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

1. **AWARDS AND RECOGNITION**

Action: No action required.

Brief:

- a. Chair Elofson presented the 2016 National Association of Clean Water Agencies (NACWA) awards announced during the annual summer conference. NACWA's Peak Performance Awards recognize member facilities for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permits. Silver Awards recognize facilities that have received no more than five permit violations per calendar year. Gold Awards honor those who have achieved perfect permit compliance for an entire calendar year while Platinum Awards recognize 100 percent compliance for at least five consecutive years.

Each of HRSD's 13 treatment plants were recognized for outstanding compliance during calendar year 2016, a remarkable accomplishment, and earned the following awards:

Award	Plant
Platinum 15	Boat Harbor Treatment Plant
Platinum 15	Nansemond Treatment Plant
Platinum 21	Virginia Initiative Plant
Platinum 22	Williamsburg Treatment Plant
Platinum 9	York River Treatment Plant
Gold	Atlantic Treatment Plant
Gold	James River Treatment Plant
Gold	Urbanna Treatment Plant



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Award	Plant
Silver	Army Base Treatment Plant
Silver	Central Middlesex Treatment Plant
Silver	Chesapeake-Elizabeth Treatment Plant
Silver	King William Treatment Plant
Silver	West Point Treatment Plant

b. Service Awards

- (1) Chair Elofson presented a service award to Mr. John “JJ” Jones who will mark his 35th year of service with HRSD on October 20. JJ was hired in October 1982 as a Diesel Technician and was promoted in March 1988 to Lead Mechanic. He became the South Shore Automotive Foreman in April 1993. He was promoted to the Automotive Superintendent in November 2006, and still holds that position today. He currently holds all eight ASE (Automotive Service Excellence) Qualifications which make JJ a Master Certified Technician in Automotive. He graduated from the HRSD apprenticeship as a Diesel Mechanic in September 1985. He is a member of the Diesel Advisory Committee at Tidewater Community College for Automotive Technology and the Tidewater Area Fleet Managers Association. He also holds a Class A CDL license.

JJ oversees maintenance and repairs on 308 vehicles, 57 heavy equipment vehicles, 4 boats, 124 trailers and 91 generators (a total of 584 assets). He was instrumental in bringing Alternative Fuel Vehicles (Hybrid electric) to HRSD and is currently investigating the use of propane fueled vehicles. Since the inception of the Computerized Maintenance Management System in July 2007, JJ has overseen 23,000 work orders.

- (2) Chair Elofson presented a service award to Mr. Samuel Jones who will mark his 35th year of service with HRSD on October 6. Sam was hired in October 1982 as a Plant Operator Helper at the Lamberts Point Treatment Plant, now known as the Virginia Initiative Plant (VIP). Five months later, he was promoted to plant operator. For the next seven years, Sam worked as both a plant operator and a maintenance operator. He was promoted to lead operator at the Atlantic Plant in September 1990, and then to chief operator in January 2004. In July 2015, Sam was promoted to superintendent of maintenance. Sam has taught classes in valves, piping and coatings in the HRSD Apprenticeship program. Outside of work, Sam enjoys hunting, fishing, boating and camping. He especially enjoys taking his three grandkids camping in his new camper. Also, Sam spends a lot of time helping out local farmers repairing their farm equipment and working on their fields.



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c. Other Awards

- (1) The WateReuse Association has named SWIFT Program Manager, Germano Salazar-Benitez the 2017 WateReuse Young Professional of the Year for his work with SWIFT. The Annual WateReuse Awards honors utilities, businesses and people that have demonstrated extraordinary leadership in advancing sustainable, locally controlled water supplies.
- (2) The Virginia Section American Water Works Association recently awarded its 2017 Public Information Awards, with HRSD receiving this year's award in the Community Relations category - large division for SWIFT Community Education and Outreach. Judging criteria includes research, planning, program execution and effectiveness.

Attachment: None

Public Comment: None



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2. **CONSENT AGENDA**

Action: Approve the items listed in the Consent Agenda.

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

Brief:

- a. Approval of minutes from previous meeting.
- b. Contract Award and Task Order
 - 1. [Lucas Creek – Woodhaven Interceptor Force Main Replacement Phase I](#)

Contract Award	\$2,655,506
Task Order	\$357,274
- c. Contract Change Orders
 - 1. [Bill Printing, eBilling, Online Payments, Merchant Card Processing and Lockbox Services](#) \$754,000
 - 2. [Sustainable Water Initiative for Tomorrow \(SWIFT\) Analytical Services](#) \$500,000
- d. Sole Source
 - 1. [Brown & Morrison, Ltd. – Chemineer Mixer Replacement Parts and Repairs](#)
 - 2. [Heyward, Inc. – Parkson Aqua Guard® Bar Screen Parts and Repairs](#)
 - 3. [Kontrol Automation, Inc. – Centrifuge Variable Frequency Drive Parts and Repairs](#)
 - 4. [NucliSENS® easyMAG® Instrument Preventive Maintenance and Support](#)

Item(s) Removed for Discussion: None

Attachment #1: [Consent Agenda](#)

Public Comment: None



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3. **CARBON FOOTPRINT REDUCTION**

Action: Adopt a greenhouse gas emission reduction goal for HRSD of a minimum of 30 percent below the 2005 baseline and authorize the purchase of green power to meet this goal in the near term to be offset by additional conservation measures and green energy production in the long term.

Moved: Maurice Lynch
Seconded: Michael Glenn

Ayes: 8
Nays: 0

Brief: The Paris Agreement is a pact sponsored by the United Nations to bring the world's countries together in the fight against climate change by reducing our carbon footprint. On December 12, 2015, in Paris, France, participating nations made a historic pact to adopt green energy sources as well as cut down on greenhouse gas emissions with the idea of limiting the rise of global temperatures. As of May 2017, nearly 200 negotiating countries have signed the agreement and over 145 parties have ratified it. Each country has an individual plan to tackle its greenhouse gas emissions.

The United States vowed to cut its emissions by 26 to 28 percent below 2005 levels by the year 2025. Although the US Policy recently changed, several states, industries and businesses have pledged to support this effort.

The three main sources of greenhouse gas emissions for HRSD are mobile sources (our truck fleet), stationary sources (our incinerators and generators) and electricity. Even if we could eliminate all emissions from the mobile and stationary sources, we would fall far short of the 30 percent goal. The only way for HRSD to make a meaningful reduction is through reduction of emissions associated with electricity.

HRSD has been making progress at becoming more energy efficient for many years. Despite the additional electrical loads associated with recent construction, HRSD has held a pretty consistent level of consumption from 2005 to the present. Total power consumed by HRSD treatment plants has decreased approximately one percent from 2005 to 2017 while overall power consumption has increased less than one percent from 2005 to 2017. To reduce our greenhouse gas emissions by 30 percent, we need to reduce energy consumption by 49.2 million kWh/year. The Atlantic Treatment Plant Combined Heat and Power (CHP) methane engine generators provide approximately 6.7 million kWh per year. It would take more than 6 additional similar projects (\$7+ million capital investment each) to produce the 49.2 million kWh/year needed to reach the 30 percent reduction goal.

Conservation and energy efficiency can achieve modest gains, but nothing close to the 30 percent reduction. HRSD is committed to continue this incremental improvement strategy but it will not achieve the goal by 2025 and unlikely to ever result in a 30 percent reduction regardless of the implementation schedule.



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Dominion Energy offers customers the option of purchasing green power, which is produced or purchased by Dominion and wheeled through their grid to our facilities. There is currently ample supply of green power available through Dominion to meet our GHG reduction goal. The current annual cost for 42.5 million kWh of green power is approximately \$90,000 (\$.002/kWh). Purchase of green power is the most cost-effective strategy for the short term for HRSD to meet a 30 percent reduction of greenhouse gas emissions. Longer-term strategies will include implementation of additional conservation measures, regular evaluation and implementation of other green sources (solar, wind, CHP, etc.) when competitive with the cost of purchased green power.

Discussion Summary: The Commission discussed the factors used to calculate the carbon footprint and how green power can be purchased. A minimal change to the carbon footprint may be seen and efficiency may increase when flow is diverted as part of the Chesapeake-Elizabeth Treatment Plant closure plan.

Attachment #2: [PowerPoint Presentation](#)

Public Comment: None



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4. **LUCAS CREEK – WOODHAVEN INTERCEPTOR FORCE MAIN REPLACEMENT PHASE I VIRGINIA CLEAN WATER REVOLVING LOAN FUND (VCWRLF) RESOLUTION**

Action: Approve the terms and conditions of the resolution authorizing the issuance of a subordinate wastewater revenue bond, not to exceed \$3,205,554 in principal amount, for the purpose of providing funds, with other available money, to pay the costs of certain improvements for the Lucas Creek – Woodhaven Interceptor Force Main Replacement Phase I, fixing the principal installment maturity dates, the interest rate, the redemption provisions and certain other details of the bond, directing the authentication and delivery of the bond, and authorizing the execution of a financing agreement with the Virginia Resources Authority.

Moved: Maurice Lynch **Ayes:** 8
Seconded: Vishnu Lakdawala **Nays:** 0

CIP Project: JR013100

Brief: The VCWRLF provides subsidized interest rates for local governments for projects that improve water quality or prevent future problems. The Virginia Resources Authority (VRA) manages the loans and the Department of Environmental Quality administers the program and policy aspects of the fund on behalf of the State Water Control Board (SWCB). On December 12, 2016, the SWCB approved seven HRSD projects to receive subsidized interest rates that vary based on the term and project type. The loans require adhering to Davis-Bacon wages and using American Iron and Steel, which increases total project cost. Staff determined that the interest savings far outweigh the potential increased project costs.

The attached [resolution](#) for the Lucas Creek – Woodhaven Interceptor Force Main Replacement Phase I is scheduled to close in October. The loan amount is set at a not-to-exceed amount of \$3,205,554 at 3.0 percent for 30 years. The rate is based on a 1.0 percent subsidy for a 30-year loan. The interest savings compared to HRSD issuing debt in the open market is estimated at \$500,000.

These documents have been reviewed by bond and local counsels.

Attachment #3: [Bond Resolution](#)

Public Comment: None



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5. **PROCUREMENT POLICY REVISIONS**

Action: Approve the revised policy, as amended.

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

Brief: The attached [Procurement Policy](#) has been revised to reflect the changes in the Virginia Public Procurement Act (VPPA) related to Construction Management Contracts. The approvals section of the policy was updated to align with the current commission guidelines. Revisions were also made to align the policy with current practices related to online bidding.

The VPPA requires local governing bodies to adopt specific policies defining local procedures for specific portions of the VPPA. Those requirements are met with this revision with the various appendices.

Discussion Summary: An additional change to section 4.1.c, which will be incorporated into the final policy, was discussed.

Attachment #4: [Procurement Policy](#)

Public Comment: None



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6. ATLANTIC TREATMENT PLANT INFLUENT SCREEN EXPANSION
INITIAL APPROPRIATION

Action: Appropriate total project funding in the amount of \$2,152,435.

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

CIP Project: AT013900

Project Description: This project will install a fourth influent screen in the Preliminary Treatment Facility (PTF) Building of the Atlantic Treatment Plant. The PTF Building was designed for four screens and three screens were installed in the last upgrade of the plant. The project will include the screen, washer/compactor, diverter chute, platform and non-potable water (NPW) booster pump and strainer.

Funding Description: The total cost for this project is estimated to be \$2,152,435 and is based on an estimate prepared by HDR Engineering, Inc. as the design engineer for the Atlantic Treatment Plant Expansion Phase I project. HDR will prepare a Preliminary Engineering Report (PER) for this project under the General Engineering Services annual contract at a cost of \$61,245. The PER will consider several different solutions for the fourth influent screen which is required at Atlantic to prepare for additional flow that will be diverted when the Chesapeake Elizabeth Treatment Plant is decommissioned. Future phases of work will be negotiated after the PER is completed.

Schedule:	PER	July 2017
	Design	January 2018
	Construction	January 2019
	Project Completion	October 2019

Attachment: None

Public Comment: None



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7. **LITTLE CREEK PUMP STATION MODIFICATIONS
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$849,000.

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

CIP Project: CE011830

Project Description: There are five sewer pumping stations associated with Joint Expeditionary Base Little Creek and two of those stations are being upgraded currently by the Navy. HRSD will be responsible for upgrading the other three as needed. At this time, HRSD is certain that one station will need to be upgraded and two other stations will be evaluated in the PER since owner-provided documentation indicates that these stations have marginally-sized pumps for future modeled conditions. The project is needed to ensure that Little Creek's sewer pumping stations can meet HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth Treatment Plant closure.

Funding Description: The total cost for this project is estimated to be \$849,000 and is based on recent minor pump station upgrades. Kimley-Horn and Associates, Inc. (KHA) will prepare a Preliminary Engineering Report (PER) for this project at a cost of \$76,400. KHA was awarded a contract in September 2016 to perform the Program Definition Phase to develop a coordinated plan of required interceptor system improvements in support of the Chesapeake-Elizabeth Treatment Plant closure. They will continue with preliminary engineering on the individual capital improvement projects identified in the program definition report. Future phases of work will be negotiated after the PER is completed.

Schedule:

PER	September 2017
Design	February 2018
Bid	December 2019
Construction	March 2020
Project Completion	May 2021

Attachment: None

Public Comment: None



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8. **LYNNHAVEN-GREAT NECK INTERCEPTOR FORCE MAIN ABANDONMENT
SHORE DRIVE CORRIDOR IMPROVEMENTS PHASE III
AGREEMENT AND APPROPRIATION**

Actions:

- a. **Authorize funding in the amount of \$1,000,000.**
- b. **Approve the terms and conditions of the agreement with the City of Virginia Beach for the design and construction associated with this project 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: Vishnu Lakdawala **Ayes:** 8
Seconded: Michael Glenn **Nays:** 0

CIP Project: AT014000

Project Description: The project will abandon the existing 16-inch force main east of the Lesner Bridge along Shore Drive in Virginia Beach. Total length to be abandoned is approximately 3,600 linear feet. Service to City of Virginia Beach Pump Station 200 will be provided by a new force main installed in the Shore Drive corridor as part of the Shore Drive Corridor Improvements Phase III project. The City will manage the design and construction of the new force main and will assume ownership of this facility and all associated appurtenances. This project also includes the relocation of a valve complex due to a proposed physical conflict.

Funding Description: Project funding will be used to reimburse the City Of Virginia Beach upon receipt of invoice at the completion of the project. This project is not in the current published Capital Improvement Program. HRSD infrastructure is in conflict with a City of Virginia Beach improvements project and needs to be relocated.

Agreement Description: The [attached agreement](#) between HRSD and the City of Virginia Beach describes the project drivers and delineates the funding, construction, and ownership of the facilities. The agreement has been reviewed by HRSD legal counsel.

Analysis of Cost: The estimated cost for this project is based on planning level unit costs and quantity measurements for facilities of similar scale and location. The City's design engineer will provide an estimate of probable construction cost for the improvements to be reimbursed by HRSD.

Attachment #5: [Agreement](#)

Public Comment: None



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9. **MANHOLE REHABILITATION PHASE 1A (NORTH SHORE) REJECTION OF ALL BIDS**

Action: Approve rejection of bid submitted for the Manhole Rehabilitation Phase 1A (North Shore) Project.

Moved: Maurice Lynch **Ayes:** 8
Seconded: Willie Levenston **Nays:** 0

CIP Project: GN012131

Type of Procurement: Competitive Bid

Bidder	Bid Amount
TA Sheets General Contractors Inc.	\$5,349,000

HRSD/Engineer's Estimate: \$1,481,803

Project/Contract Description: This project involves rehabilitation of 42 manholes located in the HRSD Interceptor System on the North Shore. The manholes identified for rehabilitation have a material risk of failure or significant inflow and infiltration during condition assessment activities.

Bids were opened for this project in August and only one bid was received. After careful review of the results and receipt of feedback from many contractors, it is evident that potential bidders were concerned about the risks associated with the project as bid. This concern led to a lack of interest in the project and the elevated pricing received for the bid submitted. Many of the contractors who specialize in coatings were unable to bid the project as a prime contractor due to its size and complexity. The bidding documents included bypass pumping as a contingency item which would only be utilized if adequate environmental conditions for epoxy coatings could not be maintained. Contractors who specialize in coatings are typically not set up to install and manage large bypass pumping systems which would be required for this project.

HRSD and Brown and Caldwell staff recommend rejecting the bid, making modifications to the specifications and moving forward with a Request for Proposal (RFP) solicitation or use of a cooperative contract. This approach would interest the contractors specializing in coatings work and allow the work to be split into smaller task orders. Issuing smaller task orders alleviates some of the risk for the contractor and allows staff to evaluate the effectiveness of manhole rehabilitation under live flow conditions. Selecting one or several contractors through a RFP process allows HRSD to effectively fulfill the requirements of the Consent Decree-Rehabilitation Action Plan which includes the rehab of 107 manholes not currently being addressed as part of other CIP projects.

Attachment: None

Public Comment: None



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10. **PROVIDENCE ROAD OFF-LINE STORAGE FACILITY
ALTERNATIVE PROJECT DELIVERY**

Action: Approve the Design-Build project delivery method for the Providence Road Off-Line Storage Facility project.

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

CIP Project: CE011826

Brief: The Providence Road Off-Line Storage Facility is one of a number of infrastructure projects identified as needed prior to the decommissioning of the Chesapeake-Elizabeth Treatment Plant and the rerouting of flow to the Atlantic Treatment Plant with a target date of mid-year 2021. This particular tank is being pursued as a partially buried rectangular tank that will store approximately 5.2 million gallons of wastewater during peak flow periods following major rainfall events. HRSD and the City of Virginia Beach have been working as a team to identify an optimum location for this tank on City property and also looking for added community improvement opportunities. Virginia Beach’s Department of Parks and Recreation and HRSD are considering an area within Woodstock Park to be equipped with a skate park on the top of this concrete tank. The City desires to make other improvements to Woodstock Park while this tank is under construction by working within HRSD’s construction contract to fund these other park enhancements. The Design-Build Delivery method will offer numerous advantages to HRSD and the City of Virginia Beach for this multiple outcomes program including establishing a Contract Cost Limit (CCL) early in the process, the ability to work collaboratively with the designers and contractors to stay within budget for each party contributing funding, and the ability to accelerate the overall completion of the tank and the park to return this community resource back to the public for use. The consultant firms of Kimley-Horn and Rummel Klepper & Kahl LLP (RK&K) will be converted from the designer to the Owner’s Agent role and will assist HRSD with the selection process leading up to a contract with the successful Design-Build firm.

Schedule:

PER Completion	March 2018
Select Design-Build Firm/Establish CCL	August 2018
60% Design Development/Guaranteed Maximum Price	May 2019
Project Completion	May 2021

Discussion Summary: The Commission discussed the approach for selecting a design/bidding method. The Alternative Delivery method is generally used on a case-by-basis for unique projects where time constraint may exist.

Attachment: None

Public Comment: None



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12. **SURRY INFRASTRUCTURE IMPROVEMENTS
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$550,000.

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

CIP Project: SU010100

Project Description: This project will repair, replace and/or rehabilitate infrastructure within the Surry sewer collection and conveyance system as necessary.

Funding Description: The total cost for this project is estimated to be \$550,000. The \$550,000 estimate is based upon a preliminary construction cost estimate done before the PER stage of the project. This estimate assumes a combination of replacement and rehabilitation work will be required. Engineering services will be provided by Bowman Consulting.

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

Attachment: None

Public Comment: None



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13. **SURRY COUNTY AND TOWN OF SURRY WATER METER REPLACEMENT APPROPRIATION**

Action: Approve funding in the amount of \$250,000 for the replacement of water meters in Surry County and the Town of Surry appropriated from General Reserve to the Fiscal Year 2018 Operating Budget.

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

Brief: Surry County and the Town of Surry have executed agreements to transfer ownership of their sewer infrastructure to HRSD on October 1, 2017. HRSD will bill customers based upon water consumption. The existing water meters are outdated and in questionable condition. To ensure accurate billing moving forward, HRSD has agreed to replace the water meters with new meters with automated reading features. In Surry County, HRSD is working to include the meters in a County contract currently under design. For the Town of Surry, HRSD is evaluating use of a stand-alone contract, riding on a City of Suffolk meter contract or contracting with the Sussex Service Authority to install meters for the Town's approximately 200 accounts.

This work was not identified prior to the preparation of the Fiscal Year 2018 budget. As a result, the Operation Budget requires an amendment to provide funding for this work.

Attachment: None

Public Comment: None



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14. **WILLIAMSBURG INTERCEPTOR FORCE MAIN CONTRACT A REPLACEMENT AGREEMENT**

Action: Approve the terms and conditions of the agreement with Escalante Golf for removal and abandonment of the existing force main on Escalante Golf's property 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:	Willie Levenston	Ayes:	8
Seconded:	Vishnu Lakdawala	Nays:	0

CIP Project: WB010700

Project Description: This project recently replaced approximately 7,400 feet of 36-inch prestressed concrete cylinder pipe originally installed in the 1970s as the Williamsburg Interceptor Force Main Contract A Replacement project.

Agreement Description: The [attached agreement](#) between HRSD and Escalante Golf provides for removal and abandonment of the existing force main that was replaced under the Williamsburg Contract A Replacement project. During the design phase of the project it was determined that the abandoned pipe that was in conflict with proposed future development by Escalante Golf would be removed. Escalante Golf provided an easement to HRSD for the new replacement force main across their property at no cost provided that conflicting pipe be removed. This agreement defines the limits of the existing pipe to be removed and the existing pipe to be abandoned in place. The agreement has been reviewed by HRSD legal counsel.

Attachment #6: [Agreement](#)

Public Comment: None



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15. **WILLIAMSBURG TREATMENT PLANT SWITCHGEAR REPLACEMENT
INITIAL APPROPRIATION**

Action: Appropriate total project funding in the amount of \$4,760,460.

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

CIP Project: WB012400

Project Description: The project is to design and construct needed replacement of the Williamsburg Treatment Plant main switchgear, generator switchgear, controls and appurtenances. The replacement of the switchgear will require the construction of a new switchgear building located adjacent to the existing administration building.

An initial effort will involve the study, design and construction of interim improvements to assure reliable operation until the planned Sustainable Water Initiative for Tomorrow (SWIFT) improvements are completed.

Funding Description: The total cost for this project is estimated to be \$4,760,460. The estimated project cost is based on a construction cost estimate of \$3,463,887 combined with an engineering services estimate of \$605,795 and a 20 percent contingency allowance of \$690,778. Engineering services will be provided by HDR Engineering and include preliminary engineering, design and construction phase services.

Schedule:	Pre-Planning	October 2018
	PER	January 2018
	Design	May 2018
	Bid	January 2019
	Construction	April 2019
	Project Completion	February 2021

Discussion Summary: The switchgear is the original equipment installed when the treatment plant was built and is nearing the end of its useful life. This equipment will be designed and coordinated to accommodate future SWIFT facilities.

Attachment: None

Public Comment: None



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Contract Description and Analysis of Cost: In accordance with HRSD's competitive sealed bidding procedures, the Engineering Department advertised and solicited bids directly from potential bidders. Three Bids were received and evaluated based upon the requirements of the invitation for bid. Shaw Construction Corporation is the apparent low bidder with a bid amount of \$1,379,000. The construction bids were obtained through competitive bidding. The engineer's estimate for construction was \$1,331,843 which indicates good agreement with the low bid. Engineering for this project is being provided by CH2M Hill. The engineering costs are based on the negotiated rates in the Professional Service Agreement with CH2M Hill. The engineering services for construction are 10 percent of the bid amount. These engineering costs are in agreement with similar efforts for other projects. The contingency costs are based on 15 percent of the bid amount.

<u>Schedule:</u>	Design	March 2016
	Bid Delay	July 2016
	Bid	August 2017
	Construction	October 2017
	Project Completion	October 2018

Attachment: None

Public Comment: None



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17. **WATER TECHNOLOGY AND RESEARCH UPDATE**

Action: No action required.

Brief: This update will provide an overview of projects and studies targeted at developing and implementing more cost-effective technologies for solids handling, nutrient removal and recovery, and advanced water treatment.

Attachment #7: [PowerPoint Presentation](#)

Public Comment: None

18. **UNFINISHED BUSINESS**

Mr. Henifin discussed logistics and a schedule of suggested sessions for the upcoming Water Environment Federation Technical Exhibition and Conference (WEFTEC).

19. **NEW BUSINESS – None**

20. **COMMISSIONER COMMENTS**

Chair Elofson commented on Mr. Henifin's monthly report summary of staff's drills and preparations for category 2 Hurricanes. He commended staffs' efforts to be looking beyond what has seemed likely and to explore impact and response to more catastrophic storm scenarios.

In response to Commissioner Lynch's question about bond rates, staff discussed the strategy and timing of when we enter the bond market.

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



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22. **INFORMATIONAL ITEMS**

Action: No action required.

Brief: The items listed below were presented for information.

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

Attachment #8: [Informational Items](#)

Public Comment: None

23. **ANNOUNCEMENTS**

- October 11 – Virginia*forever* Bridge Builder celebration in Richmond 6 pm
- October 12 – SWIFT “Construction Progress Tour” Open House at the Nansemond Treatment Plant from 10 am – 1 pm
- October 19 – Finance Committee meeting to review the draft Comprehensive Annual Finance Report (CAFR) at Virginia Beach office from 9 am until noon.

Next Commission Meeting Date: October 31, 2017 at the HRSD North Shore Operations Center, 2389 G. Avenue, Newport News, VA 23602

Meeting Adjourned: 11:07 a.m.

SUBMITTED:

APPROVED:

Jennifer L. Cascio
Secretary

Frederick N. Elofson, CPA
Chair

HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #1

AGENDA ITEM 1. – Consent Agenda

CONSENT AGENDA ITEM 2.b.1. – September 26, 2017

Subject: Lucas Creek – Woodhaven Interceptor Force Main Replacement Phase I Contract Award (>\$200,000) and Task Order (>\$200,000)

Recommended Actions:

- a. Award a contract to Basic Construction Company in the amount of \$2,655,506.
- b. Approve a task order with Michael Baker International in the amount of \$357,274.

CIP Project: JR013100

Budget	\$3,770,000
Previous Expenditures and Encumbrances	(\$564,446)
Available Balance	\$3,205,554

Type of Procurement: Competitive Bid

Bidder	Bid Amount
Basic Construction Company LLC	\$2,655,506
Garney Companies, Inc.	\$2,922,360
Gaston Brothers Utilities, LLC	\$2,970,177
Tidewater Utility Contractors Inc.	\$3,268,982
T. A. Sheets General Contractors Inc.	\$3,328,474

Engineer Estimate: **\$3,527,930**

Contract Status:	Amount
Original Contract with Michael Baker Int. (Baker)	\$155,653
Total Value of Previous Task Orders	\$373,081
Requested Task Order	\$357,274
Total Value of All Task Orders	\$730,355
Revised Contract Value	\$886,008
Engineering Services as % of Construction	33%

Project Description: This project involves the replacement of approximately 5,800 linear feet of force main from just north of the intersection of Thorncliff Drive and Warwick Boulevard to a location 900 feet west of the intersection of Warwick Boulevard and Lucas Creek Road along Lucas Creek Road in Newport News.

Contract Description and Analysis of Cost: In accordance with HRSD's competitive sealed bidding procedures, the Engineering Department advertised and solicited bids

directly from potential bidders. Five Bids were received and evaluated based upon the requirements for the invitation for bid. Basic Construction Company is the apparent low bidder with a bid amount of \$2,655,506. The Engineer's Estimate was above the bids received due to concerns by the consultant that the proposed schedule would require overtime, night-work and challenges with maintenance of traffic. The use of the Virginia Revolving Loan Fund requirements were also a concern by the consultant that was not reflected in the pricing. Due to the relative close bid results by the various contractors, the consultant recommends award of the contract to Basic Construction Company, LLC.

Task Order Description and Analysis of Cost: This task order will provide contract administration (CA) and construction inspection (CI) services. The project route is along Warwick Boulevard in Newport News and considerable coordination with the City of Newport News will be required throughout this project. A fee of \$357,274 was negotiated with Michael Baker and was based upon construction administration and inspection hours required for this effort. The contract administration cost is \$125,296 and is 4.7 percent of the bid amount and construction inspection is \$164,320 which is 6 percent of the bid amount. The additional funds are for Startup and Testing, Post Startup, and Additional Services. These items will be provided on a cost reimbursable basis. The cost for construction phase services is slightly higher than comparable projects of similar size and complexity. There is a contract requirement that the work be performed at night and this impacts the costs. Also a significant amount of coordination with the City of Newport News will be required as this is a heavily traveled corridor. A VDOT project is also under construction at Atkinson Boulevard which will have impacts on the project.

<u>Schedule:</u>	PER	January 2016
	Design	July 2016
	Bid	August 2017
	Construction	October 2017
	Project Completion	October 2018

CONSENT AGENDA ITEM 2.c.1. – September 26, 2017

Subject: Bill Printing, eBilling, Online Payments, Merchant Card Processing and Lockbox Services
Contract Change Order (>25% or \$50,000)

Recommended Action: Approve a change order contract extension for Bill Printing, eBilling, Online Payments and Merchant Card Processing with Kubra Data Transfer, Ltd. through February 5, 2018 in the estimated amount of \$680,000 and for Lockbox and Commercial Electronic Office Services with Wells Fargo Financial through April 5, 2018 in the estimated amount of \$74,000.

Contract Status: Bill Printing, eBilling, Online Payments and Merchant Card Processing	Amount	Cumulative % of Contract
Original Contract with Kubra Data Transfer, Ltd.	\$1,856,662	
Total Value of Previous Change Orders	\$2,818,567	152%
Requested Change Order No. 7	\$680,000	
Total Value of All Change Orders	\$3,498,567	188%
Revised Contract Value	\$5,355,229	

Contract Status: Lockbox and Commercial Electronic Office Services	Amount	Cumulative % of Contract
Original Contract with Wells Fargo Financial	\$997,000	
Total Value of Previous Change Orders	\$285,000	29%
Requested Change Order No. 5	\$74,000	
Total Value of All Change Orders	\$359,000	36%
Revised Contract Value	\$1,356,000	

Change Order Description: These change orders are to extend the services an additional four and six months respectively to allow for the implementation of two new contracts with different vendors that were selected during the competitive negotiation process of the Banking Services and Related Financial Services Request for Proposal.

CONSENT AGENDA ITEM 2.c.2. – September 26, 2017

Subject: Sustainable Water Initiative for Tomorrow (SWIFT) Analytical Services
Contract Change Order (>25% or \$50,000)

Recommended Action: Approve a change order with Eurofins Eaton Analytical, Inc. in the amount of \$500,000.

Contract Status:	Amount	Cumulative % of Contract
Original Contract for Eurofins Eaton Analytical, Inc.	\$221,215	
Total Value of Previous Change Orders	\$355,000	160%
Requested Change Order No. 4	\$500,000	
Total Value of All Change Orders	\$855,000	387%
Revised Contract Value	\$1,076,215	

Project Description: Analytical support for the SWIFT program provides the necessary data to develop the regulatory framework for full-scale SWIFT implementation and ensure protection of the region's groundwater supply.

