



COMMISSION MEETING MINUTES
January 22, 2019

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Attachments (8)



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Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-20
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	3-20

1. **CONSENT AGENDA**

Action: Approve the items listed in the Consent Agenda.

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

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Awards
 - 1. [Enterprise Resource Planning \(ERP\) Oracle Database and WebLogic Support Contract](#) \$478,706
- c. Task Orders
 - 1. [King William Treatment Plant Improvements Phase I](#) \$379,373
 - 2. [Treatment Plant Grease Handling Facilities](#) \$376,764
- d. Sole Source
 - 1. [Cummins Inc., Cummins Emergency Generator Parts and Repairs](#)
 - 2. [s::can Measuring Systems LLC, s::can Nitrification Analyzer](#)

Item(s) Removed for Discussion: None

Attachment #1: [Consent Agenda](#)

Public Comment: None



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Project Description: This project includes the replacement of the main switchgear, generator switchgear, controls, and appurtenances at the Boat Harbor Treatment Plant. The replacement of the primary switchgear will require the construction of a new building. This project will be partially funded through the Commonwealth of Virginia Clean Water Revolving Loan Fund. A bond resolution for this project will be presented for approval at a future Commission Meeting.

Task Order Description: This task order will provide construction phase services for this project. A fee of \$1,019,127 was negotiated with HDR and was based upon anticipated construction administration and inspection hours required for this effort. This cost for construction phase services is roughly 14.8 percent of the total construction cost and is higher than anticipated; however, this is a complex electrical project that requires multiple shutdowns and coordination with Dominion Energy.

Funding Description and Analysis of Cost: The revised total project cost is currently \$9,626,014. This amount is based on construction costs of \$6,893,065, engineering services costs of \$2,043,643, and a 10 percent contingency of \$689,306. The contingency amount is to accommodate any potential unforeseen conditions. The CIP total project budget was updated in Fiscal Year (FY) 2018, and is reflected in the FY-2019 budget as \$9,882,472. The additional appropriation of \$3,629,014 is requested to execute the construction phase.

Schedule:

Construction	March 2019
Project Completion	January 2021

Attachment: None

Public Comment: None



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3. **COOKS CORNER COLLECTION SYSTEM
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$1,660,622. The actual project expenditures will be reimbursed by Middlesex County.

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

CIP Project: MP013500

Project Description: This new project provides a gravity wastewater collection system that will serve [Cook's Corner](#). The collection system will consist of approximately 3,200 linear feet of gravity sewer, a submersible pump station, and 1,100 linear feet of force main. This force main will connect to the Middlesex Transmission Force Main Phase I project.

Analysis of Cost: The estimated total project cost is \$1,660,622. The estimated project cost is based on a construction cost estimate of \$1,240,736 combined with an engineering services estimate of \$198,326 and a 13 percent contingency allowance of \$221,560. Engineering services will be provided by Bowman Consulting Group, Ltd. and include design and construction phase services.

Schedule:

Design	January 2019
Bid	July 2019
Construction	August 2019
Project Completion	July 2020

Discussion Summary: Staff discussed the long-term plan for the Middlesex service area. The Middlesex Transmission Force Main Phase I project is under design now. Phase II planning will depend on future development and capacity. The current planned flow can be serviced by the treatment plant. The transmission force main will need to be completed before additional flow can be accommodated. This project is not included in the Consent Decree and has no impact on nutrient credits. Cost sharing agreements will be implemented where necessary to service new developments. A service agreement with the county will be forthcoming.

Attachment #2: [Maps](#)

Public Comment: None



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4. **MIDDLESEX TRANSMISSION FORCE MAIN PHASE I
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$2,348,400.

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

CIP Project: MP013600

Project Description: This new project includes the construction of a 1.8 mile [transmission force main \(TFM\) from the Cooks Corner service area](#) in Middlesex County to the existing Central Middlesex Treatment Plant (CMTP). This is the first phase of the overall Middlesex TFM program and will allow the conveyance and treatment of the Cooks Corner development. This program will be divided into discrete interceptor and pump station projects as the scope and sequencing needs of the program elements are further defined.

Analysis of Cost: The estimated total project cost is \$2,348,400. The estimated project cost is based on a construction cost estimate of \$1,425,600 combined with an engineering services estimate of \$637,680 and a 20 percent contingency allowance of \$285,120. Engineering services will be provided by Jacobs and include preliminary engineering, design and construction phase services.

Schedule:	PER	January 2019
	Design	April 2019
	Bid	July 2019
	Construction	August 2019
	Project Completion	July 2020

Discussion Summary: Easements will be obtained where necessary. Most of the construction will take place in VDOT right-of-ways.

Attachment #3: [Maps](#)

Public Comment: None



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5. HUXLEY PLACE TO MIDDLE GROUND BOULEVARD INTERCEPTOR FORCE MAIN EXTENSION AGREEMENT

Action: Approve the terms and conditions of the agreement with the City of Newport News for reimbursement of construction costs associated with Huxley Place to Middle Ground Boulevard Interceptor Force Main and authorize the General Manager to execute same, substantially as presented, together with such changes, modifications and deletions as the General Manager may deem necessary.

Moved: Stephen Rodriguez **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

CIP Project: JR012100

Budget	\$2,500,000
Previous Expenditures and Encumbrances	(\$389,086)
Available Balance	\$2,110,914

Project Description: This project will involve the installation of approximately 2,250 linear feet of new 36-inch force main (FM) from the intersection of Alpine Street and Huxley Place to the Middle Ground-City Center Interconnect FM west of the CSX railroad tracks. This extension will allow for abandonment of the 36-inch reinforced concrete pipe (RCP) from the intersection of Maxwell Lane and Route 60 to the intersection of Huxley Place and Carnegie Drive (approximately 5,500 linear feet abandoned).

Agreement Description: The [attached agreement](#) between HRSD and the City of Newport News provides for the design and construction of City gravity sewer improvements within the HRSD project area. The City of Newport News will reimburse HRSD for all construction costs associated with the City gravity sewer infrastructure. This agreement has been reviewed by HRSD legal counsel and City of Newport News legal counsel.

Analysis of Cost: The total estimated cost of the construction is \$3,286,000. The estimated cost for this construction is based a construction cost estimate prepared by the Engineer during the design phase of the project. The total cost for the City improvements is approximately \$605,000 or 23 percent of the estimated cost for this project. A future Agenda Item will be prepared for the construction contract and the engineering services during construction that will revise the appropriated amount for this project, if required.

Attachment #4: [Agreement](#)
Public Comment: None



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Mr. Henifin stated the presentation for the Capital Improvement Program Quarterly Update (item 14) is related to items 6-10 on today's agenda. Therefore, he recommended item 14 be heard at this time.

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

Action: No action required.

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

Discussion Summary: During the discussion of projects requiring additional appropriation in calendar year 2018 ([Slide 10](#)), staff explained the scope changes for the Nansemond Treatment Plant Land Acquisition – Land Stabilization project which resulted in a substantial cost increase.

[Slide 19](#) – Answering a question from a Commissioner, staff explained how and why projects were selected for Phase I of the Consent Decree/Sewer Rehabilitation Plan. As part of the Consent Decree, HRSD was required to examine its entire system and prioritize rehabilitation as needed. These projects were identified and submitted to the EPA as part of the Consent Decree requirements. These projects are now on a completion deadline required by EPA. These projects were prioritized based on an analysis of the system performed by consultant Brown & Caldwell. Criteria included deficiencies in the system, age and condition of the pipe, and risk of failure.

[Slides 20-21](#) – Pressure Reducing Station Reliability Modifications and Upgrades (related to items 6-10). A Commissioner asked if the “open book” bidding could be used for all project bids. Staff explained the Construction Management project delivery method was used for these projects. This delivery method allows the owner to hire a construction manager to work together to design a project, and once designed, the construction manager is the contractor for the project. By law, the construction manager can only perform a maximum of 10 percent of the work themselves, bidding out the remaining work in an “open book” format. The owner is allowed to see the bids and help the construction manager make decisions. The “open book” can only be used for design-build and construction management delivery methods. The state procurement law does not allow “open book” to be used in the regular bid process.

Attachment #6: [Presentation](#)

Public Comment: None



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6. **INDEPENDENCE BOULEVARD PRESSURE REDUCING STATION (PRS) MODIFICATIONS
ADDITIONAL APPROPRIATION AND TASK ORDER (>\$200,000)**

Actions:

- a. **Appropriate additional funding in the amount of \$1,065,452.**
- b. **Approve a task order for Kimley-Horn and Associates in the amount of \$319,700.**

Moved: Stephen Rodriguez **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

CIP Project: CE010400

Budget	\$3,062,000
Previous Expenditures and Encumbrances	(\$739,952)
Available Balance	\$2,322,048
Proposed Task Order to Kimley-Horn	(\$319,700)
Proposed Task Order to HDR	(\$62,800)
Proposed Guaranteed Maximum Price	(\$3,005,000)
Project Shortage/Requested Additional Funding	(\$1,065,452)
Revised Total Project Authorized Funding	\$4,127,452

Contract Status	Amount
Original Contract with Kimley-Horn and Associates	\$154,200
Total Value of Previous Task Orders	\$302,135
Requested Task Order	\$319,700
Total Value of All Task Orders	\$621,835
Revised Contract Value	\$776,035
Engineering Services as % of Construction	25.8%

Project Description: This project is to make reliability improvements to the existing Independence Boulevard PRS including new pumps and interior piping, instrumentation and electrical modifications associated with new equipment and yard piping improvements.

Funding Description: The original Capital Improvement Program (CIP) project estimate did not anticipate the Construction Management delivery process, the use of a Consultant Program Manager and more complicated yard piping modifications. These additional expenditures are justified because they will help meet the aggressive schedule of the Chesapeake-Elizabeth Treatment Plant permanent closure and diversion program and further improve future reliability of the facility. As a result, this project requires additional



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funding because cost exceeds the balance available for this CIP project. The approval of the Guaranteed Maximum Price (GMP) for construction of the improvements at this PRS is the subject of a separate agenda item. The proposed GMP amount is included in the requested amount of additional appropriation.

Task Order Description and Analysis of Cost: The task order for Kimley-Horn will provide contract administration and construction inspection services. Discussions occurred among Kimley-Horn, HDR (consultant program manager) and HRSD staff to develop and review the project and scope of services. A fee of \$319,700 was negotiated, which will provide the required services.

The cost for this task order is based on 1,089 labor hours for contract administration at an average raw hourly labor rate of \$56.32. Construction inspection is based on an average raw hourly labor rate of \$35.42. The proposed amendment amount is approximately 10.6 percent of the estimated construction cost of \$3,005,000. This cost is in agreement with historical costs for similar efforts from other firms.

<u>Schedule:</u>	Construction Project Completion	February 2019 July 2020
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Attachment: None

Public Comment: None



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7. **LASKIN ROAD PRESSURE REDUCING STATION RELIABILITY MODIFICATIONS
ADDITIONAL APPROPRIATION AND TASK ORDER (>\$200,000)**

Actions:

- a. **Appropriate additional funding in the amount of \$1,203,434.**
- b. **Approve a task order for Kimley-Horn and Associates in the amount of \$369,200.**

Moved: Vishnu Lakdawala **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

CIP Project: CE011829

Budget	\$3,220,000
Previous Expenditures and Encumbrances	(\$1,005,934)
Available Balance	\$2,214,066
Proposed Task Order to Kimley-Horn	(\$369,200)
Proposed Task Order to HDR	(\$48,300)
Proposed Guaranteed Maximum Price	(\$3,000,000)
Project Shortage/Requested Additional Funding	(\$1,203,434)
Revised Total Project Authorized Funding	\$4,423,434

Contract Status	Amount
Original Contract with Kimley-Horn and Associates	\$149,500
Total Value of Previous Task Orders	\$316,254
Requested Task Order	\$369,200
Total Value of All Task Orders	\$685,454
Revised Contract Value	\$834,954
Engineering Services as % of Construction	27.8%

Project Description: This project is to make reliability improvements to the existing Laskin Road Pressure Reducing Station (PRS) including new pumps, and interior piping and electrical modifications associated with new pumps. Some minor structural modifications are expected for items like equipment access platforms, pump pads and construction of an electrical control room. Minor modifications to the interior mechanical equipment are expected.

Funding Description: The original CIP project estimate did not anticipate the Construction Management delivery process, the use of a Consultant Program Manager and several miscellaneous improvements to facilitate operation and maintenance of the facility. These additional expenditures are justified because they will help meet the aggressive schedule of



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the Chesapeake-Elizabeth Treatment Plant permanent closure and diversion program and further improve future reliability of the facility. As a result, this project requires additional funding because cost exceeds the balance available for this CIP project. The approval of the Guaranteed Maximum Price (GMP) for construction of the improvements at this PRS is the subject of a separate agenda item. The proposed GMP amount is included in the requested amount of additional appropriation.

Task Order Description and Analysis of Cost: The task order for Kimley-Horn will provide contract administration and construction inspection services. Discussions occurred among Kimley-Horn, HDR (consultant program manager) and HRSD staff to develop and review the project and scope of services. A fee of \$369,200 was negotiated, which will provide the required services.

The cost for this task order is based on 1,129 labor hours for contract administration at an average raw hourly labor rate of \$54. Construction inspection is based on an average raw hourly labor rate of \$35.42. The proposed amendment amount is approximately 12.3 percent of the estimated construction cost which is \$3,000,000. This cost is in agreement with historical costs for similar efforts from other firms.

<u>Schedule:</u>	Construction	February 2019
	Project Completion	February 2020

Attachment: None

Public Comment: None



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8. **PINE TREE PRESSURE REDUCING STATION RELIABILITY MODIFICATIONS
ADDITIONAL APPROPRIATION AND TASK ORDER (>\$200,000)**

Actions:

- a. **Appropriate additional funding in the amount of \$4,101,574.**
- b. **Approve a task order for Kimley-Horn and Associates in the amount of \$567,600.**

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

CIP Project: CE012200

Budget	\$3,479,000
Previous Expenditures and Encumbrances	<u>(\$1,026,574)</u>
Available Balance	\$2,452,426
Proposed Task Order to Kimley-Horn	(\$567,600)
Proposed Task Order to HDR	(\$66,400)
Proposed Guaranteed Maximum Price	(\$5,920,000)
Project Shortage/Requested Additional Funding	<u>(\$4,101,574)</u>
Revised Total Project Authorized Funding	\$7,580,574

Contract Status	Amount
Original Contract with Kimley-Horn and Associates	\$154,200
Total Value of Previous Task Orders	\$411,789
Requested Task Order	\$567,600
Total Value of All Task Orders	\$979,389
Revised Contract Value	\$1,133,589
Engineering Services as % of Construction	19.1%

Project Description: This project is to make reliability improvements to the existing Pine Tree Pressure Reducing Station (PRS) including new pumps and interior piping, yard piping modifications, instrumentation and electrical modifications associated with new equipment and equipment access platforms.

Funding Description: The original CIP project estimate did not anticipate the Construction Management delivery process, the use of a Consultant Program Manager, more extensive yard piping modifications and several miscellaneous improvements to facilitate operation and maintenance of the facility. These additional expenditures are justified because they will help meet the aggressive schedule of the Chesapeake-Elizabeth Treatment Plant permanent closure and diversion program and further improve future reliability of the facility. As a result,



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this project requires additional funding because cost exceeds the balance available for this CIP project. The approval of the Guaranteed Maximum Price (GMP) for construction of the improvements at this PRS is the subject of a separate agenda item. The proposed GMP amount is included in the requested amount of additional appropriation.

Task Order Description and Analysis of Cost: The task order for Kimley-Horn will provide contract administration and construction inspection services. Discussions occurred among Kimley-Horn, HDR (consultant program manager) and HRSD staff to develop and review the project and scope of services. A fee of \$567,600 was negotiated, which will provide the required services.

The cost for this task order is based on 1,778 labor hours for contract administration at an average raw hourly labor rate of \$54.26. Construction inspection is based on an average raw hourly labor rate of \$35.42. The proposed amendment amount is approximately 9.6 percent of the estimated construction cost which is \$5,920,000. This cost is in agreement with historical costs for similar efforts from other firms.

<u>Schedule:</u>	Construction	February 2019
	Project Completion	September 2020

Attachment: None

Public Comment: None



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9. **PROVIDENCE ROAD PRS UPGRADES AND INTERCONNECT FORCE MAIN
ADDITIONAL APPROPRIATION AND TASK ORDER (>\$200,000)**

Actions:

- a. **Appropriate additional funding in the amount of \$9,004,596.**
- b. **Approve a task order for Kimley-Horn and Associates in the amount of \$828,200.**

Moved: Willie Levenston **Ayes:** 8
Seconded: Ann Templeman **Nays:** 0

CIP Project: CE011822

Budget	\$5,445,000
Previous Expenditures and Encumbrances	<u>(\$1,749,396)</u>
Available Balance	\$3,695,604
Proposed Task Order to Kimley-Horn	(\$828,200)
Proposed Task Order to HDR	(\$107,000)
Proposed Guaranteed Maximum Price	(\$11,765,000)
Project Shortage/Requested Additional Funding	<u>(\$9,004,596)</u>
Revised Total Project Authorized Funding	\$14,449,596

Contract Status	Amount
Original Contract with Kimley-Horn and Associates	\$208,300
Total Value of Previous Task Orders	\$688,033
Requested Task Order	\$828,200
Total Value of All Task Orders	\$1,516,233
Revised Contract Value	\$1,724,533
Engineering Services as % of Construction	14.7%

Project Description: This project is to upgrade the existing Providence Road Pressure Reducing Station (PRS) to meet a new capacity with the planned post-2021 valving. The project will also construct piping and control valves that will connect the PRS to the wet weather storage facility located across Providence Road in Woodstock Park. The work includes all new pumps and interior piping, yard piping modifications, instrumentation and electrical replacement, complete replacement of the building superstructure, equipment access platforms and general site improvements.

Funding Description: The original CIP project estimate did not anticipate the Construction Management delivery method, the use of a Consultant Program Manager, more extensive architectural, structural and site improvements and additional operational redundancy. These



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additional expenditures are justified because they will help meet the aggressive schedule of the Chesapeake-Elizabeth Treatment Plant permanent closure and diversion program and comply with the HRSD Pump Station Architectural Guidelines adopted in 2016. As a result, this project requires additional funding because cost exceeds the balance available for this CIP project. The approval of the Guaranteed Maximum Price (GMP) for construction of the improvements at this PRS is the subject of a separate agenda item. The proposed GMP amount is included in the requested amount of additional appropriation.

Task Order Description and Analysis of Cost: The task order for Kimley-Horn will provide contract administration and construction inspection services. Discussions occurred among Kimley-Horn, HDR (consultant program manager) and HRSD staff to develop and review the project and scope of services. A fee of \$828,200 was negotiated, which will provide the required services.

The cost for this task order is based on 2,731 labor hours for contract administration at an average raw hourly labor rate of \$53.29. Construction inspection is based on an average raw hourly labor rate of \$35.42. The proposed amendment amount is approximately seven percent of the estimated construction cost which is \$11,765,000. This cost is in agreement with historical costs for similar efforts from other firms.

Schedule: Construction February 2019
 Project Completion July 2021

Attachment: None

Public Comment: None



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10. **INDEPENDENCE BOULEVARD PRESSURE REDUCING STATION (PRS) MODIFICATIONS, LASKIN ROAD PRS RELIABILITY MODIFICATIONS, PINE TREE PRS RELIABILITY MODIFICATIONS, AND PROVIDENCE ROAD PRS UPGRADES AND INTERCONNECT FORCE MAIN APPROVAL OF GUARANTEED MAXIMUM PRICE (GMP)**

Action: Approve a Guaranteed Maximum Price of \$23,690,000 to the Comprehensive Agreement with Ulliman Schutte Construction, LLC.

Moved: Vishnu Lakdawala **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

CIP Project: CE010400, CE011829, CE012200, CE011822

Project Descriptions: The objective of these four projects is to rehabilitate or upgrade existing PRS facilities so they are capable of delivering the required performance reliably. These projects will also construct an interconnect force main near the Providence Road PRS and yard piping at Independence PRS and Pine Tree PRS. The improvements at these PRS facilities are critical to the successful diversion of the Chesapeake-Elizabeth Treatment Plant to the Atlantic Treatment Plant by the end of 2021. Similar projects in this flow diversion program are also underway at the Atlantic PRS and Kempsville PRS and are included in the Comprehensive Agreement with Ulliman Schutte, LLC. Approval of a Guaranteed Maximum Price (GMP) for construction at these two stations and additional appropriation will be requested at the April 2019 Commission Meeting. The cost figures cited below apply only to those associated with the four projects covered in this agenda item.

Guaranteed Maximum Price: These four projects are being procured through the Construction Management delivery process. On May 22, 2018, the Commission approved a Comprehensive Agreement with Ulliman Schutte Construction, LLC that included the amount of \$238,894 for preconstruction phase services associated with these projects. On September 25, 2018, the Commission approved a GMP for the procurement of pumps for these four pressure reducing stations in the amount of \$1,687,541. The Construction Manager has now competitively bid for the construction of the projects. The GMP for the construction at these four stations is \$23,690,000 broken down as follows:

<u>Project</u>	<u>Estimated Cost</u>
Independence Boulevard PRS Reliability Modifications	\$ 3,005,000
Laskin Road PRS Reliability Modifications	\$ 3,000,000
Pine Tree PRS Reliability Modifications	\$ 5,920,000
Providence Road PRS Upgrades and Interconnect Force Main	\$11,765,000



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Analysis of Cost: The bid prices for the construction of these projects are close to the detailed estimates prepared by the Engineer. A detailed breakdown of the bid prices was reviewed by the Engineer and Consultant Program Manager. The costs were judged to be appropriate for the project. Staff agrees and recommends the Comprehensive Agreement be amended to include the new GMP.

Discussion Summary: There are two additional pressure reducing stations that require modification. These projects will be added at a later date by either amending the current GMP or an entirely separate GMP will be presented for Commission approval.

Attachment: None

Public Comment: None



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11. **KEMPSVILLE ROAD INTERCEPTOR FORCE MAIN EMERGENCY REPAIR
NEW CIP**

Actions:

- a. **Approve a new CIP project (AT014200) for the Kempsville Road Interceptor Force Main Emergency Repairs**
- b. **Appropriate total project funding in the amount of \$401,552**

<u>Moved:</u>	Michael Glenn	<u>Ayes:</u>	8
<u>Seconded:</u>	Vishnu Lakdawala	<u>Nays:</u>	0

CIP Project: AT014200

Project Description: This emergency repair was completed in September 2018. Work was accomplished with funds from the Operations Department Fiscal Year (FY) 2019 Operating Budget. This work is appropriately capitalized at year-end but in the interim creates significant stress on the FY 2019 Operations Department Budget. This proposed Commission action creates and fully funds a new CIP project that will allow all costs originally charged to the Operations Department Budget for this emergency to be charged to this CIP project, restoring the FY 2019 Operations Department Budget balance for use as planned for the remainder of FY 2019.

On August 20, 2018, staff responded to calls from the City of Chesapeake about an HRSD force main failure at the intersection of Hunningdon Lakes Boulevard and Kempsville Road in Chesapeake. Approximately 27,000 gallons of wastewater flowed into the surrounding storm curb inlets which drained to a series of stormwater retention basins located in the Hunningdon Lakes neighborhood. High system pressures due to an intense rainstorm caused the 30-inch ductile iron pipeline to fail. The location is adjacent to a similar repair effort in May 2016.

Staff isolated the break by diverting flow with two mainline valves; one of the valves was installed with the previous repair. Only three City of Chesapeake pump stations had to be pump and hauled as opposed to twelve if the aforementioned valve was not installed.

The contractor, T.A. Sheets General Contractors, Inc., removed and replaced approximately 60 feet of pipe. They also installed a new air vent and cathodic protection. The force main was placed back in service on August 23.

An emergency declaration was authorized on August 21, 2018.



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This emergency was declared to utilize the Prompt Repair On-Call Services contract with T.A. Sheets General Contractors, Inc. to establish traffic control, repairs on the force main, pump and haul services, and roadway repairs.

<u>Schedule:</u>	Emergency Declaration	August 2018
	Construction	August 2018
	Project Completion	September 2018

Attachment: None

Public Comment: None



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12. **LANGLEY MAGRUDER 30-INCH DUCTILE IRON FORCE MAIN EMERGENCY REPAIRS
(SEMPLER FARM)
NEW CIP**

Actions:

- a. **Approve a new CIP project (YR013800) for the Langley Magruder 30-Inch Ductile Iron Force Main Emergency Repairs**
- b. **Appropriate total project funding in the amount of \$1,885,000**

<u>Moved:</u>	Willie Levenston	<u>Ayes:</u>	8
<u>Seconded:</u>	Stephen Rodriguez	<u>Nays:</u>	0

CIP Project: YR013800

Project Description: This emergency repair is still under construction after declaration on December 21, 2018. Work to date has been accomplished with funds from the Operations Department Fiscal Year (FY) 2019 Operating Budget. This work would be appropriately capitalized at year-end but in the interim creates significant stress on the FY 2019 Operations Department Budget. This proposed Commission action creates and fully funds a new CIP project that will allow all future costs as well as all costs already incurred against the Operations Department Budget for this emergency to be charged to this CIP project restoring the FY 2019 Operations Department Budget balance for use as planned for the remainder of FY 2019.

An emergency declaration was authorized on December 21, 2018 for the repair of the 30-inch Langley Magruder Ductile Iron Force Main (NF-047). On December 20, 2018 this force main failed in the vicinity of Sempler Farm Road in Hampton, VA and has been temporarily repaired to stop the active spill.

This emergency declaration was for the pump and haul services needed to advance the near term repair to stop an active spill and also for the ultimate and final repair of this failed infrastructure.

To date, there have been numerous contractors, service providers, and engineers to assist in this effort. Several different pump and haul contractors were utilized during the initial stages of repair for system diversions and service to locality pump stations affected by this failure. A contractor was utilized to clean up and restore a single homeowner's crawlspace impacted by this spill. Our on-call contractor, TA Sheets General Contractors, Inc., was called in and has been working towards the construction requirements to finalize the permanent repair. Our on-call engineer, Rummel Klepper & Kahl, LLP (RK&K), was called in and has been working on construction inspection, site documentation, and design work



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necessary for final pipe line repair.

Ultimately, it has been determined that this a localized issue. A section of approximately 300 LF of 30-inch ductile iron force main will need to be replaced. This project will complete this construction and provide for complete restoration of the affected area and properties.

Funding Description: The total cost for this project is estimated at \$1,715,000 based on a Class 5 cost estimate and a 10 percent contingency included in the requested appropriation.

Schedule:

Emergency Declaration	December 2018
Contractor Work	February 2019
Restoration	April 2019
Project Completion	June 2019

Attachment: None

Public Comment: None



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13. **WILLIAMSBURG TREATMENT PLANT ADVANCED NUTRIENT REDUCTION IMPROVEMENTS INITIAL APPROPRIATION**

Action: Appropriate partial project funding in the amount of \$450,000.

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

CIP Project: WB012700

Project Description: This portion of the project will be implemented to optimize the existing secondary treatment process at the Williamsburg Treatment Plant. This initial effort is intended to significantly delay, and may potentially eliminate, the need for design and construction of a supplemental carbon addition system, which was the basis for the total project estimate. Optimization of the secondary treatment process is required to provide stable source water quality that meets the influent requirements of the full scale SWIFT facility at the Williamsburg Treatment Plant. Based on performance of the current secondary treatment configuration and recent process modeling, the proposed improvements include installation of ammonia based aeration control, nitrate-based recycle flow control, equipment to release excess air, and all required appurtenances such as actuators, instrumentation, baffle walls, large bubble mixers, conduits and wiring.

Analysis of Cost: The partial funding request of \$450,000 is based on estimates for equipment that will be directly purchased and a quote for contractor services to install conduits, supports and wiring. A 20 percent contingency is included and considered appropriate for this project estimate. The total CIP estimate is \$8,586,000.

Staff will provide a briefing at the meeting.

Schedule:	Construction	January 2019
	Project Completion	January 2021

Attachment #5: [Presentation](#)

Public Comment: None



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

[Presented before items 6-10.](#)



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15. **U.S. EPA CONSENT DECREE ANNUAL PUBLIC MEETING**

Action: No action required.

Brief: The Consent Decree with the U.S. EPA requires that we hold an annual informational meeting open to the public and the localities we serve. The meeting is intended to provide an update on compliance activities and status of all activities related to the Consent Decree. The meeting will be held at 1:30 p.m. on January 22, 2019 following the regular Commission meeting at the North Shore Operations Center. Staff will provide the Commission an overview of the materials to be presented at that meeting.

Discussion Summary: Mr. Henifin discussed HRSD's Integrated Plan/Regional Wet Weather Management plan as compared to the DC Water Clean River Program (slide 27). HRSD differs from the Richmond-Lynchburg-Alexandria area, which has combined sewer systems that include stormwater. Staff does not anticipate that HRSD would be required to treat stormwater.

Attachment #7: [Presentation](#)

Public Comment: None



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16. **UNFINISHED BUSINESS**

- a. Annual Disclosure Forms – Mr. Henifin read a portion of an email recently received from Ms. Rebekah Stefanski, Attorney at the Virginia Conflict of Interest and Ethics Advisory Council as follows *“We have determined that the Commission is a local regional entity, and not a state entity... and determined that the members of the Commission are not required to file any disclosure form. Further, it is our conclusion that Va. Code 2.2-3115 does not give the Commission the authority to establish any filing requirements for either its members or its staff or employees....Please remember that this is a separate filing requirement from any forms the Governor's Office requires for its appointment process.”*

Mr. Henifin and the Commission discussed Ms. Stefanski’s opinion in detail. Legal counsel and staff are reviewing the Virginia Public Procurement Act’s reporting requirements and will present a revised Ethics Policy for Commission approval at a future meeting.

- b. Potomac Aquifer Recharge Monitoring Legislation – Virginia House Bill 2358 has passed the committee and is now in the appropriations subcommittee. It is expected to go to the floor for a vote. Virginia Senate Bill 1414 is scheduled to go to the Agriculture, Conservation and Natural Resources Committee this week. Staff does not anticipate any issues.

17. **NEW BUSINESS** – None

18. **COMMISSIONER COMMENTS**

Commissioner Rodriguez received great feedback from the Chesapeake Rotary Club on a recent staff presentation. He said they were very impressed with the SWIFT program and were looking forward to hearing more about the program.

Commissioner Levenston asked for an update on the warranty issues at the SWIFT Research Center. Mr. Henifin stated the investigation is underway with a great response from all parties. An update is forthcoming after a conference call today. Staff anticipates 5-6 weeks to complete the repairs after approval is given to proceed.

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



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20. **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 – Monthly](#) and [Annual](#)
- d. [Air Summary – Monthly](#) and [Annual](#)
- e. [Emergency Declaration - Langley Magruder 30-Inch Ductile Iron Force Main \(Semple Farm\)](#)

Attachment #8: [Informational Items](#)

Public Comment: None

21. **ANNOUNCEMENTS**

- Reminder – The Annual Elizabeth River Project River Star Businesses Recognition luncheon will be held on Thursday, January 24, 2019.

Next Commission Meeting Date: February 26, 2019 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

Meeting Adjourned: 11:11 a.m.

SUBMITTED:

Jennifer L. Cascio

Jennifer L. Cascio
Secretary

APPROVED:

Frederick N. Elofson

Frederick N. Elofson, CPA
Chair

HRSD COMMISSION MEETING MINUTES
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ATTACHMENT #1

AGENDA ITEM 1. – Consent Agenda

CONSENT AGENDA ITEM 1.b.1. – January 22, 2019

Subject: Enterprise Resource Planning (ERP) Oracle Database and WebLogic Maintenance and Support Contract
Contract Award (>\$200,000)

Recommended Action: Award a contract for ERP Oracle Database and WebLogic Maintenance and Support to Mythics, Inc. in the estimated amount of \$95,741 for year one with four annual renewal options and an estimated cumulative value in the amount of \$478,706.

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Mythics, Inc.	\$95,741

HRSD Estimate: \$96,673

Contract Description: This contract is for technical support for ERP Oracle Database and WebLogic software licenses which includes software updates. One firm submitted a bid on January 8, 2019 and they were determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Invitation for Bid. HRSD solicited multiple Oracle support providers, with Mythics being the only response.

Analysis of Cost: Costs were compared to past purchase history and costs were determined to be fair and reasonable. The HRSD estimate is based on the current contract cost plus four percent, which is typical for Oracle-based service contracts. The last contract with Oracle was in the amount of \$92,955.

CONSENT AGENDA ITEM 1.c.1. – January 22, 2019

Subject: King William Treatment Plant Improvements Phase I
Task Order (>\$200,000)

Recommended Action: Approve a task order with Jacobs Engineering Group, Inc. in the amount of \$379,373.

CIP Project: MP012000

Budget	\$801,000
Previous Expenditures and Encumbrances	(\$285,705)
Available Balance	\$515,295

Contract Status:	Amount
Original Contract with Jacobs	\$51,410
Total Value of Previous Task Orders	\$173,078
Requested Task Order	\$379,373
Total Value of All Task Orders	\$552,451
Revised Contract Value	\$603,861
Engineering Services as % of Construction	21%

Project Description: The HRSD Small Communities Division's King William Treatment Plant (KWTP) is a membrane bioreactor (MBR) plant with two parallel 50,000 gallons per day treatment trains. HRSD Small Communities Division has recently completed the necessary work to reactivate the second biological treatment train, increasing the plant's capacity to 100,000 gallons per day. Previously the MBR portion of the second train was used to stage and clean membranes used in the first treatment train. Membrane performance has not met expectations for some time and has required maintenance beyond what was anticipated with the original design. With the reactivation of the second train to meet flow conditions, improvements to the technique used to clean the membranes is required. To support these modified cleaning techniques several improvements are required. These improvements are identified as follows: automation of pulsed membrane backwash with chlorine addition; provision for off-line membrane cleaning; consolidation of chemical storage and metering; equalization tank (EQ) pumping; Ultra-Violet (UV) system improvements; and Programmable Logic Controller (PLC) additions.

Task Order Description and Analysis of Cost: This task order will provide for Design phase engineering services for King William Treatment Plant Phase I.

The cost for this task order is based on task order is based on negotiated Scope and Fee with Jacobs. The Design Engineering Services is 9.8 percent of the estimated cost of Construction. This compares well to other similar projects of this size and type.

Schedule:	Design	February 2019
	Bid	September 2019
	Construction	November 2019
	Project Completion	November 2020

CONSENT AGENDA ITEM 1.c.2. – January 22, 2019

Subject: Treatment Plant Grease Handling Facilities
Task Order (>\$200,000)

Recommended Action: Approve a task order with Jacobs in the amount of \$376,764.

CIP Project: GN013300

Budget	\$1,843,668
Previous Expenditures and Encumbrances	(\$121,740)
Available Balance	<u>\$1,721,928</u>

Contract Status:	Amount
Original Contract with Jacobs	\$99,879
Total Value of Previous Task Orders	\$11,696
Requested Task Order	\$376,764
Total Value of All Task Orders	\$488,339
Engineering Services as % of Construction Estimate	6%

Project Description: This project involves installation of a facility at Nansemond Treatment Plant to receive FOG (Fats, Oils, and Grease) from indirect haulers. The facility will screen, decant, and process the FOG in a manner that will convert a portion to bio-fuel using the Greasezilla™ system. The portion of FOG converted to bio-fuel will be sold to Greasezilla™ per a separate by product removal (off-take). The decanted FOG water will be sent to headworks for normal wastewater treatment and the remaining processed FOG not taken by Greasezilla™ will be sent to the digesters.

The current appropriated budget for this CIP is \$1,843,668, which was based on installing a much simpler system that did not require a building. In March of 2018, the HRSD project team acknowledged the need for a more robust facility to manage FOG and to also include space to accommodate other needs. As such, the CIP cost estimate was increased to \$5,386,123 for FY 2019. Jacobs has been assisting HRSD with preliminary engineering efforts and recently developed a Class 4 cost estimate indicating the construction cost estimate could range from \$5.8 million to \$12.4 million at current definition. The FY 2020 CIP will be updated to reflect this new cost estimate. The project team is committed to constructing the facility at a reasonable cost and is recommending a next step which involves services from Jacobs to provide preliminary engineering to a 30 percent design level. This effort will help to further define the project so that a more accurate cost estimate can be developed. The effort will also include a value engineering study and assessment of likely return on investment (ROI) associated with end-product biofuel off-take.

