIP Project: CE011826

Budget	\$25,608,184
Previous Expenditures and Encumbrances	(\$556,324)
Available Balance	\$25,051,860
Proposed Agreement with Crowder Construction Co.	(\$29,953,000)
Proposed Contingency	(\$1,500,000)
Project Shortage/Requested Additional Funding	(\$6,401,140)
Revised Total Project Authorized Funding	\$32,009,324

Type of Procurement: Competitive Negotiation – Design/Build

The use of the Design-Build project delivery method was approved by Commission at the September 2017 meeting. A Public Notice of the Request for Qualifications was issued on April 8, 2018. Five teams submitted Statements of Qualifications on May 8 and all five were considered to be responsive and deemed to be fully qualified, responsible, and suitable to the requirements of the Request for Qualifications. Three teams were short listed. All three short-listed teams submitted Technical Proposals on June 19. They were interviewed on June 27 and submitted Price Proposals on July 10. The points received and final ranking for each short listed team is listed below:

Proposers	SOQ	Technical Proposal	Price Proposal	Total Ranking	Recommended Selection Ranking
Crowder Construction Company	29	34.66	25	88.66	1
MEB General Contractors, Inc.	28.98	35.6	22.7	87.28	2
Ulliman Schutte, LLC	28.54	35.22	21.5	85.26	3



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The Selection Committee selected the top ranked team, comprised of Crowder Construction Company with Hazen and Sawyer as the design engineering subconsultant.

Contract Description: The comprehensive agreement is for the design/build services to design, build and commission a 5.2 million gallon storage tank. The agreement includes the requirement to reach substantial completion and initiate operations 855 days from notice to proceed, which will allow for additional testing prior to diverting flow from the Chesapeake-Elizabeth Treatment Plant to the Atlantic Treatment Plant in late 2021.

Project Description: This project is to construct a 5.2 million gallon storage tank in Virginia Beach's Woodstock Community Park, which is in the vicinity of the existing Providence Road Pressure Reducing Station (PRS). The tank will be utilized during wet weather and must be substantially complete by June 2021. A skate park on top of the tank and improvements to the existing Woodstock Community Park are also included in this project. The City will reimburse HRSD for other planned park improvements estimated at \$1,400,000. HRSD will negotiate a long-term lease with the City of Virginia Beach for use of the park property. The project is needed to provide reliable capacity and maintain HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth plant closure and for the ultimate Regional Wet Weather Management Plan (RWWMP). This project was part of the Chesapeake-Elizabeth offline solution set developed by HRSD, CDM Smith and Brown and Caldwell assuming a 2-year level of service.

Funding Description: This project requires additional funding to support design and construction of the Providence Road Off-line Storage Facility. The proposed contract cost limit of \$29,953,000 reflects a complete facility, as described in the Preliminary Engineering Report. The request also includes a \$1,500,000 contingency, which is less than five percent of the contract cost limit, to accommodate any additional unforeseen conditions and Owner's Advisor services.

This project requires additional funding due to increased costs associated with the design/build delivery method, such as development of General Conditions and Contractor involvement during design and preconstruction services. Crowder's estimate also included additional concrete additives, barrier to prevent groundwater intrusion, a larger pump station to accommodate a generator and a public outreach program. Additionally, contractors have experienced increases in material and labor costs over the last 24 months.

<u>Schedule:</u>	Design	September 2018
	Construction	June 2019
	Project Completion	June 2021

Attachment: None

Public Comment: None



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9. **RODMAN AVENUE PUMP STATION WET WELL REHABILITATION
ADDITIONAL APPROPRIATION**

Action: Appropriate additional funding in the amount of \$126,422.

Moved: Ann Templeman **Ayes:** 7
Seconded: Elizabeth Taraski **Nays:** 0

CIP Project: VP017300

Budget	\$1,333,958
Previous Expenditures and Encumbrances	(\$1,267,386)
Available Balance	\$66,572
Proposed Change Order No. 1 to Shaw Construction Co.	(\$107,087)
Proposed Task Order to Whitman Requardt	(\$12,000)
Proposed Contingency	(\$73,907)
Project Shortage/Requested Additional Funding	(\$126,422)
Revised Total Project Authorized Funding	\$1,460,380

Project Description: This project is to rehabilitate the wet well at Rodman Avenue Pump Station, the influent manhole and the influent line. This project will also install a sluice gate, bar screen, exhaust fan and a grinder in the wet well.

Funding Description: This project requires additional funding due to several additional project elements as described below.

Item 1 - Several miscellaneous items that are being incorporated into Change Order No. 1 to Shaw Construction Company for \$107,087 including the addition of a bar screen, new electrical breakers, relocation of the existing HRSD permanent emergency pump and fuel tank, and rerouting permanent bypass pump piping.

Item 2 – A task order to Whitman Requardt and Associates for \$12,000 for additional Construction Administration services to accommodate a proposed construction contract extension.

Item 3 - Demolition (\$9,790) and asbestos mitigation (\$7,980) of the house on the adjacent parcel that HRSD purchased for future use.

Item 4 - Relocation of a previously unknown Columbia Gas natural gas line (\$14,117).



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The negotiated amount for this additional work is \$150,974 and exceeds the balance available for this CIP project. This request includes a \$42,020 contingency to accommodate any additional unforeseen conditions.

Schedule: Project Completion August 2018

Attachment: None

Public Comment: None



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10. VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) SALUDA RESIDENCY OFFICE
ACCEPTANCE OF CONVEYED ASSETS

Action: Authorize conveyance of sewer infrastructure associated with the VDOT Saluda Residency sewer extension to HRSD.

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

Brief: The VDOT Saluda Residency Office physically located at 1027 General Puller Highway in Middlesex County, Virginia is extending public sewer as part of the office reconstruction. The previous office building was served by an onsite septic system. The new sewer has been designed and constructed according to HRSD standards within public right of way. The assets to be conveyed to HRSD include approximately 280 feet of 2-inch force main and 450 feet of 8-inch gravity sewer main and associated appurtenances including cleanouts that were coordinated with adjacent property owners.

A [Facility Orientation Map](#) is provided for clarification purposes.

Attachment #4: [Map](#)

Public Comment: None



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11. VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)
SAMPLING FOR THE PRESENCE OF MICROPLASTIC MATERIALS IN SWIFT WATER
AGREEMENT EXTENSION

Action: Approve Virginia Institute of Marine Science as a provider of continued services to conduct research studies for HRSD.

Moved:	Michael Glenn	Ayes:	6
Seconded:	Elizabeth Taraski	Nays:	0
		Abstained:	1 (Maurice Lynch)

Brief: The Virginia Institute of Marine Science is conducting research studies to identify and quantify the presence of Microplastics in SWIFT Water using Raman Spectroscopy for the Technical Services Division (TSD).

The [first phase](#) of the study included testing for a one year period at the York River Treatment Plant SWIFT pilot facility. The [second and final phase](#) of the project will entail sampling and summarizing microplastics particles at the Nansemond Treatment Plant SWIFT Research Center upon its completion. The Technical Services Division has requested the study to continue for another year to better characterize the occurrence of microplastics in SWIFT water.

Attachment #5: [Study Descriptions](#)

Public Comment: None



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12. **YORK RIVER TREATMENT PLANT
ENVIRONMENTAL STUDIES AND HABITAT ENHANCEMENT
ADDITIONAL APPROPRIATION**

Action: Appropriate additional funding in the amount of \$80,000.

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

CIP Project: YR013140

Budget	\$1,000,000
Previous Expenditures and Encumbrances	(\$972,970)
Available Balance	\$27,030
Proposed Completion of Modeling Contract with VIMS	(\$90,342)
Proposed New Research Contract with VIMS	(\$9,368)
Proposed Contingency	(\$7,320)
Project Shortage/Requested Additional Funding	(\$80,000)
Revised Total Project Authorized Funding	\$1,080,000

Project Description: As part of the York River Treatment Plant Outfall and Diffuser Modifications project, the Governor of Virginia required a study in collaboration with HRSD, Virginia Marine Resources Commission (VMRC), Virginia Department of Health Division of Shellfish Sanitation (VDH DSS), Virginia Institute of Marine Science (VIMS) and the University of North Carolina - Chapel Hill - Institute of Marine Science (UNC). Two primary goals are: (a) create a one-acre oyster brood stock sanctuary reef in the lower York River, and (b) examine alternative and/or additive methodologies which improve the Commonwealth’s ability to accurately determine shellfish condemnation zones necessary to preserve public health in waters adjacent to wastewater treatment facilities.

Funding Description: This project requires additional funding for VIMS to complete proposed modeling work and collaborate with HRSD in the development of an interpretive final report. Additional contingency funds are also included to address presently unforeseen challenges in the modeling work and development of final interpretive report.

Extension of project completion date: The one-acre oyster brood stock sanctuary reef portion of the project has been completed. The study portion of the project was originally expected to be completed by December 31, 2018. The modeling work with VIMS requires a 181 day extension of the schedule (to June 30, 2019) to develop and interpret management scenarios with HRSD.

Attachment: None

Public Comment: None



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13. **NUTRIENT COMPLIANCE PLAN UPDATE**

Action: No action required.

Brief: The 2018 update for the HRSD Nutrient Exchange submission is due to the Virginia Nutrient Credit Exchange Association September 1. The Exchange is a voluntary body of more than 100 regulated municipal wastewater treatment plants and industrial facilities discharging nitrogen and phosphorus into the Chesapeake Bay watershed. The purpose of the Exchange is to coordinate and facilitate nutrient credit trading among its members with the goal of improving water quality in the Chesapeake Bay watershed efficiently and cost-effectively.

As set forth by regulation, the Exchange must submit a five-year compliance plan schedule to the Department of Environmental Quality each February on behalf of all members of the Exchange. In order to provide time for compilation and review, the Exchange requires that all members submit their individual plans to the Exchange several months prior to the annual February deadline. The annual update adds a new fifth year (2023), for nitrogen and phosphorus, to the rolling five year compliance plan period.

The HRSD plan for 2023 is consistent with the 2022 plan year with minor changes in flow estimates. The highlights of the plan are noted below.

- Lower James River Basin (Army Base, Boat Harbor, Chesapeake-Elizabeth, James River, Nansemond, VIP and Williamsburg Treatment Plants): The plan includes nutrient removal at each facility with the exception of Chesapeake-Elizabeth and Boat Harbor. The projected nutrient loadings from HRSD's James River Basin facilities are anticipated to meet the nutrient allocations through 2023.
- York River Basin (King William, West Point and York River Plants): Both King William and York River employ nutrient removal. The nutrient reductions at these facilities are sufficient to meet HRSD's nutrient allocations through 2023.
- Rappahannock River Basin (Urbanna Treatment Plant): The plan continues to require HRSD to purchase nutrient credits through the Exchange to meet its allocation. In 2017, the expenditure for credits was approximately \$14,000. The cost to upgrade this facility for nutrient removal far exceeds the cost of credit purchase.

The Exchange uses the information provided by the annual updates to ensure that the plans in each basin are sufficient to meet the load allocations of nitrogen and phosphorus. HRSD successfully met the nutrient allocations in the James and York River basins for 2017 and anticipates continued compliance with the nutrient allocations in these basins through 2023. Sufficient credits are expected to be available in the Rappahannock River Basin to address



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the nutrient obligations for the Urbanna Treatment Plant. The updated submission for 2019 – 2023 demonstrates a plan of continued compliance with HRSD James River and York River allocations.

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

Discussion Summary: Staff explained the self-monitoring requirements, how limits are established, and described the inspections performed by DEQ at our treatment plants and laboratory.

Attachment #6: [Presentation](#)

Public Comment: None



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14. **SWIFT WATER NITRITE ISSUES**

Action: No action required.

Brief: In preparing the quarterly regulatory compliance report for SWIFT, staff discovered SWIFT Water had exceeded the primary maximum contaminant level (PMCL) for nitrite in 11 of 15 samples beginning in early June and ending at the end of June. As a result, we did recharge the aquifer in June with some SWIFT Water that did not meet the regulatory limits established for SWIFT Water.

Nitrite is only an issue with SWIFT when we are not getting full performance of the biological filters, typically only during start up. Once the biomass has developed nitrite is no longer an issue. By the end of June the filters were fully performing and we have not had an issue with nitrite since.

While we no longer have nitrite issues with SWIFT Water, our corrective action for the water in the aquifer was to purge the aquifer of the SWIFT Water with elevated nitrite levels until samples measured below half the PMCL for nitrite (0.5 mg/L) and then purge for an additional 7 days. Samples taken on August 12 measured 0.41 mg/L, reaching the purging target. Purging continued through Sunday, August 19, 2018. Recharge was restarted the week of August 20, 2018.

It is important to note that nitrite was produced in the aquifer itself beyond the level in the SWIFT Water from the reduction of nitrate, and monitoring well data seems to point in this direction. SWIFT Water nitrite may not have been relevant to what was measured in the monitoring well, suggesting that this may be observed with future recharge operations. The decision to purge the well was the result of the SWIFT Water exceedance in June, not the nitrite levels observed in the monitoring well.

Staff reported this issue to the US Environmental Protection Agency (EPA), Virginia Department of Environmental Quality (DEQ) and the Virginia Health Department. US EPA is the permitting agency for SWIFT and provided a written [response](#) last week that included the following: *"We do not believe the MCL exceedance for nitrite detailed in your correspondence resulted in a UIC violation."*

Staff provided a [briefing](#) with a more detailed review of this issue.

Discussion Summary: Staff explained the monitoring frequency and critical control points of specific parameters and the steps involved to purge the aquifer. One benefit of the demonstration project is the ability to incorporate additional testing and reliable controls before the full-scale implementation.

Attachment #7: [EPA Response and Presentation](#)

Public Comment: None



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15. **UNFINISHED BUSINESS**

Staff continues to work with the Southeastern Public Service Authority (SPSA) on a design that will allow a small consistent volume of leachate versus discharging sporadic large quantities. A Request for Proposals (RFP) has been issued for the design of the new force main to move leachate from the Nansemond Treatment Plant service area to the Atlantic Treatment Plant. A routing study is underway to determine the best alignment. Upon completion of the study, a design-build contract, which will fast-track the project implementation, will be presented to the commission for approval. The cost sharing agreement for this project was approved by the Commission in March 2018.

16. **NEW BUSINESS – None**

17. **COMMISSIONER COMMENTS**

Commissioner Rodriguez thanked staff for the efforts to resolve the recent issues at the SWIFT Research Center. He said he understands it isn't easy to have a failure such as that and to try to overcome it. He believes this is a positive learning experience and expressed the Commission's continued support.

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

19. **INFORMATIONAL ITEMS**

Action: No action required.

Brief: The items listed below were presented for information.

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

Attachment #8: [Informational Items](#)

Public Comment: None



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20. **ANNOUNCEMENTS**

The 39th Annual HRSD Apprentice Graduation will be held on September 15, 2018 at the Hampton Roads Convention Center. This year we will recognize 13 employees who have successfully completed the program.

Next Commission Meeting Date: September 25, 2018 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

Meeting Adjourned: 11:00 a.m.

SUBMITTED:

Jennifer L. Cascio

Jennifer L. Cascio
Secretary

APPROVED:

Frederick N. Elofson

Frederick N. Elofson, CPA
Chair

HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #1

AGENDA ITEM 1. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – August 28, 2018

Subject: Oracle Unifier Primavera Annual Maintenance and Web Hosting Contract Award (>\$200,000)

Recommended Action: Award a contract for Oracle Unifier Primavera Annual Maintenance and Web Hosting to Oracle America Inc. in the estimated amount of \$308,763 for year one with four annual renewal options and an estimated cumulative value in the amount of \$1,543,815.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Oracle America Inc.	\$308,763
Mythics Inc.	\$635,700

HRSD Estimate: \$296,420

Contract Description: This contract is an agreement for Oracle Unifier Primavera Annual Maintenance and Web Hosting services. Unifier Cost, Schedule, Project Controls and Document Manager Modules are utilized to manage the execution of capital improvement projects and HRSD's capital program. HRSD employees, consultants and contractors access the system to manage project schedules, deliverables and submit documentation.

CONSENT AGENDA ITEM 2.b.2. – August 28, 2018

Subject: Residual Hauling and Recycling Services
Contract Award (>\$200,000)

Recommended Action: Award a blanket purchase contract for Residual Hauling and Recycling services to Waste Management of Virginia, Inc. in the estimated amount of \$701,835 for year one with four one-year annual renewal options and an estimated cumulative value in the amount of \$3,726,137.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Waste Management of Virginia, Inc.	\$701,835

HRSD Estimate: \$791,500

Contract Description: This contract is an agreement for the hauling and disposal of residual materials generated by plant operations at all North Shore and South Shore Treatment Plants and Main Office complexes at the landfill. This contract also includes the hauling and disposal of domestic trash and recycling from the same locations.

Analysis of Cost: Cost is separated into two categories rental/hauling and landfill application. There was a significant increase in the monthly rental fees for recycle containers due to the surge in recycling cost in the United States. The landfill cost decreased by four percent and lowered the estimated annual spend for residuals being taken to the landfill for disposal.

CONSENT AGENDA ITEM 2.b.3. – August 28, 2018

Subject: Roof Inspection and Maintenance Services
Contract Award (>\$200,000)

Recommended Action: Award a blanket purchase contract for Roof Inspection and Maintenance Services to International Roofing Corporation in the estimated amount of \$61,730 for year one with four one-year annual renewal options and an estimated cumulative value in the amount of \$327,733.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
International Roofing Corporations	\$61,730
Weatherproofing Technologies, Inc.	\$64,300
Roof Services JGM Corporations DBA Roof Services Corp.	\$65,100

HRSD Estimate: \$79,500

Contract Description: This contract is an agreement for the inspections and preventive maintenance services for all the roofs at HRSD's nine Treatment Plants and two main office complexes. Roof systems covered under the inspections are Built-Up/ Single Ply, Metal, Green and Shingle roofs. Built-up/single ply roofs are inspected semi-annually through the months of March – October. Metal and shingle roofs are inspected annually in the spring. Green roofs are inspected monthly beginning in March through October. Planned maintenance of green roofs at VIP's canopy, administration and ATP's secondary roof is mowing once a month, if needed.

CONSENT AGENDA ITEM 2.c.1. – August 28, 2018

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

Recommended Action: Approve a task order for Optimizing Treatment and Assessing Aquifer Impact of Ozone/Biologically-Active Filtration for the SWIFT Program with Virginia Polytechnic Institute and State University (Virginia Tech) in the amount of \$271,500.

Contract Status:	Amount
Original Contract with Virginia Tech	\$240,753
Total Value of Previous Task Orders	\$0
Requested Task Order	\$271,500
Total Value of All Task Orders	\$271,500
Revised Contract Value	\$512,253

Project Description: As part of the Sustainable Water Initiative for Tomorrow (SWIFT), HRSD is conducting a study of advanced treatment technologies to allow managed aquifer recharge of highly treated water. The Virginia Tech - HRSD SWIFT Collaboration - Carbon-Based Pilot Testing and Soil Aquifer Treatment Study was previously approved as a contract award in August 2017.

Task Order Description: This task order will build on recent collaboration initiated between Virginia Tech and HRSD to advance understanding and optimize performance of the carbon-based advanced water treatment pilot system, which was operated for about two years at the York River treatment plant and has recently been relocated to the Nansemond treatment plant SWIFT Research Center. This project will continue work associated with emerging contaminant removal by ozone biofiltration, soil column studies to assess the benefit of soil aquifer treatment, and evaluation of recharge data at the SWIFT Research Center considering the transport of SWIFT Water in the aquifer and the potential for soil aquifer treatment. Other aspects involve model development for biofiltration in wastewater reuse applications and optimization of 1,4-dioxane removal through biofiltration.

CONSENT AGENDA ITEM 2.c.2. – August 28, 2018

Subject: Manhole and Wet Well Rehabilitation
Task Order (>\$200,000)

Recommended Action: Approve a task order with Progressive Environmental Services, LLC (PES) in the amount of \$531,831.

CIP Project: GN012130

Budget	\$2,834,000
Previous Expenditures and Encumbrances	(\$ 771,401)
Available Balance	\$2,062,599

Contract Status:	Amount
Original Contract with PES	\$125,503
Total Value of Previous Task Orders	\$164,424
Requested Task Order	\$531,831
Total Value of All Task Orders	\$696,255
Revised Contract Value	\$821,758

Project Description: This project includes construction related services associated with rehabilitation of numerous manholes and several siphon chambers identified as having material risk of failure or significant Inflow and Infiltration (I/I) during condition assessment activities. These manholes and siphon chambers have isolated issues with respect to the surrounding system and are not currently known to be included in any existing capital improvement projects for rehabilitation or replacement. This project is included in the I/I Abatement Rehabilitation Plan – Phase I, which is part of the Federal Consent Decree to address sanitary sewer overflows in the region.

Task Order Description: This task order will continue rehabilitation efforts for 19 additional manholes on the parallel 54-inch gravity trunk lines going into the Virginia Initiative Plant. This is the second task order issued to this contractor for this project.

Analysis of Cost: The cost for this task order is based on the unit rates provided in the cooperative contract with James City County Authority.

Schedule:	PER	June 2013
	Design	April 2017
	Bid	March 217
	Construction	June 2017
	Project Completion	April 2021

CONSENT AGENDA ITEM 2.c.3. – August 28, 2018

Subject: Suffolk Pump Station Replacement
Task Order (>\$200,000)

Recommended Action: Approve a task order with AECOM Technical Services, Inc. in the amount of \$1,703,280.

CIP Project: NP010620

Budget	\$12,049,000
Previous Expenditures and Encumbrances	(\$169,548)
Available Balance	\$11,879,452

Contract Status:	Amount
Original Contract with AECOM	\$146,710
Total Value of Previous Task Orders	\$25,250
Requested Task Order	\$1,703,280
Total Value of All Task Orders	\$1,728,530
Revised Contract Value	\$1,875,240
Engineering Services as % of Construction	11%

Project Description: This project is to relocate and replace the Suffolk Pump Station with a station that meets the current capacity needs and provides for future expansion to meet anticipated growth.

Task Order Description and Analysis of Cost: This task order will provide design phase services. A total fee of \$1,703,280 was negotiated with AECOM which is reasonable for this work. AECOM was awarded a contract in September 2013 to develop a Preliminary Engineering Report (PER) for this project in conjunction with the Shingle Creek and Hickman's Branch Gravity Sewer Improvements (NP012500). This project was put on hold after the PER was completed. Since the last CIP revision, the scope of work has changed to include: abandonment/demolition of the existing Suffolk Pump Station, construction of two new pump stations, 8,000 linear feet of force main including nine trenchless crossings, 2,200 linear feet of gravity main, 12 manholes, and abandonment of 7,000 linear feet of gravity main. An additional appropriation will be requested once the scope and fee can be further defined.

Schedule:	PER	September 2013
	Design	September 2018
	Bid	July 2020
	Construction	November 2020
	Project Completion	October 2022

CONSENT AGENDA ITEM 2.d.1 – August 28, 2018

Subject: Cornell University & Water Research Foundation Collaboration
Sidestream Enhanced Biological Phosphorus Removal
Sole Source (>\$10,000)

Recommended Action: Approve Cornell University in collaboration with the Water Research Foundation (WRF) for the further development of sidestream biological phosphorus removal and other related tasks.

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 a research study in collaboration with the WRF project team on specific objectives related to the emerging process of sidestream biological phosphorus removal, which specifically involves the fermentation of mixed liquor in a wide range of new configurations. This project is also being funded through a grant from WRF, and HRSD has been working on these concepts at the Chesapeake-Elizabeth Pilot Facility. HRSD is deliberating the full-scale testing of these concepts at York River, VIP, and Army Base Treatment Plants. Some concepts are already in place at Williamsburg and James River Treatment Plants in terms of anaerobic selector mixing. There is also an aspect of the research that will consider the potential for combining mainstream nitrite shunt with these emerging phosphorus removal processes.

HRSD will also take advantage of this collaboration to test some newly developed methods for assessing SWIFT Water quality through nonspecific toxicogenomics-based bioassays.

CONSENT AGENDA ITEM 2.d.2. – August 28, 2018

Subject: Shimadzu Scientific Instruments Inc.
Total Organic Carbon Analyzer Preventive Maintenance, Parts and Support
Sole Source (>\$10,000)

Recommended Action: Approve Shimadzu Scientific Instruments Inc. as the provider of Preventive Maintenance, Parts and Support for Total Organic Carbon (TOC) Analyzer in use at HRSD.

Sole Source Justification:

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

Details: Service includes preventive maintenance, parts replacement and instrument support for a TOC analyzer. The analyzer measures total organic carbons and the maintenance contract includes in house trained service technicians to provide priority service and support and proprietary replacement parts. Timely preventive maintenance and routine service decrease the chances of system shutdown and resulting data interruption. If the instrument is down for an extended period of time it could result in sub-contracting of analyses which will result in additional cost and delay the data turnaround.

Shimadzu Scientific Instruments Inc. is the only authorized distributor for Virginia.

CONSENT AGENDA ITEM 2.d.3. – August 28, 2018

Subject: Xylem, Inc. Flygt N-Technology Wastewater Pumps
Sole Source (>\$10,000)

Recommended Action: Approve Xylem, Inc. as the sole source provider of Flygt N-Technology Wastewater Pumps for use at the Atlantic Pressure Reducing Station and Providence Road Pressure Reducing Station.

CIP Project: Atlantic Pressure Reducing Station (CE011827)
Providence Road Pressure Reducing Station (CE01182)

Sole Source Justification:

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

Details: In a study by the Engineer, Flygt, Hidrostal and Wemco were identified as manufacturers that provide pumps that:

- (1) meet the hydraulic conditions at the pressure reducing stations;
- (2) adequately convey rag-laden sewage; and
- (3) comply with HRSD Design and Construction Standards.

The dimensions and installation considerations of the two pump types [dry-pit submersible (Flygt) and close-coupled screw impeller (Hidrostal, Wemco)] vary considerably. Installation of the Hidrostal pumps would require extensive modifications to the existing structure, primarily because their greater height would conflict with the existing mezzanine level at the Atlantic Pressure Reducing Station.

At the Providence Road Pressure Reducing Station more extensive structural support would be required for the Hidrostal/Wemco pumps to accommodate their larger size and heavier weight. These pumps are more likely to have vibration concerns when operating and the interior piping configuration would be complicated in the limited space available in the existing pump station subsurface structure. In addition, these

pumps require more significant electrical appurtenances because of a higher required motor horsepower.

The cost implications associated with the disadvantages of the Hidrostal/Wemco pumps far exceed the potential additional cost of sole sourcing the procurement of Flygt pumps from Xylem. The Flygt pumps also have the added benefit of simpler, less expensive modifications to meet the future Regional Wet Weather Management Plan design conditions. Xylem is the only authorized distributor of Flygt pumps for Virginia.

HRSD COMMISSION MEETING MINUTES
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ATTACHMENT #2

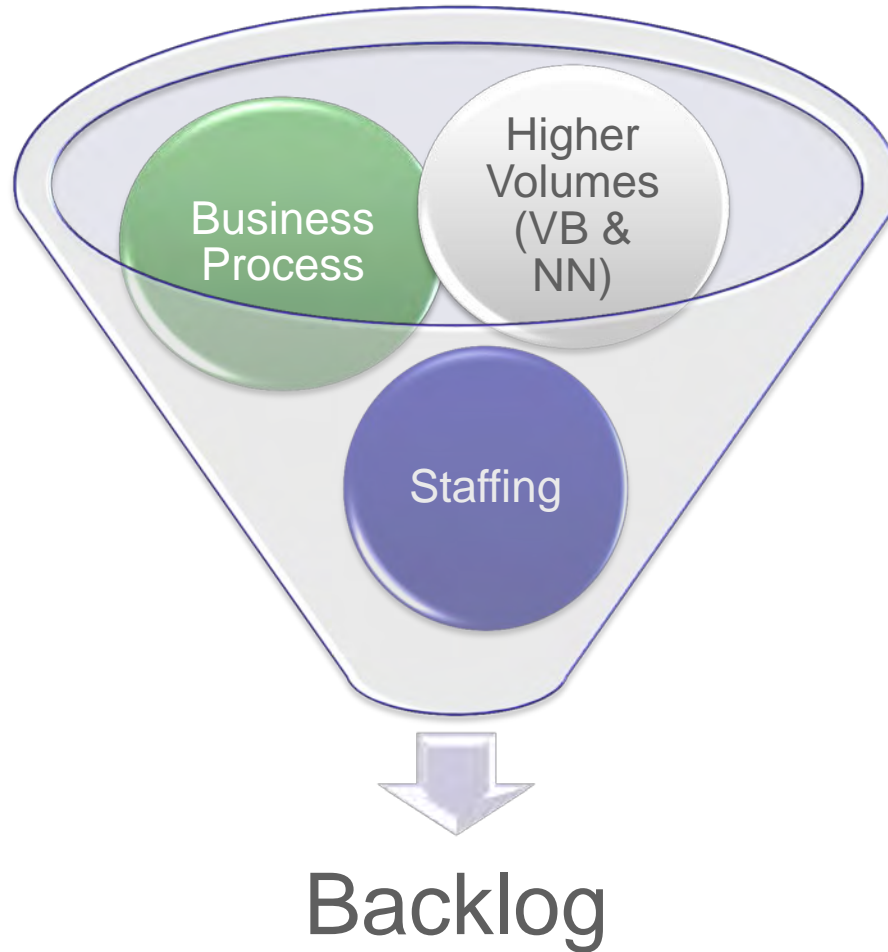
AGENDA ITEM 3. – Billing System Processing of Kick-Outs Presentation



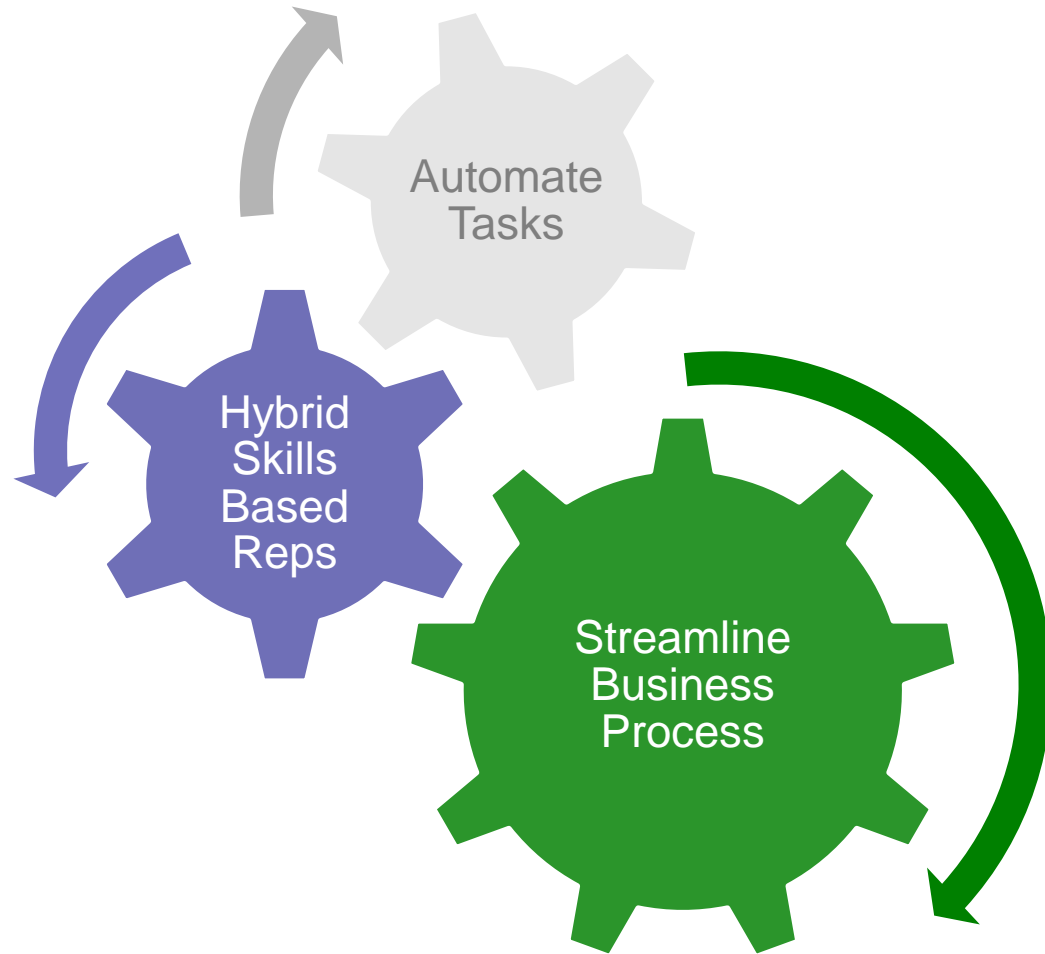
Customer Care Center Billing Backlog

August 28, 2018

Billing Backlog – What happened?

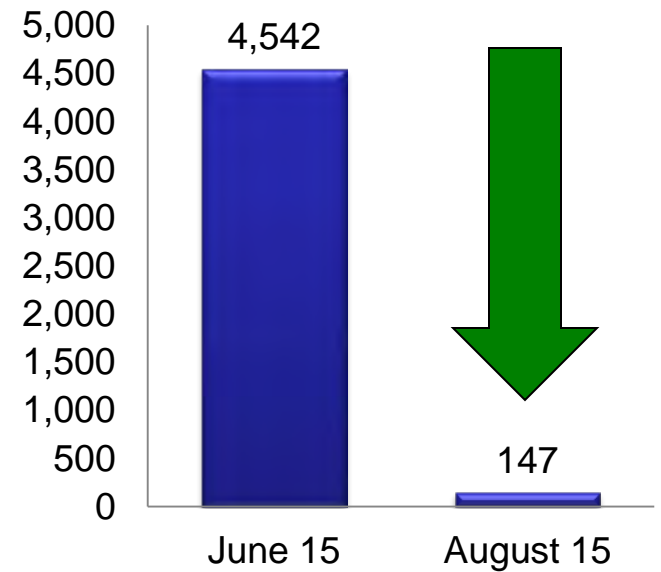


Strategy Yields Results



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Number of Accounts



- Continue to streamline business process
- Locality partnerships
- Further automation opportunities
- Hybrid-skills based employees
- New reporting



Questions?

HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #3

AGENDA ITEM 4. – Customer Assistance/Financial Counseling Services Contract

CONTRACT NO. 6190386

Customer Assistance/Financial Counseling Services

This Contract (the "CONTRACT") is made this 1 day of October, 2018 by and between the HAMPTON ROADS SANITATION DISTRICT, ("HRSD"), a political subdivision of the Commonwealth of Virginia, with place of business at 1434 Air Rail Avenue, Virginia Beach, Virginia 23455, and United Way of the Virginia Peninsula, ("CONTRACTOR"), having a usual place of business at 11820 Fountain Way, Ste 206, Newport News, VA 23606.

The Contractor and HRSD, for the consideration of the mutual covenants, promises, and agreements herein contained, agree as follows:

Scope of Services:

The goal of this assistance program is to connect customers to existing services within the community to assist them in resolving underlying issues that may be contributing to their inability to pay their HRSD bill. This will be a partnership between Hampton Roads Sanitation District (HRSD), United Way of the Virginia Peninsula (UWVP), Center for Child & Family Services (CCFS), and other Community Partners.

Program Details:

1. HRSD will refer customers who are delinquent with current payment and subject to service termination and may have a history of delinquency with HRSD.
2. HRSD will request a Case Worker once the severance process begins.
3. HRSD will refer customer to CCFS Case Worker including contact information seven (7) days prior to cut off notice "tagging".
4. CCFS Case Worker will contact customer within three (3) business days to explain the customer's options:
 - a. Pay the balance due by shut off date
 - b. Work cooperatively with the CCFS case worker
 - c. Have water shut off
5. CCFS Case Worker notifies HRSD of the customer's decision or if CCFS cannot reach customer within three (3) days the severance process resumes with "tagging" and shut off per HRSD's policy.