Change Order Description: This change order is needed to provide additional analytical services required to support the SWIFT program. During the initial feasibility phase of the program, all contract funding up to the current requested change order of \$500,000 was covered under the CIP Project GN015700. With the completion of the feasibility study, on-going analytical support of the program will be budgeted as an annual operating expense.

The original service agreement was created prior to commissioning of the treatment pilot project. Since that time, the sampling/analytical plan was modified to provide additional information needed to define pilot performance and additional data required to design the SWIFT Demonstration Facility at the Nansemond plant. While pilot treatment optimization and performance monitoring continue, the bulk of the analytical work is being shifted to focus on the SWIFT Research Center and the Nansemond service area. This evolving sampling and monitoring plan employs an adaptive strategy, refining sampling and monitoring needs based upon the results of data in-hand. While every effort is made to predict the needs, modifications and additional monitoring are necessary at times. With the continuation of the SWIFT program, the Central Environmental Laboratory is working to expand the scope of their analytical capabilities and any associated accreditations. Over time, this will reduce HRSD's reliance on contract analyses for SWIFT.

CONSENT AGENDA ITEM 2.d.1. – September 26, 2017

Subject: Brown & Morrison, Ltd. – Chemineer Mixer Replacement Parts and Repairs
Sole Source (>\$10,000)

Recommended Action: Approve Brown & Morrison, Ltd as the source for Chemineer Mixer replacement parts and repairs for use at HRSD.

Sole Source Justification:

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

Details: The Chemineer mixer parts, specifically the gearbox, were designed for the Virginia Initiative Plant (VIP) holding tank sizes and solids applications. Other parts such as shafts and blades will be used within the gearboxes and act as drop-in replacements for the mixers. Failure for mixers to perform will require the solids from City of Norfolk Water to be pumped to the head of VIP which would not be in accordance with Pretreatment, Pollution and Prevention Division policy.

Brown & Morrison, Ltd. is the only authorized distributor in Virginia.

CONSENT AGENDA ITEM 2.d.2. – September 26, 2017

Subject: Heyward, Inc. – Parkson Aqua Guard® Bar Screen Parts and Repairs
Sole Source (>\$10,000)

Recommended Action: Approve Heyward, Inc. as the source for Parkson Aqua Guard® Bar Screen parts and repairs for use at the Williamsburg Treatment Plant.

Sole Source Justification:

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

Details: The Williamsburg Treatment Plant uses Aqua Guard® Screen (brush side seals) and conversion kits as the first unit process and to remove debris from the bar screen. Repairs include a Parkson-certified technician on-site rebuild and retrofit to perforated screen with original equipment manufacturer parts. Replacement parts and rebuild of the existing bar screen will allow for the reuse of the existing headworks influent channels.

Heyward Incorporated is the only authorized representative for Virginia.

CONSENT AGENDA ITEM 2.d.3. – September 26, 2017

Subject: Kontrol Automation, Inc. – Centrifuge Variable Frequency Drive Parts and Repairs
Sole Source (>\$10,000)

Recommended Action: Approve Kontrol Automation, Inc. as the source for Centrifuge Variable Frequency Drive parts and repairs for use at HRSD.

Sole Source Justification:

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

Details: HRSD Treatment Plants use variable frequency drives (VFD) in centrifuges for the dewatering process. Purchase includes a 250 horsepower VFD, communications module, communications adapter, direct current bus kit and liquid crystal diode user interface. Replacement parts will allow for the continued use of the existing system programming.

Kontrol Automation, Inc. is the sole provider of the proprietary software program that supports the VFD configuration.

CONSENT AGENDA ITEM 2.d.4. – September 26, 2017

Subject: NucliSENS® easyMAG® Instrument Preventive Maintenance and Support
Sole Source (>\$10,000)

Recommended Action: Approve bioMerieux, Inc. as the source for preventative maintenance and support services, repairs and related parts for the NucliSENS® easyMAG® instrument used at the Central Environmental Laboratory.

Sole Source Justification:

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

Details: The Central Environmental Laboratory uses the NucliSENS® easyMAG® instrument to extract high quality nucleic acids (e.g. DNA) for use in quantification of host-specific markers and human pathogens. Enumeration of these markers and pathogens is essential to HRSD's Pathogen Program because it is critical to tracking microbial sources of contamination instream and validating SWIFT pathogen removal. The easyMAG® instrument has proven itself to be reliable. In the last year, 2300 samples were successfully processed due to the high throughput nature of the instrument and a number of contamination sources have been identified.

The warranty for the equipment has expired and a service plan is necessary to keep the instrument at optimal performance levels. Services include telephone support, all parts, two preventative maintenance inspections and remote tele-diagnostics for troubleshooting instrumentation with modem access. The instrument was purchased through a competitive solicitation in June 2016. bioMerieux, Inc. is the sole manufacturer and service provider of the easyMAG® instruments.

HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #2

AGENDA ITEM 3. – Carbon Footprint Reduction PowerPoint Presentation



Carbon Footprint Reduction
Commission Meeting
September 26, 2017

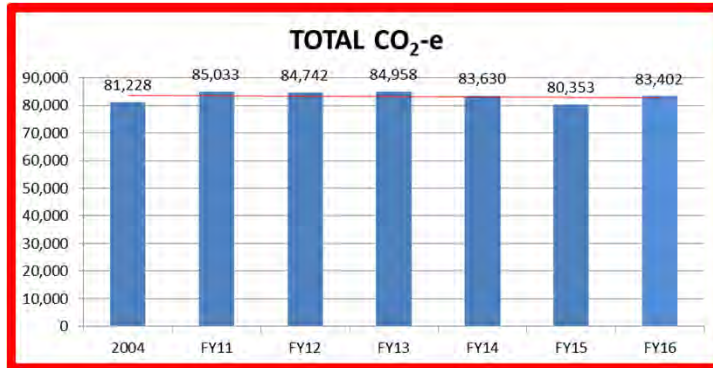
Paris Agreement

- The US vowed to cut emissions (reduce our carbon footprint) 26 to 28 percent of 2005 levels by the year 2025
- Although US Policy recently changed, several states, industries and businesses have pledged to support this effort
- We are seeking direction concerning our role in reducing our carbon footprint.

HRSD Carbon Footprint

The past 12 years.

- Increased Workforce
- Increased Office Space
- Increased Treatment Capacity and Infrastructure
- **Carbon Footprint has remained the same**



3

HRSD

HRSD Carbon Footprint

How do we calculate the carbon footprint?

EPA Climate Leaders GHG Emissions Simple Calculator

This calculator only focuses on the big three:

1. The direct emissions from stationary combustion
2. The direct emissions from mobile sources
3. The indirect emissions from electricity purchased and consumed

- **Optional Emissions are not considered.**

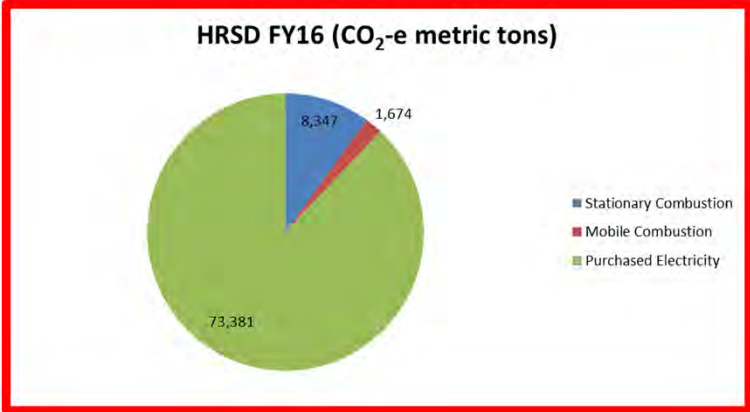
-employee business travel, employee commuting, and product transport.

4

HRSD

HRSD Carbon Footprint

HRSD's Big Carbon Contribution = Use of Electricity



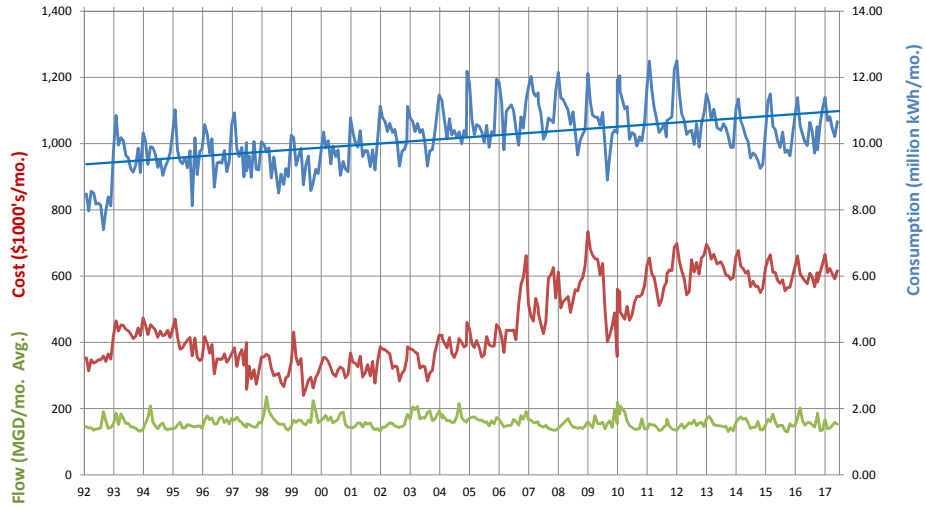
Power Consumption Data

Year	Load	% Δ
1993 – 2016	All HRSD	+7%
2005 – 2016	All HRSD	+<1%
2005 – 2016	Major Treatment Plants*	-<1%

*Treatment kWh represents 90 percent of all power consumed by HRSD facilities



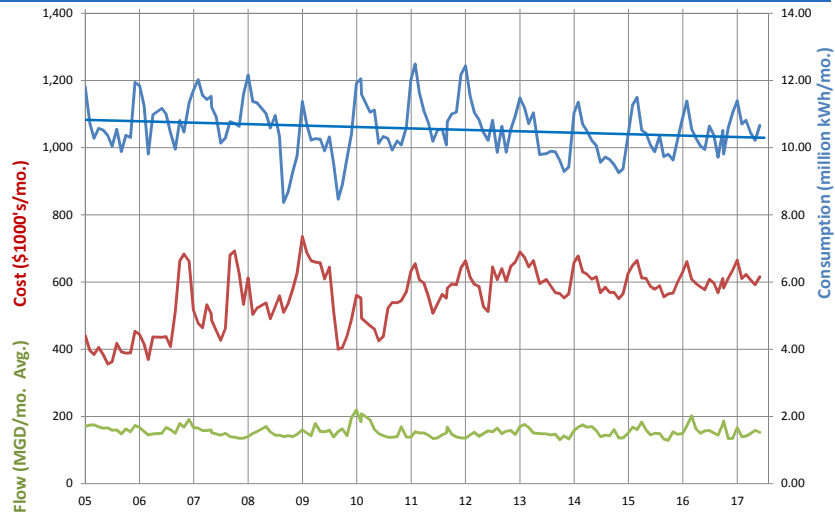
Power, Cost & Flow data for 1992-2017



7



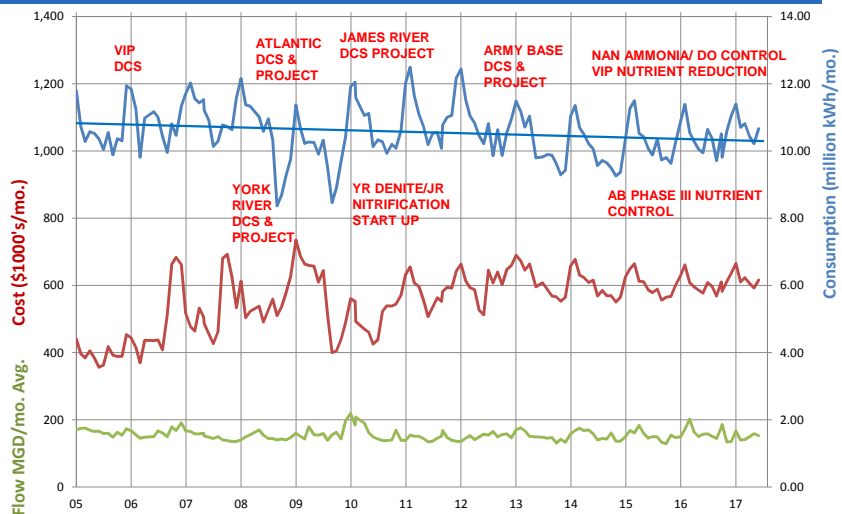
Power, Cost & Flow data for 2005 - 2017



8



Power, Cost & Flow data for 2005 - 2017



9



A 30% Reduction In Our Carbon Footprint

- A 30% reduction of the 2005 kWh can be achieved by buying green power annually at an incremental cost of .2 cents/kWh
- The resulting (kWh) = 42,484,632
- The 2017/2018 cost = \$84,969

This takes in consideration the 6.7 million kWh contribution from the CHP system at Atlantic

10



Organizational Direction

We are seeking direction concerning our role in supporting a reduction in our carbon footprint

- \$85,000 can reduce our carbon footprint to 70% of the 2005 power consumption levels
- Choosing to seek a reduction will require annual re-evaluation of consumption and cost
- Additional future electrical loads will need to be considered (SWIFT)

11



Discussion

12



HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #3

AGENDA ITEM 4. Lucas Creek – Woodhaven Interceptor Force Main Replacement
Phase I
Virginia Clean Water Revolving Loan Fund (VCWRLF)
Resolution

Hampton Roads Sanitation District
Resolution of
September 26, 2017

HAMPTON ROADS SANITATION DISTRICT COMMISSION

RESOLUTION
PROVIDING FOR THE ISSUANCE OF

A SUBORDINATE WASTEWATER REVENUE BOND

Adopted September 26, 2017

Lucas Creek Interceptor Project: #C-515605-02

Resolution

RESOLUTION AUTHORIZING THE ISSUANCE OF A SUBORDINATE WASTEWATER REVENUE BOND, NOT TO EXCEED \$3,205,554 IN PRINCIPAL AMOUNT, FOR THE PURPOSE OF PROVIDING FUNDS, WITH OTHER AVAILABLE MONEY, TO PAY THE COSTS OF CERTAIN IMPROVEMENTS TO THE LUCAS CREEK INTERCEPTOR PROJECT, FIXING THE PRINCIPAL INSTALLMENT MATURITY DATES, THE INTEREST RATE, THE REDEMPTION PROVISIONS AND CERTAIN OTHER DETAILS OF THE BOND, DIRECTING THE AUTHENTICATION AND DELIVERY OF THE BOND, AND AUTHORIZING THE EXECUTION OF A FINANCING AGREEMENT WITH THE VIRGINIA RESOURCES AUTHORITY.

WHEREAS, the Hampton Roads Sanitation District (the “Borrower”) entered into a Trust Agreement, dated as of October 1, 2011 (the “Trust Agreement”), with The Bank of New York Mellon Trust Company, N.A., as trustee (the “Trustee”), as amended and restated as of March 1, 2016, pursuant to which the Borrower may incur Parity Obligations, as defined in the Trust Agreement; and

WHEREAS, pursuant to Chapter 22, Title 62.1, Code of Virginia of 1950, as amended (the “VWFRF Act”), the General Assembly of the Commonwealth of Virginia created a permanent and perpetual fund known as the Virginia Water Facilities Revolving Fund (the “Fund”); and

WHEREAS, the Hampton Roads Sanitation District Commission (the “Commission”) heretofore received an offer from the Virginia Resources Authority (the “Authority”), as Administrator of the Virginia Water Facilities Revolving Fund (the “Fund”), to make a loan from the Fund to the Borrower in an amount expected not to exceed \$3,205,554 for the purpose of financing a project described in such offer as Lucas Creek-Woodhaven Interceptor Force Main

Replacement Project, together with related expenses; and

WHEREAS, the Commission, as the governing body of the Borrower, has determined to accept such offer and close on the loan from the Authority, as Administrator of the Fund, by authorizing and issuing its subordinate wastewater revenue bond for the purpose of financing Capital Improvement Program Costs (as defined in the Trust Agreement) of improvements to the Borrower's Lucas Creek-Woodhaven Interceptor (the "2017 Lucas Creek Local Bond"), to be payable solely from the Net Revenues Available for Debt Service (as defined in the Trust Agreement) on a parity with all Parity Obligations (as defined in the Trust Agreement) of the Borrower and subordinated to all Senior Indebtedness, as defined in, and to extent set forth, in the Trust Agreement, all in conformity with the terms and provisions of the Trust Agreement; now, therefore,

BE IT RESOLVED by the Hampton Roads Sanitation District Commission as follows:

Section 1. (a) Definitions. The capitalized terms contained in this Resolution and not defined above shall have the meanings set forth in the Glossary of Defined Terms attached to this Resolution as Exhibit A, unless the context requires otherwise.

(b) Rules of Construction. The following rules shall apply to the construction of this Resolution unless the context requires otherwise:

(i) Singular words shall connote the plural number as well as the singular and vice versa.

(ii) All references in this Resolution to particular Sections or Exhibits are references to Sections or Exhibits of this Resolution unless otherwise indicated.

Section 2. Authorization of 2017 Lucas Creek Local Bond. Pursuant to Sections 209(b) and 704(a) of the Trust Agreement and for the purpose of financing the Capital

Improvement Program Costs of the Project, which are Project Costs within the definition thereof found in the Financing Agreement, the 2017 Lucas Creek Local Bond of the Borrower is hereby authorized to be issued in the principal amount not to exceed \$3,205,554. The 2017 Lucas Creek Local Bond shall be issuable as a single registered bond without coupons and shall be dated as of its date of issue. The 2017 Lucas Creek Local Bond shall be substantially in the form attached to this Resolution as Exhibit B, with such variations, omissions and insertions as may be necessary or appropriate to conform to the provisions of this Resolution. The 2017 Lucas Creek Local Bond shall be a Parity Obligation and shall be a VRA Subordinate Obligation, each as defined in the Trust Agreement, shall be secured on a parity with all other Parity Obligations of the Borrower under the Trust Agreement, and shall be senior to all Junior Obligations (as defined in the Trust Agreement), as set forth therein.

The 2017 Lucas Creek Local Bond shall be dated as of its date of issue and shall bear interest (or “Cost of Funds” as described in the 2017 Lucas Creek Financing Agreement Supplement) on the disbursed principal balance of the 2017 Lucas Creek Local Bond at a rate not to exceed 3.00% per annum. Such interest shall be payable commencing on the date set forth in a certificate of the General Manager delivered on the date of issue of the 2017 Lucas Creek Local Bond (the “General Manager’s Certificate”), such principal and interest shall be payable in essentially equal semi-annual installments (rounded to the nearest \$100), with the balance due on the date set forth in the General Manager’s Certificate, but not later than May 1, 2049.

Section 3. Redemption Provisions. The principal installments on the 2017 Lucas Creek Local Bond shall be subject to redemption prior to their respective maturities, at the option of the Borrower, from any money that may be made available for such purpose, either in whole or in part on any date at the redemption price of par plus accrued interest on ten (10) days’ written

notice to the Authority and otherwise as provided in the Financing Agreement. Any such partial redemption shall not postpone the due date of any subsequent payment on the 2017 Lucas Creek Local Bond, or change the amount of such installment, unless the Borrower and the Authority agree otherwise in writing.

Section 4. Deposits to Local Bond Fund. The Borrower shall deposit money with or to the order of the Authority, as Administrator of the Fund, in amounts sufficient to pay in full, when due (whether by maturity, redemption, acceleration or otherwise), the 2017 Lucas Creek Local Bond issued under this Resolution, together with the interest thereon, all as set forth in the 2017 Lucas Creek Local Bond.

Section 5. Authority to Execute 2017 Lucas Creek Financing Agreement Supplement. The execution and delivery of the 2017 Lucas Creek Financing Agreement Supplement, substantially in the form presented at this meeting, relating to the loan from the Authority, as Administrator to the Fund, to the Borrower and the repayment of the loan by the Borrower in accordance with the 2017 Lucas Creek Local Bond, are hereby authorized, with such changes, insertions and omissions as may be approved by the Chairman or Vice Chairman of the Commission, the execution of the 2017 Lucas Creek Financing Agreement Supplement by the Chairman or the Vice Chairman to be conclusive evidence of his approval of any changes, insertions and omissions therein.

Section 6. Manner of Execution of 2017 Lucas Creek Local Bond. The 2017 Lucas Creek Local Bond shall be executed by the Chairman or Vice Chairman and the Secretary or an Assistant Secretary of the Commission, and the seal of the Commission shall be impressed on the 2017 Lucas Creek Local Bond. The 2017 Lucas Creek Local Bond shall be delivered to or for

the account of the Authority, as Administrator of the Fund, upon execution and delivery of the 2017 Lucas Creek Financing Agreement.

Section 7. Obligations of Borrower Unconditional. Subject to the terms of the Trust Agreement, nothing contained in this Resolution or the 2017 Lucas Creek Local Bond is intended to or shall impair, as between the Borrower, its creditors, and the holder of the 2017 Lucas Creek Local Bond, the obligation of the Borrower, which is absolute and unconditional, to pay to the holder of the 2017 Lucas Creek Local Bond the principal of, redemption premium, if any, and interest on the 2017 Lucas Creek Local Bond as and when the same shall become due and payable in accordance with its terms, or affect the relative rights of the holder of the 2017 Lucas Creek Local Bond and creditors of the Borrower, nor shall anything herein or therein prevent the holder of the 2017 Lucas Creek Local Bond from exercising all remedies otherwise permitted by applicable law and under the Trust Agreement upon default under the 2017 Lucas Creek Local Bond and the 2017 Lucas Creek Financing Agreement Supplement.

Section 8. Payments on 2017 Lucas Creek Local Bond Permitted. Nothing contained in this Resolution or the 2017 Lucas Creek Local Bond shall affect the obligation of the Borrower to make, or prevent the Borrower from making, payment of the principal of, redemption premium, if any, or interest on the 2017 Lucas Creek Local Bond in accordance with the provisions hereof, except as otherwise provided in this Resolution.

Section 9. Benefits of Resolution. Nothing in this Resolution or the 2017 Lucas Creek Local Bond, express or implied, shall give to any person, other than the holder of the 2017 Lucas Creek Local Bond, any benefit or any legal or equitable right, remedy or claim under this Resolution.

Section 10. Further Action. The Chairman, Vice Chairman, the Secretary and any

Assistant Secretary of the Commission and the General Manager, the Director of Engineering and the Director of Finance of the Borrower are authorized and directed (without limitation except as may be expressly set forth therein) to take such action and to execute and deliver any such documents, certificates, undertakings, agreements or other instruments as they, with the advice of counsel, may deem necessary or appropriate to effect the transactions contemplated by the 2017 Lucas Creek Financing Agreement Supplement.

Section 11. Effectiveness. This Resolution shall take effect immediately upon its adoption.

[END OF RESOLUTION]

Adopted by the Hampton Roads Sanitation District Commission on September 26, 2017.


Frederick N. Elofson, CPA, Chairman

EXHIBIT A

GLOSSARY OF DEFINED TERMS

“*2017 Lucas Creek Financing Agreement Supplement*” means the Supplement to Master Financing Agreement relating to the 2017 Lucas Creek Local Bond, between the Borrower and the Authority, as Administrator of the Fund, together with any amendments or supplements thereto.

“*2017 Lucas Creek Local Bond*” means the bond in substantially the form attached to this Resolution as Exhibit B, to be issued by the Borrower to the Authority, as Administrator of the Fund, pursuant to this Resolution and the 2017 Lucas Creek Financing Agreement Supplement.

“*2017 Lucas Creek Local Bond Proceeds*” means proceeds of the issuance and sale of the 2017 Lucas Creek Local Bond to the Authority, as Administrator of the Fund, pursuant to the 2017 Lucas Creek Financing Agreement Supplement.

“*Capital Improvement Program Costs*” means “Capital Improvement Program Costs” as defined in the Trust Agreement.

“*Financing Agreement*” means the Master Financing Agreement, dated as of February 1, 2016, between the Authority, as Administrator of the Fund, and the Borrower, as amended to the date hereof, and as supplemented by the 2017 Lucas Creek Financing Agreement Supplement.

“*General Manager’s Certificate*” means the certificate of the General Manager delivered on the date of issue of the 2017 Lucas Creek Local Bond.

“*Junior Indebtedness*” means “Junior Indebtedness,” as defined in the Trust Agreement.

“*Net Revenues*” means “Net Revenues” as defined in the Trust Agreement.

“*Parity Obligations*” means “Parity Obligations,” as defined in the Trust Agreement.

“*Project*” means the project described in Exhibit B to the 2017 Lucas Creek Financing Agreement Supplement, the costs of the acquisition, construction, improving or equipping of which are to be financed or refinanced in part with the 2017 Lucas Creek Local Bond Proceeds.

“*Project Budget*” means the budget for the financing or the refinancing of the Project, a copy of which is attached to the 2017 Lucas Creek Financing Agreement Supplement as Exhibit C, with such changes therein as may be approved in writing by the Authority.

“*Senior Indebtedness*” means “Senior Indebtedness,” as defined in the Trust Agreement.

“*Trust Agreement*” means the Trust Agreement, dated as of October 1, 2011, by and between the Borrower and the Trustee, as amended and restated as of March 1, 2016.

“*Trustee*” means The Bank of New York Mellon Trust Company, N.A., as trustee under the Trust Agreement, and any successor in trust thereto.

EXHIBIT B

FORM OF LOCAL BOND

United States of America
Commonwealth of Virginia

**HAMPTON ROADS SANITATION DISTRICT
Subordinate Wastewater Revenue Bond**

Hampton Roads Sanitation District (the “Borrower”), a political subdivision of the Commonwealth of Virginia, by Hampton Roads Sanitation District Commission (the “Commission”), the governing body of the Borrower, acknowledges itself indebted and, for value received, hereby promises to pay, solely from the revenues and other property hereinafter described and pledged to the payment of this Bond, to the order of the Virginia Resources Authority (the “Authority”), as Administrator of the Virginia Water Facilities Revolving Fund, Richmond, Virginia (the “Fund”), the principal amount equal to the sum of the principal disbursements made by the Authority, as Administrator of the Fund, to the Borrower (as shown in Schedule 1) pursuant to the Master Financing Agreement, dated as of February 1, 2016, between the Authority, as Administrator of the Fund, and the Borrower, as amended to the date hereof, and as supplemented by the Supplement to Master Financing Agreement, dated as of _____ 1, 2017 (as so amended and supplemented, the “Financing Agreement”) not to exceed _____ Dollars (\$ _____), together with interest (or “Cost of Funds” as described in the Financing Agreement) on the disbursed principal at the rate of _____% per annum, as follows:

Interest shall be payable on _____ 1, _____, and thereafter principal and interest due under this Bond shall be payable in essentially equal semi-annual installments (rounded to the nearest one hundred dollars (\$100)) on _____ 1 and _____ 1 of each year, commencing _____ 1, 20__ (as shown on Schedule 2), provided that if not sooner paid, all amounts under this Bond shall be due and payable in full on _____ 1, 20__.

In addition, if any installment of principal or interest is not received by the holder of this Bond within ten (10) days from its due date, the Borrower shall pay to the holder of this Bond, a late payment charge in an amount equal to five percent (5.00%) per annum on such overdue installment. Both principal and interest are payable in lawful money of the United States.

No notation is required to be made on this Bond of the payment of any principal or interest on normal installment payment dates. HENCE, THE FACE AMOUNT OF THIS BOND MAY EXCEED THE PRINCIPAL SUM REMAINING OUTSTANDING AND DUE HEREUNDER. This Bond and the premium, if any, and the interest thereon are limited obligations of the Borrower and (except to the extent payment with respect to the Bond shall be made from the proceeds from the sale of the Bond or the income, if any, derived from the investment thereof) are payable solely from Net Revenues Available for Debt Service (as defined in the below-mentioned Trust Agreement) from time to time deposited by the Borrower with or to the order of the Authority, as the Administrator of the Fund pursuant to the Resolution (the “Resolution”) adopted by the Commission on September 26, 2017, authorizing the issuance of

this Bond, which Net Revenues Available for Debt Service have been pledged pursuant to the Financing Agreement to secure payment hereof. Neither the Commonwealth of Virginia nor any political subdivision thereof, including the Borrower, shall be obligated to pay the principal of or premium, if any, or interest on this Bond or other costs incident thereto except from the revenues pledged therefor, and neither the faith and credit nor the taxing power of the Commonwealth of Virginia or any political subdivision thereof, including the Borrower, is pledged to the payment of the principal of or premium, if any, or interest on this Bond or other costs incident thereto.

This Bond shall be a Parity Obligation and a VRA Subordinate Obligation and secured on parity with all other all Parity Obligations and VRA Subordinate Obligations heretofore and hereafter issued and outstanding under the Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016 (the "Trust Agreement"), by and between the Borrower and the predecessor in trust to The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"), and shall be senior to all Junior Indebtedness (as defined in the Trust Agreement), to the extent and in the manner set forth therein.

This Bond is being issued pursuant to the terms of the Resolution and the Financing Agreement to evidence a loan from the Authority, as Administrator of the Fund, to the Borrower to finance Capital Improvement Program Costs (as defined in the Trust Agreement).

This Bond is subject to optional prepayment to the extent and on the terms set forth in the Resolution and the Financing Agreement.

If an Event of Default (as defined in the Financing Agreement) occurs, the principal of and accrued interest on this Bond may be declared immediately due and payable by the holder by written notice to the Borrower.

The obligations of the Borrower under this Bond shall terminate when all amounts due and to become due pursuant to this Bond have been paid in full.

All provisions of this Bond are subject to the terms of the Trust Agreement, and all capitalized terms used herein and not otherwise defined herein shall have the meanings assigned thereto by the Resolution and the Financing Agreement.

All acts, conditions and things required to happen, exist or be performed precedent to and in the issuance of this Bond have happened, exist and have been performed.

IN WITNESS WHEREOF, the Borrower has caused this Bond to be signed by the Chairman of its Commission and its seal to be impressed hereon and attested by the Secretary of its Commission all as of _____, 2017.

HAMPTON ROADS SANITATION DISTRICT

By: _____
Chairman of the Hampton Roads Sanitation
District Commission

(SEAL)
ATTEST:

Secretary of the Hampton Roads
Sanitation District Commission

SCHEDULE OF PRINCIPAL DISBURSEMENTS

The amount and date of disbursements of the principal of the Bond to which this Schedule is attached, not to exceed \$_____, shall be entered hereon by the authorized representative of Virginia Resources Authority when each such disbursement of principal is made to the Borrower.