A request for additional appropriation will be presented to Commission after completion of the 30 percent design and value engineering effort. The off-take agreement with Greasezilla™ will also be presented at that time.

Task Order Description: This task order will provide preliminary design services (up to 30 percent design) along with a value engineering study.

Analysis of Cost: The cost for this task order is based on a negotiated price between Jacobs and HRSD. The preliminary design phase services as a percentage of construction cost is four percent, which compares well with the percentages for other similar projects.

<u>Schedule:</u>	PER	April 2015
	Design	February 2019
	Bid	January 2020
	Construction	March 2020
	Project Completion	September 2021

CONSENT AGENDA ITEM 1.d.1 – January 22, 2019

Subject: Cummins Inc.
Cummins Emergency Generator Parts and Repairs
Sole Source (>\$10,000)

Recommended Action: Approve Cummins Inc. as the provider of repair parts and services for Big Bore Cummins Emergency Generators 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 repairs and associated parts for Cummins Emergency Generators in use throughout HRSD. The emergency generators are critical to continued facility operations in the event of a power outage.

The Commission previously approved limited sole source authority to Cummins for the maintenance and repair of the Combined Heat and Power (CHP) methane generators at Atlantic Treatment Plant.

Cummins is the only provider of parts and repairs and does not outsource Big Bore Generator repair services via third party vendors.

CONSENT AGENDA ITEM 1.d.2. – January 22, 2019

Subject: s::can Measuring Systems LLC
s::can Nitrification Analyzer
Sole Source (>\$10,000)

Recommended Action: Approve s::can Measuring Systems LLC as the provider of s::can Nitrification Analyzers for use at the Boat Harbor Treatment Plant.

Sole Source Justification:

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

Details: Product includes s::can nitrification analyzers for measurement of NO_x (Nitrite NO₂ + Nitrate NO₃) in the aeration tanks at the Boat Harbor Treatment Plant. The s::can analyzers independently measure both NO₂ and NO₃ maximizing efficiency and increasing aeration control for nitrification. Previously the Hach Nitritax Analyzer has been used to measure NO_x for aeration control; however the Hach Nitratix is not capable of measuring NO₂ and NO₃ independently.

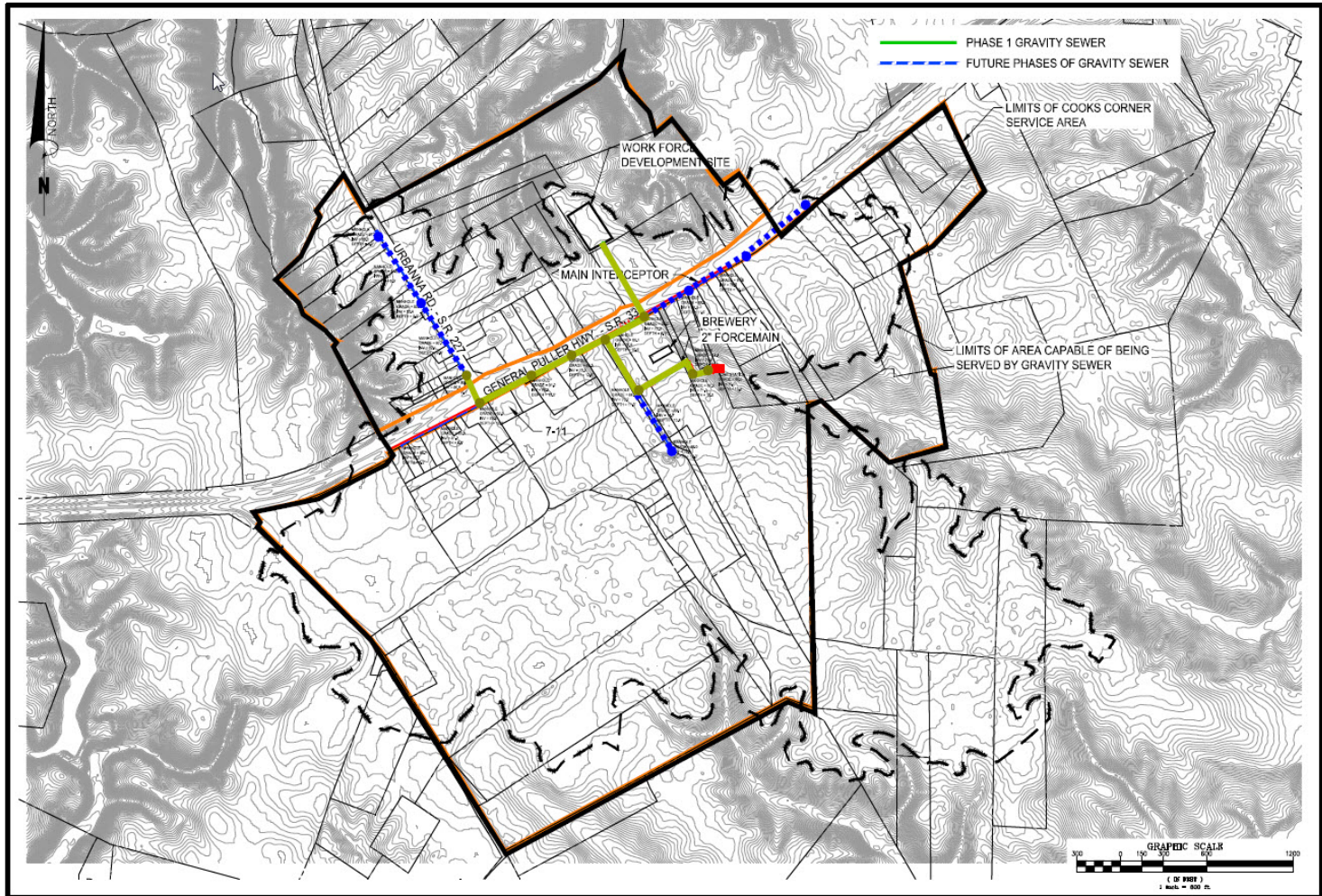
s::can Measuring Systems LLC is the local distributor of the s::can nitrification analyzer.

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ATTACHMENT #2

AGENDA ITEM 3. – Cooks Corner Collection System Maps

Cooks Corner Collection System Preliminary Layout



Middlesex County Transmission FM Master Plan

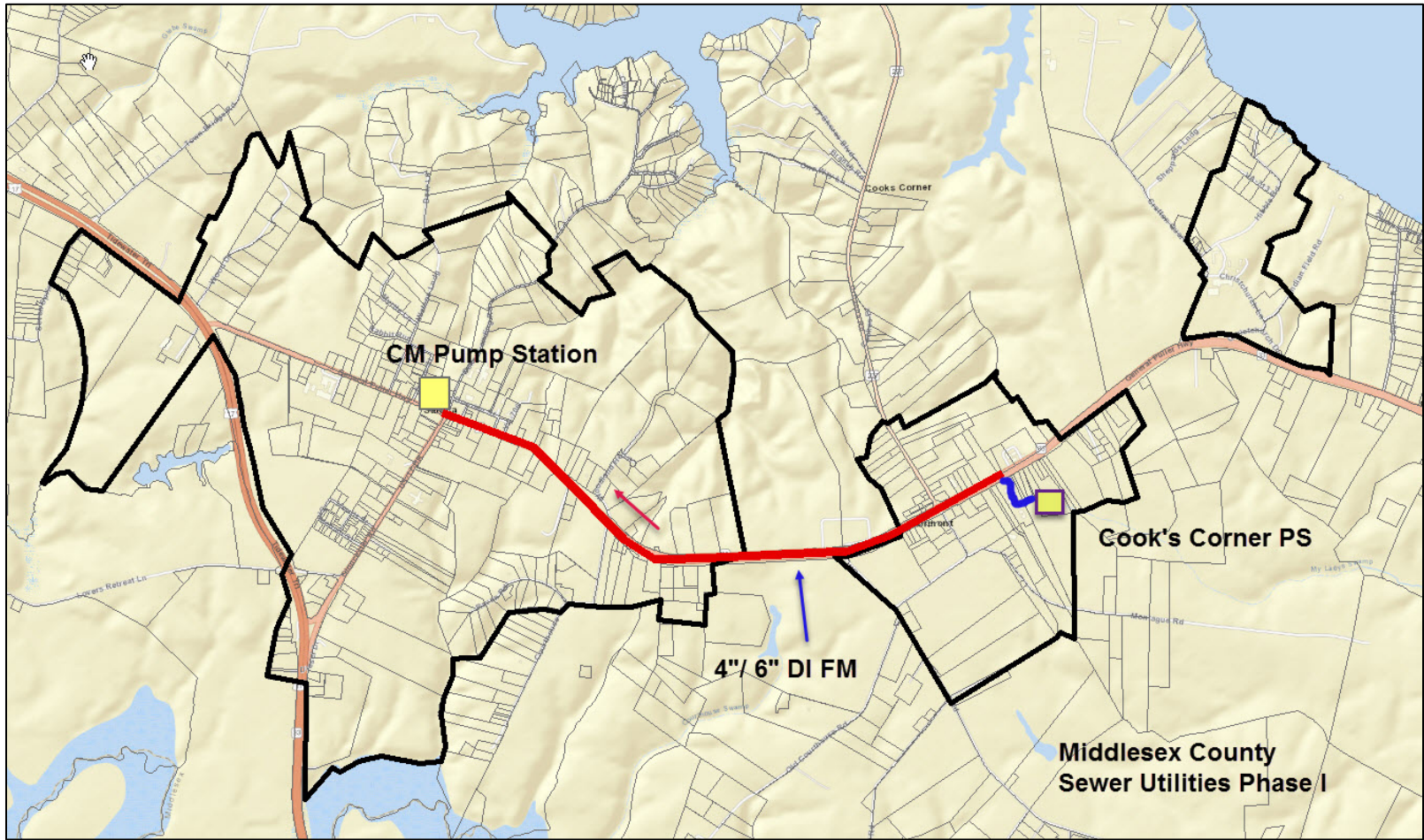


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ATTACHMENT #3

AGENDA ITEM 4. – Middlesex Transmission Force Main Phase I Maps

Transmission FM Phase I



Middlesex County Transmission FM Master Plan



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ATTACHMENT #4

AGENDA ITEM 5. – Huxley Place to Middle Ground Boulevard Interceptor Force Main
Extension Agreement

AGREEMENT FOR COST SHARING
OF THE
HAMPTON ROADS SANITATION DISTRICT
HUXLEY PLACE TO MIDDLE GROUND BOULEVARD INTERCEPTOR FORCE MAIN
EXTENSION (JR012100)

AND

CITY OF NEWPORT NEWS
HUXLEY PLACE SANITARY REHABILITATION AND REPLACEMENT

THIS AGREEMENT FOR COST SHARING (the "Agreement"), between the CITY OF NEWPORT NEWS ("CITY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), is entered into this 28th day of January, 2019 (the "Effective Date").

RECITALS

R:1. HRSD is constructing its Huxley Place to Middle Ground Boulevard Interceptor Force Main Project as shown on **Exhibit 1** (the "HRSD Facilities"); and

R:2. The CITY is constructing its Huxley Place Sanitary Rehabilitation and Replacement Project as shown on **Exhibit 2** (the "CITY Facilities") as part of the City of Newport News Capital Improvement Program; and

R:3. The construction of the HRSD Facilities and the CITY Facilities (collectively referred to as the "Improvements") will necessitate the construction, installation of force main, realignment, rehabilitation, bypassing, replacement of existing gravity sewers and laterals, and abandonment of existing force main; and

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

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

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

TERMS

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

I. DESIGN OF IMPROVEMENTS

A. Plans and Specifications

1. HRSD will employ Rummel, Klepper, and Kahl, LLP ("ENGINEER"), to prepare plans and specifications for the HRSD Facilities. A location map of the HRSD Facilities is included as Exhibit 1.
2. CITY will employ Rummel, Klepper, and Kahl, LLP ("ENGINEER"), to prepare plans and specifications for the CITY Facilities. A location map of the CITY Facilities is included as Exhibit 2.
3. ENGINEER, along with HRSD and the CITY, will meet to coordinate, review, and approve a set of construction documents (the "Final Plans and Specifications") for the Improvements.

B. Payment of the Design Costs

1. HRSD will compensate the ENGINEER for all engineering design costs and any amendments related to the HRSD Facilities.
2. CITY will compensate the ENGINEER for all engineering design costs and any amendments related to the CITY Facilities.

C. Compliance

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

II. CONSTRUCTION OF IMPROVEMENTS

A. Cost of Construction:

1. The total cost of the Improvements, as more particularly defined by the Final Plans and Specifications, prepared by the ENGINEER for HRSD and the CITY (the "Improvements Costs") shall include:
 - a. Cost of construction of the Improvements;
 - b. Cost of advertising for bids;
 - c. Cost of permits required for the construction of the Improvements;
 - d. Costs for construction contract administration (CA) and construction inspection (CI);
 - e. Any related miscellaneous essential expenses.
2. The current estimated cost of the construction of the HRSD Facilities is \$2,681,000 and the estimated cost of the construction of the CITY Facilities is \$605,000.

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

1. HRSD and the CITY agree that before any construction work is to begin under this Agreement, HRSD and the CITY will jointly review and approve the Final Plans and Specifications. This approval shall be in writing, and once approved, the approval as well as the Final Plans and Specifications shall be appended as an addendum to this Agreement.
2. HRSD and the CITY shall review and agree upon the qualifications of the contractor's and subcontractors employed for the Improvements (the "Contractor(s)") prior to award of the construction contract.
3. Contractors shall be responsible for all necessary permits and approvals necessary for the Improvements.

4. HRSD will review and approve change orders related to the HRSD Facilities.
5. CITY will review and approve change orders related to the CITY Facilities.
6. CITY will review and approve scope of work and fee for the construction contract administration and inspections related to the CITY Facilities.

C. Payment of Improvement Costs

1. The Improvements Costs shall be apportioned among the parties as follows:
 - a. HRSD will administer and be responsible for bearing one hundred percent (100%) of the cost of the HRSD Facilities.
 - b. The CITY will administer and be responsible for bearing one hundred percent (100%) of the cost of the CITY Facilities.
 - c. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - i. HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and
 - ii. The CITY shall be responsible for costs due to a Change Order requested by the CITY.
2. During the course of construction, HRSD shall compensate the Contractors and other individuals and entities providing materials and/or services related to the Improvements for all Improvement Costs, including those for which the CITY is responsible. The CITY shall reimburse HRSD for all such payments made on its behalf. The CITY shall pay its share of the Improvements Costs to HRSD in one lump sum payment upon completion of construction (as determined by HRSD). HRSD shall provide the CITY with an invoice detailing the CITY's share of the Improvement Costs. Within thirty (30) days of its receipt of such invoice, the CITY shall reimburse HRSD for the CITY's share of the Improvement Costs as detailed in the invoice.

3. The CITY's CA cost will be equal to the final City Facilities Cost when compared to the total project Improvement Cost multiplied by the total CA cost.

$$\text{City Facilities Costs} / \text{Total Improvement Costs} \times \text{Total CA Costs} = \text{CITY CA Cost}$$

4. The CITY's CI cost will be equal to the final City Facilities Cost when compared to the total project Improvement cost multiplied by the total CI cost.

$$\text{City Facilities Costs} / \text{Total Improvement Costs} \times \text{Total CI Costs} = \text{CITY CI Cost}$$

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

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

III. SCHEDULE

The construction is anticipated to begin by June 1, 2019 and be complete by June 1, 2020. If the construction dates listed herein are substantially delayed, HRSD reserves the right to terminate this Agreement.

IV. OBLIGATIONS OF HRSD AND THE CITY

A. Public Hearing

HRSD and the CITY will be responsible for holding a public hearing if required. The CITY will coordinate and reserve the location, and assist HRSD in such public hearing.

B. Bidding of the Improvements

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

C. Administration

HRSD shall provide contract administration of the Improvements. The CITY shall reimburse HRSD for the contract administration cost of the CITY Facilities.

D. Inspection

HRSD shall provide full-time inspection of the Improvements. The CITY shall reimburse HRSD for the inspection costs of the CITY Facilities. The inspector(s) shall have the authority to assure the Improvements are constructed in accordance with the Final Plans and Specifications.

E. Deeds and Easements

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

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

F. Correction of Construction Defects in the Improvements

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

G. Construction Record Drawings

ENGINEER shall provide HRSD and the CITY approved construction record drawings in accordance with HRSD Standards for use in Engineered Construction Projects and the City of Newport News Construction Standards and Special Provisions, latest edition.

V. GOVERNING LAW

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

VI. TERMINATION

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

VII. NOTICE

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

For: HRSD

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

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

With Copy to:

Conway H. Shield, III
Jones, Blechman, Woltz and Kelly
701 Town Center Drive, Suite 800
Newport News, VA 23606

For: City of Newport News

Cynthia D. Rohlf, City Manager
City of Newport News, Virginia
2400 Washington Avenue
Newport News, VA 23607
Telephone: (757) 727-6392
Facsimile: (757) 926-3505

With Copy to:

City Attorney
2400 Washington Avenue
Ninth Floor City Hall
Newport News, VA 23607

VIII. ASSIGNMENT

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

IX. AMENDMENT

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

X. SEVERABILITY

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

XI. DAMAGES

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

XII. INSURANCE

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

XIII. TERM OF AGREEMENT

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

XIV. FORCE MAJEURE

In the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond the control of the CITY or HRSD or the Contractor and without their fault or negligence, including, but not restricted to, acts of God or of the public enemy, acts of the government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargos, and unusually severe weather or delays of subcontractors due to such causes; it being the purpose and intent

of this provision that in the event of the occurrence of any such enforced delay, the time or times for performance of the obligations of the parties shall be extended for the period of the enforced delay.

XV. INDEPENDENT CONTRACTOR

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

XVI. SUBCONTRACTOR

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

XVII. WAIVER

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

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

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

XVIII. INTEGRATION

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

Agreement for Cost Sharing of the HRSD Huxley Place to Middle Ground Boulevard Interceptor Force Main Extension (JR012100) and City of Newport News Huxley Place Sanitary Rehabilitation & Replacement


IN WITNESS WHEREOF, the Hampton Roads Sanitation District Commission (HRSD) has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on January 22, 2019.

HAMPTON ROADS SANITATION DISTRICT

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

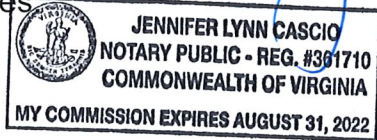
COMMONWEALTH OF VIRGINIA,
CITY OF VIRGINIA BEACH, to-wit:

The foregoing agreement was acknowledged before me this 28th day of January, 2019, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.


Notary Public

My commission expires

Registration No.:



Agreement for Cost Sharing of the HRSD Huxley Place to Middle Ground Boulevard Interceptor Force
Main Extension (JR012100) and City of Newport News Huxley Place Sanitary Rehabilitation &
Replacement

IN WITNESS WHEREOF, the City of Newport News (CITY) has caused this Agreement to be signed by the City Manager on its behalf pursuant to Resolution adopted by the City Council on January 8, 2019.

CITY OF NEWPORT NEWS

By Cynthia D. Rohlf
Cynthia D. Rohlf, City Manager

ATTEST:

Nabel Washington Jenkins
City Clerk

COMMONWEALTH OF VIRGINIA,
CITY OF NEWPORT NEWS, to-wit:

The foregoing Agreement was acknowledged before me this 17th day of January, 2019, by Cynthia D. Rohlf, City Manager, City of Newport News, Virginia.



Indiana A. Brown
Notary Public

My commission expires 1/18/23

Registration No.: 7647821

Approved as to Form and Correctness:

[Signature]
Deputy City Attorney

Approved as to Content:

[Signature]
Director of Engineering

Agreement for Cost Sharing of the HRSD Huxley Place to Middle Ground Boulevard Interceptor Force Main Extension (JR012100) and City of Newport News Huxley Place Sanitary Rehabilitation & Replacement

Exhibit 1

HRSD Facilities Location Map

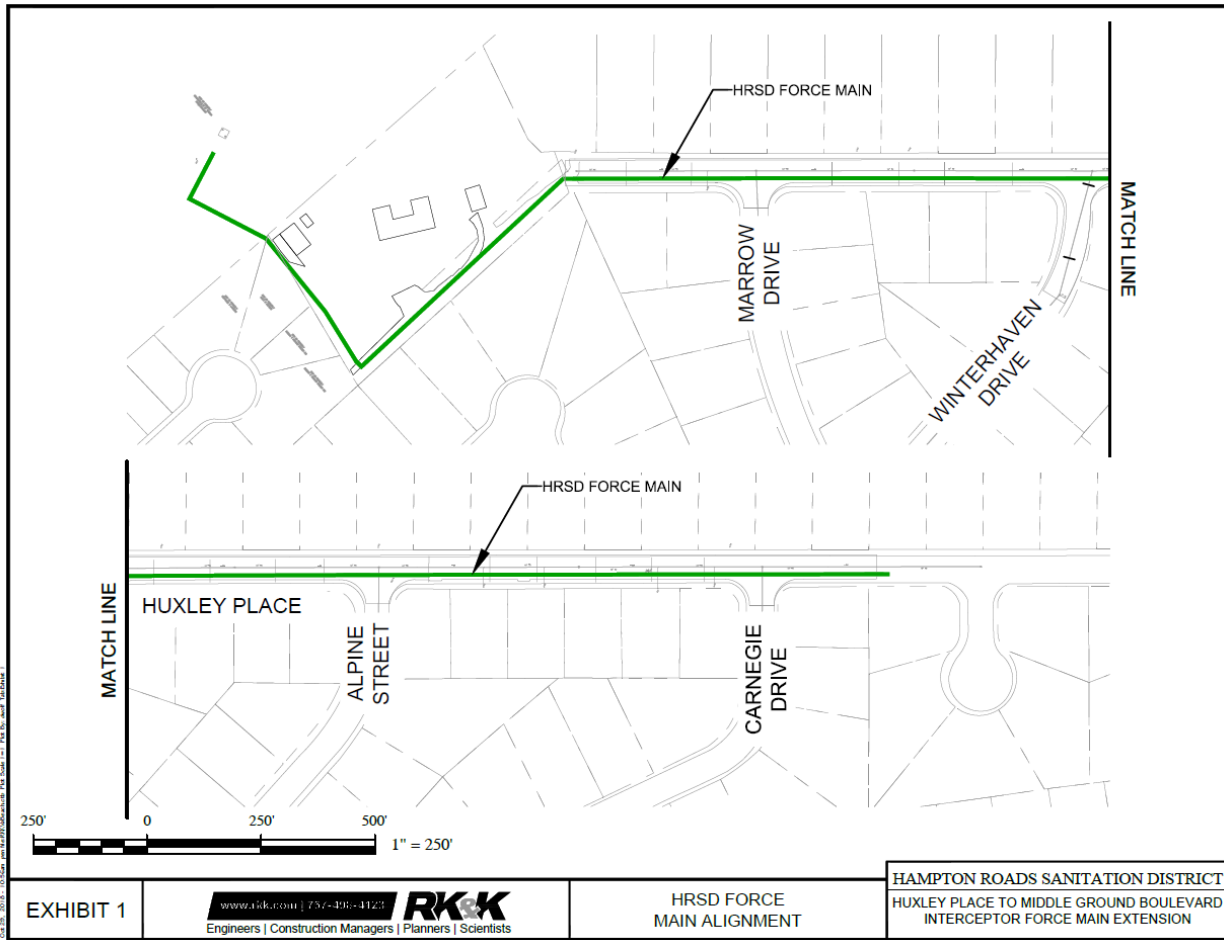
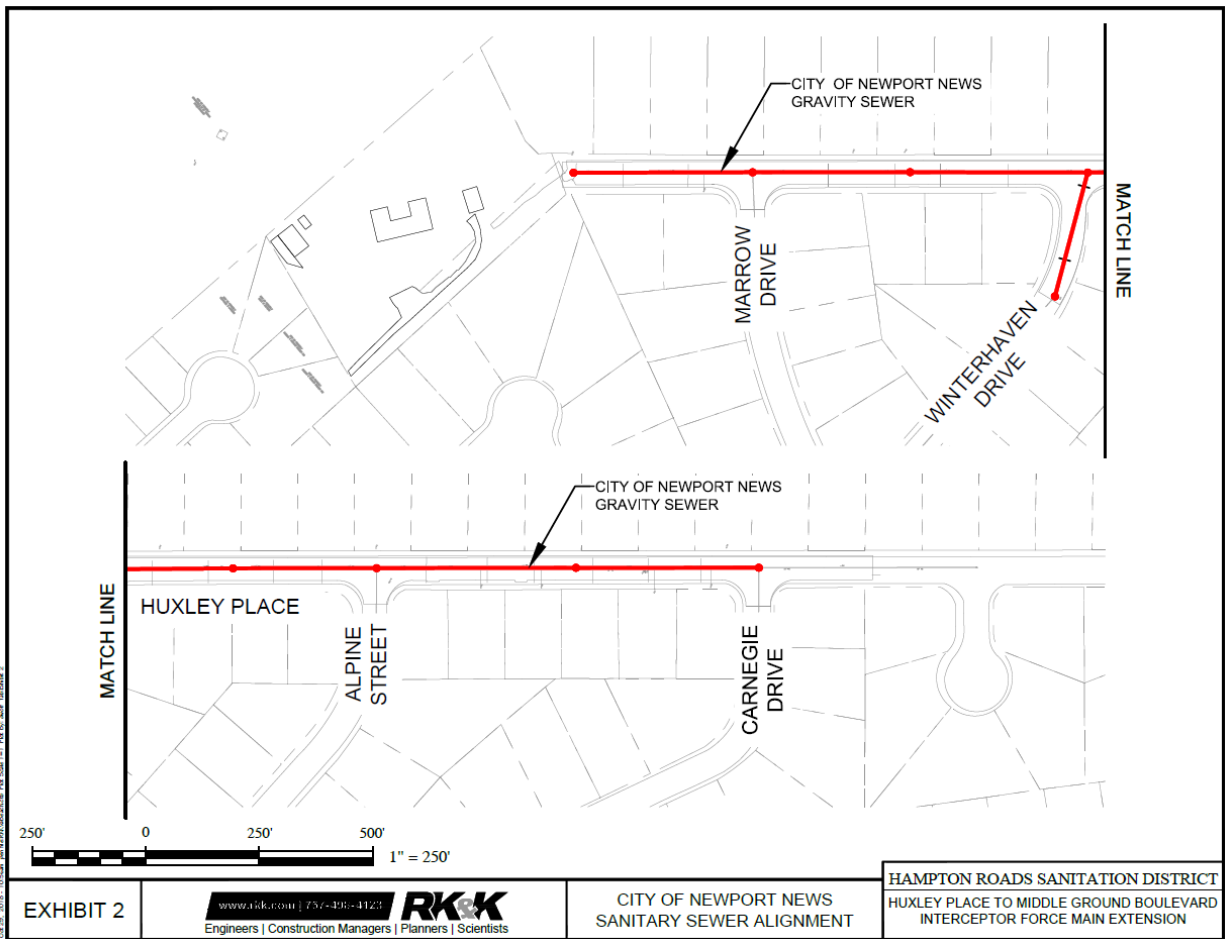


Exhibit 2



City Facilities Location Map

HRSD COMMISSION MEETING MINUTES
January 22, 2019

ATTACHMENT #5

AGENDA ITEM 13. – Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements Presentation

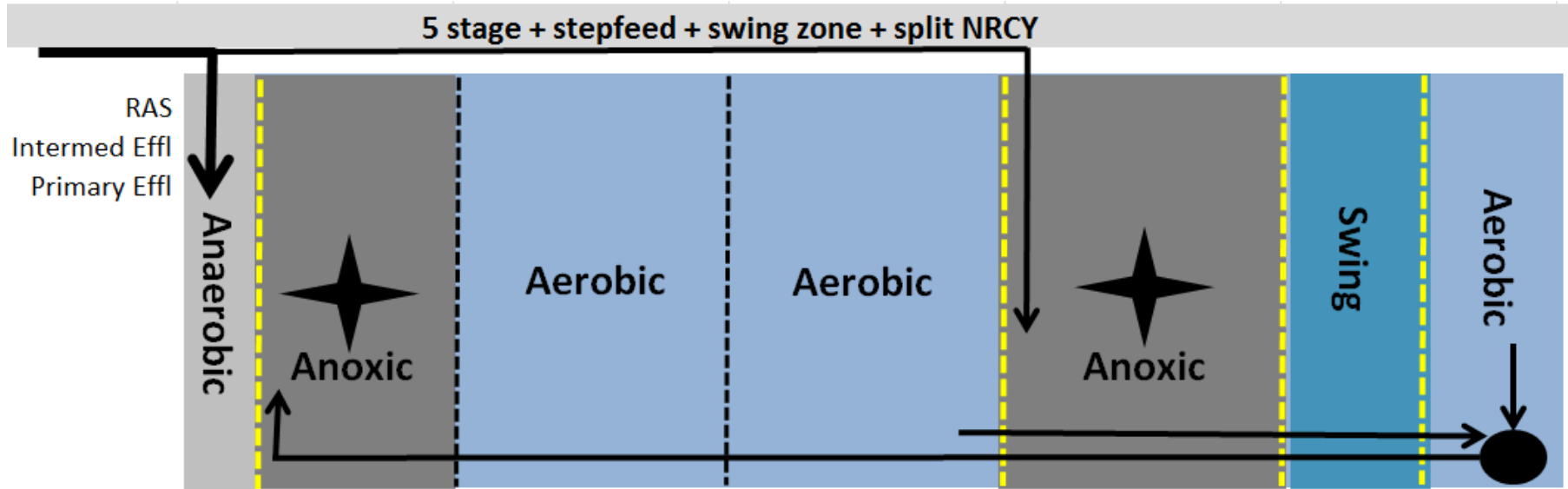


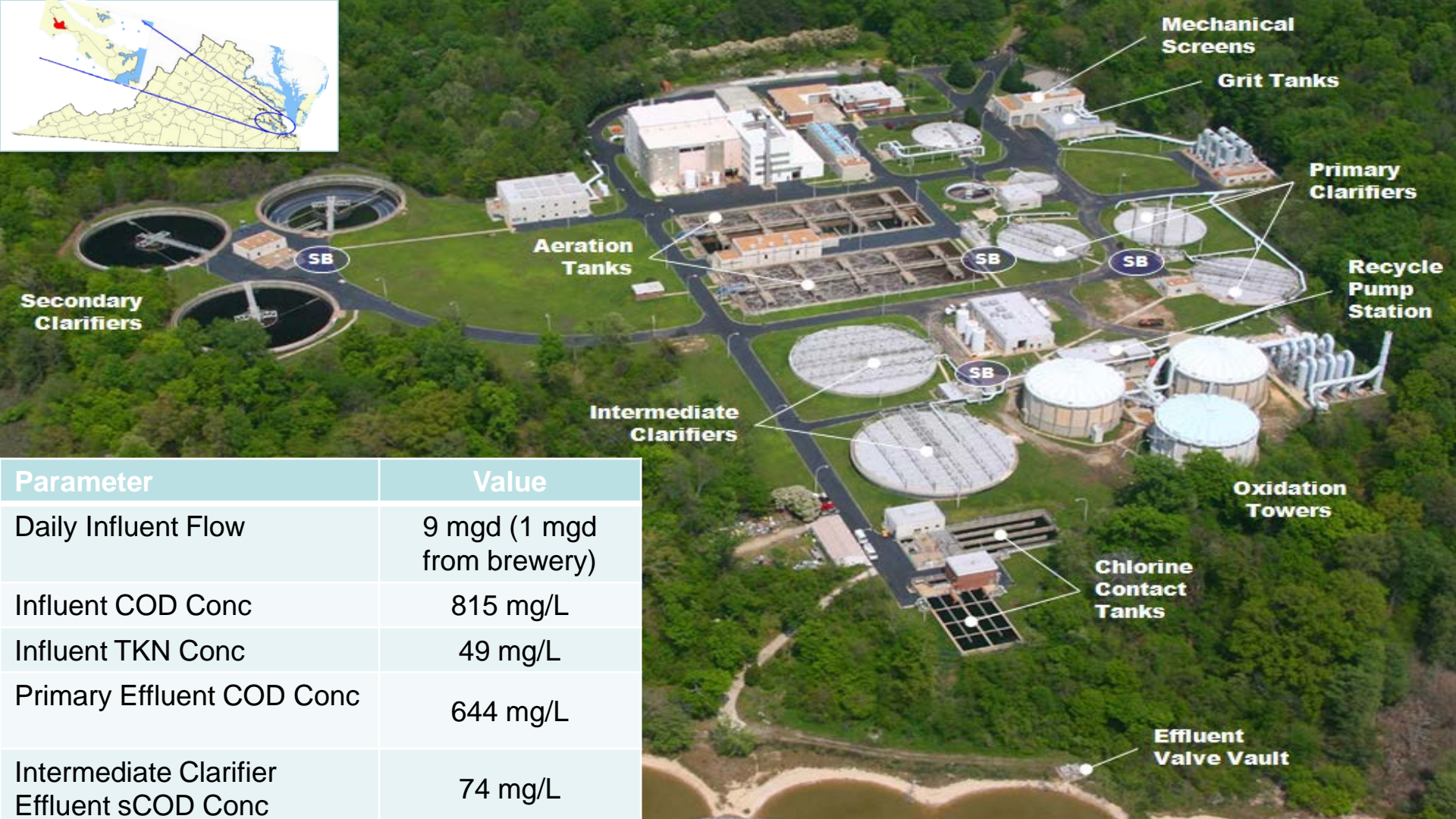
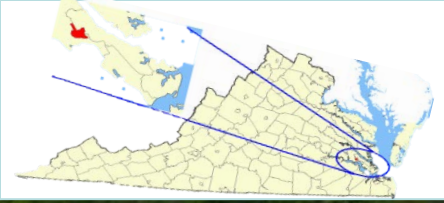
Cleaning wastewater every day for a better Bay.