6. If customer chooses to work with a CCFS Case Worker, CCFS's Case Worker will notify HRSD within one (1) business day and the severance process will be put on hold while the customer actively engages with CCFS.
7. The CCFS Case Worker will do a financial assessment and make a referral to the HRSD Money Management Program and will have follow up appointments over a four (4) month period.
 - a. Attends a Group Money Management Course within fourteen (14) days of initial fiscal assessment which includes interactive budgeting and money management workshops offered once a week.
 - b. Individual one-on-one follow-up sessions with case worker / counselor within thirty (30) days of attending the group classes
 - c. Contact by phone from the CCFS Case Worker or community partner at 60-75 days to check in on customer to see if they need additional budgeting assistance.
 - d. After 120 days, CCFS will do a final phone call to client to check in, and if customer has made two (2) regular payments during the program time, CCFS will make final determination that outstanding delinquent balances from previous billing periods are uncollectable as the client lacks the assets to pay these balances and further collection efforts would pose an undue financial hardship on the client and risk the ability of the client to remain current with HRSD billing going forward.

Program Roles & Responsibilities:

1. Hampton Roads Sanitation District (HRSD)
 - ▶ Refers delinquent customers to CCFS
 - ▶ Funding agent (provides program funding)
2. United Way of the Virginia Peninsula (UWVP)
 - ▶ Fiscal Agent of HRSD funding
 - ▶ Program reporting responsibilities to HRSD including reports from CCFS
 - ▶ Fiscal Agent to CCFS for program funding and Fiscal Agent to Community Partners
3. Center for Child & Family Services (CCFS)
 - ▶ Program development with assistance of UWVP
 - ▶ Program flow, organization, quality control and oversight of the Community Partners
 - ▶ Initial fiscal assessment once customer has been referred to CCFS from HRSD
 - ▶ Facilitate and deliver program

- ▶ Refer customer to other services, beyond financial management, as deemed necessary
- ▶ Provide final assessment that customer is capable of making future payments and written determination to HRSD that past due balances are uncollectable as they would create an undue financial hardship

Program Reporting:

1. CCFS would provide UWVP/HRSD with reporting/tracking on each individual customer referred to CCFS
2. CCFS would provide monthly status reporting on referred customers and enrolled customers
3. CCFS would provide monthly invoicing to UWVP for Program Reimbursement Cost.
4. CCFS would provide invoicing to UWVP for community partners' cost for services provided.

Contract Documents

The Contract Documents consist of this Contract, the HRSD Purchase Order, and United Way of the Virginia Peninsula (UWVP) proposal dated May 14, 2018. Where the terms of this Contract and UWVP's proposal are at variance, the provisions of this Contract shall prevail.

Contract Term

This is a pilot program which will consist of HRSD customers who are customers of Newport News Waterworks which is approximately one-quarter of HRSD's total customer base. These customers live in Newport News, Hampton, Poquoson, York County and the southern end of James City County. The pilot program for Newport News Waterworks customers would be a minimum of six (6) months to a maximum of twelve (12) months. If the pilot program is successful the program may be expanded to the entire HRSD service area.

The term of this Contract shall be for the period of October 1, 2018 through September 30, 2019 with HRSD reserving the right to extend this contract for four (4) successive one year periods through September 30, 2023. This contract term may be extended, and if necessary, its term amended, in writing, if mutually agreed to by both parties.

Contract Amount

1. HRSD will pay United Way of Virginia Peninsula \$10,000 per month for a total of \$120,000/year. The total annual contract will provide services to a maximum of 1000 cases. If more than 1000 cases are referred, a contract modification shall be negotiated to provide additional case management services. Monthly fee includes the following:

- a. The cost of two (2) CCFS case managers (benefits, computer, workbooks, travel, etc.)
 - b. Group Money Management Course
 - c. Program oversight, reporting and direct services to all customers during initial customer contact and all financial assessments.
 - d. Additional services provided by CCFS will include workshops, one-on-one sessions, and follow up sessions with all customers at the (120) day mark and final recommendation to HRSD.
2. Other services that may be provided by community partners will be billed separately with a detailed breakdown of the services provided not to exceed \$50,000/year.
- a. Workshops, \$100 per group session
 - b. Individual follow-up sessions, \$25 per session
 - c. Phone Assessments, \$10 per assessment
 - d. Individual budget counseling assistance, \$20 per session

Method of Payment

Payment terms shall be Net 30 Days. Payment is made by invoice showing the items delivered or services performed during the preceding month with reference to the contract or purchase order and directed to the address shown on the purchase order contract. Invoices must be emailed to ap@hrsd.com or mailed to Accounts Payable, HRSD, P O Box 5915, Virginia Beach VA 23471-0915.

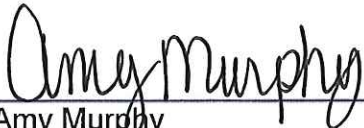
General Terms and Conditions


- | | |
|----------------------------|--|
| Anti-Discrimination | Disputes |
| Anti-Trust | Ethics in Public Contracting |
| Applicable Laws and Courts | HRSD's Right to Terminate the Contract for Cause |
| Assignment of Contract | HRSD's Right to Terminate for Convenience |
| Availability of Funds | Immigration Reform and Control Act of 1986 |
| Changes to the Contract | Indemnification |

In witness whereof, the parties below execute this Contract as of the date first above written.

HRSD

United Way of the Virginia Peninsula

AUTHORIZED SIGNATURE 
 NAME Amy Murphy
 TITLE Chief of Procurement
 DATE 8/30/18

AUTHORIZED SIGNATURE 
 NAME Steven S. Kast
 TITLE President and CEO
 DATE 8-30-18

GENERAL TERMS AND CONDITIONS

Anti-Discrimination: Contractor certifies to HRSD that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Act of 1975, as amended, as well as the Virginians With Disabilities Act, the Americans With Disabilities Act and Section 11-51 of the Virginia Public Procurement Act.

In every contract over \$10,000 the provisions in 1 and 2 below apply:

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
2. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
4. The Contractor will include the provisions of 1. Above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

Anti-Trust: By entering into a contract, the Contractor conveys, sells, assigns, and transfers to HRSD all rights, title and interest in and to all causes of the action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by HRSD under said contract.

Applicable Law and Courts: This contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The Contractor shall comply with applicable federal, state and local laws and regulations.

Assignment of Contract: This contract shall not be assignable by the Contractor in whole or in part without the written consent of HRSD.

Availability of Funds: It is understood and agreed between the parties herein that HRSD shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

Audit: The Contractor shall retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audit by HRSD, whichever is sooner. The agency, its authorized agents, and/or State auditors shall have full access to and the right to examine any of said materials during said period.

Changes to the Contract: By written notice to the Contractor, HRSD may from time to time make changes, within the general scope of the contract, in the goods or services to be provided by the Contractor, the method of shipment or packing, or the place of delivery or the place of performance. The Contractor shall promptly comply with the notice and shall make all subsequent shipments of goods and performance of services in conformity to the notice. If any such change causes an increase or decrease in the Contractor's cost of performance or the time required for performance, an equitable adjustment in the contract price and/or the time allowed for performance of the contract shall be negotiated and the contract modified accordingly by written supplemental agreement. Any claim by the Contractor for adjustment under this clause must be asserted by written notice to the Procurement Manager within (30) days from the date of receipt by the Contractor of the change notice giving rise to the increase/decrease condition. If the parties fail to agree to an adjustment, the question of an increase or decrease in the contract price or time allowed for performance shall be resolved in accordance with the procedures for resolving disputes provided by the disputes clause of the contract or, if there is none, in accordance with the disputes provisions of HRSD procurement manual. Neither the existence of a claim, a dispute, submission of the dispute to HRSD resolution process, litigation or any portion of this provision or changes shall excuse the Contractor from promptly proceeding with performance of the contract as changed by the notice.

Disputes: Contractual claims, whether for money or other relief, shall be submitted in writing to the issuing procurement office no later than (60) days after final payment; however, written notice of the contractor's intention to file such claim shall have been given at the time of the occurrence or beginning of the work upon which the claim is based. Nothing herein shall preclude a contractor from requiring submission of an invoice for final payment within a certain time after completion and acceptance of the work or acceptance of the goods. Pending claims shall not delay payment of amounts agreed due in the final payments (*Code of Virginia*, Section 11-69). A contractor may not institute legal action prior to receipt of the procurement office's decision on the claim, unless that office fails to render such decision within (30) days. The decision of the procurement office shall be final and conclusive unless the contractor, within six months of the date of the final decision on the claim, institutes legal action as provided in the *Code of Virginia*, Section 11-70.

Ethics in Public Contracting: Contractor certifies that their proposal was made without collusion or fraud and that they have not offered or received any kickbacks or inducement from any other, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than normal value, present or promised unless consideration of substantially equal or greater value was exchanged.

HRSD's Right to Terminate the Contract for Cause:

1. If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, the Owner may terminate the contract. If the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or suppliers of material or labor, or persistently disregards laws, ordinances or the written instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner may terminate the Contract.
2. Prior to termination of the contract, the Owner shall give the Contractor and/or his surety ten (10) calendar days written notice, during which the Contractor and/or his surety may rectify the cause of the proposed termination. If rectified to the satisfaction of the Owner with said ten (10) days, the Owner may rescind its notice of termination. If it does not, the termination for cause shall become effective at the end of the ten day (10) notice period. In the alternative, the Owner may postpone the effective date of the termination notice, at its sole discretion, if it should receive reassurances from the Contractor and/or its surety that the causes of termination will be remedied in a time and manner which the Owner finds acceptable. If at any time more than ten (10) days after the notice of termination, the Owner determines that contractor and/or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Owner may immediately terminate the Contract for cause by giving written notice to the contractor and its surety.
3. Notice of termination, whether initial or given after a period of postponement, may be served upon the Contractor and/or the surety by registered or certified mail at their last known places of business in Virginia or elsewhere, by delivery to any officer or management/supervisory employee of either wherever they may be found, or, if no such officer, employee or place of business is known or can be found by reasonable inquiry within three (3) days, by posting the notice at the job site. Failure to accept or pick up registered or certified mail addressed to the last known address shall be deemed to be delivery.
4. Upon termination of the contract, the Contractor shall not be entitled to receive any further payment.
5. Termination of the Contract under this section is without prejudice to any other right or remedy of the Owner.

HRSD's Right to Terminate the Contract for Convenience: The contract may be terminated by HRSD in whole or in part for the convenience of HRSD without a breach of contract by delivering to the contractor a written notice of termination specifying the extent to which performance under the contract is terminated and the effective date of the termination. Upon receipt of such a notice of termination, the contractor must stop work, including but not limited to work performed by subs and consultants, at such time and to the

extent specified in the notice of termination. If the contract is terminated in whole or in part for the convenience of HRSD, the contractor shall be entitled to those fees earned for work done prior to the notice of termination and thereafter shall be entitled to any fees earned for work not terminated, but shall not be entitled to lost profits for the portions of the contract which were terminated. The contractor will be compensated for reasonable costs or expenses arising out of the termination for the convenience of HRSD for delivery to HRSD of all products of the services for which the contractor has or will receive compensation.






Immigration Reform and Control Act of 1986: Contractor certifies that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

Indemnification: Contractor agrees to indemnify, defend and hold harmless HRSD, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor/any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of HRSD or to failure of HRSD to use the materials, goods, or equipment in the manner already and permanently described by the Contractor on the materials, goods, or equipment delivered

HRSD COMMISSION MEETING MINUTES
August 28, 2018

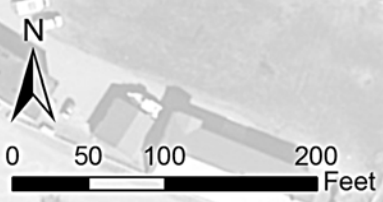
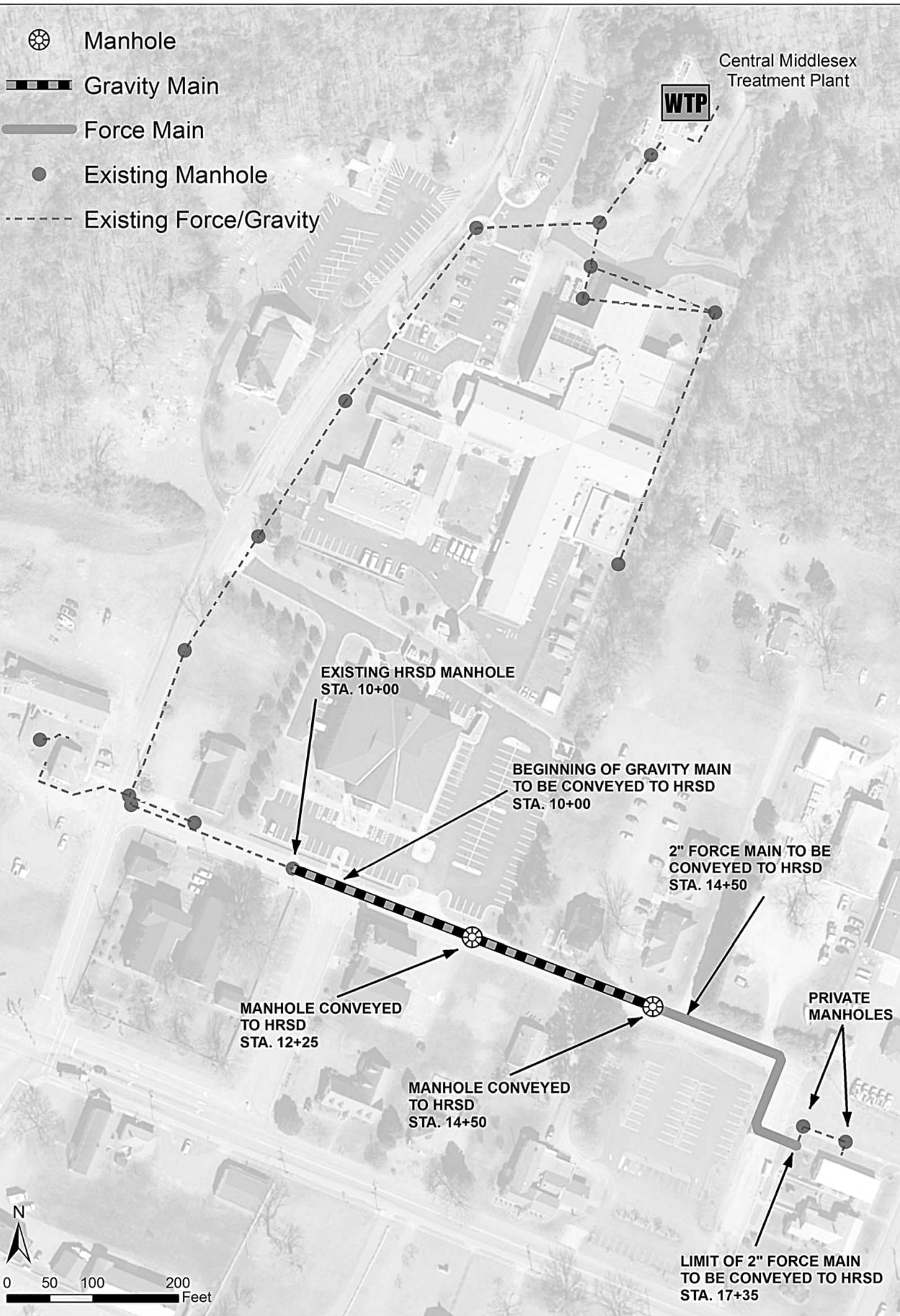
ATTACHMENT #4

AGENDA ITEM 10. – Virginia Department of Transportation (VDOT) Saluda Residency
Office Acceptance of Conveyed Assets Map

-  Manhole
-  Gravity Main
-  Force Main
-  Existing Manhole
-  Existing Force/Gravity

Central Middlesex
Treatment Plant

WTP



Hampton Roads Sanitation District

Saluda, VA

Force Main and Gravity Extension

Exhibit No. 1

August 2018



HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #5

AGENDA ITEM 11. – Virginia Institute of Marine Science (VIMS) Sampling for the Presence of Microplastic Materials in SWIFT Water Agreements

Objectives:

The objective of this proposal is to continue examining samples collected from the York River Treatment Plant (YRTP) Sustainable Water Recycling (SWR) project treatment train for the presence of microplastic materials. Additional samples may be collected from additional sample locations at YRTP and other treatment plants in the HRSD service area. Sample analysis will be performed using Raman spectromicroscopy. Due to the short time frame over which this continued study will take place it is imperative that sample analysis continue uninterrupted. The project dates for this continued study are scheduled for July 2017 to June 2018 (12 months). During this time all prescribed sample collection and analysis must be completed. A final project report for this project continuation must be completed and submitted to HRSD within 90 days of project completion. Costs for this project should not exceed total cost estimates from expense report (\$72,050.00).

Specific objectives of this proposal are documented below.

Sample Analysis:

Samples from YRTP-SWR will be collected for analysis. Sample collection will be geared towards the effort to enumerate and identify microplastic particles from the SWR system at YRTP. Sample analysis will document microplastic particle concentration, size, and composition.

- HRSD staff will assist VIMS personnel in the collection of samples from the SWR treatment train at a minimum of the following locations (sample name and number). It is imperative that HRSD staff accompany VIMS personnel whenever they are on plant sites (for safety concerns):

Pilot Feed (S1)

UVD Effluent (S6)

UVA OP Effluent (S10)

Activated Carbon Train (Sample point to be determined))

Sample analysis will include previously established positive and negative control samples to ensure microplastic particle concentration accuracy. Careful consideration must be taken in processing both positive and negative control samples to insure the absence of sample contamination with microplastic particles.

Deliverables:

Due to the short time frame of this project quarterly updates will be presented to HRSD for review. Updates will include status report on priority project activities, summary of all data analysis, and any sample results from the previous quarter. Project activities are to include, but not be limited to, any method development and or SWR train sample analysis. Quarterly updates are to be submitted to HRSD within 30 days of the end of quarter (October 31, 2017, January 31, 2018, and April 30, 2018). At the completion of project a final report summarizing method development, sample analysis, final conclusions will be submitted to HRSD for review and comments. Final report is to be delivered to HRSD within 90 days of final sample collection from treatment plant.

Payment for work will not exceed proposed cost of \$72,050.00 without prior approval of work scope by HRSD.

Due to the time frame over which this project will occur payments will be made by HRSD to VIMS at the end of each quarter. Payments will be based on invoice statements from VIMS to HRSD documenting expenditures.

2018-2019 Microplastics Analysis Objectives:

The objective of this proposal is to examine samples collected from the Nansemond Plant Sustainable Water Recycling project treatment train for the presence of microplastic materials. Due to the short time frame over which this study will take place it is imperative that this study begin in a short amount of time (estimated start date September 2018). The project dates are scheduled for September 2018 to June 2019 (9 months). During this time all sampling, sample analysis, and final report must be completed. The final project report must be completed and submitted to HRSD before the end of the project (June 2019). Costs for this project should not exceed total cost estimates from expense report (\$63,831.00).

Specific objectives of this proposal are documented below.

Sample Analysis:

Samples from Nansemond Treatment Plant SWR facility will be collected for analysis. Samples will be analyzed from key treatment steps in the SWR treatment system. One additional sample may be collected for analysis from an as yet to be determined sample point in the treatment system.

Deliverables:

Project activities are to include, but not be limited to, SWR train sample analysis. At the completion of the project a final report summarizing sample analysis, and final conclusions will be submitted to HRSD for review and comments. Final report is to be delivered to HRSD before the end of project (June 2019).

Payment for work will not exceed proposed cost of \$63,831.00 without prior approval of work scope by HRSD.

Due to the time frame over which this project will occur payments will be made by HRSD to VIMS at the end of FY 19.



Bongkeun Song Ph.D.
Associate Professor,
Department of Biological Sciences
Virginia Institute of Marine Science
College of Williams & Mary

HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #6

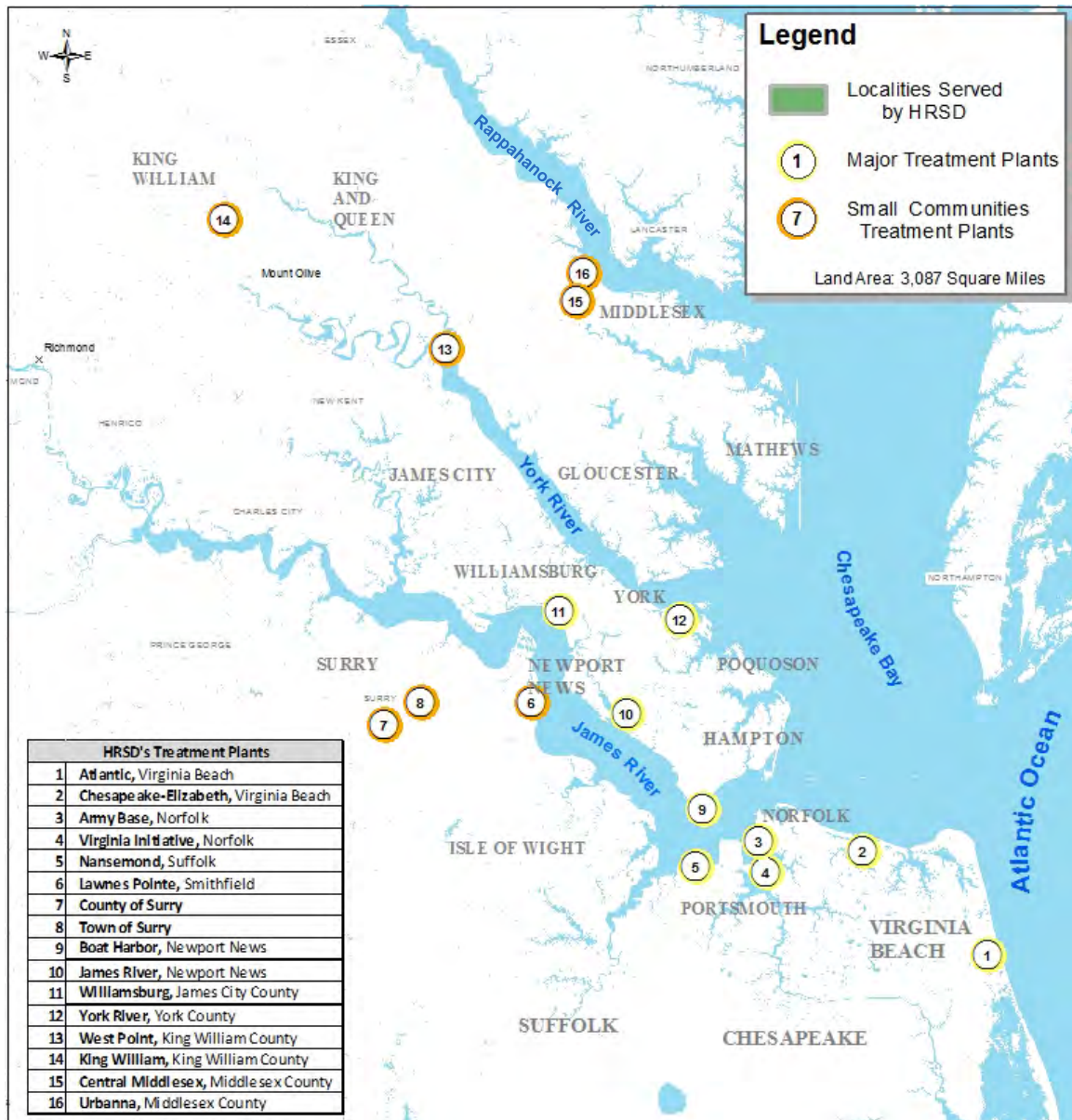
AGENDA ITEM 13. – Nutrient Compliance Plan Update Presentation



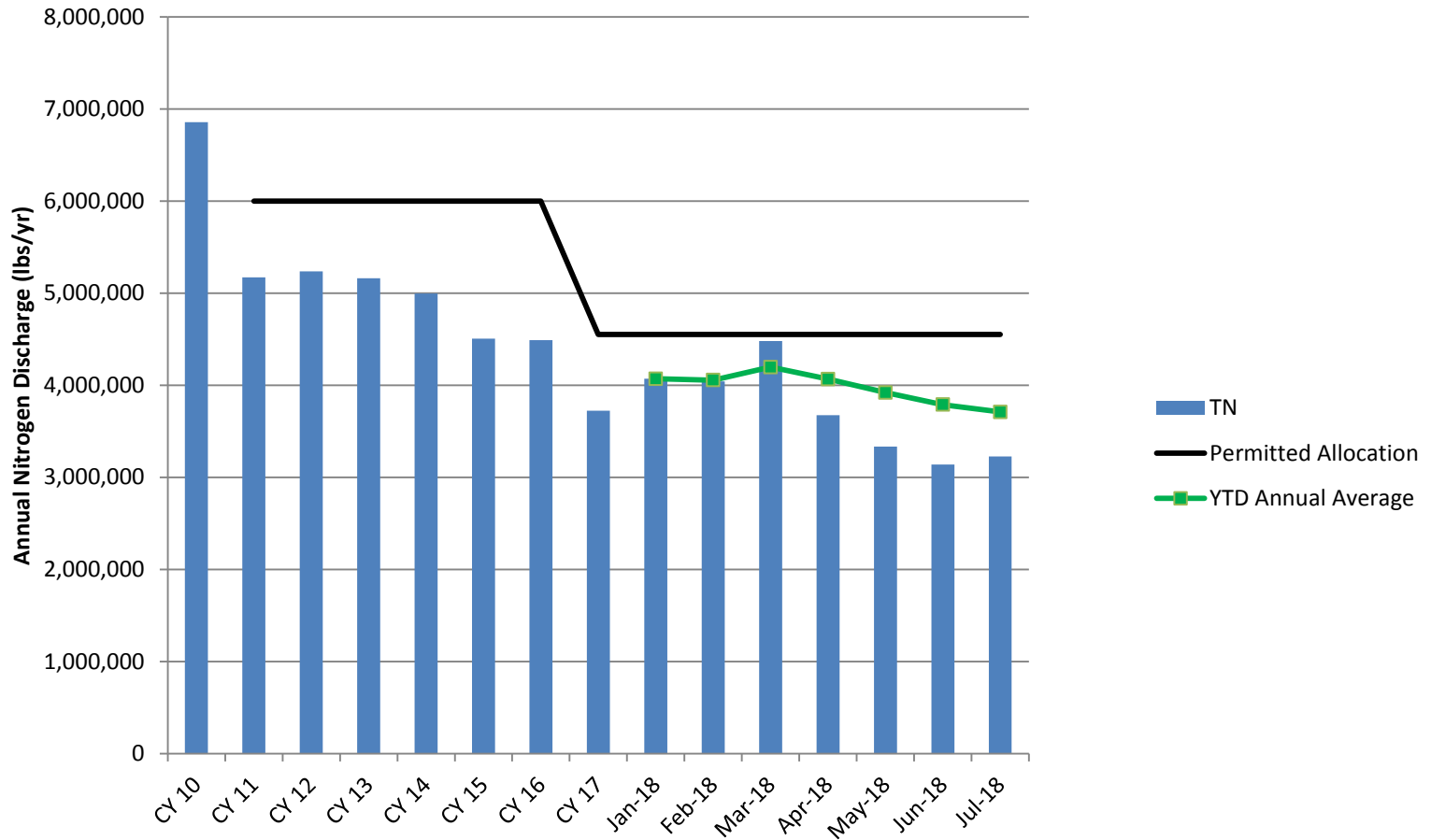
Nutrient Compliance Plan Update Commission Briefing

August 28, 2018

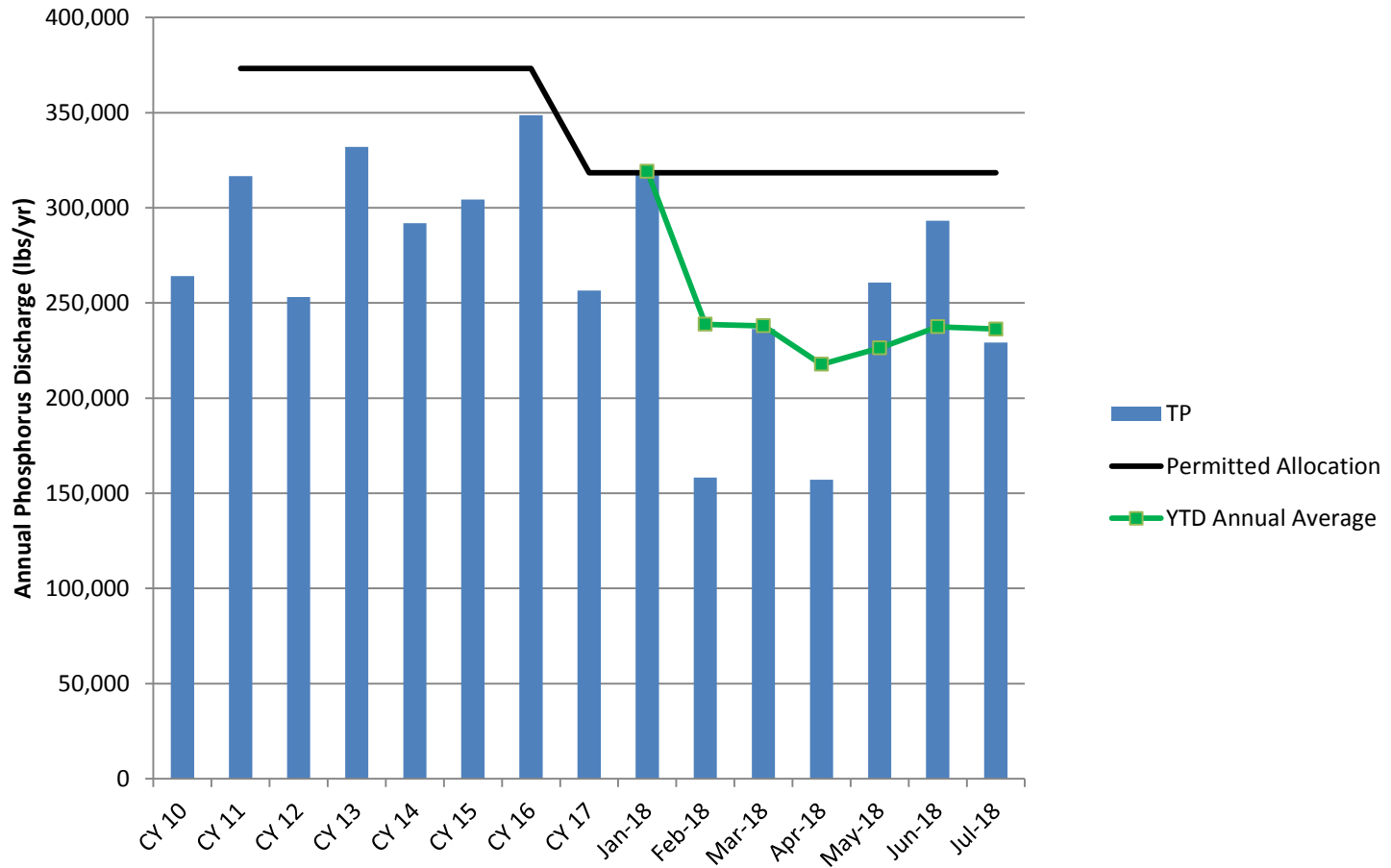
HRSD-River Basin Map



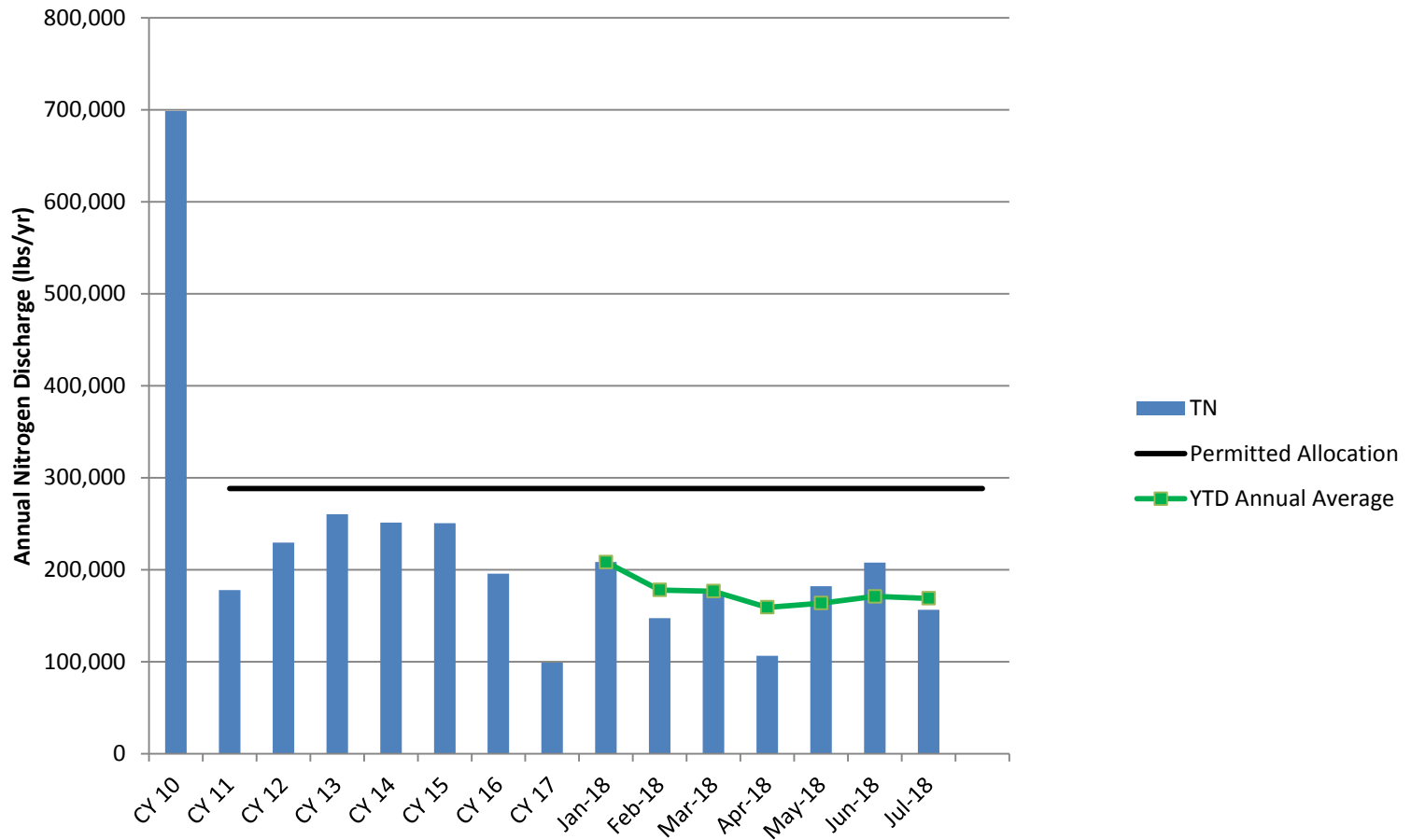
James River Basin: Annual Nitrogen Discharge