<u>Date</u>	<u>Amount</u>	<u>Cumulative Amount</u>	<u>Authorized Signature</u>
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
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_____	\$ _____	\$ _____	_____
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_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____

AMORTIZATION SCHEDULE

**SUPPLEMENT TO
MASTER FINANCING AGREEMENT**

dated as of _____ 1, 2017

BETWEEN

VIRGINIA RESOURCES AUTHORITY,

**as Administrator of the
Virginia Water Facilities Revolving Fund**

AND

HAMPTON ROADS SANITATION DISTRICT

Virginia Resources Authority
Virginia Water Facilities Revolving Fund

**Lucas Creek Interceptor Project
Loan No. C-515605-02**

SUPPLEMENT TO MASTER FINANCING AGREEMENT

THIS SUPPLEMENT TO MASTER FINANCING AGREEMENT (this “Supplement”) is made as of _____ 1, 2017, between the **VIRGINIA RESOURCES AUTHORITY**, a public body corporate and a political subdivision of the Commonwealth of Virginia (the “Authority”), as Administrator of the **VIRGINIA WATER FACILITIES REVOLVING FUND**, and the **HAMPTON ROADS SANITATION DISTRICT**, a political subdivision of the Commonwealth of Virginia (the “Borrower”), acting by and through the **HAMPTON ROADS SANITATION DISTRICT COMMISSION**, the governing body of the Borrower (the “Commission”).

A. The Authority and the Borrower previously entered into a Master Financing Agreement, dated as of February 1, 2016, as previously amended by a First Amendment to Master Financing Agreement, dated as of August 1, 2016 (together, the “Master Financing Agreement”), with respect to certain loans from the Fund evidenced by the Direct Local Bonds the Borrower issued and sold to the Authority, as Administrator of the Fund, and the Leveraged Local Bonds the Borrower issued and sold to (i) the Authority and assigned to the Trustee or (ii) the Trustee on behalf of the Authority, pursuant to the Authority’s Master Indenture.

B. The Borrower has requested an additional loan from the Fund and will evidence its obligation to repay such loan by the 2017 Lucas Creek Local Bond (as defined below) the Borrower will issue and sell to the Authority, as Administrator of the Fund.

C. The Borrower will use the proceeds of the sale of the 2017 Lucas Creek Local Bond to the Authority to finance that portion of the 2017 Lucas Creek Project Costs (as defined below) not being paid from other sources, all as further set forth in the 2017 Lucas Creek Project Budget (as defined below).

D. The Authority and the Borrower desire to supplement the Master Financing Agreement with respect to the 2017 Lucas Creek Local Bond, as set forth herein.

E. The Authority and the Borrower hereby set forth certain supplements to the Master Financing Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the Authority and the Borrower covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.1 Definitions. The capitalized terms contained in this Supplement and not defined above shall have the meanings set forth below unless the context requires otherwise and any capitalized terms not otherwise defined herein shall have the meaning assigned to such terms in the Master Financing Agreement:

“Agreement” means the Master Financing Agreement between the Authority and the Borrower, as supplemented, amended or modified by one or more Supplemental Financing Agreements.

“Annual Administrative Fee” means the portion of the Cost of Funds, if any, specified in Section 5.1 and Exhibit G payable as an annual fee for administrative and management services attributable to the 2017 Lucas Creek Local Bond.

“Authorized Representative” means any member, official or employee of the Borrower authorized by resolution, ordinance or other official act of the Commission to perform the act or sign the document in question.

“Borrower” means the Hampton Roads Sanitation District, a political subdivision of the Commonwealth of Virginia, created by and acting under Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended by Chapter 584 of the Acts of Assembly of Virginia of 1962, Chapter 520 of the Acts of Assembly of Virginia of 1964, Chapter 112 of the Acts of Assembly of Virginia of 1974, Chapter 637 of the Acts of Assembly of Virginia of 1976, Chapter 271 of the Acts of Assembly of Virginia of 1977, Chapter 30 of the Acts of Assembly of Virginia of 1987, Chapter 350 of the Acts of Assembly of Virginia of 1989, Chapter 153 of the Acts of Assembly of Virginia of 1990, Chapter 210 of the Acts of Assembly of Virginia of 1998, Chapter 120 of the Acts of Assembly of Virginia of 2004, Chapter 574 of the Acts of Assembly of Virginia of 2008, Chapter 724 of the Acts of Assembly of Virginia of 2012 and Chapter 218 of the Acts of Virginia of 2017, as such acts may be further amended from time to time.

“Cost of Funds” means interest, including the part thereof allocable to the Annual Administrative Fee, if any, payable as set forth in Section 5.1 and Exhibit G with respect to the 2017 Lucas Creek Local Bond.

“Direct Local Bonds” means, collectively, the bonds and any allonges thereto described in Exhibit F-1 issued by the Borrower to the Authority, including the 2017 Lucas Creek Local Bond.

“Local Bonds” means, collectively, the Direct Local Bonds and the Leveraged Local Bonds.

“2017 Lucas Creek Closing Date” means the date of delivery of the 2017 Lucas Creek Local Bond to the Authority.

“2017 Lucas Creek Commitment Letter” shall mean the commitment letter from the Authority to the Borrower with respect to the 2017 Lucas Creek Local Bond, and all extensions, modifications and amendments thereto.

“2017 Lucas Creek Local Bond” means the Direct Local Bond in substantially the form attached to this Financing Agreement as Exhibit A issued by the Borrower to the Authority, as Administrator of the Fund, pursuant to the Agreement.

“2017 Lucas Creek Local Bond Proceeds” means the aggregate proceeds from the sale of the 2017 Lucas Creek Local Bond pursuant to this Supplement.

“2017 Lucas Creek Local Bond Resolution” means all resolutions adopted by the Commission approving the transactions contemplated by and authorizing the execution and delivery of this Supplement and the execution, issuance, and delivery of the 2017 Lucas Creek Local Bond.

“2017 Lucas Creek Project” means the particular project described in Exhibit B, the costs of the acquisition, construction, improving or equipping of which are to be financed in whole or in part with the 2017 Lucas Creek Local Bond Proceeds.

“2017 Lucas Creek Project Budget” means the budget for the financing of the 2017 Lucas Creek Project, a copy of which is attached as Exhibit C, with such changes therein as may be approved in writing by the Authority.

“2017 Lucas Creek Project Costs” means the costs of the acquisition, construction, improving or equipping of the 2017 Lucas Creek Project, as further described in the 2017 Lucas Creek Project Budget, and such other costs as may be approved in writing by the Authority, provided such costs are permitted by the VWFRF Act.

“Parity Bonds” means any of the Borrower’s bonds, notes or other evidences of indebtedness, as further described on Exhibit F-3 or issued under or secured by the Parity Trust Agreement after the date hereof, that are secured on parity by a pledge of Net Revenues Available for Debt Service, including the 2017 Lucas Creek Local Bond.

“Senior Bonds” means any of the Borrower’s bonds, notes or other evidences of indebtedness; as further described on Exhibit F-3 or issued under or secured by the Senior Trust Agreement after the date hereof; that are secured by or payable from a pledge of Net Revenues all or any portion of which is senior to the pledge of Net Revenues Available for Debt Service securing the Parity Bonds.

“Supplement” means this Supplement to Master Financing Agreement, dated as of _____ 1, 2017, supplementing, amending or modifying the provisions of the Agreement entered into by the Authority and the Borrower.

“Taxable Leveraged Local Bonds” means, collectively, the bonds and any allonges thereto described in Exhibit F-2 as the Taxable Leveraged Local Bonds, issued by the Borrower to (i) the Authority and assigned to the Trustee or (ii) the Trustee on behalf of the Authority.

“Tax-Exempt Leveraged Local Bonds” means, collectively, the bonds and any allonges thereto described in Exhibit F-2 as the Tax-Exempt Leveraged Local Bonds, issued by the Borrower to (i) the Authority and assigned to the Trustee or (ii) the Trustee on behalf of the Authority.

ARTICLE II

REPRESENTATIONS

Section 2.1. Representations by Borrower. The Borrower makes the following representations as the basis for its undertakings under this Supplement:

(a) The Borrower is a duly created and validly existing “local government” (as defined in Section 62.1-224 of the VWFRF Act) of the Commonwealth of Virginia and is vested with the rights and powers conferred upon it by Virginia law.

(b) The Borrower has full right, power and authority to (i) adopt the 2017 Lucas Creek Local Bond Resolution and execute and deliver this Supplement and the other documents related thereto, (ii) issue, sell and deliver the 2017 Lucas Creek Local Bond to the Authority, as Administrator of the Fund, (iii) own and operate the System, (iv) construct, acquire or equip the 2017 Lucas Creek Project and finance or refinance the 2017 Lucas Creek Project Costs by borrowing money for such purpose pursuant to this Supplement and the issuance of the 2017 Lucas Creek Local Bond, and (v) carry out and consummate all of the transactions contemplated by the 2017 Lucas Creek Local Bond Resolution, this Supplement and the 2017 Lucas Creek Local Bond.

(c) This Supplement and the 2017 Lucas Creek Local Bond were duly authorized by the 2017 Lucas Creek Local Bond Resolution and this Supplement and the 2017 Lucas Creek Local Bond are in substantially the same form as presented to the governing body of the Borrower at its meeting at which the 2017 Lucas Creek Local Bond Resolution was adopted.

(d) All governmental permits, licenses, registrations, certificates, authorizations and approvals required to have been obtained as of the date of the delivery of this Supplement have been obtained for (i) the Borrower’s adoption of the 2017 Lucas Creek Local Bond Resolution, (ii) the execution and delivery by the Borrower of this Supplement and the 2017 Lucas Creek Local Bond, (iii) the performance and enforcement of the obligations of the Borrower thereunder, (iv) the acquisition, construction, improving, equipping, occupation, operation and use of the 2017 Lucas Creek Project, and (v) the operation and use of the System and the performance by the Borrower of its obligations under the Senior Trust Agreement and the Parity Trust Agreement. The Borrower knows of no reason why any such required governmental permits, licenses, registrations, certificates, authorizations and approvals not obtained as of the date hereof cannot be obtained as needed.

(e) The Agreement, the Senior Trust Agreement, the Parity Trust Agreement and the 2017 Lucas Creek Local Bond have been executed and delivered by duly authorized officials of the Borrower and constitute the legal, valid and binding obligations of the Borrower enforceable against the Borrower in accordance with their terms.

(f) The 2017 Lucas Creek Local Bond has been executed and delivered by duly authorized officials of the Borrower and constitutes a legal, valid and binding limited obligation of the Borrower enforceable against the Borrower in accordance with its terms.

(g) The issuance of the 2017 Lucas Creek Local Bond and the execution and delivery of this Supplement and the performance by the Borrower of its obligations thereunder are within the powers of the Borrower and do not conflict with, or constitute a breach or result in a violation of, (i) to the best of the Borrower's knowledge, any Federal or Virginia constitutional or statutory provision, including the Borrower's charter or articles of incorporation, if any, (ii) any agreement or other instrument to which the Borrower is a party or by which it is bound or (iii) any order, rule, regulation, decree or ordinance of any court, government or governmental authority having jurisdiction over the Borrower or its property.

(h) The Borrower is not in default in the payment of the principal of or interest on any of its indebtedness for borrowed money and is not in default under any instrument under and subject to which any indebtedness for borrowed money has been incurred. No event or condition has happened or existed, or is happening or existing, under the provisions of any such instrument, including but not limited to the Agreement, the Senior Trust Agreement and the Parity Trust Agreement, which constitutes, or which, with notice or lapse of time, or both, would constitute an event of default thereunder.

(i) The Borrower (i) to the best of the Borrower's knowledge, is not in violation of any existing law, rule or regulation applicable to it in any way which would have a material adverse effect on its financial condition or its ability to perform its obligations under the Agreement, the Senior Trust Agreement, the Parity Trust Agreement or the 2017 Lucas Creek Local Bond and (ii) is not in default under any indenture, mortgage, deed of trust, lien, lease, contract, note, order, judgment, decree or other agreement, instrument or restriction of any kind to which the Borrower is a party or by which it is bound or to which any of its assets is subject, which would have a material adverse effect on its financial condition or its ability to perform its obligations under the Agreement, the Senior Trust Agreement, the Parity Trust Agreement or the 2017 Lucas Creek Local Bond. The execution and delivery by the Borrower of this Supplement or the 2017 Lucas Creek Local Bond and the compliance with the terms and conditions thereof does not conflict with or result in a breach of or constitute a default under any of the foregoing.

(j) There are not pending or, to the best of the Borrower's knowledge, threatened against the Borrower, any actions, suits, proceedings or investigations of a legal, equitable, regulatory, administrative or legislative nature, (i) affecting the creation, organization or existence of the Borrower or the title of its officers to their respective offices, (ii) seeking to prohibit, restrain or enjoin the approval, execution, delivery or performance of the 2017 Lucas Creek Local Bond Resolution, the Agreement, the Senior Trust Agreement, the Parity Trust Agreement or the 2017 Lucas Creek Local Bond or the issuance or delivery of the 2017 Lucas Creek Local Bond, (iii) in any way contesting or affecting the validity or enforceability of the 2017 Lucas Creek Local Bond Resolution, the Agreement, the Senior Trust Agreement, the Parity Trust Agreement, the 2017 Lucas Creek Local Bond or any agreement or instrument relating to any of the foregoing, (iv) in which a judgment, order or resolution may have a material adverse effect on the Borrower or its business, assets, condition (financial or otherwise), operations or prospects or on its ability to perform its obligations under the 2017 Lucas Creek Local Bond Resolution, the Agreement, the Senior Trust Agreement, the Parity Trust Agreement or the 2017 Lucas Creek Local Bond, or (v) the undertaking of the 2017 Lucas Creek Project. Notwithstanding the preceding sentence, the Borrower references the ongoing matter described in Exhibit H. The status of the matter is essentially the same as described herein.

(k) There has been no change in the Borrower's AA ratings by S&P Global Ratings and Fitch Ratings, respectively, on its debt outstanding under the Parity Trust Agreement;

(l) To the best of the Borrower's knowledge, the Borrower is in material compliance with its financial policies in effect as of June 30, 2016.

(m) No material adverse change has occurred in the financial condition of the Borrower as indicated in the financial statements, applications and other information furnished to the Authority.

(n) There have been no defaults by any contractor or subcontractor under any contract made by the Borrower in connection with the construction, improving or equipping of the 2017 Lucas Creek Project.

(o) Except as may otherwise be approved by the Authority or permitted by the terms of the Senior Trust Agreement or the Parity Trust Agreement or the terms hereof, the 2017 Lucas Creek Project and the System at all times will be owned by the Borrower and will not be operated or controlled by any other entity or person.

(p) There is no indebtedness of the Borrower secured by or payable from a pledge of Net Revenues with respect to the Senior Bonds or Net Revenues Available for Debt Service with respect to the Parity Bonds on a parity with or prior to the lien of the pledge of Revenues securing the 2017 Lucas Creek Local Bond except any Parity Bonds or Senior Bonds set forth on Exhibit F-3.

(q) No Event of Default or Default has occurred and is continuing.

ARTICLE III

ISSUANCE AND DELIVERY OF THE 2017 LUCAS CREEK LOCAL BOND

Section 3.1. Loan to Borrower and Purchase of the 2017 Lucas Creek Local Bond.

The Borrower agrees to borrow from the Authority and the Authority agrees to lend to the Borrower, from the Fund, the principal amount equal to the sum of the principal disbursements made pursuant to Section 4.1, but not to exceed \$_____, for the purposes herein set forth. The Borrower's obligation shall be evidenced by the 2017 Lucas Creek Local Bond, which shall be in substantially the form of Exhibit A attached hereto and made a part hereof and delivered to the Authority on the 2017 Lucas Creek Closing Date. The 2017 Lucas Creek Local Bond shall bear a Cost of Funds, mature and be payable as hereinafter provided.

Section 3.2. Conditions Precedent to Purchase of the 2017 Lucas Creek Local Bond. The Authority shall not be required to make the loan to the Borrower and purchase the 2017 Lucas Creek Local Bond unless the Authority shall have received the following, all in form and substance satisfactory to the Authority:

- (a) The 2017 Lucas Creek Local Bond.
- (b) A certified copy of the 2017 Lucas Creek Local Bond Resolution.
- (c) A certificate of appropriate officials of the Borrower as to the matters set forth in Section 2.1 and such other matters as the Authority may reasonably require.
- (d) A closing certificate from the Department certifying that the 2017 Lucas Creek Project is in compliance with all federal and state laws and project requirements applicable to the Fund and evidencing the Board's concurrence in the closing of the loan with the Borrower.
- (e) A certificate of the Consulting Engineer estimating the total 2017 Lucas Creek Project Costs to be financed with the 2017 Lucas Creek Local Bond Proceeds, which estimate is in an amount and otherwise compatible with the financing plan described in the 2017 Lucas Creek Project Budget.
- (f) A certificate, including supporting documentation, of the District Engineer or the General Manager to the effect that in the opinion of the District Engineer or the General Manager (i) the 2017 Lucas Creek Project will be a part of the System, (ii) the 2017 Lucas Creek Local Bond Proceeds and funds available from the other sources specified in the 2017 Lucas Creek Project Budget will be sufficient to pay the estimated 2017 Lucas Creek Project Costs, and (iii) during the first two complete Fiscal Years of the Borrower following completion of the 2017 Lucas Creek Project, the projected Net Revenues Available for Debt Service will satisfy the Rate Covenant set forth in Section 705 of the Parity Trust Agreement with respect to the Parity Bonds. In providing this certificate, the District Engineer or the General Manager may take into consideration future System rate increases, provided that such rate increases have been duly approved by the governing body of the Borrower and any other person or entity required to give approval for the rate increase to become effective. In addition, the District Engineer or the General Manager may take into consideration additional future revenues to be derived under existing contractual arrangements entered into by the Borrower and from reasonable estimates of growth in the consumer base of the Borrower.
- (g) A certificate of the District Engineer as to the date the Borrower is expected to complete the acquisition, construction, improving and equipping of the 2017 Lucas Creek Project.
- (h) Evidence satisfactory to the Authority that all governmental permits, licenses, registrations, certificates, authorizations and approvals for the 2017 Lucas Creek Project required to have been obtained as of the date of the delivery of this Supplement have been obtained and a statement of the District Engineer that he knows of no reason why any future required governmental permits, licenses, registrations, certificates, authorizations and approvals cannot be obtained as needed.
- (i) Evidence satisfactory to the Authority that the Borrower has obtained or has made arrangements satisfactory to the Authority to obtain any funds or other financing required to provide funds in excess of the 2017 Lucas Creek Local Bond Proceeds for the 2017 Lucas Creek Project as contemplated in the 2017 Lucas Creek Project Budget.

(j) Evidence satisfactory to the Authority that the Borrower has performed and satisfied all of the terms and conditions contained in this Supplement to be performed and satisfied by it as of such date.

(k) An Opinion of Bond Counsel, substantially in the form of Exhibit D, addressed to the Fund and the Authority.

(l) An opinion of counsel to the Borrower in form and substance reasonably satisfactory to the Authority.

(m) Evidence satisfactory to the Authority that the Borrower has complied with the insurance provisions set forth in the Agreement.

(n) Copies of any and all documents, certificates or instruments required to be delivered to the Local Trustee pursuant to Section 704 of the Parity Trust Agreement as a condition precedent to the issuance of the 2017 Lucas Creek Local Bond, and such other evidence satisfactory to the Authority that the 2017 Lucas Creek Local Bond will be issued as VRA Subordinate Obligations under and as defined in the Parity Trust Agreement on a parity with the Parity Bonds.

(o) Such other documentation, certificates and opinions as the Authority, the Board or the Department may reasonably require.

ARTICLE IV

USE OF LOCAL BOND PROCEEDS AND CONSTRUCTION OF 2017 LUCAS CREEK PROJECT

Section 4.1. Application of Proceeds.

(a) The Borrower agrees to apply the 2017 Lucas Creek Local Bond Proceeds solely and exclusively to the payment, or to the reimbursement of the Borrower for the payment, of 2017 Lucas Creek Project Costs and further agrees to exhibit to the Department or the Authority receipts, vouchers, statements, bills of sale or other evidence of the actual payment of such 2017 Lucas Creek Project Costs. The Authority shall disburse money from the Fund to or for the account of the Borrower not more frequently than once each calendar month (unless otherwise agreed by the Authority and the Borrower) upon receipt by the Authority (with a copy to be furnished to the Department) of the following:

(1) A requisition (upon which the Authority, the Board and the Department shall be entitled to rely) signed by an Authorized Representative and containing all information called for by, and otherwise being in the form of, Exhibit E to this Supplement;

(2) If any requisition includes an item for payment for labor or to contractors, builders or materialmen,

(i) a certificate, signed by the District Engineer, stating that such work was actually performed or such materials, supplies or equipment were

actually furnished or installed in or about the construction of the 2017 Lucas Creek Project; and

(ii) a certificate, signed by an Authorized Representative, stating either that such materials, supplies or equipment are not subject to any lien or security interest or that such lien or security interest will be released or discharged upon payment of the requisition.

Upon receipt of each such requisition and accompanying certificate or certificates and approval thereof by the Department, the Authority shall disburse 2017 Lucas Creek Local Bond Proceeds hereunder to or for the account of the Borrower in accordance with such requisition in an amount and to the extent approved by the Department and shall note the date and amount of each such disbursement on a schedule of principal disbursements to be included on the 2017 Lucas Creek Local Bond. The Authority shall have no obligation to disburse any such 2017 Lucas Creek Local Bond Proceeds if the Borrower is in default hereunder nor shall the Department have any obligation to approve any requisition if the Borrower is not in compliance with the terms of the Agreement.

(b) Upon receipt of each such requisition and accompanying certificate or certificates and approval thereof by the Department, the Authority shall disburse 2017 Lucas Creek Local Bond Proceeds hereunder to or for the account of the Borrower in accordance with such requisition in an amount and to the extent approved by the Department and shall note the date and amount of each such disbursement on a schedule of principal disbursements to be included on the 2017 Lucas Creek Local Bond. The Authority shall have no obligation to arrange for the disbursement of any such 2017 Lucas Creek Local Bond Proceeds if the Borrower is in default hereunder nor shall the Department have any obligation to approve any requisition if the Borrower is not in compliance with the terms of the Agreement.

(c) The Borrower shall comply with all applicable laws of the Commonwealth of Virginia, including but not limited to, the Virginia Public Procurement Act, as amended, regarding the awarding and performance of public construction contracts. Except as may otherwise be approved by the Department, disbursements shall be held at ninety-five percent (95%) of the maximum authorized amount of the 2017 Lucas Creek Local Bond to ensure satisfactory completion of the 2017 Lucas Creek Project. Upon receipt from the Borrower of the certificate specified in Section 4.2 and a final requisition detailing all retainages to which the Borrower is then entitled, the Authority, to the extent approved by the Department and subject to the provisions of this Section and Section 4.2, will arrange for the disbursement of Local Bond Proceeds to or for the account of the Borrower to the extent of such approval.

The Authority shall have no obligation to disburse Local Bond Proceeds in excess of the amount necessary to pay for approved Project Costs. If principal disbursements up to the maximum authorized amount of the 2017 Lucas Creek Local Bond are not made, installments due on the 2017 Lucas Creek Local Bond shall be reduced in accordance with Section 5.1.

Section 4.2. Agreement to Accomplish Project. The Borrower agrees to cause the 2017 Lucas Creek Project to be acquired, constructed, expanded, renovated or equipped as described in Exhibit B and in accordance with the 2017 Lucas Creek Project Budget and the

plans, specifications and designs accepted by the District Engineer and approved by the Department. The Borrower shall use its best efforts to complete the 2017 Lucas Creek Project by the date set forth in the certificate provided to the Authority pursuant to Section 3.2(f). All plans, specifications and designs shall be approved by all applicable regulatory agencies. The Borrower agrees to maintain complete and accurate books and records of the 2017 Lucas Creek Project Costs and permit the Authority and the Department through their duly authorized representatives to inspect such books and records at any reasonable time in accordance with Section 8.4 of the Master Financing Agreement. The Borrower and the Authority, with the consent of the Department, may amend the description of the 2017 Lucas Creek Project set forth in Exhibit B.

When the 2017 Lucas Creek Project has been completed, the Borrower shall promptly deliver to the Authority and the Department a certificate signed by an Authorized Representative of the Borrower and by the District Engineer stating (i) that the 2017 Lucas Creek Project has been completed substantially in accordance with this Section, the plans and specifications as amended from time to time, as approved by the Department, and in substantial compliance with all material applicable laws, ordinances, rules and regulations, (ii) the date of such completion, (iii) that all certificates of occupancy or other material permits necessary for the 2017 Lucas Creek Project's use, occupancy and operation have been issued or obtained, and (iv) the amount, if any, to be reserved for payment of 2017 Lucas Creek Project Costs.

Section 4.3. Permits. The Borrower, at its sole cost and expense, shall comply with, and shall obtain all permits, consents and approvals required by local, state or federal laws, ordinances, rules, regulations or requirements in connection with the acquisition, construction, improving, equipping, occupation, operation or use of the 2017 Lucas Creek Project. The Borrower shall, upon request, promptly furnish to the Authority and the Department copies of all such permits, consents and approvals. The Borrower shall also comply with all lawful program or procedural guidelines or requirements duly promulgated and amended from time to time by the Department in connection with the acquisition, construction, improving, equipping, occupation, operation or use of projects financed under the Act, including, but not limited to, those pertaining to the adoption of any requisite sewer use ordinance. The Borrower shall also comply in all respects with all applicable federal, state and local laws, regulations and other requirements relating to or arising out of or in connection with the 2017 Lucas Creek Project and the funding thereof from the Fund. Where noncompliance with such requirements is determined by the Authority or the Board, the issue shall be referred to the proper governmental authority or agency for consultation or enforcement action.

Section 4.4. Construction Contractors. Each construction contractor employed in the accomplishment of the 2017 Lucas Creek Project shall be required in the construction contract to furnish a performance bond and a payment bond each in an amount equal to one hundred percent (100%) of the particular contract price. Such bonds shall list the Borrower, the Fund, the Authority, the Department and the Board as beneficiaries. Each contractor shall be required to maintain during the construction period covered by the particular construction contract builder's risk insurance, workers' compensation insurance, public liability insurance, property damage insurance and vehicle liability insurance in amounts and on terms satisfactory to the District Engineer. Upon request of the Authority, the Department or the Board, the Borrower shall cause

each contractor to furnish evidence of such bonds and insurance to the Authority, the Board or the Department.

Section 4.5. Engineering Services. The Borrower shall designate a District Engineer to provide engineering services covering the operation of the System and the supervision and inspection of the construction of the 2017 Lucas Creek Project. The District Engineer shall certify to the Authority and the Department as to the various stages of the completion of the 2017 Lucas Creek Project as disbursements of Local Bond Proceeds are requested and shall upon completion of the 2017 Lucas Creek Project provide to the Fund, the Authority and the Department the certificates required by Sections 4.1 and 4.2.

Section 4.6. Borrower Required to Complete Project. If the 2017 Lucas Creek Local Bond Proceeds, together with amounts made available to the Borrower pursuant to the Funding Agreement, are not sufficient to pay in full the cost of the 2017 Lucas Creek Project, the Borrower will complete the 2017 Lucas Creek Project at its own expense and shall not be entitled to any reimbursement therefor from the Fund, the Authority or the Department or any abatement, diminution or postponement of the Borrower's payments under the 2017 Lucas Creek Local Bond or the Agreement.

Section 4.7. Davis-Bacon Act. The Borrower agrees to comply with the Davis-Bacon Act and related acts, as amended, with respect to the 2017 Lucas Creek Project and require that all laborers and mechanics employed by contractors and subcontractors for the 2017 Lucas Creek Project shall be paid wages at rates not less than those prevailing on projects of a similar character, as determined by the United States Secretary of Labor in accordance with Section 513 of the Federal Water Pollution Control Act, as amended.

Section 4.8. American Iron and Steel. The Borrower agrees to comply with Section 608 of the Federal Water Pollution Control Act and related acts, as amended, with respect to the 2017 Lucas Creek Project and require that all iron and steel products used for the 2017 Lucas Creek Project are to be produced in the United States as required under such act. The term "iron and steel products" is defined to mean the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete and construction materials.

Section 4.9. Fiscal Sustainability Plan. The Borrower agrees to develop and implement a fiscal sustainability plan ("FSP") to the reasonable satisfaction of the Department that includes but is not limited to: (1) an inventory of critical assets that are part of the treatment works, (2) evaluation of the condition and performance of inventoried assets or asset groupings, (3) certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan, and (4) a plan for maintaining, repairing, funding, and as necessary, replacing the treatment works. Except as may otherwise be approved by the Department, disbursements shall be held at eighty percent (80%) of the maximum authorized amount of the 2017 Lucas Creek Local Bond until a draft FSP is submitted to the Department and at ninety-five percent (95%) of the maximum authorized amount of the 2017 Lucas Creek Local Bond until a final FSP is submitted and approved by the Department.

ARTICLE V

PAYMENTS

Section 5.1. Payment of 2017 Lucas Creek Local Bond. The 2017 Lucas Creek Local Bond shall be dated the 2017 Lucas Creek Closing Date. The Cost of Funds of the 2017 Lucas Creek Local Bond shall be computed on the disbursed principal balance thereof from the date of each disbursement at the rate set forth on Exhibit G with respect to the 2017 Lucas Creek Local Bond. Principal and the Cost of Funds due under the 2017 Lucas Creek Local Bond shall be payable in equal installments as set forth on Exhibit G with respect to the 2017 Lucas Creek Local Bond. All amounts due under the Agreement and the 2017 Lucas Creek Local Bond shall be due and payable in full with the final installment of principal and Cost of Funds due as set forth on Exhibit G with respect to the 2017 Lucas Creek Local Bond. Each installment shall be applied first to payment of the Cost of Funds accrued and unpaid to the payment date and then to principal. If principal disbursements up to the maximum authorized amount of the 2017 Lucas Creek Local Bond are not made, the principal amount due on the 2017 Lucas Creek Local Bond shall not include such undisbursed amount. However, unless the Borrower and the Authority agree otherwise in writing, until all amounts due hereunder and under the 2017 Lucas Creek Local Bond shall have been paid in full, less than full disbursement of the maximum authorized amount of the 2017 Lucas Creek Local Bond shall not postpone the due date of any semi-annual installment due on the 2017 Lucas Creek Local Bond, or change the amount of such installment unless the principal amount due under the 2017 Lucas Creek Local Bond is less than the amount of such installment. If any installment of principal or the Cost of Funds on the 2017 Lucas Creek Local Bond is not paid within ten (10) days after its due date, the Borrower agrees to pay the Authority a late payment charge in an amount equal to five percent (5.0%) of the overdue installment on the 2017 Lucas Creek Local Bond.

ARTICLE VI

PREPAYMENTS

Section 6.1. Prepayment of 2017 Lucas Creek Local Bond. Upon completion of the 2017 Lucas Creek Project and after giving at least ten (10) days' written notice to the Authority, the Borrower may prepay the 2017 Lucas Creek Local Bond at any time, in whole or in part and without penalty. Such written notice shall specify the date on which the Borrower will make such prepayment and whether the 2017 Lucas Creek Local Bond will be prepaid in full or in part, and if in part, the principal amount to be prepaid. Any such partial prepayment shall be applied against the principal amount outstanding under the 2017 Lucas Creek Local Bond but shall not postpone the due date of any subsequent payment on the 2017 Lucas Creek Local Bond, or change the amount of such installment, unless the Authority and the Borrower agree otherwise in writing.

ARTICLE VII

MISCELLANEOUS

Section 7.1. Successors and Assigns. This Supplement shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 7.2. Applicable Law. This Supplement shall be governed by the laws of the Commonwealth of Virginia.