Williamsburg Treatment Plant Advanced Nutrient Reduction Improvements

January 22, 2019

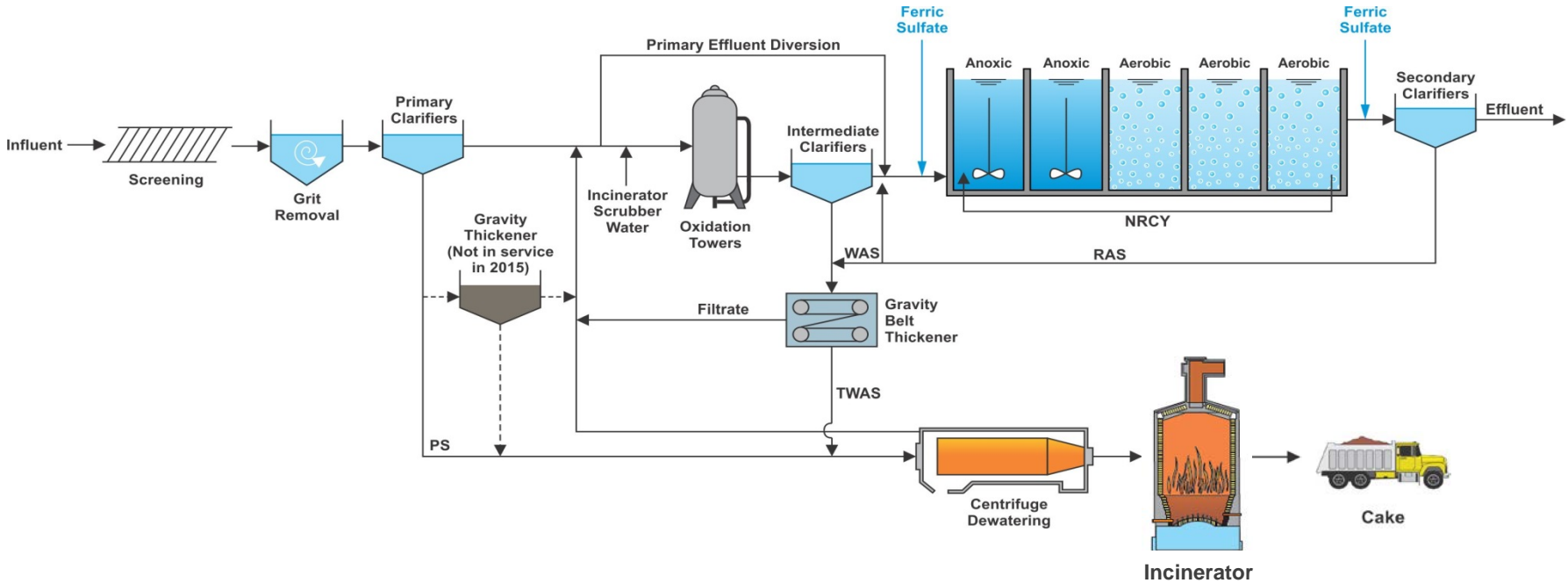
Lower Nitrogen with a Small Budget and Ingenuity





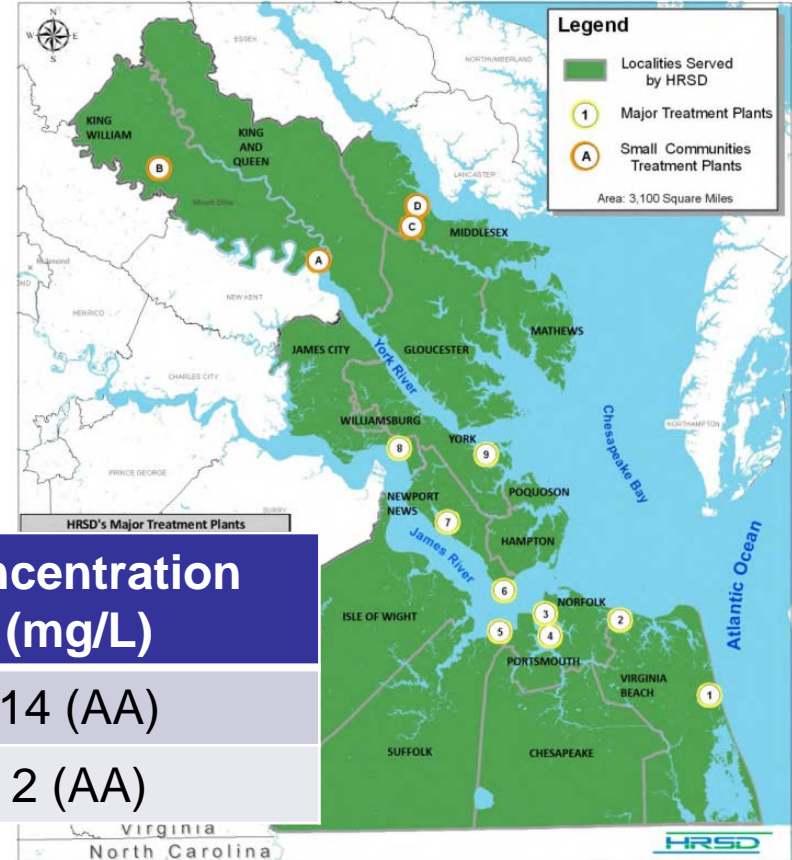
Parameter	Value
Daily Influent Flow	9 mgd (1 mgd from brewery)
Influent COD Conc	815 mg/L
Influent TKN Conc	49 mg/L
Primary Effluent COD Conc	644 mg/L
Intermediate Clarifier Effluent sCOD Conc	74 mg/L

Process Flow Diagram (MLE Configuration)

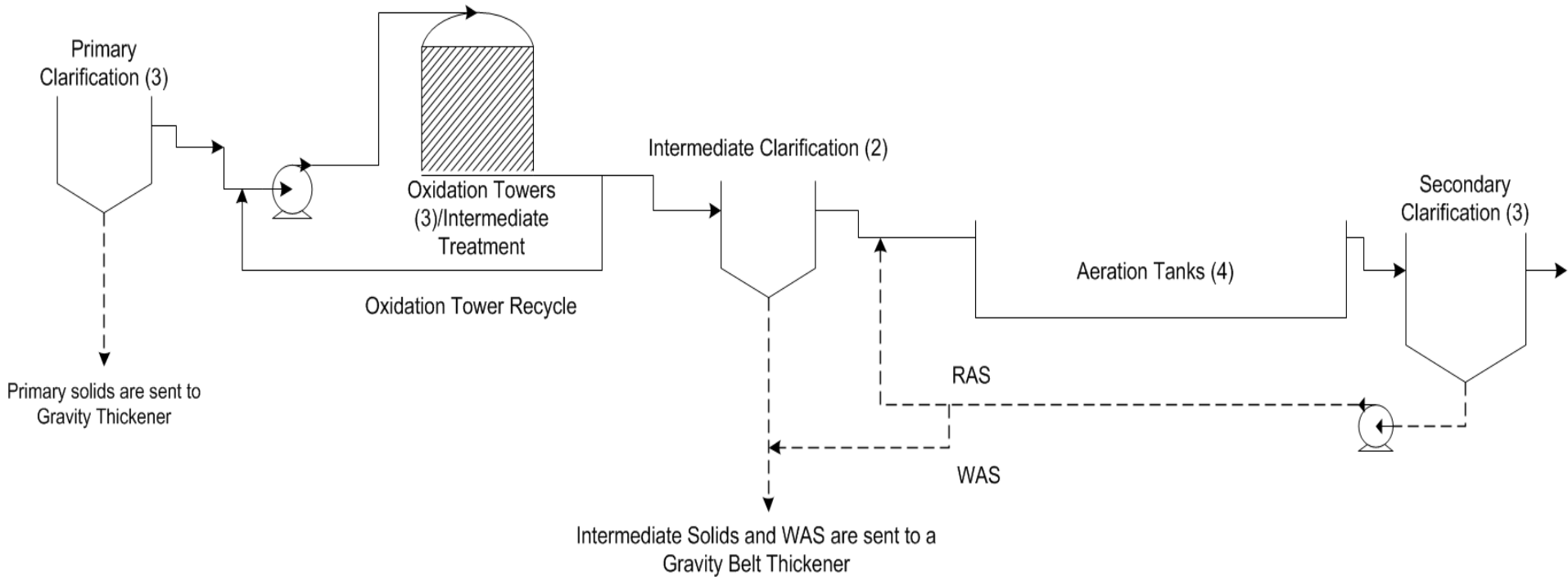


Project Goals – Nutrient Reduction

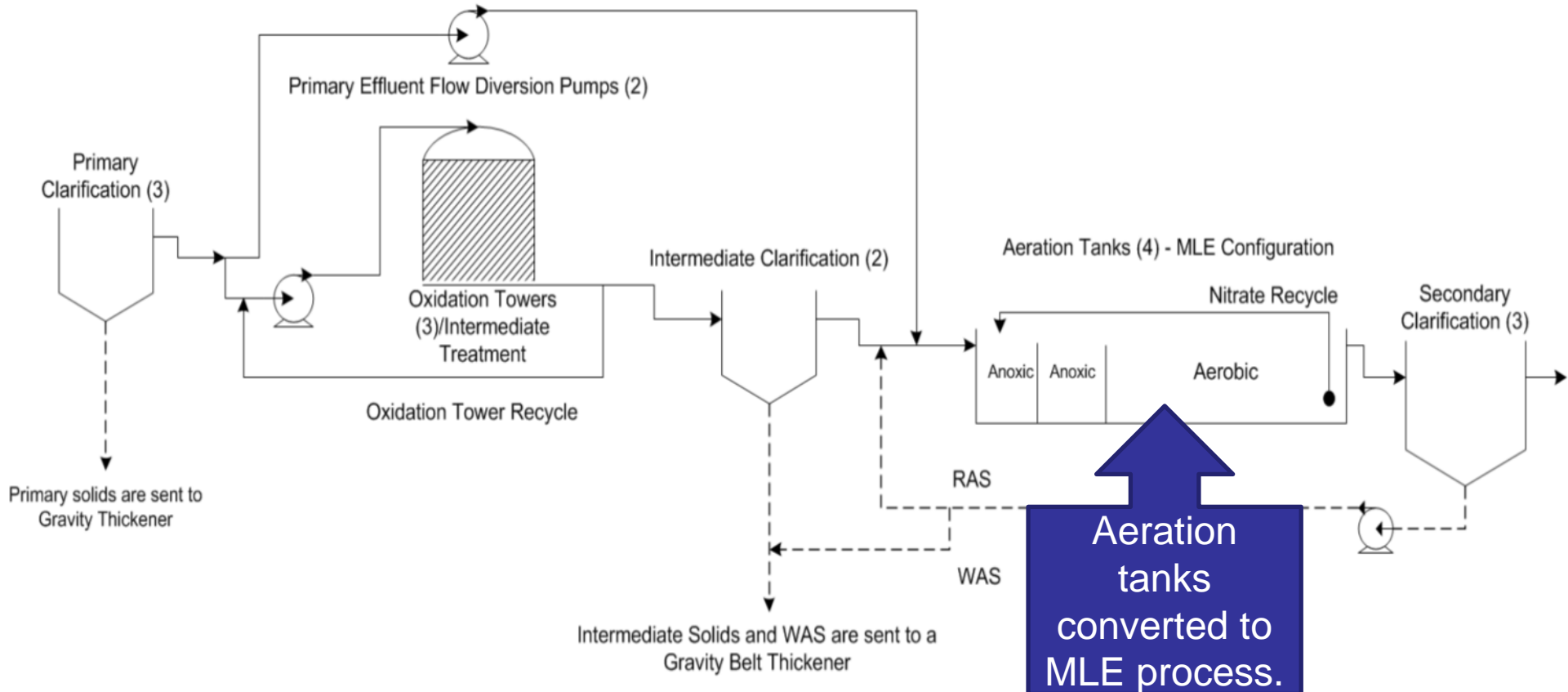
- James River Bubble Permit
 - 7 Plants
 - Nitrogen
 - 4.55 million pounds/year (2017)



Liquid Process Flow Pre-2011



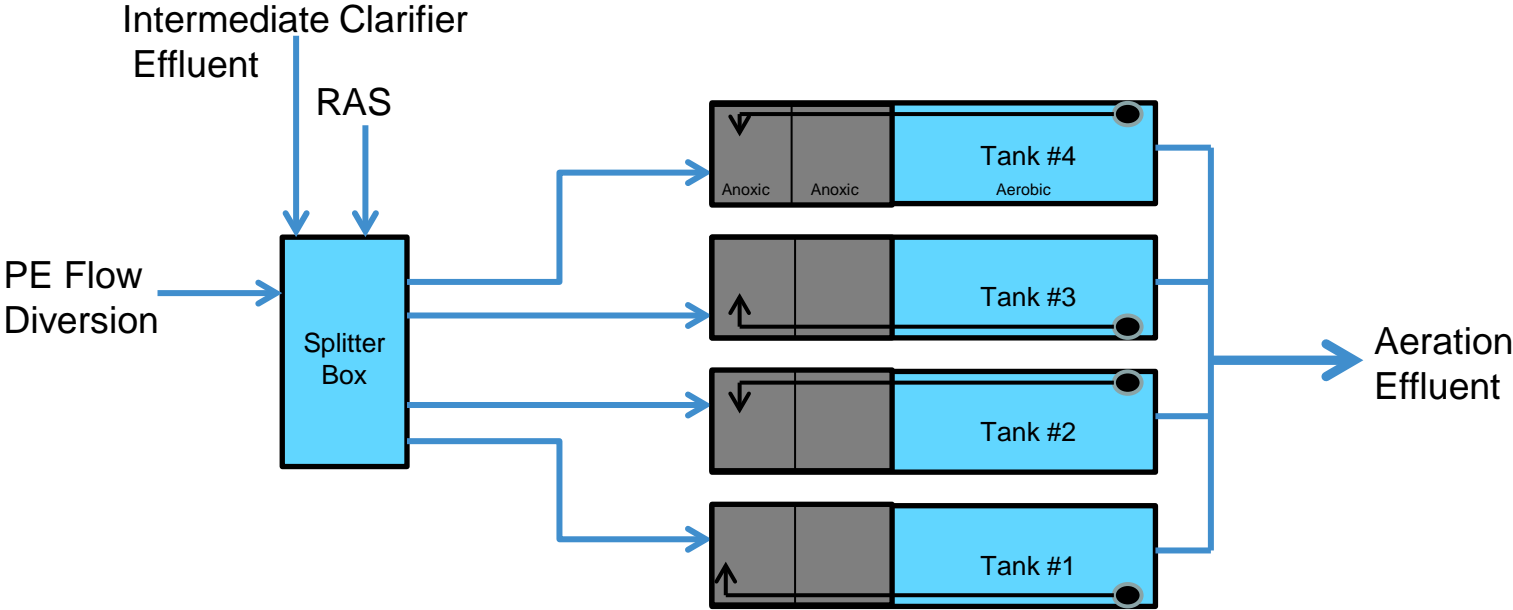
Liquid Process Flow - May 2011 to January 2017



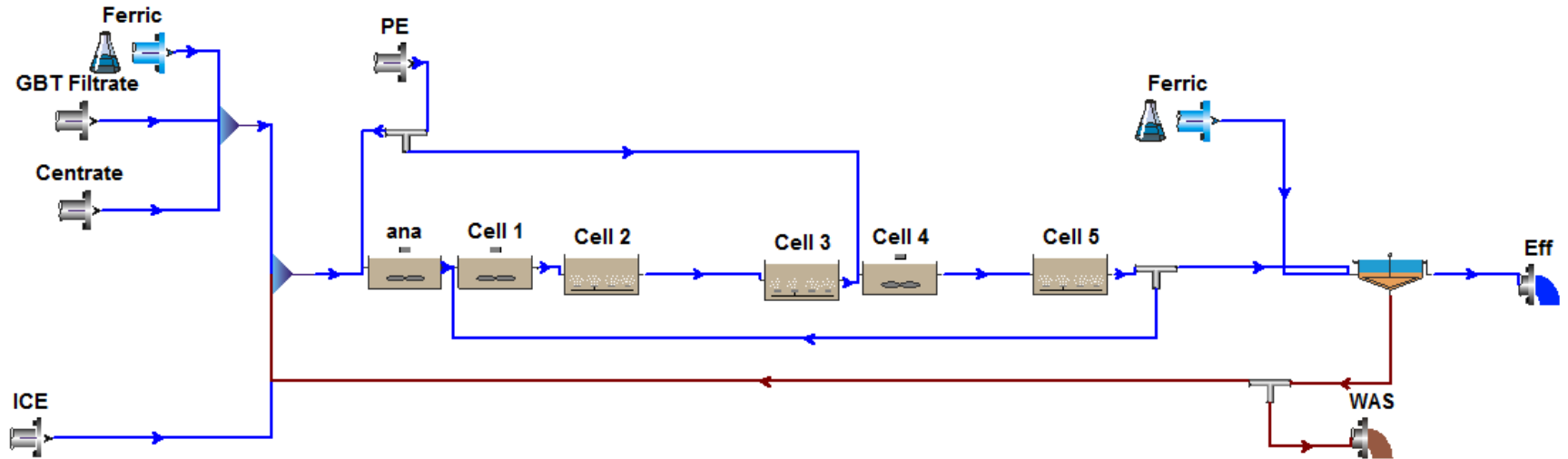
- Variability in brewery load
 - High & very low (or zero) COD loading
 - Impacts flow split between oxidation towers and aeration tanks
 - Impacts ammonia loading into aeration tanks
- Incinerator scrubber water
 - Treated in oxidation towers prior to aeration tanks
 - No formal sidestream process
 - Nitrification upsets associated with incinerator scrubber water not being treated in oxidation towers
- Bio-P
 - Unreliable in summer
 - Issues with warm weather are further exaggerated when oxidation towers partially nitrify in summer (adds NO₃ to anaerobic zone)

Historical Data Review and Modeling

Liquid Process Flow – May 11 to January 2017 – MLE Configuration

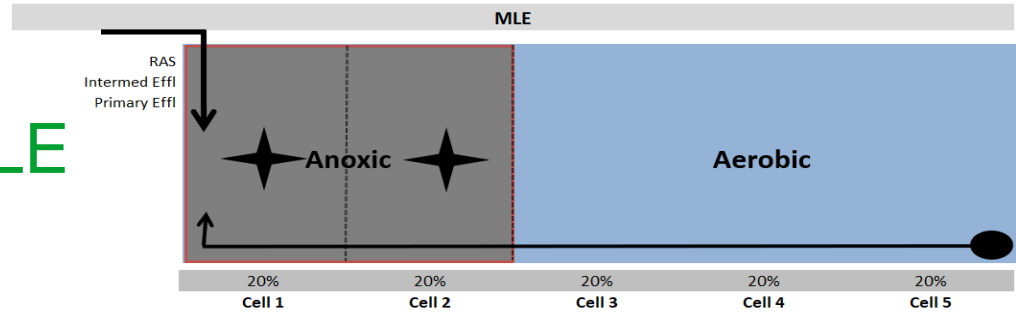


Upgrade Evaluation Using Process Modeling

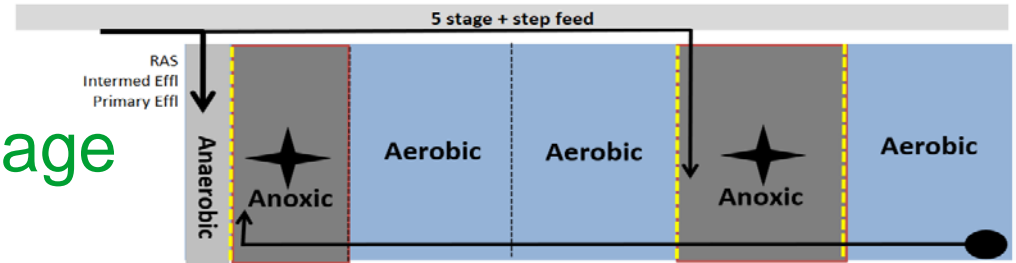


Phased Upgrades

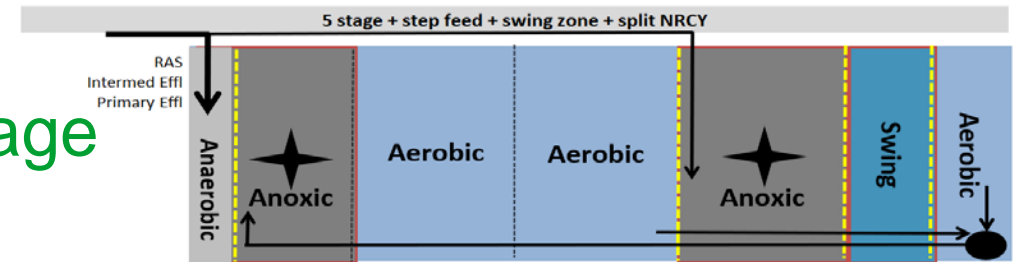
Original MLE



Phase I: 5-Stage

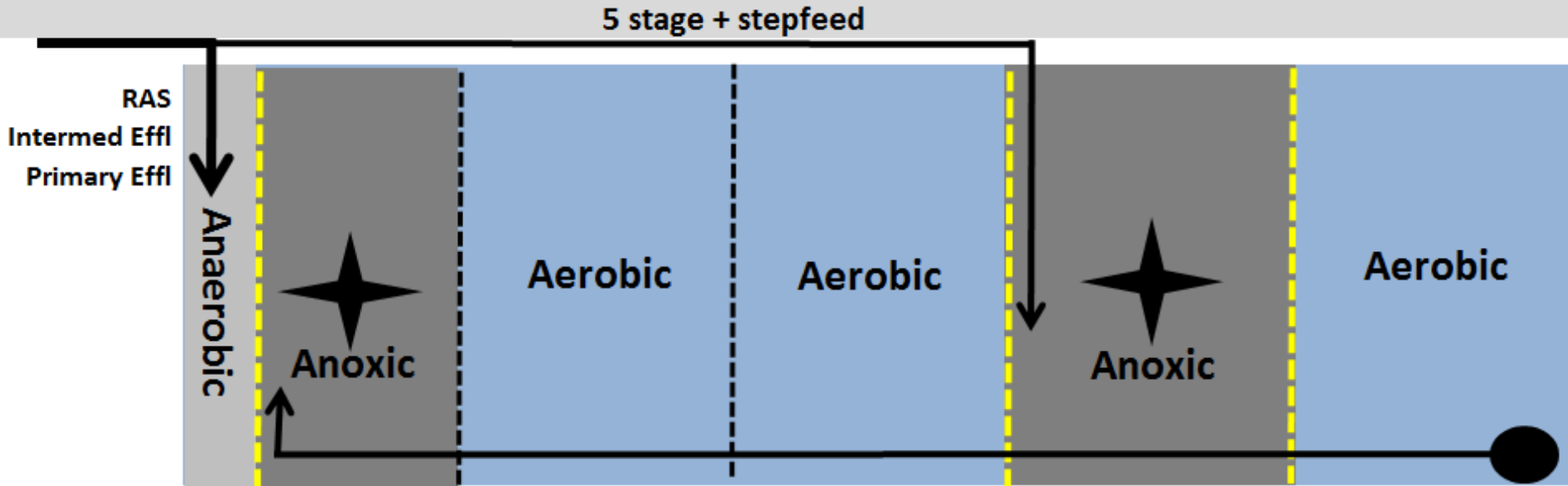


Phase II: 5-Stage



Phase I: 5-Stage Upgrade

January 2017 – August 2017



- Installation of 3 baffle walls (yellow dashed lines)
- Adjusted NRCY discharge piping
- Addition of step feed of MLSS
- Moved mixer to 2nd anoxic zone
- Aeration grid modifications

Phase II: 5-Stage Upgrade

August 2017 - current

5 stage + stepfeed + swing zone + split NRCY

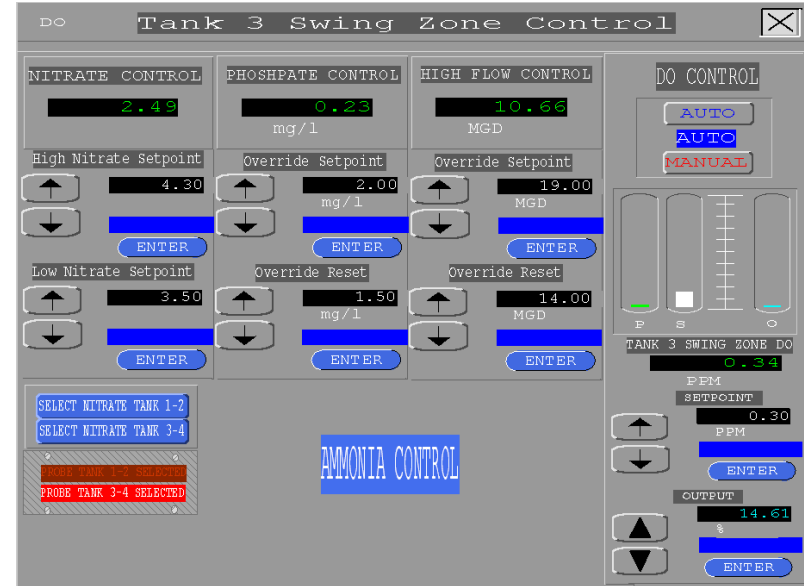


- Additional baffle wall for swing zone
- Addition of large bubble mixing in swing zone
- Aeration grid modifications
- NRCY intake modifications
- Actuators for DCS control

Phase II: 5-Stage Upgrade

Swing Zone Operation

- Can also operate as:
 - Anoxic
 - Low DO
 - ABAC (Ammonia Based Aeration Control)
- NO₃ & NH₃ sensors in aeration effluent determine swing zone operation
- Air OFF (anoxic) when NO₃ > high setpoint
- Air on 0.25 mg/L when NO₃ < low setpoint
- ABAC when NH₃ > setpoint
- Normal DO overrides for high flow and high PO₄

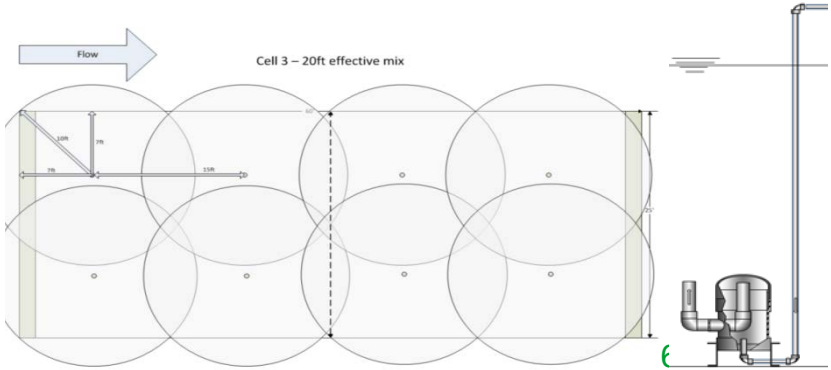


Construction Details – Baffle Wall Modifications

- Material costs = \$4,000 (each)
 - Fiberglass
 - 1/8" PVC roofing panels
 - Stainless steel accessories
- Fabrication & Installation by HRSD maintenance staff



Construction Details – Swing Zone Mixing created by HRSD staff using low pressure air



Construction Details – Development of Big Bubble Mixing System

Sizes tested ranged from 0.25 cf to 7.0 cf



Plastic Cup



Bucket



Small Trashcan



Large Trashcan



Larger trashcan

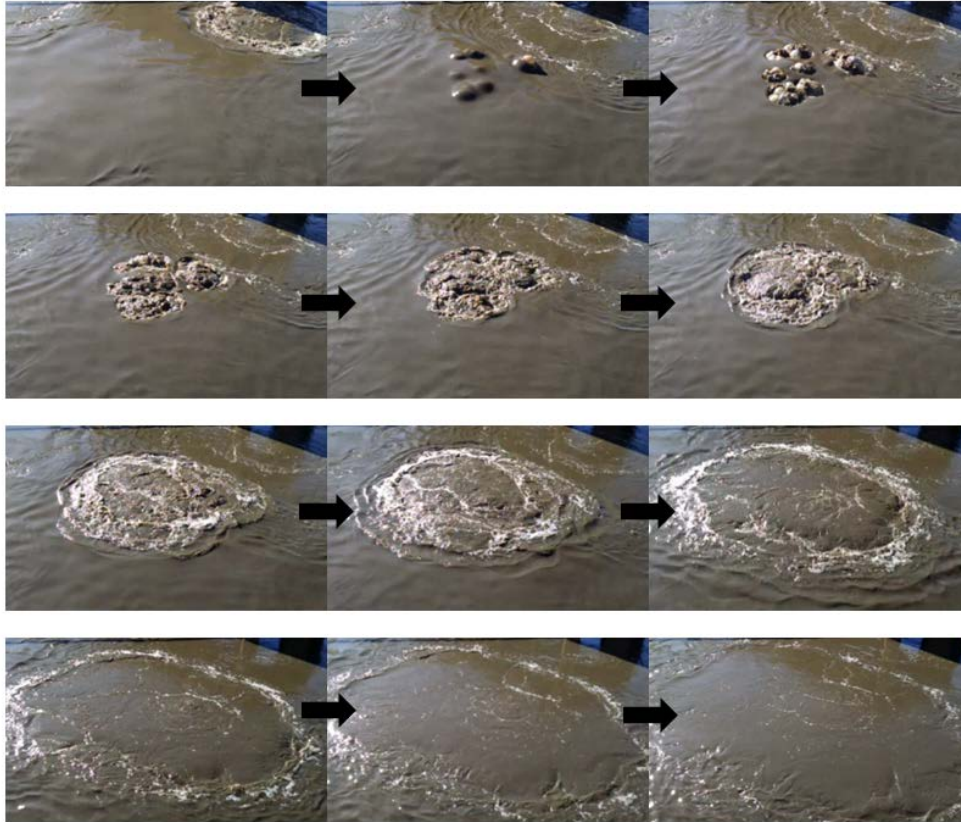


Aluminum Box



PVC Fittings

Big Bubble Mixers in Action

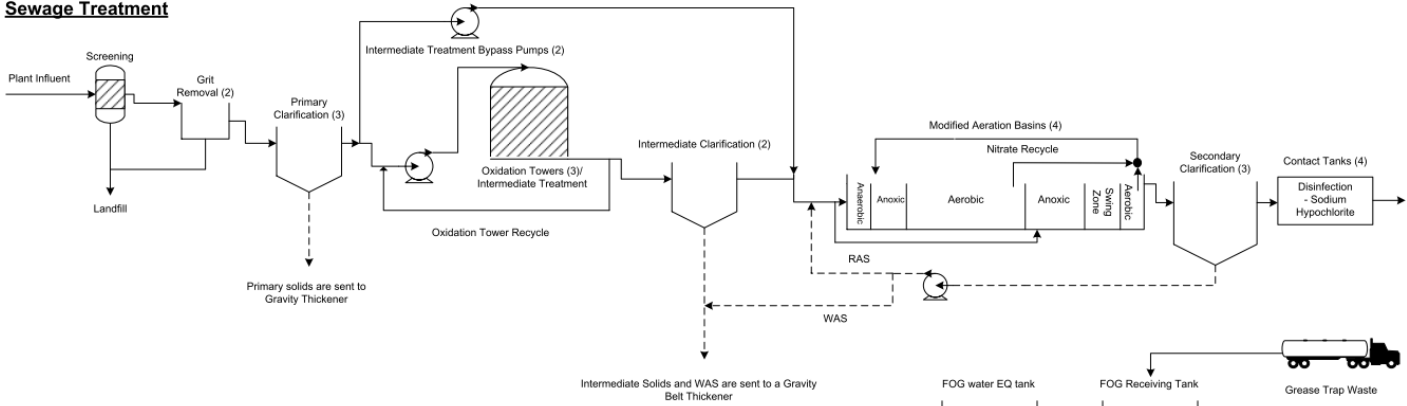


Construction Details – Upgrade Cost Breakdown

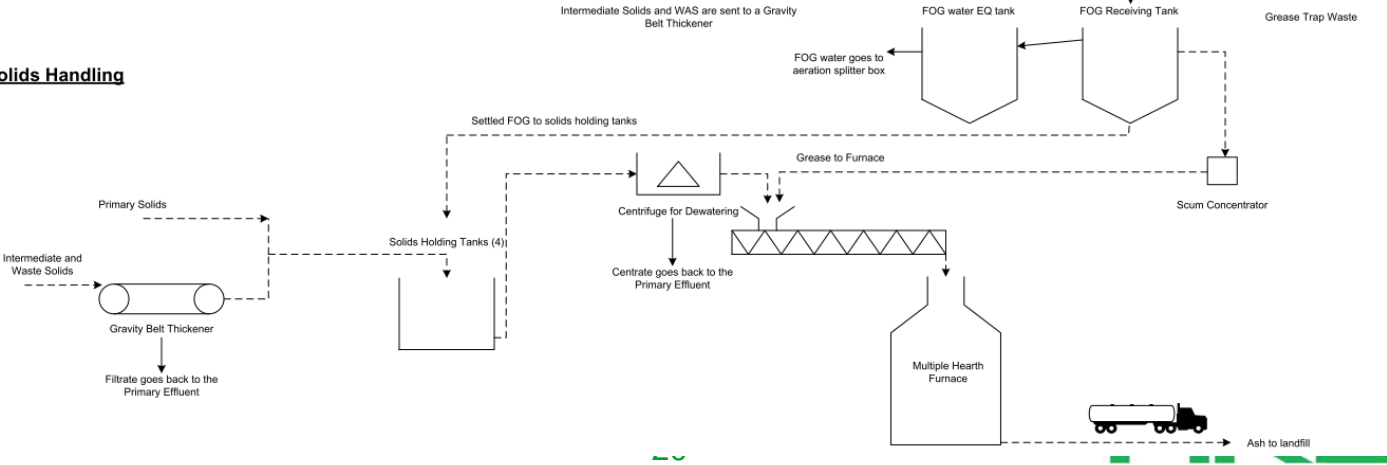
Phase	Modifications per Treatment Train	Total Cost
I	<ul style="list-style-type: none">• Installation of 3 baffle walls• Adjusted NRCY discharge piping• Addition of step feed of MLSS• Moved mixer to 2nd anoxic zone• Aeration grid modifications	\$78,000
II	<ul style="list-style-type: none">• Additional baffle wall for swing zone• Addition of large bubble mixing in swing zone• Aeration grid modifications• NRCY intake modifications• Actuators for DCS control	\$100,000
	Total	\$178,000