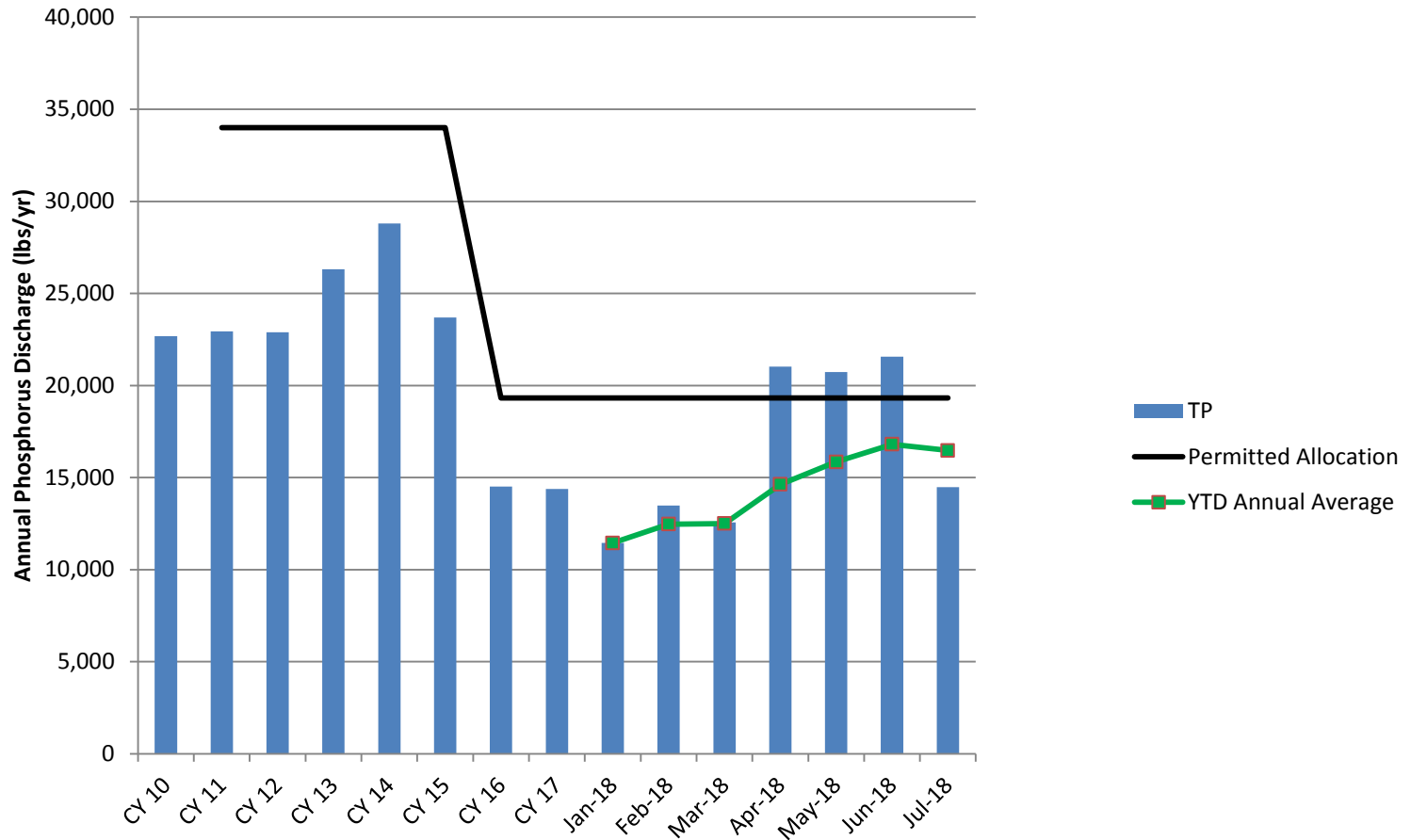
James River Basin: Annual Phosphorus Discharge



York River Basin: Annual Nitrogen Discharge



York River Basin: Annual Phosphorus Discharge



Nitrogen – 5 yr: James River Basin

	2019	2020	2021	2022	2023
Army Base: Flow (MGD)	10.41	10.42	10.43	10.22	10.24
Proj Conc (mg/L)	4.50	4.50	4.50	4.50	4.50
Proj Mass (lbs/yr)	142,652	142,789	142,927	140,033	140,274
Boat Harbor: Flow (MGD)	14.74	14.74	14.74	14.87	14.78
Proj Conc (mg/L)	26.00	26.00	26.00	29.00	29.00
Proj Mass (lbs/yr)	1,167,137	1,167,275	1,167,414	1,313,407	1,305,253
Ches-Eliz: Flow (MGD)	17.95	18.04	18.13	0.00	0.00
Proj Conc (mg/L)	26.50	26.50	26.50	0.00	0.00
Proj Mass (lbs/yr)	1,448,740	1,455,884	1,463,063	0	0
James River: Flow (MGD)	13.12	13.14	13.16	13.21	13.19
Proj Conc (mg/L)	9.00	9.00	9.00	9.00	9.00
Proj Mass (lbs/yr)	359,535	360,057	360,580	362,100	361,496
Lawnes Point: Flow (MGD)	0.00	0.00	0.00	0.00	0.00
Proj Conc (mg/L)	0.00	0.00	0.00	0.00	0.00
Proj Mass (lbs/yr)	0.00	0.00	0.00	0.00	0.00
Nansemond: Flow (MGD)	17.75	18.10	18.46	19.37	19.45
Proj Conc (mg/L)	7.50	7.50	7.50	5.00	5.00
Proj Mass (lbs/yr)	405,362	413,393	421,584	294,975	296,245
VIP: Flow (MGD)	30.82	30.89	30.95	31.53	30.80
Proj Conc (mg/L)	4.50	4.50	4.50	4.50	4.50
Proj Mass (lbs/yr)	422,420	423,308	424,199	432,080	422,161
Williamsburg: Flow (MGD)	9.07	9.18	9.29	9.10	8.95
Proj Conc (mg/L)	10.00	10.00	10.00	10.00	10.00
Proj Mass (lbs/yr)	276,109	279,494	282,921	277,068	272,659
Expected Discharge (lbs/yr)	4,221,955	4,242,201	4,262,687	2,819,663	2,798,088
Permitted Wasteload Allocation (lbs/yr)	4,553,500	4,553,500	4,553,500	3,553,500	3,553,500
Total Flow (MGD)	113.85	114.50	115.15	98.30	97.41
Safety Factor	7%	7%	6%	21%	21%

Nitrogen : Planning Years and Beyond James River Basin

	2024	2025	2026	Design
Army Base: Flow (MGD)	10.26	10.29	10.31	18.00
Proj Conc (mg/L)	4.50	4.50	4.50	4.00
Proj Mass (lbs/yr)	140,620	140,967	141,315	219,280
Boat Harbor: Flow (MGD)	14.79	14.79	14.80	25.00
Proj Conc (mg/L)	29.00	29.00	29.00	26.00
Proj Mass (lbs/yr)	1,305,927	1,306,602	1,307,277	1,979,614
Ches-Eliz: Flow (MGD)	0.00	0.00	0.00	0.00
Proj Conc (mg/L)	0.00	0.00	0.00	0.00
Proj Mass (lbs/yr)	0	0	0	0
James River: Flow (MGD)	13.21	13.23	13.25	20.00
Proj Conc (mg/L)	9.00	9.00	9.00	4.00
Proj Mass (lbs/yr)	362,058	362,621	363,185	243,645
Lawnes Point: Flow (MGD)	0.00	0.00	0.00	0.05
Proj Conc (mg/L)	0.00	0.00	0.00	5.00
Proj Mass (lbs/yr)	0	0	0	761
Nansemond: Flow (MGD)	19.65	19.86	20.06	30.00
Proj Conc (mg/L)	5.00	5.00	5.00	4.00
Proj Mass (lbs/yr)	299,292	302,371	305,481	365,467
VIP: Flow (MGD)	30.89	30.98	31.06	40.00
Proj Conc (mg/L)	4.50	4.50	4.50	4.00
Proj Mass (lbs/yr)	423,347	424,537	425,730	487,290
Williamsburg: Flow (MGD)	9.05	9.15	9.25	22.50
Proj Conc (mg/L)	10.00	10.00	10.00	4.00
Proj Mass (lbs/yr)	275,597	278,570	281,580	274,100
Expected Discharge (lbs/yr)	2,806,842	2,815,668	2,824,567	3,570,158
Permitted Wasteload Allocation (lbs/yr)	3,553,500	3,553,500	3,553,500	3,553,500
Total Flow (MGD)	97.8	98.3	98.7	155.5
Safety Factor	21%	21%	21%	0%

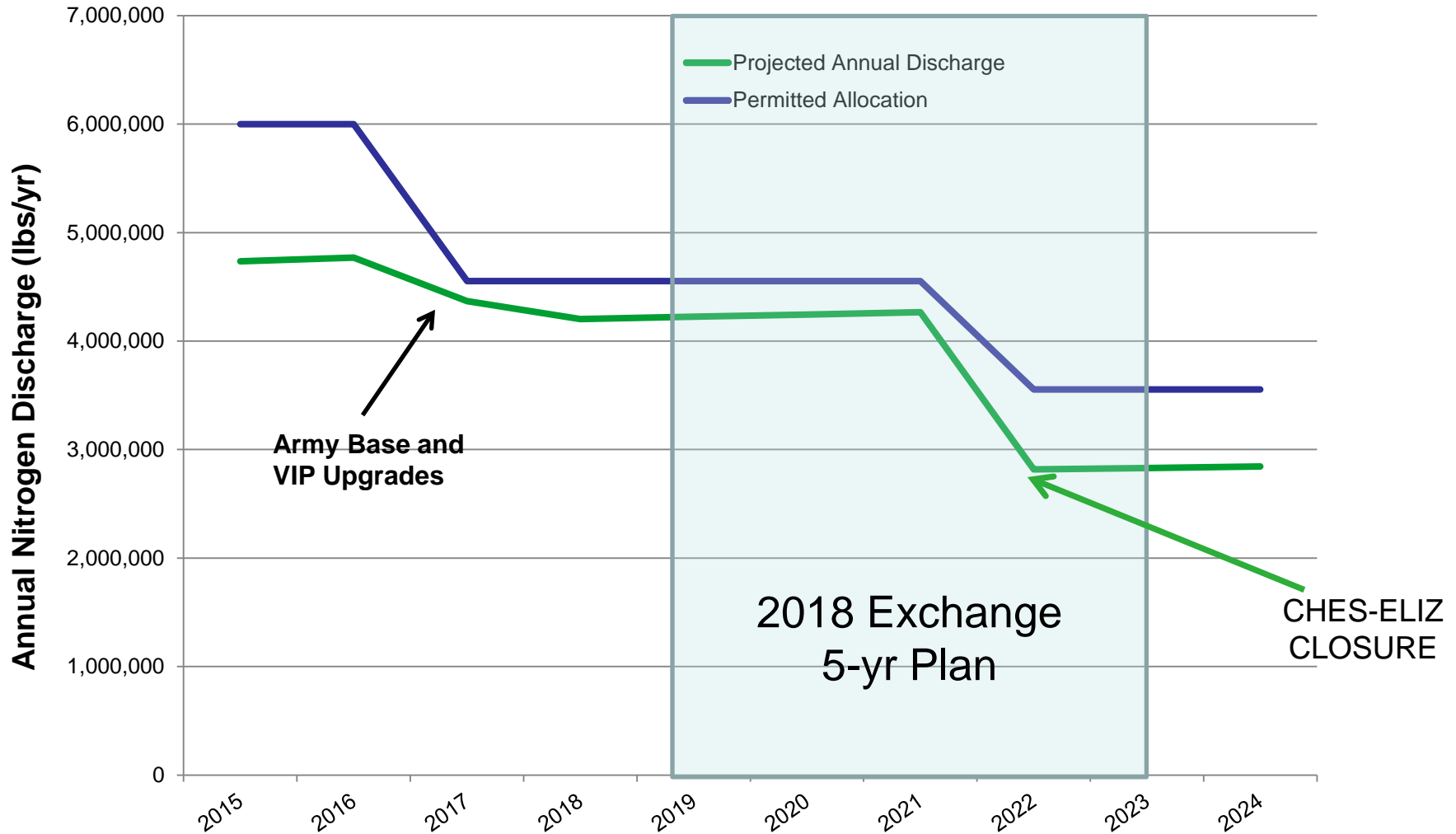
Phosphorus – 5 yr: James River Basin

	2019	2020	2021	2022	2023
Army Base: Flow (MGD)	10.41	10.42	10.43	10.22	10.24
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	25,360	25,385	25,409	24,895	24,938
Boat Harbor: Flow (MGD)	14.74	14.74	14.74	14.87	14.78
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	35,912	35,916	35,920	36,232	36,007
Ches-Eliz: Flow (MGD)	17.95	18.04	18.13	0.00	0.00
Proj Conc (mg/L)	0.9	0.9	0.9	0.0	0.0
Proj Mass (lbs/yr)	49,202	49,445	49,689	0	0
James River: Flow (MGD)	13.12	13.14	13.16	13.21	13.19
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	31,959	32,005	32,052	32,187	32,133
Lawnes Point: Flow (MGD)	0.00	0.00	0.00	0.00	0.00
Proj Conc (mg/L)	0.0	0.0	0.0	0.0	0.0
Proj Mass (lbs/yr)	0	0	0	0	0
Nansemond: Flow (MGD)	17.75	18.10	18.46	19.37	19.45
Proj Conc (mg/L)	1.2	1.2	1.2	1.2	1.2
Proj Mass (lbs/yr)	64,858	66,143	67,453	70,794	71,099
VIP: Flow (MGD)	30.82	30.89	30.95	31.53	30.80
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	75,097	75,255	75,413	76,814	75,051
Williamsburg: Flow (MGD)	9.07	9.18	9.29	9.10	8.95
Proj Conc (mg/L)	0.8	0.8	0.8	0.8	0.8
Proj Mass (lbs/yr)	22,089	22,360	22,634	22,165	21,813
Expected Discharge (lbs/yr)	304,477	306,508	308,570	263,087	261,040
Permitted Wasteload Allocation (lbs/yr)	318,436	318,436	318,436	318,436	318,436
Total Flow (MGD)	113.85	114.50	115.15	98.30	97.41
Safety Factor	4%	4%	3%	17%	18%

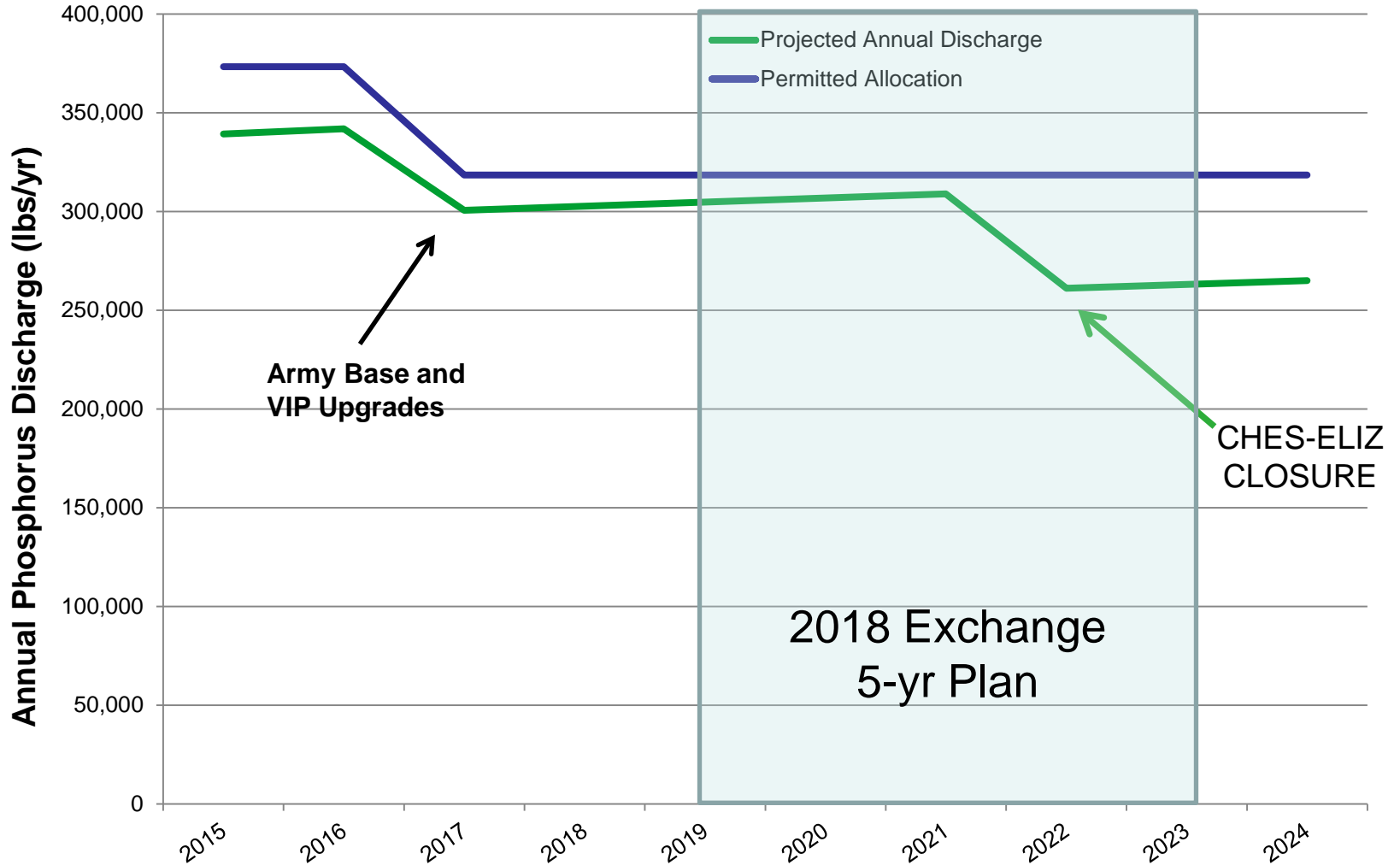
Phosphorus Exchange Submission: Planning Years and Beyond James River Basin

	2024	2025	2026	Design
Army Base: Flow (MGD)	10.26	10.29	10.31	18.00
Proj Conc (mg/L)	0.80	0.80	0.80	0.6
Proj Mass (lbs/yr)	24,999	25,061	25,123	32,892
Boat Harbor: Flow (MGD)	14.79	14.79	14.80	25.00
Proj Conc (mg/L)	0.80	0.80	0.80	0.6
Proj Mass (lbs/yr)	36,026	36,044	36,063	45,683
Ches-Eliz: Flow (MGD)	0	0	0	0.00
Proj Conc (mg/L)	0.00	0.00	0.00	0.0
Proj Mass (lbs/yr)	0.00	0.00	0.00	0
James River: Flow (MGD)	13.21	13.23	13.25	20.00
Proj Conc (mg/L)	0.80	0.80	0.80	0.6
Proj Mass (lbs/yr)	32,183	32,233	32,283	36,547
Lawnes Point: Flow (MGD)	0	0	0	0.05
Proj Conc (mg/L)	0.00	0.00	0.00	5.0
Proj Mass (lbs/yr)	0.00	0.00	0.00	76
Nansemond: Flow (MGD)	19.65	19.86	20.06	30.00
Proj Conc (mg/L)	1.20	1.20	1.20	0.6
Proj Mass (lbs/yr)	71,830	72,569	73,315	54,820
VIP: Flow (MGD)	31	31	31	40.00
Proj Conc (mg/L)	0.80	0.80	0.80	0.6
Proj Mass (lbs/yr)	75,262	75,473	75,685	73,093
Williamsburg: Flow (MGD)	9.05	9.15	9.25	22.50
Proj Conc (mg/L)	0.80	0.80	0.80	0.6
Proj Mass (lbs/yr)	22,048	22,286	22,526	41,115
Expected Discharge (lbs/yr)	262,347	263,666	264,996	284,227
Permitted Wasteload Allocation (lbs/yr)	318,436	318,436	318,436	318,436
Total Flow (MGD)	97.8	98.3	98.7	100.5
Safety Factor	18%	17%	17%	11%

James River Basin Nitrogen Reduction Strategy



James River Basin Phosphorus Reduction Strategy



HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #7

AGENDA ITEM 14. – SWIFT Water Nitrite Issues

- [EPA Response](#)
- [Presentation](#)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Wheeling Field Office
1060 Chapline Street
Wheeling, West Virginia 26003

August 16, 2018

Ms. Jamie Heisig-Mitchell, Chief of Technical Services
Hampton Roads Sanitation District
Water Quality Department
PO Box 5911
Virginia Beach, Virginia 23471

Re: SWIFT Research Center
Nansemond Pilot Project
Nitrite Primary MCL Exceedance

Dear Ms. Mitchell:

We have received correspondence from you dated August 8, 2018 detailing a primary Maximum Contaminant Level (MCL) exceedance for nitrite in SWIFT aquifer recharge water. We also spoke with you by telephone to discuss this matter on August 3. We appreciate the opportunity to offer this response.

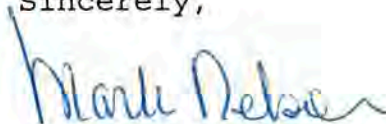
The EPA Underground Injection Control (UIC) program utilizes MCLs as a "first blush" indicator of injectate water quality for shallow injection wells. A subsurface discharge through a well directly into or above an underground source of drinking water must not endanger ground water quality or the health of persons. A subsurface discharge which meets primary MCLs provides, in our opinion, a significant margin of safety to ensure the endangerment threshold described above is not compromised. We do not believe the MCL exceedance for nitrite detailed in your correspondence resulted in a UIC violation.

The EPA decision to "rule authorize" the SWIFT aquifer recharge project was premised upon, among other information, the pilot nature of the operation. We anticipated, and I am sure you

will agree, that the complexity of large scale advanced water treatment and aquifer recharge provides ample opportunities now and into the future to learn and implement adjustments throughout the treatment, aquifer recharge, monitoring and reporting processes. With specific regard to the nitrite MCL violation, the potential for incomplete nitrification in the biofilter during water treatment start-up was a topic of conversation during our compliance inspection on July 18, 2018.

We appreciate your timely notification to EPA of this matter and the opportunity to address these issues with you. We believe your immediate response upon learning of this situation was appropriate. We have reviewed the preliminary plan to modify monitoring and reporting protocols and are confident any future upsets will be immediately identified and addressed. Please contact me at (304) 234-0286 with any questions.

Sincerely,



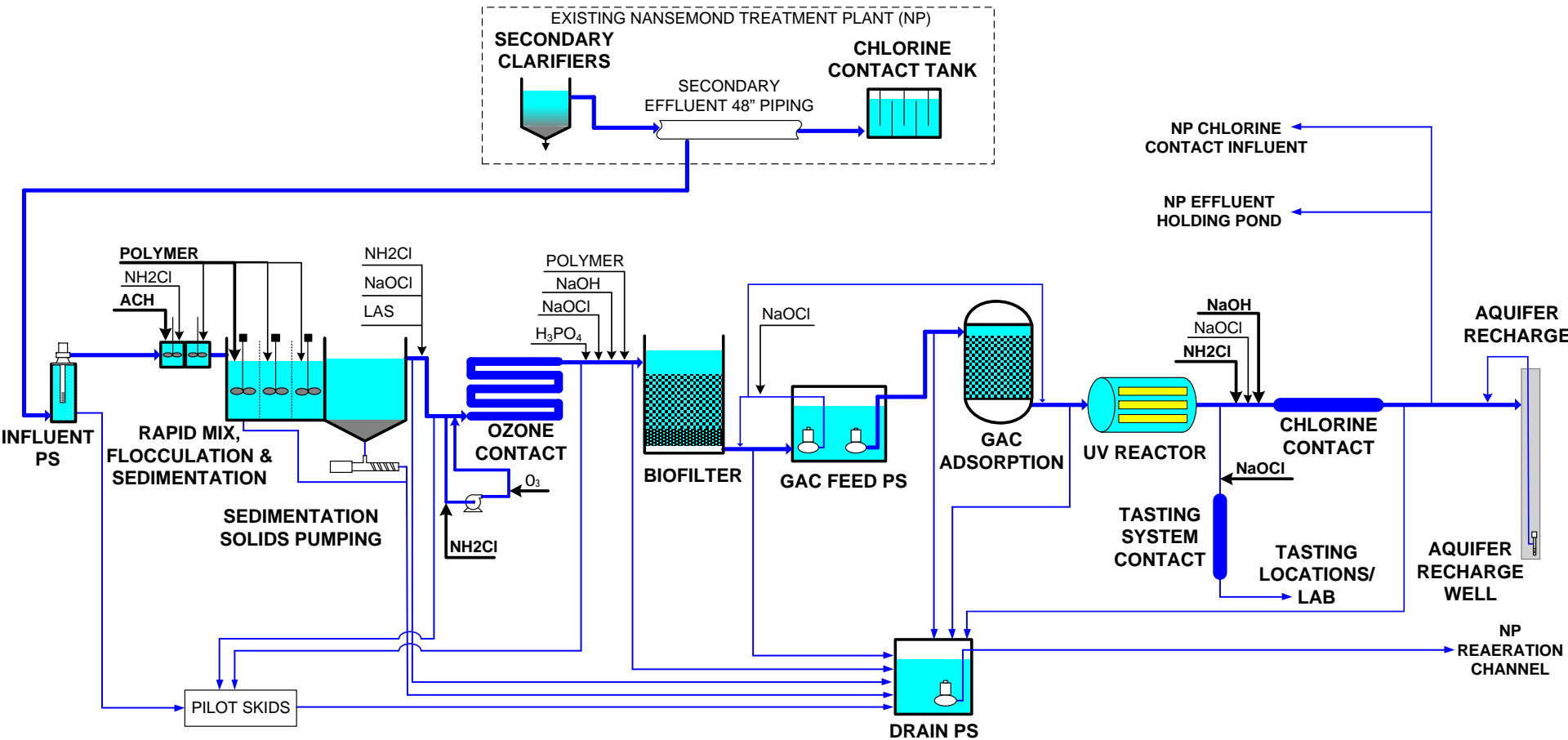
Mark A. Nelson, Hydrologist
Water Protection Division

Update on the Operation of the SWIFT Research Center





Process Flow Diagram for SWIFT Research Center



SWIFT RESEARCH CENTER PROCESS FLOW DIAGRAM



SWIFT Water Quality Targets

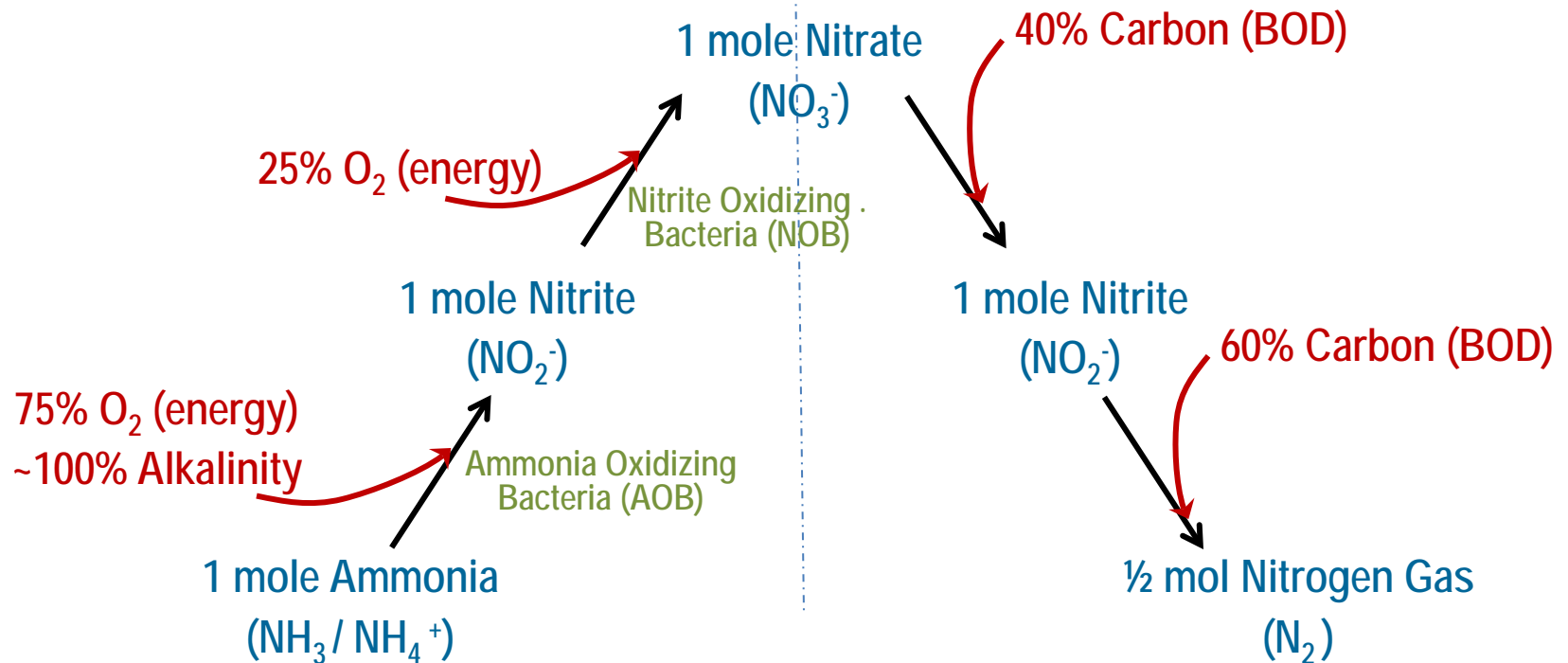
Parameter	Proposed Regulatory Limit	Non-regulatory Action/Goal
MCLs	Meet all primary MCLs	N/A
TN	5 mg/L monthly average; 8 mg/L max daily	Secondary Effluent CCP Action Limit for TIN = 6 mg/L
Turbidity	IFE <0.15 NTU 95% of time & never > 0.3 NTU in two consecutive measurements	CCP Action Limit at 0.10 NTU to initiate backwash or place filter in standby
TOC	4 mg/L monthly average 6 mg/L maximum	COP Action Limit at 4 mg/L, laboratory 10 day average
Total coliform	< 2 CFU / 100 mL; 95% of time; Not to exceed geometric mean of 3 CFU/100 mL, based on a running calculation of 20 days of daily samples for total coliforms	CCPs to achieve 12 LRV for viruses and 10 LRV for Crypto & Giardia
E. Coli	Non-detect	
Unreg Chemicals (CECs)	None	Monitor suite of chemicals and address as necessary
Total Dissolved Solids	None	Monitor aquifer compatibility

Sustainable Water Initiative for Tomorrow

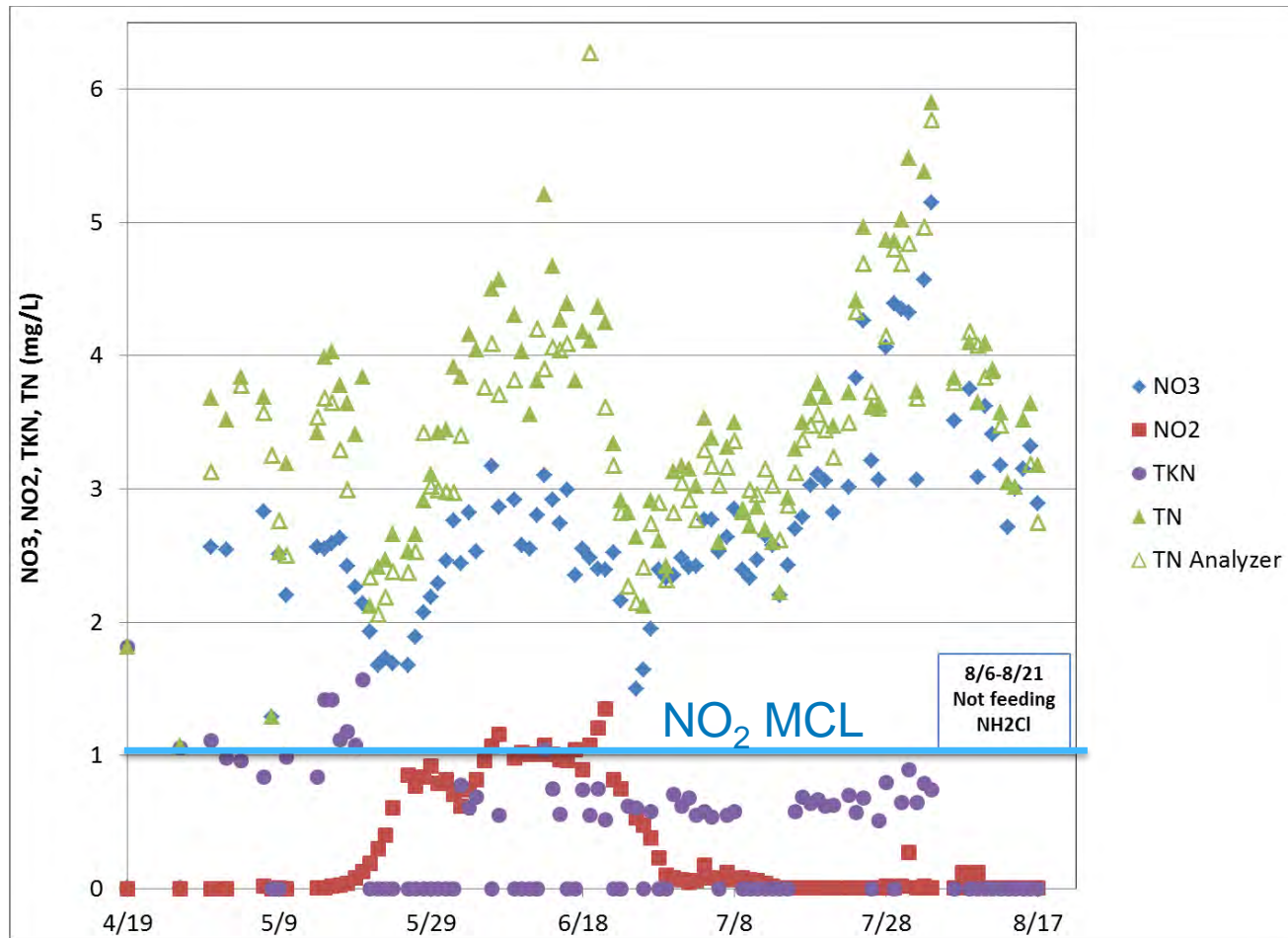
Conventional Nitrification-Denitrification

Autotrophic Bacteria
Aerobic Environment

Heterotrophic Bacteria
Anoxic Environment



SWIFT Water Total Nitrogen (TN)