Section 7.3. Authorization of Supplement. All terms, covenants, conditions and agreements of the Master Financing Agreement shall apply with full force and effect to the 2017 Lucas Creek Local Bond, except as otherwise provided herein.

Section 7.4. Ratification of Master Financing Agreement. All of the representations and warranties of the Borrower contained in Article II of the Master Financing Agreement are true and correct as of the date hereof. All terms of the Master Financing Agreement except as amended or modified by the terms of this Supplement are hereby reaffirmed, ratified and confirmed.

Section 7.5. Severability. If any clause, provision or section of this Supplement shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or section shall not affect the remainder of this Supplement which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Supplement. If any agreement or obligation contained in this Supplement is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Authority and the Borrower, as the case may be, only to the extent permitted by law.

Section 7.6. Headings. The headings of the several articles and sections of this Supplement are inserted for convenience only and do not comprise a part of this Supplement.

Section 7.7. Term of Supplement. This Supplement shall be effective upon its execution and delivery, provided that the 2017 Lucas Creek Local Bond previously or simultaneously has been executed and delivered. Except as otherwise specified, the Borrower's obligations under the 2017 Lucas Creek Local Bond and this Supplement shall expire upon payment in full of the 2017 Lucas Creek Local Bond and all other amounts payable by the Borrower under the Agreement.

Section 7.8. 2017 Lucas Creek Commitment Letter. The 2017 Lucas Creek Commitment Letter is an integral part of this Supplement and shall survive closing hereunder.

Section 7.9 Counterparts. This Supplement may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

WITNESS the following signatures, all duly authorized.

**VIRGINIA RESOURCES AUTHORITY, as
Administrator of the Virginia Water Facilities
Revolving Fund**

By: _____

Title: _____

HAMPTON ROADS SANITATION DISTRICT

By: _____

Title: _____

EXHIBIT A
Form of Local Bond
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

[To Come from Borrower's Bond Counsel]

EXHIBIT B
2017 Lucas Creek Project Description
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

The 2017 Lucas Creek Project includes financing the replacement of the Lucas Creek-Woodhaven interceptor force main, along with related expenses.

EXHIBIT C
2017 Lucas Creek Project Budget
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

[To Come]

EXHIBIT D
Opinion of Bond Counsel
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

[To Come from Borrower's Bond Counsel]

EXHIBIT E
Form of Requisition
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

(To Be on Borrower's Letterhead)

[Date]

Walter A. Gills, Program Manager
Construction Assistance Program
Department of Environmental Quality
P. O. Box 1105
Richmond, Virginia 23218

Re: Hampton Roads Sanitation District
Loan No. C-515605-02

Dear Mr. Gills:

This requisition, Number _____, is submitted in connection with the Master Financing Agreement, dated as of March 1, 2016, between the Authority, as Administrator of the Fund, and the Borrower, as amended to the date hereof, and as supplemented by the Supplement to Master Financing Agreement, dated as of _____ 1, 2017 (as so amended and supplemented, the "Agreement"), between the Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, and the Hampton Roads Sanitation District (the "Borrower"). Unless otherwise defined in this requisition, all capitalized terms used herein shall have the meaning set forth in the Agreement. The undersigned Authorized Representative of the Borrower hereby requests disbursement of loan proceeds under the Agreement in the amount of \$_____, for the purposes of payment of the 2017 Lucas Creek Project Costs as set forth in Schedule 1 attached hereto.

Attached hereto are invoices relating to the items for which payment is requested.

The undersigned certifies that (a) the amounts requested by the requisition will be applied solely and exclusively to the payment, or to the reimbursement of the Borrower for the payment, of the 2017 Lucas Creek Project Costs, and (b) any materials, supplies or equipment covered by this requisition are not subject to any lien or security interest or such lien or security interest will be released upon payment of the requisition. In addition, to the extent applicable, the undersigned certifies that the Borrower has conducted adequate oversight for compliance with the Davis-Bacon Act and related acts through (a) the review of payrolls and associated certifications, (b) the conducting of employee interviews, and (c) the posting of all wage determinations and additional classifications (as appropriate) on the work site, and through this oversight, the Borrower has determined to the best of its ability that the 2017 Lucas Creek Project complies with the requirements of the Davis-Bacon Act and related acts. The Borrower further certifies that all

products included in this request satisfy the appropriate provisions of the American Iron and Steel requirements included in the Agreement.

The undersigned further certifies that (a) no Event of Default or Default has occurred and is continuing, and no condition exists which, with the passing of time or with the giving of notice or both, would constitute an Event of Default hereunder, and (b) the representations and warranties of the Borrower contained in the Agreement are true, correct and complete and the Borrower has performed all of its obligations thereunder required to be performed as of the date hereof.

This requisition includes an accompanying Certificate of the Consulting Engineer as to the performance of the work.

Very truly yours,

By: _____

Its: _____

Attachments

cc: DEQ Regional Engineer (with all attachments)

CERTIFICATE OF THE CONSULTING ENGINEER
FORM TO ACCOMPANY REQUEST FOR DISBURSEMENT

This Certificate is being executed and delivered in connection with Requisition Number ____, dated _____, 20__, submitted by the Hampton Roads Sanitation District (the “Borrower”), pursuant to the Master Financing Agreement, dated as of March 1, 2016, between the Authority, as Administrator of the Fund, and the Borrower, as amended to the date hereof, and as supplemented by the Supplement to Master Financing Agreement, dated as of _____ 1, 2017 (as so amended and supplemented, the “Agreement”), between the Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund (the “Authority”), and the Borrower. Capitalized terms used herein shall have the same meanings set forth in the Agreement.

The undersigned Consulting Engineer for the Borrower hereby certifies to the Authority that, insofar as the amounts covered by this Requisition include payments for labor or to contractors, builders or materialmen, such work was actually performed or such materials, supplies or equipment were actually furnished to or installed in the construction portion of the 2017 Lucas Creek Project.

[Consulting Engineer]

By: _____

Date: _____

**SCHEDULE 1
 VIRGINIA WATER FACILITIES REVOLVING FUND
 FORM TO ACCOMPANY REQUEST FOR DISBURSEMENT**

REQUISITION # _____
BORROWER: HAMPTON ROADS SANITATION DISTRICT
LOAN NUMBER: C-515605-02
CERTIFYING SIGNATURE: _____
TITLE: _____

Cost Category	Amount Budgeted	Previous Disbursements	Expenditures This Period	Total Expenditures to Date	Net Balance Remaining
TOTALS:					

Total Loan Amount \$ _____
Previous Disbursements \$ _____
This Request \$ _____
Loan Proceeds Remaining \$ _____

EXHIBIT F-1
Direct Local Bonds
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$40,338,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project)

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

EXHIBIT F-2
Tax-Exempt Leveraged Local Bonds and Taxable Leveraged Local Bonds
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

Tax-Exempt Leveraged Local Bonds.

\$6,490,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 19, 2000 (Disinfection Projects)

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

Taxable Leveraged Local Bonds.

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016

EXHIBIT F-3
Senior Bonds, Migrating Senior Bonds and Parity Bonds
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

Senior Bonds.

\$223,170,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2008, dated March 31, 2008

\$152,640,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 12, 2009

\$45,705,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2011, dated October 20, 2011

\$130,480,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2012, dated December 27, 2012

\$111,345,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Refunding Series 2014A, dated November 12, 2014

Migrating Senior Bonds.

\$19,410,226 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated May 28, 2009 (Nansemond Treatment Plant Project), as amended on September 11, 2015

\$13,718,671 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated November 20, 2009 (James River Treatment Plant Project), as amended on September 11, 2015

\$11,418,372 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2009, dated December 18, 2009 (Interceptor System Metering Project), as amended on September 11, 2015

\$50,000,000 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Army Base Wastewater Treatment Plant Project), as amended on August 31, 2016

\$5,924,715 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Williamsburg Oxidation Towers Project), as amended on August 31, 2016

\$7,583,771 Hampton Roads Sanitation District Wastewater Revenue Bonds, Series 2010, dated June 29, 2010 (Boat Harbor Treatment Project), as amended on August 31, 2016

\$6,318,000 Hampton Roads Sanitation District Wastewater Revenue Bond, Series 2012, dated March 13, 2012 (Atlantic Treatment Plant: Digester Gas to Energy Project)

Parity Bonds.

\$6,490,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 19, 2000 (Disinfection Projects)

\$2,380,185 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated September 28, 2000 (Odor Control Projects)

\$1,759,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated January 31, 2002 (Army Base Aeration and James River Thickener Projects), as amended on January 9, 2013

\$2,476,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated April 3, 2002 (York River STP-Wastewater Reuse Project), as amended on January 9, 2013

\$1,070,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated May 31, 2002 (Chesapeake-Elizabeth Incinerator Project)

\$40,338,298 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated February 26, 2004 (Chesapeake-Elizabeth Treatment Plant Project), as amended on January 9, 2013

\$1,235,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated July 29, 2005 (Army Base Treatment Plant Project), as amended on January 9, 2013

\$7,339,600 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Atlantic Wastewater Treatment Plant Project), as amended on January 9, 2013

\$1,605,200 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated June 22, 2006 (Colonial Williamsburg Pump Station Project), as amended on January 9, 2013

\$30,000,000 Hampton Roads Sanitation District Subordinate Pledge Sewer Revenue Bond, dated December 17, 2008 (York River Wastewater Treatment Plant Project), as amended on January 15, 2015

\$25,000,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Series 2011, dated October 20, 2011

\$22,680,000 Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2012, dated December 27, 2012

\$246,845,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016A, dated March 17, 2016

\$50,000,000 Sanitation District Subordinate Wastewater Revenue Bonds, Refunding Series 2016B, dated April 1, 2016

\$57,273,700 Sanitation District Subordinate Wastewater Revenue Bond (Atlantic Treatment Plant Project), dated August 10, 2017

\$1,000,000 Sanitation District Subordinate Wastewater Revenue Bond (Ferguson Park Interceptor Project), dated August 10, 2017

EXHIBIT G
Debt Service Schedule
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

[To Come]

EXHIBIT H
EPA Consent Order
Hampton Roads Sanitation District
Lucas Creek Interceptor Project
Loan No. C-515605-02

[To Be Updated]

State Consent Agreement, EPA Consent Decree and Regionalization

In order to address capacity-related sewer overflows during wet weather events, HRSD is required to develop, submit for agency approval, and implement a Regional Wet Weather Management Plan in coordination with 14 of the localities it serves.

On December 19, 2014, the Commonwealth of Virginia entered into a long-term State Consent Agreement (the “2014 Consent Agreement”) with 14 of the localities that HRSD serves. The 2014 Consent Agreement requires the localities to perform long-term management, operations and maintenance of their sewer systems in support of HRSD’s efforts to provide long-term regional wet weather wastewater capacity. HRSD is not a party to the 2014 Consent Agreement. Instead, HRSD’s obligation to provide regional wet weather sewer capacity is now solely imposed through its federal consent decree (the “Consent Decree”). HRSD entered into the Consent Decree with the Commonwealth and US Environmental Protection Agency (EPA).

The Consent Decree was entered by the federal district court for the Eastern District of Virginia (the “District Court”) on February 23, 2010. The Consent Decree has been amended four times, most recently on February 21, 2017 (the “Amended Consent Decree”).

The Amended Consent Decree has two major operative requirements. First, it requires HRSD to develop a Regional Wet Weather Management Plan (“RWWMP”) to control capacity related sewer overflows within the 14 localities. However, through the third and fourth amendments, HRSD has now assumed responsibility for planning (in consultation with the 14 affected localities), designing, funding, and implementing the controls in both the Localities’ systems and the HRSD system that will be contained in the approved RWWMP. Through this approach, HRSD estimates the regional ratepayers will achieve significantly reduced program costs than if each locality sought to address peak wet weather wastewater flows on its own. To facilitate these regional cost savings, the Amended Consent Decree extends the RWWMP submittal deadline to October 1, 2017. To further facilitate this approach, the 14 affected localities entered into a Memorandum of Agreement with HRSD in 2014 in which they agreed to (1) cooperate with HRSD, (2) facilitate the construction of and accept ownership of any improvements which HRSD may need to construct in the localities’ systems, and (3) maintain the integrity of their systems to industry standards.

The Amended Consent Decree also requires HRSD to implement a total of 45 projects from its ten-year Capital Improvement Plan. These 45 projects total approximately \$306 million. The largest of which is its ongoing upgrade to its Virginia Initiative Plant (“VIP”) to add nutrient removal technology required under the Chesapeake Bay Program. The VIP plant upgrade will cost approximately \$143 million. All 45 projects must be completed by February

23, 2018 (except for the VIP plant upgrade which must be completed by December 31, 2018). HRSD is on track to timely meet the financial commitment to fund all of the 45 Interim System Improvements identified in the Amended Consent Decree.

The recommended RWWMP identify the attainable level of wet weather capacity in the Regional Sanitary Sewer System and an implementations schedule to achieve that level of control. The RWWMP will also summarize the major projects and programs that must be implemented in order to achieve the specified level of regional wet weather capacity. It is likely that the RWWMP will call for approximately \$2 billion in infrastructure investments across the Hampton Roads region over several decades.

The Fourth Amendment to the Amended Consent Decree also authorizes HRSD to submit the RWWMP as part of an Integrated Management Plan (IMP). HRSD intends to use the IMP approach to facilitate the timing and financing of both its RWWMP and its Sustainable Water Initiative For Tomorrow (SWIFT) program. The SWIFT program will feature the recharge of groundwater in the HRSD service area through the injection of highly treated wastewater. This program will assist the Commonwealth to meet its Chesapeake Bay nutrient reduction commitments and save HRSD's 14 localities approximately \$1-2 billion in avoided Chesapeake Bay-related storm water control costs.

HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #4

AGENDA ITEM 5. – Procurement Policy Revisions

COMMISSION ADOPTED POLICY
Procurement Policy



Adopted: December 16, 2014

Revised: September 26, 2017

Page 1 of 7

1.0 **Purpose and Need**

All procurement shall be in accordance with the Code of Virginia §2.2-4300, the Virginia Public Procurement Act, as supplemented herein.

2.0 **Guiding Principles**

1. HRSD is committed to competitive procurement practices that are accountable to our ratepayers and the public, ethical, impartial, professional, transparent and fully in accordance with applicable law.
2. The Chief of Procurement is responsible for the purchase, rent, lease, or otherwise acquiring goods, professional and non-professional services, and certain construction services. In addition, the Chief of Procurement is responsible for control and disposal of excess, obsolete, and salvageable materials and equipment.

The Chief of Procurement shall establish procedures consistent with this policy and may designate other HRSD staff to act on his/her behalf.

3. The Director of Engineering is responsible for procurement of professional and non-professional services related to the study, design, construction, real estate and property acquisition associated with capital improvement projects or facility projects.

The Director of Engineering shall establish procedures consistent with this policy and may designate other HRSD staff to act on his/her behalf.

4. Except for small purchases (less than \$10,000) and certain easement acquisitions, no employee has the authority to enter into any purchase agreement or contract except the Chief of Procurement or the Director of Engineering or such other employee as may be designated by the General Manager.
5. Fair market value shall be the basis of all real estate acquisitions with appropriate compensation for related restoration and/or inconvenience. Additional costs, in accordance with applicable state law, shall be included as required in procurement through eminent domain procedures.

3.0 **Definitions**

Agreement/Contract. An understanding, in writing, between two or more competent parties, under which one party agrees to certain performance as defined in the agreement and the second party agrees to compensation for the performance rendered in accordance with the conditions of the agreement.

Fair Market Value. The price for an item upon which purchaser and supplier agree in an open market when both are fully acquainted with market conditions.

Total Value. Cost of all related procurement actions, even across fiscal years, that are known at the time of the procurement action including delivery, assembly, start-up, warranty, etc. Each procurement action must be able to meet the business objective individually, without the need for additional procurement actions.

4.0 **Procedures**

1. Generally competition shall be sought for all procurement with the following exceptions:
 - a. Purchase of goods or services other than professional services where the Total Value will not exceed \$10,000. Related purchases shall not be divided into separate actions to meet this threshold.
 - b. Sole Source – Purchase of goods or services where there is only one source practicably available. The requesting department shall provide a written determination supporting the sole source to the Chief of Procurement. The HRSD Commission must approve all sole sources above \$10,000 for specific vendor and specific application.
 - c. Emergency – Where emergency actions are required to protect public safety, public health, HRSD employees or property or the environment, a contract can be awarded without competition upon a written emergency declaration, approved by General Manager. Competition should be sought if possible with emergency contracts even if typical procurement procedures cannot be fully followed.

COMMISSION ADOPTED POLICY
Procurement Policy



Adopted: December 16, 2014

Revised: September 26, 2017

Page 3 of 7

- d. Real Property – Where acquisition or lease is required in support of HRSD facilities.
2. In accordance with § 2.2-4303 G. competitive sealed bids or competitive negotiation is not required for purchase of goods and services other than professional services where the **total value of the procurement will not exceed \$10,000**. The following procedure shall be followed:
 - a. A minimum of one quote is required. When possible, multiple quotes should be obtained. Use of small businesses and businesses owned by women, minorities, and service disabled veterans is encouraged for all procurement actions whenever possible.
 - b. Purchase is normally made using an HRSD ProCard.
 - c. Purchase may be made by any HRSD employee granted purchasing authority by their department director.
 - d. Basis of award shall be a determination that the stated need will be met and the price is fair and reasonable.
3. In accordance with § 2.2-4303 G. competitive sealed bids or competitive negotiation is not required for purchase of goods and services other than professional services where **the total value of the procurement will be greater than \$10,000 and not to exceed \$100,000**. The following procedure shall be followed:
 - a. Purchases shall be initiated by the submission of a requisition to Procurement or Engineering.
 - b. An unsealed (informal) quote shall be solicited by Procurement or Engineering from three sources in response to an Invitation for Bid (IFB) or Request for Proposal (RFP).
 - c. Basis of award shall be lowest responsive and responsible bidder, offeror or best value as determined by criteria included in the IFB or RFP.
4. In accordance with § 2.2-4303 G. competitive negotiation is not required for purchase of **professional services where the total value of the**

COMMISSION ADOPTED POLICY
Procurement Policy



Adopted: December 16, 2014

Revised: September 26, 2017

Page 4 of 7

procurement will not exceed \$60,000. The following procedure shall be followed:

- a. Purchases shall be initiated by the submission of a requisition to Procurement or Engineering.
 - b. An unsealed (informal) quote shall be solicited by Procurement or Engineering from three sources in response to an IFB or RFP.
 - c. Basis of award shall be lowest responsive and responsible offeror or best value as determined by criteria included in the IFB or RFP.
5. In accordance with §2.2-4308, design-build or construction management contracts shall be in accordance with [Appendix A](#) of this policy.
 6. In accordance with §2.2-4310 B, HRSD promotes the use of small businesses and businesses owned by women, minorities, and service disabled veterans in procurement transactions in accordance with [Appendix B](#) of this policy.
 7. In accordance with §2.2-4316, comments concerning specifications or other provisions in IFB or RFP must be submitted and received in accordance with the procedures specified in the IFB or RFP for comment submittal.
 8. In accordance with §2.2-4318, if the bid from the lowest responsive, responsible bidder exceeds available funds, negotiations may be entered with the apparent low bidder to obtain a contract price within available funds in accordance with [Appendix C](#) of this policy.
 9. In accordance with §2.2-4321, contractors may be debarred from contracting for particular types of supplies, services, insurance or construction, for specified periods of time in accordance with [Appendix D](#) of this policy.
 10. In accordance with §2.2-4330 C, bids may be withdrawn due to error for other than construction contracts in accordance with [Appendix E](#) of this policy.

11. In accordance with §56-575.3:1, a project under the Public-Private Education Facilities and Infrastructure Act shall be in accordance with [Appendix F](#) of this policy.
12. Acquisition of easements (temporary or permanent) may be made by the Director of Engineering (or his/her designee) up to \$25,000.

5.0 **Approvals**

The following actions specifically require the approval of the HRSD Commission before executing unless executed under an approved emergency declaration:

1. **Agreements.** Contracts or purchase orders where the total value is projected to exceed \$200,000.
2. **Sole Source Procurement.** Initial sole source determination for specific vendor, items(s) and location(s) where the Total Value is projected to exceed \$10,000 (§2.2-4303E).
3. **Modifications to Agreements (Task Orders).** Where the Total Value is projected to exceed **\$200,000**.
4. **Cooperative Procurement.** Where the Total Value of HRSD's participation is projected to exceed **\$200,000** (§2.2-4304).
5. **Change Orders (§2.2-4309).** Where the Total Value exceeds **25 percent** of the original contract award or **\$50,000** whichever is greater.
6. **Rejection of all Bids.** Where the Total Value is projected to exceed **\$200,000** (§2.2-4319).
7. **Design-Build or Construction Management Agreements.** (§2.2-4306).
8. **Debarment.** (§2.2-4321).
9. **Determination of Non-responsibility.** (§2.2-4359).
10. **Real Property**
 - a. Acquisition by condemnation in accordance with the Code of Virginia §15.2

- b. Acquisitions by purchase, lease, grant or conveyance
 - c. Sale, lease or permanent encumbrance of HRSD property
 - d. Easements or Right of Entry Agreements (temporary or permanent) with value in excess of \$25,000
11. **Intellectual Property.** All Intellectual Property Rights Agreements and Royalty Distribution Agreements.
12. **Agreements with other Entities.** Agreements which include any of the following criteria:
- a. Design or construction of infrastructure with a constructed value in excess of \$50,000
 - b. Provides use of real property for temporary (greater than one year) or permanent use
 - c. Provide use of personal property valued at more than \$50,000 for temporary (greater than one year) or permanent use
 - d. Provides a service or other benefit that spans multiple years
 - e. Obligates significant financial resources (\$200,000 or more)
 - f. Obligates significant personnel resources (one full time employee or more)
 - g. Is or has the potential to be politically significant

6.0 **Ethics**

HRSD employees involved in the procurement process are expected to maintain high ethical standards. In addition to HRSD's Standards of Conduct and HRSD's Ethics Policy, the following State laws apply:

1. Virginia Public Procurement Act (VPPA); (§2.2-4300)
2. Ethics in Public Contracting (§2.2-4367)

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3. Virginia Governmental Frauds Act (§18.2-498.1) and Articles 2 (§18.2-438) and 3 (§18.2-446) of Chapter 10 of Title 18.2.
4. State and Local Government Conflict of Interests Act (§ 2.2-3100)

7.0 **Responsibility and Authority**

This policy was developed in accordance with HRSD's Enabling Act and the Code of Virginia. Any changes this policy shall be made in writing and approved by the HRSD Commission.

HRSD's General Manager and the Chief of Procurement are the designated administrators of this policy. The Chief of Procurement shall have the day-to-day responsibility and authority for implementing the provisions of this policy.

Approved:

A handwritten signature in black ink, appearing to read "Fredrick N. Elofson", written over a horizontal line.

Frederick N. Elofson
Commission Chair

9/26/17

Date

Attest:

A handwritten signature in blue ink, appearing to read "Jennifer L. Cascio", written over a horizontal line.

Jennifer L. Cascio
Commission Secretary

9/26/17

Date

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix A
Design-Build and Construction Management Contracting



Adopted: December 16, 2014

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1.0 **Purpose and Need**

Design-build and construction management contracting methods provide opportunity for HRSD to contract for specific projects where traditional design-bid-build may not be in the best interest of HRSD. These non-traditional procurement methods shall only be used in accordance with this policy.

2.0 **Procedures**

While the competitive sealed bid process remains the preferred method of construction procurement for HRSD, a contract for construction on a design-build fixed price or on a construction management basis may be used, provided a written determination made in advance is approved by the Commission which sets forth that competitive sealed bidding is either not practicable or not fiscally advantageous.

Criteria for Use of Design-Build Contracts – Design-Build contracts are intended to minimize the project risk and to reduce the delivery schedule by overlapping the design phase and construction phase of a project.

Criteria for Use of Construction Management Contracts – Construction Management contracts may be approved for use on projects where fast tracking of construction is needed to meet program requirements or value engineering and/or constructability analyses concurrent with design are required. The use of Construction Management shall be limited to projects with a construction value that is in excess of \$10,000,000. With proper justification for small complex projects, the Commission may grant a waiver of this requirement and the written approval maintained in the procurement file.

2.1. **Procedure for Design-Build or Construction Management Contracts**

2.1.1. **General.** The Director of Engineering shall prepare a report documenting in writing that for a specific construction project; (i) a Design-Build or Construction Management contract is more advantageous than a competitive sealed bid construction contract; (ii) why there is a benefit to HRSD by using a Design-Build or Construction Management contract; and (iii) why competitive sealed bidding is not practical or fiscally advantageous; and (iv) these justifications shall be stated in the Request for Qualifications. This report shall be submitted to the General Manager for approval.

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- 2.1.2. Design-Build construction projects involve retaining a party that provides both professional design and construction services. Construction Management projects involve retaining a firm to coordinate and administer contracts for construction services and may also include, if provided in the contract, the direct furnishing of construction services. Design-Build services shall be procured using a two-step competitive negotiation process which shall consider both technical capabilities and price for the services required for the project. Construction Management services shall be awarded and initiated no later than the completion of the Schematic Phase of design.
- 2.1.3. **Design-Build and Construction Management Firms.** The Director of Engineering shall obtain qualified Design-Build and Construction Management firms to provide needed services. A list of firms shall be accumulated through solicitation and other methods. The list of firms shall include small, women-owned, minority-owned or service disabled veteran-owned businesses
- 2.1.4. **Request for Qualification (RFQ).** A RFQ shall be prepared for each project and approved by the Director of Engineering. The RFQ shall state the criteria and goals of the project, the time and place for receipt of qualifications, the factors to be used in evaluating qualifications, the contractual terms and conditions, any unique capabilities or qualifications required of the proposer and any project specific requirements for the particular project. The RFQ shall normally consist of the following sections unless modified by the Director of Engineering:
- Cover Sheet
 - I. Introduction and/or Background
 - II. Instructions to Proposers
 - III. Scope of Work
 - IV. Tentative Procurement Schedule
 - V. Attachments
- 2.1.5. **Public Notice.** A Public Notice of the RFQ shall be posted, at least ten (10) business days prior to receipt of proposals for design-build or construction management services, , in a newspaper or newspapers of general circulation in the area in which the contract is to be performed and on the HRSD Internet website. For Construction management services, the Public Notice shall also be published on the Commonwealth of Virginia’s central electronic

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procurement website, known as eVA, at least thirty (30) days prior to the date set for receipt of qualification proposals. The Public Notice shall be sent directly to firms that have requested to be notified of work and may be sent to those firms believed to be qualified to perform the work. The Public Notice shall also be sent directly to organizations promoting small, women-owned, minority-owned and service disabled veteran-owned businesses and to similar businesses that have requested to be notified and/or are believed to be qualified to perform the work. An affidavit shall be placed in the project file certifying the advertising date and method.

- 2.1.6. **Contacts by Proposers.** Proposers may contact only the HRSD representative designated in the RFQ related to questions pertaining to the project. Responses to these questions which are relevant to the work will be documented and addenda will be issued to all proposers who have requested a copy of the RFQ.
- 2.1.7. **Selection Committee.** A Selection Committee shall evaluate the Statements of Qualifications (SOQ) and short-list proposers for further consideration. The Selection Committee shall consist of at least three (3) qualified HRSD staff members appointed by the Director of Engineering. The members of the Selection Committee shall have experience relevant to the project, with backgrounds in such areas as design, construction, contracts, project management and operations/maintenance.
- 2.1.8. **Statements of Qualifications.** The Selection Committee shall request a SOQ from any firm desiring consideration. The SOQ shall provide the information requested in the RFQ. Firms submitting a SOQ shall provide the electronic document by the date and time listed in the RFQ.
- 2.1.9. **Pre-Proposal Conference.** A pre-proposal conference may be held for complex or large projects to ensure clarity, review potential problems with the Scope of Work and answer questions related to the project. Attendance at the pre-proposal conference may be optional or mandatory as specified in the RFQ. If attendance is mandatory, SOQ's shall be considered only from those firms who attended the conference and met the requirements listed in the RFQ related to the pre-proposal conference.
- 2.1.10. **Opening of Statement of Qualifications.** The Director of Engineering or his/her designee shall document receipt of the SOQ's at the specified time and place. SOQ's not received at the specified time will not be considered.

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2.1.11. **Changes to the RFQ.** The Selection Committee shall determine whether any changes to the RFQ should be made to clarify errors, omissions or ambiguities or to incorporate project improvements or additional details. If such changes are required, an addendum shall be issued.

2.1.12. **Evaluation of Statement of Qualifications (Short-List Step).** The Selection Committee shall evaluate each SOQ. The Selection Committee may waive minor informalities in a SOQ but shall eliminate from further consideration any proposer determined to be non-responsive or deemed not fully qualified, responsible or suitable. Prior construction management or design-build experience shall not be required as a prerequisite for consideration or award of a contract. However, in the selection of a contractor, the selection committee may consider the experience of each contractor on comparable projects. The Selection Committee shall then select (short-list) two (2) or more responsive proposers based on the SOQ submitted in response to the RFQ. The Selection Committee either individually or as a group at any point in the evaluation may contact some or all references recommended by the proposer. The Selection Committee may use the information gained during the reference checks in the evaluation. The Selection Committee may ask questions or request additional information from any proposer.

2.1.13. **Request for Proposals (RFP).** A RFP shall be prepared for each project and approved by the Director of Engineering. The RFP shall provide further details not described in the RFQ and shall include the factors to be used in evaluating each proposal. For Design-Build contracts, the RFP shall include details regarding the project quality and performance requirements, conceptual design documents and information regarding the proposer's Construction Cost Limit (CCL) to determine the best value in response to the RFP. For Construction Management contracts, the RFP shall define the allowable level of direct construction involvement by the proposer, describe details regarding the proposer's CCL and define the pre-design, design, bid and construction phase services required. No more than ten (10) percent of the construction work, as measured by the cost of the work, shall be performed by the construction manager with its own forces. The Construction Management firm will procure the subcontractors services by publicly advertising and competitive sealed bidding to the maximum extent practicable. Documentation shall be placed in the file detailing the reasons any work is not procured by publicly advertised competitive sealed bidding.

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The RFP process shall include a separate technical proposal evaluation stage and a price proposal evaluation stage.