Current Process Flow Diagram

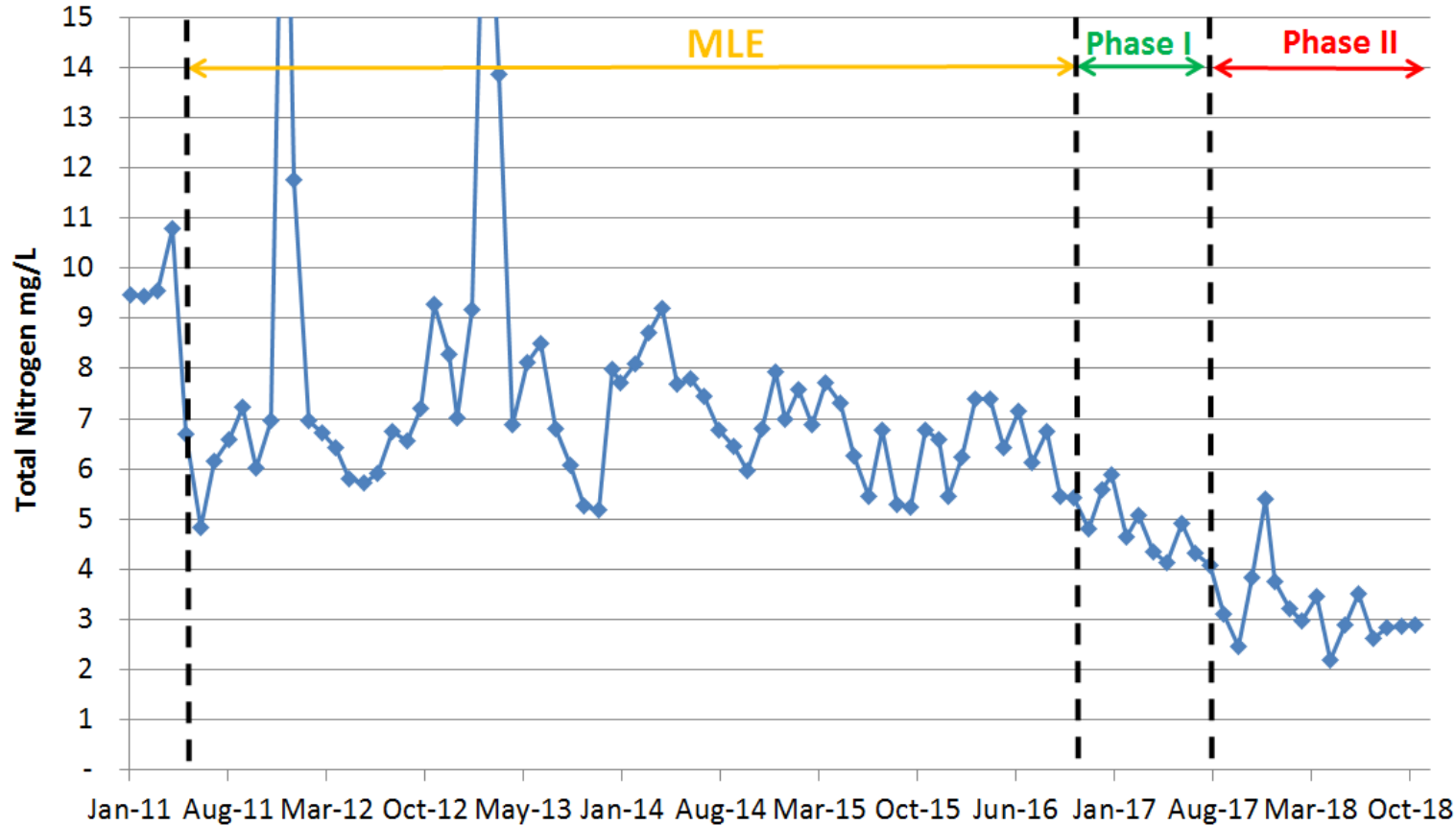
Sewage Treatment



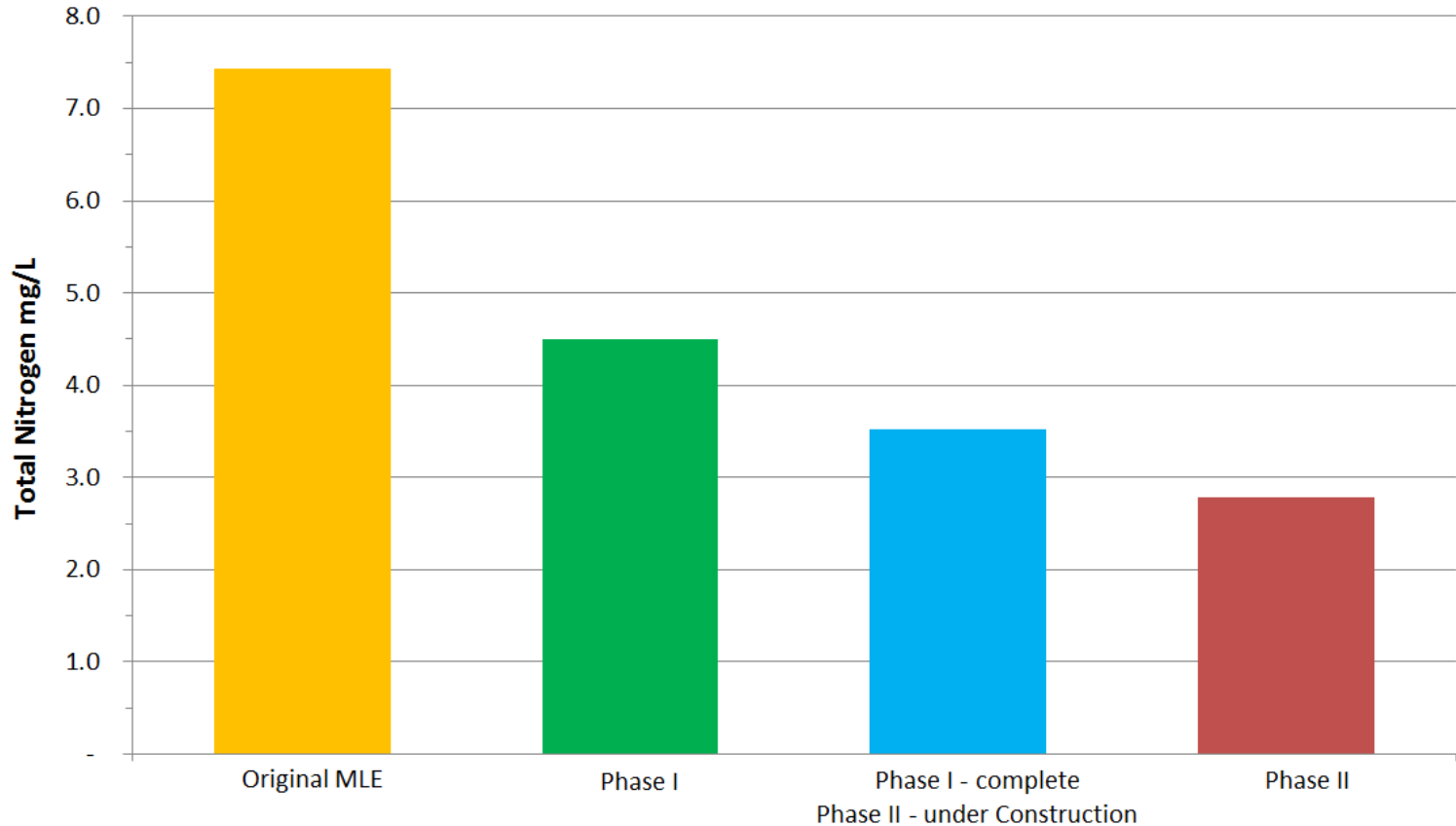
Solids Handling



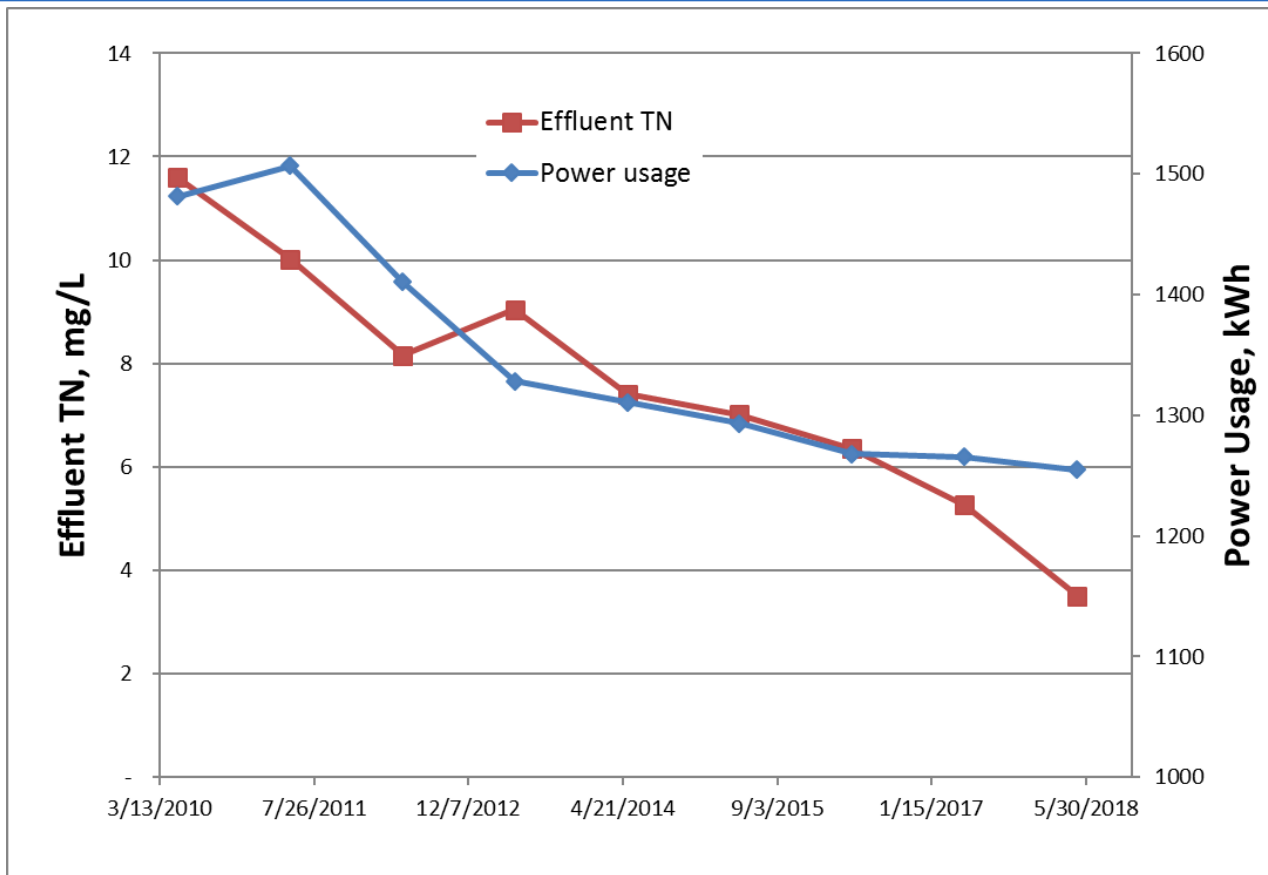
Post-Upgrade Performance – Historical Effluent TN (Monthly Avg.)



Post-Upgrade Performance – Effluent TN by Phase



Post-Upgrade Performance – Historic Power Usage



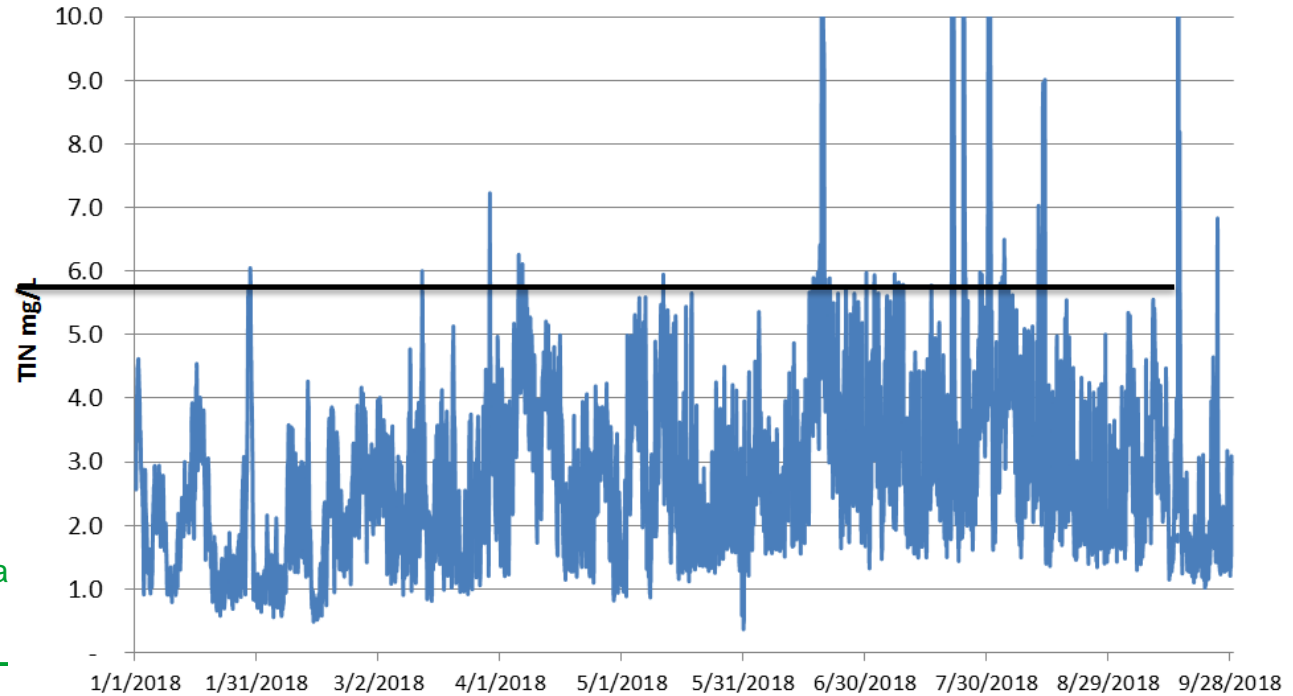
SWIFT Effluent Goals

Anticipated Future Effluent Goals	Concentration (mg/L)
TIN	< 5-6 (instantaneous)
TN	< 4 (monthly avg)
TP	< 1 (monthly avg)

Post-Upgrade Performance – Effluent TIN for SWIFT Treatment Goals

SWIFT
requires
< 6 mg/L TIN

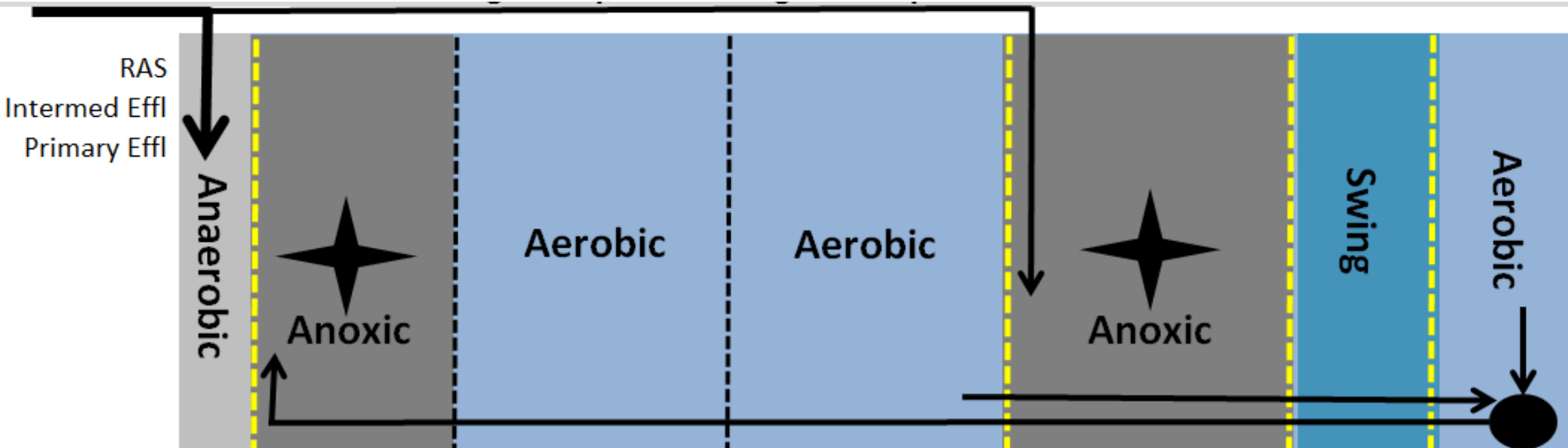
- Analyzing 10 minute TIN sensor data
Jan 1 – Sept 28, 2018
- **Only 94 hours (1.4%) TIN > 6 mg/L**
 - 18 hours – oxidation tower failure
 - 76 hours – wet weather / storms



- BNR upgrades greatly improved N removal
 - Phase I: Baffle walls, step feed, NRCY mods
 - Phase II: Swing Zone, NRCY mods
- Bio P operation more stable
 - Anaerobic Zone, NRCY mods
- Construction effort completed in-house for only \$178,000
- 2018 TN avg = 3.17 mg/L

Future Work

- NO₃ based NRCY - Based on NO_x in 1st and 2nd anoxic
- ABAC in cell 3 and cell 5 (reaeration in effluent channel)
- Better DO control and handling excess air
- BioP improvements in anaerobic zone



HRSD COMMISSION MEETING MINUTES
January 22, 2019

ATTACHMENT #6

AGENDA ITEM 14. – Capital Improvement Program (CIP) Quarterly Update
Presentation



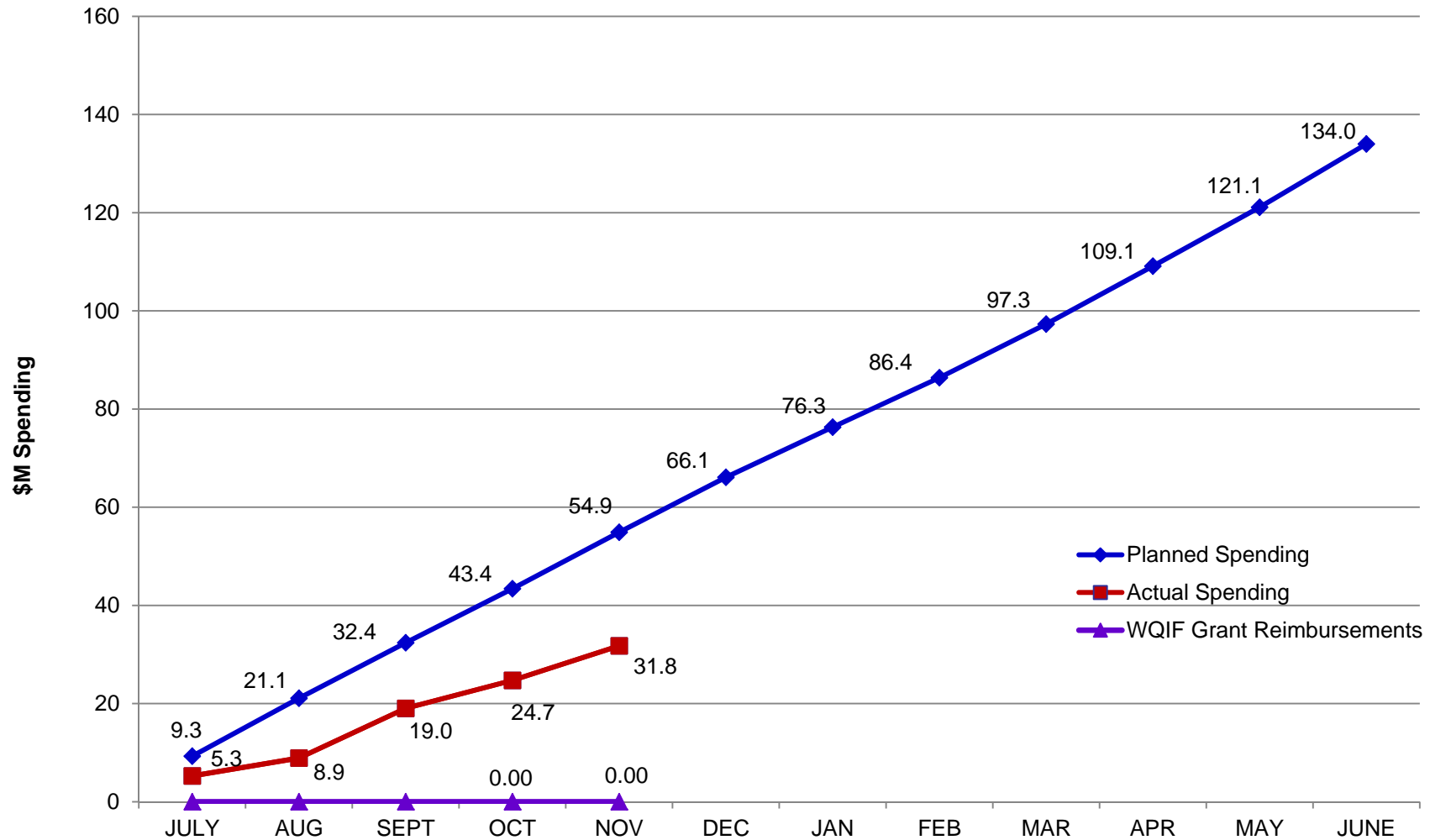
Capital Improvement Program Commission Briefing

January 22, 2019

- CIP Expenditures for FY-2019
- CIP Performance Metrics
- Summary of Projects Requiring Additional Appropriation in CY-2018
- Consent Decree/Sewer Rehabilitation Plan – Project Updates
- Significant Project Updates
- Project Focus:
 - Pressure Reducing Station Reliability Modifications and Upgrades

CIP Expenditures for FY-2019

Cumulative Monthly Expenditures & Reimbursements



CIP Expenditures for FY-2019

CIP Projects with Largest Spending Projections in FY-2019:

Project Name	Planned FY-2019 CIP Spending	Actual FY-2019 Spending
Atlantic Treatment Plant Thermal Hydrolysis Process (Cambi)	\$20,000,000	\$9,357,500
Virginia Initiative Plant Nutrient Reduction Improvements – Contact B	\$6,379,000	\$2,564,800
Program Management of SWIFT Full Scale Implementation	\$6,154,000	\$464,800

CIP Performance Metrics

- CIP Spending and Staffing
- Construction Contracts Awarded in CY-2018
- Construction Contracts Completed in CY-2018

CIP Spending and Staffing

CIP Spending for Calendar Year 2018 = \$108.2M
(\$27.1M Design, \$81.1M Construction)

Internal Staffing:

Engineering Department Staff = 43 Full-Time, 7 Part-Time

External Staffing:

Design Services Staff = 135 Full-Time Employees

Construction Services Staff = 450 Full-Time Employees

Total = 585 Full-Time Employees

Construction Contracts Awarded in 2018

2018 Construction Bids

Project Name	CIP	Bid Date	CIP Estimate	Engineer's Estimate	Low Bid	Average of Bids	High Bid	# Bidders
Boat Harbor Treatment Plant Switchgear & Controls Replacement	BH015300	12/18/18	\$8,500,000.00	\$8,990,500.10	\$6,893,065.00	\$7,831,150.00	\$8,663,385.00	3
Kirby Street Sanitary Sewer Rehabilitation	MP011800	09/06/18	\$813,400.00	\$782,026.28	\$663,866.00	\$908,244.00	\$1,147,500.00	5
North Trunk Part B Replacement	WB012200	11/15/18	\$1,371,000.00	\$2,012,410.00	\$1,479,880.00	\$2,141,904.21	\$2,639,290.50	7
Orcutt Avenue & Mercury Boulevard Sewer Improvements	BH015000	07/10/18	\$5,768,000.00	\$8,191,050.00	\$7,763,168.60	\$8,772,195.14	\$10,035,043.21	6
Small Communities Collection Rehabilitation – Phase 1	MP013000	05/03/18	\$1,725,000.00	\$263,168.32	\$273,359.33	\$333,186.44	\$398,495.00	3

Totals			\$20,239,154.70	\$17,073,338.93	\$19,986,679.79	\$22,883,713.71	
% Difference				-16%	-1%	13%	

Construction Contracts Completed in 2018

Project Name	CIP	Original Contract	Final Contract	# CO	CO Percentage
Bridge Street Pump Station Replacement	BH011600	\$10,647,000.00	\$11,498,790.17	5	8.0%
Center Avenue PS Replacement Contract C	JR010100	\$2,923,353.40	\$3,729,082.31	7	27.6%
Ferguson Park Interceptor FM Bridge Span Relocation	BH013700	\$777,040.20	\$768,838.76	2	-1.1%
Hampton Trunk Sewer Ext Div B - Claremont FM Replacement	BH012700	\$4,091,738.50	\$4,020,688.00	3	-1.7%
Hampton Trunk Sewer Dive E Gravity Replacement	BH012000	\$1,658,580.00	\$2,060,461.84	5	24.2%
James River Treatment Plant Hydraulics Improvement	JR012899	\$1,489,980.00	\$1,614,671.64	2	8.4%
James River Treatment Plant Centrate Equalization Improvements	JR012900	\$1,310,949.00	\$1,592,885.89	2	21.5%
North Shore PS Wet Well Rehab	GN013600	\$1,010,270.00	\$1,043,775.57	1	3.3%
Williamsburg PS Wet Well Rehab	WB012300	\$240,605.00	\$406,661.60	1	69.0%
Small Communities Collection System Rehab - Phase I	MP013000	\$273,359.33	\$273,359.33	0	0.0%
Sustainable Water Phase III - Demonstration Facility	GN016200	\$24,143,000.00	\$24,788,606.00	4	2.7%
Warwick Boulevard to James River IFM Section 1	JR011100	\$2,271,247.50	\$2,261,113.01	1	-0.4%
Warwick Boulevard to James River IFM Section 2	JR010820	\$7,983,444.60	\$7,225,077.22	3	-9.5%
Warwick Boulevard to James River IFM Section 3	JR012020	\$2,488,140.00	\$2,518,129.51	3	1.2%
Williamsburg Interceptor Force Main Contract A Replacement	WB010700	\$6,429,192.00	\$6,989,949.87	2	8.7%
Army Base TP Improvements	AB010100	\$78,591,458.73	\$90,346,537.74	28	15.0%
Atlantic TP Primary Clarifier Influent Scum Channels	AT013320	\$878,870.00	\$891,206.00	1	1.4%
Locality Sewer Rehab	CE011900	\$1,150,000.00	\$922,277.09	2	-19.8%
Sanitary Sewer Western Diversion Emergency	VP018100	\$250,738.40	\$250,738.40	0	0.0%
Sewerage System Improvements	VP011600	\$978,330.00	\$1,290,937.51	1	32.0%
South Trunk Section G - 30/36 Inch FM Replacement	VP013200	\$6,043,495.00	\$5,512,912.43	3	-8.8%
South Trunk Section G – 24/30 Inch FM Replacement	VP016200	\$3,287,745.00	\$3,081,952.20	3	-6.3%
York River Treatment Plant Digester Cover Replacement Ph II	YR012220	\$1,379,000.00	\$1,579,241.93	1	14.5%

Totals \$160,297,536.66 \$174,667,894.02 9.0%

Summary of Projects Requiring Additional Appropriation in CY-2018

CIP Summary

Total Value of 10-Year CIP:	\$2.53B
CIP Spending in CY-2018	\$108.2M
Total # of Projects in 10-Year CIP:	156
# of Active Projects in CY-2018:	119

Summary of Projects Requiring Additional Appropriation in CY-2018 (cont.)

Project Name	CIP	Original Appropriation*	Additional Appropriation	Percent Increase
Aquifer Replenishment System (SWIFT)	GN015700	\$10,900,000	\$200,000	1.8%
Atlantic Treatment Plant Administration Building	AT012000	\$2,740,000	\$50,162	1.8%
Bridge Street Pump Station Replacement	BH011600	\$14,123,400	\$400,464	2.8%
Hampton Trunk Sewer Extension Div. E Gravity Replacement	BH012000	\$2,254,489	\$467,097	20.7%
Int Sys PS Control & SCADA Upgrades & Enhancement	GN012800	\$24,849,471	\$3,184,608	12.8%
Kirby Street Sanitary Sewer Rehabilitation	MP011800	\$656,200	\$331,923	50.6%
Mathews Collection System Vacuum	MP011400	\$1,452,000	\$212,597	14.6%
Nansemond TP Land Acquisition - Land Stabilization	NP013500	\$1,840,000	\$3,894,789	211.7%
North Trunk Force Main Part B Replacement	WB012200	\$883,600	\$1,120,939	126.9%
Orcutt Avenue and Mercury Boulevard	BH015000	\$6,655,000	\$2,797,686	42.0%
Providence Road Off-Line Storage Facility	CE011826	\$25,608,184	\$6,401,140	25.0%
Rodman Avenue PS	VP017300	\$1,333,958	\$126,422	9.5%
Williamsburg Treatment Plant Outfall Repairs 2018	WB012800	\$165,000	\$101,189	61.3%
York River TP Digester Cover Replacement Phase II	YR012220	\$1,777,375	\$94,488	5.3%
YRTP Environmental Studies and Habitat Enhancement	YR013140	\$1,000,000	\$80,000	8.0%
Totals		\$96,238,677	\$19,463,504	20.2%
2017		\$196,860,303.00	\$32,028,770	16.3%
2016		\$150,415,925	\$30,220,144	20.1%

Atlantic Treatment Plant Thermal Hydrolysis Process and FOG Receiving Station

Engineer(s):

HDR Engineering, Inc. / Brown &
Caldwell

Construction Manager:

Crowder Construction Company

Schedule Completion:

October 2020

Project Value: \$67.2M

Funding:

HRSD Revenue Bond
VRLF Loan



Virginia Initiative Plant Nutrient Reduction Improvements

Engineer: HDR Engineering, Inc.

Contractor:

Contract A – PC Construction

Contract B – MEB General Contractors
Procurement – Emergency Generators

Schedule Completion (Contract B):

March 2017 – Nutrient Reduction
Improvements

November 2018 – Capacity
Improvements

December 2019 – Other Work

Project Value: \$161.4M

Funding: HRSD Revenue Bond
WQIF Grant (\$46.8M)



Program Management of SWIFT Full Scale Implementation

Consultants:

Technical Advisor – Jacobs

Program Management – AECOM/Hazen & Sawyer

Efforts Underway:

1. Program Management Plan
2. Program/Project Schedules and Budgets
3. Facility Plan for Williamsburg SWIFT
4. Advanced Recharge Well Installation



Consent Decree/Sewer Rehabilitation Plan – Project Updates

- Consent Decree Condition Assessment Program (CAP) identified condition defects in the regional sanitary sewer system.
- EPA/VDEQ approved the Rehabilitation Action Plan (RAP) in May 2015.
- RAP addresses improvements to gravity mains, force mains, pump stations and associated system compounds.
- RAP will be implemented in three phases:
 - Phase 0 (June 2017)
 - Phase 1 (May 2021)
 - Phase 2 (May 2025)

Consent Decree/Sewer Rehabilitation Plan – Project Updates

Phase 0

CIP	Project Name	Project Status	Total CIP Cost
GN014300	North Shore Operations Unvented High Spot Correction	Complete	\$1,602,832
VP012100	State Street Pump Station Electrical Modifications	Complete	\$2,089,201

Consent Decree/Sewer Rehabilitation Plan – Project Updates

Phase 1

CIP	Project Name	Project Status	Total CIP Cost
BH012700	Hampton Trunk Sewer Extension Division B - Claremont Force Main Replacement	Complete	\$4,876,709
BH014700	Boat Harbor Outlet Sewer Improvements	Design	\$6,486,452
BH014800	Jefferson Avenue Extension Gravity Improvements	Design	\$3,123,247
BH015000	Orcutt Avenue and Mercury Blvd Gravity Sewer Improvements	Construction	\$6,607,042
CE010400	Independence Boulevard Pressure Reducing Station Modifications	Design	\$1,869,200
CE011700	Western Trunk Force Main Replacement	Design	\$1,987,802
GN011700	Pump Station Generators and Standby Pump Upgrades	Design	\$7,106,157
GN012130	Manhole Rehabilitation-Replacement Phase I and North Shore Siphon Chamber Rehabilitation Phase I	Construction	\$608,725
GN012131	Manhole Rehabilitation Phase 1A (North Shore)	Proposed	\$1,631,203
GN012132	Manhole Rehabilitation Phase 1B	Proposed	\$1,631,203
GN012133	Manhole Rehabilitation Phase 1C	Proposed	\$1,631,203
GN012134	North Shore Siphon Chamber Rehabilitation Phase 1	Proposed	\$1,631,203
GN012140	Pump Station Wet Well Rehabilitation Phase I	Construction	\$3,388,665
GN015100	Arctic Avenue Pump Station and Newtown Road Pump Station Electrical Improvements	Proposed	\$615,812
JR012100	Huxley to Middle Ground Force Main Extension	Design	\$4,932,185
NP011300	Suffolk Interceptor Force Main Section I Main Line Valving Replacement	Proposed	\$1,483,109
NP012600	Deep Creek Interceptor Force Main Replacement	Design	\$6,232,922
VP014010	Ferebee Avenue Pump Station Replacement	Design	\$5,852,747
WB012200	North Trunk Force Main Part B Replacement	Design	\$1,735,250

Consent Decree/Sewer Rehabilitation Plan – Project Updates

Phase 2

CIP	Project Name	Project Status	Total CIP Cost
AB010000	Army Base 24-Inch and 20-Inch Transmission Main Replacements	Design	\$27,249,474
AT011510	Shipps Corner Interim Pressure Reducing Station	Construction	\$2,972,422
AT011520	Shipps Corner Pressure Reducing Station Modifications	Proposed	\$1,741,875
AT011900	Great Bridge Interceptor Extension 16-Inch Replacement	Proposed	\$5,313,344
AT013000	Washington District Pump Station Area Sanitary Sewer Improvements	Proposed	\$2,496,266
AT013100	South Norfolk Area Gravity Sewer Improvements	Proposed	\$6,472,759
AT013200	Doziers Corner Pump Station and Washington District Pump Station Flooding Mitigation Improvements	Proposed	\$305,202
BH014000	West Avenue and 35th Street Interceptor Force Main Replacement	Proposed	\$4,275,739
BH014500	Ivy Home-Shell Road Sewer Extension Division I Replacement	Design	\$2,243,889
BH014600	46th Street Diversion Sewer Rehabilitation Replacement	Design	\$11,823,129
BH014900	Hampton Trunk Sewer Extension Division K Gravity Improvements	Proposed	\$4,509,141
BH015100	Bloxoms Corner Force Main Replacement	Proposed	\$3,393,988
CE011300	Birchwood Trunk 24-Inch 30-Inch Force Main at Independence Boulevard Replacement Phase II	Proposed	\$1,686,224
CE011600	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements	Proposed	\$2,115,354
CE012000	Poplar Hall Davis Corner Trunk 24-Inch Gravity Sewer Improvements (I-264 VDOT Betterment)	Complete	\$121,859
GN010730	Horizontal Valve Replacement Phase III	Proposed	\$3,878,866

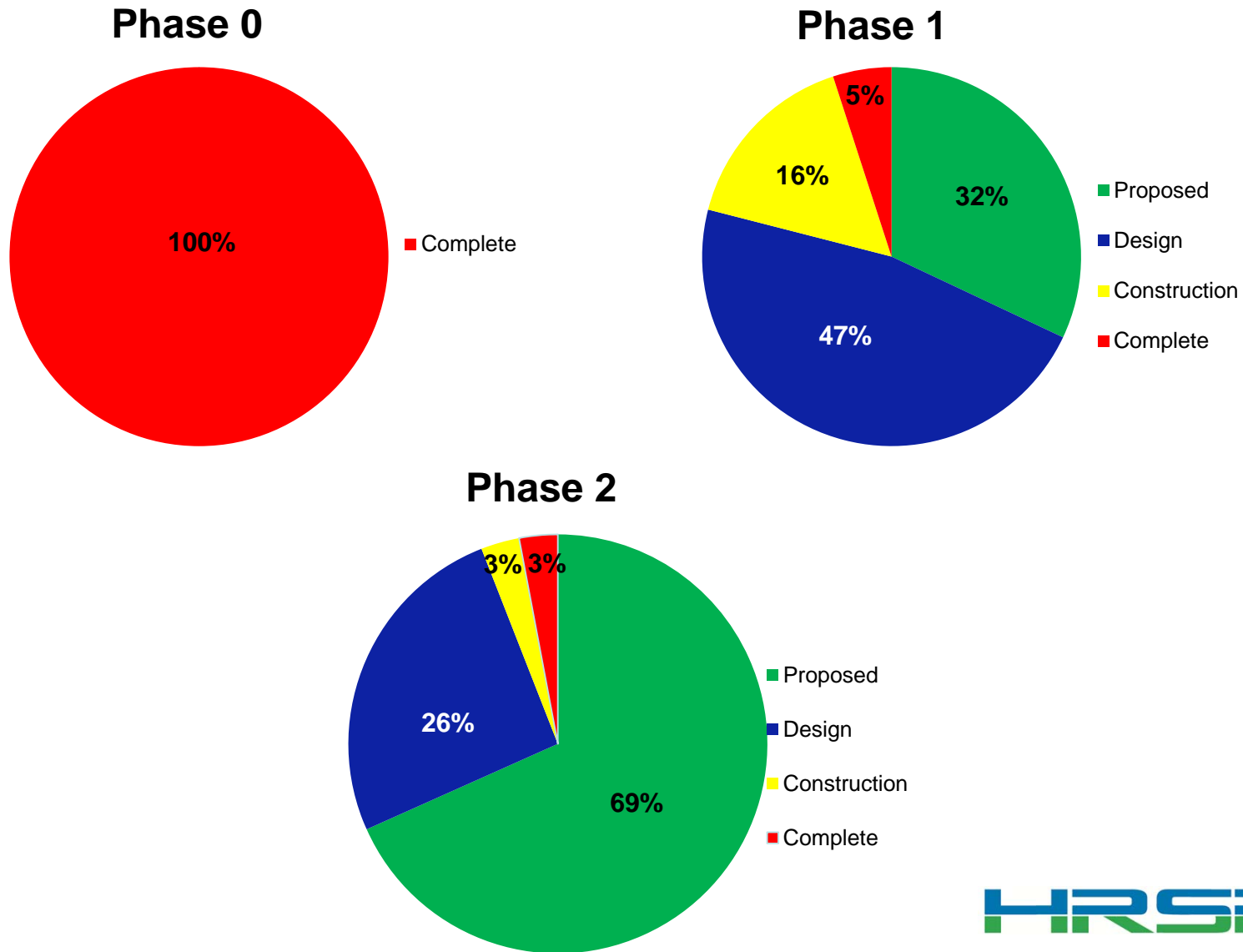
Consent Decree/Sewer Rehabilitation Plan – Project Updates

Phase 2 (cont.)