- **TN Limits**

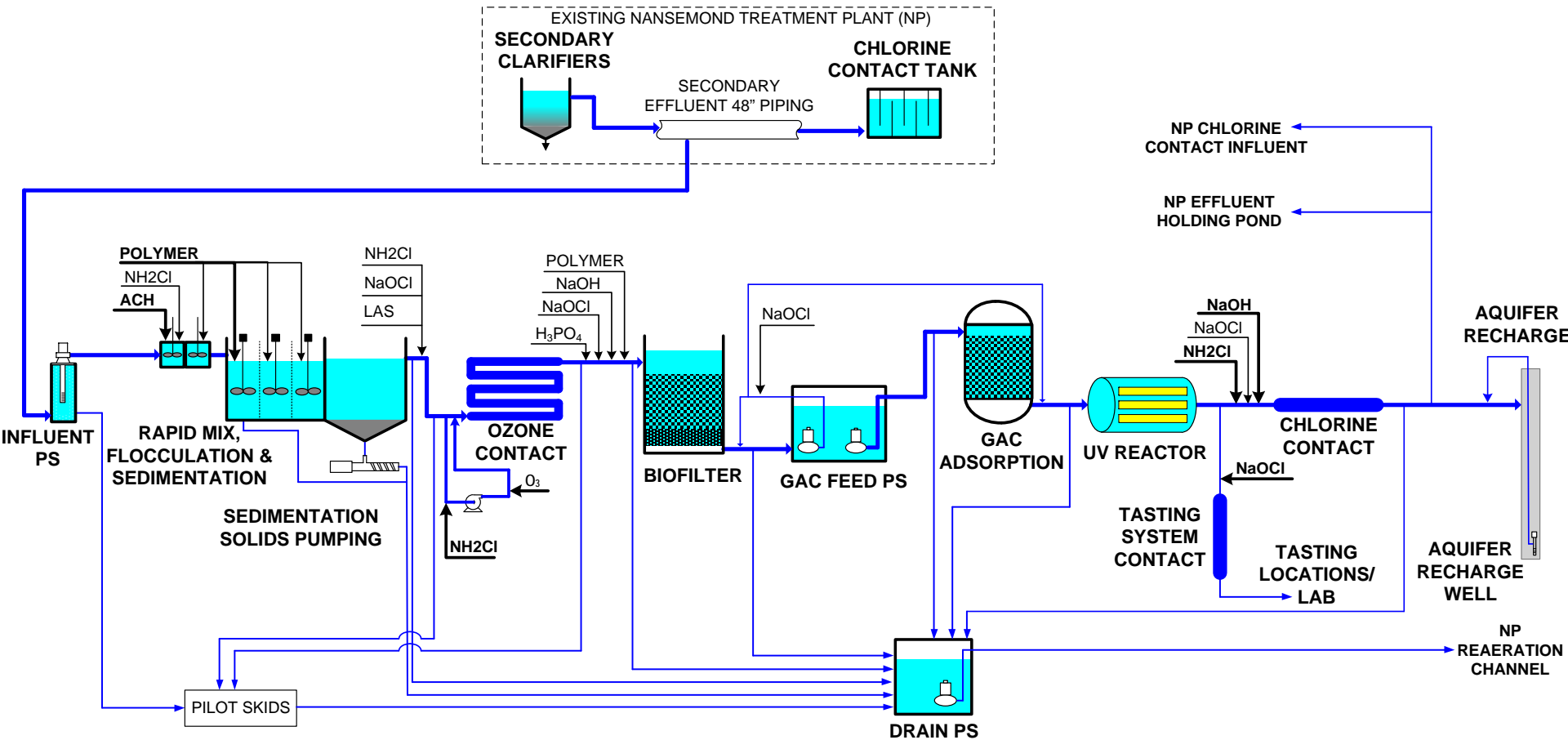
- 5 mg/L Monthly Average
- 8 mg/L Daily Max

- **SWIFT Water TN consistently below limits**

- **NO₂ increased and subsequently decreased after filters began to nitrify**



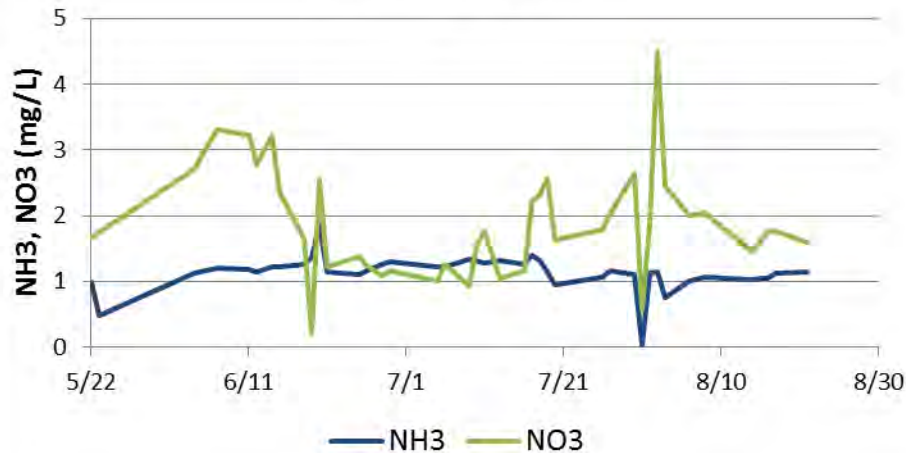
Process Flow Diagram for SWIFT Research Center



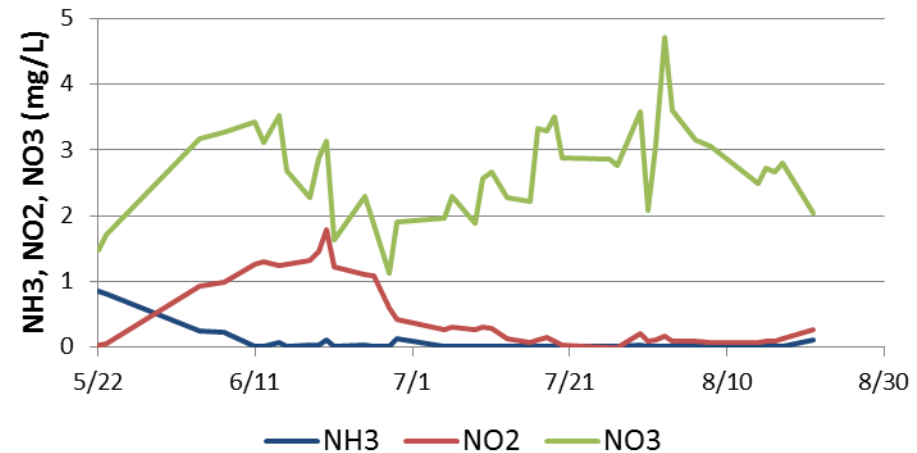
SWIFT RESEARCH CENTER PROCESS FLOW DIAGRAM

Nitrogen Profiles

Ozone Effluent



BAF Effluent



- Partial nitrification observed after approximately 1 month of filter operation
- Tasting system – initially very challenging due to need for breakpoint chlorination

Nitrite in SWIFT Water

- Recharged approximately 4.8 MG on days in which the nitrite concentration exceeded the MCL
- Average June 9 – June 21: 1.06 mg/L
- Average for June: 0.82 mg/L
- A different approach for averaging and compliance evaluations needs to be considered

Corrective Action Measures

- Alerts for regulatory triggers assigned to laboratory generated data
 - All SWIFT related projects will be evaluated for appropriate triggers at project initiation
- When a valid data point exceeds the regulatory value, SWIFT Water will be diverted and a confirmation sample will be collected within 24 hours
 - Recharge will not resume until we confirm that the concentration is not exceeding the regulatory value
- Nitrite analyzer installed for continuous monitoring of Granular Activated Carbon Combined Effluent and nitrite incorporated as a critical control point

Unregulated Chemical Constituents that are of Public Health Interest

(Final Report of an NWRI Independent Advisory Panel: Recommended DPR General Guidelines and Operational Requirements for New Mexico, 2016)

Chemical	Criterion	Carbon-based Train Conc.	Notes
1,4-Dioxane	1 µg/L	0.34-0.39 µg/L ¹	CCL3; CA Notification limit
17-B-estradiol	TBD (ng/L range)	<0.005 µg/L ²	CCL3
DEET	200 µg/L	<0.010 µg/L ²	Minnesota Health guidance value
Ethinyl Estradiol	TBD (ng/L range)	<0.005 µg/L ²	CCL3
NDMA	10 ng/L	6.6 -14 ng/L ³	CCL3; CA Notification limit
Perchlorate	6 µg/L	< 4 µg/L ⁴	CA Notification limit
PFOA +PFOS	70 ng/L	< 60 ng/L ⁵	USEPA Health Advisory
TCEP	5 µg/L	<0.010 µg/L ²	Minnesota Health guidance value

1. Based on 3 samples in finished water
2. Based on 8 samples in finished water
3. Based on 9 samples in finished water
4. Based on 4 samples in pilot feed
5. Based on 1 sample in finished water

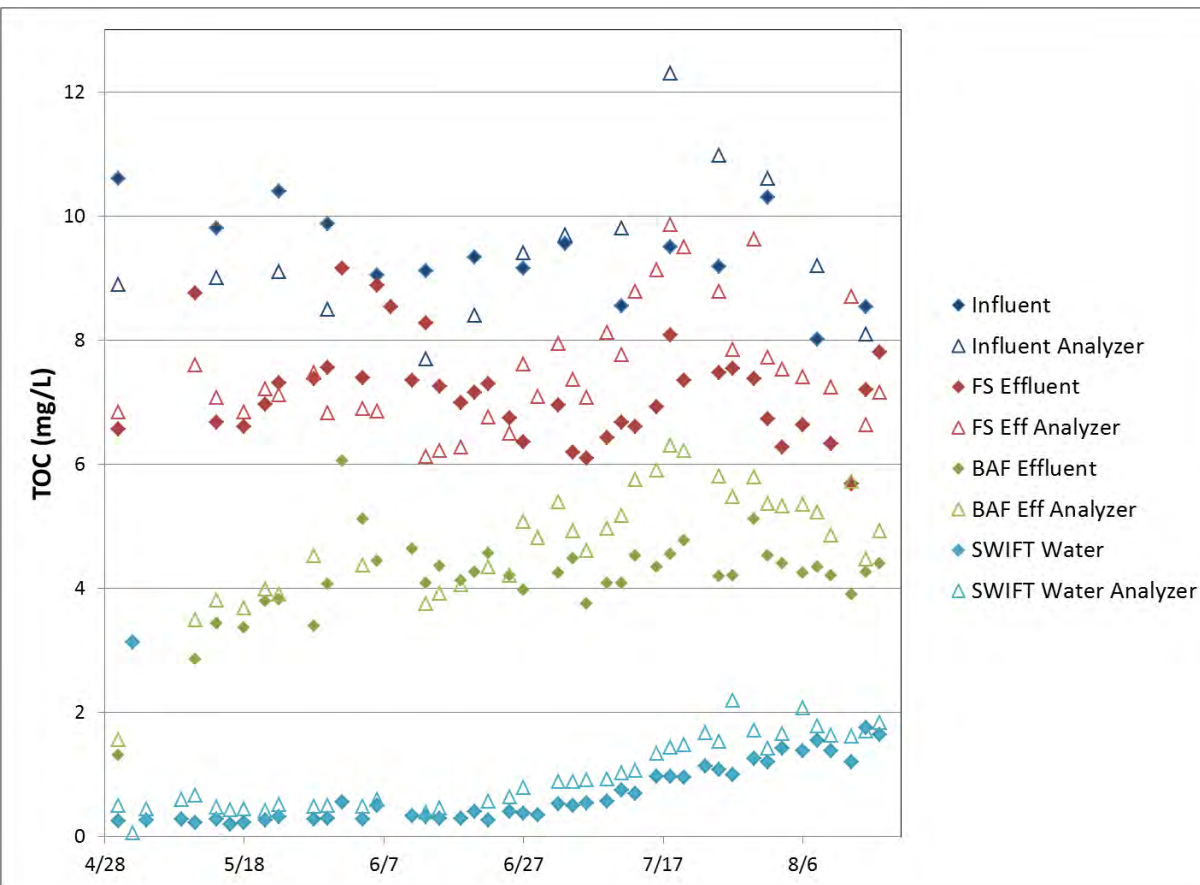
Unregulated chemical constituents that provide information on the effectiveness of treatment

(Final Report of an NWRI Independent Advisory Panel: Recommended DPR General Guidelines and Operational Requirements for New Mexico, 2016)

Chemical	Criterion ¹	Carbon-based Train FW Conc.	Notes
Cotinine	1 µg/L	<0.010 µg/L ²	Surrogate for low MW, partially charged cyclics
Primidone	10 µg/L	< 0.005 µg/L ²	
Phenytoin	2 µg/L	No data	
Meprobamate	200 µg/L	< 0.005 µg/L ²	High occurrence in WWTP effluent
Atenolol	4 µg/L	< 0.005 µg/L ²	
Carbamazepine	10 µg/L	< 0.005 µg/L ²	Unique structure
Estrone	320 µg/L	< 0.005 µg/L ²	Surrogate for steroids
Sucralose	150 mg/L	Range: <0.1 to 61 µg/L (GAC1) Range: <0.1 to 0.32 µg/L (GAC2)	Surrogate for water soluble, uncharged chemicals, moderate MW
Triclosan	2100 µg/L	<0.010 µg/L ²	Chemical of interest

1. In most cases, criterion based on drinking water equivalent concentration for lowest therapeutic dose divided by 1,000 or 10,000 to provide a safety factor.
2. Based on 8 samples in finished water

Total Organic Carbon (TOC)



- Consistent TOC removal has been observed through flocculation/ sedimentation and BAF/GAC

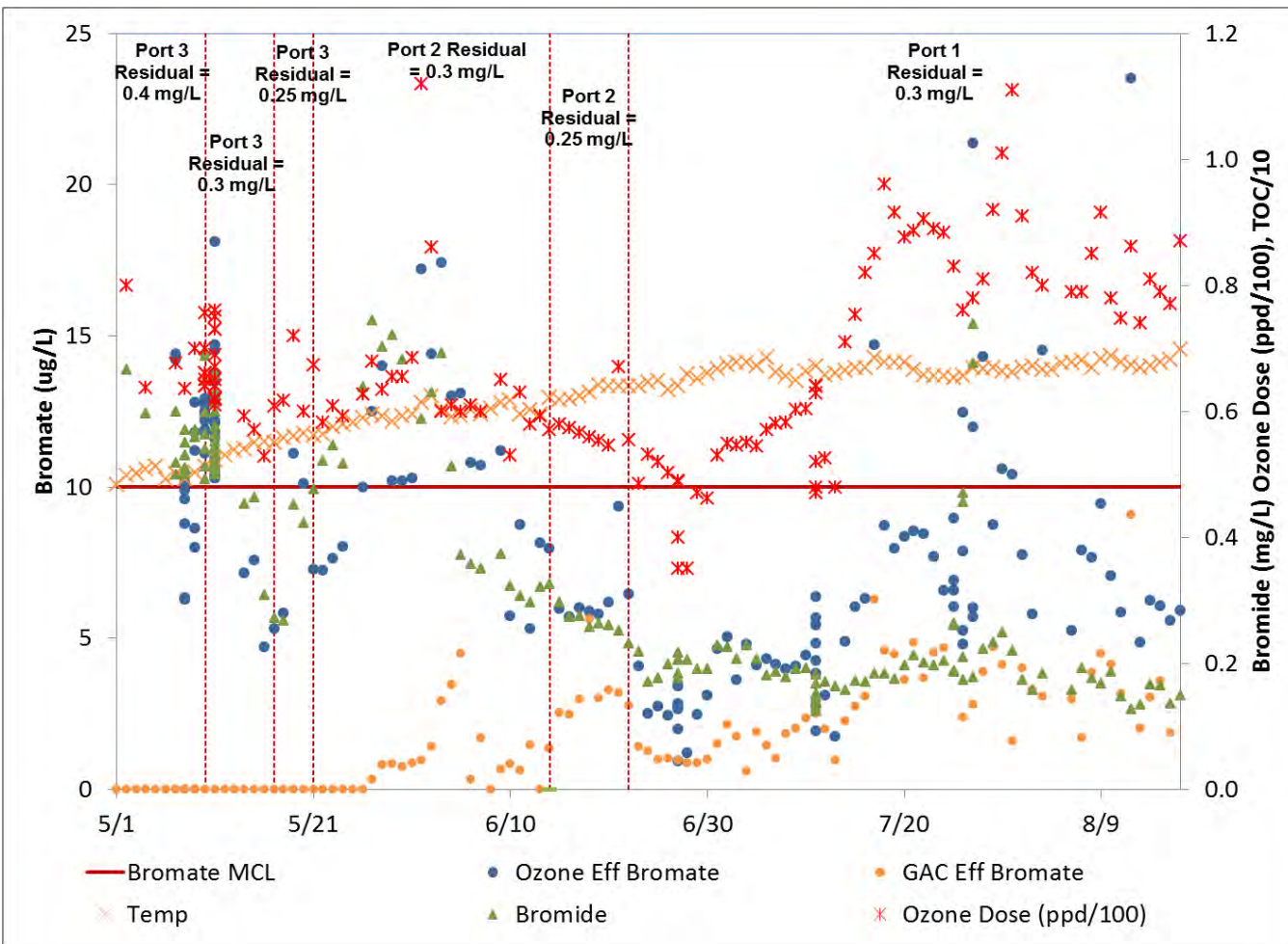
Process	Average TOC (mg/L)
Influent	9.6
Floc/Sed Eff	7.3
BAF CE	4.2
SWIFT Water	0.73

Bromate

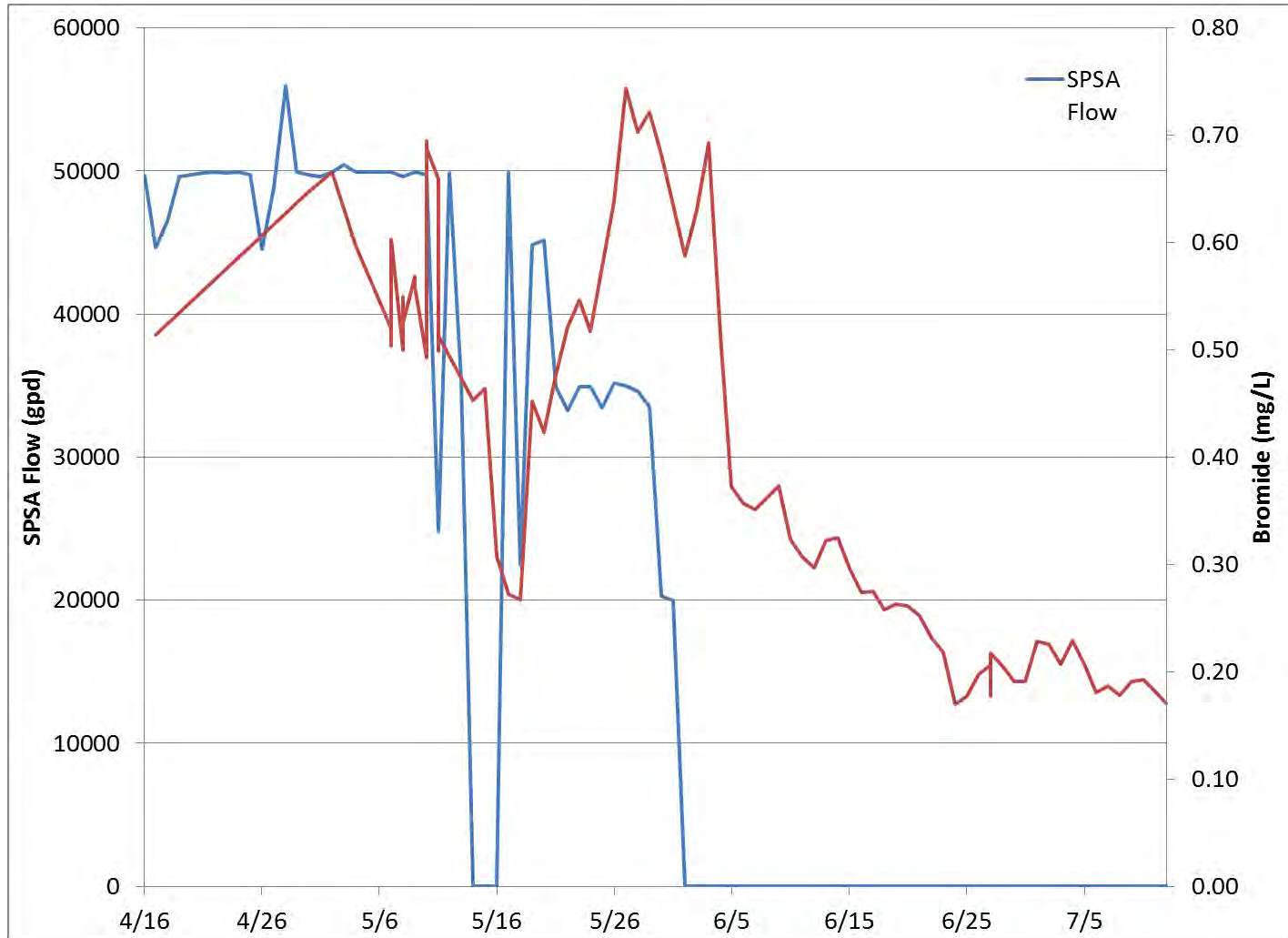
Bromate MCL = 10 $\mu\text{g/L}$

6/1/2018 SPSA stopped discharging leachate

Bromide has since decreased resulting in bromate below the MCL



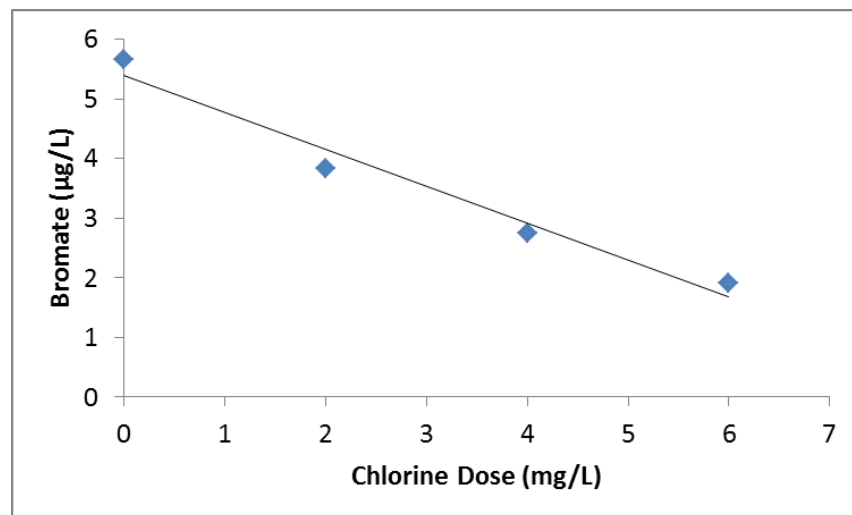
SPSA Leachate Pumping to Nansmond



Bromate Special Testing

Cl Dose (mg/L)	O3 Dose (ppd)	Sample Port	Br ⁻ (mg/L)	BrO ₃ ⁻ (µg/L)
0	64	STW	0.177	0.55
		Ozone Eff	0.167	5.67
2	52	Influent	0.161	0.63
		STW	0.158	<0.30
		Ozone Eff	0.152	3.84
4	48	Influent	0.154	0.62
		STW	0.141	<0.30
		Ozone Eff	0.146	2.75
6	47	Influent	0.148	0.57
		STW	0.121	<0.30
		Ozone Eff	0.13	1.91

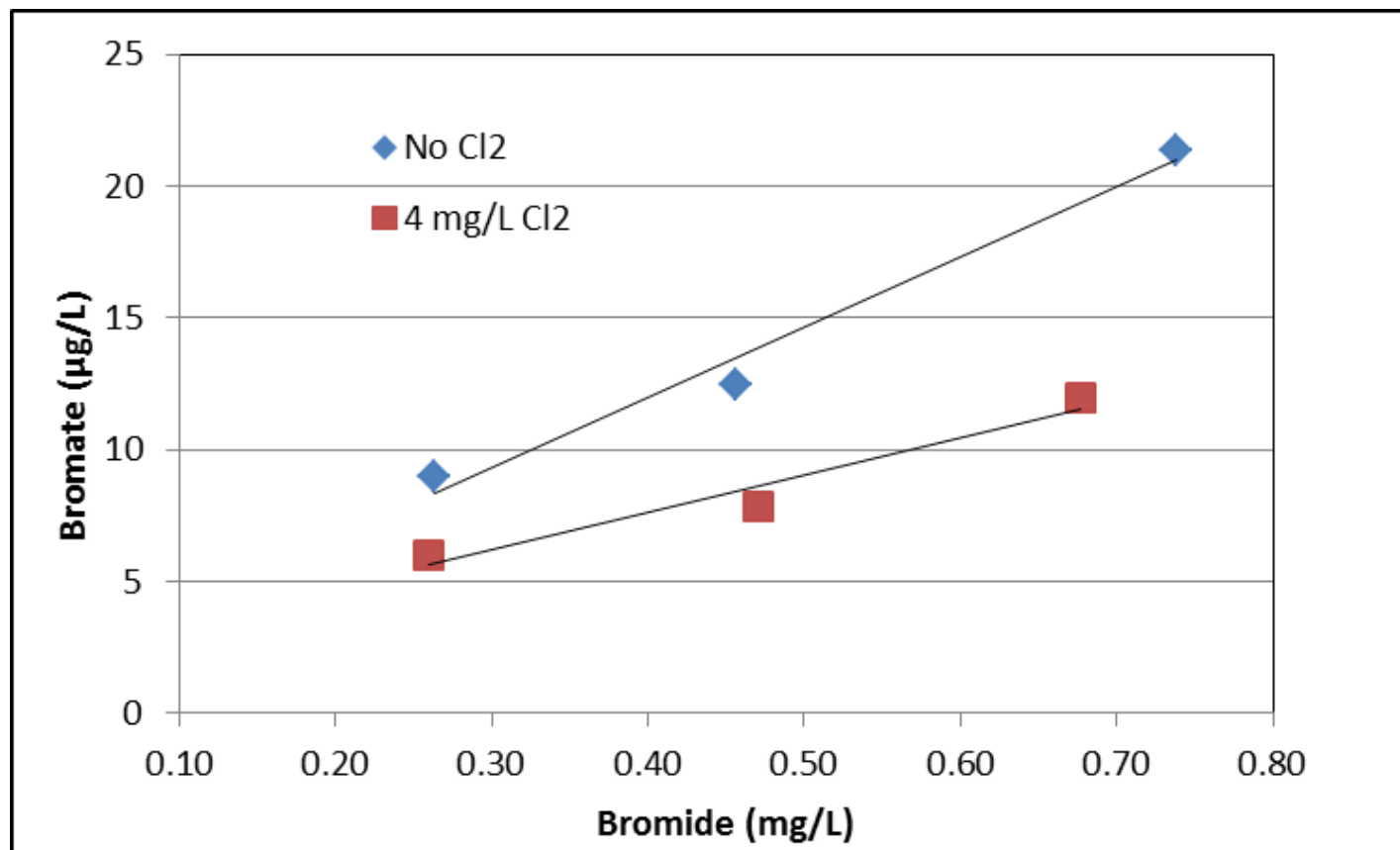
- Chlorine was fed to rapid mix at doses of 2, 4 and 6 mg/L
- Preoxidation resulted in reduced ozone demand and decreased bromate formation



Note: Bromate detection limit = 0.30 µg/L
STW = Settled water

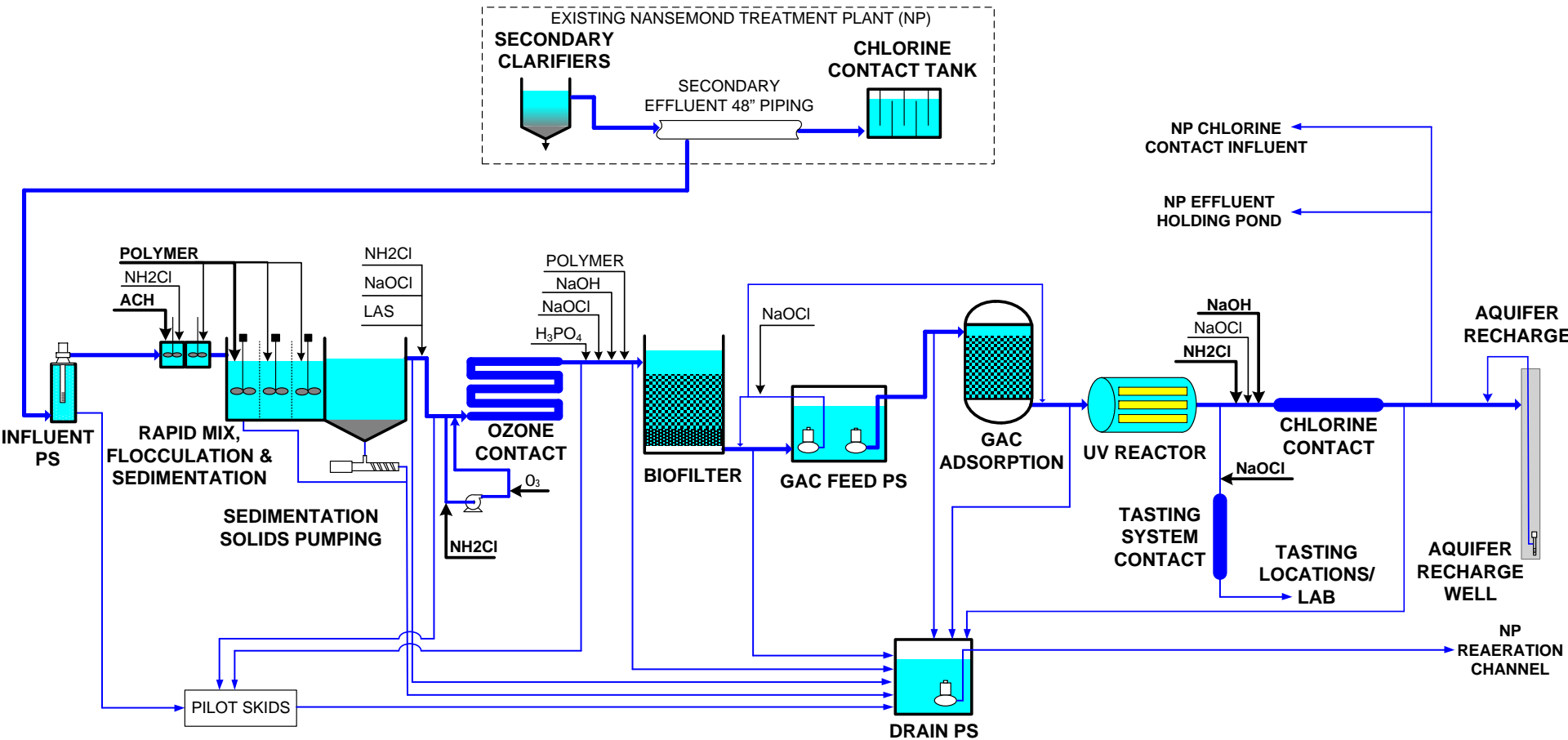
Bromate Special Testing

- Bromide addition at controlled concentrations with and without upstream free chlorine addition



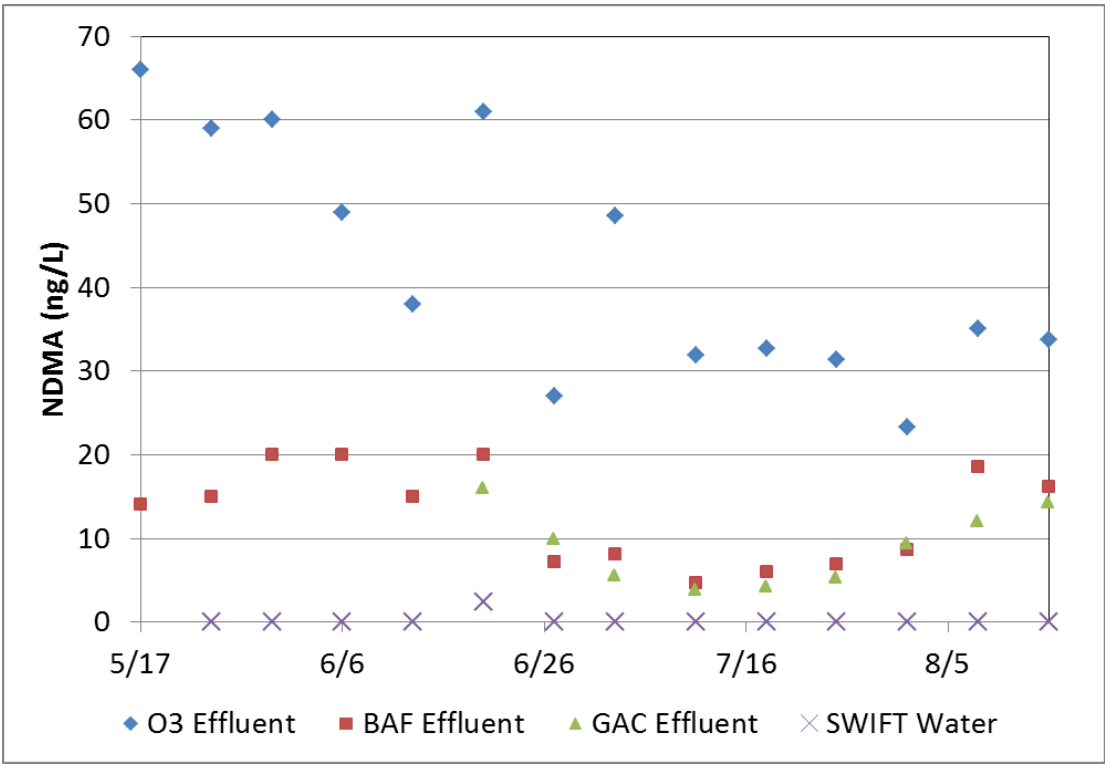


Process Flow Diagram for SWIFT Research Center



SWIFT RESEARCH CENTER PROCESS FLOW DIAGRAM

NDMA = N-nitrosodimethylamine



- NDMA is a byproduct of chloramination/ozonation
 - Included on the EPA Contaminant Candidate List 3
 - CA Health Advisory Limit = 10 ng/L

- 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

1, 4-Dioxane

Date	1, 4- Dioxane (µg/L)			
	Influent	Ozone Eff	BAF Eff	SWIFT Water
4/18/2018		0.5	<0.07	<0.07
4/19/2018				<0.07
5/15/2018				<0.07
5/30/2018	0.7			
7/3/2018	0.54			0.42
7/11/2018	0.56			0.41
7/18/2018	0.57			0.36
7/25/2018	0.47			0.35
8/1/2018	0.44			0.28
8/8/2018	0.57			0.31
8/15/2018	0.48			0.27

- Trace organic included on the EPA Contaminant Candidate List 3
- CA Drinking Water Notification Limit = 1 µg/L
 - Partial removal by hydroxyl radical through ozonation
 - Biodegraded in biologically active filters (some)
 - Adsorption on virgin GAC

Manganese

Mn Secondary MCL = 50 µg/L

Bypass Filtering Index (BFI)



Date	Manganese (µg/L)	
	Influent	SWIFT Water
5/30/2018	30.6	
6/12/2018		21.1
6/13/2018	37.3	
6/19/2018	25.1	
6/20/2018	28.3	17.1
6/27/2018	22.8	16.4
7/4/2018	30.0	25.4
7/11/2018	16.0	7.7
7/18/2018	26.0	5.7
7/25/2018	27.9	5.5
8/1/2018	28.6	6.2