- 2.1.14. **Technical Proposals.** The Selection Committee shall initially request a technical proposal from those firms that were short-listed. The technical proposals shall provide the information requested in the RFP. Firms submitting a technical proposal shall provide the electronic document by the date and time listed in the RFP.
- 2.1.15. **Opening of Technical Proposals.** The Director of Engineering or his/her designee shall document receipt of the technical proposals at the specified time and place. Technical proposals not received at the specified time will not be considered.
- 2.1.16. **Preliminary Evaluation of Technical Proposals.** The Selection Committee shall review each technical proposal to first determine whether the proposals are responsive to the requirements of the RFP. The Selection Committee shall then evaluate and document (score) the technical proposal from the short-listed proposers based on an evaluation plan specified in the RFP. The Selection Committee shall keep confidential a preliminary ranking of the technical proposals. The Selection Committee may cancel or reject any and all technical proposals. The Director of Engineering shall prepare a report documenting the reasons for the cancellation or rejection. The Selection Committee may waive informalities in the technical proposals.
- 2.1.17. **Conferences During Preliminary Evaluation.** The Selection Committee may hold a question and answer conference with any or all proposers to clarify or verify the contents of a technical proposal. The conference may be in person or by telephone. Each proposer shall be allotted the same fixed amount of time for any conference held as part of the selection. Proposers shall be encouraged to elaborate on their qualifications, proposed services, relevant experience and details of the technical proposal for the project. Proprietary information from competing proposers shall not be disclosed to the public or to competitors.
- 2.1.18. **Changes to the RFP.** Based upon a review of the technical proposal and discussions with each short-listed proposer, the Selection Committee shall determine whether any changes to the RFP should be made to clarify errors, omissions or ambiguities or to incorporate project improvements or additional details. If such changes are required, an addendum shall be provided to each

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proposer. If addenda are issued by the Selection Committee, proposers will be given an opportunity to revise their technical proposals.

- 2.1.19. **Final Evaluation of Technical Proposals.** At the conclusion of the technical proposal evaluation stage, the Selection Committee will meet to discuss each proposer. After the discussion is completed, each team member will be given an opportunity to adjust their score. The Selection Committee shall document and keep confidential a final ranking of the technical proposals. This documentation shall occur before any price proposals are received by HRSD.
- 2.1.20. **Price Proposals.** The Selection Committee shall request a price proposal from those firms short-listed during the price proposal evaluation stage. The price proposal shall provide the information requested in the RFP including any and all addendum. The price proposal will include a CCL based on the project scope of work and other information provided in the RFP and any subsequent changes to the RFP. Firms submitting a price proposal shall provide the requested information by the date and time listed in the RFP. For Construction Management contracts, price shall be a critical basis for award of the contract. Unless approved by the commission in advance of issuance of the Public Notice, the price component for selection of a Construction Management firm shall be at least fifty (50) percent of the weighted score.
- 2.1.21. **Opening of Price Proposals.** The Director of Engineering or his/her designee shall open and document receipt of the price proposals at the specified time and place. Price proposals not received at the specified time will not be considered.
- 2.1.22. **Evaluation of Price Proposals.** The Selection Committee shall review each price proposal to determine whether the proposals are responsive to the requirements of the RFP and any and all addenda. The Selection Committee shall document and keep confidential the results of each price proposal.
- 2.1.23. **Final Evaluation and Recommendation to Award a Contract.** The Selection Committee shall tabulate the technical and price proposal scores as listed in the RFP to determine the recommended firm. The Selection Committee shall prepare a report documenting the process, summarizing the results and recommending the design-build or construction management firm for award to the Director of Engineering. Upon concurrence with the

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recommendation of the Selection Committee, the Director of Engineering or his/her designee shall negotiate a contract with the recommended firm. Otherwise, the Director of Engineering or his/her designee shall formally terminate negotiations with the proposer ranked first and shall negotiate with the proposer ranked second, and so on, until a satisfactory agreement can be negotiated. The Director of Engineering shall inform the General Manager of the results of the negotiation. The General Manager shall receive Commission approval of award to the recommended firm. The Commission may cancel or reject any and all proposals.

2.1.24. **Award of Design-Build or Construction Management Contract.** Upon approval by the Commission, the Director of Engineering shall forward all contract, bond and insurance forms to the selected firm for signature. The contract shall be prepared using the standard HRSD format approved by the Director of Engineering and reviewed by the HRSD attorney.

2.1.25. **Inspection of Proposals.** Any proposer may inspect the proposal documents after opening of the price proposals but prior to award of the contract. All records, subject to public disclosure under the Virginia Freedom of Information Act, shall be open to public inspection only after award of the contract.

2.1.26. **Emergency Procurement.** A contract for design-build or construction management services may be negotiated and awarded without competitive negotiation if the General Manager determines there is an emergency. The procurement of these services will be made using as much competition as practical under the circumstances. The Director of Engineering shall submit a report documenting the basis of the emergency and the selection of the particular firm. The Director of Engineering shall prepare a notice stating the contract is being awarded on an emergency basis and identifying what is being procured, the firm selected and the date the contract was or will be awarded. The notice shall be placed on the HRSD Internet website on the day HRSD awards or announces its decision to award, whichever comes first or as soon thereafter as practical.

2.2. **Procedure for Changes to Design-Build or Construction Management Contracts**

All changes to the Contract shall be by a formal Change Order as mutually agreed to by the firm and HRSD. The method of making such

changes and any limits shall be in accordance with the Contract Documents. Change Orders shall be negotiated by HRSD staff and such actions reported to the Director of Engineering with recommendations for approval. Change Orders exceeding \$50,000 or 25% of the original contract amount, whichever is greater, shall be submitted to the Commission for approval prior to authorization. All Change Orders shall be executed by the firm and the Director of Engineering or his/her designee.

Extra work by the firm may be authorized by a written Work Change Directive within limits of authorization provided above with later inclusion in the Contract by formal Change Order.

In case of disputes as to the value of extra work, HRSD, within the limits of authorization provided above, may issue a directive in accordance with the Contract Documents to proceed with the work so as to not impede the progress and cause unnecessary delay and expense to the parties involved. The directive shall acknowledge the dispute by the firm, and the dispute shall be resolved at a later date.

2.3. Procedure for Progress Payments

Progress payments shall be paid in accordance with the Contract Documents. Requests for progress payments shall be prepared by the firm and approved by HRSD staff and the Director of Engineering. Requests for progress payments shall generally be submitted to HRSD on a monthly basis with payments by HRSD to the firm within the period of time specified in the Contract Documents.

Progress payments shall be based on unit prices, schedules of values, and other agreed-upon specified basis. Each progress payment shall represent the amount of completed work and materials on site to be incorporated into the work as accepted and approved, less the specified retainage and less previous payments. Payment for materials on site shall be in accordance with the Contract Documents.

Progress payments may be reduced or withheld in accordance with the Contract Documents. Retainage may be reduced or increased in accordance with the Contract Documents.

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Contracting



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2.4. Procedure for Final Payments

Final acceptance, payment, and release of claims shall be in accordance with the Contract Documents. Requests for final payments shall be prepared by the firm, certified and approved by HRSD staff and approved by the Director of Engineering.

3.0 Responsibility and Authority

Under the direction of the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix B
Participation of SWaM



Adopted: December 16, 2014

Revised: September 26, 2017

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1.0 **Purpose and Need**

This policy is in accordance with §2.2-4310 B to facilitate the participation of small businesses and businesses owned by women, minorities and service disabled veterans in HRSD procurement transactions.

HRSD is committed to ensuring fair consideration of all contractors and suppliers in its day-to-day purchase or lease of goods and services. HRSD recognizes that working with a wide range of contractors and suppliers provides an open, competitive and diverse business environment.

HRSD recognizes its responsibilities to the communities that it serves and the society in which it conducts business. The inclusion of small, women-owned, minority-owned and service disabled veteran-owned (SWaM) businesses must be a function of our normal, day-to-day purchasing activities. No potential contractor or supplier will be precluded from consideration on the basis of race, religion, color, sex, national origin, age, or disability (Code of Virginia, § 2.2-4310A).

Therefore, HRSD's policy is to actively solicit and encourage SWaM businesses to participate in procurement opportunities through equally fair and open competition for all contracts. Every employee who is involved in procurement decisions for the purchase of goods or services is charged with making giving every consideration to using qualified SWaM businesses in a manner that is consistent with state and federal laws and regulations. Further, each of HRSD's contractors and suppliers are encouraged to provide for the participation of SWaM businesses through partnerships, joint ventures, subcontracts and other contractual opportunities.

HRSD shall not accept a bad business deal or a lower quality contractor, supplier, product or service in order to achieve greater participation of SWaM businesses in HRSD procurement.

As an integral part of the company-wide culture, HRSD does not discriminate because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by law. Additionally, in procuring goods or services or in making disbursements, HRSD shall not (i) discriminate against a faith-based organization on the basis of the organization's religious character or (ii) impose conditions that (a) restrict the religious character of the faith-based organization, except, in accord with Virginia Code §2.2-4343.1(F), that no funds shall be expended on contracts for sectarian worship, instruction, or proselytizing, or (b) impair, diminish, or discourage the exercise of religious freedom by the recipients of such goods, services, or disbursements.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix B
Participation of SWaM



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2.0 Procedures

The Procurement Division shall:

1. Ensure SWaM businesses have the maximum practicable opportunity in procurement and contractual activities
2. Apprise potential SWaM businesses of HRSD's procurement activities
3. Identify SWaM businesses for HRSD solicitations
4. Promote the use of SWaM contractors through formal and informal training classes
5. Maintain diversity procurement data of contracts and subcontracts awarded to SWaM businesses
6. Monitor, evaluate, and report on the utilization of SWaM contractors at least annually to the HRSD Commission
7. Include qualified businesses selected from the HRSD centralized contractor/supplier database, the Department of Minority Business Enterprise www.dmbc.state.va.us (Code of Virginia, § 2.2-4310), and/or the Virginia Minority Supplier Development Council <http://www.vmsdc.org/> consistent with this policy whenever soliciting quotes or qualifications

All employees with purchasing responsibility or who are involved in procurement decisions for goods and services shall give every consideration to using qualified SWaM contractors/suppliers and consult with the Procurement Division as required to identify SWaM contractors/suppliers.

Certified Minority Business Enterprise (MBE). No contractor/supplier shall be considered a Small Business Enterprise, a Minority-Owned Business Enterprise, a Women-Owned Business Enterprise or a Service Disabled Veteran-Owned Business Enterprise unless certified as such by the Virginia Department of Small Business and Supplier Diversity or Carolinas-Virginia Minority Supplier Development Council.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix B
Participation of SWaM



Adopted: December 16, 2014

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3.0 Responsibility and Authority

Under the direction of the Director of Finance, the Chief of Procurement, as well as the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix C
Negotiation with Lowest Responsible Bidder



Adopted: December 16, 2014

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1.0 **Purpose and Need**

If the bid from the lowest responsive, responsible bidder exceeds available funds, HRSD may negotiate with the apparent low bidder to obtain a contract price within available funds in accordance with this policy.

2.0 **Procedures**

Unless all bids are cancelled or rejected, HRSD reserves the right to negotiate with the lowest responsive, responsible bidder to obtain a contract price within the funds available. The term “available funds” shall mean those funds which were budgeted by the requested HRSD department for the contract prior to the issuance of the written Invitation for Bids. The procurement record in the Procurement Division shall include documentation of the “available funds” prior to the issuance of the IFB.

Negotiations with the lowest responsive, responsible bidder may include both modifications of the bid price and the Scope of Work/Specifications to be performed.

HRSD shall initiate such negotiations by written notice to the lowest responsive, responsible bidder that its bid exceeds the available funds and that HRSD wishes to negotiate a lower contract price. The times, places, and manner of negotiating shall be agreed to by HRSD and the lowest responsive, responsible bidder.

If a mutually acceptable price cannot be negotiated, all bids shall be rejected. A new IFB cannot be issued without HRSD modifying the scope or specification to match the available funds. Shopping for bids shall not be permitted.

3.0 **Responsibility and Authority**

Under the direction of the Director of Finance, the Chief of Procurement, as well as the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix D
Debarment



Adopted: December 16, 2014

Revised: N/A

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1.0 **Purpose and Need**

To ensure HRSD receives the best value with all procurement actions, contractors that fail to meet HRSD standards may be debarred and prevented from being awarded work from HRSD for a specified period of time. Debarment is a serious action and shall only be pursued when continued use of a particular contractor threatens HRSD's ability to meet regulatory requirements, requires inordinate levels of inspection, administration or supervision, poses a legal, financial or reputational risk to HRSD or a locality partner or the contractor has previously demonstrated the inability to meet HRSD schedules or quality requirements, provides poor references or is in active litigation related to HRSD work or similar projects.

2.0 **Procedures**

The Chief of Procurement or Director of Engineering shall regularly evaluate prospective contractors to determine eligibility for contracting for particular types of supplies, services, insurance or construction.

If a determination is made that a prospective contractor should not be eligible, the Chief of Procurement or Director of Engineering shall submit a written report notifying the contractor of the proposed debarment and specified period of time, disclosing factual support for the contractor's unsatisfactory performance and/or other reasons for the proposed debarment, and allowing the contractor an opportunity to inspect any documents relating to the proposed debarment within five (5) business days after receipt of notification and to submit rebuttal information within ten (10) business days after receipt of notification.

The Chief of Procurement or Director of Engineering shall revise the report as appropriate within five (5) business days after receipt of rebuttal information and submit the revised report to the contractor and the General Manager.

The General Manager shall submit the revised report and recommended action to the HRSD attorney for review and to the Commission for action. The Chief of Procurement or Director of Engineering shall notify the contractor of the Commission's final determination including, if debarred, the basis of the debarment and the term of the debarment.

3.0 **Responsibility and Authority**

Under the direction of the Director of Finance, the Chief of Procurement, as well as the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix E
Withdrawal of Bids



Adopted: December 16, 2014

Revised: N/A

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1.0 **Purpose and Need**

Occasionally a bidder requests to withdraw a bid due to a mistake. It is not in HRSD's best interest to force a bidder to perform if the bidder actually made an error in their bid preparation. However, in a competitive bid environment, bidders cannot be allowed to withdraw bids without just cause as this practice can undermine the integrity of the bidding process. HRSD shall follow these procedures to protect the integrity of the bidding process when considering a request to withdraw a bid.

2.0 **Procedures**

For bids on construction projects, withdrawal procedures shall be in accordance with §2.2-4330 where the bidder shall give notice in writing of his claim of right to withdraw his bid within two business days after the conclusion of the bid opening procedure and shall submit original work papers with such notice.

For bids other than construction bids, the same withdrawal procedures shall be followed.

The Chief of Procurement or the Director of Engineering will review the request to withdraw and make a determination based on the evidence provided in accordance with §2.2-4330.

3.0 **Responsibility and Authority**

Under the direction of the Director of Finance, the Chief of Procurement, as well as the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix F
PPEA



Adopted: December 15, 2014

Revised: N/A

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1.0 Purpose and Need

This policy is intended to encourage competition and guide the procurement of projects under Public-Private Education Facilities and Infrastructure Act.

2.0 Procedures

General. Prior to developing or operating the qualifying project, the selected private entity shall enter into a comprehensive agreement with HRSD. Prior to entering a comprehensive agreement, an interim agreement may be entered into that permits a private entity to perform compensable activities related to the project. Any interim or comprehensive agreement shall define the rights and obligations of HRSD and the private entity with regard to the project. The interim and comprehensive agreements and any amendments thereto must be approved by the HRSD Commission.

Interim Agreement Terms. Prior to or in connection with the negotiation of the comprehensive agreement, HRSD may enter into an interim agreement with the private entity proposing the development or operation of the qualifying project. The scope of an interim agreement may include, but is not limited to:

1. Project planning and development;
2. Design and engineering;
3. Environmental analysis and mitigation;
4. Survey;
5. Ascertaining the availability of financing for the proposed facility through financial and revenue analysis;
6. Establishing a process and timing of the negotiation of the comprehensive agreement; and
7. Any other provisions related to any aspect of the development or operation of a qualifying project that the parties may deem appropriate prior to the execution of a comprehensive agreement.

Comprehensive Agreement Terms. Prior to developing or operating the qualifying project, the selected private entity shall enter into a comprehensive

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix F
PPEA



Adopted: December 15, 2014

Revised: N/A

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agreement with HRSD. The comprehensive agreement shall define the rights and obligations of HRSD and the private entity with regard to the project.

As provided by the PPEA, the terms of the comprehensive agreement shall include, but not be limited to:

1. The delivery of maintenance, performance, and payment bonds or letters of credit in connection with any acquisition, design, construction, improvement, renovation, expansion, equipping, maintenance, or operation of the qualifying project, in the forms and amounts satisfactory to HRSD and in compliance with § 2.2-4337 for those components of the qualifying project that involve construction;
2. The review and approval of plans and specifications for the qualifying project by HRSD;
3. The rights of HRSD to inspect the qualifying project to ensure compliance with the comprehensive agreement;
4. The maintenance of a policy or policies of liability insurance or self-insurance reasonably sufficient to insure coverage of the project and the tort liability to the public and employees and to enable the continued operation of the qualifying project;
5. The monitoring of the practices of the private entity by HRSD to ensure proper maintenance, safety, use, and management of the qualifying project;
6. The terms under which the private entity will reimburse HRSD for services provided;
7. The policy and procedures that will govern the rights and responsibilities of HRSD and the private entity in the event that the comprehensive agreement is terminated or there is a material default by the private entity including the conditions governing assumption of the duties and responsibilities of the private entity by HRSD and the transfer or purchase of property or other interests of the private entity by HRSD;
8. The terms under which the private entity will file appropriate financial statements on a periodic basis;

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix F
PPEA



Adopted: December 15, 2014

Revised: N/A

Page 3 of 5

9. The mechanism by which user fees, lease payments, or service payments, if any, may be established from time to time upon agreement of the parties. Any payments or fees shall be the same for persons using the facility under like conditions and that will not materially discourage use of the qualifying project;
 - a. A copy of any service contract shall be filed with HRSD;
 - b. A schedule of the current user fees or lease payments shall be made available by the private entity to any member of the public upon request;
 - c. Classifications according to reasonable categories for assessment of user fees may be made.
10. The terms and conditions under which HRSD will contribute financial resources, if any, for the qualifying project;
11. The terms and conditions under which existing site conditions will be assessed and addressed, including identification of the responsible party for conducting the assessment and taking necessary remedial action;
12. The terms and conditions under which HRSD will be required to pay money to the private entity and the amount of any such payments for the project;
13. Other requirements of the PPEA or other applicable law; and
14. Such other terms and conditions as HRSD determines serve the public purpose of the PPEA.

Notice and Posting requirements. In addition to the posting requirements of Section IV, HRSD shall advertise for a public hearing to discuss proposals it has received or the negotiated interim or comprehensive agreements. Such hearing may occur at a regularly scheduled meeting of the Board. Such notice shall be at least 30 days prior to the public hearing. Public comments may be submitted to HRSD at any time during the notice period and prior to the public hearing. After the public hearing and the end of the public comment period, no additional posting shall be required based on any public comment received.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix F
PPEA



Adopted: December 15, 2014

Revised: N/A

Page 4 of 5

Once the negotiation phase for the development of an interim or a comprehensive agreement is complete and a decision to award has been made, the proposed agreement shall be posted in the following manner:

1. On the HRSD website for 30 days prior to the execution of the agreement.
2. In addition to the posting requirements, a copy of the proposals shall be made available for public inspection. Trade secrets, financial records, or other records of the private entity excluded from disclosure under the provisions of subdivision 11 of §2.2-3705.6 shall not be required to be posted, except as otherwise agreed to by the HRSD and the private entity.
3. Any studies and analyses considered by HRSD in its review of a proposal shall be disclosed at some point prior to the execution of an interim or comprehensive agreement.

Once an interim agreement or a comprehensive agreement has been entered into, the HRSD shall make procurement records available for public inspection, upon request.

1. Such procurement records shall include documents protected from disclosure during the negotiation phase on the basis that the release of such documents would have an adverse effect on the financial interest or bargaining position of HRSD or the private entity in accordance.
2. Such procurement records shall not include:
 - a. trade secrets of the private entity as defined in the Uniform Trade Secrets Act (§ 59.1-336 et seq.) or
 - b. financial records, including balance sheets or financial statements of the private entity that are not generally available to the public through regulatory disclosure or otherwise.

Actual timelines will depend on many factors, including complexity of the project, number of proposals received, staff workload, and Commission meeting schedules.

COMMISSION ADOPTED POLICY
Procurement Policy – Appendix F
PPEA



Adopted: December 15, 2014

Revised: N/A

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3.0 Responsibility and Authority

Under the direction of the Director of Finance, the Chief of Procurement, as well as the Director of Engineering, shall be responsible for overall development, management and implementation of this policy.

HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #5

AGENDA ITEM 8. – Lynnhaven-Great Neck Interceptor Force Main Abandonment
Shore Drive Corridor Improvements Phase III Agreement

**AGREEMENT FOR THE
HAMPTON ROADS SANITATION DISTRICT
LYNNHAVEN-GREAT NECK INTERCEPTOR FORCE MAIN (IFM)
(SF-021) ABANDONMENT
AND
CITY OF VIRGINIA BEACH
SHORE DRIVE CORRIDOR IMPROVEMENTS PHASE III**

THIS AGREEMENT (the "Agreement") between the CITY OF VIRGINIA BEACH ("CITY") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD") is entered into this 21 day of Dec, 2017 (the "Effective Date").

RECITALS

R:1. The CITY is constructing its **SHORE DRIVE CORRIDOR IMPROVEMENTS PHASE III** as shown on **Exhibit 1** (the "CITY Facilities") as part of the CITY's Roadways Capital Improvement Program; and

R:2. The design and construction of the CITY Facilities will necessitate the abandonment of the HRSD Interceptor Force Main SF-021 and construction of a new sewer force main serving City PS 200 (collectively referred to as the "Force Main Improvements"); and

R:3. In response, HRSD has developed the **LYNNHAVEN-GREAT NECK IFM (SF-021) ABANDONMENT** as shown on **Exhibit 2** (the "HRSD Facilities"); and

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

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

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

R:7. The CITY agrees to assume ownership of the newly constructed, HRSD funded Force Main Improvements.

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. CITY will employ KIMLEY HORN ("ENGINEER") to prepare plans and specifications for the Force Main Improvements and the CITY Facilities. A location map of the City Facilities is shown on Exhibit 1. A location map of the Force Main Improvements is shown on Exhibit 2.
2. ENGINEER, along with HRSD and the CITY, will meet to coordinate, review, and approve a set of final construction documents (the "Final Plans and Specifications") which incorporate the Force Main Improvements into the CITY Facilities.

B. Payment of the Design Costs

HRSD will compensate the CITY for all engineering design costs and any amendments related to the Force Main Improvements being incorporated into the construction plans for the CITY Facilities.

C. Compliance

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

II. CONSTRUCTION OF FORCE MAIN IMPROVEMENTS

A. Cost of Construction

1. The total cost of the Force Main Improvements, as more particularly defined by the Final Plans and Specifications, prepared by the ENGINEER for HRSD and the CITY (the "Force Main Improvements Cost") shall include:

- a. Cost of construction of the Force Main Improvements;
 - b. Cost of approvals and permits required for the construction of the Force Main Improvements;
 - c. Costs of services rendered by ENGINEER; and
 - d. Any related miscellaneous essential expenses.
2. The current estimated cost of the Lynnhaven-Great Neck IFM (SF-021) Abandonment is \$1,000,000.

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.
2. CITY shall acquire all necessary plan approvals and property acquisitions related to the Force Main Improvements and CITY Facilities prior to the award of the construction contract.
3. HRSD and the CITY shall review and agree upon the qualifications prior to bidding the project and confirm that the construction contract is awarded to a firm that meets the stated requirements.
4. Contractors shall be responsible for all necessary permits and approvals necessary for the Improvements.
5. HRSD will review and approve shop drawings related to the Force Main Improvements. CITY will review and approve shop drawings related to the CITY Facilities.
6. HRSD will review and approve scope of work and fee for the construction contract administration and inspections related to the Force Main Improvements. HRSD and CITY will jointly review and approve scope of work and fee for the construction contract administration and inspections related to the Force Main Improvements.
7. HRSD and CITY will jointly review and approve change orders related to the Force Main Improvements.

C. Payment of Force Main Improvements Costs

1. The Force Main Improvements Costs shall be apportioned among the parties as follows:
 - a. HRSD will be responsible for bearing one hundred percent (100%) of the design and construction cost of the Force Main Improvements.
 - b. The CITY will administer and be responsible for bearing one hundred percent (100%) of the cost of CITY requested "betterment" as the CITY Facilities.
 - c. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - (1) HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and
 - (2) The CITY shall be responsible for costs due to a Change Order requested by the CITY.
 - (2) The CITY and HRSD shall be responsible for costs due to a Change Order resulting from unforeseen conditions.
2. During the course of construction, HRSD shall compensate the CITY for all Force Main Improvements work. HRSD shall pay its share of the Force Main Improvements Costs to CITY in one lump sum payment upon completion of construction (as determined jointly by CITY and HRSD). CITY shall provide HRSD with an invoice detailing HRSD's share of the Force Main Improvements Costs. Within thirty (30) days of its receipt of such invoice, HRSD shall reimburse CITY for HRSD's share of the Force Main Improvements Costs as detailed in the invoice.
3. In conjunction with the above, and for additional clarity, it is agreed that HRSD shall pay its share of the construction administration and construction inspection costs (the "CA and CI Costs") for the Force Main Improvements to CITY in one lump sum payment upon completion of construction (as determined jointly by CITY and HRSD). CITY shall provide HRSD with an invoice detailing the HRSD's share of the CA and CI Costs.

Within thirty (30) days of its receipt of such invoice, the HRSD shall reimburse CITY for HRSD's share of the CA and CI Costs as detailed in the invoice.

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

1. HRSD shall be responsible for operation and maintenance of the existing HRSD Facilities during and after construction.
2. CITY shall be responsible for operation and maintenance of the CITY sanitary sewer facilities during and after construction.
3. CITY shall assume ownership and be responsible for operation and maintenance of the newly constructed, HRSD funded, Force Main Improvements at the Substantial Completion stage of construction.
4. HRSD and the CITY agree to cooperate and coordinate for the operations and maintenance of any interconnections between the HRSD Facilities and CITY Sewer Facilities.

III. SCHEDULE

The construction is anticipated to begin by August of 2019 and be complete by August of 2020.

IV. OBLIGATIONS OF HRSD AND THE CITY

A. Public Hearing or Meeting

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

B. Bidding of the Force Main

1. CITY to issue bidding documents for construction of the Force Main Improvements. HRSD agrees to provide administrative support during the bidding phase. In particular HRSD shall:
 - a. Attend the preconstruction meeting.

- b. Provide timely responses to the CITY for any questions, requests for clarification, or addenda during the bidding phase.
 - c. Provide miscellaneous support to CITY as required during the bidding phase.
2. The CITY will receive bids for construction of the Force Main Improvements as part of the CITY Facilities. All bids received will be reviewed and approved by the CITY and HRSD prior to award of the construction contract. The CITY shall negotiate in good faith to resolve financial matters with regards to bidding the Force Main as part of the City Facilities (Force Main). The bidding procedure shall be conducted in accordance with the Virginia public Procurement Act and the CITY's procurement process.

C. Administration

CITY shall provide contract administration of the Force Main. HRSD shall reimburse the CITY for the contract administration cost of the Force Main construction.

D. Inspection

CITY shall provide in-house inspection for the Force Main. HRSD shall reimburse the CITY for the inspection costs of the Force Main only if non-City personnel are used for overnight inspection. The inspector(s) shall have the authority to assure the Force Main is constructed in accordance with the Final Plans and Specifications.

E. Deeds and Easements

1. The CITY shall obtain any and all necessary fee simple deeds and/or deeds of easement needed for the Force Main.
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 Force Main

The construction contract shall provide for a warranty of the Contractor's work against construction defects in the Force Main 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 Force Main.

G. Construction Record Drawings

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

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

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

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

With Copy to:

William A. Cox, III
Kellam, Pickrell, Cox & Anderson, P.C.
403 Boush Street, Suite 300
Norfolk, VA 23510
Telephone: (757) 627-8365
Facsimile: (757) 625-2189

For: City of Virginia Beach

City Manager
City of Virginia Beach
2401 Courthouse Drive
Virginia Beach, VA 23456
Telephone: (757) 385-4242

With Copy to:

City Attorney
City of Virginia Beach
2401 Courthouse Drive
Virginia Beach, VA 23456
Telephone: (757) 385-4531

VIII. ASSIGNMENT

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

IX. AMENDMENT

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

X. SEVERABILITY

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

XI. DAMAGES

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

XII. INSURANCE

The CITY has the right to review and approve insurance coverage in the various insurance categories that 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 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, the CITY has 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 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.


IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on September 26, 2017.

HAMPTON ROADS SANITATION DISTRICT

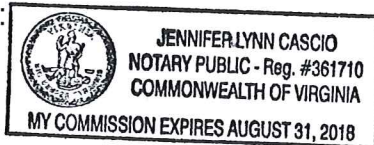
By 
Edward G. Henifin, P.E., General Manager

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

The foregoing agreement was acknowledged before me this 12th day of December, 2017, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.


Notary Public

My commission expires:
Registration No.:



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

Per Renee Hester at City of VB, City Council approval was not required.
jlc

(SEAL)

CITY OF VIRGINIA BEACH

By: Thomas M Leahy
City Manager/Authorized Designee

ATTEST:

[Signature]
City Clerk

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

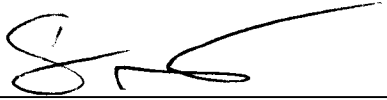
The foregoing instrument was acknowledged before me by Thomas M. Leahy, City Manager/Authorized Designee of the City Manager, of the City of Virginia Beach, Virginia, this 21st day December, 2017.