CIP	Project Name	Project Status	Total CIP Cost
GN014900	North Shore Gravity Sewer Improvements Phase I	Proposed	\$5,475,637
GN014900	North Shore Gravity Sewer Improvements Phase I	Proposed	\$5,475,637
GN015000	South Shore Gravity Sewer Improvements Phase I	Proposed	\$886,778
GN015300	Interceptor System Valve Improvements Phase I	Proposed	\$3,161,886
GN015400	South Shore Aerial Crossing Improvements	Proposed	\$317,091
JR010600	Lucas Creek Pump Station Upgrade	Design	\$6,824,774
NP010620	Suffolk Pump Station Replacement	Design	\$12,080,669
NP012400	Western Branch Sewer System Gravity Improvements	Proposed	\$3,305,390
NP012500	Shingle Creek and Hickman's Branch Gravity Sewer Improvements	Design	\$9,070,795
VP010920	Norview Estabrook Division I 18-Inch Force Main Replacement Phase II, Section 2	Proposed	\$1,719,631
VP014020	Sanitary Sewer Project 1950 12 Inch Force Main and 24 and 18 Inch Gravity Replacement	Design	\$7,179,000
VP014700	Ingleside Road Pump Station Replacement	Proposed	\$3,699,465
VP014800	Lee Avenue-Wesley Street Horizontal Valve Replacement	Design	\$1,109,112
VP015320	Larchmont Area Sanitary Sewer Improvements	Proposed	\$16,265,000
VP015400	Lafayette Norview-Estabrook Pump Station Replacements	Proposed	\$18,495,895
VP016500	Norview-Estabrook Division I 12-Inch Force Main Replacement	Proposed	\$2,418,329
VP016700	Norview-Estabrook Division I 18-Inch Force Main Replacement Phase III	Proposed	\$2,972,071
VP017100	Central Norfolk Area Gravity Sewer Improvements	Proposed	\$3,004,023
VP018000	Park Avenue Pump Station Replacement	Design	\$5,955,271
YR010300	Foxridge Sanitary Sewer System Sections 1, 4 & 5 Gravity and Woodland Road Fox Hill Road Gravity Sewer Rehabilitation	Proposed	\$3,704,967

\$255,368,184

Consent Decree / Sewer Rehabilitation Plan – Project Updates



Pressure Reducing Station Reliability Modifications and Upgrades

Program Description:

This effort includes a group of projects to modify and upgrade six (6) existing pressure reducing stations (PRSs) located in the City of Virginia Beach. These projects will provide improved reliability and hydraulic capacity to redirect flows from the Chesapeake-Elizabeth Treatment Plant to the Atlantic Treatment Plant by June 2021. The PRSs to be included in this effort are:

- Independence
- Laskin Road
- Pine Tree
- Providence Road
- Atlantic
- Kempsville

Engineer: Kimley-Horn / RK&K

Construction Manager: Ulliman-Schutte

Program Budget: \$ 47,000,000

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)

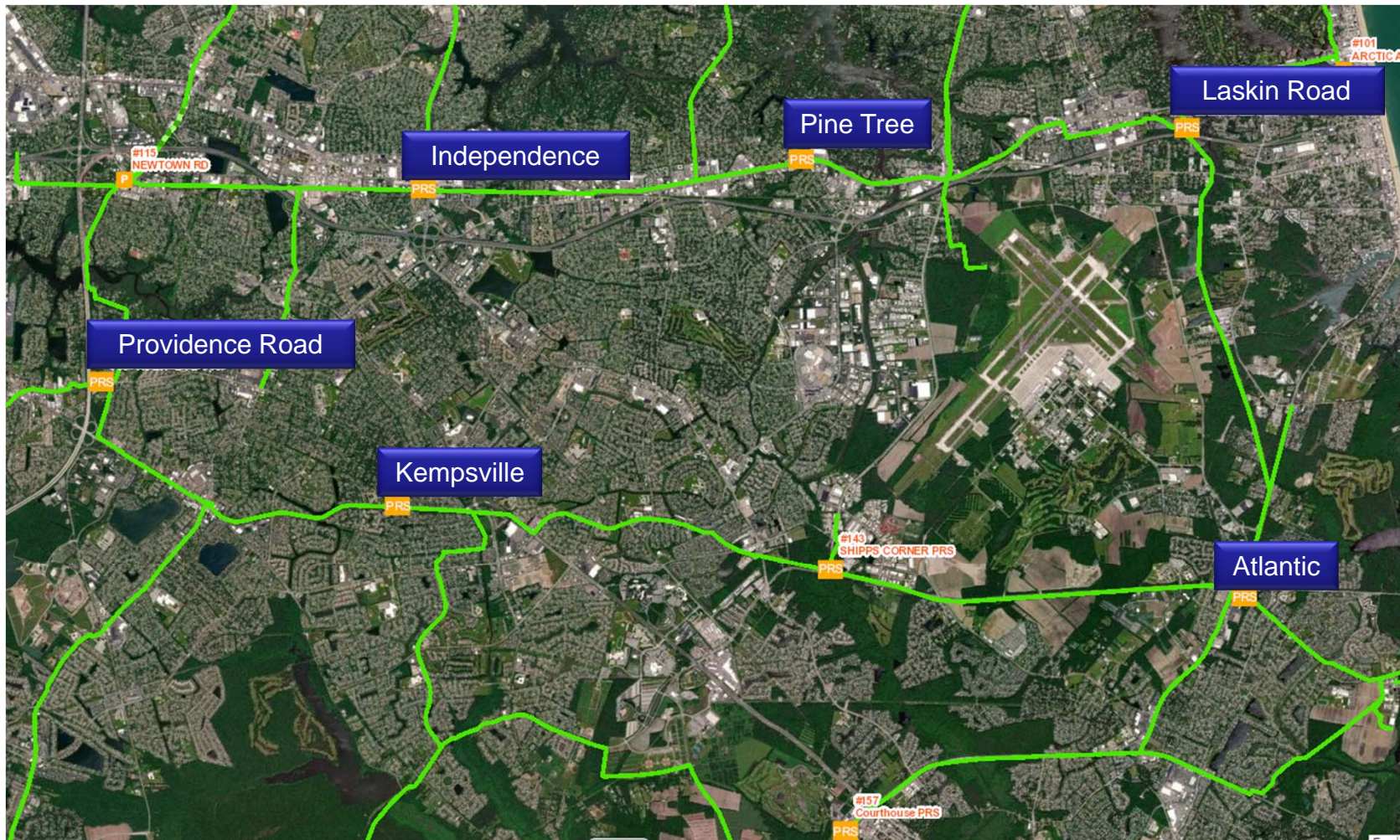
Financial Summary:

Study Costs:	\$ 200,000
Design Costs:	\$ 4,500,000
Construction Costs:	\$ 40,520,000
Owner Contingency Costs:	\$ 1,320,000
Construction Manager Contingency Costs:	\$ 460,000

Schedule Summary:

Planning:	June 2016 – Aug. 2016
Design:	Sept. 2016 – Jan. 2019
Construction:	April 2019 – May 2021
Complete:	June 2021

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)

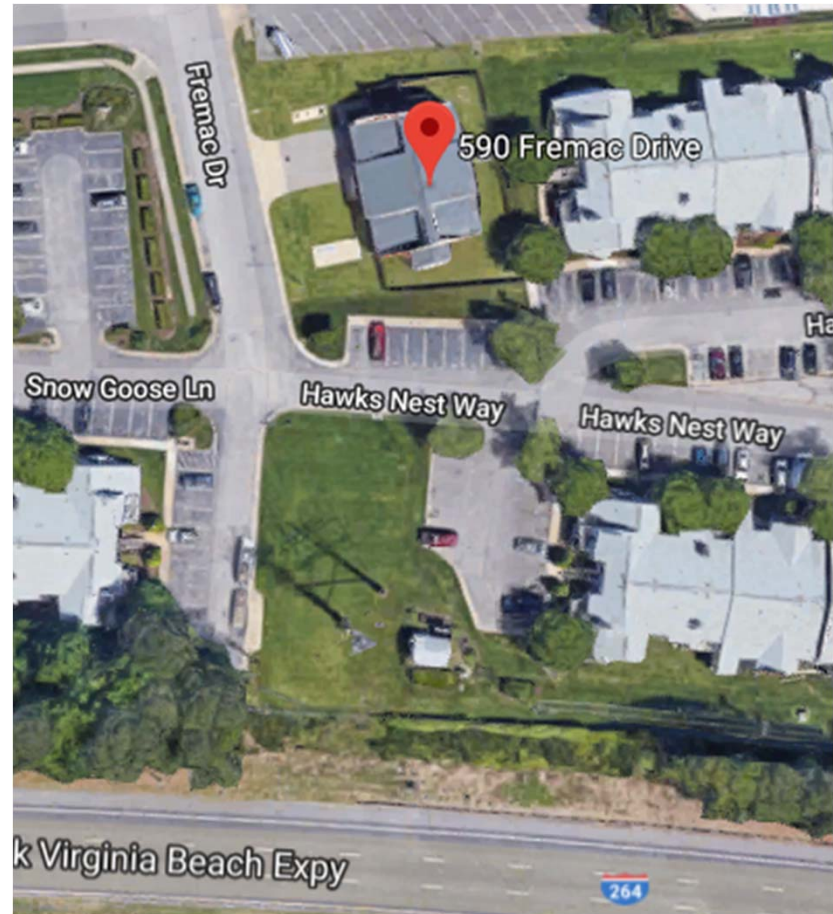


Location Plan

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)

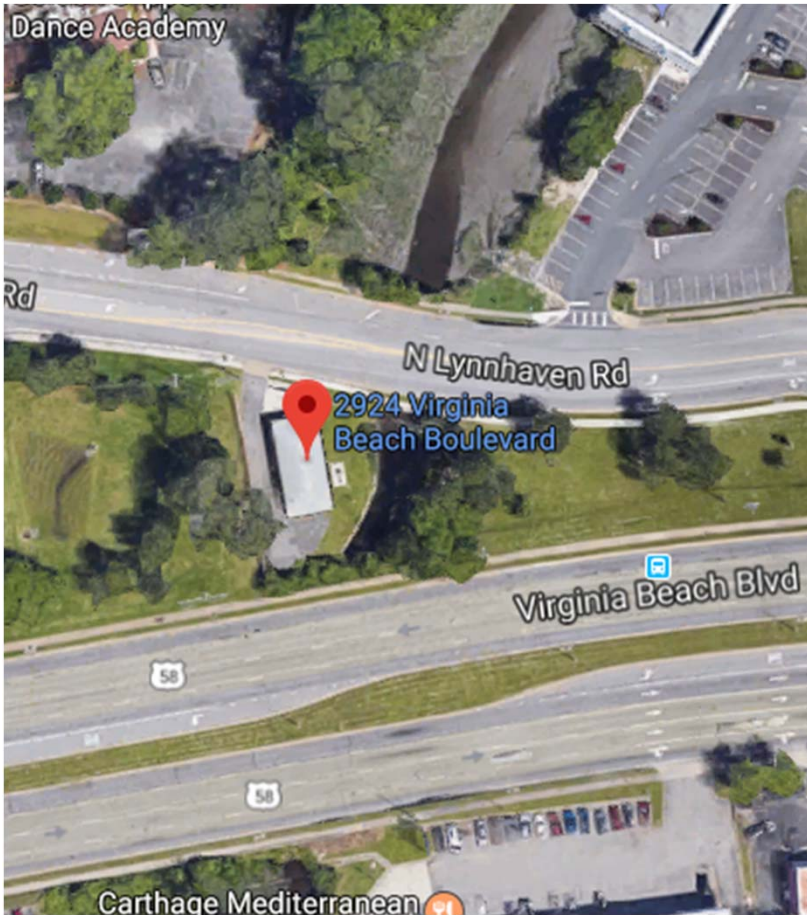


Independence

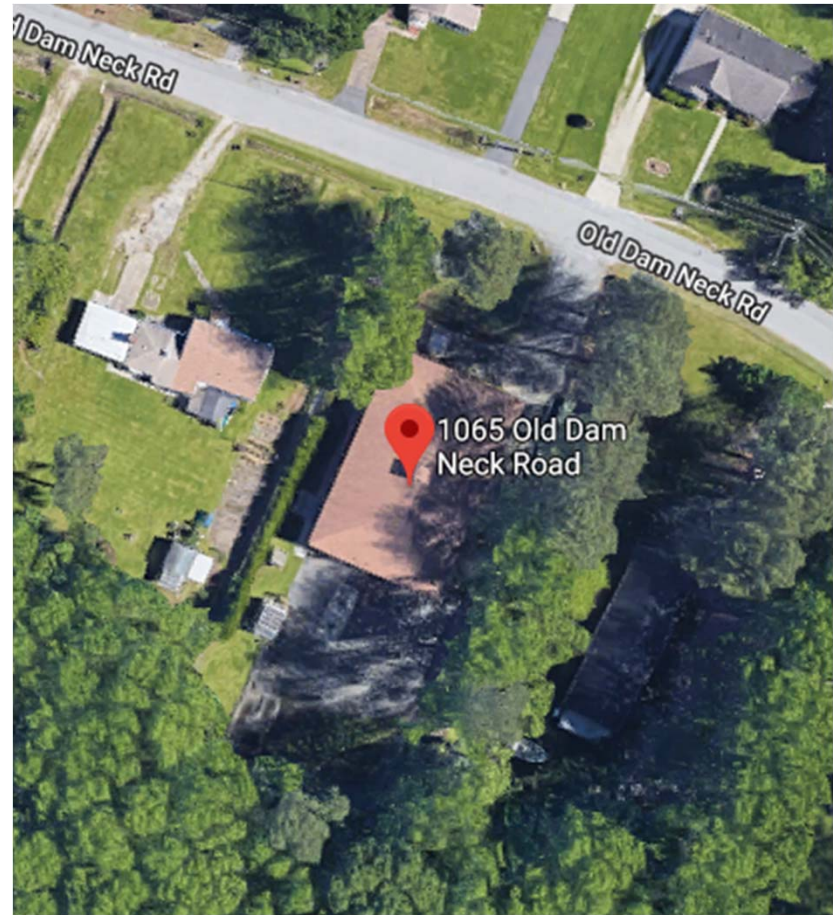


Laskin Road

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)



Pine Tree

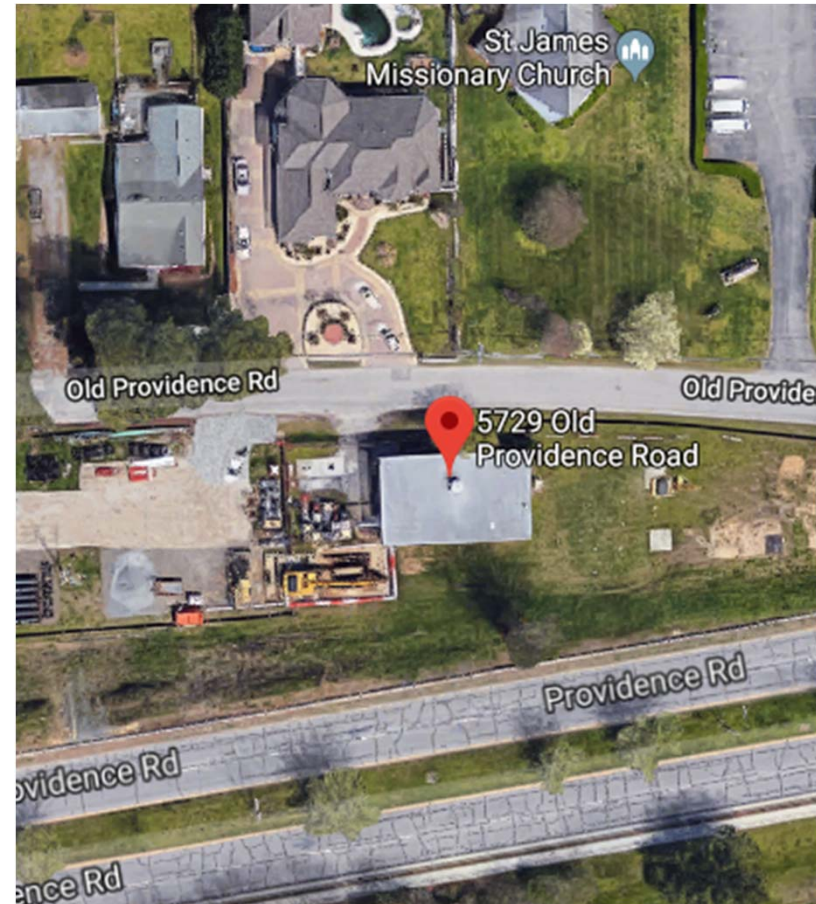


Atlantic

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)



Kempsville



Providence Road

Pressure Reducing Station Reliability Modifications and Upgrades (cont.)



Providence Road (Existing)

Providence Road (Proposed)

Questions?

HRSD COMMISSION MEETING MINUTES
January 22, 2019

ATTACHMENT #7

AGENDA ITEM 15. – U.S. EPA Consent Decree Annual Public Meeting Presentation



EPA Consent Decree
Annual Informational Meeting
Integrated Plan/Regional Wet
Weather Management Plan

January 22, 2019

Requirements of the Consent Decree

- *“...after providing reasonable notice on its webpage and in a newspaper of general circulation”*
- *“...shall hold an annual informational meeting open to the Localities and the public”*
- *“HRSD shall convey information on the status of the Regional Wet Weather Management Plan, HRSD – Locality cooperation and steps citizens within the Localities can take to protect the receiving waters”*

Objective of the Consent Decree

“HRSD, working in consultation with the Localities, to fulfill the objectives of the Clean Water Act with a goal of eliminating Sanitary Sewer Overflows (SSOs)”



Regionalized Approach

- Consent decree amended to permit a regional approach estimated to save the region \$1 billion over original approach
- Localities and HRSD agreed in Memorandum of Agreement to Regionalized Approach
- HRSD will be responsible for capacity in the regional sanitary sewer system (Localities' systems and HRSD system)
- **MOA modified in 2018 to move HRSD responsibility to plan approval date**

Major Change in Compliance Orders

- Special Order by Consent (SOC) modified in December 2014 focuses on Localities' Management, Operations and Maintenance (MOM) issues
 - Eliminates HRSD from SOC
 - Adds Norfolk to SOC and terminates prior Order
- Consent Decree Modification No. 4 references SWIFT and its relationship with the RWWMP. Requires that the approved RWWMP be a material modification to the CD subject to public comment and Court approval

Overall Regulatory Status

- HRSD continues to implement requirements of Federal Consent Decree, which was originally entered with the court on February 23, 2010, as modified
- **All Consent Decree required submittals have been on time**

Rehabilitation Action Plan

- Requires addressing specific features with condition defects identified in Consent Decree Condition Assessment Program (CAP)
- EPA/DEQ approved the plan in May 2015
- Addresses more than \$183M of required improvements in gravity mains, force mains, pump stations, and associated system components
- Implementation Plan has three phases through May 2025 – Total over \$255 million
 - **Phase 0 - Complete**
 - **Phase 1 (5/2021) – 21% in construction or complete**
 - **Phase 2 (5/2025) – 6 % in construction or complete**

Interim System Improvements

- Consent Decree includes requirement to complete 45 CIP projects totaling approximately \$ 400M.
- All are complete with the final project certification provided to EPA in December 2018.

COMPLETE

Management, Operations, and Maintenance (MOM) Program

- MOM Program approved by EPA/DEQ in 2011
- **The MOM Program was updated in 2018:**
 - Organizational updates
 - Current programs and updated status of initiatives
- Performance measures are continuing to be tracked to evaluate the effectiveness of the programs

Consent Decree Performance Measures Review

Year-over-Year Performance Summary

Metric	Target	FY-12 Actual	FY-13 Actual	FY-14 Actual	FY-15 Actual	FY-16 Actual	FY-17 Actual	FY-18 Actual
Pump Station Annual PM	82*	84	83	83	84	85	87	89
Back-up Generator Annual PM	55	112	81	121	129	129	121	89
Force Main Air Vent PM	1,550	3,096	3,274	3,304	3,486	3,327	3,940	1,881
Non-Invasive Force Main Inspection (LF)	2,400	15,098	2,800	2,562	4,355	2,562	6,375	5,000
Gravity Sewer Inspection (LF)	39,600	72,730	98,185	81,841	89,757	71,595	94,009	40,307
Gravity Sewer Cleaning (LF)	29,400	234,463	207,724	194,838	208,059	190,160	203,206	57,025

*The Pump Station target became 86 in FY 17 due to new stations coming on line

HRSD SSOs

Year	# of SSOs	Volume (gal)	# of Unknown SSO Volumes (during wet weather)	Total Inches of Rain near ORF
CY2011	35	1,880,086	13	55
CY2012	40	22,850,543*	6	52
CY2013	14	722,237	2	50
CY2014	29	2,250,915	10	45
CY2015	18	516,704	3	53
CY2016	49**	6,148,239**	23**	69**
CY2017	21	259,057	4	42
FY2018	20	1,006,196	3	47

*Included single SSO at Wilroy Road of 18,352,000 gallons. Remaining volume ~4,500,000 gallons for 2012

**Included two major weather events in Hurricane Matthew and Tropical Storm Hermine

Capacity Related SSOs

Calendar Year	Total # of SSOs	Total Volume Of SSOs (gal)	Volume for Capacity (Gals)	# of Capacity SSOs	Named Storm
2011	35	1,880,086	1,409,796	16	Hurricane Irene
2012	40	22,850,543	4,249,483	31	Hurricane Sandy
2013	14	722,237	584,784	5	Remnants of Hurricane Andrea (1)
2014	29	2,250,915	681,392	15	None
2015	18	516,704	207,177	15	None
2016	49	6,148,239	2,133,775	35	TS Julia & Hurricane Matthew
2017	21	259,057	145,221	13	None
2018	20	1,006,196	134,886	10	None

Submitted to EPA 9/2017

- Plan integrates HRSD obligations under federal consent decree to minimize wet weather overflows with SWIFT to prioritize projects that achieve greatest environmental benefits (i.e., SWIFT)



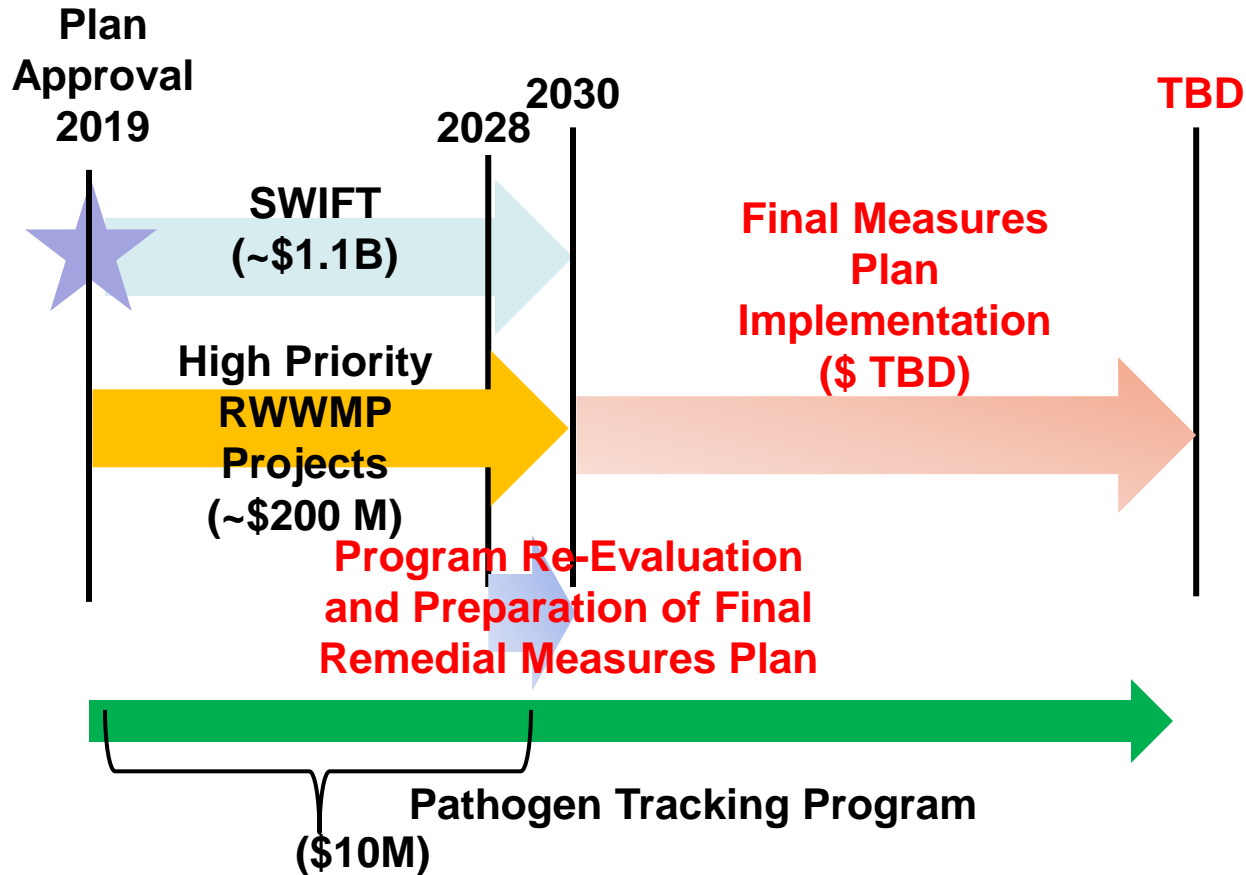
- Sea level rise and recurrent flooding
- Magnitude and spatial patterns of growth
- Future of numerous major DoD facilities
- Long term trend in I/I
- Regional economic vitality and household income and employment levels
- Regional environmental and public health priorities

Adaptive Management Approach

- Applying iterative decision-making in the face of multiple uncertainties and adjusting the course of solutions in the future to adapt to changing conditions

- HRSD and Localities have entered into nutrient trading agreements to apply SWIFT reductions to stormwater requirements
- Prioritize the projects that provide the highest benefit to human health and the environment
- Allows for appropriate sequencing of projects/programs
- Provides for adaptive management strategies to adjust programs based on results and changing circumstances

Sequence Places the Greatest Water Quality Benefits First

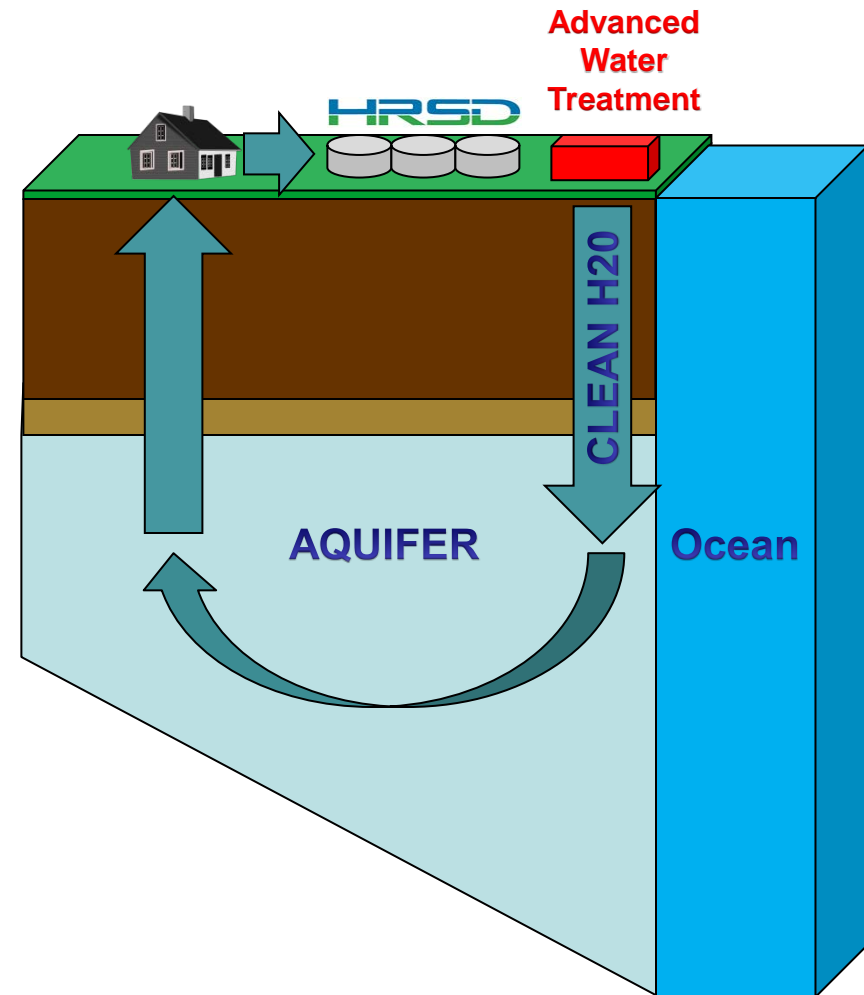


Regional Integrated Plan – An Adaptive Plan

Phase	Activities	Cost, \$M	Schedule
1	Planning, Condition Assessment, Prompt Repairs, Interim System Improvements, Rehab Action Plan	\$700	2008 - 2025
2	SWIFT and High Priority Projects	\$1,308	2020 - 2030
3	Re-Evaluation and Development of Final Remedial Measures Plan for Priority Capacity Related SSOs	\$2	2028 - 2030
4	Implementation of Final Remedial Measures Plan	TBD	TBD

SWIFT – Sustainable Water Initiative for Tomorrow

- Treat water to meet drinking water standards and replenish the aquifer with clean water to:
 - Provide regulatory stability for wastewater treatment
 - Reduce nutrient discharges to the Bay
 - Reduce the rate of land subsidence
 - Provide a sustainable supply of groundwater
 - Protect the groundwater from saltwater contamination

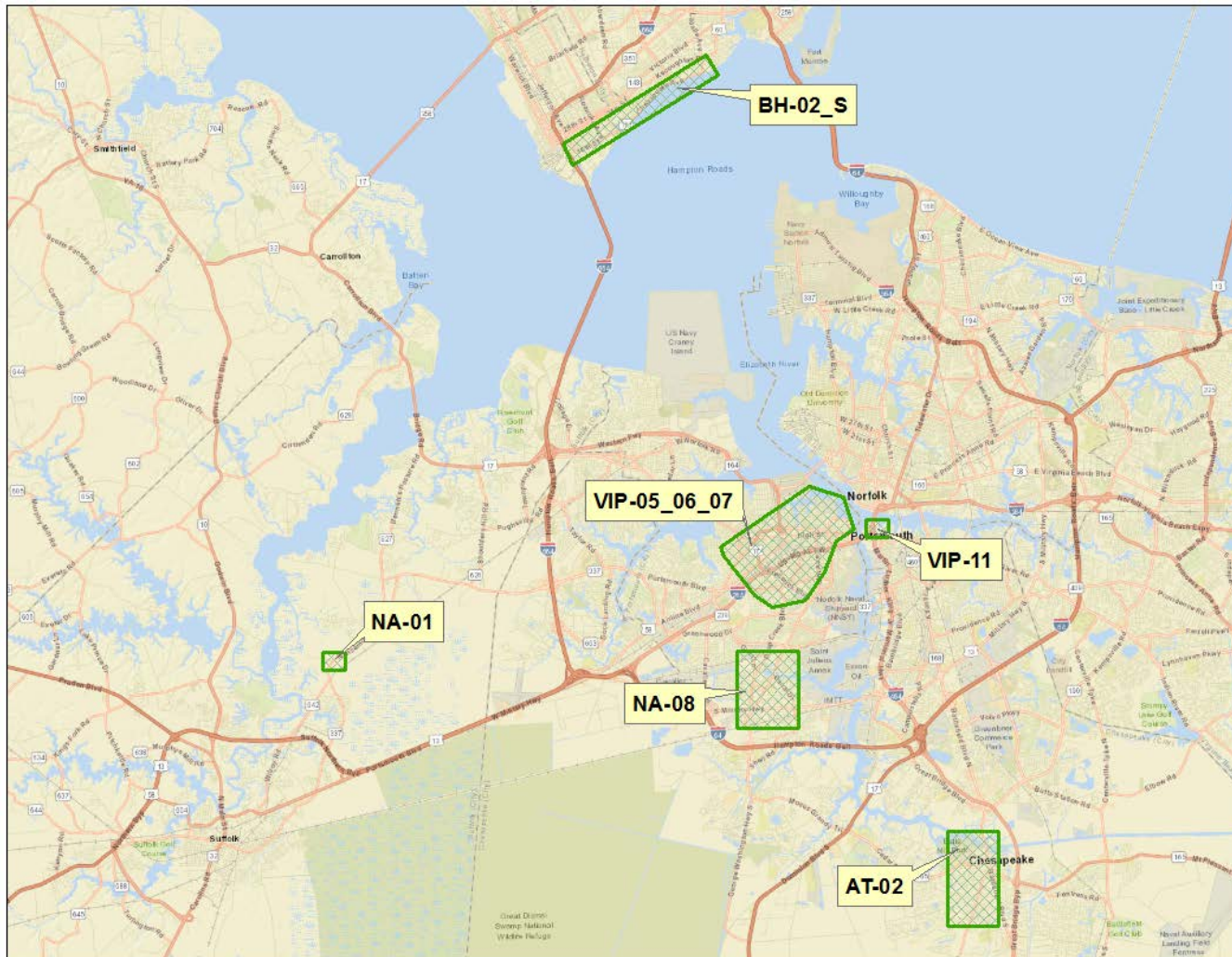




	Pre-SWIFT Daily Total	Estimated Post SWIFT Daily Total	Pre-SWIFT Annual Total	Estimated Post SWIFT Annual Total
Flow (MG)	113.4	12	41,391 (MG)	4,140 (MG)
BOD mg/L (LBS)	4552	455	1.66 M	166 K
TSS mg/L (LBS)	4960	496	1.81 M	181 K
TP mg/L (LBS)	794	79	290 K	29 K
TN mg/L (LBS)	8175	818	2.98 M	298 K

Calendar year 2016 averages

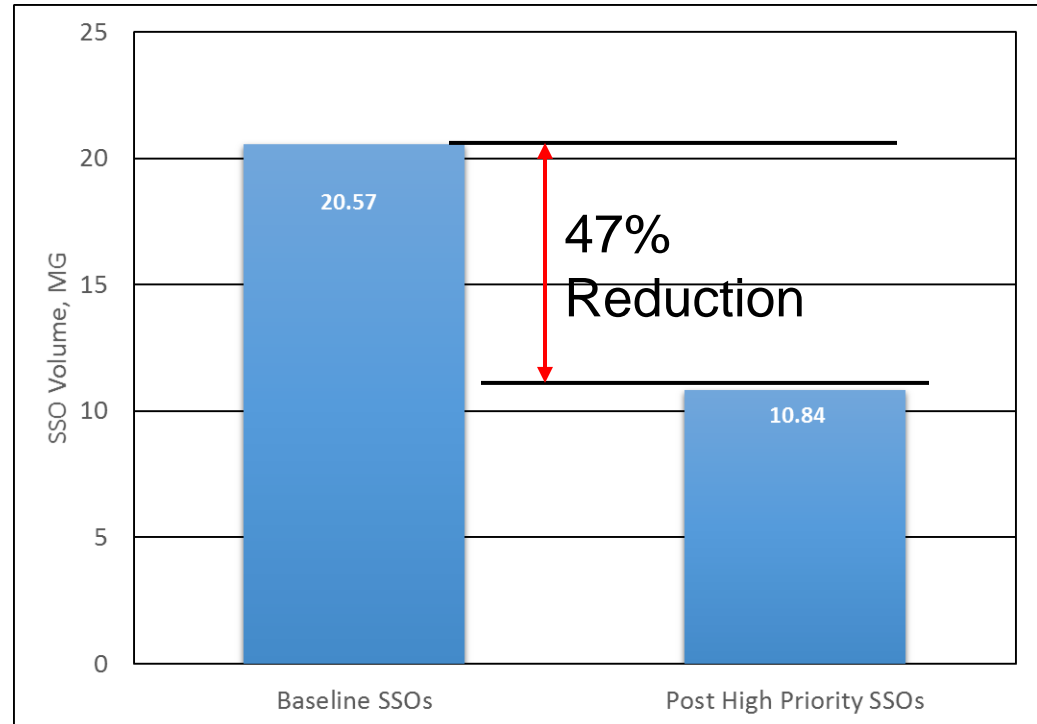
High Priority Project Areas



Potential High Priority Project Impact

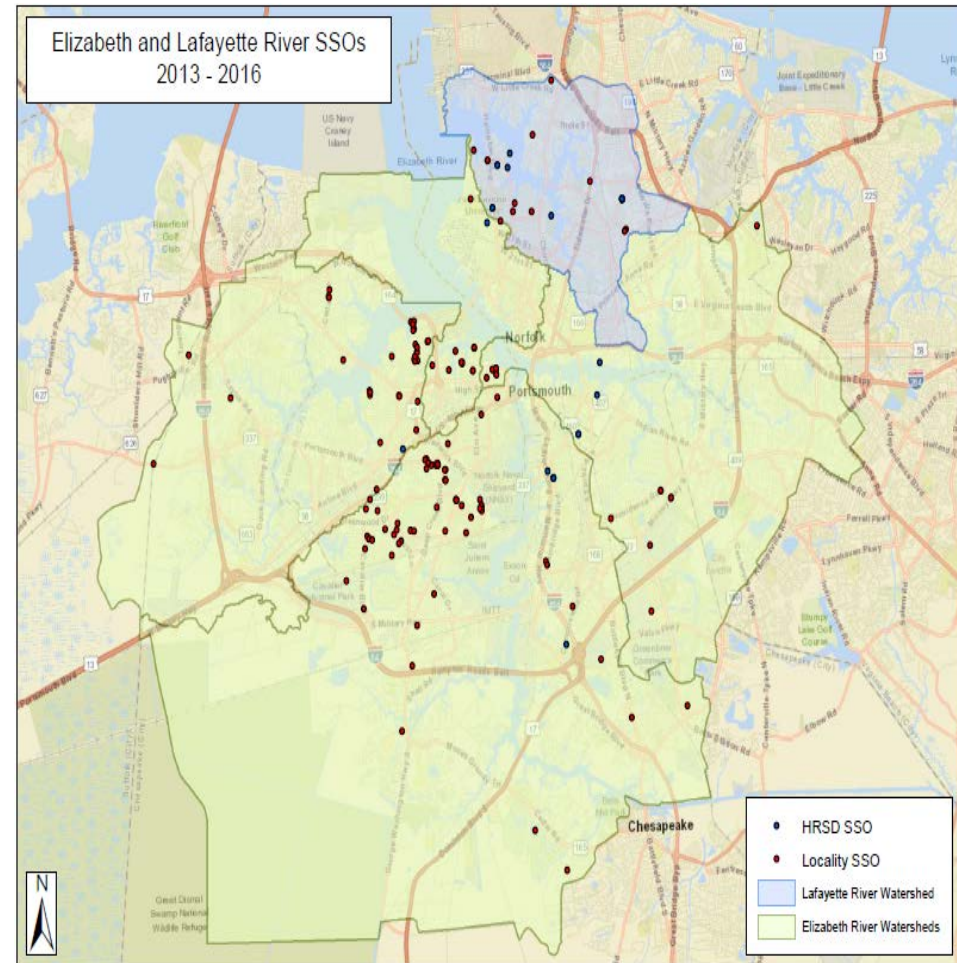
Volume reduction as compared to RHM baseline simulation