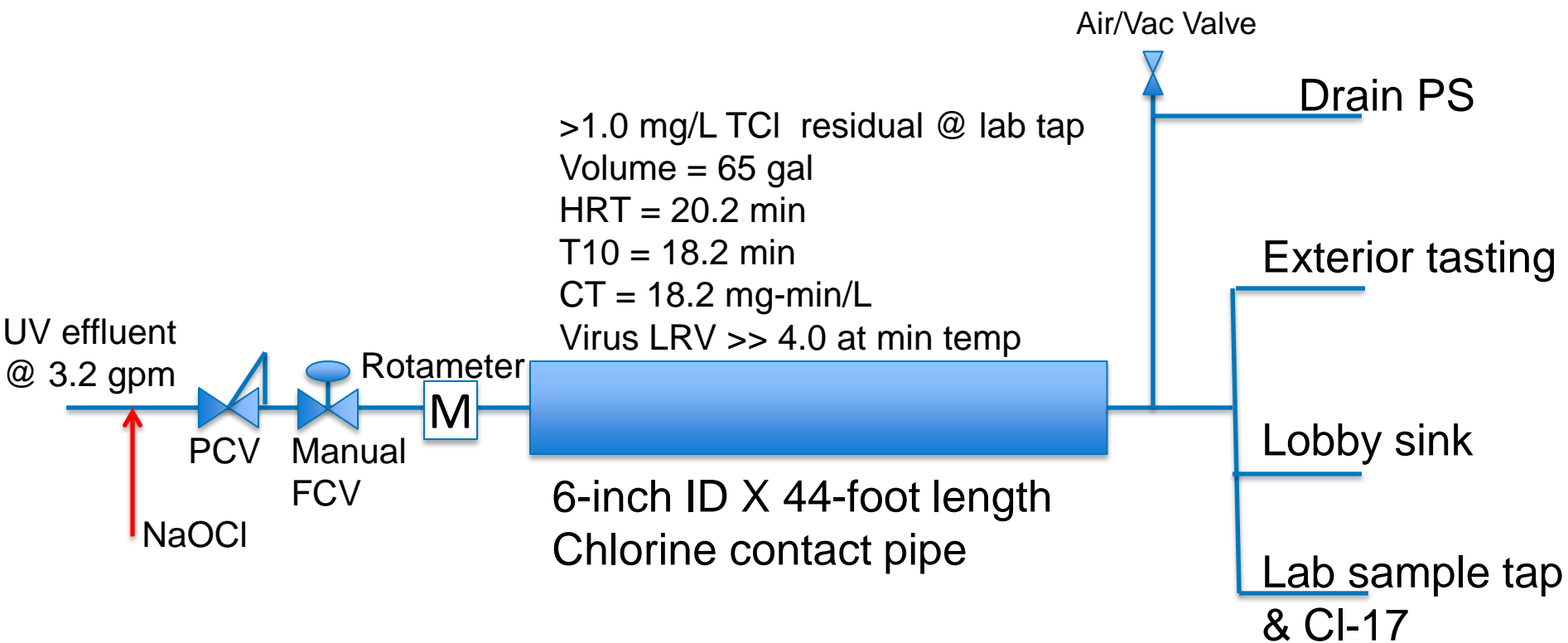


SWIFT Research Center – Pathogen LRVs

- Design – 12/10/10 (NWRI recommendation, but include SAT)
- Operate to achieve 12/10/10 using CCPs
- Tasting demands virus and giardia reduction by ozone & additional free chlorination (4 LRV virus)

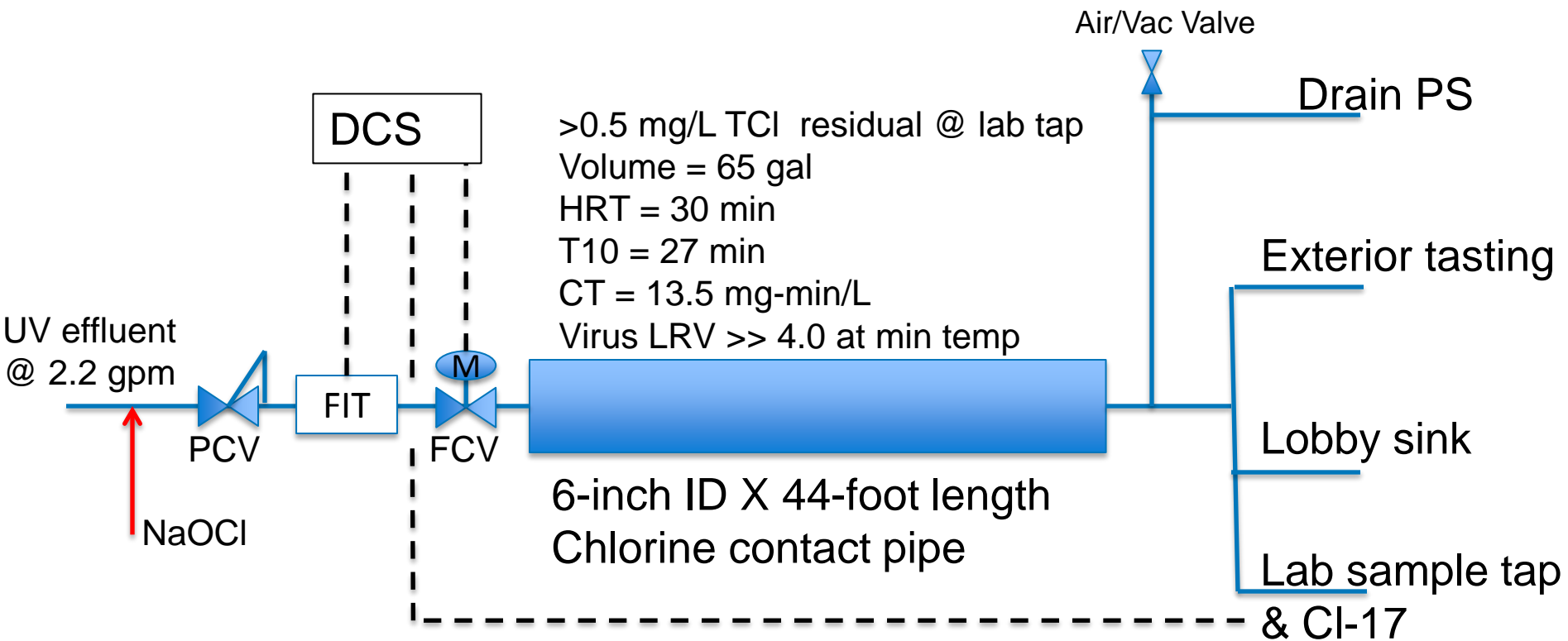
Parameter	Log Reduction Credits								
	Coag/Sed (+BAC)	Ozone	BAC	GAC	UV (186 mJ/cm ²)	Cl ₂	Total AWT	SAT	Total
Enteric Viruses	2	0-3	0	0	4	0-4	6-13	6	12-19
Cryptosporidium	4	0	0	0	6	0	10	6	16
Giardia	2.5	0-1.5	0	0	6	0	8.5-10	6	14.5-16

Tasting System – Version 1.0





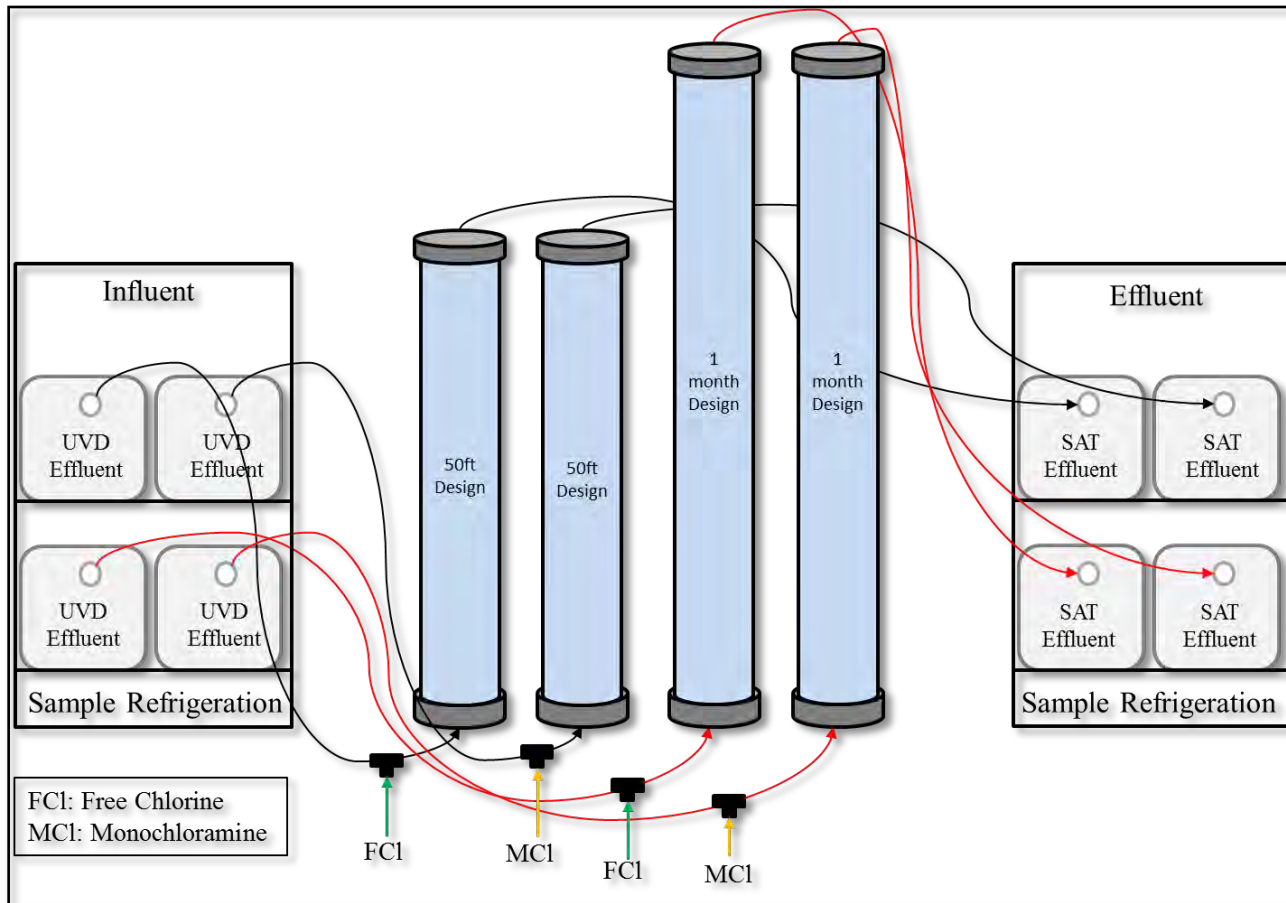
Tasting System – Version 2.0



Soil Columns to evaluate Soil Aquifer Treatment



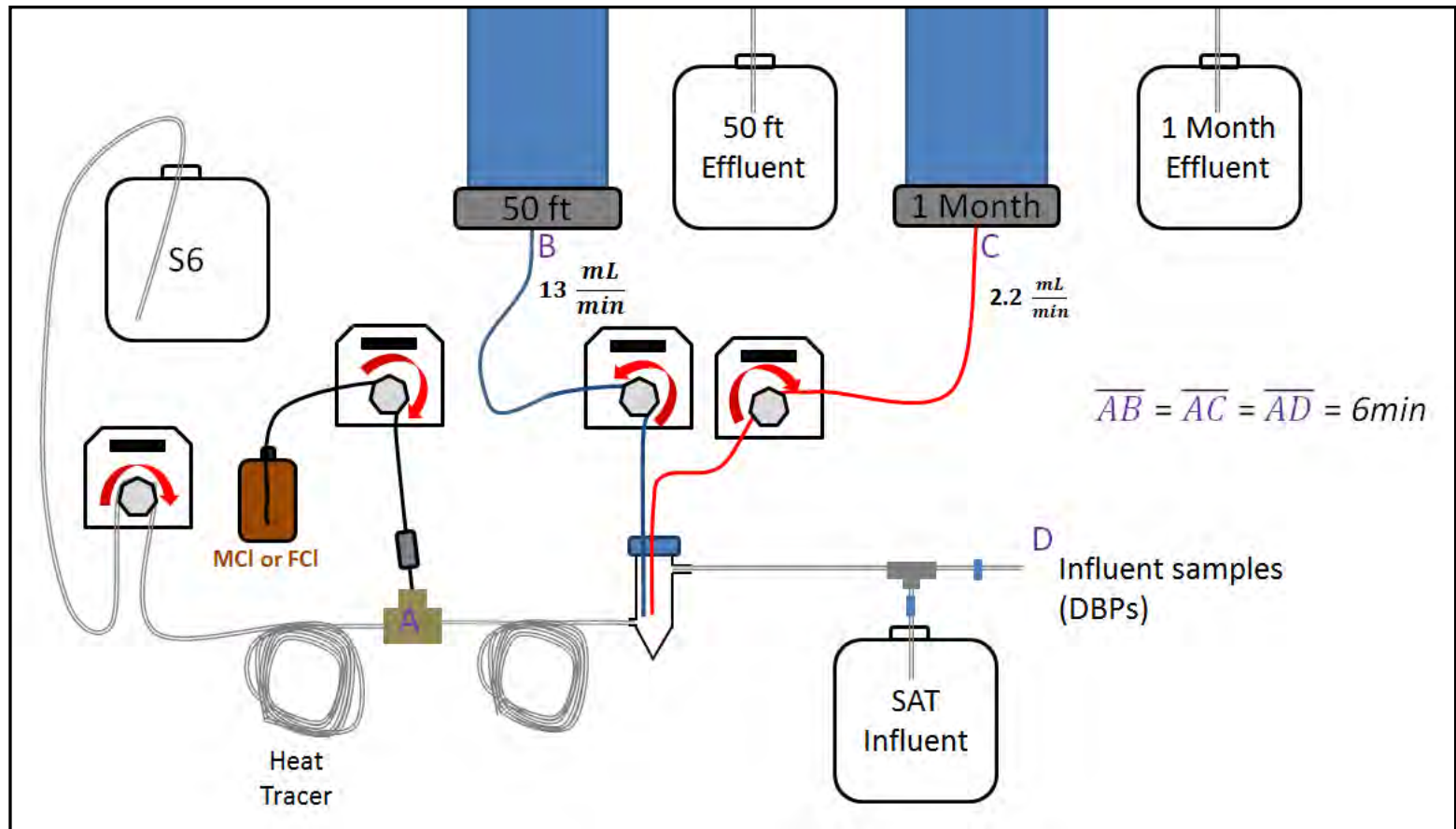
Soil Column Schematic



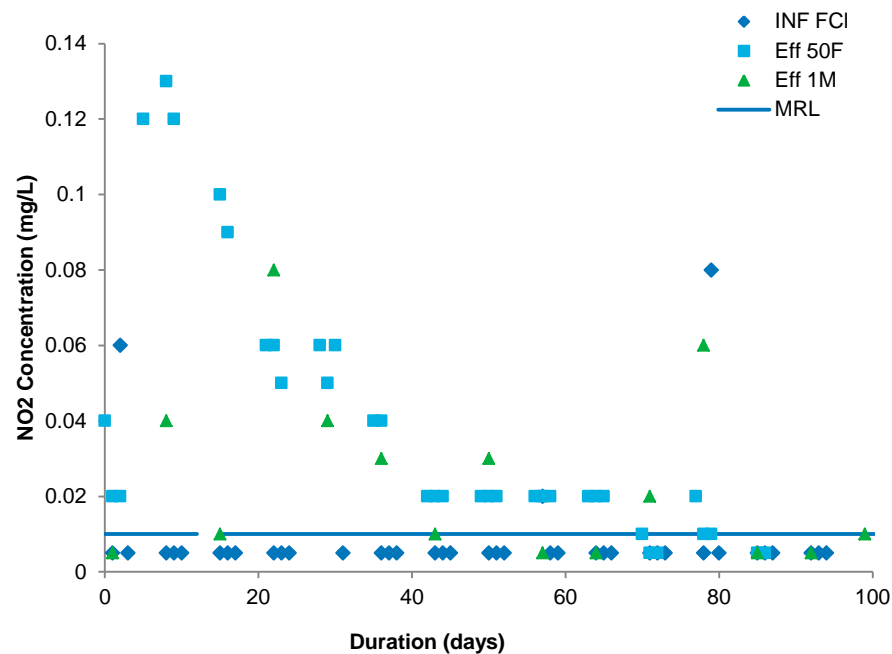
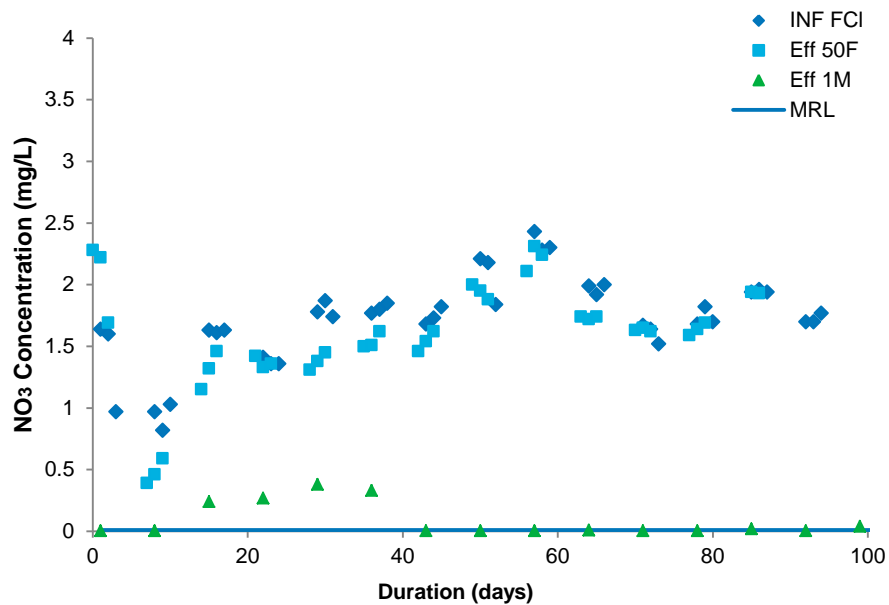
Pathogen indicator summary

	1 month (#1)	1 month (#2)	50 ft. (#3)	50 ft. (#4)
Travel time (days)	29.6	30.2	3.1	3.4
	Log removals			
MS2	7	-	6.9	6.9
<i>E.coli</i>	-	6.5	6.6	-
Microbeads	-	4.8	4.8	4.8
Targeted	at least 1 log removal per month of travel time			

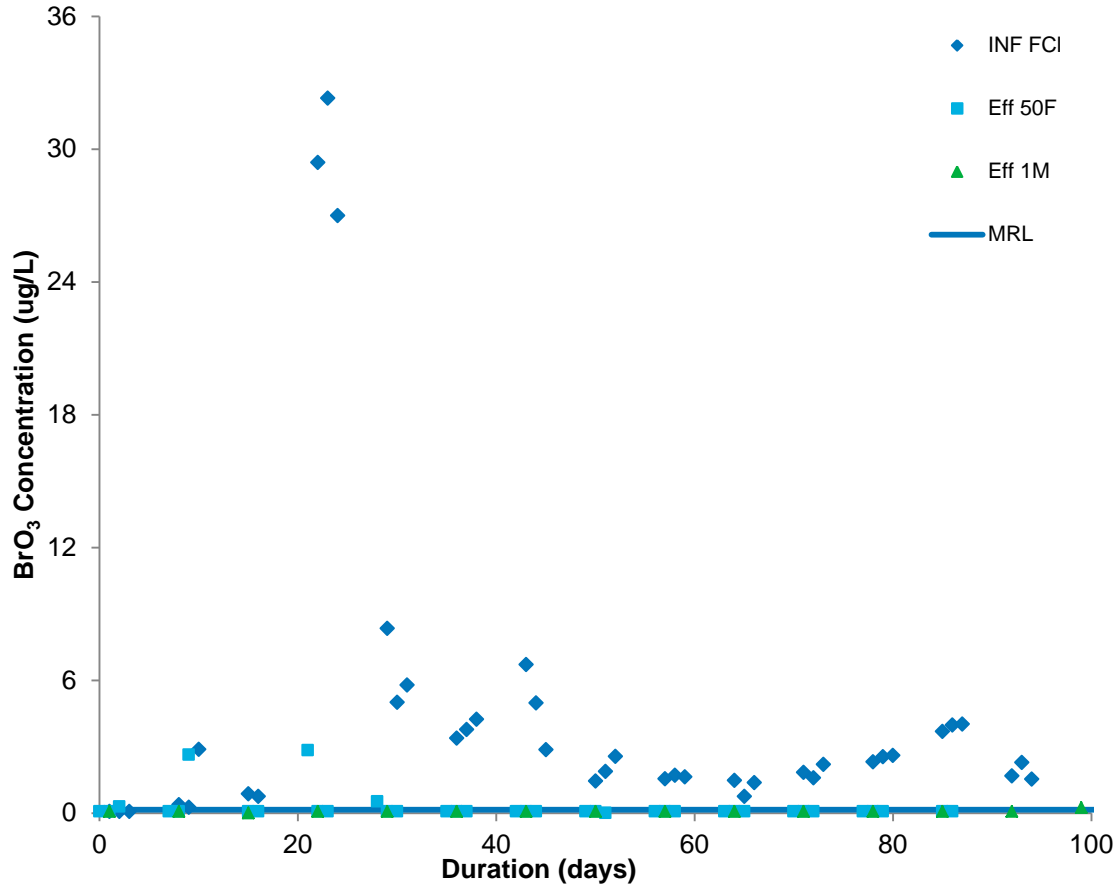
Soil Column Experimental Design - Detail



Soil Column Effluent – Nitrate and Nitrite



Soil Column Effluent – Bromate

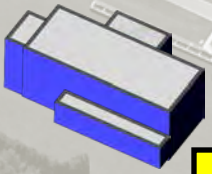
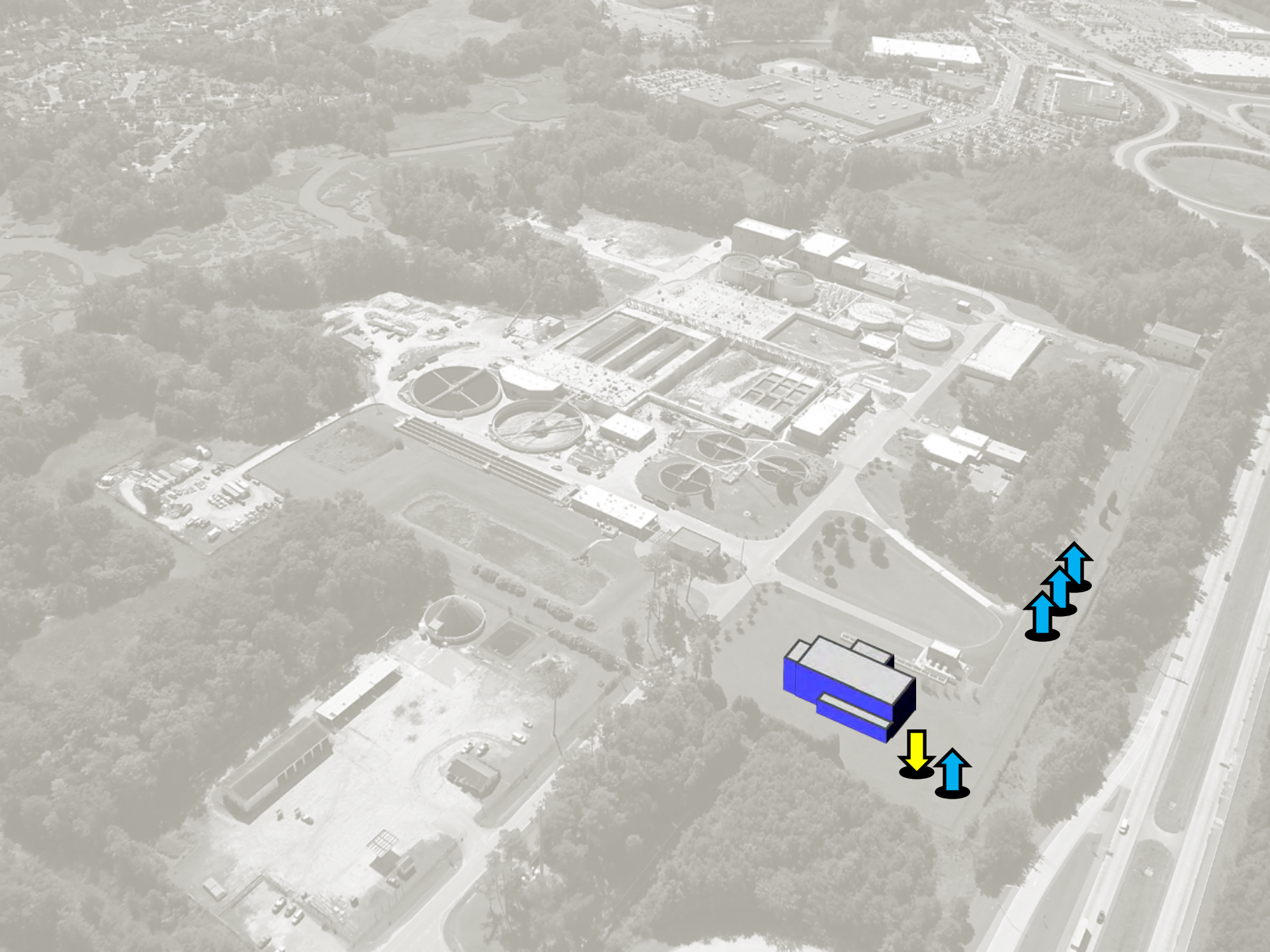




SWIFT Water Quality (May – Current)

Parameter	May	June	July	August	SWIFT Water Target
Total Nitrogen, mg/L	3.1 Avg; 4.0 Max	4.0 Avg; 5.2 Max	3.2 Avg; 3.5 Max	4.2 Avg; 5.7 Max	5 mg/L Monthly Average; 8 mg/L Daily Maximum
Total Organic Carbon (TOC), mg/L	0.53 Avg; 3.1 Max	0.37 Avg; 0.56 Max	0.50 Avg; 0.57 Max	1.3 Avg; 1.4 Max	4 mg/L Monthly Average; 6 mg/L Maximum
Nitrite, mg/L	0.34 Avg; 0.92 Max	0.82 Avg; 1.35 Max	0.05 Avg; 0.27 Max	0.04 Avg; 0.32 Max	1
Bromate, ug/L	0.150	1.97	2.17	3.14	10
Antimony, ug/L	<0.20	0.21	<1.00	ND	6
Arsenic, ug/L	0.98	0.41	0.40	ND	10
Barium, mg/L	0.01	0.01	0.01	<0.005	2
Fluoride, mg/L	0.88	0.70	1.0	0.91	4.0
TDS, mg/L	622	666	719	632	NA

PMCL detections only, ND: No data (not yet reported)





MAR Well
TW-1

MW-LPA

MW-MPA

MW-UPA

MW-SAT

500'

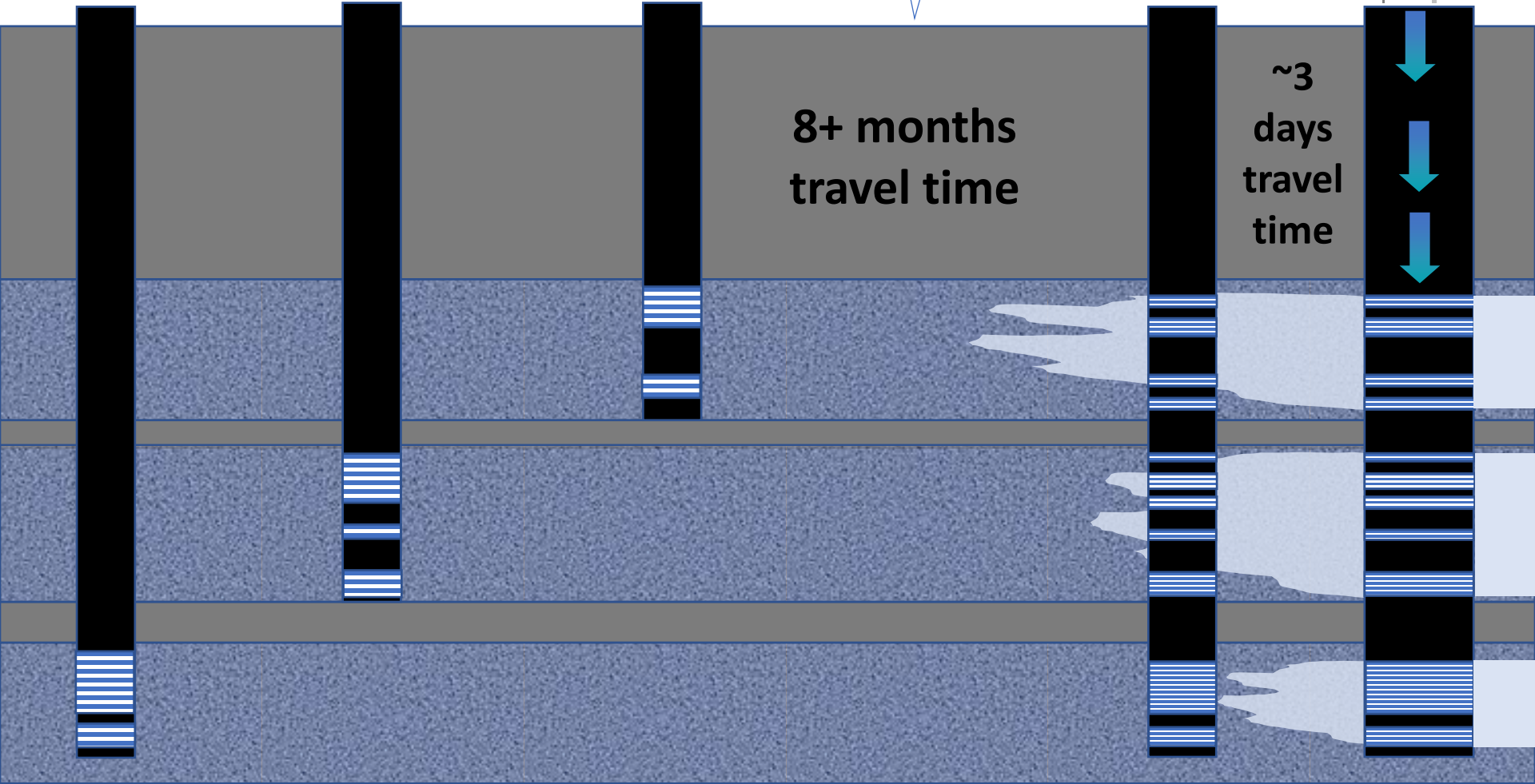
450'

400'

50'

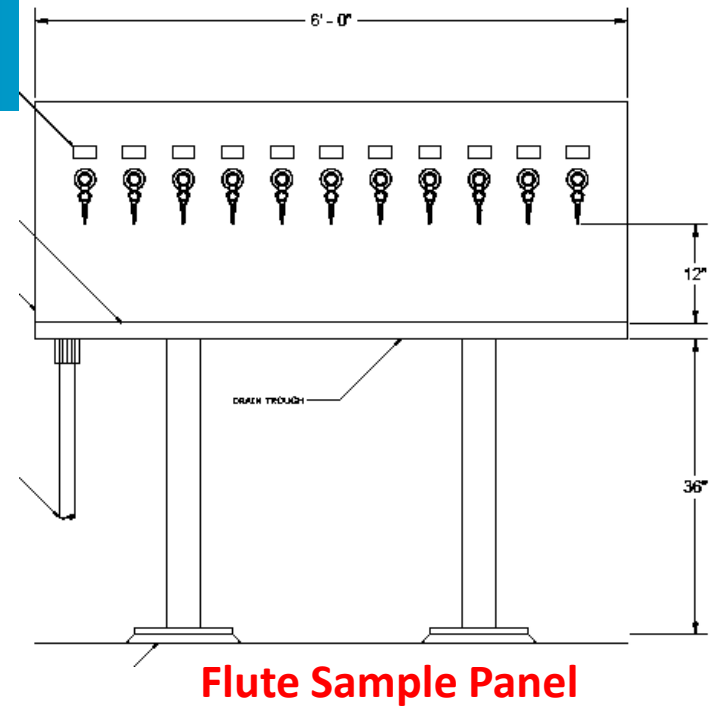
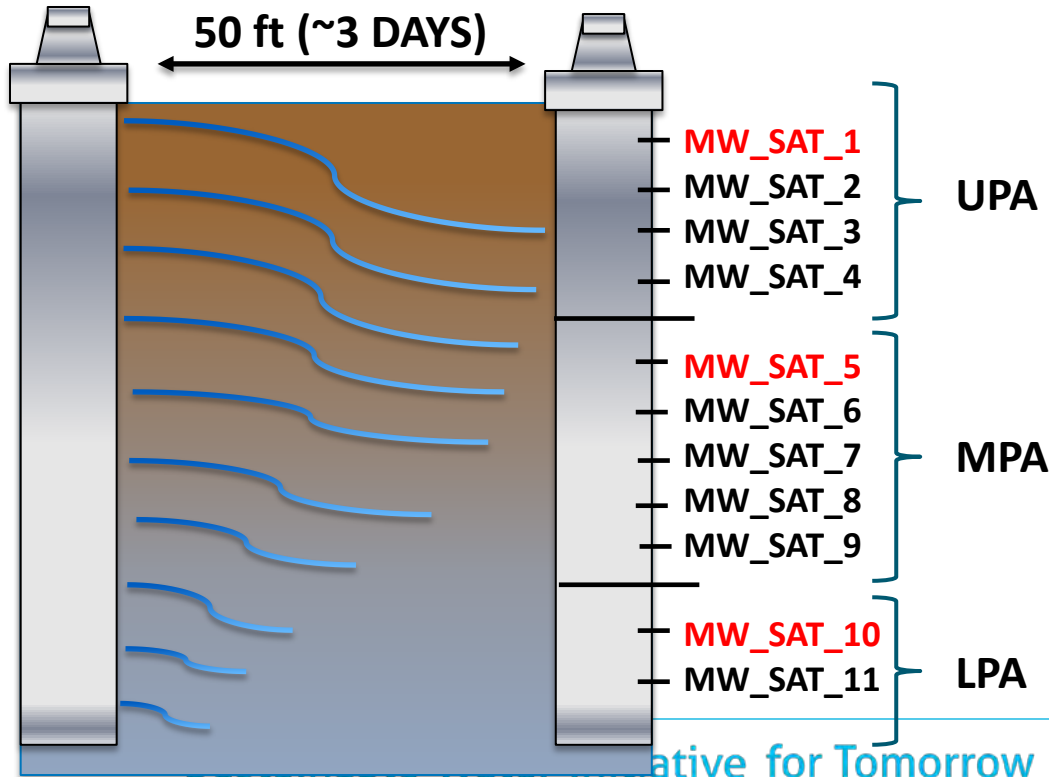
8+ months
travel time