Commonwealth Of Virginia
Jennifer Anne Grundler - Notary Public
Commission No. 7037167
My Commission Expires 5/31/18

[Signature]
Notary Public

My commission expires: 5/31/18
Registration No.: 7037167

APPROVED AS TO CONTENT:



Department of Public Utilities
Steve Motley

CERTIFIED AS TO
AVAILABILITY OF FUNDS:



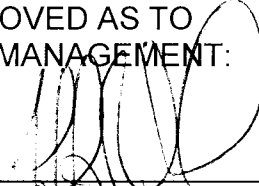
Department of Finance

APPROVED AS TO CONTENT:



Department of Public Works
David Jarmin

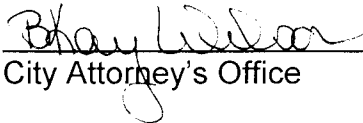
APPROVED AS TO
RISK MANAGEMENT:



Risk Management

#247 rec'd on 12/19/2017

APPROVED AS TO LEGAL SUFFICIENCY:



City Attorney's Office

**Exhibit 2
CITY Facilities Location Map**



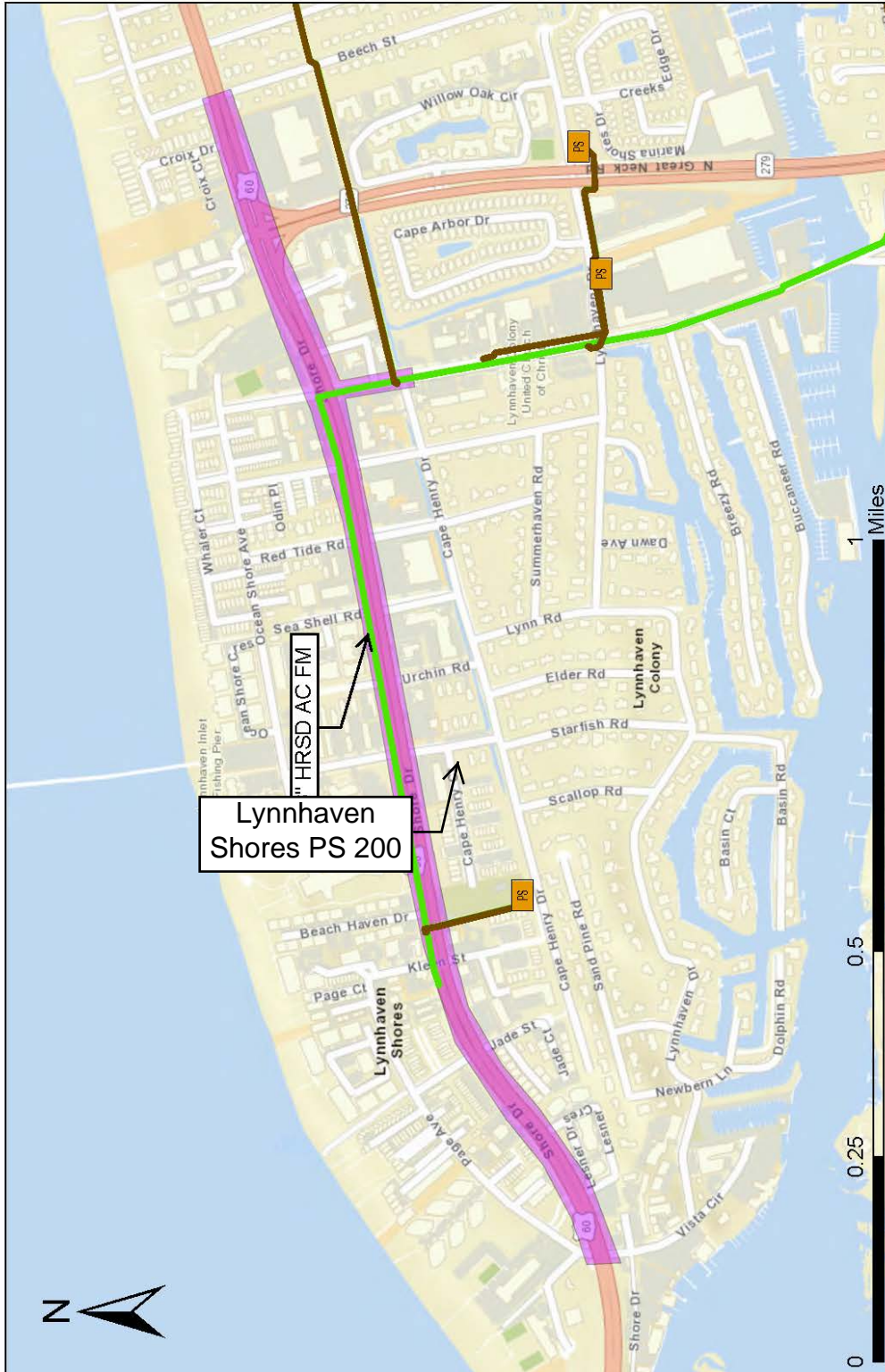
Legend

- Proposed City FM
- HRSD Forcemain
- HRSD IFM Abandoned (SF-021)
- City Pump Station
- City Forcemain

**Exhibit 2
Lynn Haven-Great Neck IFM
(SF-021) Abandonment**



**Exhibit 1
HRSD Facilities Location Map**



- Legend**
-  City Pump Station
 -  HRSD Force Main
 -  Phase III ROW
 -  City Force Main

**Exhibit 1
Shore Drive Corridor
Improvements Phase III**



HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #6

AGENDA ITEM 14. - Williamsburg Interceptor Force Main Contract A Replacement Agreement

AGREEMENT
FOR
FORCE MAIN REMOVAL AND FORCE MAIN ABANDONMENT
OF THE
HAMPTON ROADS SANITATION DISTRICT
WILLIAMSBURG INTERCEPTOR FORCE MAIN CONTRACT "A" REPLACEMENT
(WB010700)
AND
ESCALANTE GOLF

THIS AGREEMENT FOR REMOVAL OF ABANDONED PIPING (the "Agreement"), between the Escalante Golf ("Escalante") and the HAMPTON ROADS SANITATION DISTRICT ("HRSD"), is entered into this 29TH day of NOVEMBER, 2017 (the "Effective Date").

RECITALS

R:1. HRSD has constructed its Williamsburg Interceptor Force Main Contract "A" Replacement as shown on Exhibit 1, (the "HRSD Facilities"); and

R:2. The construction of the HRSD Facilities will necessitate the removal of approximately fifteen hundred (1,500) feet of abandoned force main to accommodate future development by Escalante; and

R:3. HRSD and ESCALANTE agree that it is in the best interest of the parties to coordinate the removal of portions of the abandoned force main; and

R:4. HRSD agrees to remove portions of the abandoned force main as shown on Exhibit 1.

R:5. HRSD agrees to replant grass seed and regrade the affected area as shown on Exhibit 1.

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. Removal and Abandonment of Thirty-Six (36) Inch Force Main

- A. HRSD will administer and be responsible for bearing one hundred percent (100%) of the cost of the removal and abandonment of existing thirty-six (36) inch force main as shown on the attached Exhibit 1. HRSD will employ AECOM ("ENGINEER") to prepare plans for removal and abandonment.
- B. HRSD and ESCALANTE will meet to coordinate, review, and approve a set of final construction documents (the "Final Plans") for the removal and abandonment.

II. Payment of the Design Costs

HRSD will compensate ENGINEER for all engineering design costs and any amendments related to the removal and abandonment of the existing thirty-six (36) inch force main.

III. Compliance

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

IV. Construction of Removal and Abandonment

A. Cost of Construction

The total cost of the removal and abandonment, as more particularly defined by the Final Plans prepared by the ENGINEER for HRSD shall include:

- 1. Cost of construction of the removal and abandonment of the pipe and replanting the grass seed and regrading the affected area as shown on Exhibit 1;
- 2. Costs for construction contract administration and inspection;
- 3. Costs of services rendered by ENGINEER;

4. Any related miscellaneous essential expenses.
- B. Approval of Final Plans, Contractors and Change Orders
1. HRSD and ESCALANTE agree that before any construction work is to begin under this Agreement, HRSD and ESCALANTE will jointly review and approve the Final Plans. This approval shall be in writing.
 2. HRSD shall acquire all necessary plan approvals and property acquisitions related to HRSD Facilities
 3. TA Sheets General Contractors, Inc. ("Contractor") shall be responsible for all necessary permits and approvals necessary for the removal and abandonment of the pipe and replanting the grass seed and regrading the affected area as shown on Exhibit 1.
 4. HRSD will review and approve shop drawings related to the abandonment and removal.
 5. HRSD will review and approve scope of work and fee for the construction contract administration and inspections related to the HRSD Facilities.
 6. HRSD will review and approve change orders related to the HRSD Facilities.
- C. Payment of Removal and Abandonment Costs
1. The Removal and Abandonment 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 removal and abandonment.
 - b. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:
 - (1) HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and
 - (2) The ESCALANTE shall be responsible for costs due to a Change Order requested by the ESCALANTE.
 2. Any future removal of abandoned pipe or removal of abandoned

pipe not indicated on Exhibit 1 will be performed by and paid for by Escalante.

D. Abandoned Facilities and Future Cooperation between HRSD and Escalante

HRSD and the ESCALANTE agree to cooperate and coordinate with regards to any future removal of abandoned force main.

E. Payment of Replanting Grass Seed and Regrading

1. The Replanting Grass Seed and Regrading 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 replanting grass seeds and regrading.

b. Costs associated with any change to the initial construction cost ("Change Order") shall be as follows:

(1) HRSD shall be solely responsible for costs due to a Change Order requested by HRSD; and

(2) The ESCALANTE shall be responsible for costs due to a Change Order requested by ESCALANTE.

V. SCHEDULE

The construction is anticipated to begin by November 2017 and be complete by December 2017.

VI. OBLIGATIONS OF HRSD AND THE ESCALANTE

A. Administration

HRSD shall provide contract administration of the removal and abandonment.

B. Inspection

HRSD shall provide part-time inspection for the removal and abandonment. The inspector(s) shall have the authority to assure the

removal and abandonments are constructed in accordance with the Final Plans.

C. Construction Record Drawings

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

VII. 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.

VIII. TERMINATION

Anything herein or elsewhere to the contrary notwithstanding, this Agreement and the obligations of the parties hereunder may be terminated by ESCALANTE 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 ESCALANTE and HRSD.

IX. NOTICE

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

For: HRSD

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

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

With Copy to:

Conway H. Sheild, III
Jones, Blechman, Woltz and Kelly
701 Town Center Drive, Suite 200
Newport News, VA 23606

For: Escalante Golf

2930 Bledsoe Street #124
Fort Worth, TX 76107
Telephone: (817) 386-9721

X. ASSIGNMENT

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

XI. AMENDMENT

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

XII. SEVERABILITY

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

XIII. DAMAGES

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.

XIV. INSURANCE

HRSD and ESCALANTE have the right to review and approve insurance coverage in the various insurance categories that HRSD and ESCALANTE 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 ESCALANTE and the insurance coverage shall be maintained during the term of this Agreement.

XV. 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.

XVI. FORCE MAJEURE

In the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond the control of ESCALANTE 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.

XVII. INDEPENDENT CONTRACTOR

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

XVIII. 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.

XIX. WAIVER

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

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

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

XX. 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 FORCE MAIN REMOVAL AND FORCE MAIN ABANDONMENT HRSD Williamsburg
Interceptor Force Main Contract "A" Replacement (WB010700) and Escalante Golf

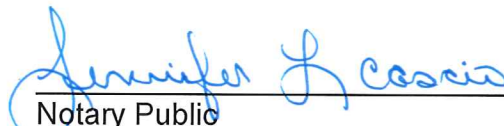
IN WITNESS WHEREOF, the Hampton Roads Sanitation District (HRSD) Commission has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on September 26, 2017.

HAMPTON ROADS SANITATION DISTRICT

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

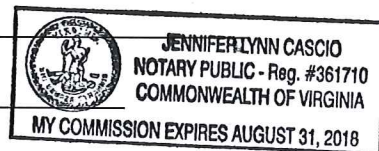
COMMONWEALTH OF VIRGINIA,
CITY OF VIRGINIA BEACH, to-wit:

The foregoing agreement was acknowledged before me this 12th day of December, 2017, by Edward G. Henifin, P.E., General Manager, Hampton Roads Sanitation District.


Notary Public

My commission expires: _____

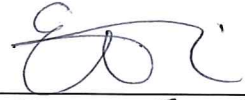
Registration No.: _____



AGREEMENT FOR FORCE MAIN REMOVAL AND FORCE MAIN ABANDONMENT HRSD Williamsburg
Interceptor Force Main Contract "A" Replacement (WB010700) and Escalante Golf

IN WITNESS WHEREOF, Escalante Golf has caused this Agreement to be signed by
ELCIO SILVA on its behalf pursuant to Resolution adopted by the Escalante
Council on NOVEMBER 29, 2017,

ESCALANTE GOLF

By: 
Name: ELCIO SILVA
Title: Sr. VP OF OPERATIONS

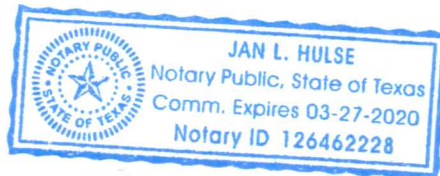
STATE OF TEXAS
CITY or COUNTY OF Tarrant, to-wit:

The foregoing Agreement was acknowledged before me this 29 day of
November, 2017, by Elcio Silva [Name], Sr VP of [Title], Escalante
Golf. operations


Notary Public

My commission expires:

Registration No.:



HAMPTON ROADS SANITATION DISTRICT



WILLIAMSBURG INTERCEPTOR FORCE
MAIN CONTRACT "A" REPLACEMENT

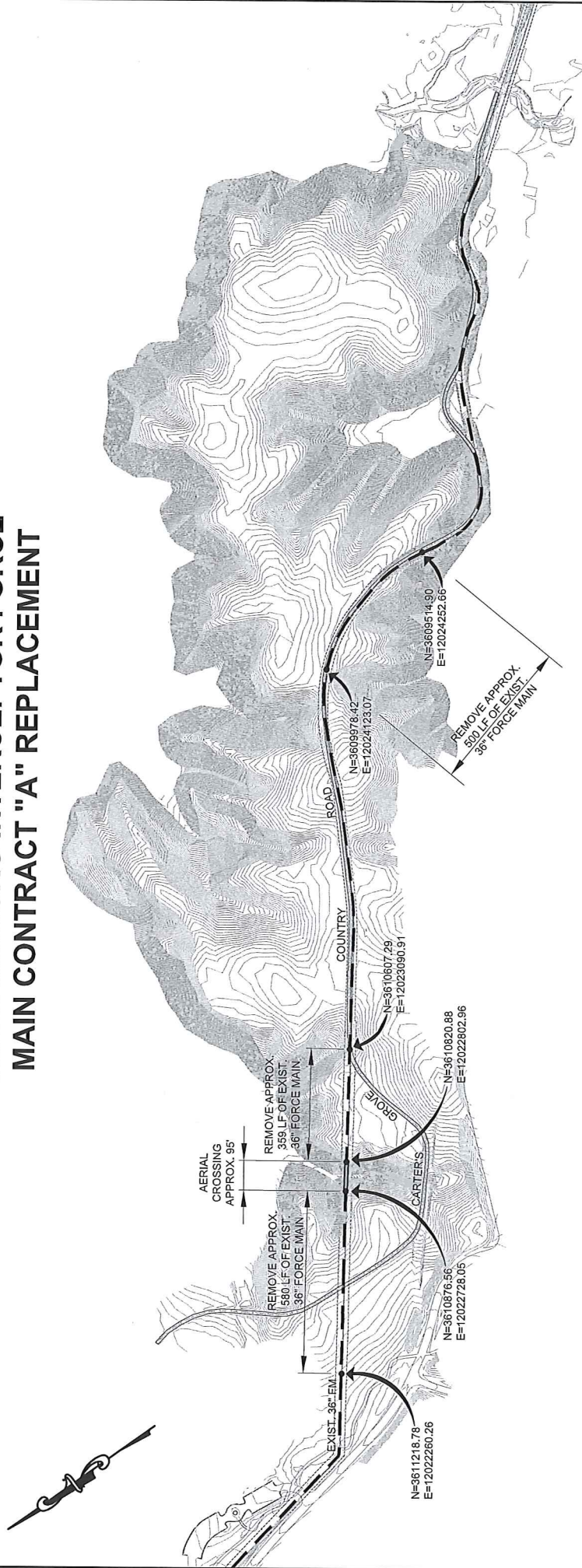
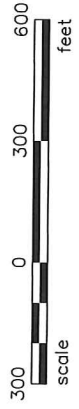


EXHIBIT 1
EXISTING FORCE MAIN REMOVAL PLAN



NOVEMBER 17, 2017
SHEET 1 OF 1



HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #7

AGENDA ITEM 17. – Water Technology and Research Update PowerPoint

Water Technology & Research - Update



Department Organization

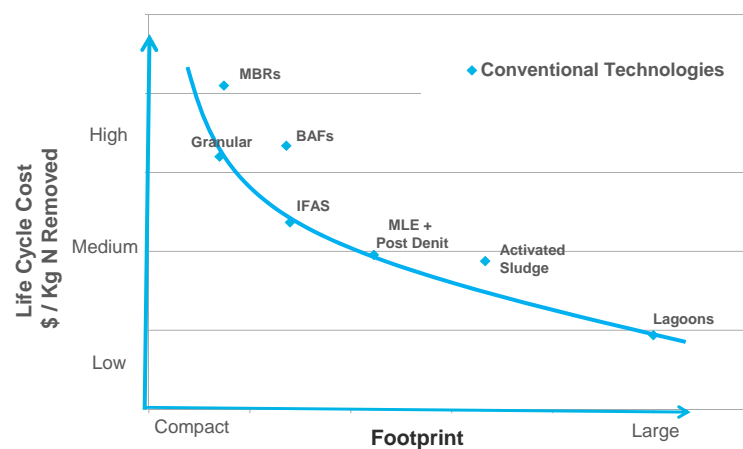
- Plant operations assistance and troubleshooting
- Participation in capital project planning and design
- University projects of interest to HRSD
 - HRSD funds/efforts leveraged to obtain grant funding
 - WERF, EPA, NSF
- HRSD Water Technology & Research projects
 - HRSD staff support – TSD, CEL, Treatment, Facility Support
 - MS and PhD student interns from ODU & VT (~12)
 - Project work at an HRSD facility
 - Benefits – cost, education, university collaboration
- Chris Wilson, PhD, P.E. – HRSD Chief of Process Engineering and Research

Technology Implementation at HRSD is Driven by:

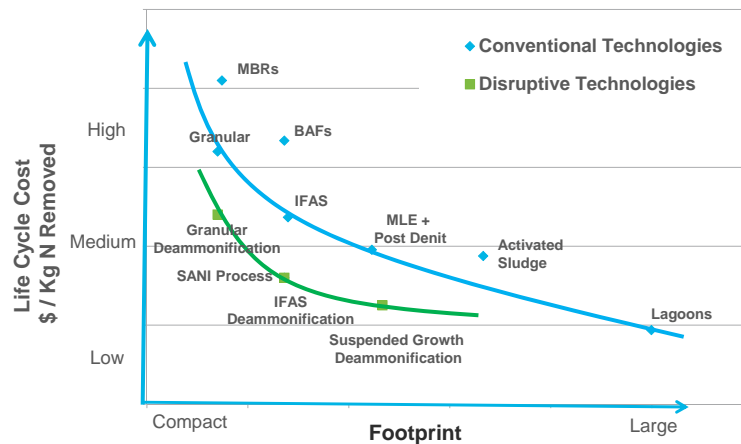
- MINIMIZING Resource Utilization:
 - Energy
 - Chemicals
 - Labor (operations, maintenance, instrumentation...)
 - Concrete, footprint, land area

Intensification

Nitrogen Removal Technologies - Conventional



Nitrogen Removal - Intensified



Technology Implementation at HRSD is Driven by:

- MINIMIZING Resource Utilization:
 - Energy
 - Chemicals
 - Labor (operations, maintenance, instrumentation...)
 - Concrete, footprint, land area
 - MAXIMIZING Resource Recovery (*business case must be good*)
 - Water (SWIFT)
 - P
 - N (can't compete)
 - CH₄ – biogas (electricity, CNG, etc)
 - Heat
 - Hydraulic energy
 - Chemicals of interest (maybe)
 - Biosolids (N, P, organics)
 - Etc, etc, etc
- Intensification

Chesapeake Elizabeth BNR Pilot



CE Pilot Crew



Topics for Today

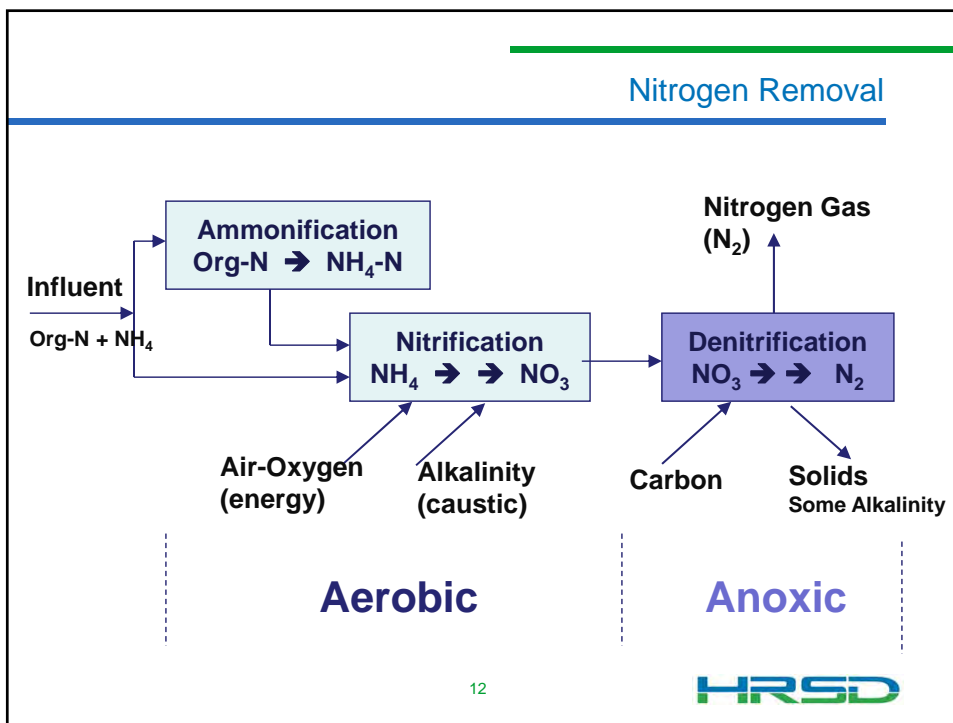
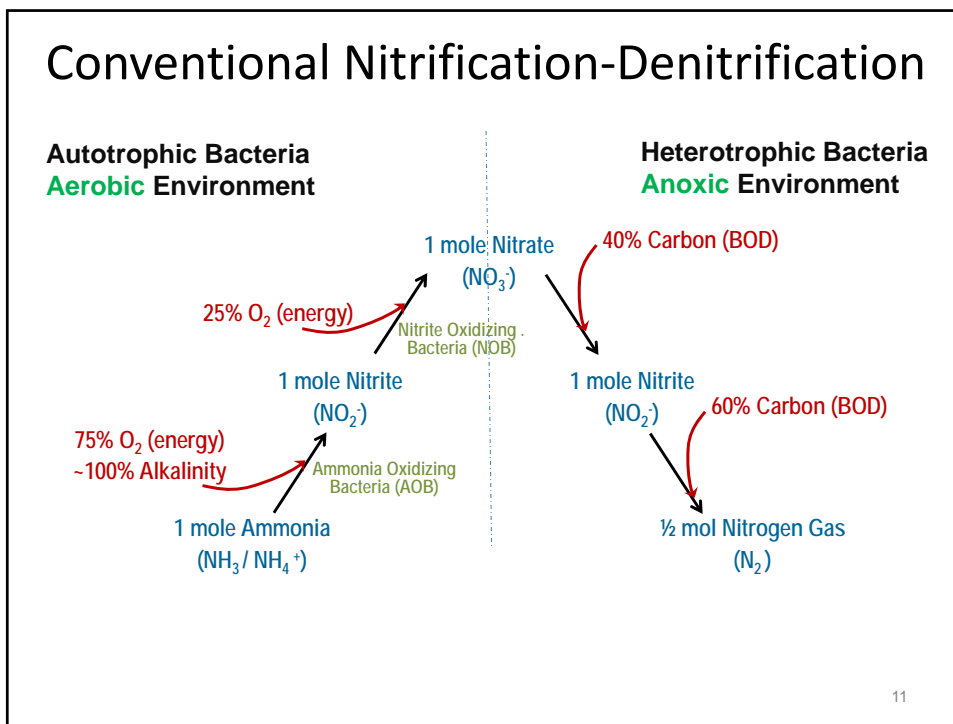
1. Simultaneous nitrification denitrification (SND) with ammonia based aeration control (ABAC).
2. York River Treatment Plant Pilot Testing:
 - Mainstream deammonification with bioaugmentation and anammox retention
 - “Sidestream” biological P removal by RAS fermentation

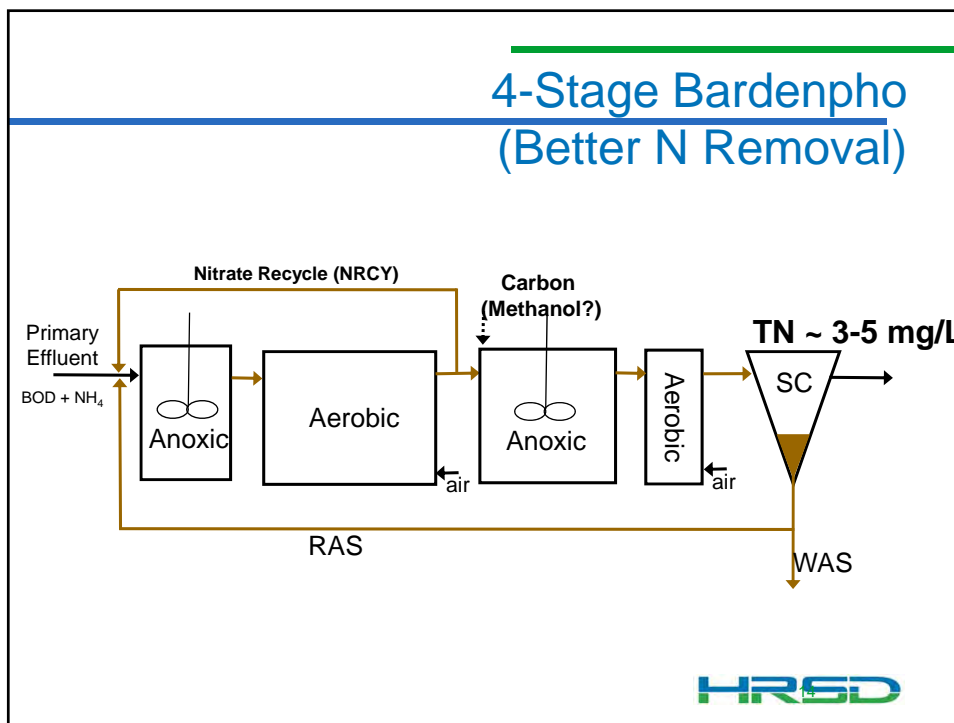
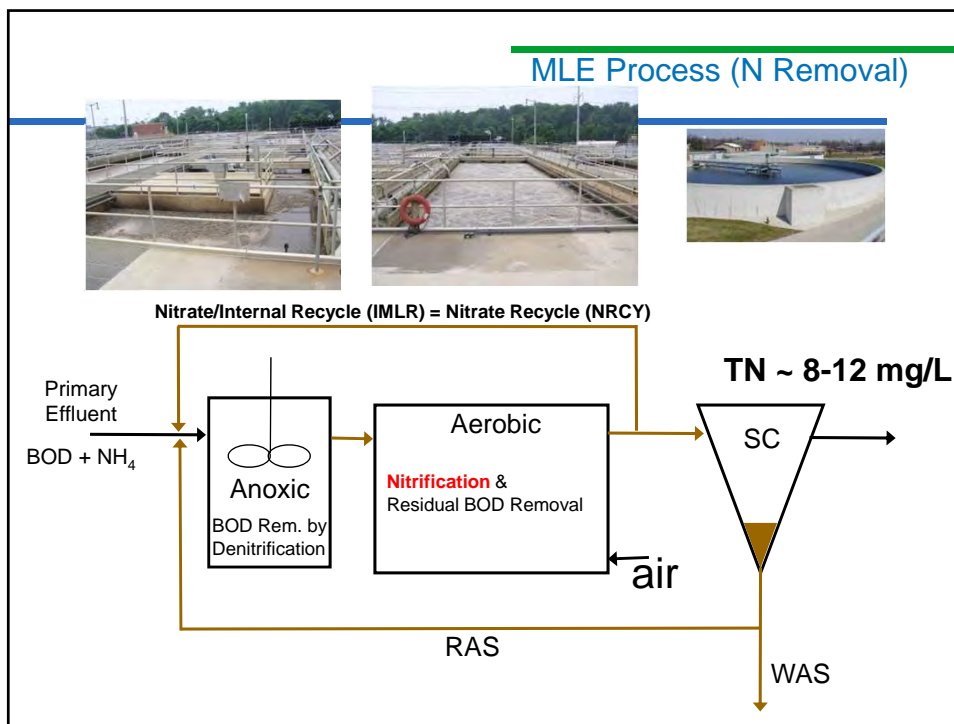
Preliminary Background

- Nitrification
- Denitrification
- Bio-P = biological phosphorus removal

We rely on bacteria to accomplish treatment...

- *Organics (BOD, COD, TOC, etc)*
- *Nitrogen (N)*
- *Phosphorus (P)*

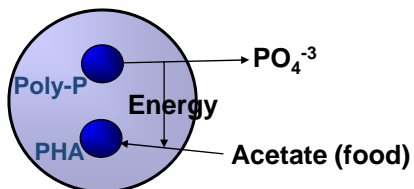




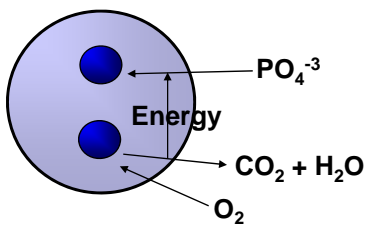
Biological Phosphorus Removal (Bio-P)

Phosphorus accumulating organisms (PAOs) have a unique anaerobic/aerobic metabolism

Anaerobic Conditions



Aerobic Conditions

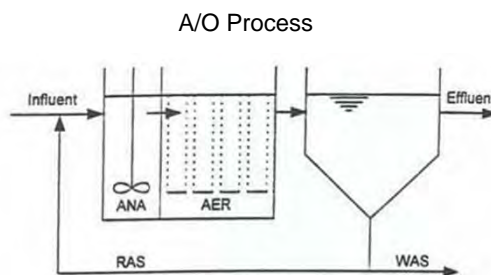


Poly-P = granule of poly-phosphate

PHA = granule of polyhydroxyalkanoate

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Bio-P in A/O Process



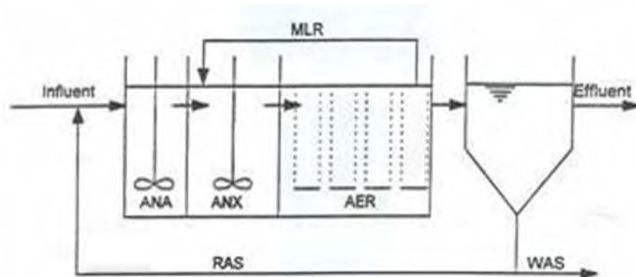
ANA = Anaerobic

AER = Aerobic

Addition of an anaerobic selector...