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



Observed wet weather overflows in ER watershed, 2013-2016

- Number of overflows: 172
- 2013: 0
- 2014: 53
- 2015: 0
- 2016: 119



Number of Days Impacted by Wet Weather Overflows, 2013-2016

- 2013: 0 days with wet weather overflows
- 2014: 4 days with wet weather overflows
 - > 4 inches in 4 hours
 - 1.8 inches in 30 minutes
 - > 3 inches in 12 hours
 - > 5 inches in 24 hours
- 2015: 0 days with wet weather overflows
- 2016: 10 days with wet weather overflows
 - ~ 2.5 inches in 7 hours
 - 3.86 inches of rain over 3 days
 - 2.46 inches of rain
 - 3 days of overflows associated with Tropical Storm Julia (> 10 inches of rain)
 - 4 days of overflows associated with Hurricane Matthew (> 9 inches of rain)

Water Quality Impacts of SSOs

- Water quality impacts have proven to be short-lived for non-chronic spills (temporally and spatially diverse)
- Post-overflow monitoring consistently demonstrates rapid return to background conditions and compliance with recreational standard when applicable

Water Quality Impacts of SSOs - Examples

–Shingle Creek - 2011

- Loss of >18 million gallons in headwater stream
- Returned to background within 5 days of cessation of leak

–Linkhorn – 2016

- Loss of > 2 million gallons in headwater stream
- Sample results complied with recreational standard within 24 hours of cessation of leak

SSO Volume in Perspective

DC Water Clean River Program - \$2.6 Billion investment

- CSO volume reported in 2016 1963 MG
- CSO Target at program completion 138 MG/yr

HRSD Wet Weather Management Plan - \$1.8 Billion investment

- SSO volume reported in 2016 6.2 MG
- SSO volume at program completion 1.2 MG/yr*

*Modeled overflow volume reduced by 5 MG/yr on average for the 50 year simulation

Nutrient Impact CSO - SSO

DC Water Clean River Program

- CSO volume at program completion 138 MG/yr
 - TN 9 mg/ L x 138 MG = 10.4K lbs/year
 - TP 1.9 mg/L x 138 MG = 2.2K lbs/year

Delay of HRSD Wet Weather Program

- SSO volume during delay +5 MG/yr
 - TN 39 mg/L x 5 MG = 1.6K lbs/year
 - TP 5.5 mg/L x 5 MG = 230 lbs/year

Integrated Plan Costs

- Overall = \$1.816B
 - Wet Weather Capacity Improvements = \$963.7M
 - I/I Reduction Program = \$852.3M
- Scheduled 176 Projects
 - 532 Elements grouped and sequenced w/ hydraulic considerations
- Implementation Timeframe
 - 2020-2030 High Priority \$200M (6 projects)
 - 2020-2030 SWIFT \$1B
 - 2028-2030 Re-evaluate needs and prioritize investments
 - Known wet weather work as of 2017 (\$1.6 B)
 - Sea level rise adaptation \$???
 - Unknown unknown

Income Quintiles

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

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

\$1,302 Peak CPH WW+SW

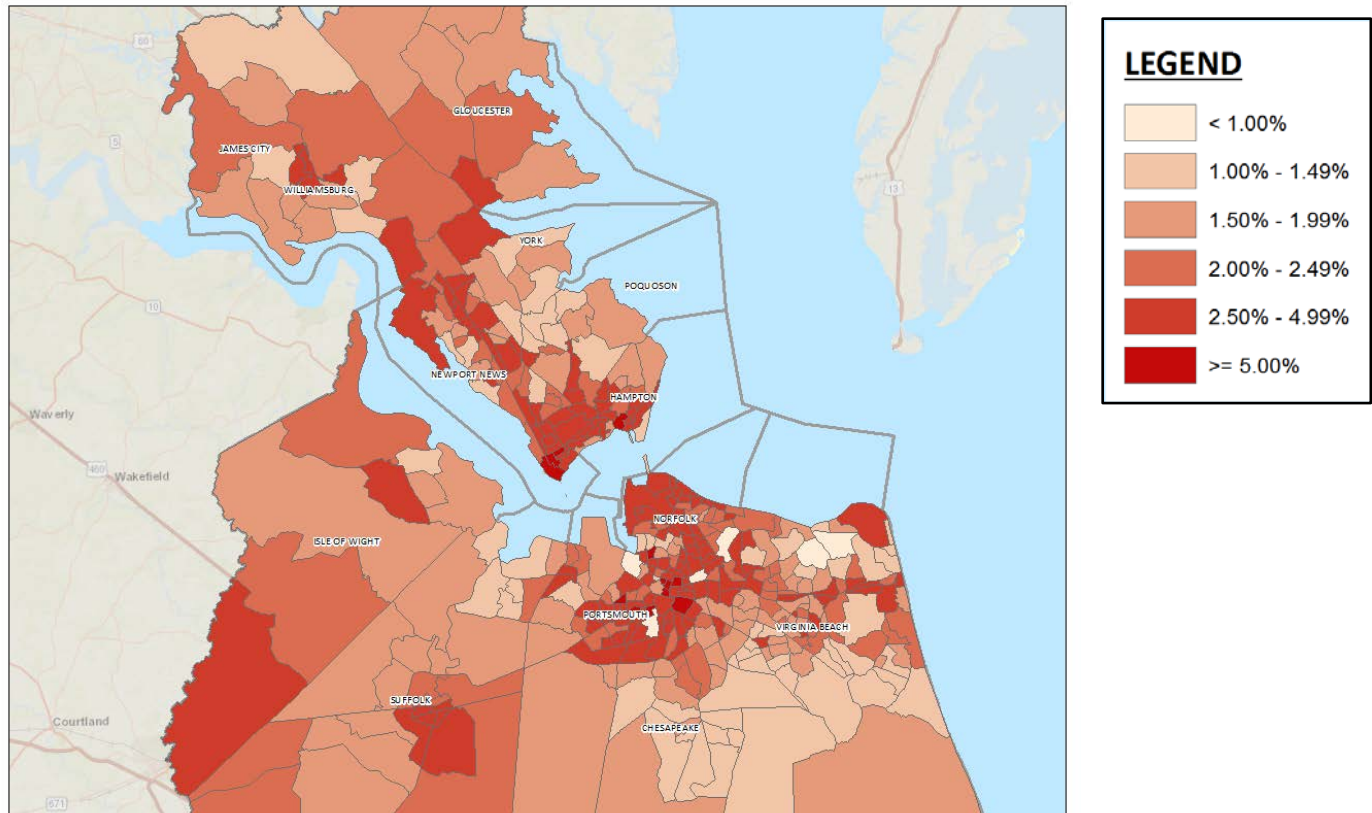
@ Regional MHI: 2.10%

@ Lowest Quintile: 9.18%

Census Tract Household Utility Cost Burden

- Costs are already high burden for some
- Much broader impact at implementation peak

Peak CPH Wastewater + Stormwater



Coordination with Localities

- Meetings with individual Localities to review capacity enhancements in their systems
- Periodic meetings of Capacity Team
- Monthly Directors of Utilities meetings
- HRSD providing GIS, flow, pressure and rainfall data to Localities
- Ad hoc coordination of bacteria source tracking program

- Annual newsletter published in February 2018 and posted on HRSD.com
- Annual public informational meeting with public notice was held on January 23, 2018

Steps Citizens Can Take to Protect Receiving Waters

- Report Sanitary Sewer Overflows – Call your local utility department
- Inspect home, yard and sewer service pipes to ensure separation between storm and sanitary systems
- Reduce storm water runoff by using rain barrels, rain gardens and establishing a buffer



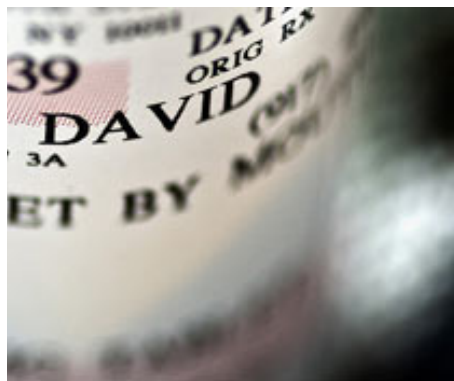
Steps Citizens Can Take to Protect Receiving Waters

- Pick up animal waste
- Avoid feeding wildlife
- Support “No Dumping” and use boater pump out facilities



Steps Citizens Can Take to Protect Receiving Waters

- Practice proper disposal of pharmaceuticals, household chemicals, food wastes and kitchen grease – minimize use of or eliminate garbage disposal



Steps Citizens Can Take to Protect Receiving Waters

- Improve water quality by raising oysters
- Plant native plants – minimize groomed turf – managed meadow concept
- Limit fertilizer and other lawn chemical applications – use natural products like compost

Questions?

HRSD COMMISSION MEETING MINUTES
January 22, 2019

ATTACHMENT #8

AGENDA ITEM 20. – 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 – Monthly](#) and [Annual](#)
- d. [Air Summary – Monthly](#) and [Annual](#)
- e. [Emergency Declaration - Langley Magruder 30-Inch Ductile Iron Force Main](#)



January 15, 2019

Re: General Manager's Report

Dear Commissioners:

A superstitious person might believe that my lengthy description of a quiet month in my November monthly report may have been the cause of the challenges experienced at the end of December. The year went out like a lion with a major line break on the 20th and a major power failure on the 25th. The response in both cases was an impressive display of our staff's dedication, creativity, skill and professionalism. We are truly lucky to have such great people working on our team, including outstanding support from TA Sheets, one of our contractor resources. That said, I think everyone would like me to refrain from describing any future month as "quiet."

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

- A. **Treatment Compliance and System Operations:** All treatment plants met permit but we did have two major spills as well as a minor one. We also failed to provide DEQ with timely notice of excess air emissions related to the use of the bypass stack at the Boat Harbor Treatment Plan. The highlights of the month are included in the attached monthly reports.
- B. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
1. Two new employee orientation sessions
 2. A meeting to discuss possible modifications to the high strength waste surcharge program
 3. A meeting to review corrosion issues at SWIFT
 4. Provided a welcome and a "TED Talk" for the Leadership and Management Program class
 5. A meeting to discuss the path forward for the SCADA contract

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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

6. Two site visits to the Semple Farm force main break
7. A strategy meeting to prepare for meeting with the Navy about a new access road to the Atlantic Treatment Plant
8. A meeting to develop risk consequence definitions

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

1. Provided a tour of the SWIFT RC for a contractor's senior leadership team
2. Presented SWIFT to the South Carolina Water Quality Association at their quarterly meeting
3. Participated in two conference calls as a member of the US EPA Environmental Financial Advisory Board
4. A meeting with the Commanding Officer of Oceana and other senior staff regarding the proposed new access road to the Atlantic Treatment Plant
5. A meeting with a City of Norfolk Deputy City Manager and Director of Utilities to review various partnership issues
6. A meeting with the New Kent County - County Administrator and Director of Utilities to discuss treatment options
7. The water resources budget announcement by Governor Northam at the CBF Brock Center
8. A meeting with the US EPA Region 3 Administrator, Chief of Staff and General Counsel to review SWIFT
9. A meeting with the US Department of Justice, US EPA and Virginia DEQ to discuss stipulated penalties associated with SSOs

C. **Consent Decree Update:**

1. There have been a series of proposals and counter proposals between HRSD and DOJ/EPA regarding the latest demand for stipulated penalties. No resolution has been agreed to as of today and the government shut down may delay final resolution.
2. The annual public meeting will be held at 1:30 pm on January 22 at the NS Operations Training Room. The Commission will receive the public briefing during the regular Commission meeting that morning.

The SWIFT monitoring and oversight legislation has been introduced (HB 2358/SB 1414) and is moving through the legislative process. Commissioner Rodriguez was instrumental in lining up Delegate Jones to carry HB 2358. Senator Mason agreed to carry SB 1414 and is a big SWIFT supporter, especially after cutting the ribbon on the Research Center in May.

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, January 22, 2019 in Newport News.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager
FROM: Director of Communications
SUBJECT: Monthly Report for December 2018
DATE: January 11, 2019

A. Publicity and Promotion

1. **A Sustainable Source of Water** | December 1, 2018 | Civil + Structural Engineer
<https://cseengineermag.com/article/a-sustainable-source-of-water/>
2. **Onancock votes to repay county part of sewage overpayment** | December 19, 2018 | Delmarvanow.com
<https://www.delmarvanow.com/story/news/2018/12/19/onancock-votes-repay-county-part-sewage-overpayment/2349642002/>
3. **Virginia Shore officials highlight poultry's huge impact in meeting with Luria** | December 20, 2018 | Delmarvanow.com
<https://www.delmarvanow.com/story/news/2018/12/20/va-shore-officials-meet-luria/2331286002/>

B. Social Media and Online Engagement

1. Facebook: 12,578 post impressions and Facebook Engagement of 331
2. Twitter: 12,500 impressions
3. SWIFT website visits: 559
4. LinkedIn Impressions: 0
5. Blog posts: 2
6. Construction Project Page Visits: 617 total (this number does not include direct visits from home page), broken down as follows:
 - a. 266 visits to construction status page
 - b. 299 visits to individual project pages
7. Next Door unique impressions: 543 for one notice to Newport News residents adjacent to and surrounding the Warwick/Lucas Creek to Thorncliff project.

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

1. News Releases/Traffic Advisories/Construction Notices: 1
2. Advertisements: 0
3. Project Notices: 0
4. Project/Community Meetings: 0
5. New Project Web Pages/Blogs/Videos: 2 (blog posts)

D. Special Projects and Highlights

1. Director and engineering staff met with City of Virginia Beach Public Utilities staff to discuss public outreach expectations, strategies and planning for upcoming projects within the city.
2. Staff participated in the Elizabeth River Project Youth Resilience Roundtable Meeting.
3. Staff participated in Virginia Water Environment Association (VWEA) Communications conference call.
4. Community Education and Outreach Specialist participated in a presentation phone conference with Lynnhaven River NOW.
5. Director, with engineering staff attended the Providence Road Offline Storage Facility (PROLSF) Communications Plan Review Meeting together with City of Virginia Beach staff.

E. Internal Communications

1. Director participated in the following internal meetings:
 - a. Strategic Carbon Footprint Reduction team meetings
 - b. Apprenticeship Graduation and 40th anniversary planning meeting
 - c. Senior leadership meeting
 - d. New Employee Orientation
 - e. SWIFT Risk management workshop
 - f. SWIFT QST meeting

2. Director conducted bi-weekly communications department status meetings, 90-day progress meeting with Community Education and Outreach Specialist and project update check-ins with Community Relations Liaison.

F. Metrics

1. Educational and Outreach Activities: 4
 - a. 12/12/18 – Chesapeake-Elizabeth Treatment Plant (CETP) tour – Princess Anne High School (20 attendees)
 - b. 12/13/18 – CETP tour – Princess Anne High School (17 attendees)
 - c. 12/18/18 – Amazing Aquifers activity for Southwestern Elementary 4th grader Chrome Club (20 attendees)
 - d. 12/20/2018 – SWIFT Research Center (SWIFT RC) Tour, St. Georges Brewery (2 attendees)

2. Number of Community Partners: 3
 - a. City of Virginia Beach Public Schools
 - b. City of Chesapeake Public Schools
 - c. St. Georges Brewery, Hampton

3. Additional Activities Coordinated by Communications Department:

12/14/18 – Continental Automotive Energy and Environment Day, Newport News

4. Monthly Metrics Summary

Item #	Strategic Planning Measure	Unit	December 2018
M-1.4a	Total Training Hours per Full Time Employee (3) - Current Month	Hours / #FTE	5.7
M-1.4b	Total Training Hours per Full Time Employee (3) - Cumulative Fiscal Year-to-Date	Hours / #FTE	41.7
M-5.2	Educational and Outreach Events	Number	4
M-5.3	Number of Community Partners	Number	3

Respectfully,

Leila Rice, APR
 Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for December 2018

DATE: January 8, 2019

A. General

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

CIP Spending (\$M):

	Current Period	FYTD
Actual	7.05	31.78
Plan	11.50	54.90

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

2. Construction costs in 2018 rose by 2.9 percent as the economy continues to improve as documented by the Engineering News Record (ENR) Construction Cost Index (CCI). Construction starts are expected to level off from strong increases in 2018 and material costs are expected to increase by 3.5 percent. The ENR also predicts a 3.0 percent increase in the CCI in 2019 due to modest increases for materials and labor. Many of HRSD's projects, including smaller plant, pump station and pipeline work, had numerous bidders in the past year. These bidders continue to be competitive in their pricing, and as a result, HRSD continues to see only modest increases in the costs for many of our CIP projects. Large plant projects, which are more sensitive to national trends in both materials and labor, continue to increase at rates comparable to the CCI due to the limited availability of skilled trades and material price increases in steel and cement. Capital spending in both the public and private sectors continues to improve but with a limited backlog of work by the contractors in our region, we expect a continued competitive bidding environment in 2019. These issues should help to control costs for many of HRSD's CIP projects to be bid and constructed in the coming year.
3. The Engineering Department completed the selection efforts for the open Condition Assessment Manager position in December. Ms. Katherine Linares was selected to fill this role. Since Katherine was working as a Project Manager in the Engineering Department, this position must now be filled. We expect to begin this process in the coming month.

B. Asset Management Division

1. An assessment report for the Atlantic Treatment Plant was recently prepared by Collins Engineers. This report focused on coatings systems used to protect facilities and equipment from corrosion-related deterioration. The report provided data to be used as part of the coatings database to assist with life cycle analysis for coatings maintenance and future project prioritization.
2. The draft Treatment Plant Condition Assessment Manual was recently submitted by Black & Veatch for review and comment. The manual will establish a uniform process for inspecting the condition of treatment plant mechanical, electrical, instrumentation and structural assets. The manual will be finalized and used to conduct the Atlantic Treatment Plant condition assessment scheduled for later this year. Asset inventory and condition assessments will be performed at all treatment plants to establish a baseline that will be used for future maintenance and capital plans and budgets.

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

1. The Mathews Main Vacuum Pump Station Replacement project design is now complete. The project has been advertised for construction with bids anticipated to be received in February. Construction of this project should begin later this summer.
2. Design efforts are nearly complete and the construction cost estimates are being finalizing by the contractor providing the Construction Management Services for the multi-pressure reducing station projects. This effort includes improvements to the following pressure reducing stations in Virginia Beach:
 - Independence
 - Providence Road
 - Laskin Road
 - Pine Tree
 - Atlantic
 - Kempsville

Construction of the first four pump station improvement projects should begin in February and the final two pump station improvement projects will begin later this summer. The Construction Management project delivery method is being utilized for this work to expedite the construction and

coordinate the work at each pump station since they have similar work efforts and the timing of each pump station must be closely coordinated. This work must be completed prior to closure of the Chesapeake-Elizabeth Treatment Plant scheduled for the end of 2021.

3. The SWIFT Full-Scale Implementation Program (FSIP) Risk Management Plan has been recently drafted by the project team. This document lists the potential items that could impact the successful implementation of the FSIP. Each risk item was assigned a likelihood and consequence score. The draft plan will be distributed to the FSIP Team for review and those individuals assigned a specific risk item will be tasked with creating a mitigating strategy to limit the impact of the issue of concern to the overall SWIFT Program.

D. Planning & Analysis Division

1. Staff is working with the HRSD consulting engineer, Bowman Consulting, to prepare a conceptual plan for both a collection system in the Cooks Corner area of Middlesex County and a conveyance system that will ultimately serve the entire county in the future. In the short-term, the flow from the collection system will be directed to the Central Middlesex Treatment Plant and will ultimately be conveyed through the Mathews Transmission Force Main to the York River Treatment Plant. This plan will result in some near-term projects that will be presented to the Commission in the coming months for approval.
2. Staff is working with the City of Norfolk to study the feasibility of abandoning the Chesterfield Heights Pump Station, associated gravity sewer and adjacent force main. This pump station was constructed in 1975 to eliminate a direct outfall into the Eastern Branch of the Elizabeth River. Since the city is working on a large improvement program in this area, combining assets and improving the reliability and sustainability of the sewer system is a logical step. The outcome of this study will likely involve a cost sharing agreement to allow for the needed construction efforts.

E. Strategic Planning Metrics Summary

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

4. Metrics Summary

Item #	Strategic Planning Measure	Unit	December 2018
M-1.4a	Total Training Hours per Full Time Employee (43) - Current Month	Hours / #FTE	2.10
M-1.4b	Total Training Hours per Full Time Employee (43) - Cumulative Fiscal Year-to-Date	Hours / #FTE	14.64
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
M-5.4	Number of Research Partners	Number	0

Bruce W. Husselbee, P.E.

Bruce W. Husselbee, P.E.

TO: General Manager
FROM: Director of Finance
SUBJECT: Monthly Report for December 2018
DATE: January 9, 2019

A. General

1. The Federal Reserve raised short-term rates for the fourth time in 2018, but noted that the economy may be slowing. Market analysts now believe the number of likely rate increases for 2019 has dropped to only two. The rate hikes are beneficial to our short-term investments as our Liquidity Pool was yielding around 2.45 percent, up from 2.36 percent in November. This is in contrast to our variable rate debt, where we are paying 1.71 percent. This roughly equates to a 70 percent Municipal/US Treasury ratio, which is a market dislocation due to supply and demand factors. Currently, there is no variable rate tax-exempt supply. The typical ratio is about 80 percent since municipal debt is tax-exempt. This ratio is expected to decline next month due to the "January Effect" where a significant amount of principal payments are due and need to be reinvested. This supply/demand dynamic should temporarily cause a reduction in our variable rate in January.
2. Revenues are slightly higher than budget and in-line with the previous year due to slightly higher than expected water consumption. Interest Income is strong as the Federal Reserve continues to raise short-term rates. Major repairs and capital assets expenses continue to be significantly lower than budget at this time, since many purchases earlier in the fiscal year related to prior year encumbrances. Total operating expenses are under budget at 44 percent which is slightly lower than last year's 45 percent. Debt service is recorded based on actual year to date payments, currently at 59 percent of budget, and we anticipate it to be within budget at year's end. Total expenses are under budget at 48 percent, but slightly higher than prior year's 47 percent due to debt service.
3. In August, HRSD partnered with the United Way of the Virginia Peninsula (UWVP) and the Center for Child & Family Services (CCFS) to offer a customer assistance program focused on financial counseling for HRSD customers struggling to pay HRSD bills. During December, the pilot program was launched to eligible customers of Newport News Waterworks (NNWW). The Financial Wellness initiative is welcomed by most invitees and has a 72 percent enrollment rate. Customers have expressed extreme gratitude for the opportunity to both HRSD and CCFS staff.

B. Interim Financial Report

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

	Amended Budget	Current YTD	Current YTD as % of Budget (50% Budget to Date)	Prior YTD as % of Prior Year Budget
Operating Revenues				
Wastewater	\$ 289,967,000	\$ 148,107,209	51%	51%
Surcharge	1,425,000	757,707	53%	40%
Indirect Discharge	2,750,000	1,407,341	51%	55%
Fees	2,855,000	1,420,404	50%	48%
Municipal Assistance	875,000	280,729	32%	52%
Miscellaneous	595,000	698,038	117%	77%
Total Operating Revenue	298,467,000	152,671,428	51%	51%
Non Operating Revenues				
Facility Charge	6,075,000	3,160,765	52%	53%
Interest Income	2,500,000	3,481,357	139%	76%
Build America Bond Subsidy	2,400,000	1,145,118	48%	49%
Other	820,000	209,533	26%	95%
Total Non Operating Revenue	11,795,000	7,996,773	68%	59%
Total Revenues	310,262,000	160,668,201	52%	52%
Transfers from Reserves	8,847,824	4,423,912	50%	50%
Total Revenues and Transfers	\$ 319,109,824	\$ 165,092,113	52%	52%
Operating Expenses				
Personal Services	\$ 55,331,886	\$ 28,145,658	51%	51%
Fringe Benefits	24,321,670	11,903,365	49%	51%
Materials & Supplies	7,686,154	3,729,518	49%	50%
Transportation	1,446,906	637,070	44%	39%
Utilities	12,306,952	5,809,028	47%	43%
Chemical Purchases	10,894,183	4,171,471	38%	37%
Contractual Services	42,104,030	14,378,678	34%	38%
Major Repairs	10,315,534	3,093,613	30%	26%
Capital Assets	1,232,144	352,340	29%	58%
Miscellaneous Expense	2,945,304	1,280,966	43%	49%
Total Operating Expenses	168,584,763	73,501,707	44%	45%
Debt Service and Transfers				
Debt Service	62,811,000	37,004,463	59%	48%
Transfer to CIP	87,475,061	43,737,528	50%	50%
Transfer to General Reserve	-	-	0%	50%
Transfer to Risk management	239,000	119,502	50%	50%
Total Debt Service and Transfers	150,525,061	80,861,493	54%	49%
Total Expenses and Transfers	\$ 319,109,824	\$ 154,363,200	48%	47%

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 December 31, 2018

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2018	\$ 193,623,393	\$ 3,260,531	\$ 15,266,324	\$ 75,874,029
Add: Current Year Sources of Funds				
Cash Receipts	159,349,361			-
Capital Grants				-
VRA Draws				11,567,621
Bond Proceeds (includes interest)				605,809
Transfers In	-	119,502		43,737,528
Sources of Funds	159,349,361	119,502	-	55,910,958
Total Funds Available	\$ 352,972,754	\$ 3,380,033	\$ 15,266,324	\$ 131,784,987
Deduct: Current Year Uses of Funds				
Cash Disbursements	112,491,432			50,244,577
Transfers Out	43,857,030			-
Uses of Funds	156,348,462	-	-	50,244,577
End of Period - December 31, 2018	\$ 196,624,292	\$ 3,380,033	\$ 15,266,324	\$ 81,540,410

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

Classification/ Treatment Service Area	Expenditures		Year to Date		Total Expenditures	Outstanding Encumbrances	Available Balance
	Budget	prior to June 30, 2018	FY 2019 Expenditures				
Administration	\$ 64,885,711	\$ 40,373,105	\$ 384,125	\$ 40,757,230	\$ 1,286,850	\$ 22,841,631	
Army Base	158,584,000	124,056,440	438,693	124,495,133	2,171,370	31,917,497	
Atlantic	127,413,586	56,021,559	11,266,005	67,287,564	37,112,241	23,013,781	
Boat Harbor	128,380,436	55,186,498	1,974,318	57,160,816	9,426,861	61,792,759	
Ches-Eliz	155,356,457	10,416,092	2,271,090	12,687,182	37,334,801	105,334,474	
James River	89,151,802	55,333,203	1,812,636	57,145,839	1,708,476	30,297,487	
Middle Peninsula	49,276,789	7,951,942	1,068,796	9,020,738	4,526,754	35,729,297	
Nansemond	84,434,179	39,238,100	1,658,356	40,896,456	3,910,115	39,627,608	
Surry	3,236,000	101,724	274,189	375,913	197,065	2,663,022	
VIP	292,496,378	250,845,561	5,033,535	255,879,096	4,034,344	32,582,938	
Williamsburg	18,888,971	10,079,626	255,713	10,335,339	1,126,509	7,427,123	
York River	45,712,249	40,864,038	635,361	41,499,399	127,792	4,085,058	
General	482,765,843	216,595,238	4,707,900	221,303,138	27,532,209	233,930,496	
	<u>\$1,700,582,401</u>	<u>\$ 907,063,126</u>	<u>\$ 31,780,717</u>	<u>\$ 938,843,843</u>	<u>\$ 130,495,387</u>	<u>\$ 631,243,171</u>	

5. Debt Management Overview

Debt Outstanding (\$000's)					
	Principal Nov 2018	Principal Payments	Principal Draws	Principal Dec 2018	Interest Payments
Fixed Rate					
Senior	\$ 318,713	\$ -	\$ -	\$ 318,713	\$ -
Subordinate	442,325	(1,070)	-	441,255	(221)
Variable Rate					
Subordinate	50,000	-	-	50,000	(72)
Line of Credit					
Total	<u>\$ 811,038</u>	<u>\$ (1,070)</u>	<u>\$ -</u>	<u>\$ 809,968</u>	<u>\$ (293)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 12/28/18

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	1.81%	1.81%	0.00%
Average	0.42%	0.41%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 12/28/18	1.71%	1.76%	0.05%

* Since October 20, 2011 HRSD has averaged 41 basis points on Variable Rate Debt

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

	Current YTD	Policy Minimum
Days Cash on Hand (Unrestricted)	491 days	270-365 days
Days Cash on Hand (Excl Reserve \$15m and Risk Mgmt \$3m)	451 days	270-365 days
Risk Management Reserve as % of Projected Claims Costs	25%	25%

HRSD - SOURCES OF FUNDS

December 31, 2018

Primary Source	Beginning	YTD		YTD	Ending	Allocation of Funds	Credit Quality	Current Mo Avg Yield
	Market Value July 1, 2018	Contributions	Withdrawals	Income Earned	Market Value Dec 31, 2018			
BAML Corp Disbursement Account	10,669,597	295,737,592	297,510,434	25,692	8,922,447	7.4%	N/A	0.50%
VIP Stable NAV Liquidity Pool	-	136,000,000	26,000,000	891,641	110,891,641	92.6%	AAAm	2.45%
Va Local Government Investment Pool	68,984,048	5,000,000	74,115,221	131,173	-	0.0%	AAAm	2.45%
Total Primary Source	\$ 79,653,645	\$ 436,737,592	\$ 397,625,655	\$ 1,048,506	\$ 119,814,088	100.0%		

VIP Stable NAV Liquidity Pool performance equaled Va Local Government Investment Pool (the market benchmark) in the month of December.

Secondary Source	Beginning	YTD		YTD	Ending	Ending Cost	YTD Mkt Adj	Yield to Maturity at Market
	Market Value July 1, 2018	Contributions	Withdrawals	Income Earned & Realized G/L	Market Value Dec 31, 2018			
VIP 1-3 Year High Quality Bond Fund	-	124,728,039	1,009,603	1,246,629	125,471,810	124,965,066	506,744	2.62%
Total Secondary Source	\$ -	\$ 124,728,039	\$ 1,009,603	\$ 1,246,629	\$ 125,471,810	\$ 124,965,066	\$ 506,744	

VIP 1-3 Year High Quality Bond Fund out performed ICE BofA ML 1-3 yr AAA-AA Corp/Gov Index (the market benchmark) by 0.05% in the month of December.