~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

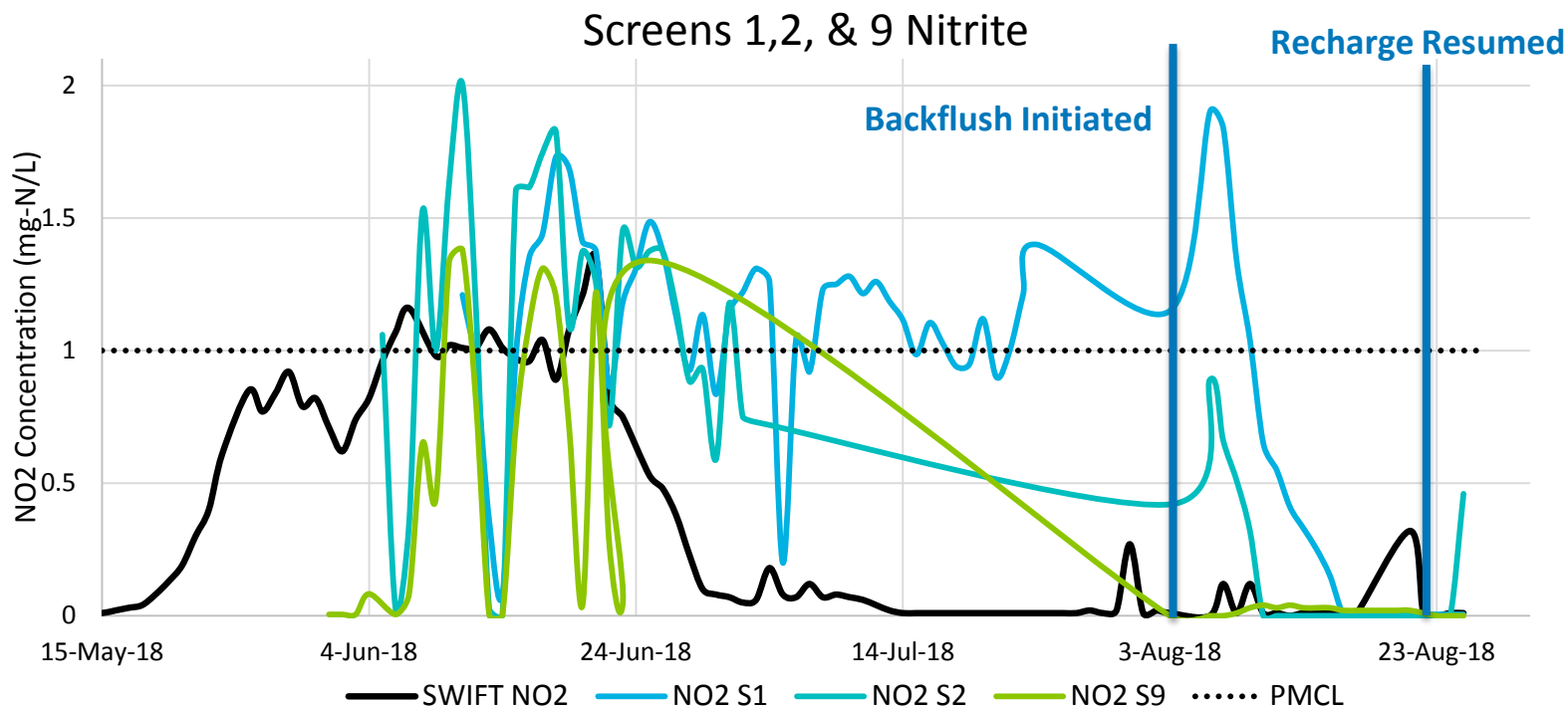
UPPER POTOMAC

MIDDLE POTOMAC

LOWER POTOMAC

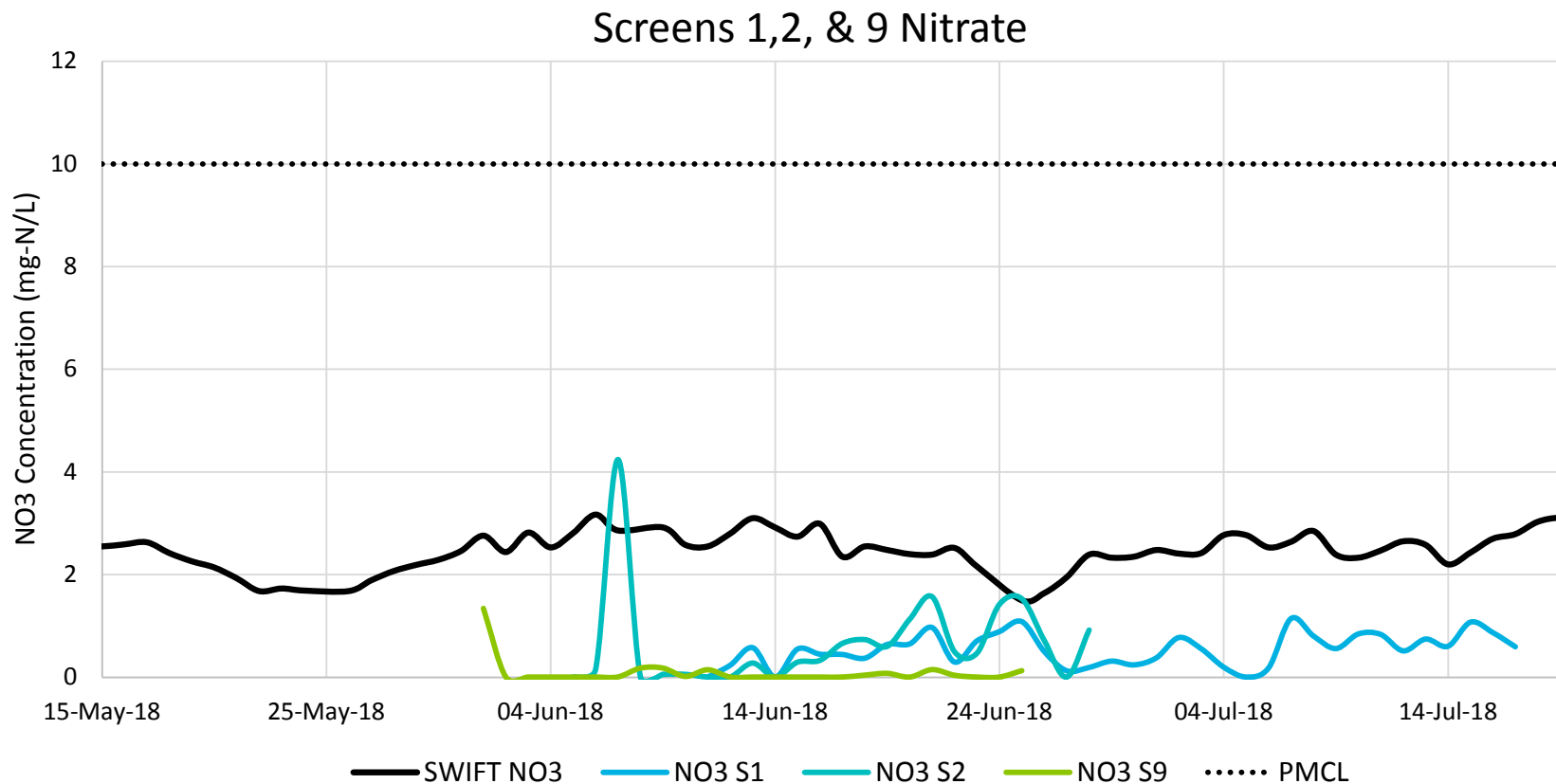


Nitrite in MW-SAT – Screens 1, 2 and 9



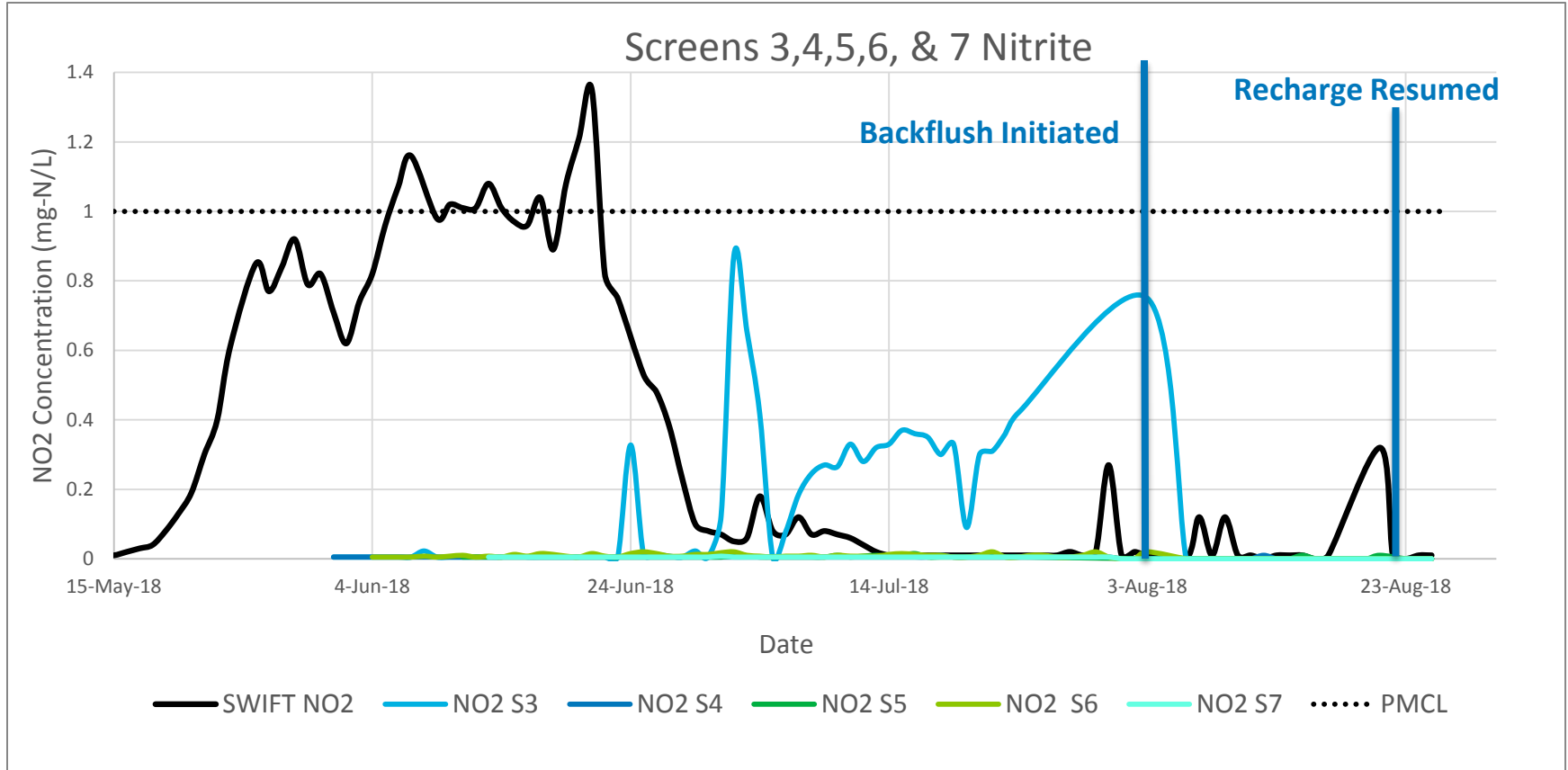
- Screen Interval 2 had highest concentration of 2.01 mg/L on June 11
- Concentrations in Interval 1 remained elevated after nitrite was removed from SWIFT Water
- Concentrations in Interval 2 beginning to rise above the detection limit less than a week after recharge resumed

Nitrate in MW-SAT – Screens 1, 2 and 9



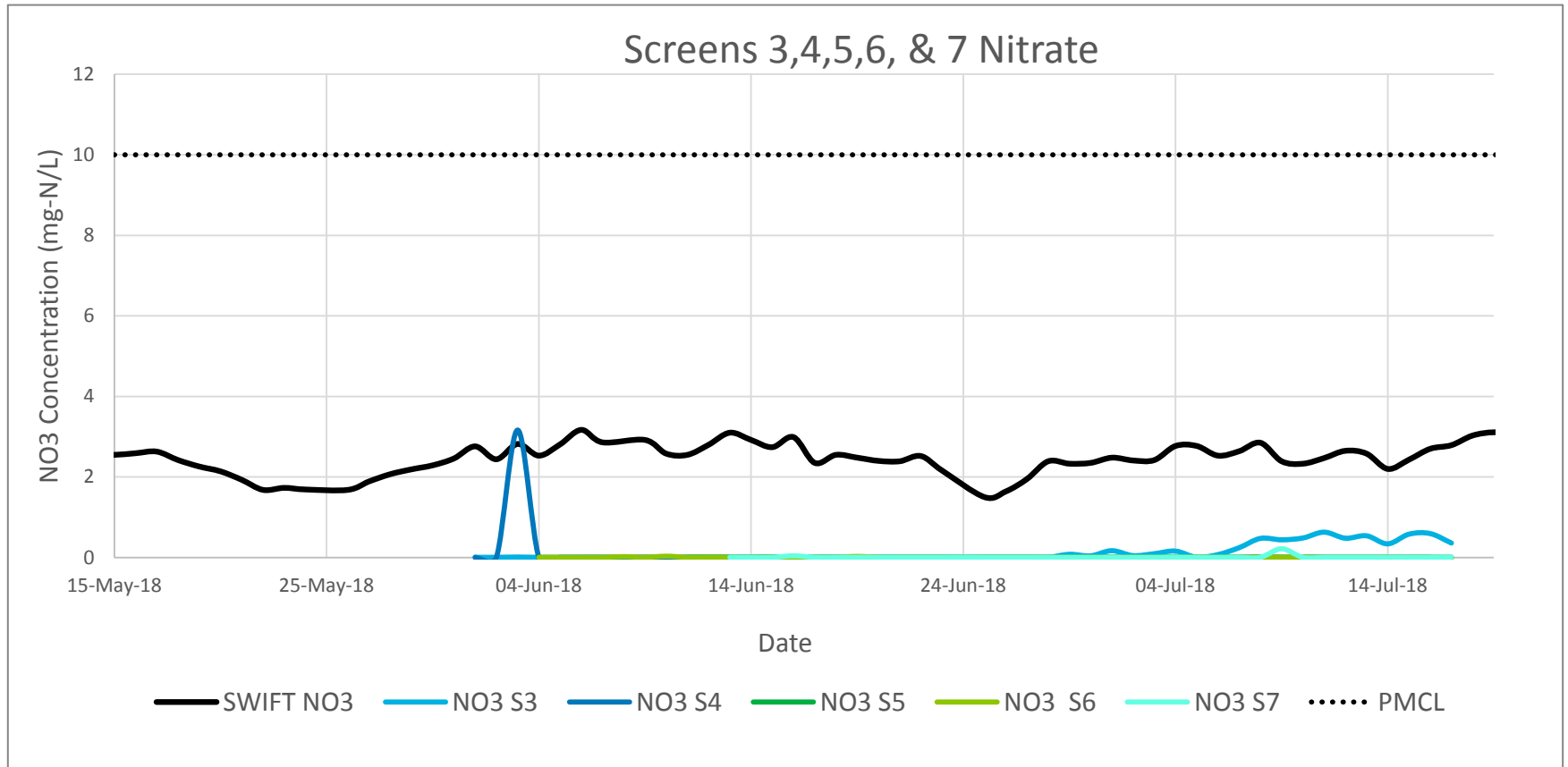
- Significant nitrate removal only 50 ft away (approximately 3 days travel time)

Nitrite in MW-SAT – Screens 3-7



- Nitrite Concentrations in Interval 3 increasing trend before backflush initiated

Nitrate in MW-SAT – Screens 3-7



- Significant nitrate removal only 50 ft away (approximately 3 days travel time)

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

SWIFTVA.COM



HRSD COMMISSION MEETING MINUTES
August 28, 2018

ATTACHMENT #8

AGENDA ITEM 19. – 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](#)



August 20, 2018

Re: General Manager's Report

Dear Commissioners:

July was highlighted by the presentation of the 2018 US Water Prize for SWIFT at the US Water Alliance's One Water Summit in Minneapolis. HRSD was well represented with Rick Elofson, Jamie Mitchell, Germano Salazar-Benites and Ramola Vaidya accepting the award on behalf of our entire organization. While we have a long way to go with SWIFT, the US Water Prize is a great confirmation that we are on the right path, building a strong foundation for the full scale implementation of our innovative and sustainable solution to multiple water challenges facing the Commonwealth.

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

- A. **Treatment Compliance and System Operations:** All treatment plants met permit requirements with the exception of the West Point Treatment Plant that had a permit exceedance for enterococcus. Details of West Point's challenges and the highlights of the month are included in the Operations Director's report.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
1. Two new employee orientation sessions
 2. A call with our attorney to discuss renewable energy credits
 3. Several meetings to discuss billing issues
 4. A meeting to discuss the community benefit provision of the SWIFT program management contract
 5. A meeting to discuss procurement service level targets
 6. A meeting to review preliminary design issues with the shoreline access road at Nansemond Treatment Plant
 7. A meeting to discuss internal SWIFT oversight

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

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

1. The quarterly meeting of Congressman Taylor's Chesapeake Bay Advisory Board
2. A teleconference to prepare for participation in a panel discussion at the US Water Alliance's One Water Summit
3. A call with Dave Mayfield to discuss HRSD support for the Catch the King 2018 event
4. The One Water Summit
5. The monthly meeting of the Hampton Roads Planning District Commission Director of Utilities Committee
6. A conference call with US EPA to discuss full-cost pricing
7. A meeting of the DEQ stakeholders group to address the potential prioritization of human consumptive uses of water in the Commonwealth
8. The National Association of Clean Water Agencies (NACWA) quarterly board meeting and summer membership meeting
9. Provided a tour of the SWIFT Research Center for a member of the Virginia Forever board
10. A meeting with the Director of Newport News Waterworks to discuss supplying raw water to private property to reduce groundwater usage

D. **Consent Decree Update:** At the end of Fiscal Year 2018 we ended the 10+ year contract with Brown and Caldwell for engineering services in support of the Consent Decree. We have met our obligations under the Decree to submit a plan to address wet weather capacity and now await EPA approval of the Integrated Plan we submitted in September 2017. Going forward our continuing obligations will include meeting our compliance elements of the Maintenance, Operation and Management (MOM) program, completing rehabilitation plan projects in accordance with the compliance schedule, and executing the Integrated Plan once approved. We also have annual and semi-annual reporting requirements. All of this work has been re-distributed into Engineering, Operations and Water Quality as appropriate and as such, the role of the Special Assistant for Compliance Assurance has been modified to assisting with responding to EPA for additional information pending plan approval. Going forward, the Monthly Management Reports will no longer include a report from the

Special Assistant for Compliance Assurance and Consent Decree updates will be provided in this section of my monthly report.

In July we received a demand from EPA for \$117,100 in stipulated penalties associated with 27 sanitary sewer overflows (SSOs) that occurred in 2016 and 2017. The Consent Decree includes the ability for EPA to assess penalties for a variety of issues should we fail to perform or meet schedules as agreed to in the Decree. There is also a provision to assess penalties for SSOs that was agreed upon in the original negotiations with the understanding EPA would use discretion and enforce only in egregious or negligent situations. We typically object to penalties for several SSOs included in each demand letter. In this case we have objected to 16 and have agreed to 11 for a total of \$30,350. We are currently awaiting EPA's response.

There was no further movement in the approval of the Integrated Plan in July.

The leadership and support you provide are the keys to our success as an organization. Thanks for your continued dedicated service to HRSD, the Hampton Roads region, the Commonwealth and the environment. **I look forward to seeing you on Tuesday, August 28 in Virginia Beach.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager
FROM: Director of Communications
SUBJECT: Monthly Report for July 2018
DATE: August 16, 2018

A. Publicity and Promotion

1. **US Water Alliance announces US Water Prize Winners | July 10, 2018 | Wateronline.com** <https://www.wateronline.com/doc/us-water-alliance-announces-us-water-prize-winners-0001>
2. **Tasting award-winning water treatment | July 12, 2018 | Suffolk News-Herald** <https://www.suffolknewsherald.com/2018/07/12/tasting-award-winning-water-treatment/>
3. **HRSD receives U.S. Water Prize | July 18, 2018 | Gloucester-Mathews Gazette-Journal** https://www.gazettejournal.net/index.php/business/business_article/hrsd_receives_u.s._water_prize
4. **Board to be updated on potential water conservation efforts, long-term water supply options | July 21, 2018 | The Virginia Gazette** <http://www.vagazette.com/news/va-vg-water-supply-conservation-0721-story.html>
5. **2018 US Water Prize recipients announced | July 23, 2018 | Water Finance and Management** <https://waterfm.com/2018-us-water-prize-recipients-announced/>
6. **Board updated on county water needs, potential conservation options | July 24, 2018 | Daily Press** <http://www.dailypress.com/va-vg-james-city-supervisors-water-0724-story.html>
7. **Hampton Roads Sanitation District Cleans Up Its Web Presence | July 25, 2018 | Business Wire** <https://www.businesswire.com/news/home/20180725005651/en/Hampton-Roads-Sanitation-District-Cleans-Web-Presence>
8. **2017 Virginia Midpoint Assessment | July 27, 2018 | Chesapeake Bay Foundation** <http://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/2017-virginia-midpoint.html>

B. Social Media and Online Engagement

1. Facebook Reach: 6,070
2. Twitter: 24,500 impressions
3. SWIFT website visits: 397
4. LinkedIn Impressions: 829
5. Construction Project Page Hits: Unavailable at this time (converting to new measurement/analytics tools with new website)
6. Next Door unique impressions: 61,529

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

1. News Releases/Traffic Advisories: 1
[HRSD Receives U.S. Water Prize for Sustainable Water Initiative for Tomorrow](#)
2. Advertisements: 0
3. Project Notices: 8
 - a. Hampton: Chesapeake Avenue; Sewer Manhole Rehabilitation
 - b. James City County: Williamsburg Trunk B
 - c. Newport News: Chesapeake Avenue; Center Avenue/Rivermont Pipeline Closeout; Warwick-Thorncliff to Lucas Creek (project page updates)
 - d. Norfolk – Pump Station Wetwell Rehabilitation
 - e. Town of West Point in King William – Lee Street
4. Project/Community Meetings: 0
5. New Project Web Pages/Blogs/Videos: 1
[City of Hampton – Sewer Manhole Rehabilitation Projects](#)

D. Special Projects and Highlights

1. The Director of Communications attended the U.S. Water Alliance's One Water Summit in Minneapolis, MN.
2. Director participated in the SWIFT Oversight group meeting and tour of the SWIFT RC

E. Internal Communications

1. Director participated in the following internal meetings:
 - a. Solids Master Planning workshop
 - b. Planning meetings for Bridge Street Pump Station Open House
 - c. SWIFT leadership coordination meeting
 - d. Meetings with customer care related to billing
 - e. Meeting to discuss communication role of SWIFT Project Management team
 - f. New employee orientation department introduction meetings
2. Director conducted bi-weekly communications department status meetings, monthly social media content development meetings and project update meetings with staff.

F. Metrics

1. Educational and Outreach Activities: 3
 - a. Tidewater Park Career Day, 7/11
 - b. Bridge Street Pump Station Open House, 7/28
 - c. SWIFT Research Center (SWIFT RC) Tour, Newport News Shipbuilding, 7/30
2. Number of Community Partners: 3
 - a. Newport News Shipbuilding
 - b. Portsmouth Public Schools
 - c. Norfolk Public Schools
3. Additional Activities Coordinated by Department: 2
 - a. SWIFT RC Tour, Envirobase Session 3, 7/11
 - b. SWIFT RC Tour, Commercial Coffee, 7/18

4. Monthly Metrics Summary

Item #	Strategic Planning Measure	Unit	July 2018
M-1.4a	Total Training Hours per Full Time Employee (3) - Current Month	Hours / #FTE	0.83
M-1.4b	Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date	Hours / #FTE	0.83
M-5.2	Educational and Outreach Events	Number	3
M-5.3	Number of Community Partners	Number	3

5. Annual Metrics Summary

Item #	Strategic Planning Measure	Unit	FY-2018
M-5.1	Name Recognition (Survey Results)	Percentage	53%*

*New survey methodology implemented; full survey results to be presented at September 2018 Commission meeting.

Respectfully,

Leila Rice, APR
Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for July 2018

DATE: August 12, 2018

A. General

1. Capital Improvement Program (CIP) spending for the 12th and final month of Fiscal Year (FY) 2018 exceeded the planned spending target.

CIP Spending (\$M):

	Current Period	FYTD
Actual	10.06	118.14
Plan	6.57	140.00

No Water Quality Improvement Fund (WQIF) Grant reimbursements were received in the month of July.

2. CIP expenditures for FY 2018 were \$118.14 million, which was 84 percent of planned spending for the year. WQIF grant reimbursements were \$3.27 million in FY 2018 and are estimated at \$1.0 million in FY 2019 as the nutrient reduction work at the Virginia Initiative Plant is completed. CIP expenditures are projected to be \$134 million in FY 2019. Expenditures are projected to average \$11.2 million per month to complete this volume of work. Efforts associated with the SWIFT Program will begin to increase and this will become a larger overall part of the CIP. By FY 2023, the SWIFT Program will expend over \$100 million and this level of spending will continue for a number of years beyond FY 2023. The work to install the thermal hydrolysis process at the Atlantic Treatment Plant will increase and is projected to be the largest single CIP project in FY 2019.

Numerous interceptor sewer rehabilitation and/or replacement projects and a number of pump station projects will also be a focus of work over the coming fiscal year. The interceptor sewer system projects are typically smaller in scope and cost than treatment plant projects but often have larger direct impacts to the public during the construction efforts.

B. Asset Management Division

1. Staff began meeting with Operations work centers to review the goals of the new Asset Management Program. The focus of these visits includes a review of why the data they are collecting is important, upcoming efforts

related to asset management and a dialogue of problems or concerns by staff. The theme of the discussions is that we are all Asset Managers and why their efforts matter to this program.

2. Staff began developing organizational and likelihood and consequence of failure criteria. This information will be reviewed with the HRSD QST in the coming month for discussion and feedback. Developing these criteria is critical to setting a risk tolerance framework for staff so that the organization can begin to understand how risk can be embraced and used to set goals and limit either undue risk or overly conservative work efforts that are risk adverse.

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

1. Design continues for the 46th Street Diversion Sewer Rehabilitation and Replacement project. This existing pipeline is located on the Newport News Shipbuilding property in Newport News. The consultant is developing various options for routing and rehabilitating this gravity sewer. Options under consideration include rehabilitating the existing pipeline and conveying this pipeline to Newport News Shipbuilding; diversion of flow from this sewer through the installation of a new gravity sewer, and construction of a new pump station to redirect flows. The depth, cost and constructability of various options make this project very challenging. Alternatives will be developed in the coming month and presented to internal staff, City of Newport News and Newport News Shipbuilding.
2. Construction efforts continue for the Virginia Initiative Treatment Plant Nutrient Reduction Improvements Contract B project. The current effort involves the completion of the new Preliminary Treatment Facility and other hydraulic improvements. This work will allow the plant to hydraulically handle an increase in flow from 80 MGD to 100 MGD. Work in this phase to be completed by late fall includes odor control, instrumentation and controls, safety items and final punch list issues.
3. The SWIFT Full Scale Implementation Program Manager selection is complete and the team of AECOM and Hazen & Sawyer has been awarded the contract. Initial efforts are underway to schedule kick-off meetings and begin to gather the data to set up the controls necessary to manage this large and complex program. Briefings were made to the Commission in July and the program team is being put in place, including the needed office space and other information technology systems to assist in communication and data transfer.

D. Planning & Analysis Division

1. Staff continues their work to coordinate a study to address the hydraulic capacity of flows in Middlesex County and the Urbanna Treatment Plant. Due to development and a potential expansion of the Beth-Page Campground, additional conveyance and treatment in this area will be required. A number of options are under consideration, including extension of the sewer system, decentralized treatment and/or expansion of the existing Urbanna Treatment Plant. Discussions continue with county representatives and developers in the area.
2. Staff continues their efforts to review and provide technical support for the Federal Facilities Inflow and Infiltration (I&I) Reduction Program. A total of 18 federal facilities will ultimately be permitted through this program. Technical reviews are conducted on the following submittals: monitoring plans, monitoring reports, GIS data model development, rehabilitation planning and Sanitary Sewer Evaluation Survey (SSES) work. This is a long-term effort which will continue for the next several years.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 5
 - a. Staff provided a tour of the SWIFT Research Center to Commissioner Taraski and a number of businesses from the City of Suffolk on July 11.
 - b. Staff made a presentation to students at the Tidewater Park Career Day sponsored by the City of Norfolk Public Schools LEAP Program on July 11.
 - c. Staff provided a tour of the SWIFT Research Center to Clark Nexsen and a number of municipal staff members interested in this program on July 17.
 - d. Staff assisted with an Open House Event for the newly constructed Bridge Street Pump Station on July 28.
 - e. Staff provided a tour of the SWIFT Research Center to Pennoni Associates Inc. on July 30.

2. Number of Community Partners: 3
 - a. Norfolk Public Schools (LEAP) Program
 - b. Clark Nexsen
 - c. Pennoni Associates, Inc.
3. Number of Research Partners: 0
4. Metrics Summary

Item #	Strategic Planning Measure	Unit	July 2018
M-1.4a	Total Training Hours per Full Time Employee (43) - Current Month	Hours / #FTE	3.08
M-1.4b	Total Training Hours per Full Time Employee (43) - Cumulative Fiscal Year-to-Date	Hours / #FTE	3.08
M-5.2	Educational and Outreach Events	Number	5
M-5.3	Number of Community Partners	Number	3
M-5.4	Number of Research Partners	Number	0

5. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2018
M-2.1	CIP Delivery – Budget	Percentage	160%
M-2.2	CIP Delivery – Schedule	Percentage	167%

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for July 2018
DATE: August 15, 2018

A. General

1. Customer Care staff is working diligently on reducing and monitoring the backlog of errors that prevent customers' accounts from being billed. Four staff members have been reallocated within Customer Care to specifically work on these errors. During July, staff successfully completed 49 percent of the excess errors. All customers with significantly delayed bills have been sent notification of the account billing delay and are being reassured that late fees will not be incurred nor will they be at risk of shut off while their account is under review. Staff expects the irregularities in these customers' billing to be resolved within the next two billing cycles. Customer Care and Information Technology are working closely together to develop automation, improve file processing and create system enhancements to improve error corrections and communication to affected customers.
2. Temporary personnel have been hired and are in a training phase to help minimize any potential decline in service level for the Customer Interaction Center in August due to the reallocation of staff needed to resolve the excess billing errors. We also anticipate an increase in calls with Newport News Waterworks changing their billing frequency from bi-monthly to monthly on July 1st. During August, Customer Care staff will be closely monitoring the service level and workforce management.
3. Staff worked diligently to ensure the \$124 million fund transfer from our PFM-managed funds to the Virginia Municipal League and Virginia Association of Counties (VML/VACo) Virginia Investment Pool went smoothly. As a result of the successful transfer, this monthly report references Primary and Secondary Sources of Liquidity. The Primary Source is our Operating Liquidity Strategy and represents funds needed for day-to-day operations. The Secondary Source is our Total Return Strategy which represents funds not needed in the short term, which can be invested in longer duration maturities to earn additional yield. In the current flat yield curve, rising interest rate environment, we are retaining more funds in the Operating Liquidity Strategy as a defensive measure to prevent capital value erosion.
4. Staff met with Standard & Poor's (S&P) on July 30 as part of our annual Self-Liquidity review for our \$50 million 2016B Variable Rate bonds. With the fund transfer noted above, staff explained our revised failed remarketing procedures and sources of funds. Although the final rating has not been provided, the initial assessment was that we met their criteria for a favorable rating.

B. Interim Financial Report

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

	Budget	Current YTD	Current YTD as % of Budget (8% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	\$ 289,967,000	\$ 26,387,589	9%	9%
Surcharge	1,425,000	135,360	9%	8%
Indirect Discharge	2,750,000	238,841	9%	10%
Fees	2,855,000	224,626	8%	6%
Municipal Assistance	875,000	91,660	10%	18%
Miscellaneous	595,000	16,625	3%	4%
Total Operating Revenue	298,467,000	27,094,701	9%	9%
Non Operating Revenues				
Facility Charge	6,075,000	819,415	13%	14%
Interest Income	2,500,000	320,452	13%	12%
Build America Bond Subsidy	2,400,000	-	0%	0%
Other	820,000	-	0%	4%
Total Non Operating Revenue	11,795,000	1,139,867	10%	10%
Total Revenues	310,262,000	28,234,568	9%	9%
Transfers from Reserves		-	0%	0%
Total Revenues and Transfers	\$ 310,262,000	\$ 28,234,568	9%	9%
Operating Expenses				
Personal Services	\$ 55,331,886	\$ 4,291,715	8%	8%
Fringe Benefits	24,296,168	1,932,643	8%	8%
Materials & Supplies	7,190,245	285,750	4%	6%
Transportation	1,444,741	55,418	4%	6%
Utilities	12,245,138	692,668	6%	6%
Chemical Purchases	10,703,626	636,026	6%	5%
Contractual Services	37,365,990	2,716,515	7%	9%
Major Repairs	7,832,425	135,523	2%	3%
Capital Assets	601,500	11,713	2%	0%
Miscellaneous Expense	2,725,220	185,113	7%	5%
Total Operating Expenses	159,736,939	10,943,084	7%	7%
Debt Service and Transfers				
Debt Service	62,811,000	8,600,594	14%	8%
Transfer to CIP	87,475,061	7,289,588	8%	8%
Transfer to General Reserve	-	-	0%	8%
Transfer to Risk management	239,000	19,917	8%	8%
Total Debt Service and Transfers	150,525,061	15,910,099	11%	8%
Total Expenses and Transfers	\$ 310,262,000	\$ 26,853,183	9%	8%

2. Notes to Interim Financial Report

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

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

Transfers represent certain budgetary policy designations as follows:

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

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

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2018	\$ 193,623,393	\$ 3,260,531	\$ 15,266,324	\$ 75,873,274
Add: Current Year Sources of Funds				
Cash Receipts	26,186,304			-
Capital Grants				-
VRA Draws				10,034
Bond Proceeds (includes interest)				119,809
Transfers In	-	19,917		7,289,588
Sources of Funds	26,186,304	19,917	-	7,419,431
Total Funds Available	\$ 219,809,697	\$ 3,280,448	\$ 15,266,324	\$ 83,292,705
Deduct: Current Year Uses of Funds				
Cash Disbursements	23,849,767			10,900,521
Transfers Out	7,309,505			-
Uses of Funds	31,159,272	-	-	10,900,521
End of Period - July 31, 2018	\$ 188,650,425	\$ 3,280,448	\$ 15,266,324	\$ 72,392,183

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

Classification/ Treatment Service Area	Budget	Expenditures prior to June 30, 2018	Year to Date FY 2019 Expenditures	Total Expenditures	Outstanding Encumbrances	Available Balance
Administration	\$ 62,245,711	\$ 40,314,399	\$ -	\$ 40,314,399	\$ 367,117	\$ 21,564,195
Army Base	158,584,000	124,056,440	-	124,056,440	2,601,421	31,926,139
Atlantic	124,917,320	55,882,362	-	55,882,362	47,824,374	21,210,584
Boat Harbor	106,149,694	55,186,498	-	55,186,498	3,634,251	47,328,945
Ches-Eliz	148,955,317	10,416,092	-	10,416,092	5,464,453	133,074,772
James River	89,151,802	55,333,203	-	55,333,203	3,534,846	30,283,753
Middle Peninsula	48,944,866	7,935,387	-	7,935,387	4,650,564	36,358,915
Nansemond	82,441,359	39,238,100	29,915	39,268,015	2,717,238	40,456,106
Surry	3,236,000	101,724	-	101,724	256,120	2,878,156
VIP	291,380,456	249,676,125	494,093	250,170,218	6,635,624	34,574,614
Williamsburg	16,321,843	10,079,626	-	10,079,626	804,866	5,437,351
York River	45,537,761	40,864,038	-	40,864,038	1,087,178	3,586,545
General	471,591,343	215,984,177	154,482	216,138,659	17,745,910	237,706,774
	<u>\$1,649,457,472</u>	<u>\$ 905,068,171</u>	<u>\$ 678,490</u>	<u>\$ 905,746,661</u>	<u>\$ 97,323,962</u>	<u>\$ 646,386,849</u>

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal Jun 2018	Principal Payments	Principal Draws	Principal Jul 2018	Interest Payments
Fixed Rate					
Senior	\$ 332,141	\$ (5,500)	\$ -	\$ 326,641	\$ (2,996)
Subordinate	435,468	(42)	10	435,436	(9)
Variable Rate					
Subordinate	50,000	-	-	50,000	(54)
Line of Credit	-	-	-	-	-
Total	<u>\$ 817,609</u>	<u>\$ (5,542)</u>	<u>\$ 10</u>	<u>\$ 812,077</u>	<u>\$ (3,059)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 08/03/18

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	1.81%	1.81%	0.00%
Average	0.35%	0.34%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 08/03/18	1.29%	1.31%	0.02%

* Since October 20, 2011 HRSD has averaged 34 basis points on Variable Rate Debt

6. Financial Performance Metrics for the Period Ended July 31, 2018

	Current YTD	Policy Minimum
Days Cash on Hand	438 days	270-365 days
Days Cash on Hand (Excl Reserve \$15m and Risk Mgmt \$3.3m)	396 days	270-365 days
Risk Management Reserve as % of Projected Claims Costs	25%	25%