16

Add Bio-P to MLE... - A2/O Process

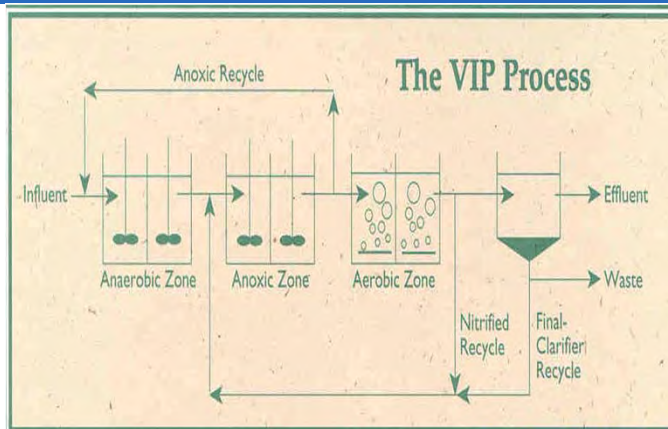


A²/O or Phoredox Process

ANA = Anaerobic
 ANX = Anoxic
 AER = Aerobic

17

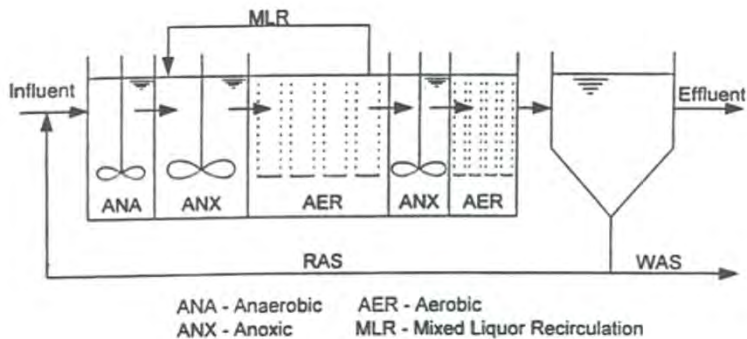
Virginia Initiative Process (VIP)



- Developed collaboratively by HRSD, Virginia Tech, and CH2M Hill
- Biological N and P removal

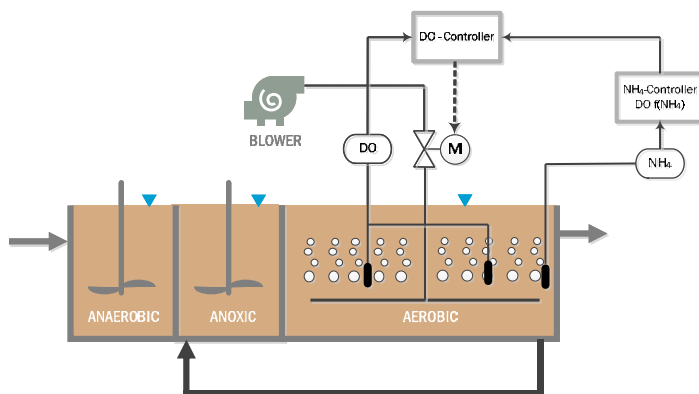
HRSD

5-Stage Bardenpho



Generally - "5-stage BNR"
 Add second anoxic zone to a Bio-P processes
 (for example VIP + 2, MUCT+2, A2O+2, etc)

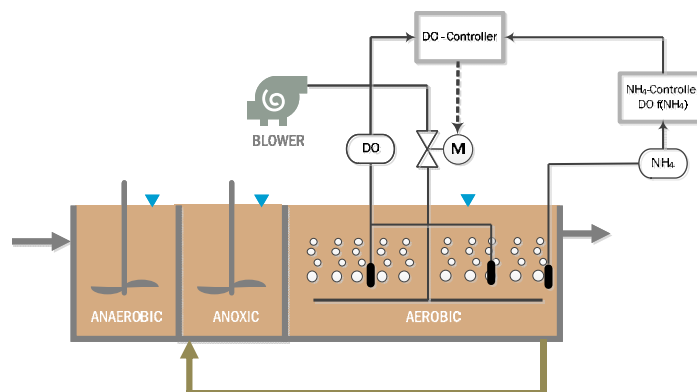
Ammonia-Based Aeration Control (ABAC)



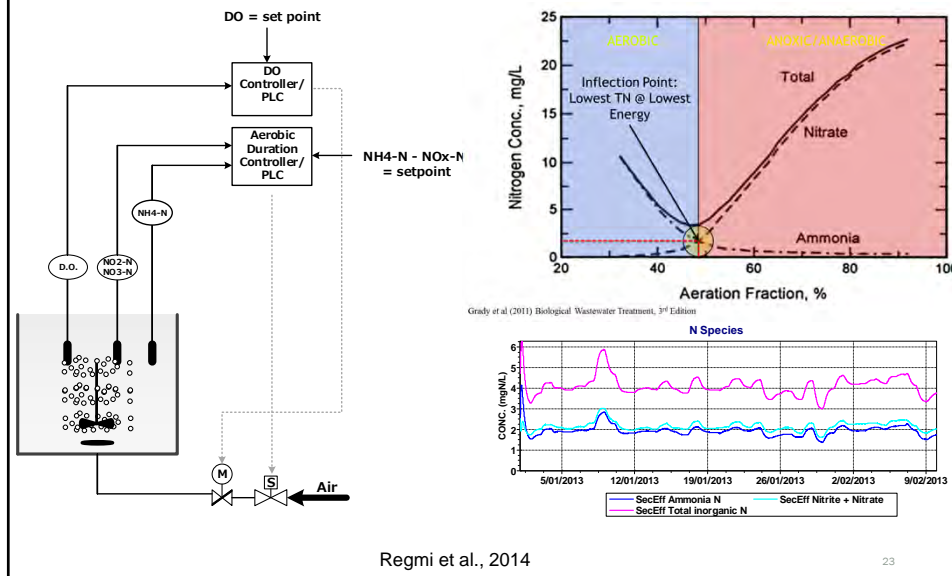
Benefits of ABAC

- Reduce energy consumption
 - less NH_4 converted, aerating at lower DO, less COD oxidized aerobically
- Improve usage of sbCOD, reduce need for supplemental carbon
- Decrease ALK demand
- Decrease chlorine demand – chloramination
- **Increase in nitrogen removal via simultaneous nitrification/denitrification (SND)**

Ammonia-Based Aeration Control (ABAC)



Ammonia vs NOx control (AvN)

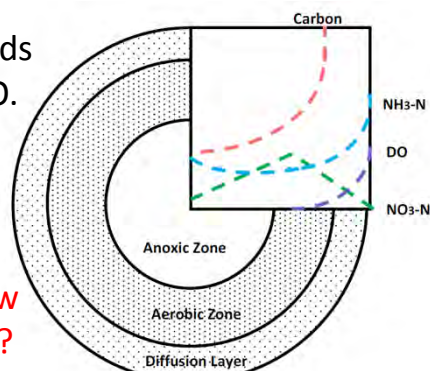
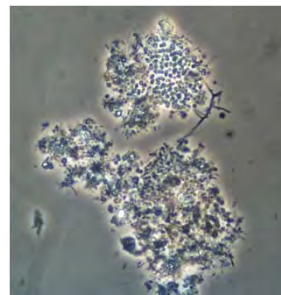


Benefits of Ammonia vs. NOx (AvN) control

- Maximize TIN removal for a given COD load
- Modes of implementation:
 - Intermittent aeration
 - NOB out-selection
 - Defined anoxic period for denitrification
 - Continuous aeration
 - Simple, continuous aeration
 - **Even more SND?**

Mechanisms of SND

- A DO gradient within the floc allows for an anoxic zone for denitrification to occur.
- A DO gradient within the reactor. Incomplete mixing leads to areas of very low or zero DO.

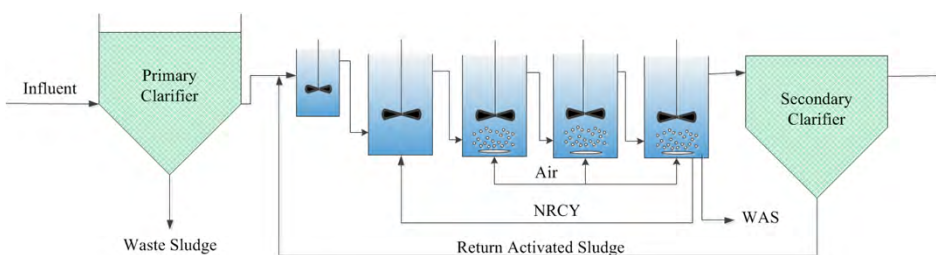


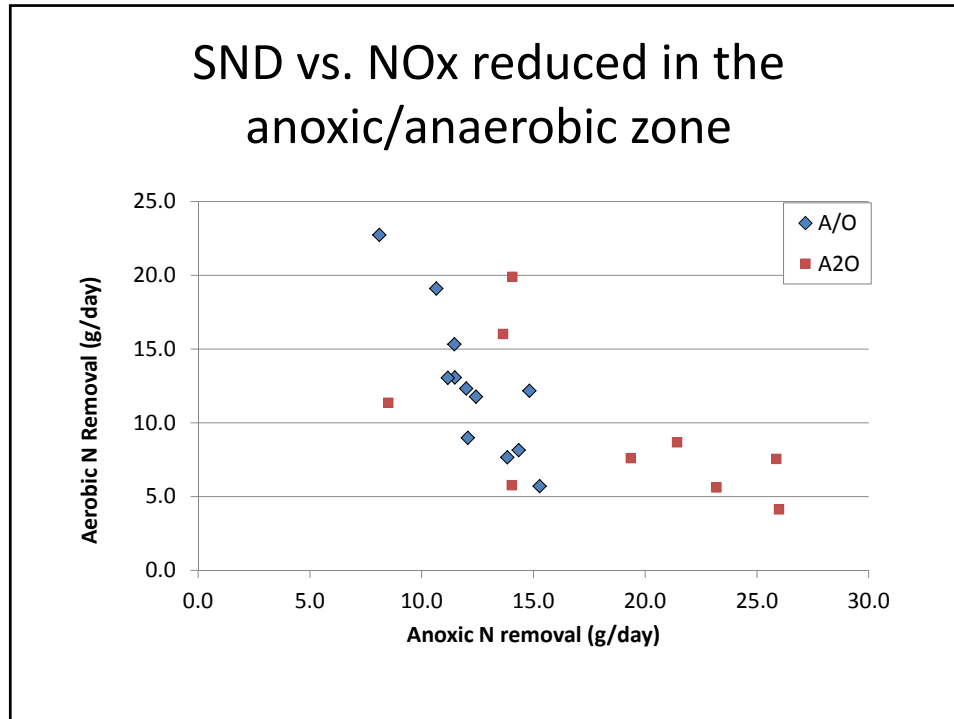
How much SND is actually occurring in well-mixed, plug-flow processes with diffused aeration?

Jimenez et al., 2013

Experimental Approach

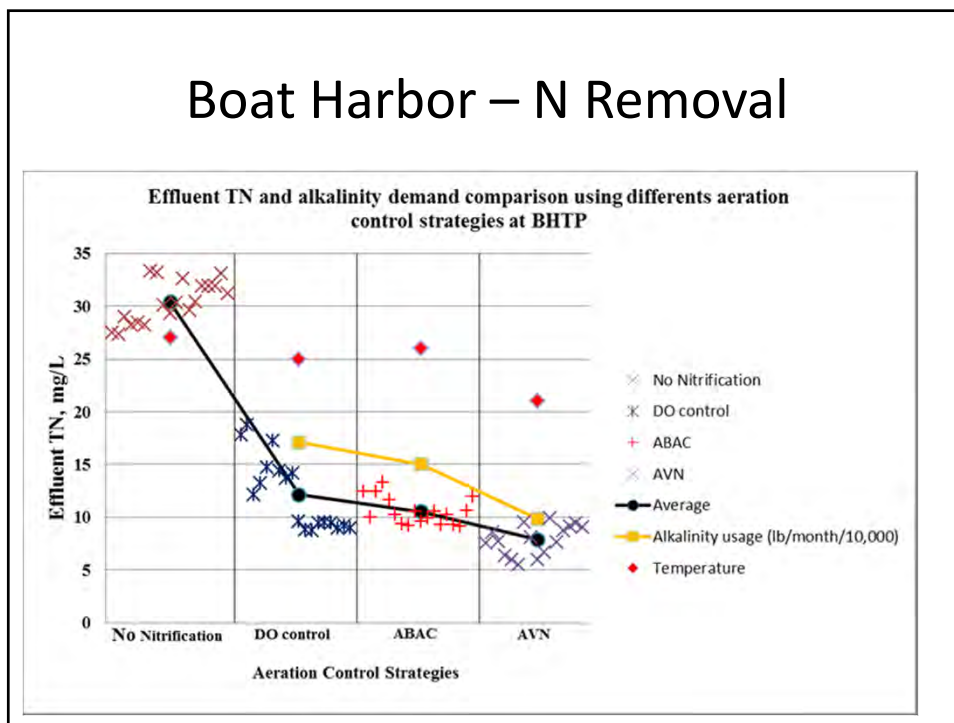
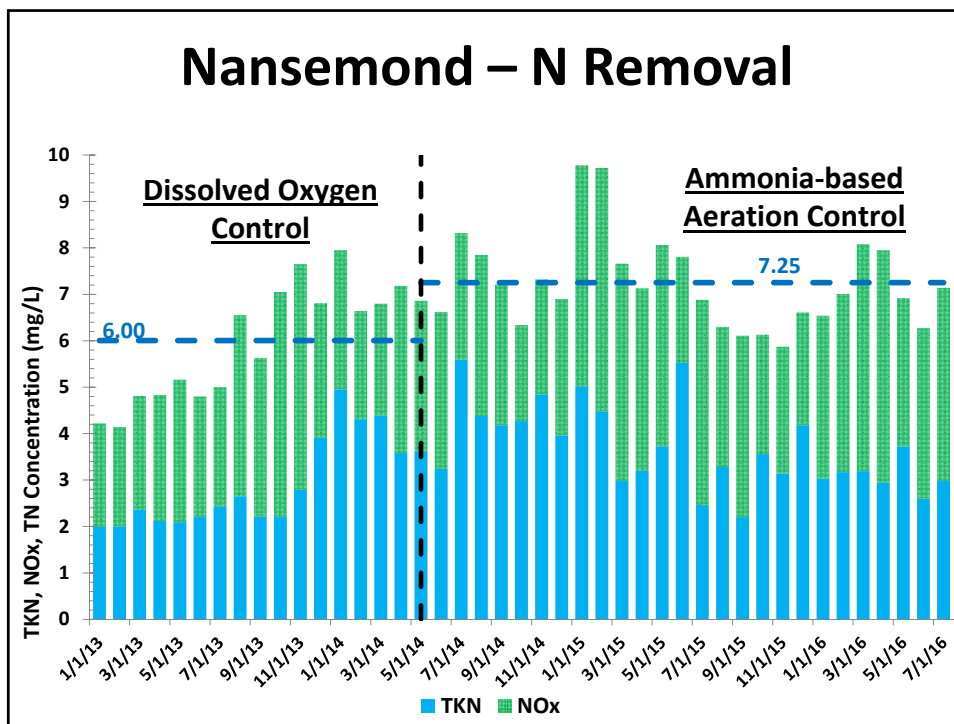
- Operated in both A/O and A2O configuration
- Very low DO of 0.1 to 0.2 mg/L



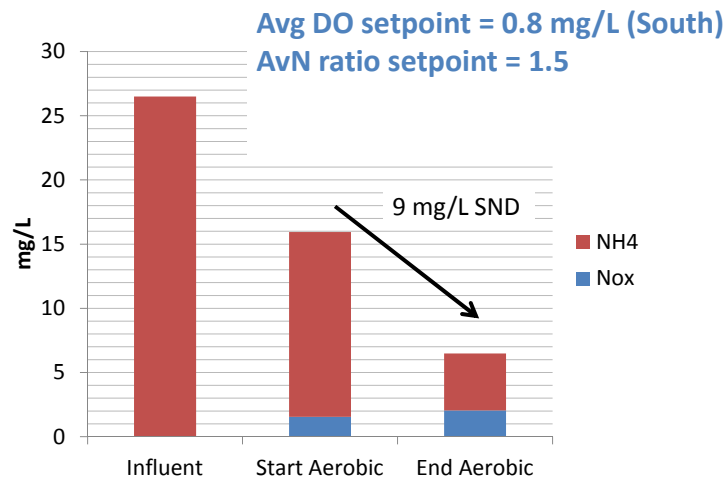


Significance

- Many HRSD plants are implementing ABAC and AvN. There are significant benefits to these control strategies but is additional TN removal guaranteed at lower DO concentrations?

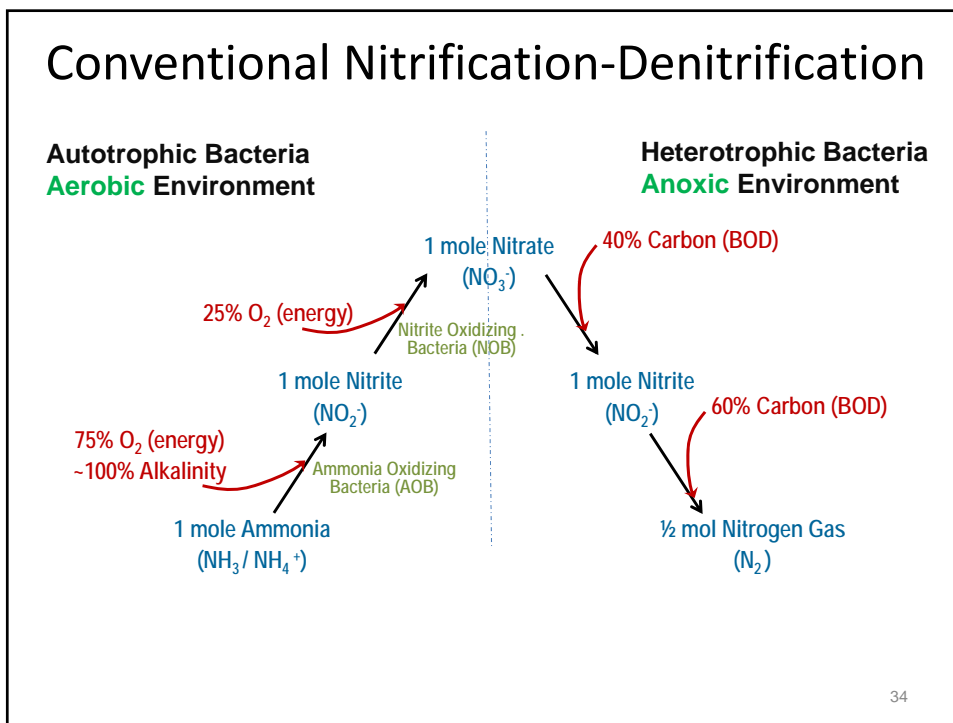
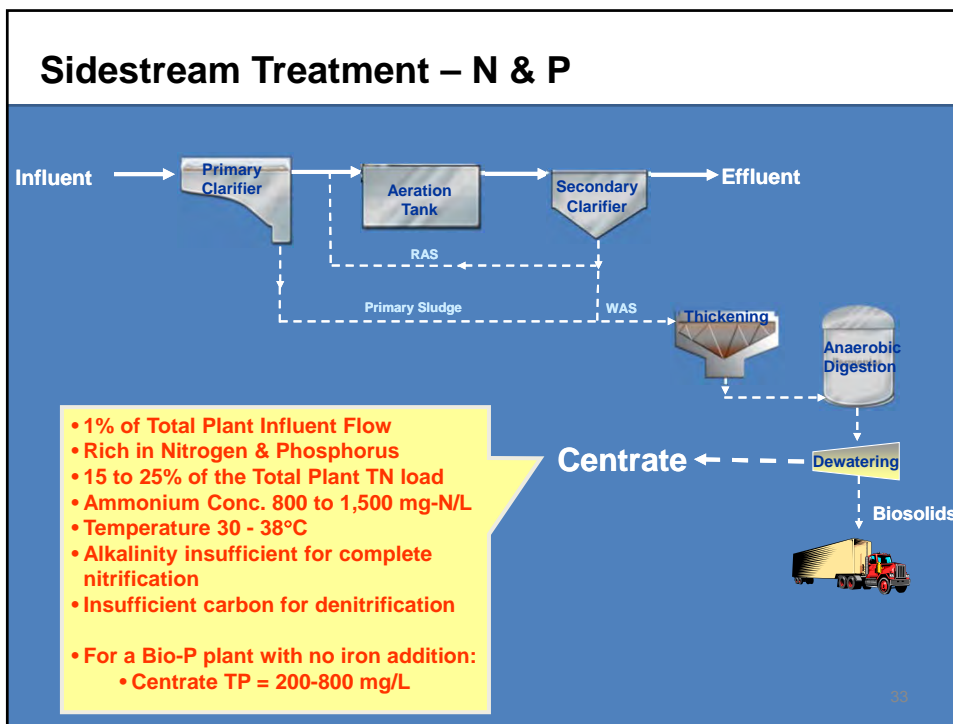


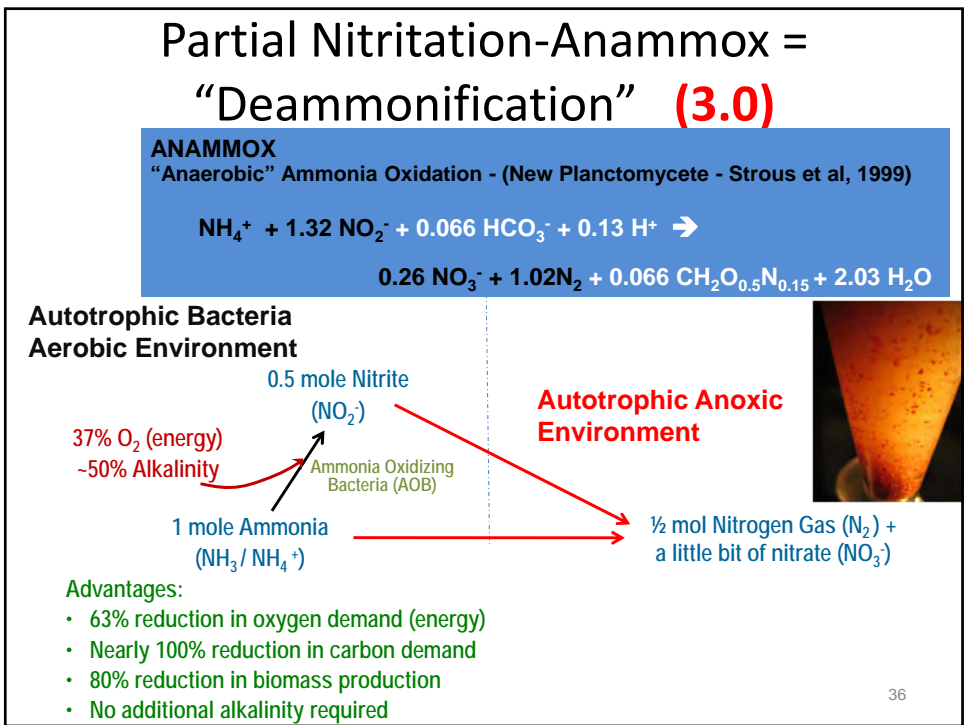
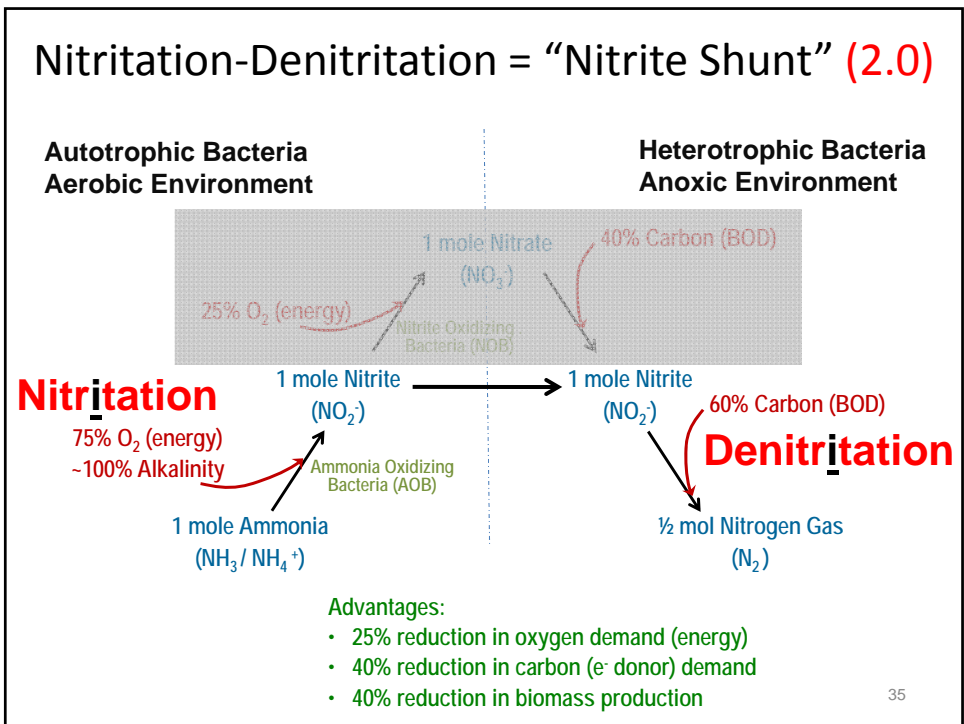
Boat Harbor Profile 9/18/17



Topics for Today

1. Simultaneous nitrification denitrification (SND) with ammonia based aeration control (ABAC).
2. York River Treatment Plant Pilot Testing:
 - Mainstream deammonification with bioaugmentation and anammox retention
 - “Sidestream” biological P removal by RAS fermentation





One-Step Sidestream Deammonification

- **SBR + Hydrocyclone Granular Sludge (DEMON)**

- Strass, Austria
- World Water Works, Inc.

- **Upflow Granular Sludge (CANON/ANAMMOX)**

- Olburgen, Netherlands
- Paques (NL)

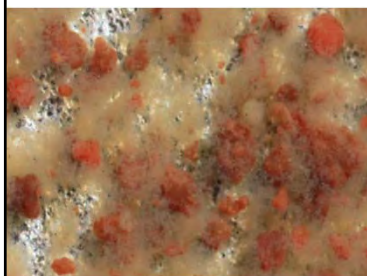
- **Biofilm process (MBBR-style)**

- ANITA Mox – Malmo, Sweden
 - AnoxKaldnes – Kruger - Veolia
- Deammon -- Hattingen, Germany & Stockholm
 - Purac

Centrate
 NH_4^+



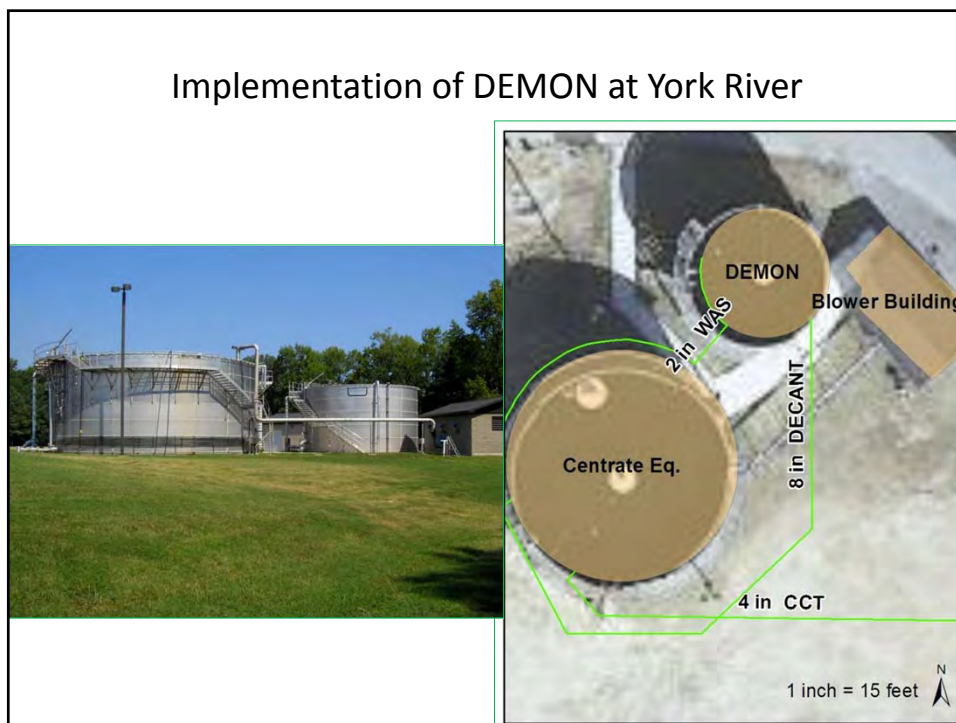
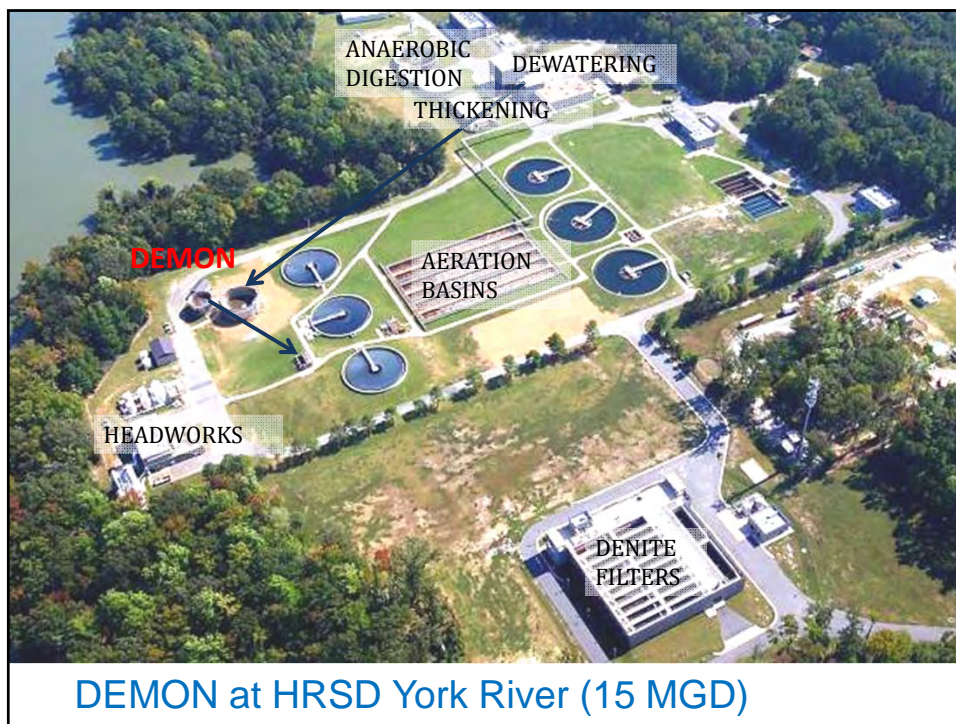
Partial Nitrification and Anammox
- combined in a single reactor



Sidestream Deammonification Status in North America

- DEMON – HRSD York River; Started October 2012; **operating**
- ANITA Mox – HRSD James River; Started November 2013; **operating**
- DEMON – Harvest Power/Reedy Creek, FL; Started January 2014; **operating**
- DEMON – Alexandria, VA; Started June 2015; **operating**
- DEMON- Guelph, Ontario; Started 2015; **operating**
- ANITA Mox – South Durham, NC; Started 2015; **operating**
- DEMON – Greeley, CO; Started 2015; **operating**
- ANITA Mox – Chicago Egan MWRDGC; Started 2016; **operating**
- ANITA Mox – Denver MWRD; Started 2017; **operating**

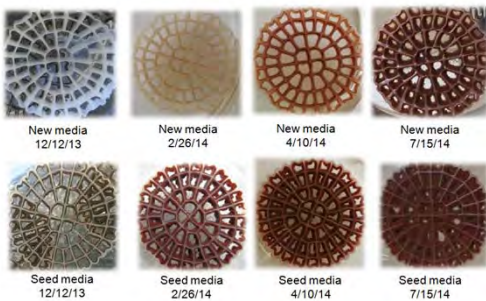
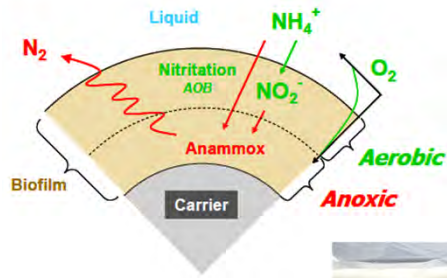
- DEMON – Pierce County, WA; **pilot complete; in construction**
- DEMON – DCWater Blue Plains; **in construction**