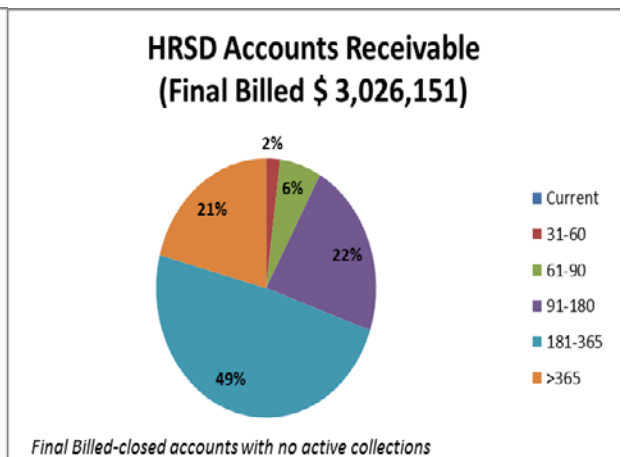
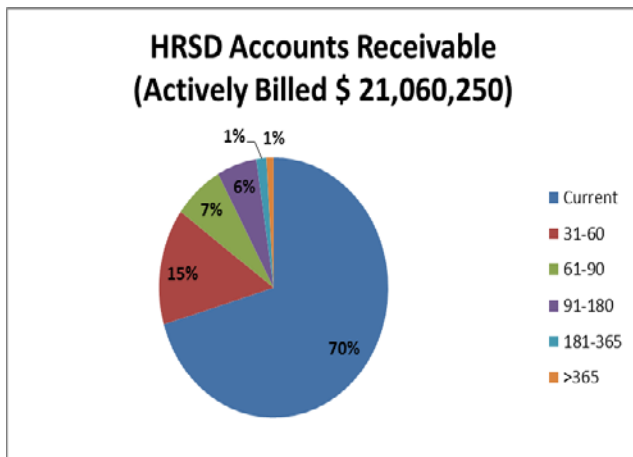
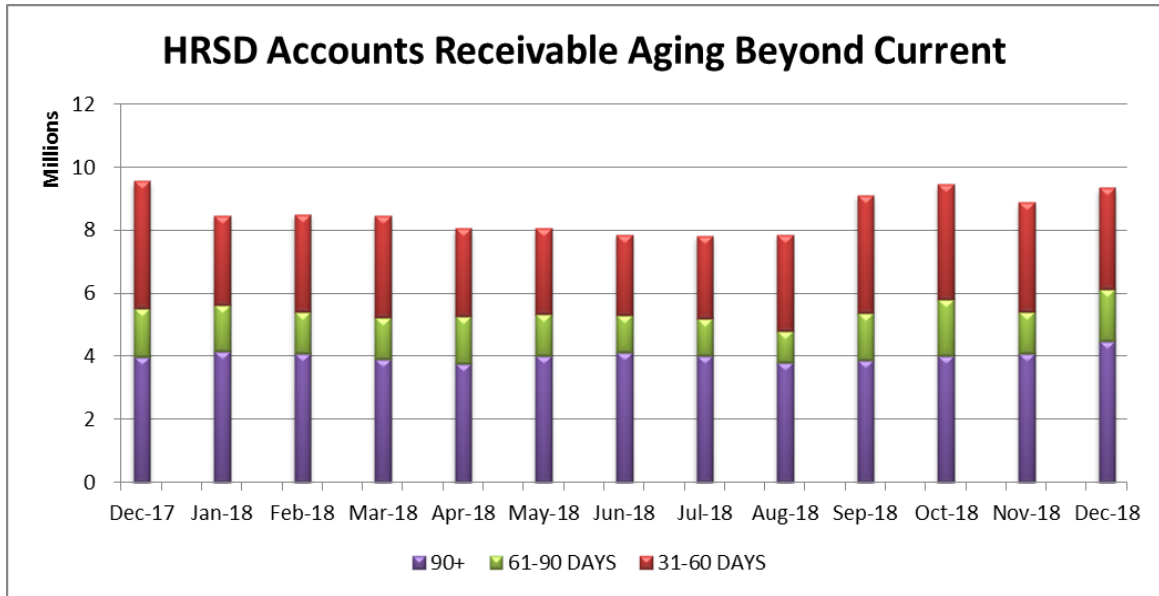
Total Primary Source	\$ 119,814,088	48.8%
Total Secondary Source	\$ 125,471,810	51.2%
TOTAL SOURCES	\$ 245,285,898	100.0%

7. Summary of Billed Consumption

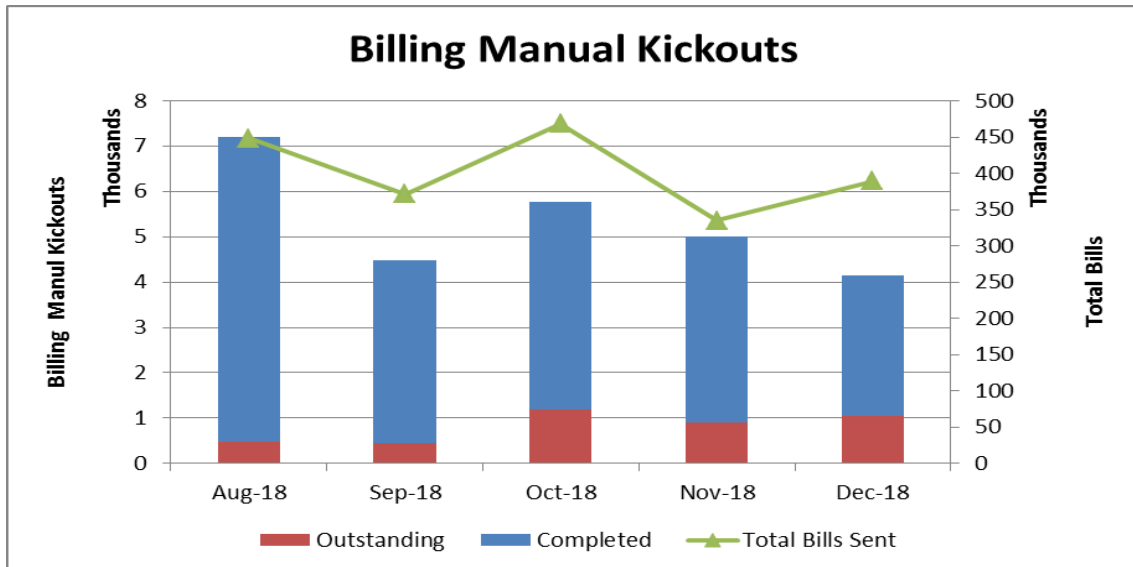
Summary of Billed Consumption (,000s ccf)							
Month	FY2019 Cumulative Budget Estimate	FY2019 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative FY2018 Actual	From FY2018	Cumulative 3 Year Average	From 3 Year Average
July	4,737	5,175	9.3%	4,869	6.3%	4,821	7.3%
Aug	9,595	10,233	6.6%	9,939	3.0%	9,666	5.9%
Sept	14,442	14,294	-1.0%	14,632	-2.3%	14,383	-0.6%
Oct	18,768	19,087	1.7%	19,006	0.4%	18,999	0.5%
Nov	22,834	23,249	1.8%	23,305	-0.2%	23,358	-0.5%
Dec	27,166	27,376	0.8%	27,462	-0.3%	27,616	-0.9%
Jan	31,486	-	N/A	31,965	N/A	31,948	N/A
Feb	36,154	-	N/A	36,519	N/A	36,247	N/A
March	40,096	-	N/A	40,741	N/A	40,654	N/A
Apr	43,612	-	N/A	44,732	N/A	44,649	N/A
May	47,887	-	N/A	49,018	N/A	48,864	N/A
June	52,927	-	N/A	53,298	N/A	53,391	N/A

C. Customer Care Center

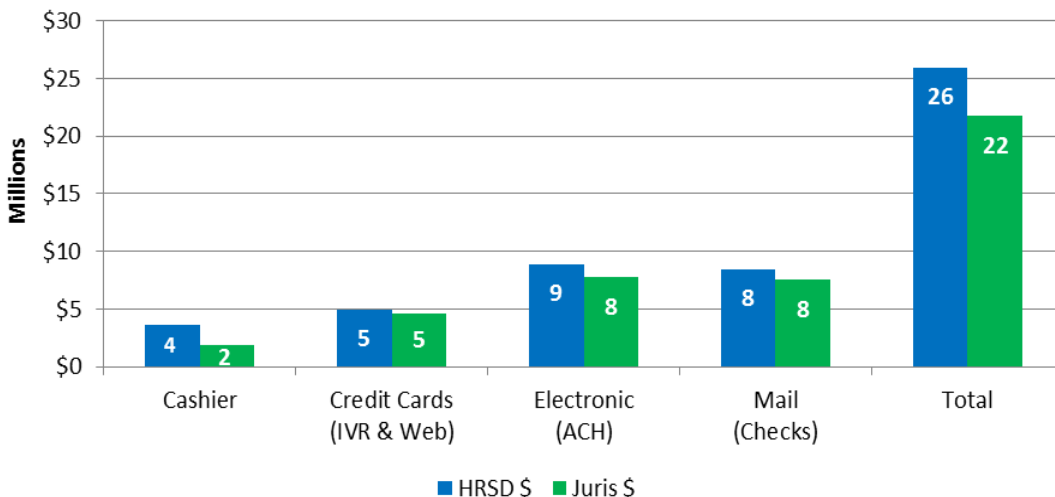
1. Accounts Receivable Overview



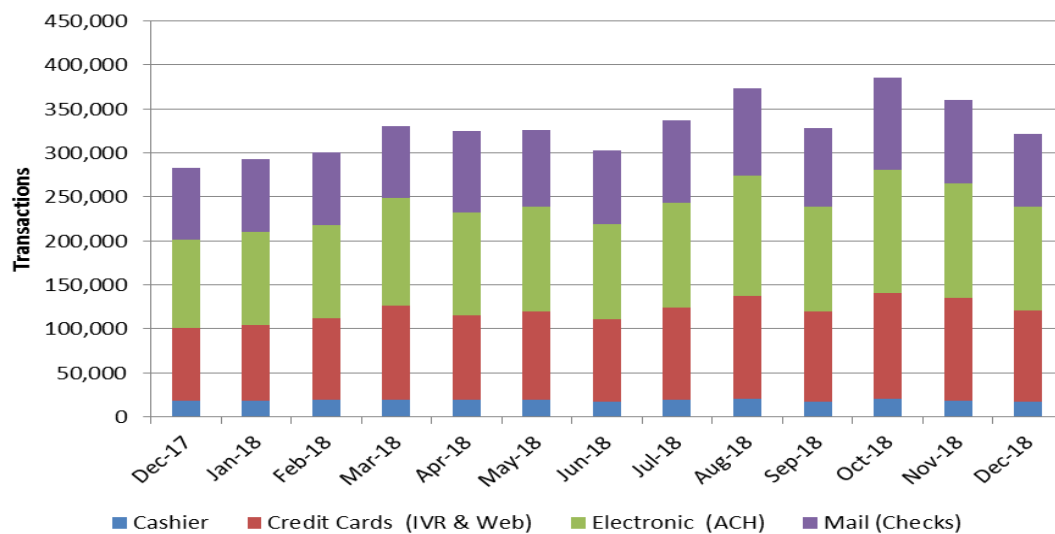
2. Customer Care Center Statistics



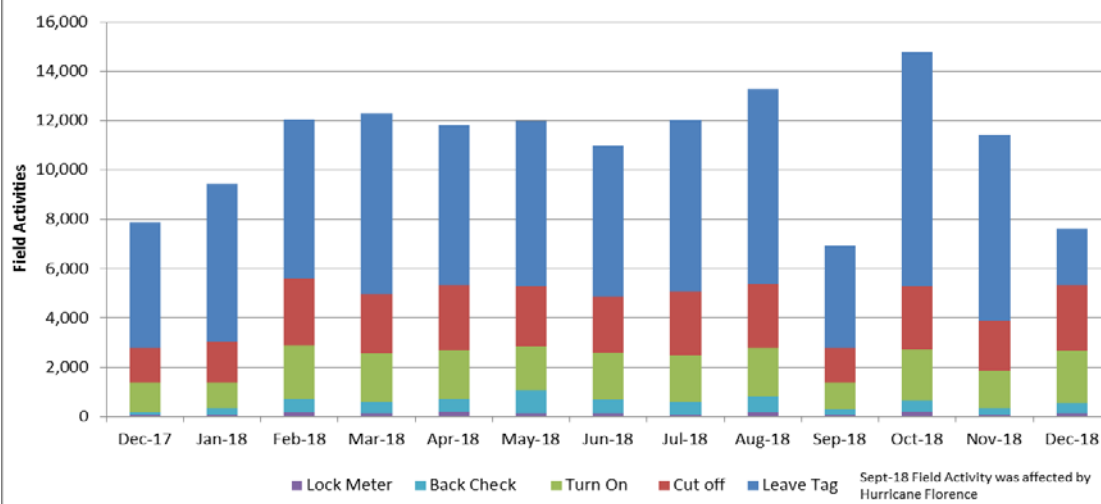
Payments Processed December 2018

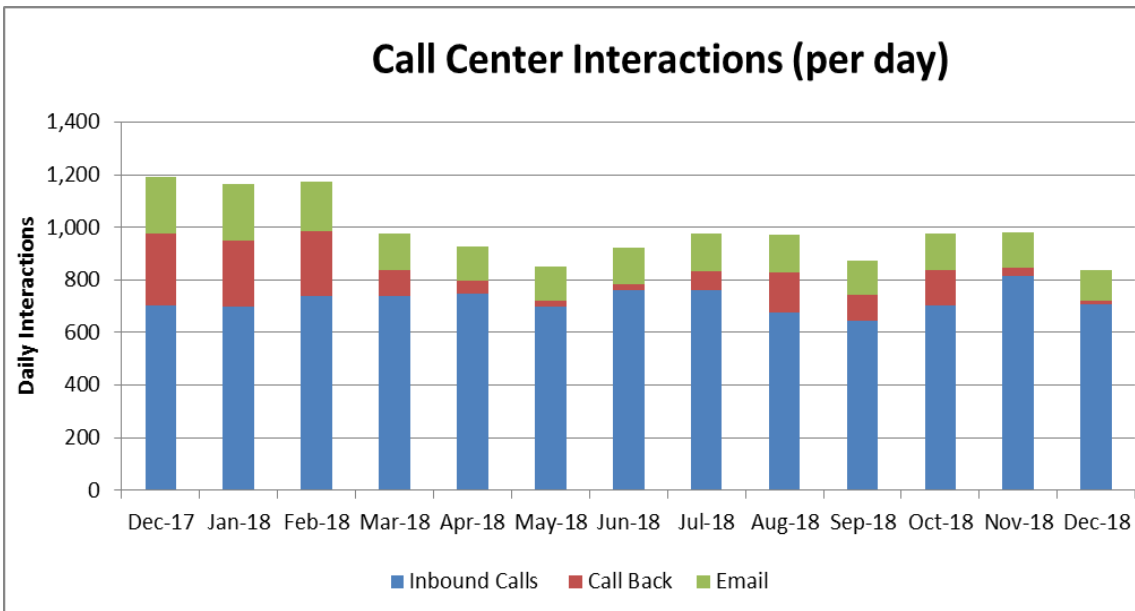
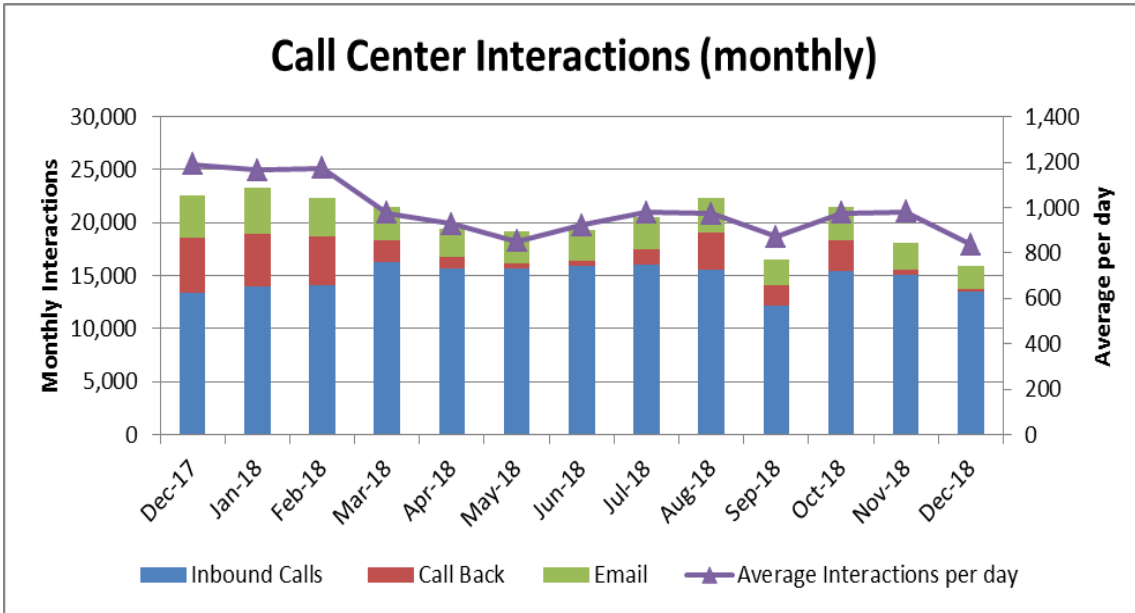
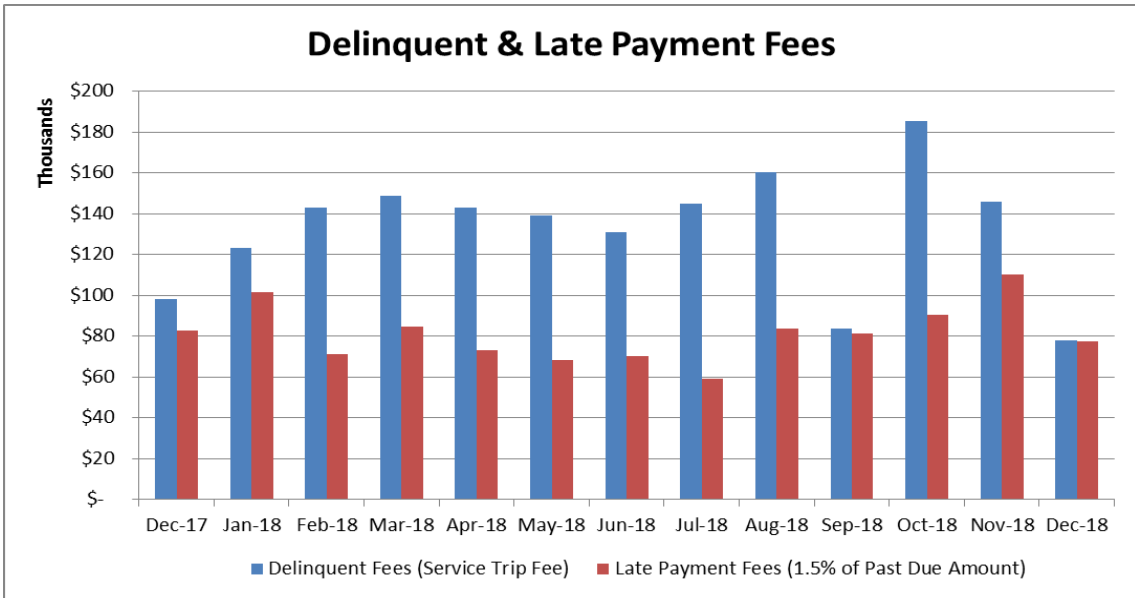


Payment Transactions



Field Activity

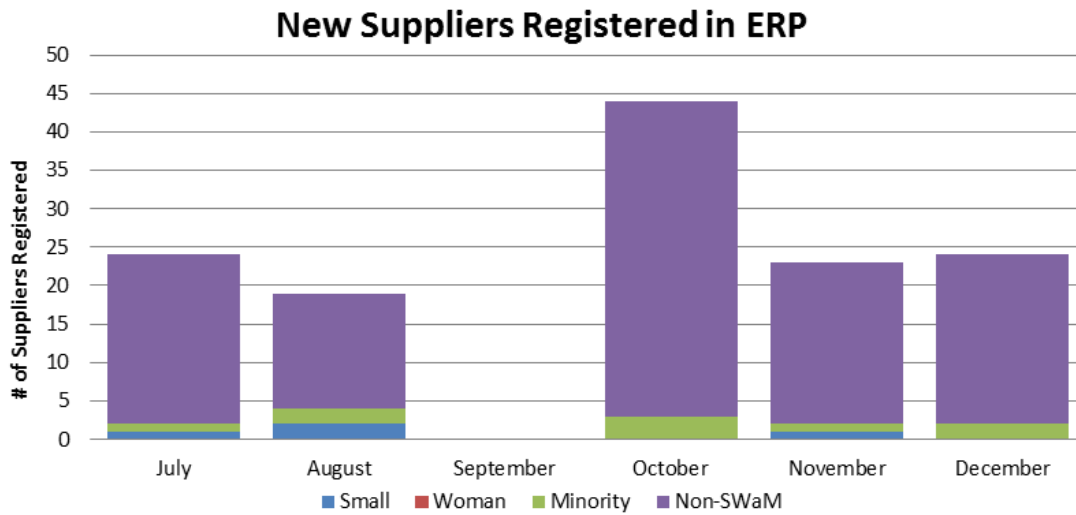




Customer Interaction Statistics	Jul	Aug	Sep	Oct	Nov	Dec
Calls Answered within 3 minutes	76%	56%	68%	61%	89%	93%
Average Wait Time (minutes)	2:17	4:22	3:02	3:50	1:12	0:38
Calls Abandoned	9%	14%	11%	14%	6%	4%

D. Procurement Statistics

Savings	Current Period	FYTD
Competitive Savings ¹	\$307,100	\$917,005
Negotiated Savings ²	\$1,945	\$95,357
Salvage Revenues	\$0	\$134,740
Corporate VISA Card - Estimated Rebate	\$15,524	\$107,545

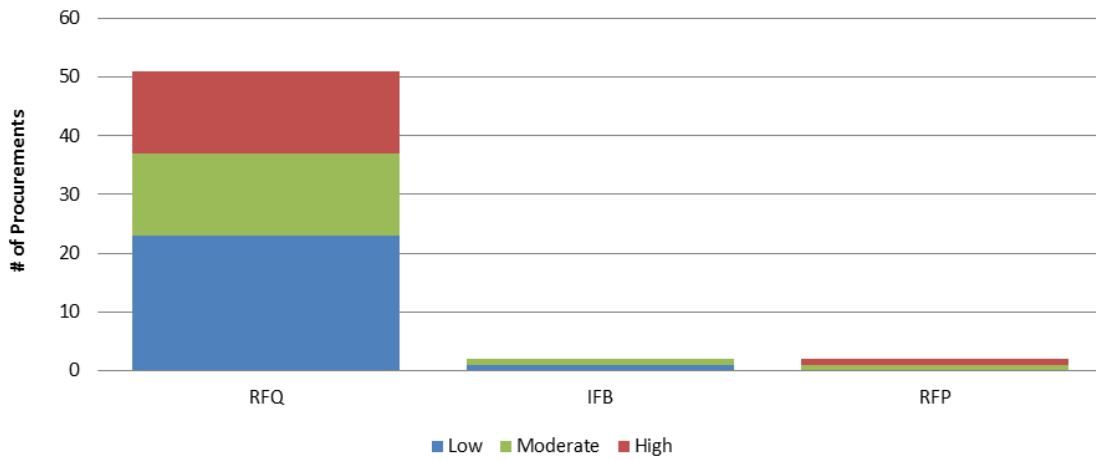


**Increased supplier registration due to supplier outreach at NIGP Forum 8/21/18, Water Jam 9/12/18, WEFTEC 10/2/18, VASCUPP@ SWaMFest 10/4/18, DGS Public Procurement Forum 10/23/18, CNU SWaM Fair 11/7/18, Virginia Beach Minority Business Council Conference and Expo 11/8/18*

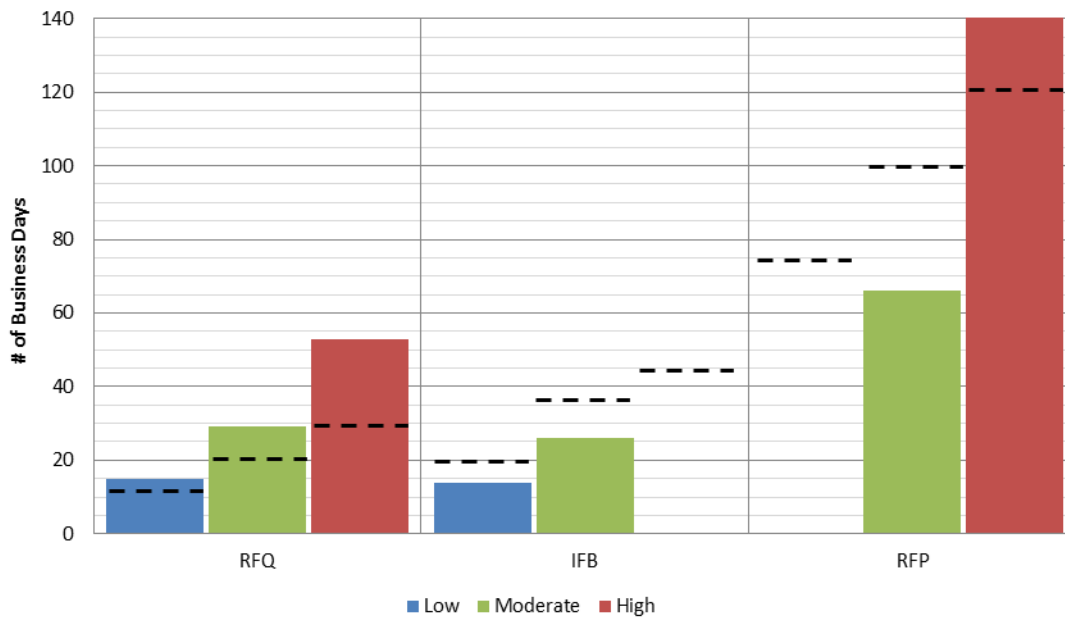
¹ Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

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.

Procurements Completed Based on Complexity



Cycle Time per Method of Procurement and Complexity

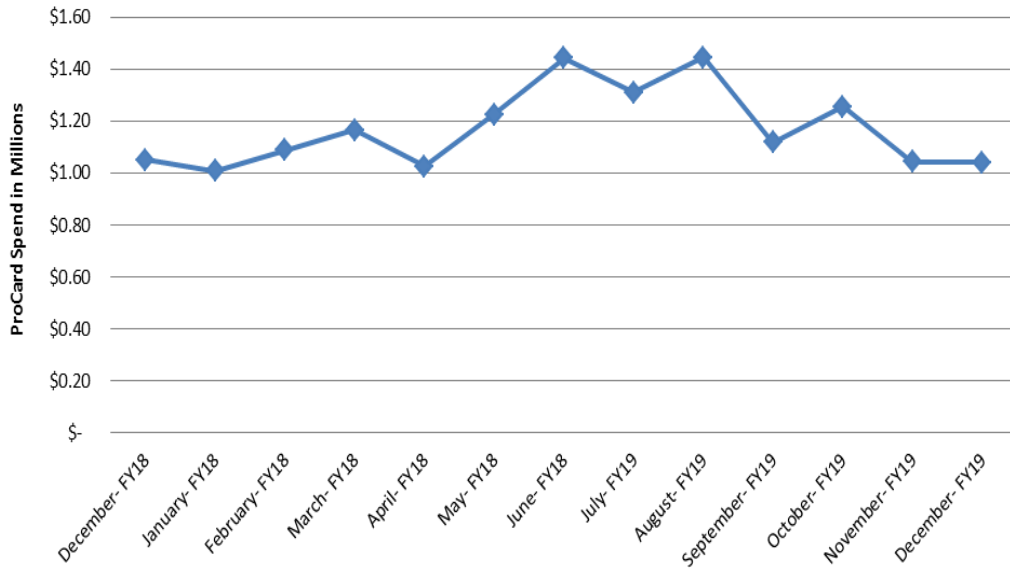


Dashed Line: Target Service Level Cycle Time

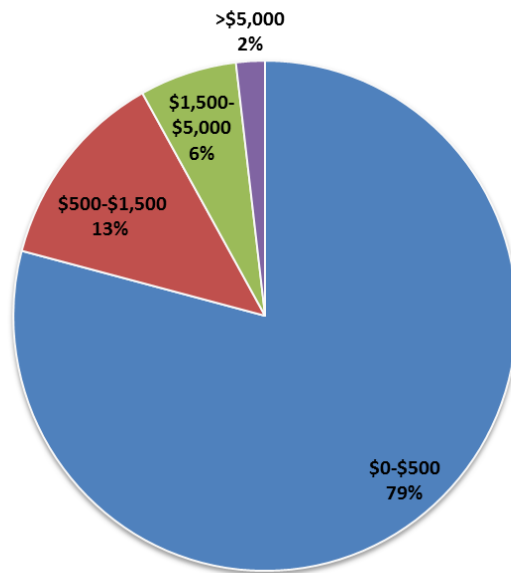
	Low	Moderate	High
RFQ	12	20	30
IFB	20	35	45
RFP	75	100	120

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

ProCard Spend



ProCard Transaction Dollar Amounts



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

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

Accidental Use, which is anything that is not purchased for use and ownership by HRSD, was at 0 transactions (0%) out of the 2,048 December ProCard transactions, with a combined total of \$0.

Procurement Client Training		
	Current Period	YTD
ProCard Policy and Process	2	19
Procurement Cycle	2	20
Total	4	39

E. Business Intelligence – Enterprise Resource Planning (ERP)

- ERP Helpdesk currently has 182 open work orders in the following statuses:

Escalated	2
In progress	64
On Hold	21
Open	91
Waiting on User	4

- ERP Helpdesk received 249 work orders in December. In December, 261 work orders were closed and 117 were closed within one hour.
- ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

- Educational and Outreach Events: 0
- Community Partners: 0
- Monthly Metrics

Item #	Strategic Planning Measure	Unit	December 2018
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	1.83
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	15.47
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0
	Wastewater Revenue	Percentage of budgeted	102%
	General Reserves	Percentage of Operating Budget less Depreciation	117%
	Liquidity	Days Cash on Hand	491 Days

Item #	Strategic Planning Measure	Unit	December 2018
	Accounts Receivable (HRSD)	Dollars	\$24,086,401
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	19%

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

TO: General Manager
FROM: Director of Information Technology
SUBJECT: Information Technology Department Report for December 2018
DATE: January 8, 2019

A. General

1. The Industrial automation programmers continued their modifications and enhancements to various SWIFT monitoring screens, to include additional details related to key processes and alarm/alert conditions.
2. Staff is currently evaluating cloud-based application and database options to determine the feasibility and desirability of migrating additional resources to the cloud.
3. Enterprise Data Service programmers, Industrial Automation programmers and the Asset Management work center are nearing completion of their most recent integration efforts involving the Enterprise Data Server (EDS) and Infor Enterprise Asset Management (EAM) platforms. This enhancement will eliminate manual processing of machine run-time data captured by the EDS. Implementation, testing, and user training will be complete in the first quarter of 2019.
4. In collaboration with members of the Asset Management Division, staff began the implementation of an asset maintenance management application, Innovyze InfoAsset Planner. This software reporting tool integrates with the Infor EAM, and will assist in prioritizing CIP maintenance plans.
5. Staff participated in Mobile Workforce Program RFP demonstrations for the replacement of the Customer Care Center's current mobility product. Oracle Corporation submitted the successful offer and the project kickoff is scheduled for next month.

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	December 2018
M-1.4a	Training During Work Hours Per Full Time Employee (51) – Current Month	Total Training Hours / # FTE	2.15
M-1.4b	Total Training During Work Hours Per Full Time Employee (51) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	12.48
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 December 2018
DATE: January 10, 2019

A. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. There was one sanitary sewer overflow this month when a 30-inch ductile iron force main failed along Semple Farm Road in Hampton. We believe the cause of the failure was internal crown corrosion likely due to an unvented high spot close to a terminal pump station connection. This weak spot in the pipe failed under elevated pressures created by a rain event. Because of the location of the break, isolation of the line was a significant challenge. After two and a half days of round-the-clock work that included isolation to the greatest extent possible and pump and haul operations, and use of the Coliseum Drive off-k=line storage tank, staff was able to temporarily repair the pipe while still actively spilling. Ultimately, crews were able to contain and significantly reduce the amount of sewage leaking from the pipe through the use of wooden plugs, rolled steel plates, gum rubber, pieces of gasket material, and chain load binders. Flows were reduced from thousands of gallons per minute (gpm) to less than 10 gpm. Once flows were contained, crews were able to pump the leaking sewage back into the pipe to effectively stop the active spill. Staff estimates a total of 1.2 million gallons was lost during this event. Although contained, an emergency repair of this section of line is ongoing. Final repair should be completed in mid-January with extensive clean up and restoration to follow. The Department of Health issued a closure of the shell fishing beds in this area. A member of the Virginia Department of Environmental Quality's (DEQ's) Pollution Response and Preparedness Program visited the site on day two of the repair effort. The DEQ staff member indicated they were impressed with the level of response and HRSD's efforts to minimize the impacts of the spill.
- b. There was one odor complaint, one interceptor complaint and 11 system alarms during the month. The alarms and complaints were fully resolved.

- c. There was one Miss Utility “No Show” this month. The “No Show” was miscommunication among staff. HRSD was late to mark the infrastructure by only a few of hours.
- d. Staff responded to and repaired a force main failure on Tuesday, December 4 just outside of our Freeman Pump Station (PS) in Hampton. The line was isolated and we were able to recover sewage that was lost.
- e. The Williamsburg PS lost utility power service on December 9 during a winter weather event and was operating on emergency generator for two days. On December 11, the generator failed, resulting in sewer backup and a Sanitary Sewer Overflow (SSO) at a City of Williamsburg manhole. The generator was repaired and staff cleaned up the site and applied lime to the affected area.

2. South Shore (SS) Interceptor Systems

- a. There were eight interceptor complaints and six system alarms reported this month. Staff responded and resolved issues.
- b. Staff assisted the Chesapeake-Elizabeth Treatment Plant (CETP) staff by removing approximately five yards of grease from the septic well.
- c. Staff assisted NS Interceptor Operations on the Semple Farm force main emergency repair with pump and haul support and heavy equipment operation. Staff worked around-the-clock on the challenging repair.
- d. Staff corrected a drainage issue at the Nansemond Treatment Plant. Staff re-established a drainage swale to the existing catch basin, repaired the service road asphalt and raised a valve casting.

B. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. The nitrogen removal system continues to perform exceptionally well. The final effluent total nitrogen average for December was 2.80 mg/L. The final effluent total nitrogen average for 2018 was 4.39 mg/L, even

though the addition of supplemental carbon did not begin until April 13, 2018. This accomplishment could not have been achieved without the dedication and support of the Operations and Engineering Department staff.

- b. Staff installed a Milton Roy pump for use with methanol due to feed tube ruptures on the current peristaltic pumps.
- c. A contractor relocated bisulfite feed piping. The original piping routed through an electrical room.
- d. A contractor completed the construction of the parking area outside of the administration building.
- e. Staff completed the inspection of the anaerobic and anoxic mixers in two biological nutrient removal (BNR) tanks.
- f. Staff installed new LED lighting on the first floor of the incinerator building.
- g. Staff began a biological phosphorus removal experiment. The experiment entails the shutdown of the mixers in the anaerobic portions of the BNR tanks to allow fermentation of the return activated biosolids. The initial results indicate that the velocity is too high through the tanks to allow significant solids settling.

2. Atlantic Treatment Plant (ATP)

- a. There was one air regulatory reporting event on December 2 resulting from a high hydrogen sulfide (H₂S) exhaust on the Combined Heat and Power Engine (CHP) in excess of 50 parts per million (ppm). The system was secured and placed in bypass until the levels returned to normal. A new air permit went into effect on December 3. While most of the air permit remains the same, the new permit allows for a 500 ppm limit of H₂S on start up on the CHP which should eliminate many of the reporting events in the future without a negative impact on air quality.
- b. On December 29 there was a scum spill when an automatic valve failed on primary clarifiers 5 & 6. This resulted in a spill of about 150 gallons. Most of the spill was recovered; however, it was estimated that 20 gallons reached the storm drain. Staff cleaned up the spill, unplugged the drain and corrected the valve failure.

- c. On December 13, two representatives from the Environmental Protection Agency (EPA) were given a plant tour.
- d. Construction of the Thermal Hydrolysis Process (THP) continues. Contractors worked on the new pre-dewatering building by pouring walls and running conduit. Work also continues in the dewatering building with the installation of conduit and piping
- e. Digester #2 was removed from service to be cleaned and disinfected as part of the THP project.

3. Boat Harbor Treatment Plant (BHTP)

- a. There was one reportable event when the medium voltage cables feeding substations 4 and 5 at BHTP faulted on December 25. The fault caused the main utility system to shut down and kept the emergency generator from assuming the plant electrical load. To correct the problem, staff manually transferred the substations to an alternate feeder and restarted the generators, reestablishing power to the plant. Due to the duration of the outage (approximately an hour) a spill of 625,000 gallons was discharged when the primary clarifiers overflowed. Staff is working on a strategy to replace the faulted cables.
- b. Due to the loss of power on December 25, an emergency use of the bypass stack was necessary until the power was restored, resulting in an air permit deviation. Given all the activity associated with this event, staff inadvertently failed to make a timely report of the permit deviation to the DEQ.
- c. Staff noticed a problem with secondary #3 seal leaking on December 17. This seal isolates the return activated solids (RAS) flow chamber from the main tank liquid. Staff successfully drained the tank, set up scaffolding and replaced the seal in only two days in preparation of incoming inclement weather.

4. CETP

- a. A contractor repaired and returned final effluent pump #4.
- b. Staff repaired the hypochlorite pump that is used to chlorinate the return.

- c. Staff completed the annual preventative maintenance on the emergency generator.
- d. Staff is installing covers on the open pit dumpsters to provide some additional odor control.

5. James River Treatment Plant (JRTP)

- a. There were two reportable wastewater events this month.
 - a. The first occurred when a drain system manhole overflowed while a contractor was drilling a Sustainable Water Initiative for Tomorrow (SWIFT) test well. The potable water was discharged into the drain system. Once potable water enters the plant drain system it is considered contaminated from a regulatory reporting perspective. The contract has been directed to no longer discharge well water into the plant drain system.
 - b. The second wastewater event occurred when there was a low final effluent chlorine residual resulting from high flows. The hypochlorite feed pump was not able to respond quickly enough to the rapidly increasing flow levels. The feed pump was put in manual operation and feed rate increased to correct the issue.
- b. Staff modified the centrifuge dry polymer feed system at the hopper inlet to mitigate dry polymer on surrounding surfaces.
- c. New ammonia and dissolved oxygen probes were installed on the Integrated Fixed-Film Activated Sludge (IFAS) tanks.

6. Nansemond Treatment Plant (NTP)

- a. The premature corrosion that staff discovered at the SWIFT Research Center (SWIFTRC) remains under investigation. Investigation into the extent of the corrosion and the development of an action plan for repairs required the suspension of treatment operations at the facility.
- b. Staff completed odor control scrubber H₂S monitoring upgrades. This should result in savings of control chemicals (sodium hydroxide).

- c. Staff is working closely with the electrical contractor in preparation of the replacement of our 800 and 600 Motor Control Centers (MCCs). Estimated completion is March 2019. The project will require several periodic process shutdowns.
- d. Staff assisted a contractor in the removal of #3 dewatering centrifuge, which will be replaced with a new, energy efficient centrifuge.

7. Virginia Initiative Plant (VIP)

- a. There was one reportable event on December 6 when staff filled the equalization tank for testing and discovered a leaking manway cover which resulted in a 280-gallon spill of non-potable water (NPW – fully treated effluent) onto the ground and into the storm drain.
- b. Staff performed functional testing for parallel operation, classifying selector, centrate and fermenter pumping.
- c. Staff rebuilt and reinstalled a caustic recirculation pump and rehabilitated three primary clarifier cross-collectors.
- d. Staff assisted contractors with the installation of new pipes and valves for the classifying selector and centrate pumping systems.
- e. Staff began work to configure incinerator #2 for zero-hearth operation for more efficient air permit compliance.