Primary Source	Beginning Market	YTD	YTD	YTD	Ending		Allocation of funds	Credit Quality	Current Mo Avg Yield
	Value July 1, 2018	Contributions	Withdrawals	Income Earned	Market Value	July 31, 2018			
BAML Corporate Disbursement Account	10,669,597	70,576,341	66,992,882	6,003	14,259,059		17.7%	N/A	0.50%
VIP Stable NAV Liquidity Pool	-	30,000,000	-	35,124	30,035,124		37.4%	AAAm	2.13%
Va Local Government Investment Pool	68,984,048	5,000,000	38,000,000	89,008	36,073,056		44.9%	AAAm	2.11%
Total Primary Source	\$ 79,653,645	\$ 105,576,341	\$ 104,992,882	\$ 130,135	\$ 80,367,239		100.0%		

Secondary Source	Beginning Market	YTD	YTD	YTD	Income	Ending	Ending Cost	YTD Mkt Adj	Credit Quality
	Value July 1, 2018	Contributions	Withdrawals	Earned	Market Value	July 31, 2018			
VIP 1-3 Year High Quality Bond Fund	-	124,727,957	-	117,417	124,745,537	124,845,374	(99,837)	AA+f/\$1	
Total Secondary Source	\$ -	\$ 124,727,957	\$ -	\$ 117,417	\$ 124,745,537	\$ 124,845,374	\$ (99,837)		

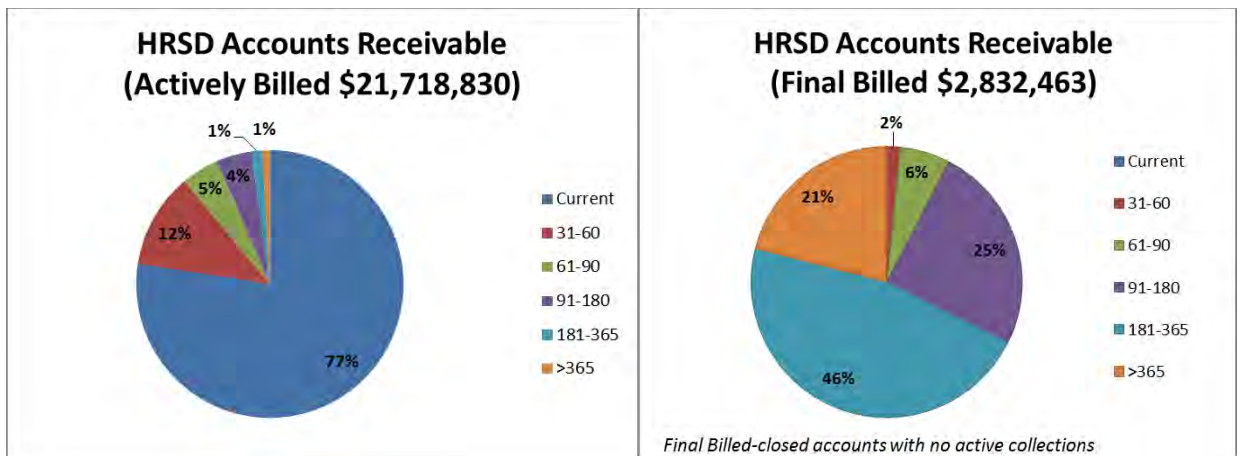
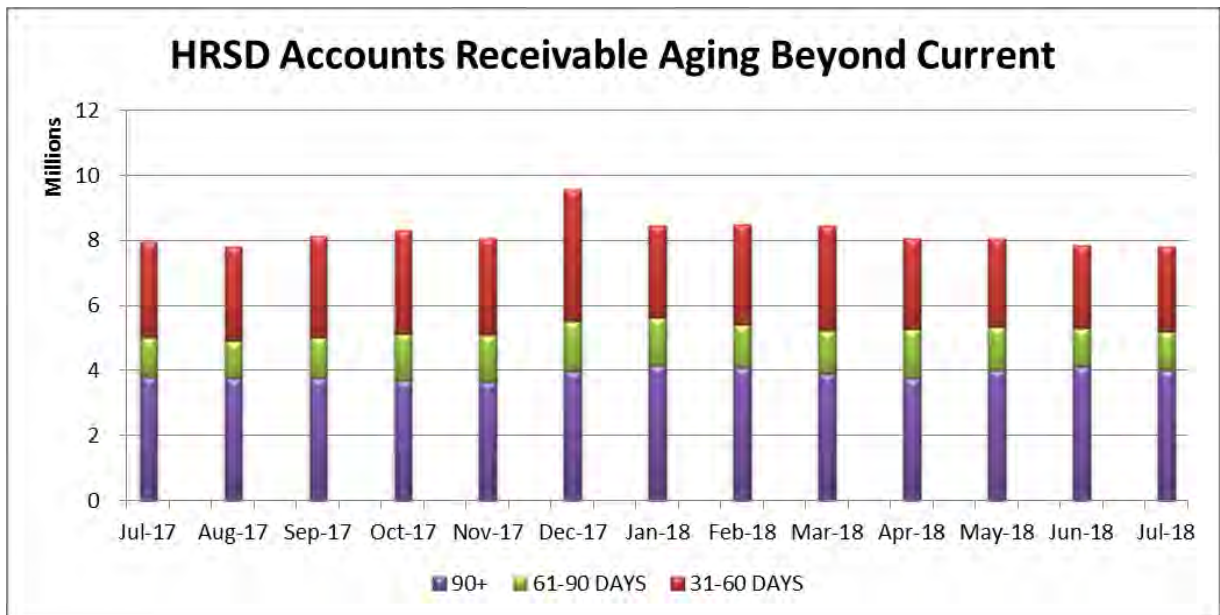
Total Primary Source	\$ 80,367,239	39.2%
Total Secondary Source	\$ 124,745,537	60.8%
TOTAL SOURCES	\$ 205,112,776	100.0%

7. Summary of Billed Consumption

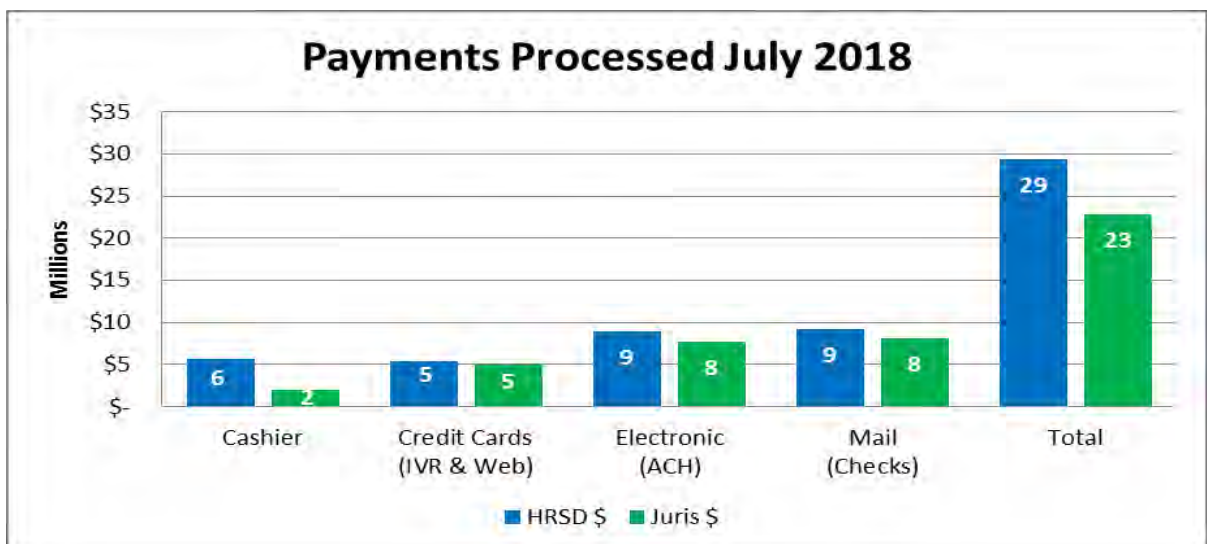
Summary of Billed Consumption (,000s ccf)							
Month	FY2019 Cumulative Budget Estimate	FY2019 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2018 Actual	From FY2018	Cumulative 3 Year Average	From 3 Year Average
July	4,737	5,175	9.3%	4,869	6.3%	4,821	7.3%
Aug	9,595	-	N/A	9,939	N/A	9,666	N/A
Sept	14,442	-	N/A	14,632	N/A	14,383	N/A
Oct	18,768	-	N/A	19,006	N/A	18,999	N/A
Nov	22,834	-	N/A	23,305	N/A	23,358	N/A
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

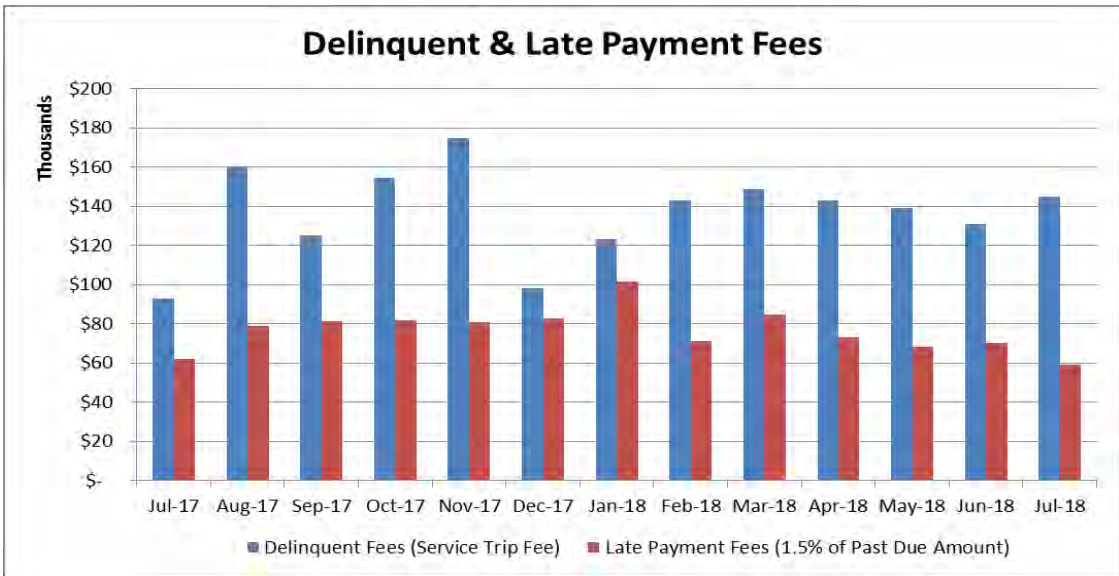
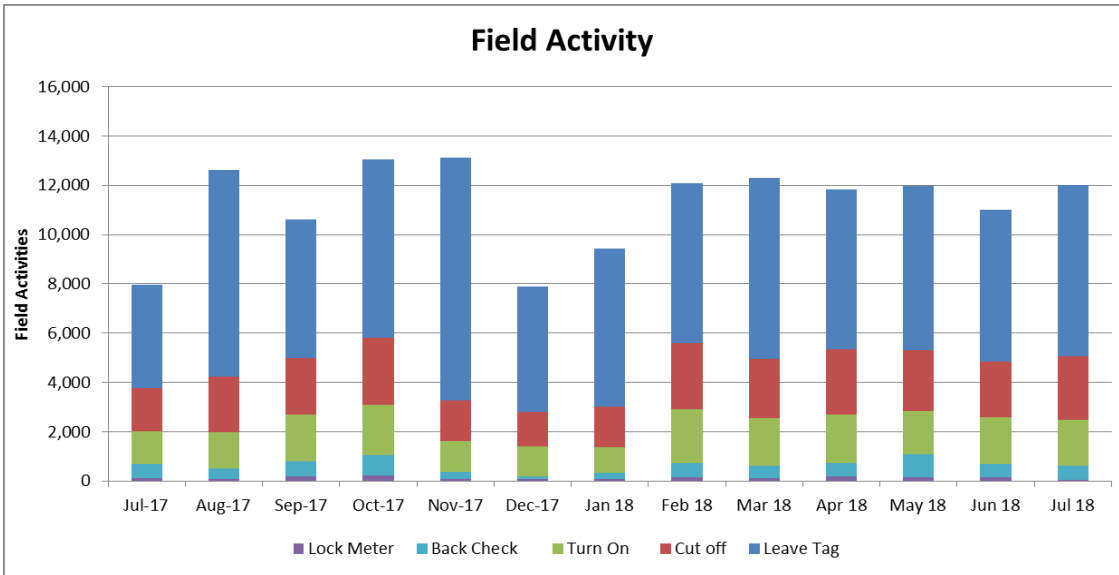
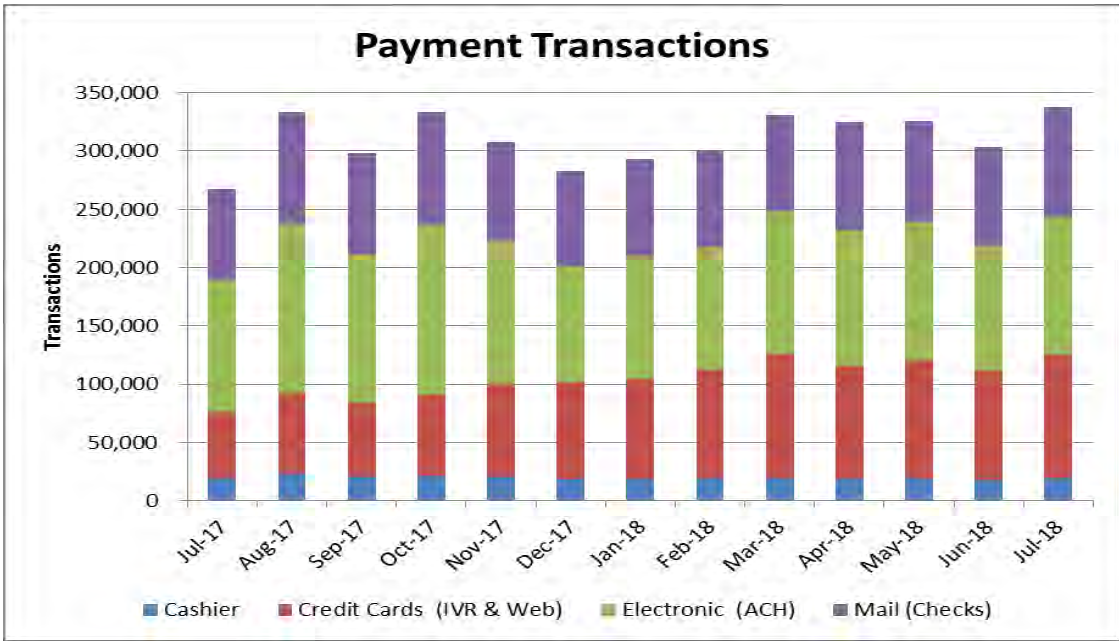
C. Customer Care Center

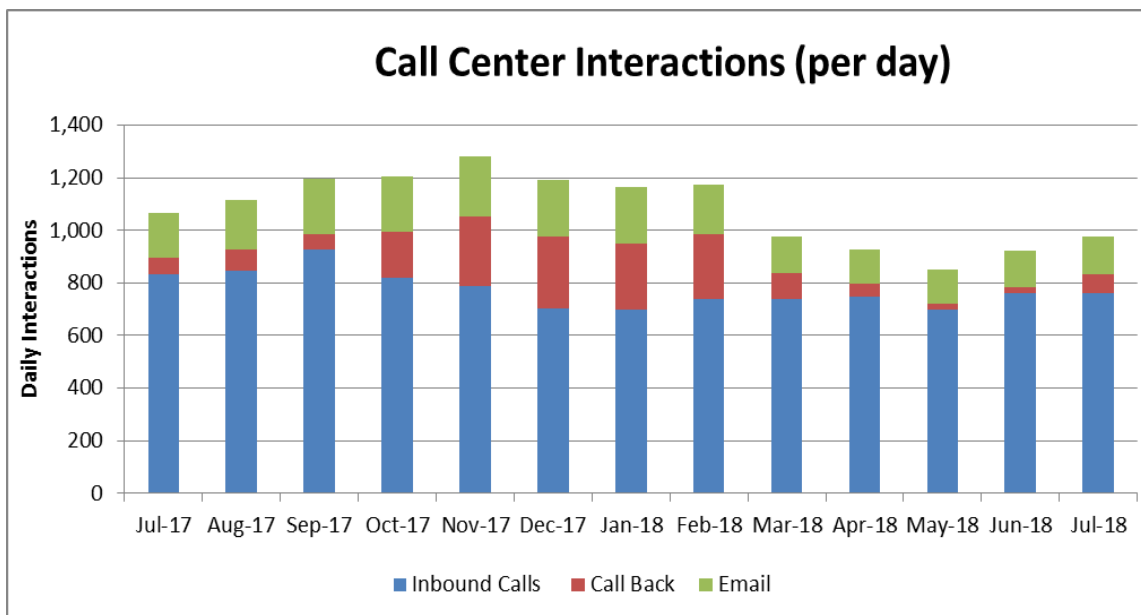
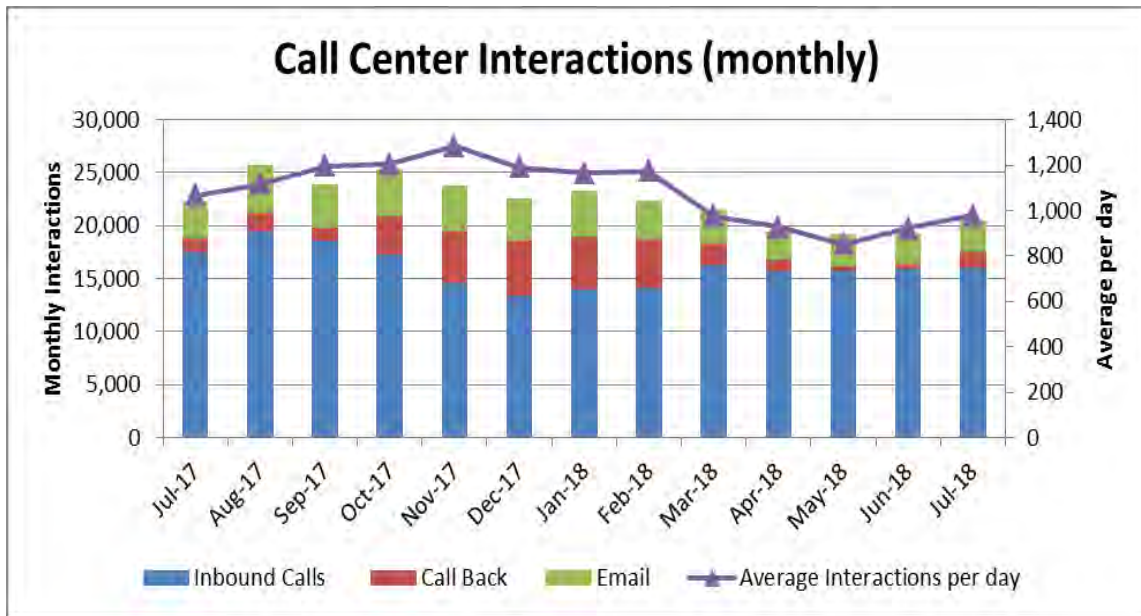
1. Accounts Receivable Overview



2. Customer Care Center Statistics



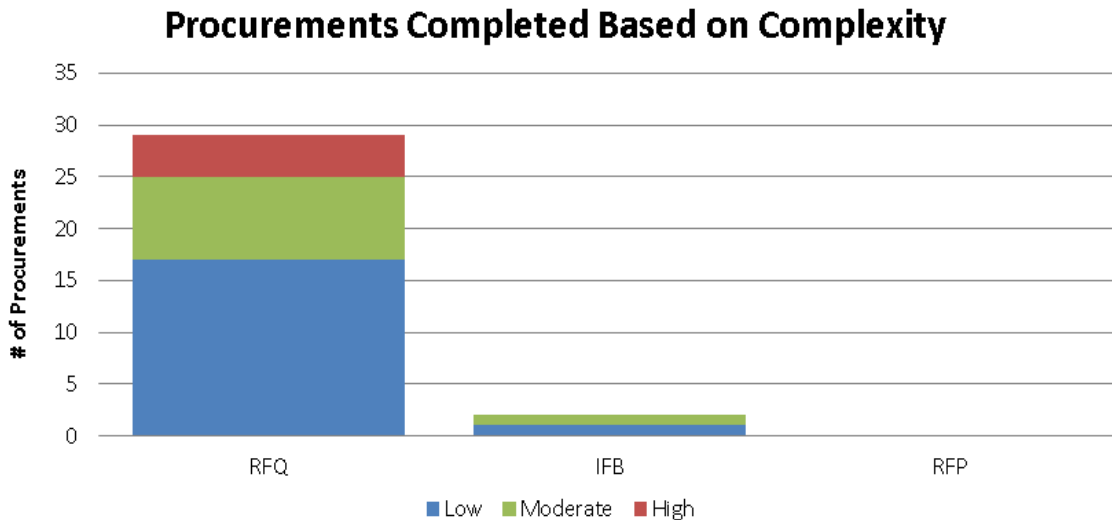
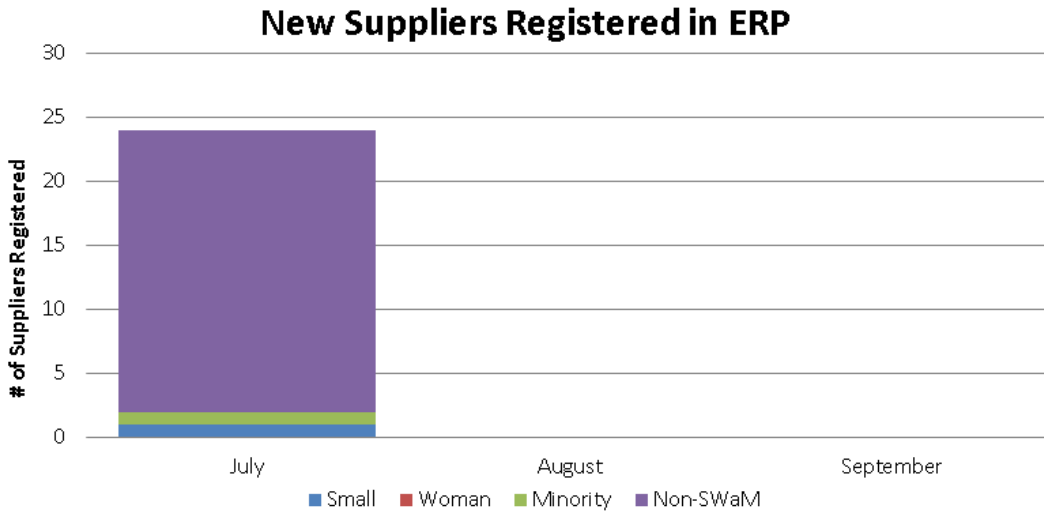




Customer Interaction Statistics	Feb	Mar	Apr	May	Jun	Jul
Calls Answered within 3 minutes	48%	68%	78%	88%	87%	76%
Average Wait Time (minutes)	5:31	2:51	1:53	1:06	1:09	1:52
Calls Abandoned	16%	10%	8%	5%	6%	9%

D. Procurement Statistics

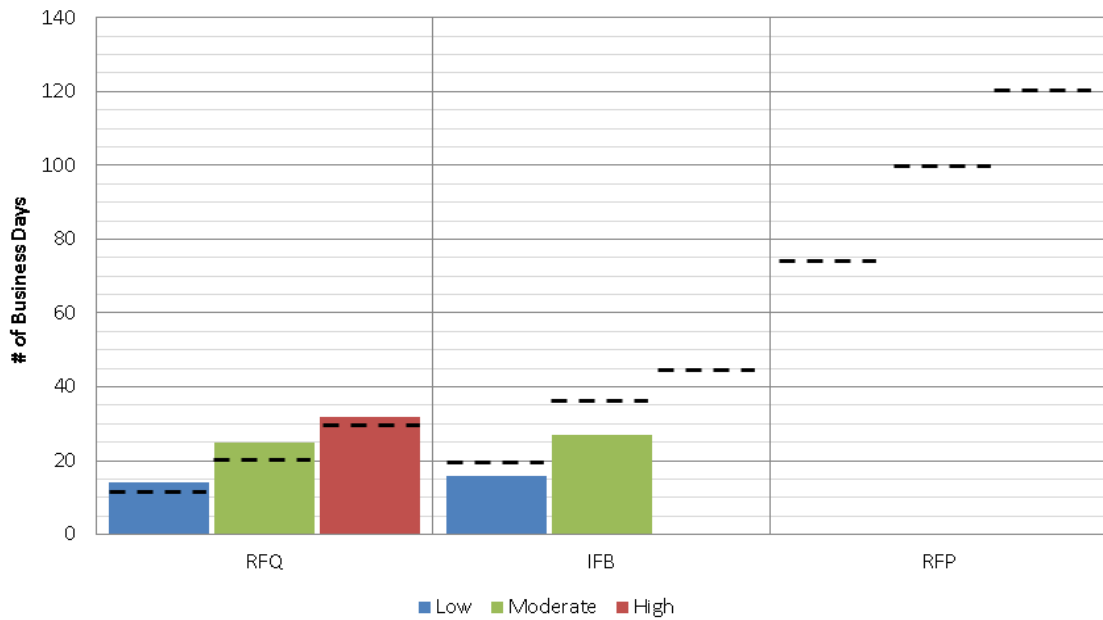
Savings	Current Period	FYTD
Competitive Savings ¹	\$41,503	\$41,503
Negotiated Savings ²	\$26,869	\$26,869
Salvage Revenues	\$1,644	\$1,644
Corporate VISA Card - Estimated Rebate	\$19,519	\$19,519



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

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

Cycle Time per Method of Procurement and Complexity

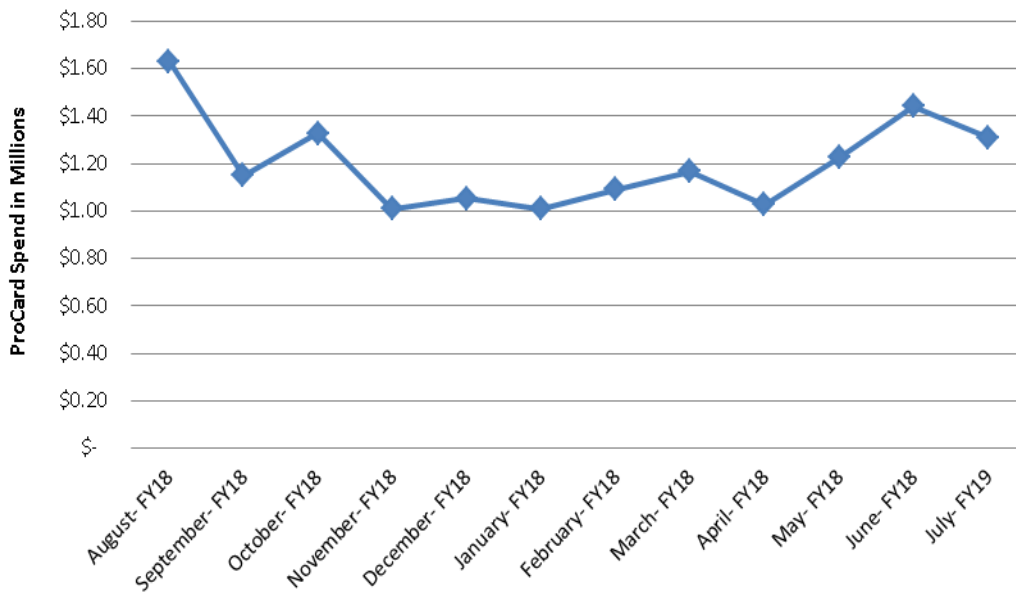


Dashed Line: Target Service Level Cycle Time

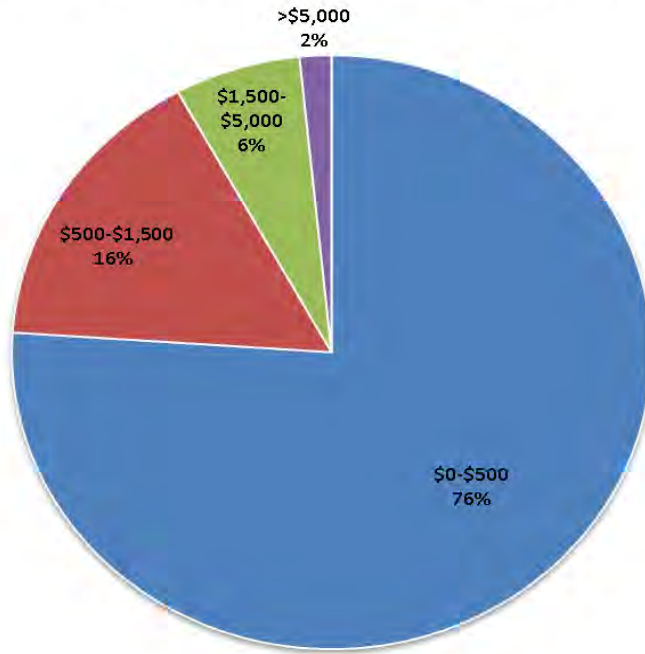
	Low	Moderate	High
RFQ	12	20	30
IFB	20	35	45
RFP	75	100	120

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

ProCard Spend



ProCard Transaction Dollar Amount



ProCard Fraud	External Fraud Transactions *	Comments
July	3	1 Caught by Cardholder; 2 Caught by Bank Immediately
Total	3	

***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 2 transactions (0.08%) out of the 2,431 July's ProCard transactions, with a combined total of \$107.99.

Procurement Client Training		
	Current Period	YTD
ProCard Policy and Process	2	2
Procurement Cycle	4	4
Total	6	6

E. Business Intelligence – Enterprise Resource Planning (ERP)

- ERP Helpdesk currently has 272 open work orders in the following statuses:

Escalated	3
In progress	61
On Hold	20
Open	185
Waiting on User	3

2. ERP Helpdesk received 256 work orders in July. In July, 213 work orders were closed and 59 were closed within one hour.
3. ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 0
2. Community Partners: 0
3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2018
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	1.02
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	1.02
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	113%
	General Reserves	Percentage of Operating Budget less Depreciation	118%
	Liquidity	Days Cash on Hand	438 Days
	Accounts Receivable (HRSD)	Dollars	\$24,551,293
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	16%

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2018
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	*
M-4.3	Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow	*
M-4.4	Affordability	6.5 CCF Monthly Charge/Median Household Income ³	*
M-4.5	Operating Cost/MGD	Total Operating Expense /365/5-Year Average Daily Flow	*
	Billed Flow	Percentage of Total Treated	*
	Senior Debt Coverage	Cash Reserves/ Senior Annual Debt Service	*
	Total Debt Coverage		*

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

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

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

TO: General Manager

FROM: Director of Information Technology (IT)

SUBJECT: Information Technology Department Report for July 2018

DATE: August 15, 2018

A. General

1. The industrial automation programmers continue to make programming and configuration changes to the SWIFT distributed control system in response to support requests from Dr. Bott and his staff.
2. In preparation for the new Supervisory Control And Data Acquisition (SCADA) platform, cellular modems and antennas are being installed and tested at each pump station.
3. Staff continued their final inspections of the SCADA networking hardware located within the data centers at Small Communities, North Shore Operations, and Air Rail Avenue. Items requiring remediation or modification are being corrected by the contractors (REW and Emerson). When all items are complete, cyber security testing will be conducted, and the system will go live as pump stations are cutover to the new platform.
4. Staff worked with Customer Care to further automate bill file processing and programmatically fix errors and minimize back billing issues.
5. As part of HRSD IT's ongoing security initiatives, wireless access management software was upgraded at all HRSD locations.
6. Programming staff is working on further integrations of computerized maintenance management system with e-Business Suite as well as plant operational data contained within the Emerson Enterprise Data Server.

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	July 2018
M-1.4a	Training During Work Hours Per Full Time Employee (51) – Current Month	Total Training Hours / # FTE	0.31
M-1.4b	Total Training During Work Hours Per Full Time Employee (51) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	0.31
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully,
Don Corrado

TO: General Manager
FROM: Director of Operations
SUBJECT: Operations Report for July 2018
DATE: August 6, 2018

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. Due to excessive rainfall, both ponds at the Lawnes Point Treatment Plant were nearing capacity at the end of July. As such, we began treating and discharging the pond water on July 27. This process will continue for the next several months until the ponds are emptied. We continue to pump and haul the raw influent from the neighboring community.
- b. There was one sanitary sewer overflow (SSO) this month. The spill was the result of heavy rainfall in the Williamsburg area. The overflow resulted in approximately 13,110 total gallons spilled.
- c. There was one interceptor complaint and 10 system alarms during the month. The alarms and complaint were fully resolved.
- d. Staff spent a significant amount of time at the Lee Hall Pressure Reducing Station (PRS) preparing for and implementing the disconnection of the station from the force main. the demolition work will begin once disconnection is completed in August.
- e. Staff continued GPS locating all appurtenances and infrastructure recently acquired from the Town of Surry and Surry County.
- f. Staff performed one caustic injection in the Gloucester system and two pump and haul operations of the Town of Surry Treatment Plant.

2. South Shore (SS) Interceptor Systems

- a. Staff supported the Army Base Treatment Plant (ABTP) by cleaning out the plant's rock trap. A rock trap is a settling area in front of the plant's influent screens that settle large rocks or other debris that would otherwise damage our equipment. Staff performed the work at night when flows are at their lowest. .

- b. On July 23 and 24, the Chesapeake-Elizabeth Treatment Plant (CETP) experienced mechanical and electrical problems with their solids handling equipment. Staff performed an emergency diversion to take six million gallons per day (MGD) from the CETP to the Atlantic Treatment Plant (ATP).
- c. Staff continues to devote significant time reviewing the designs supporting the CETP closure.

B. Major Treatment Plant Operations

1. ABTP

- a. The nitrogen removal system continues to perform exceptionally well. The final effluent total nitrogen average for July was 2.46 mg/L.
- b. Staff installed electric actuators on the remaining six 24-inch nitrified recycle (NRCY) valves. The installation of these actuators will allow all the discharge valves to be opened or closed in less than 10 minutes. Without the actuators, it took over 30 minutes to open or close each valve.
- c. A failed high/high level sensor on the methanol tank was replaced with a new sensor.
- d. After investigating the cause of the secondary clarifier #2 drive failure, staff discovered water had entered the power conduit resulting in a wire failure. Staff corrected the problem.
- e. On July 4 staff reported a leak in the #3 Sodium Hypochlorite tank. The contents of this tank were transferred to two other tanks. The leak was contained within the containment area. Repairs were made and the tank was returned to service.
- f. Staff converted the old bar screen room into a new maintenance shop for our incinerator maintenance staff. The old shop was located on the third floor of the incinerator building and wasn't very functional. The new shop has much more space.
- g. Staff rebuilt the under-drains in both of the screening compactors.
- h. Staff installed a variable frequency drive (VFD) for our #2 nitrified waste activated solids pump (NWAS). Before the VFD installation,

staff had to run the pump against a mostly closed valve to obtain the desired waste rate. The VFD will increase pump efficiency and minimize maintenance issues.

2. ATP

- a. Construction of the Thermal Hydrolysis Process (THP) project continues. Contractors removed the two gas phase digester boilers and stack to make room for the new steam boiler for the THP process. Work continues on enlarging the digester gas piping needed to handle the additional gas production with THP. Staff worked with contractors to shut down the hot water supply system for two days so work could be completed.
- b. Construction of the new administration building is in the final stages. Current target date for completion of the building is now late August or early September due to an issue with getting power to the building.
- c. Staff added carbon media to Odor station C to help with the hydrogen sulfide (H₂S) levels exceeding the scrubbers' removal capacity.
- d. Staff worked with the Technical Services Division to help identify the source of and eliminate off-site odors.

3. Boat Harbor Treatment Plant (BHTP)

- a. On July 5 there was an air permit deviation caused by excess visible emissions observed during ash unloading from the ash silo. Staff made improvements to the ash conditioning system by adding more spray nozzles to improve wetting that abates the fugitive dust. The Department of Environmental Quality (DEQ) was notified of the deviation and the corrective action taken.
- b. Staff continues to optimize nitrification efforts in order to support the lower James River bubble permit. Treatment was good during the month of July with a Total Nitrogen (TN) of 13.76 mg/L and Total Phosphors (TP) of 0.67 mg/L due to warmer temperatures.

4. CETP

- a. On July 27, a non-potable water (NPW) spill occurred at the contact tank when the influent gate failed. Approximately 6,500 gallons reached the stormwater drain that goes to the plant's stormwater

pond. Staff repaired the gate and placed the tank back in service and stopped the flow.

- b. Staff repaired both the liquid and dry polymer feed systems on the treatment side of the plant.

5. James River Treatment Plant (JRTP)

- a. Staff reported an odor deviation when a malfunction of the odor control system occurred. Staff switched to pH control until the problem was resolved.
- b. Staff completed repair work on the #1 and #2 thickened waste activated solids pumps and the #3 waste activated solids pump.
- c. Staff cleaned out the pipeline between the gravity thickeners and the digester. Over time grease builds up in the pipeline, causing it to clog.
- d. Staff replaced two malfunctioning NPW valves along with the hydrant they serve.
- e. Testing began on the new waste solids cyclones and the magnesium hydroxide feed system for centrifuge feed solids.
- f. Work continued to replace the outdated, explosion-proof, power distribution center in the digester basement.

6. Nansemond Treatment Plant (NTP)

- a. Staff completed the first set of improvements on the Regional Residuals Facility by rebuilding the bar screen, adding spray water and a conveyor. Staff also rebuilt 14 gearboxes.
- b. Plant staff continued making improvements to the primary scum removal system.
- c. A pilot test is underway at the Struvite Recovery Facility to evaluate improvement process loading rates in support of the Waste Activated Sludge Stripping to Remove Internal Phosphorus (**WASSTRIP**) capital improvement project (CIP).

- d. NTP operators took over the day shift operation of the SWIFT Research Center (SWIFTRC). Operators are now operating the SWIFTRC 24 hours per day.

7. Virginia Initiative Plant (VIP)

- a. Staff cleaned a first stage scrubber on the main odor control system on July 12. The muriatic acid solution introduced to the scrubber caused a rapid pH change within the tower media, resulting in a short-term release of sulfur compounds into the scrubber air duct system. This resulted in a reportable exhaust Hydrogen Sulfide (H₂S) discharge of 2.3 ppm.
- b. Staff rebuilt one primary solids feed pump and replaced the pump packing with a mechanical seal. Staff installed a second ferric pump and placed the ferric mixer in service. Staff cleaned and inspected one primary clarifier and one secondary clarifier.
- c. The nutrient reduction portion of the VIP construction project is moving toward substantial completion. Installation of the last three anoxic recycle pumps and the step gate from the AA effluent channel to the versatile bioreactor will complete the nutrient reduction project.
- d. Contractors started and tested screening equipment in mid-July. The grit influent box, fermenter, headworks odor control and centrate pumping systems are nearing completion.
- e. Staff continues working with the Pretreatment and Pollution Prevention (P3) Division to determine the industrial wastewater source coming into the plant that is periodically causing process upsets.
- f. Staff received Distributed Control System (DCS) process control training for screening, influent pumping, flow equalization, odor control, solids fermentation and classifying selector operation.

8. Williamsburg Treatment Plant (WBTP)

- a. Staff started repair work on the #1 primary clarifier rake arm truss.
- b. Staff installed new stainless steel influent gates for influent screens #1 and #2.

- c. Modifications to the newly installed perforated plate influent screen were completed by the manufacturer. During an inspection of the channel, over a foot of rags were found built up between the influent gate and the new screen. Based on the assumption that the small rake teeth were not carrying rags out of the channel, the manufacturer installed larger rake teeth with curved ends. The channel was cleared of rags after placing the modified unit back in service.

9. York River Treatment Plant (YRTP)

- a. Two odor control events occurred when scrubber operations were down for more than one hour. The first event occurred when a contractor was doing planned modifications to electrical transformers. The second occurred when a pump failed.
- b. The contractor replacing the digester cover continued coating work on the new steel cover. Coating work on the underside of the cover is complete. Coating on top of the cover was limited to night time hours because of high surface temperatures during the day. Surface temperatures below 100 degrees Fahrenheit are required for coating.

10. Incinerator Operations Events Summary

- a. Minor incinerator operations are summarized below:

Condition	Cause	ABTP	BHTP	CETP	VIP	WBTP
Use of Emergency bypass stack	Power anomaly/loss	1	0	1	0	1
Pressure Drop	Planned Burnout	0	0	5	0	0
Less than Minimum Scrubber pH	Equipment malfunction	0	0	4	0	0

- b. ABTP had a reportable air incident that occurred during operation of Multiple Hearth Incinerator (MHI) #1 that had one-hour and five minutes of excess visible emissions (VE) from the MHI stack. Inspection revealed that the air fan filters were clogged. The excess air emissions were reported to the DEQ.
- c. Multiple system failures at the CETP caused staff to shut down the MHI #1 for several weeks for repairs. During this time approximately six MGD of flow was diverted from CETP to ATP on to help manage the solids due to multiple mechanical problems with the incineration process.

C. Small Communities

1. Middle Peninsula

a. SC Treatment:

(1) West Point Treatment Plant (WPTP)

Staff reported a permit exceedance when the monthly average enterococcus value of 55 N/100 ml, which exceeded the limit of 35 N/100 ml. It is suspected that high solids during high flows, combined with poor mixing in the effluent chlorine contact channel during low flows caused this microbial increase. Extensive cleaning throughout the month and the addition of a temporary submersible pump at the head of the contact tank showed varying levels of improvement.

Additional pilot testing and sampling was performed at the West Point TP for the Huber mobile dewatering press. Biosolids from all four SCD treatment plants were processed with the mobile dewatering unit with impressive results and sampled for toxicity characteristic leaching procedure (TCLP) testing in order to ensure landfill acceptance from all four active SCD plants.

(2) Urbanna Treatment Plant (UBTP)

The Mobile Dewatering project has completed the preliminary engineering phase and will soon be moving into the design phase. This project involves the purchase of a mobile screw press for dewatering solids at all small community wastewater plants. Additional pilot testing was completed with the Huber manufacturer and representatives to obtain solids from each individual plant necessary to complete toxicity testing. This testing will ensure that solids being generated by the selected mobile dewatering equipment will be applicable for landfill application. The next steps will include designing a detailed performance specification for the equipment itself, including power, controls, trailer sizing and associated appurtenances along with site specific modifications at each of the four small communities' treatment plants.

(3) King William Treatment Plant (KWTP)

After extensive renovation by staff, use of Treatment Train #1 occurred July 26. Train #1 never functioned as originally intended. The startup and operation of this second membrane bioreactor increased the plant's volumetric capacity from

50,000 gallons to 100,000 gallons per day (GPD). Consequently, now that we effectively ceased pump and haul operations during dry weather, we are seeing an average daily dry weather flow of 55,000 to 60,000 GPD. Additionally, now that the renovation is complete, the offline peak storage tank that was installed in 2011 is also now utilized for its originally intended purpose - to shave and equalize wet weather flows; this has proven to be extremely useful and effective in the last several rain events. The treatment trains are performing exceptionally well and have exceeded our expectations.

b. SC Collections:

(1) West Point System

The Kirby Street Rehabilitation CIP is in the pre-bid process. The Rehabilitation Phase I CIP project began construction and is progressing very well.

(2) Urbanna System

The Cross Street Pump Station (PS) rehabilitation punch project is complete.

(3) Mathews System

The final vacuum relocation associated with the Virginia Department of Transportation storm drainage project is complete. Approximately a dozen vacuum pits still need to be installed. Recent wet weather this month hampered the rate of installation. Substantial completion is expected by end of August or early September.

2. Small Communities – Surry Systems

a. Town of Surry

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

(2) At the Town of Surry TP, the second drum filter rebuild was completed, leading to improved suspended solids.

(3) Operation of the County TP continued without issue during the month.

D. Support Systems

1. Automotive

- a. Staff installed 118 fleet monitoring devices on HRSD vehicles. Staff will continue to install the units until all 284 rolling stock vehicles are complete.
- b. Staff performed load bank tests at Bowers Hill, Patrick Henry, Rolling Hills, and Suffolk pump stations and the North Shore (NS) and South Shore (SS) Main Operations Complexes. All generators operated as designed and were returned to service.

2. Condition Assessment

- a. Condition Assessment, through use of Closed-Circuit Television (CCTV), inspected 8,637 LF of gravity force main. Staff also completed 38 manhole inspections. The total number of inspected manholes so far this fiscal year is 38.
- b. Staff assisted contractors with prompt repairs of the Powhatan manhole (MH-SPS-122-1077).
- c. Staff performed adhesion tests on the interior walls of bio filter tanks #1 and #4 at the SWIFTRC due to visual signs of coating failure in trough sections of the tanks. The interior tank walls were in conformance, but staff was unable to test trough areas due to tanks being in service.
- d. Staff completed inspection assessments on coatings projects occurring at VIP and manholes at City Line, Terminal Avenue, and Normandy PSs.
- e. Contractors completed steel repairs on the canopy at the administration building at JRTP and completed roof repairs on ATP's new Preliminary Treatment Facility.
- f. Restoration of NTP's #2 digester reached completion. Contractor will have to return to repair coping prior to the tank being placed into service.

3. Facilities Maintenance

- a. Construction of the Condition Assessment offices at NTP is complete.
- b. Staff worked with contractors to seal coat the NS Operations center parking lot. Three of the four phases of work are complete. Due to inclement weather, the fourth and final phase was rescheduled for August.
- c. Staff built and installed two platforms for the Technical Services Division (TSD), and began construction on additional workstations at the SWIFT Research Center.
- d. Staff fabricated sleeves for two pumps at the Park Avenue PS, built mounting feet for barrel samplers and flow splitters for TSD, designed and installed rear steps on two box vans for Automotive, fabricated three sets of packing glands for SS pump stations, and made two shafts for a bar screen at NTP.

E. Electrical and Energy Management (EEM)

1. A NPW line ruptured, spraying water on a motor control center (MCC) located in the incinerator at CETP, resulting in electrical component failures. Staff repaired and returned the furnace to operation. Subsequently, hearth #1 became extremely hot, resulting in compromised wiring in an adjacent electrical conduit. The wiring and controls were replaced and the incinerator was returned to normal operation.
2. Staff worked with a contractor to shut down an MCC at ATP to replace a 350 amp breaker with a 400 amp breaker. It was discovered the point of attachment cannot presently provide suitable power to the new Administration Building. The consulting engineer is working on a solution, which may include additional equipment.
3. Staff modified the KWTP automation to allow both treatment trains to operate simultaneously. Work included repairs, calibration and validation of all instrumentation, reprogramming the Siemens programmable logic control (PLC), and an additional actuator valve to prevent tank overflows.
4. Staff continues to install instrumentation and maintain equipment for the SWIFTRC. The team is modifying additional control schemes and rewiring the pilot plant that was relocated from the YRTP.

5. This fiscal year, staff will replace 210 (3G) Telog modems with fourth generation long term evolution (4G LTE) modems. We have a total of 320 third generation (3G) Telog modems. The plan is to replace the remaining modems in FY 2020. Telog modems are used to transmit field information from Master Metering Program (MMP) sites, pump stations, generators, temporary sites and other miscellaneous sites to a central location, where information can be viewed and subsequently used to better understand field operations and make changes accordingly.
6. Staff worked with a contractor to startup odor control fans and equalization tanks for the new preliminary treatment facility at VIP. Additional functional testing of raw wastewater influent (RWI) variable frequency drives (VFDs) was also conducted.
7. Staff assisted contractors with work on the Combined Heat and Power (CHP) generator switchgear and breakers at ATP.
8. Staff responded to a high well alarm problem at the Washington PS. The team found a faulty relay and chassis, which were replaced and rewired.
9. Staff continues to support redesign of the Switchgear Replacement Capital Improvement Project (CIP) at Boat Harbor Treatment Plant (BHTP), as well as design for switchgear and generators for the CIP at Williamsburg Treatment Plant (WTP).

F. Water Technology and Research

As part of the SWIFT program, stringent compliance with nitrogen standards is required, and the existing treatment plant nutrient removal processes must be stabilized with respect to secondary effluent ammonia, nitrate and nitrite to ensure sufficient treatment within the SWIFT facilities and compliance with SWIFT Water quality objectives and critical control points. This requires more advanced real time controls associated with biological nutrient reduction (BNR) processes than are currently in place.

At present, HRSD utilizes a wide range of nutrient sensors and proportional-integral-derivative (PID) or simple rule-based control systems at multiple facilities for aeration, BNR recycle flow, and supplemental carbon feed control. PID controllers use feedback loops that respond to changes in a controlled variable by manipulating another variable. PID controllers work well in processes with short response times and when process dynamics are minimal. At HRSD, PID controllers provide stable dissolved oxygen control, but for the more sophisticated ammonia-based aeration control and supplemental carbon feed, PID controllers are probably insufficient for SWIFT requirements. Wastewater treatment plants have highly dynamic influent flows and loads, undergo seasonal configuration and operational changes that make

PID tuning of slow controllers very difficult, and the optimum PID tuning parameters are continuously changing. Nonetheless, the data from process sensors are collected and stored within a data management system and utilized for assessing previous process performance or to identify issues. These stored data provide an opportunity for use in advancing process controls.

White-box model-based control, using a mathematical model such as ASM1 (activated sludge model #1), is capable of providing real-time control, but this approach is extremely complex and would require considerable recalibration effort to reflect changes in the plant over time. Predictive data-driven controllers using various statistical methods, also known as black-box models (or machine learning), have been researched and implemented for control with varying success, but limited reliability or replicability. These black-box controllers are not able to capture established knowledge of biological and physical-chemical processes that contemporary mathematical process simulation models can provide. Gray-box modeling or the combination process models (white-box) and statistical data analysis (black-box) may be a feasible route for predictive process control. The combination of data and knowledge-based approaches, or gray-box models, has shown some success in wastewater process applications, but this work is very much at the embryonic stage.

We have initiated a project at HRSD to create a gray-box model specifically for supplemental carbon feed control. This work will likely be developed as a pilot test for the methanol feed system at VIP and will have two goals: 1) to reduce the variability in effluent nitrate compared to prior existing supplemental carbon control schemes and 2) to minimize supplemental carbon costs. This gray-box model will combine ASM-based kinetic and stoichiometric process models with data-driven approaches using available real-time sensor data for calibration and operation. This project represents our attempt to develop and implement a sophisticated control approach for one plant and one representative control system with a clear need for improvement. However, it is important to recognize that these approaches should be transferable to a wide range of process control systems, and our project will consider this need. This pilot test is primarily being conducted by Alexandria (Ali) Gagon, Virginia Tech PhD student, working in collaboration with HRSD Operations and Industrial Automation and Control staff.

H. Strategic Measurement Data

1. Education and Outreach Events: 7

- a. Charles Bott provided a SWIFT Overview for Singapore International Water Week
- b. Charles Bott and Jaime Mitchell provided a SWIFT Overview to Potomac Aquifer Monitoring Laboratory Group
- c. Chris Wilson provided an Overview of Solids Handling and Struvite Issues during a Water Research Foundation Dewatering Workshop
- d. The North (NS) Electrical Manager coordinated a tour of the SWIFTRC for Cooperating Hampton Roads Organization for Minorities in Engineering (CHROME) Club's Summer Opportunities for Aerospace (SOARS) and marine science high school students on July 11.
- e. The NS Electrical Manager conducted electrical theory workshops for SOARS at Old Dominion University (ODU) on July 12 and Christopher Newport University (CNU) on July 19.
- f. The NS Electrical Manager participated in the interview selection committee for CHROME's Program Director position on July 24 and 26.
- g. SWIFT tour for City of Bridgeport staff

2. Community Partners: 3

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

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2018
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (510) – Current Month	Hours / FTE	2.53
M-1.4b	Total Training During Work Hours per FTE (510) – Cumulative Year-to-Date	Hours / FTE	2.53
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	24,677.25

Item #	Strategic Planning Measure	Unit	July 2018
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	57.89%
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	17.26%
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	24.85%
M- 4.1a	Energy Use: Treatment *reported for June 2018	kWh/MG	2,203
M-4.1b	Energy Use: Pump Stations *reported for June 2018	kWh/MG	167
M-4.1c	Energy Use: Office Building *reported for June 2018	kWh/MG	107
M-5.2	Educational and Outreach Events	Number	7
M-5.3	Number of Community Partners	Number	3

4. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2018
M- 4.1a	Energy Use: Treatment	kWh/MG	2,395
M-4.1b	Energy Use: Pump Stations	kWh/MG	170
M-4.1c	Energy Use: Office Building	kWh/MG	104

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager
FROM: Director of Talent Management
SUBJECT: Monthly Report for July 2018
DATE: August 15, 2018

A. Human Resources (HR)

1. Recruitment

a. Recruitment Summary

New Recruitment Campaigns	6
Job Offers Accepted – Internal Selections	3
Job Offers Accepted – External Selections	10
Internal Applications	31
External Applications	201
Average Days to Fill Position	75

b. Nine Hampton Roads Public Works Academy interns began summer internships in Talent Management and Operations workcenters.

2. Enterprise Resource Planning (ERP)

a. HRSD worked with the Managed Services consultant on:

- (1) Benefit program setup
- (2) Benefit interface updates
- (3) Appraisal reminder notifications
- (4) Updates to BI Reporting setup

b. The Cigna interface was completed. Interface reports are being monitored to ensure accurate transmission of benefit information and to address issues.

3. Benefits and Compensation

- a. Staff worked with the benefit consultant on:
 - (1) Implementing Health Advocate Services, including communication of the benefit services to employees.
 - (2) Finalizing contract and scope for second opinion services
- b. Staff worked with consultant to initiate a custom and market-based compensation study.

4. Wellness

a. Participation Activities

Year Six Participation Activities	Unit	July 2018	Year to Date (March 2018–February 2019)
Biometric Screenings	Number	1	6
Preventive Health Exams	Number	5	15
Preventive Health Assessments	Number	27	97
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	11	162
Web-MD Online Health Tracking	Number	115	687
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	6	53

- b. Optima Wellness and Employee Assistance Program staff partnered to present a program on Resiliency for Boat Harbor Treatment Plant (TP), Chesapeake-Elizabeth TP, James River TP and Army Base TP employees. Presentations were well-attended overall.
- c. Optima and HR staff continued to develop potential solutions to address upcoming changes to wellness regulations.
- d. The Wellness Specialist began work to update fitness center discounts on the southside and peninsula.

5. Workers Compensation

Five new cases were opened with 9 cases remaining active.

6. Employee Relations

Staff continued to partner with work center supervisors and employees to support employee relations and address HR issues. Specialists participated on interview panels for Operations.

7. General

a. Re-organization of the HR file room and storage areas continued.

b. Staff participated in the following HRSD activities:

- (1) Fleetistics Team
- (2) HRSD Facilitator Meetings

c. Staff participated in the following training:

Marsh McLennan Agency's Wellness Program Compliance Webinar

B. Organization Development and Training (OD&T)

1. Training

a. OD&T staff facilitated a workshop for Army Base TP, Chesapeake-Elizabeth TP and Virginia Initiative Plant (VIP) supervisors. The workshops included material from *First Break All the Rules*, a *Strengths Finder* assessment and discussion and team building.

b. HR and OD&T Staff met with the Commission Secretary to begin development of an HRSD Ethics Policy training program based on internal audit recommendations.

c. Work continued with subject matter experts to create a project management workshop. Basic modules were completed and the team began refining materials.

d. Preparations were initiated for Fiscal Year 2020 Workcenter Planning Day meetings. A schedule was developed to include

facilitator training on brainstorming methods, group engagements, parking board management and general facilitation.

- e. The Recruitment process began for the Training Resource Specialist position.
- f. The Workplace Team recruited and selected two new facilitators, Korey Kendall, Hydraulic Analysis Manager and Milorad Radovic, Customer Care Center Coordinator.

2. Apprenticeship Program

- a. Planning for new initiatives continued:
 - (1) A summer orientation to include administering the math placement exam along with a facilitated session on Adult Learning and navigating the Apprenticeship Program
 - (2) An Instructor Program and Appreciation Luncheon was held, providing instructors an opportunity to network and share success strategies
- 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 worked with Procurement to evaluate Continuing Professional Education hours for several training courses.
- d. Staff continued to enter historical training and apprenticeship program information into ERP and to scan historical records.
- e. The Training Superintendent performed the following in relation to Apprenticeship courses:
 - (1) Evaluated *Wastewater Analysis and Wastewater Laboratory* course for conversion to an online format and revision of the Laboratory component to align with Plant Operator functions
 - (2) Evaluated Condition Assessment Technician Trade curriculum and On the Job Training books for the new trade

4. General

- a. Planning continued for an *Operations Workforce of the Future Workshop* in November. Two pre-workshop *Lunch and Learn* sessions were developed with the consultant.
- b. Staff participated in the following training:
 - (1) Environmental Protection Agency’s 129 emission limits (MACT129 rule) and regulatory reporting requirements
 - (2) Executive Coaching- Mentor Coach
 - (3) Individual Intensive Coaching- Mentor Coach

C. Safety

1. Mishaps and Work Related Injuries

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

	<u>2017</u>	<u>2018</u>
Mishaps	42	27
Lost Time Mishaps	10	5
<i>Numbers subject to change pending HR review of each case.</i>		

- b. MOM Program Year Performance Measure Work Related Injuries

July 2018 Injuries For Operations	July 2018 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2018	Total HRSD Injuries Since July 2018
4	1	1	5

- c. Follow-up investigations were performed on five reported work-related injuries and one property damage incident.

2. HRSD Safety Training

Strategic Planning Measure	Unit	July 2018
Total Safety Training Hours per Full Time Employee (836) All HRSD – July 2018	272.75Hours / 836 FTE	0.33
Total Safety Training Hours Per Full Time Employee (836) – Cumulative July 2018	272.75 Hours / 836 FTE	0.33

3. In addition to regularly scheduled safety training and medical monitoring, the following sessions were conducted:
- a. Ten external briefings for contractors working at treatment plants and pump stations
 - b. Daily hot work permits for a Bridge Street Pump Station contractor
 - c. Two Ladder safety training sessions for North Shore and South Shore Electrical and Energy Management (EEM) employees
 - d. Coordinated on-site Department of Transportation Commercial Driver's License physicals for South Shore Interceptor employees
 - e. Chemical Hygiene Plan training for Water Quality, Water Research and Technology and Safety employees
 - f. Several make-up sessions of annual pulmonary and respirator fit testing for employees
 - g. Sulfuric Acid Safe Work practice training for Water Research and Technology employees
4. Safety Inspections, Testing and Monitoring
- a. Weekly on-site inspections of the following construction sites:
 - (1) Army Base Treatment Plant (TP)
 - (2) Atlantic TP
 - (3) Bridge Street Pump Station
 - (4) Rodman Pump Station

- (5) Virginia Initiative Plant (VIP)
- (6) York River TP

- b. Quarterly safety inspections of the following work centers:
 - (1) Army Base TP
 - (2) Boat Harbor TP
 - (3) Nansemond TP
 - (4) North Shore Automotive, Carpentry and Electrical Shops
 - (5) North Shore Interceptors
 - (6) North Shore Pretreatment and Pollution Prevention (P3)
 - (7) SWIFT Research Center (SWIFTRC)

- c. Monitoring and testing for the following:
 - (1) Monthly velocity tests on Central Environmental Lab (CEL) and Technical Services Division (TSD) lab hoods
 - (2) Velocity tests on a North Shore P3, SWIFTRC and VIP lab hoods
 - (3) Annual air vent sampling for South Shore and North Shore Interceptors
 - (4) Air sampling during discharge of leachate waste into the interceptor system for P3

- d. Safety walk-throughs and evaluations:
 - (1) Final walk-through of the Bridge Street Pump station
 - (2) Evaluated hazardous waste disposal needs for SWIFTRC lab
 - (3) Evaluated arc flash labeling within the SWIFTRC electrical room
 - (4) Escorted a Fire Protection vendor throughout Air Rail Avenue facilities for annual fire extinguisher inspections and service

5. Safety Programs

- a. Semi-annual Safety Recognition Program results were compiled. Eighteen work centers received full recognition for no lost time accidents/injuries and six received partial recognition for minimal incidents.

- b. The following was performed in relation to the Confined Space program:
 - (1) Updated and created space-specific confined space permits for the James River TP

- (2) Assembled a Confined Space Specific permit book for the SWIFTRC
- c. Employee pulmonary function and respirator fit testing results were compiled and distributed to employees and supervisors as part of the Respiratory Protection Program.
- d. Nansemond Plant Emergency Response procedures were updated to incorporate SWIFTRC facility operations. Draft procedures were submitted to the Director of Water Research and Technology.
- e. Safety staff met with Operations staff to discuss issues and needs related to chemicals used at the SWIFTRC.
- f. The Prescription Safety Glasses program was successfully implemented. Several on-site meetings with the vendor were held for employees to order prescription safety glasses to be distributed to employees in August.
- f. Industrial Hygienist met with an EEM Manager to apply arc flash labels at the York River TP.
- g. The Safety Manager worked with the Nansemond TP Process Engineer to finalize safety procedures for the Nansemond TP Ostara facility pilot study.
- h. Staff worked with Information Technology to update the spirometric and audiometric software.
- h. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

6. General

- a. Activities continued for online implementation of the Material Safety Data Sheet (SDS) system. Staff completed entry of SDS information for the CEL and North Shore and South Shore Automotive shops.
- b. Staff provided support for three security-related incidents.

- c. The following was performed in relation to the Nansemond TP adjacent property:
 - (1) Met with several contractors working on-site to provide property access and information
 - (2) Attended a meeting with Army Corp of Engineers staff to address removal of an underground storage tank
- d. Staff met with an industrial discharger and P3 staff to preview safety precautions requirements during discharge of leachate waste.
- e. A meeting was held with Treatment and Facilities staff to clarify roles related to fire suppression system inspection, maintenance and response for HRSD facilities.
- f. Staff attended the following training:
 - (1) Marine Chemist Asbestos Inspector Certification class
 - (2) Marine Chemist Asbestos Inspector refresher class

D. Monthly Strategic Planning Metrics Summary

- 1. Education and Outreach Events: (4)
 - a. City of Suffolk Local Emergency Planning Commission meeting
 - b. Participated in International Public Managements Association's Benchmarking HR Analytics Survey
 - c. Hampton Roads Society for Human Resources Management (SHRM) Conference
 - d. Hampton Roads Public Works Academy meeting
- 2. Community Partners: (2)
 - a. City of Suffolk Local Emergency Planning Commission
 - b. Hampton Roads Public Works Academy

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2018
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.63
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.20
M-1.4a	Total Training Hours Per Full Time Employee (17) – Current Month	Total Training Hours/ FTE	3.62
M-1.4b	Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date	Hours / FTE	3.62
M-5.2	Educational and Outreach Events	Number	4
M-5.3	Community Partners	Number	2

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for July 2018
DATE: August 14, 2018

A. General

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

Riverside Convalescent Center – Mathews

An Enforcement Order was issued to Riverside Convalescent Center, Mathews, in June 2018 as a result of violations associated with a sanitary sewer overflow (SSO) and sanitary sewer system damage that occurred in February 2018. The Order contained an invoice totaling \$2,500 in Civil Penalties. Riverside Convalescent Center had previously paid an invoice for cost recovery totaling \$2,773.18. This included HRSD staff time for the SSO cleanup and for replacement of a damaged valve.

The SSO resulted from excessive buildup of fats, oils and grease and solid materials such as wipes and adult diapers. The facility submitted a compliance schedule with solutions to remedy the problem which included staff retraining, more frequent cleaning of their grease control devices, and the installation of a device in the toilets to retain the wipes and other solid material.

The Enforcement Order was accepted and the invoice was paid in July 2018.

2. The Director attended the annual National Association of Clean Water Agencies' (NACWA) summer conference. The focus of this conference was management and governance. One question posed to attendees addressed water workforce challenges. Retention of new, younger employees quickly became recognized as one of the biggest challenges. In looking around at the attendees at the conference, it was clear that this age group of employees was greatly under-represented. Assumptions are being made as to why retention for this age group is more difficult now than ever before. The water sector needs to ask its newer, younger employees what they want from their employer and what it will take to retain despite

other opportunities. The Director will pursue this approach with Talent Management staff.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) reported the following activities for the month of July.
 - a. Proposed a new name for the committee, Sustainable Environment Advocacy Group (SEA), which denotes its focus on environmental sustainability
 - b. Proposed a mission statement for the group
 - c. Started planning for an open house/membership drive to possibly take place in September
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to the City of Virginia Beach to support their water quality monitoring program for Lake Trashmore and to Hanover County to support their Virginia Pollution Discharge Elimination System (VPDES) permit application processes.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 4
 - a. CEL (Central Environmental Laboratory) staff hosted a student from Floyd E. Kellam High School for the day. The student was afforded the opportunity to job shadow.
 - b. P3 staff participated in a SWIFT Research Center tour for the Nansemond River Preservation Alliance.
 - c. P3 staff provided a SWIFT Research Center tour for Newport News Shipbuilding representatives.
 - d. P3 staff participated in the Clean the Bay Day event.
2. Community Partners: 12
 - a. City of Newport News
 - b. City of Norfolk
 - c. City of Suffolk
 - d. City of Virginia Beach

- e. Elizabeth River Project
- f. Hampton Roads Planning District Commission
- g. Lynnhaven River NOW
- h. United Way
- i. Virginia Department of Environmental Quality
- j. Virginia Department of Health Division of Shellfish Sanitation
- k. Virginia Department of Health Office of Epidemiology
- l. Virginia Institute of Marine Science

4. Monthly Metrics

Item #	Strategic Planning Measure	Unit	July 2018
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	1.91
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	1.91
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	1
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	1:5,073
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	17,798,381
M-3.5	Pollutant Discharge	% Pounds Discharged/ Pounds Permitted	14%
M-5.2	Educational and Outreach Events	#	3
M-5.3	Community Partners	#	12
	Average Daily Flow	Total MGD for all Treatment Plants	145.14
	Industrial Waste Related System Issues	#	0

5. Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2018
M-3.3	Carbon Footprint	Tons per MG	1.66
M-4.2	R & D Budget	Percentage of Total Revenue	*%
M-5.4	Value of Research	Number	*
M-5.5	Number of Research Partners	Number	*
	Rolling 5 Year Average Daily Flow	MGD	152.8
	Rainfall reported at Norfolk International Airport	Inches	49.24

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

Respectfully submitted,
James Plett, PhD
Director of Water Quality



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

I. Projects in Process

Corporate Governance: Ethics Function

- **Tasks Completed (July 2018)**
 - Submitted final report to Commission for review; no additional tasks required

Treatment Plant Operations

- **Tasks Completed (July 2018)**
 - Obtained and reviewed management action plans
 - Conducted follow-up discussions with Operations management
 - Reviewed and incorporated additional documentation
 - Updated final report
- **Upcoming Tasks (August 2018)**
 - Submit final report to HRSD Operations management and finalize action plans

Business Continuity and Disaster Recovery

- **Tasks Completed (July 2018)**
 - Selected sampled business process areas for testing
 - Worked with process owners to develop document request list
 - Distributed document request list to applicable process owners
 - Reviewed items provided by process owners
 - Continued performance of fieldwork testing
 - Began drafting audit report
- **Upcoming Tasks (August 2018)**
 - Complete fieldwork tasks
 - Schedule findings discussion with process owners
 - Draft final report

II. Upcoming Projects (FY2018)

All FY18 audits have been started at this time. The first FY19 audit is scheduled to begin in September 2018. The subject of this audit will be Customer Care and include a process assessment and test of control design.

III. Management Action Plan (MAP) Monitoring

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

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

The following describes the current project monitoring status.



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

EFFLUENT SUMMARY FOR JULY 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	10.69	59%	1	2.7	4	<1	0.73	0.60	2.5	5.3	NA	NA	22
ATLANTIC	30.07	56%	10	5.2	11	1	NA	NA	NA	NA	NA	NA	2
BOAT HARBOR	13.08	52%	5	4.2	4	1	0.67	0.53	14	14	NA	NA	3
CENT. MIDDLESEX	0.011	44%	<2	<1.0	1	1	NA	NA	NA	NA	<0.50	0.03	NA
CHES-ELIZ	16.11	67%	11	10	25	4	0.77	0.81	30	30	NA	NA	20
JAMES RIVER	11.70	58%	0	1.8	2	1	0.27	0.37	6.7	8.3	NA	NA	2
KING WILLIAM	0.045	45%	<2	<1.0	NA	<1	0.023	0.052	0.41	0.85	0.22	NA	NA
LAWNES POINT	0.066	132%	<2	1.7	<1	<1	0.01	0.01	0.52	0.52	NA	NA	NA
NANSEMOND	16.26	54%	3	2.3	5	2	0.54	1.1	3.4	4.2	NA	NA	2
SURRY, COUNTY	0.045	69%	<2	1.6	NA	1	NA	NA	NA	NA	<0.50	<0.10	0
SURRY, TOWN	0.049	82%	3	19	NA	116	NA	NA	NA	NA	0.99	0.12	NA
URBANNA	0.062	62%	6	15	13	6	6.2	3.9	36	23	NA	0.08	NA
VIP	26.35	66%	1	2.2	2	1	1.2	0.76	3.3	6.6	NA	NA	6
WEST POINT	0.382	64%	16	13	32	56	3.2	2.8	17	18	NA	11	0
WILLIAMSBURG	8.71	39%	1	2.7	4	3	0.86	0.55	3.5	3.1	NA	NA	1
YORK RIVER	11.51	77%	4	1.7	3	7	0.24	0.32	5.2	3.9	NA	NA	2
	<u>145.14</u>												

	% of Capacity
North Shore	55%
South Shore	60%
Small Communities	66%

	Tributary Summary					
	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection CY18		YTD	Projection CY18	
Tributaries	%	Lbs	%	%	Lbs	%
James River	47%	3,698,559	81%	44%	272,590	86%
York River	36%	227,911	79%	48%	16,130	84%
Rappahannock	141%	NA	NA	353%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY19 to Date: 1:5,073
Pounds of Pollutants Removed in FY19 to Date: 17,798,381
Pollutant Lbs Discharged/Permitted Discharge FY19 to Date: 14%

	Rainfall (inch)		
	<u>North Shore</u> (PHF)	<u>South Shore</u> (ORF)	<u>Small Communities</u> (FYJ)
Month	10.24"	9.21"	7.21"
Normal for Month	5.95"	6.41"	5.48"
Year to Date Total	32.75"	34.38"	34.34"
Normal for YTD	28.62"	27.85"	28.51"

AIR EMISSIONS SUMMARY FOR JULY 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	0	1	38	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	0	7	93	0
CHES-ELIZ	0	1	1	1	1	1	4	1	38	97	0
VIP	0	0	0	n/a	0	0	0	0	76	100	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	11	100	0

ALL OPERATIONS

DEQ Reportable Air Incidents:	1
DEQ Request for Corrective Action (RCA):	0
DEQ Warning Letter:	0
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	1
Odor Complaints Received:	0
HRSD Odor Scrubber H2S Exceptions:	2