8. Williamsburg Treatment Plant (WBTP)

- a. Staff continued with nutrient removal enhancements in aeration tank #4. Work centered on modifying the nitrified recycle pipe line and preparing the tank for testing.
- b. Staff completed temporary repairs on one of the solids cake screw conveyors servicing the #1 incinerator. The screw conveyor sheared in half, which completely stopped cake feed to the incinerator.

9. York River Treatment Plant (YRTP)

- a. Staff started nutrient removal enhancement modifications to aeration tank #2.

- b. The contractor working on the new digester cover bolted it down and completed the installation and connection of gas lines. A second contractor completed installation of instrumentation.

10. Minor Incinerator Operations Events Summary

Condition	Cause	ABTP	BHTP	CETP	VIP	WBTP
Use of emergency bypass stack	Power anomaly/loss		1	3	2	3
Use of emergency bypass stack	Equipment malfunction	1				
Total Hydrocarbon Emission Failure	Equipment malfunction	1				1
Total Hydrocarbon Emission Monitor Failure	Unit out of calibration			3		
Less than minimum pressure drop	Power anomaly/loss			4		

C. Small Communities (SC)

1. Middle Peninsula SC Treatment and Collections

- a. The West Point Treatment Plant was above the 95 percent design flow threshold for the second month in a row. High flows are attributed to continuously wet conditions and no ability to direct flows to other locations.
- b. An odor complaint was received from a customer in West Point. Upon investigation staff discovered a small amount of gasoline in the sewer system. Staff from the Water Quality Department is investigating the issue.
- c. The Kirby Street Rehabilitation project continues to progress well. The 10th Street portion is complete and the contractor will be moving to the second portion of gravity rehabilitation and replacement under the tidal marsh area from 7th to 2nd street.

2. Small Communities – Surry Systems

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

3. Small Communities - Lawnes Point

Pump and haul operations continue. There were two pump and haul operations of the Lawnes Point Treatment Plant.

D. Support Systems

1. Automotive

- a. 263 vehicle information devices have been installed to date.
- b. Staff performed load bank tests at Colonial Williamsburg, Granby Street, and Park Avenue PS and monthly generator tests at the NS and SS Main Operations Complexes. All generators operated as designed and were returned to service.

2. Condition Assessment

- a. Staff, through the use of Closed-Circuit Television (CCTV), inspected 339.5 LF of gravity main. CCTV inspections were reduced this month because significant staff hours were spent in training, the holidays and employees taking leave before the end of the calendar year.. In addition, staff performed 69 manhole inspections and assisted with pipe inspections in the SWIFTRC.
- b. Staff continues to support the Engineering Department with inspections of nine manholes at City Line, Terminal, and Normandy and with the Manhole Rehabilitation CIP by inspecting manholes MH-NG-150-15214 and MH-SG-047-1025. Staff performed inspections of YRTP digester lid for Engineering.
- c. Staff completed an inspection assessment of secondary clarifier #1 at NTP.

3. Facilities Maintenance

- a. Renovation of NTP's solids handling locker room continues. Installation of new concrete masonry unit (CMU) walls, HVAC ductwork, and door frame assemblies is complete. Phase II plumbing is also complete.
- b. Contractors replaced a defective gas heat exchanger in HVAC unit #2 in the administration building at JRTP.
- c. Staff installed a new entry door at Powhatan Avenue PS.
- d. Staff rebuilt the #4 pump at Washington PS and continues to rebuild a pump at BHTP. Staff finished fabricating parts for the light-wells as part of the skylight project at the main office, cleaned and repaired a

shaft for the ATP, and fabricated 12 sets of barrel brackets for the Water Quality Department.

E. Electrical and Energy Management (EEM)

1. In addition to the aforementioned power loss at BHTP, staff responded to a loss of utility power and diesel generator power at the Williamsburg Pump PS during a snow storm. The PS diesel generator day tank failed to refill with diesel fuel during normal operation. Staff refilled the day tank and returned the generator to service. Shortly thereafter, the generator day tank failed a second time, prompting staff to connect a portable generator to the station until the day tank fuel oil transfer pump, pump motor and contactor were replaced. Extensive testing was conducted before returning the day tank to service.
2. Staff assisted an electrical contractor at Rodman PS with new control panel testing. The team tested control circuits, performed loop checks and verified alarm system functionality.
3. Staff installed time delay switches on the main switchgear circuit breakers at ABTP. These switches are designed to protect operators from potential dangers of an arc flash. When the circuit breaker switch is initiated, the circuit breaker closure delay provides time for the operator to step out of the arc flash boundary before the circuit breaker closes and energizes the circuit.
4. Staff worked with software engineers to develop a watt hour consumption meter program at ATP. The program creates an automated report to capture and report monthly megawatt generation for the combined heat and power methane generators.
5. Staff responded to 23 communication failures with Supervisory Control and Data Acquisition (SCADA) and Telog systems.
6. Staff completed new programming changes to improve process operations at Urbanna Treatment Plant (TP).

F. Water Technology and Research

Highlighted Project: Facility planning and preliminary engineering has been initiated for JRTP in advance of detailed design for the SWIFT upgrade. At this point, the work includes layout and siting of SWIFT treatment facilities and an alternatives analysis for wastewater treatment upgrades in support of SWIFT.

There are three needs for JRTP wastewater upgrades, including improved cold weather control of secondary effluent ammonia, post denitrification to control effluent nitrate, and secondary clarifier improvements. The existing secondary clarifiers at JRTP have long been in need of an upgrade. They are very shallow compared to current design practice, the peripheral feed-center weir configuration is inefficient and problematic, return activated solids pumping is limited, and splitting flow proportional to clarifier surface area over a wide range of plant flows is very challenging with three different clarifier sizes. In addition, there are peak flow hydraulic limitations that need to be addressed between the aeration tank and secondary clarifiers. Several alternatives for upgrading the secondary clarifiers and associated problems have been considered, and it seems likely that three of the existing five circular clarifiers will be replaced with rectangular clarifiers, and the other two clarifiers will be repurposed for treatment. As this stage, a process modeling study is being conducted to determine how best to meet the cold weather nitrification reliability requirements and to evaluate post alternatives denitrification. This will involve some stress testing of nitrification in the existing aeration tanks over the next few months.

G. MOM reporting numbers

MOM Reporting #	Measure Name	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
2.7	# of PS Annual PMs Performed (NS)	2	2	3	3	2	1						
2.7	# of PS Annual PMs Performed (SS)	6	3	5	4	6	3						
2.7	# of Backup Generator PMs Performed (Target is 4.6)	6	19	7	8	10	4						
2.8	# of FM Air Release Valve PMs Performed (NS)	128	33	124	268	213	191						
2.8	# of FM Air Release Valve PMs Performed (SS)	193	221	222	275	161	230						
2.9	# of Linear Feet of Gravity Clean (NS) (Target is 2,417 for HRSD)	7,548	5,980	3,241	7,880	2,739	3,458						
2.9	# of Linear Feet of Gravity Clean (SS) (Target is 2,417 for HRSD)	5,990	7,971	2,460	11,882	3,938	5,029						
2.9	# of Linear Feet of Gravity CCTV Inspection (HRSD Target 3,300 LF)	8,637	16,671	5,816*	5,062	9,115	340						

*Adjusted monthly total

H. Strategic Measurement Data

1. Education and Outreach Events: 9

- a. MS Committee Meeting Presentation on SWIFT at Virginia Tech – Samantha Hogard
- b. MS Thesis Defense Presentation on Aerobic Granular Sludge at Virginia Tech – Tim Kent
- c. Hosted the Water Research Foundation, Mid-Atlantic Research Forum – Bott, Wilson, Mitchell
- d. Invited presentation on SWIFT at Jefferson Lab as part of a Jefferson Lab outreach technical workshop – Bott
- e. Facility Maintenance Superintendent instructed two courses on Physical Plant Maintenance at New Horizons
- f. 12/19/18 Staff attended the Lake Taylor High School Career Fair in Norfolk.
- g. West Point Christmas on the Town (touch-a-truck and parade)
- h. West Point PTA (touch-a-truck)
- i. Chesapeake Bay Foundation – oyster cage maintenance at BHTP for oyster gardening program

2. Community Partners: 3

- a. Old Dominion University (ODU)
- b. New Horizons (Hampton Roads Public Works Academy)
- c. Virginia Institute of Marine Science (VIMS)

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	December 2018
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (510) – Current Month	Hours / FTE	1.26
M-1.4b	Total Training During Work Hours per FTE (510) – Cumulative Year-to-Date	Hours / FTE	15.60
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	75,541.25
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	49%
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	24%
M-2.3d	Planned Maintenance - Projects	% of Total Maintenance Hours	27%
M- 4.1a	Energy Use: Treatment *reported for November 2018	kWh/MG	2,107
M-4.1b	Energy Use: Pump Stations *reported for November 2018	kWh/MG	174
M-4.1c	Energy Use: Office Building *reported for November 2018	kWh/MG	100
M-5.2	Educational and Outreach Events	Number	9
M-5.3	Number of Community Partners	Number	3

Respectfully submitted,
Steve de Mik
 Director of Operations

TO: General Manager
FROM: Director of Talent Management (TM)
SUBJECT: Monthly Report for December 2018
DATE: January 9, 2019

A. Human Resources (HR)

1. Recruitment

a. Summary

New Recruitment Campaigns	5
Job Offers Accepted – Internal Selections	10
Job Offers Accepted – External Selections	3
Internal Applications	14
External Applications	96
Average Days to Fill Position	52

2. Enterprise Resource Planning (ERP)

a. HRSD worked with the Managed Services consultant on:

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

b. Updates to Labor Analysis Business Intelligence (BI) reports were made and all supervisors notified.

c. New Optional Life benefit plan setup was implemented.

3. Benefits and Compensation

a. Staff worked with the benefit consultant on:

- (1) Evaluation of a Diabetes Prevention Program offering
- (2) Options for voluntary benefits
- (3) Pre-renewal meeting for medical, dental and vision benefits

b. Staff continued work with the consultant on the draft report for the custom and market-based compensation study.

4. Wellness

a. Participation Activities

Year Six Participation Activities	Unit	December 2018	Year to Date (March 2018–February 2019)
Biometric Screenings	Number	14	35
Preventive Health Exams	Number	24	68
Preventive Health Assessments	Number	36	283
Coaching Calls	Number	0	0
Online Health Improvement Programs	Number	186	664
Web-MD Online Health Tracking	Number	92	1100
Challenges Completed	Number	48	48
Fit-Bit Promotion	Number	3	74

- b. Forty-eight people participated in the December wellness challenge, *“Be Kind to Your Mind”*.
- c. The Wellness Specialist did a healthy cooking demonstration for Army Base TP employees.
- d. The Wellness Specialist participated on a conference call with HR and Cigna staff and an *Omada* diabetes prevention program representative to discuss program details.

5. Workers Compensation

Three new cases were opened with five cases remaining active.

6. Employee Relations

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

7. General

- a. HR and Accounting staff continued to meet to streamline and improve HR and payroll processes.

- b. HR, Business Analyst, Accounting and Information Technology staff met to discuss 2018 Affordable Care Act Reporting requirements and processes.
- c. HR staff met with the Drug Screening and Employment Physicals provider to discuss improvements to administrative processes.
- d. Reorganization of the HR file room and storage areas continued. Storage area items were relocated to the new facility.
- e. Staff participated in the following HRSD activities:
 - (1) SharePoint Governance Team meeting
 - (2) Leadership Day planning meeting
 - (3) Facilitated Leadership and Management Program training
 - (4) Leadership Forum
 - (5) Senior Leadership Meeting
 - (6) Facilitated Your Role in Quality training
- f. Staff participated in the following training:
 - (1) Emotional Intelligence Intensive
 - (2) Mercer's Employee Wellbeing webinar
 - (3) *Society of Human Resources Conducting Workplace Investigations - Part 2* webinar

B. Organization Development and Training (OD&T)

1. Training

- a. OD&T, HR, Procurement and General Management staff continued to meet to address HRSD Ethics Policy training needs based on internal audit recommendations. A training module is being developed in an e-learning environment and will be integrated with ERP and an electronic library platform.
- b. Staff continued compiling Work Center Planning Day results and creating a Parking Board listing for QST review.
- c. Work continued to update and categorize training program procedures.
- d. Meekins building storage items were organized for salvage.

- e. The following programs were conducted:
 - (1) Leadership and Management Program (LAMP)
 - (2) Leadership and Ethics
 - (3) Beginning and Advanced Coaching
 - (4) Emotional Intelligence Intensive
 - (5) Your Role in Quality training

2. Apprenticeship Program

- a. The Learning Management System (LMS) team met to define needs and specifications and to develop project scope.
- b. OD&T, General Management and Communications staff met to discuss development of a 2019 Apprenticeship Graduation video to commemorate HRSD's Apprenticeship Program 40th Anniversary.
- c. Entry of historical training and program information and scanning of historical records into ERP continued.

3. General

- a. Staff participated in the following HRSD activities:
 - (1) Leadership Day planning team
 - (2) Document Retention team to categorize outstanding documents for compliance with Virginia's record retention schedule
- c. Staff participated in the following training:
 - (1) Mentor Coach's *Executive Coaching*

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	45
Lost Time Mishaps	10	6
<i>Numbers subject to change pending HR review of each case.</i>		

b. MOM Program Year Performance Measure Work-Related Injuries

December 2018 Injuries For Operations	December 2018 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2018	Total HRSD Injuries Since July 2018
4	0	2	26

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

2. HRSD Safety Training

Strategic Planning Measure	Unit	December 2018
Total Safety Training Hours per Full Time Employee (836) All HRSD – December 2018	96.7 Hours / 836 FTE	0.11
Total Safety Training Hours Per Full Time Employee (836) – Cumulative July 2018	2039.3 Hours / 836 FTE	2.44

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

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

- b. Confined Space training for Water Research and Technology interns working at the SWIFT Research Center (SWIFT RC).
 - c. Liquid Oxygen and Ozone Safety training for Engineering employees
 - d. Forklift Safety training for Nansemond Treatment Plant (TP) and York River TP employees
4. Safety Inspections, Testing and Monitoring
- a. Weekly on-site inspections of the following construction sites:
 - (1) Army Base TP
 - (2) Atlantic TP
 - (3) Newtown Road Pump Station
 - (4) Rodman Pump Station
 - (5) Shipps Corner Pump Station
 - (6) Virginia Initiative Plant
 - (7) Willoughby Avenue Pump Station
 - (8) York River TP
 - b. Quarterly safety inspections of the following work centers:
 - (1) Atlantic TP
 - (2) Chesapeake Elizabeth TP
 - (3) Small Communities TPs and Pump Stations
 - (4) South Shore Automotive, Carpentry, Electrical and Machine Shops
 - (5) South Shore Interceptors
 - (6) Williamsburg TP
 - c. Monitoring and testing for the following:
 - (1) Monthly velocity tests on Central Environmental Laboratory (CEL) and Technical Services Division (TSD) lab hoods
 - (2) Collection of Chesapeake Elizabeth TP Administration Building bulk samples for asbestos testing
 - (3) Ventilation surveys of drywells at six North Shore and two South Shore pump stations

- d. Safety walk-throughs and evaluations:
 - (1) Escorted City of Virginia Beach Fire Marshall on a walk-through of the Chesapeake Elizabeth TP
 - (2) Met City of Chesapeake Fire Marshall at the Washington Pump Station to complete installation of a lock

5. Safety Programs

- a. The following was performed for the Electrical Safety Program:
 - (1) Continued installation of new arc flash labelling on Air Rail Complex electrical panels
 - (2) Met with Electrical Managers to update the Electrical Safety Program
- b. Various hot work permits were issued for contractors working at the following pump stations:
 - (1) Rodman Avenue
 - (2) Shipps Corner
- c. A Safety Notice outlining On-Line Material Safety Data sheet Program requirements was developed and distributed.
- c. The 2019 Safety Calendar was distributed.
- d. Staff worked on updates to the Chemical Hygiene Plan and met with the CEL Operations Manager to clarify and discuss Personal Protective Equipment (PPE) requirements.
- e. A meeting with TSD staff was held regarding a micro-nutrient mix Safety Data Sheet.
- f. Information was provided to obtain hazardous material permits for four pump stations located in the City of Chesapeake.
- g. The Safety Manager participated in a conference call with the SWIFT Program consultant to discuss safety forms.
- h. Prescription Safety Glasses program implementation continued. Order forms were distributed to interested employees.

6. General

- a. The Safety team toured the Bridge Street pump station.
- b. The Safety Manager met with the Chief of Asset Management to discuss safety related preventative maintenance.
- c. 2019 Inspection Tags were distributed to work centers.
- d. An Industrial Hygienist attended four hour Asbestos Inspector refresher class at Applied Labs.

D. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: (6)

- a. Former Nansemond Ordnance Depot Meeting, December 6
- b. City of Newport News *One City Celebration* Community Job and Resource Fair, December 12
- c. City of Hampton's *My Future, My Journey Exploratory Program*, December 13
- d. City of Norfolk Public Schools Lake Taylor High School Career Day, December 19
- e. Virginia Employment Commission Veterans Employment Advisory Council meeting, December 19
- f. Instructed Hampton Roads Public Works Academy *Employability Skills*, December 19

2. Community Partners: (6)

- a. Former Nansemond Ordnance Depot
- b. City of Newport News
- c. City of Hampton
- d. City of Norfolk Public Schools
- e. Virginia Employment Commission

f. Hampton Roads Public Works Academy

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	December 2018
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.75
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.13
M-1.4a	Total Training Hours Per Full Time Employee (17) – Current Month	Total Training Hours/ FTE	0.88
M-1.4b	Total Training During Work Hours Per Full Time Employee (17) – Cumulative Fiscal Year-to-Date	Hours / FTE	29.56
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Community Partners	Number	6

Respectfully submitted,
Paula A. Hogg
Director of Talent Management

TO: General Manager
FROM: Director of Water Quality (WQ)
SUBJECT: Monthly Report for December 2018
DATE: January 10, 2019

A. General

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

B. Quality Improvement and Strategic Activities

1. The Sustainability Environment Advocacy Group (SEA) reported three activities for the month of December.
 - a. Two open houses were held, one at 1434 Air Rail Avenue and one at the SWIFT facility, to introduce HRSD staff to SEA and garner support through new membership and staff engagement. Nine employees expressed interest in joining the group.
 - b. The R3 (Reduce, Reuse, Recycle) Support SharePoint site has been developed and published:
<https://sharepoint.hrsd.com/teams/home/sea/SitePages/R3Support.aspx>
 - c. The SEA Group launched the HRSD Interactive Challenge. The Trash Collector Design Challenge was announced and registration for teams closed December 31.
2. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

1. HRSD provided analytical services to the Town of Lawrenceville to support monitoring required of its Virginia Pollution Discharge Elimination System (VPDES) permit.
2. The [Municipal Assistance Billed Reimbursements](#) per service collected between October 1 and December 31, 2018 are attached.

3. The [Municipal Assistance Invoice Summary](#) for the fourth quarter of the 2018 calendar year is attached.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1
 - a. Technical Services Division (TSD) staff participated in a SWIFT outreach event at Continental Motors on December 14.
2. Community Partners: 5
 - a. City of Norfolk
 - b. City of Suffolk
 - c. Elizabeth River Project
 - d. Virginia Department of Environmental Quality
 - e. Virginia Department of Health Division of Shellfish Sanitation

3. Odor Complaint

An odor complaint was received by North Shore Operations in December. Amory's Seafood in Hampton, VA recently reported to HRSD that it detected sewer odors inside its building. HRSD responded and, to date, no odors have been observed that would assist in determining the source of the odors that triggered the complaint. North Shore Operations and TSD are continuing to investigate. Smoke testing may be needed if the building's plumbing or a local area collection system failure is the cause of the odors.

4. Monthly Metrics

Item #	Strategic Planning Measure	Unit	December 2018
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	6.94
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	23.44

Item #	Strategic Planning Measure	Unit	December 2018
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	1:30,440
M-3.2	Odor Complaints	#	1
M-3.4	Pollutant Removal	Total Pounds Removed	95,990,708
M-3.5	Pollutant Discharge	% Pounds Discharged/ Pounds Permitted	17%
M-5.2	Educational and Outreach Events	#	1
M-5.3	Community Partners	#	5
	Average Daily Flow	Total MGD for all Treatment Plants	161.80
	Industrial Waste Related System Issues	#	0

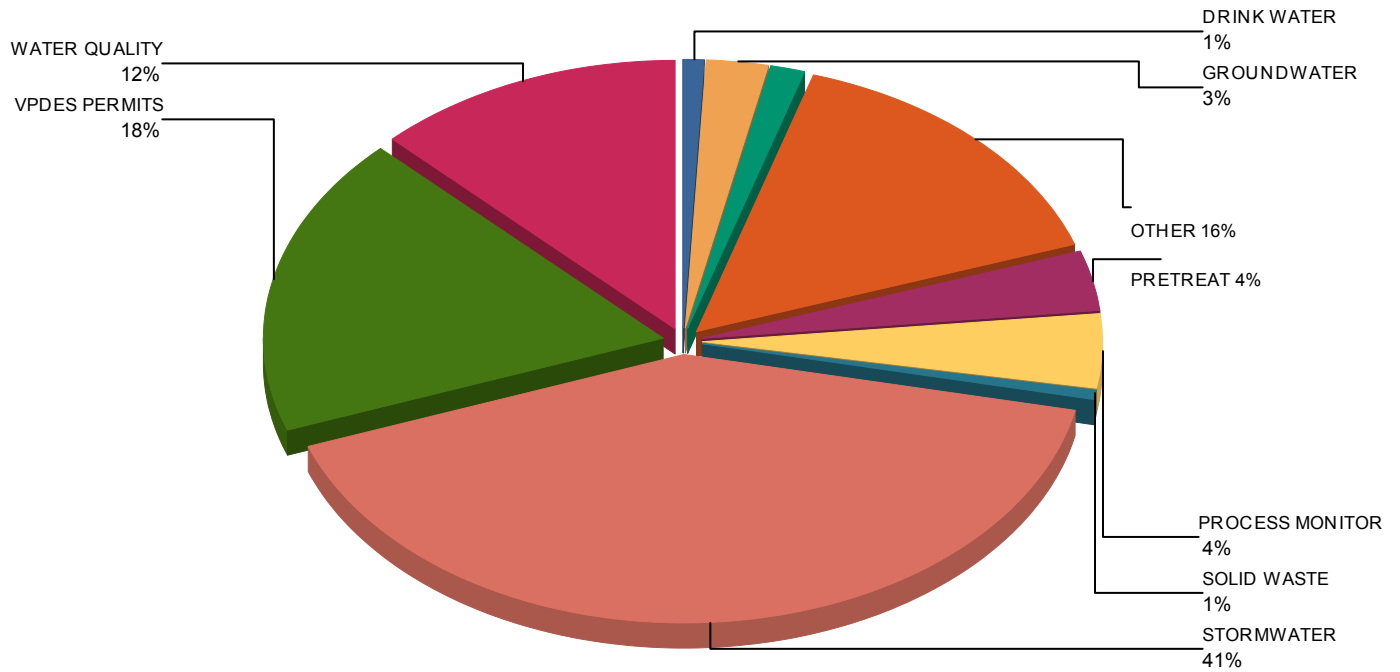
Respectfully submitted,

James Pletl, Ph.D

Director of Water Quality

Municipal Assistance Billed Reimbursements per Service From 10/01/2018 to 12/31/2018

Attachment 1



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

Municipal Assistance Invoice Summary

From 10/01/2018 - 12/31/2018

Municipality	Reimbursements
Accomack County	\$3,251.39
Buckingham County	\$609.05
City of Chesapeake	\$1,533.11
City of Emporia	\$225.27
City of Hampton	\$4,025.19
City of Norfolk	\$6,550.03
City of Portsmouth	\$6,677.74
City of Suffolk	\$7,962.00
City of Virginia Beach	\$4,822.00
Deerfield Corrections Center	\$805.49
HRPDC	\$52,431.89
Hanover County	\$892.56
Hopewell RWTF	\$4,656.41
New Kent County	\$8,375.96
Northampton County WWTP	\$1,744.64
Northumberland Co. - Callao WWTP	\$1,587.08
Rivanna Water and Sewer Authority	\$204.01
Stafford County	\$99.02
Star Sewer and Water District	\$317.49
Town of Cape Charles	\$5,957.13
Town of Lawrenceville	\$979.71
Upper Occoquan Service Authority	\$6,689.89
Virginia Department of Health	\$7,610.41
Westmoreland County	\$1,852.72
Totals:	<u>\$129,860.19</u>



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

Business Continuity and Disaster Recovery

- **Tasks Completed (December 2018)**
 - No additional tasks were performed for this project in the month of December; the report is currently with process owners for management action plan development
- **Upcoming Tasks (Q1 2019)**
 - SC&H will continue to work with HRSD process owners and management to finalize the audit report, incorporating management action plans. A specific completion date has not been identified at this time.

Customer Care

- **Tasks Completed (December 2018)**
 - Completed flowchart documentation for each of the four Call Center functional areas and communicated to process owners for review
 - Incorporated process owner updates into the flowchart documentation
 - Drafted risk and control matrix and performed process analysis
 - Drafted fieldwork audit objectives and completed planning documentation
- **Upcoming Tasks (January 2019)**
 - Discuss finalized audit objectives with process owners
 - Finalize audit program steps
 - Communicate fieldwork documentation requests
 - Begin fieldwork testing procedures

2018 Risk Assessment Refresh

- **Tasks Completed (December 2018)**
 - Conducted risk assessment discussions with all necessary members of HRSD management
 - Documented risk understanding
 - Incorporated updates into the HRSD risk assessment matrix and audit plan
- **Upcoming Tasks (January 2019)**
 - Request and obtain any feedback from external audit and HRSD Commission
 - Finalize HRSD risk assessment and audit plan
 - Discuss updates with HRSD management contacts
 - Prepare updated risk assessment and audit plan for presentation to Commission

II. Upcoming Projects (FY2019)

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



III. Management Action Plan (MAP) Monitoring

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

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

The following describes the current project monitoring status.

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

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

Monthly Updated Metrics													FY-19	FY-19
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18	Nov-18	Dec-18
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	145.8	144.1	161.8
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	4	0	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	103%	102%	102%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	112%	112%	117%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$17,013,784	\$17,359,488	\$18,795,475	\$20,524,316	\$20,758,439	\$22,444,273	\$22,572,788	\$22,243,447	\$24,570,853	\$24,086,401
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	18%	17%	19%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	10	0	0
M-3.1	Permit Compliance	# of Exceedances to # of Permitted Parameters	0		12:55,045	1:51995	2:52491	1:52491	2:52491	2:52,491	9:53236	9:58338	1:25366	1:30440
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	6	0	1
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	190,536,910	80,213,895	95,990,708
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	22%	20%	22%	17%	16%	17%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	432	33	19
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	381	26	14

EFFLUENT SUMMARY FOR DECEMBER 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	11.77	65%	5	5.1	7	3	0.25	0.58	2.8	4.4	NA	NA	16
ATLANTIC	27.17	50%	13	6.6	4	<1	NA	NA	NA	NA	NA	NA	2
BOAT HARBOR	18.58	74%	6	7.7	3	1	0.68	0.59	19	16	NA	NA	10
CENT. MIDDLESEX	0.010	40%	<2	<1.0	<1	<1	NA	NA	NA	NA	NA	NA	NA
CHES-ELIZ	17.76	74%	16	17	27	2	1.6	1.0	33	30	NA	NA	6
JAMES RIVER	15.65	78%	5	4.6	1	1	0.68	0.44	8.4	8.1	NA	NA	2
KING WILLIAM	0.060	60%	<2	<1.0	NA	<1	0.032	0.047	0.87	0.78	0.82	NA	NA
NANSEMOND	17.77	59%	5	5.8	4	3	0.73	1.0	4.9	4.3	NA	NA	9
SURRY, COUNTY	0.091	140%	4	1.0	NA	NA	NA	NA	NA	NA	NA	NA	0
SURRY, TOWN	0.096	160%	6	8.0	NA	51	NA	NA	NA	NA	1.2	0.16	NA
URBANNA	0.042	42%	10	15	11	21	2.2	4.3	5.9	23	NA	0.20	NA
VIP	28.22	71%	1	2.8	2	2	0.51	0.78	3.7	6.0	NA	NA	1
WEST POINT	0.637	106%	18	13	1	1	1.6	2.5	12	16	NA	6.4	0
WILLIAMSBURG	9.17	41%	4	4.1	2	3	0.65	0.59	4.5	3.2	NA	NA	2
YORK RIVER	14.79	99%	5	0.20	1	<1	0.21	0.27	5.5	4.3	NA	NA	2
	<u>161.80</u>												

Tributary Summary

	% of Capacity
North Shore	71%
South Shore	62%
Small Communities	94%

Tributaries	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection CY18		YTD	Projection CY18	
	%	Lbs	%	%	Lbs	%
James River	79%	3,574,744	79%	80%	249,460	78%
York River	68%	189,286	66%	73%	14,187	73%
Rappahannock	273%	NA	NA	716%	NA	NA

Rainfall (inch)

	<u>North</u>	<u>South</u>	<u>Small</u>
	<u>Shore</u>	<u>Shore</u>	<u>Communities</u>
	<u>(PHF)</u>	<u>(ORF)</u>	<u>(FYJ)</u>

Permit Exceedances: Total Possible Exceedances, FY19 to Date: 1:30,440
Pounds of Pollutants Removed in FY19 to Date: 95,990,708
Pollutant Lbs Discharged/Permitted Discharge FY19 to Date: 17%

Month	4.94"	3.89"	3.59"
Normal for Month	3.77"	3.50"	3.61"
Year to Date Total	58.83"	56.68"	61.58"
Normal for YTD	51.14"	50.29"	48.82"

2018 EFFLUENT SUMMARY

PLANT	FLOW MGD	BOD MG/L	TSS MG/L	FC #/100 ML	ENTERO #/100 ML	TP MG/L	TN MG/L	CONTACT TANK EX	NH3 MG/L
ARMY BASE	10.85	3	3.7	4	2	0.58	4.4	14	NA
ATLANTIC	27.79	11	6.9	5	1	NA	NA	NA	NA
BOAT HARBOR	15.04	6	6.6	3	1	0.59	16	3	NA
C. MIDDLESEX	0.011	1	1.7	1	1	NA	NA	NA	0.11
CHES-ELIZ	16.80	14	12	18	3	1.0	30	7	NA
JAMES RIVER	13.46	3	3.5	2	1	0.44	8.1	2	NA
KING WILLIAM	0.051	1	<1.0	NA	1	0.047	0.78	NA	NA
LAWNES POINT	0.060	<2	3.6	1	1	0.015	0.41	NA	NA
NANSEMOND	16.84	4	4.1	2	2	1.0	4.3	6	NA
SURRY, COUNTY	0.063	2	1.5	NA	1	NA	NA	NA	0.29
SURRY, TOWN	0.059	5	13	NA	35	NA	NA	NA	0.37
URBANNA	0.049	6	12	9	7	4.3	23	NA	0.72
VA INITIATIVE	27.28	3	3.0	3	1	0.78	6.0	3	NA
WEST POINT	0.478	18	14	6	8	2.5	16	1	8.1
WILLIAMSBURG	8.25	3	3.1	5	4	0.59	3.2	3	NA
YORK RIVER	12.95	3	1.3	1	2	0.27	4.3	3	NA

Permit Exceedences:

January, 2018: KW weekly and monthly average concentration for TKN (2); CM weekly average concentration for ammonia (1); UB weekly average concentration for ammonia (1); TSY TSS monthly and weekly average concentration and loading (4)

February, 2018: TSY TSS monthly average concentration and loading (2)

March, 2018: TSY TKN weekly average concentration and loading and copper monthly and weekly average concentration (4)

April, 2018: TSY TSS monthly average concentration and monthly loading; copper monthly and weekly average concentration (4)

July, 2018: WP enterococcus monthly geomean (1)

August, 2018: TSY TSS weekly average concentration and loading (2)

Note: Interim limits for TSY were developed as part of a Consent Order to identify reasonable facility performance expectations before a planned shut-down in November 2020. Over 90% of the exceedances noted in January – April would not have been identified as exceedances if the interim limits were in place at that time.

AIR EMISSIONS SUMMARY FOR DECEMBER 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	24	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	17	96	0
CHES-ELIZ	0	4	0	0	0	0	0	3	24	95	0
VIP	0	0	0	n/a	0	0	0	2	87	100	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	3	10	97	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:	3
Odor Complaints Received:	1
HRSD Odor Scrubber H2S Exceptions:	1

AIR EMISSIONS SUMMARY FOR CY 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	4	0	0	0	0	2	19	32	99	0
BOAT HARBOR	0	0	0	n/a	2	0	0	9	11	96	0
CHES-ELIZ	0	10	1	1	1	1	4	22	30	97	0
VIP	1	1	0	n/a	0	0	1	9	69	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	12	10	96	0

ALL OPERATIONS

DEQ Reportable Air Incidents:	3
DEQ Request for Corrective Action (RCA):	1
DEQ Warning Letter:	2
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	6
Odor Complaints Received:	8
HRSD Odor Scrubber H2S Exceptions:	86

AGENDA ITEM 20.e. – January 22, 2019

Subject: Langley Magruder 30-Inch Ductile Iron Force Main (NF-047)
Emergency Declaration

CIP Project: YR013800 (New CIP)

Recommended Action: No action is required. Information Only

Brief: On the afternoon of Thursday December 20, 2018 North Shore Interceptor Operations responded to a failure of our 30-inch ductile iron force main in the vicinity of Semple Farm Road in Hampton. Efforts to minimize the effects of environmental and physical damage were extensive. Round the clock operations were necessary to divert flows, minimize spills, and restore services. A temporary repair consisting of roll steel plates and gum rubber was established by staff on December 22, when the sewage being lost was finally contained. An estimated total of 1.2 million gallons of sewage was lost. As of January 10, the excavation and break site remains an active leak that is being sumped and pumped back into our system.

An emergency declaration was authorized on December 21. This authorization was for the pump and haul services needed to advance the near term repair to stop the active spill. This authorization was also for engineering, contractor, and incidental support (cleanup, restoration, etc.) to enact the final repair of this pipe.

The cause of this failure was internal crown corrosion. This corrosion occurred due to improper placement of the nearby air vent at the time of construction in 1968. The location of this air vent did not allow for the complete evacuation of air. Over time and due to a nearby connection supplying oxygen to this unvented high spot, hydrogen sulfide gas turned into sulfuric acid and attacked the pipe along the interior crown of the pipe where the air could not be evacuated.

Operational crews were able to divert flows, enact pump and haul, and utilize the Big Bethel Pressure Reducing Station (PRS) and Coliseum Tank and PRS to minimize volumes and piece together a temporary repair. The location of this failure made the temporary repair an extremely difficult endeavor as dewatering this pipe to provide access for excavation equipment and personnel was not possible.

Impacts to the neighboring properties were extensive and created a unique situation where individuals were displaced due to the spill severity and construction related activities in extremely close vicinity. Outside contractors have been used to aid in the cleanup of an individual homeowner's crawlspace and personal property.

Based on the spill quantity, the Virginia Department of Health issued an emergency closure of shell fishing beds in this area. This emergency closure was for the Back

River and was effective from December 21, 2018 through January 11, 2019. HRSD's post water quality sampling showed a very short term response, with most samples below shell fishing standards with a week.

An individual from Virginia Department of Environmental Quality conducted a site visit of the spill and emergency repair efforts at 1 p.m. on December 21. Nothing but positive feedback was given to our level of response and efforts to mitigate and address the impact of this event.

The cooperation and understanding of the neighbors impacted by this spill has been very positive. Notices to neighbors were provided at each phase of the repair efforts to allow for full disclosure on what lies ahead. These notices were intended to provide disclosure on the disruptions to their normal residential surroundings so they can anticipate and prepare.

The contractor, TA Sheets General Contractors, Inc., with the design assistance of Rummel Klepper & Kahl, LLP (RK&K) will likely have the damaged section of pipe completely replaced in January.