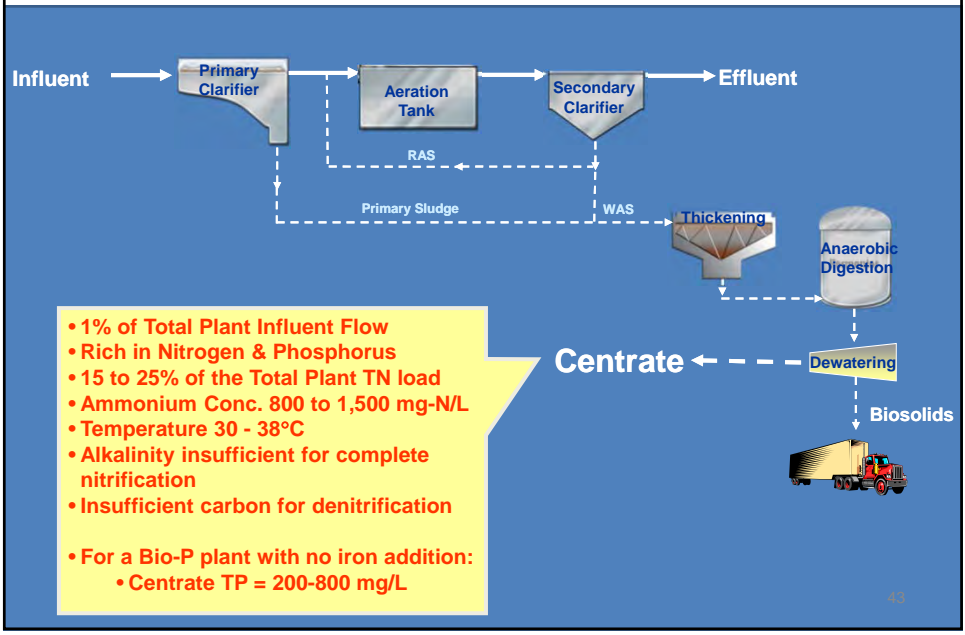
HRSD James River Treatment Plant (20 MGD)



ANITA Mox Sidestream Deammonification MBBR



Sidestream Treatment – N & P



Drivers for Mainstream Shortcut N Removal

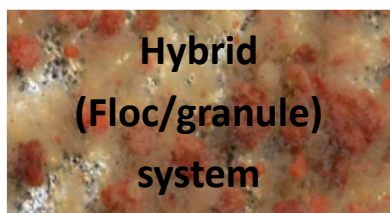
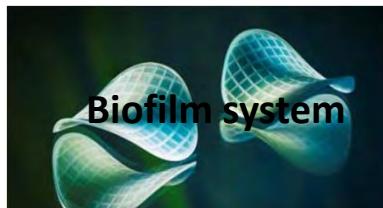
- Eliminate External Carbon
- Energy
 - decreases aeration demand for N removal
 - decreases aerobic COD oxidation
 - diverts wastewater carbon to anaerobic digestion
- Intensification
 - carbon diversion = much smaller aeration tank volume required

Challenges

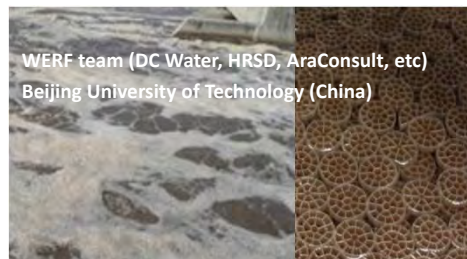
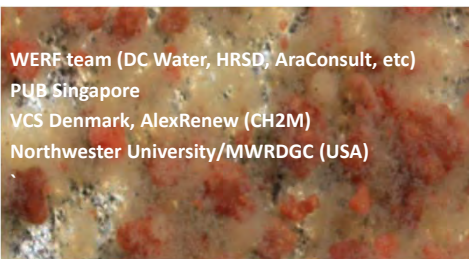
Management of populations

1. NOB out-selection (maximize AOB rate)
2. Anammox retention

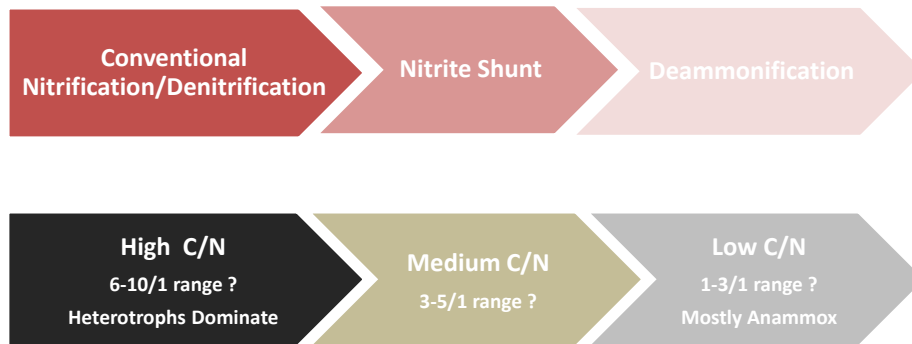
Mainstream Approaches Considered



Where is the work being performed?

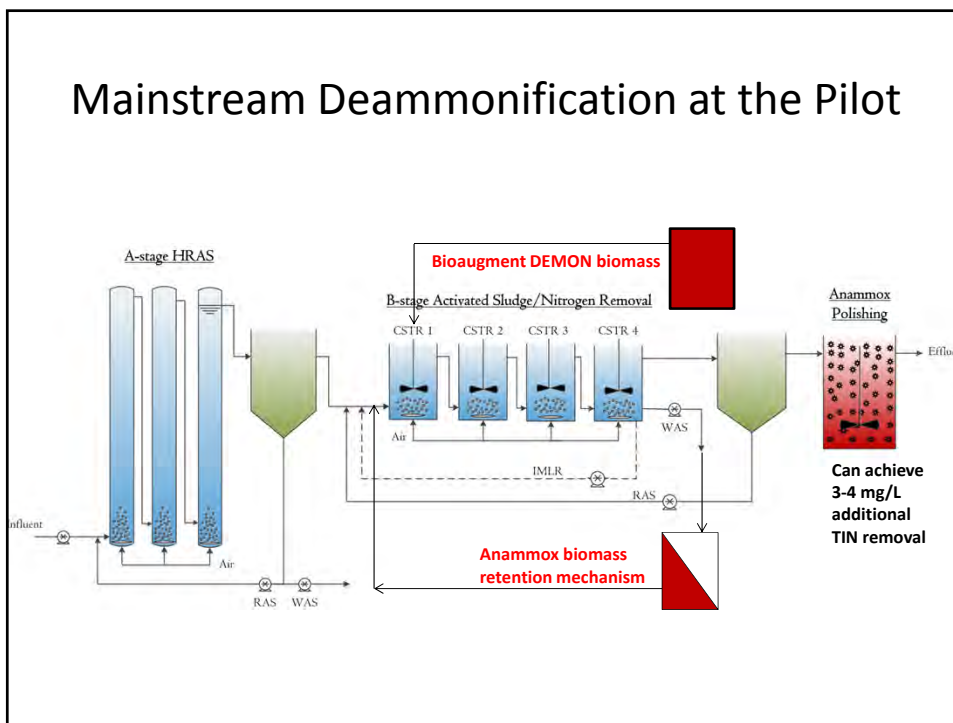
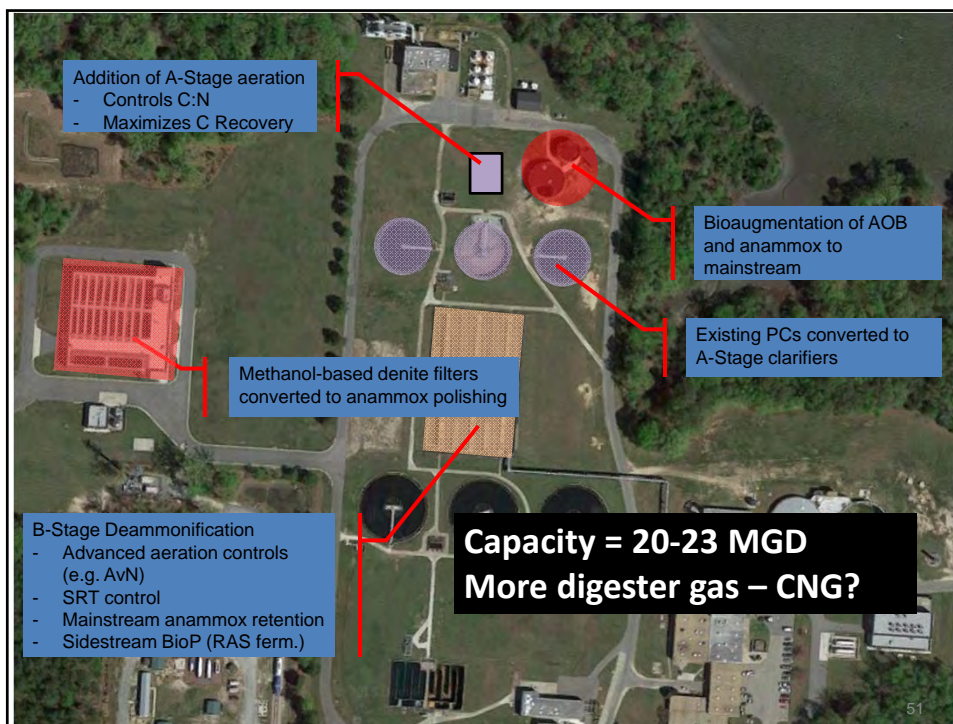


N removal is driven by extent of C diversion

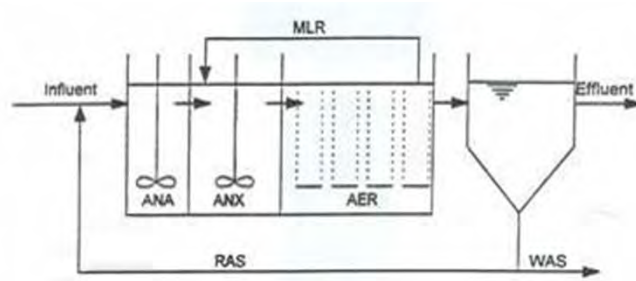


Processes for Carbon Diversion & Control

- Primary Clarifier
- Chemically Enhanced Primary Treatment
- "A-stage" - super high-rate activated sludge
- Primary filtration - microscreen, cloth, compressible media
- AAA[®] - convert rectangular primary clarifier to A-stage
- Captivator[®] - aerated WW contact with WAS + DAF
- ClearCove – screening, batch settling, CEPT, EQ combined
- High rate MBBR + DAF
- Roughing trickling filter
- Conventional high-rate activated sludge
- Mainstream anaerobic treatment – UASB, AnMBR



Add Bio-P to MLE... - A2/O Process



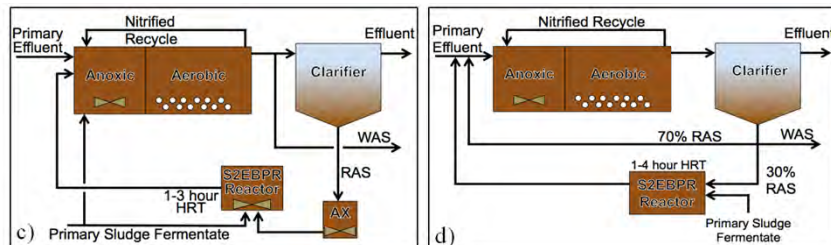
A²/O or Phoredox Process

ANA = Anaerobic
 ANX = Anoxic
 AER = Aerobic

53

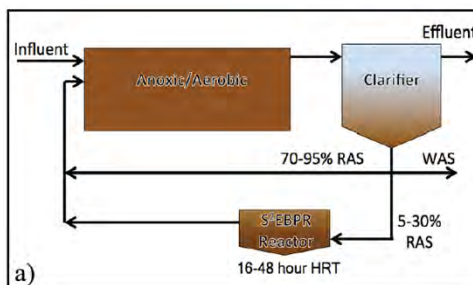
Sidestream Bio-P

- Ferment for 24-48 hours without external carbon
- More realistic sizing is 4-8 hr HRT with some external carbon addition



RAS Fermentation

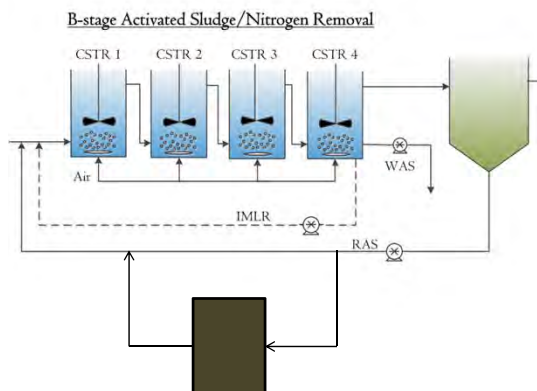
- Increases reliability of Bio-P when influent VFA is low
- Combines hydrolysis, fermentation, and enrichment of PAO
- Selection of PAO over GAO
- Possibly enrichment of *Tetrasphaera* over *Accumulibacter*



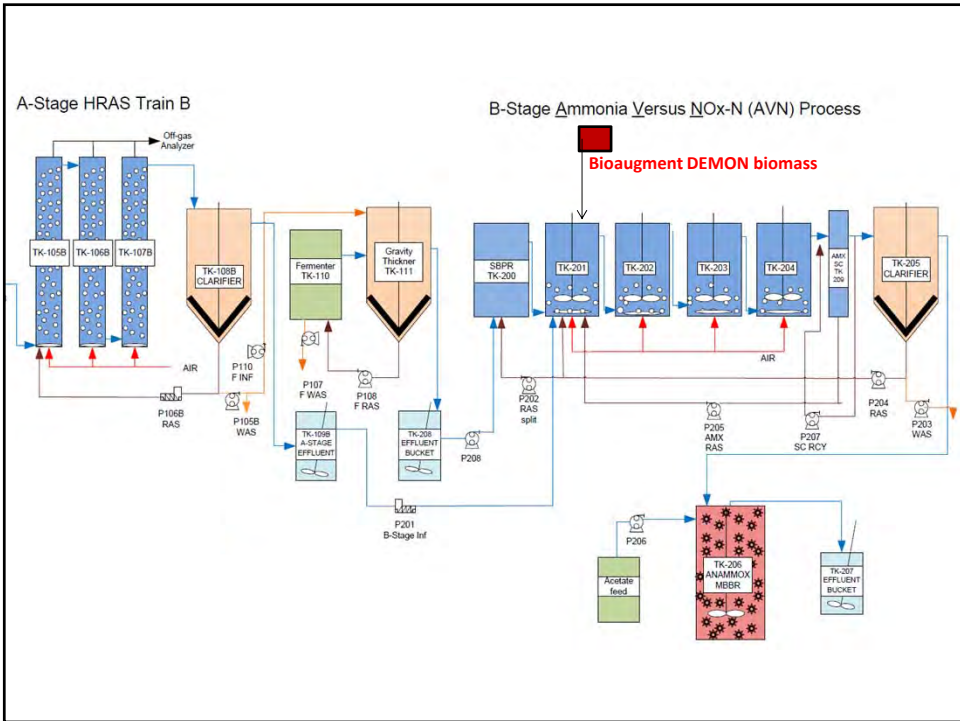
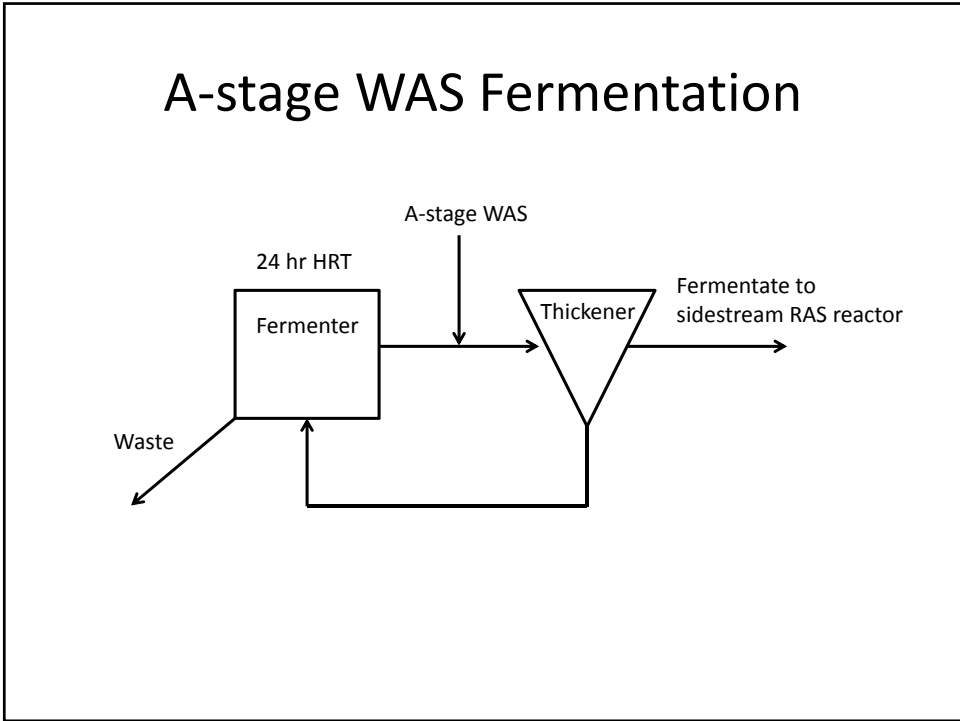
Tooker, N.B., Barnard, J.L., Bott, C.B., Carson, K., Dombrowski, P.D., Martin, K., McQuarrie, J., Menniti, A., Phillips, H., Schauer, P., Shaw, A., Stevens, G., Takács, I., Onnis-Hayden, A., Gu, A. (2016). Side-stream enhanced biological phosphorus removal as a sustainable and stable approach for removing phosphorus from wastewater. IWA – Nutrient Removal & Recovery, Denver, USA.

Sidestream RAS Fermentation

- Objective: Determine if reliable Bio-P can occur in an A/B process by fermenting a portion of the RAS
- Expected Results: Would be remarkable to achieve Bio-P in A/B process. May have an effect on NOB outselection.



Sidestream Bio P Reactor (SBPR) with 10-30% of the RAS for 4-8 hrs with or without external carbon addition (fermentate)



Questions?

HRSD COMMISSION MEETING MINUTES
September 26, 2017

ATTACHMENT #8

AGENDA ITEM 22. – Informational Items

a. Management Reports

- (1) [General Manager](#)
- (2) [Communications](#)
- (3) [Engineering](#)
- (4) [Finance](#)
- (5) [Information Technology](#)
- (6) [Operations](#)
- (7) [Special Assistant for Compliance Assurance](#)
- (8) [Talent Management](#)
- (9) [Water Quality](#)
- (10) [Report of Internal Audit Activities](#)
- (11) [Internal Audit Report – Procurement and ProCard Management](#)

b. [Strategic Planning Metrics Summary](#)

c. [Effluent Summary](#)

d. [Air Summary](#)



September 19, 2017

Re: General Manager's Report

Dear Commissioners:

Hampton Roads has been very fortunate this year to observe the impact of hurricanes without actually feeling the effects. Hurricanes Harvey and Irma have been sobering reminders of the challenges our region will face when the next storm hits our coast. It has been 14 years (to the day as I write this report) since the last major storm hit us, with Isabel making landfall as a very weak category 1 hurricane. It is challenging to even imagine the impact of a storm of Irma's size and strength.

While we have an excellent Hurricane Plan, we have focused our drills and preparation on what we believe to be most probable, not the unimaginable. Our planning has focused on up to a category 2 hurricane passing over the region in a reasonable timeframe. We have not given serious consideration to a larger storm or one that could stall over our region and dump more than a year's worth of rain in less than one week.

As a result, we will be reviewing our plans over the coming months and exploring a modeling exercise that inundates our region with a Harvey-like rain event. The results of such an exercise may not result in changes to our plan, but at least we will have a better understanding of where the largest impacts to our facilities and our region will occur and what the duration of recovery efforts may be in such an unlikely situation.

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

1. **Treatment Compliance and System Operations:** All plants met all VPDES and air permit requirements during the month. The North Shore interceptor system experienced capacity-related overflows due to intense rain events in Hampton on August 8 and 29 and in Suffolk on August 12. Details of these and other minor issues are included in the Operations Director's report.

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

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

2. **Internal Communications:** I participated in the following meetings/activities with HRSD personnel:
 - a. A meeting with HRSD United Way Campaign leaders to discuss this year's campaign
 - b. A meeting to discuss the potential redevelopment of the Meekins Building to solve space issues in the Water Quality Department
 - c. A meeting to review exterior colors for the Sustainable Water Initiative for Tomorrow (SWIFT) Research Center
 - d. A meeting to discuss employee uniform items
 - e. A review of the interpretive education elements for the SWIFT Research Center
 - f. A meeting to review projects related to the Chesapeake-Elizabeth Treatment Plant closure plan
 - g. Multiple meetings planning the October 12th Imagine a Day without Water event at the SWIFT Research Center
 - h. A strategic planning update meeting
 - i. Several calls and meetings regarding reviews of the Regional Wet Weather Management Plan (RWWMP)
 - j. A debrief and planning meeting for 2018 apprentice graduation
 - k. A meeting to review property acquisition issues associated with Surry and Williamsburg
 - l. A meeting to review staffing issues in Operations
 - m. A meeting to discuss community meetings associated with the Virginia Beach storage tank project
 - n. Two new employee orientation sessions
 - o. One breakfast with employees celebrating service anniversaries

3. **External Communications:** I participated in the following meetings/activities:
 - a. A meeting with the City of Hampton Planning Department regarding repurposing Bridge Street Pump Station
 - b. Multiple planning calls with Water Environment Federation (WEF) staff and participants in the upcoming WEF Technical Exhibition Conference (WEFTEC) Public Officials Forum
 - c. The groundbreaking for the Elizabeth River Project Paradise Creek Park education building

- d. A call with the City of Richmond to discuss mutual interest in real-time sewer sensors and operations
- e. The Governor's announcement of WHRO's Environmental Educational initiative funded by a grant from Jane Batten
- f. Delivered the keynote address at the National Governor's Association Water Policy Institute
- g. Participated in a joint Water Environment & Research Foundation (WERF)/WEF Shared Water Vision convening as one of two utilities invited
- h. A conference call with the Water Agency Leaders Alliance to discuss workforce issues and a research project with Brookings Institute
- i. A follow up call with the facilitator for the SWIFT Oversight and Monitoring Workshop
- j. A meeting with the Virginia Port Authority to discuss property adjacent to the Army Base Treatment Plant
- k. A meeting with the Tidewater Community College (TCC) Real Estate Foundation regarding plans for the SWIFT Research Center and future development at the Nansemond Treatment Plant
- l. Briefed the Portsmouth City Council regarding the nutrient trading agreement
- m. Briefed the Virginia Beach City Council regarding the nutrient trading agreement
- n. Briefed the Williamsburg City Council regarding the nutrient trading agreement
- o. Attended the City of Hampton Planning Commission meeting
- p. Hosted representatives from Kohler Plumbing research department
- q. Met with representatives from the South Hampton Roads United Way campaign

On August 29th we received a response from US EPA regarding the Alternative Analysis Report (AAR) submitted on July 29, 2016. The response was limited to EPA expressing a generalized concern about the proposed overall integrated plan schedule. As you were briefed last month, the proposed schedule extends through 2053 and still results in a significant financial burden for a high percentage of the households we serve. In their response, the US EPA indicated that they will review the final submittal to determine the most expeditious implementation schedule possible.

In a follow up email, we asked EPA for any supporting information that they may have which they believe shows that our schedule is not as expeditious as possible. Their response was "I'm sure we will be discussing your other points with you in the future."

After EPA took 13 months to review the AAR, it is frustrating that EPA provided no substantive comments (which was the whole point of their insistence that we provide them with the AAR 14 months ahead of the RWWMP submittal). Moreover, their failure to provide any analysis whatsoever to support their conclusory assertion that a shorter implementation period may be feasible is unhelpful at best. We believe this continues to be posturing by EPA staff and remain prepared to engage in a detailed discussion them on the integrated plan schedule. We continue to believe our schedule is very aggressive and will push the limits of affordability for regional ratepayers.

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, September 26, 2017 in Virginia Beach.**

Respectfully submitted,

Ted Henifin

Ted Henifin, P.E.
General Manager

TO: General Manager
FROM: Director of Communications
SUBJECT: Monthly Report for August 2017
DATE: September 13, 2017

A. Publicity and Promotion

1. “Hampton Roads treating wastewater till it’s good enough to return to aquifer,” July 31, 2017 | Bay Journal
http://www.bayjournal.com/article/hampton_roads_treating_wastewater_till_its_good_enough_to_return_to_aq
2. “Virginia tightens spigot on big water users to stem Potomac Aquifer decline,” August 5, 2017 | Fredericksburg.com (powered by The Free Lance-Star)
http://www.fredericksburg.com/news/environment/virginia-tightens-spigot-on-big-water-users-to-stem-potomac/article_46dcc766-36f9-5687-a60f-651f97bd6596.html
3. “East of I-95, Virginia Begins to Limit Permitted Groundwater Users”, August 9, 2017 | Radio IQ – www.wvtf.org
<http://wvtf.org/post/east-i-95-virginia-begins-limit-permitted-groundwater-users>
4. “Hampton Roads Region Looks for a Way to Live With the Water,” August 10, 2017 | ENR (Engineering News-Record)
<http://www.enr.com/articles/42494-hampton-roads-region-looks-for-a-way-to-live-with-the-water>
5. “WHRO’s environmental education program has job-creating potential, Gov. McAuliffe says,” August 14, 2017 | The Virginian Pilot and pilotonline.com
https://pilotonline.com/news/local/environment/whro-program-has-job-creating-potential-gov-mcauliffe-says/article_0719d86a-71e4-529e-b2dc-d9db1a615835.html

6. “Close-up | Elizabeth Taraski, CEO of Nansemond River Preservation Alliance and Suffolk representative to HRSD,” August, 15, 2017 | The Virginian Pilot and pilotonline.com
https://pilotonline.com/news/local/close-up-elizabeth-taraski-ceo-of-nansemond-river-preservation-alliance/article_2148d452-726f-57cc-b296-1df0c13c3cb3.html
7. “Skateboarding atop a water tank? Virginia Beach is considering the idea,” August 23, 2017 | Pilotonline.com and The Virginian Pilot
https://pilotonline.com/news/government/skateboarding-atop-a-water-tank-virginia-beach-is-considering-the/article_25f091ff-ae66-5a0d-9723-a978800f19f8.html
8. “A skate park and a storm water tank all wrapped up into one,” August 24, 2017 | WVEC-TV (www.13newsnow.com)
<http://www.13newsnow.com/news/local/a-skate-park-and-a-storm-water-tank-all-wrapped-up-into-one/467136970>
NOTE: A correction was submitted to reporter requesting a correction of “storm water tank” to “underground wastewater storage tank”

B. Social Media and Online Engagement

1. Facebook Reach: 1,266
2. Twitter: 13,600 impressions
3. SWIFT website visits: 487
4. LinkedIn: 7,484 impressions – we continue to see significant growth in engagement in this platform – we more than doubled last month’s 3,470 impressions this month.
5. Construction Project Page Hits: 7,611

C. News Releases, Advisories and Project Notices and Project Websites

1. New Project Web Pages
 - a. SWIFT Research Center located at Nansemond Treatment Plant (Suffolk)
 - b. Pump Station Wet Well Rehabilitation (Chesapeake)
 - c. Pump Station Wet Well Rehabilitation (Norfolk)

2. Project Notices:

- a. Kecoughtan Road Gravity Sewer Pipeline Replacement (Hampton)
- b. [Chesapeake Avenue Force Main Replacement](#) (Hampton)
- c. [Chesapeake Avenue Force Main Replacement](#) (Newport News)
- d. [Warwick Boulevard to James River Influent Force Main Section 2](#) (Newport News)
- e. Warwick Boulevard to James River Influent Force Main Section 3-Phase II (Newport News)
- f. Elm Avenue Force Main Replacement
- g. Ingleside Road Pump Station Incident (Norfolk)
- h. Norchester Site Maintenance (Norfolk)

D. Special Projects and Highlights

1. The Communications team attended the WHRO Environmental Education program launch event featuring Governor McAuliffe. HRSD has partnered with WHRO to provide educational content for this new environmental education program, which will be available to all public school, private school and homeschooled students within the HRSD service region and the Commonwealth. The program has been funded by the Batten Foundation and will provide HRSD far greater educational outreach than previously possible.
2. The Director of Communications participated in the Poverty Simulation, held at the Doubletree Hotel following the August Commission meeting. This event provided an eye-opening educational experience for many of our customer care and management team members, creating greater understanding of the challenges faced by a large population of customers who struggle financially.

E. Internal Communications

1. The Director of Communications and staff participated in the Apprentice Graduation, supporting the event, assisting as needed and taking photos.
2. Communications Staff provided a Teams and Problem Solving (TAPS) training course presentation to QST.
3. Director participated in United Way Campaign kickoff coordination meetings.
4. Communications staff participated in meetings with askHRgreen.org and the Value of Water (US Water Alliance) Communications Sub-Committee

5. Director and staff participated in several development meetings for the “Environment” and “People” areas of the HRSD Strategic Plan, which is under review and being updated.
6. Communications Director met with research company representatives to begin coordination for next customer service survey.
7. Communications staff met with engineering team members to begin coordination of the first community information meeting about the Providence Storage Tank project.
8. Communications staff attended several meetings to review interpretive educational features for the SWIFT Research Center.
9. Staff began planning and coordination of a SWIFT Research Center Progress Tour in conjunction with this year’s “Imagine a Day without Water” taking place on October 12, 2017.

F. Metrics

1. Educational and Outreach Activities: 2
 - a. Bridge Street Pump Station Replacement, Community Open House with city of Hampton, Hampton Yacht Club - 8/8
 - b. Campostella Recreation Center – What Not to Flush (two sessions, 40 students each) – 8/8
2. Number of Community Partners: 3
 - a. City of Norfolk
 - b. City of Hampton
 - c. Hampton Yacht Club
3. Additional Activities Coordinated by Department:
 - a. ODU Engineering Student Tour of SWIFT Pilot – 8/1
 - b. Combination tour of Chesapeake-Elizabeth Treatment Plant and Central Environmental Lab for home school group – 8/7

4. Monthly Metrics

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Total Training Hours per Full Time Employee (2) - Current Month	Hours / #FTE	6.5
M-1.4b	Total Training Hours per Full Time Employee (2) - Cumulative Fiscal Year-to-Date	Hours / #FTE	9.75
M-5.2	Educational and Outreach Events	Number	2
M-5.3	Number of Community Partners	Number	3

Respectfully,

Leila Rice

Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for August 2017

DATE: September 13, 2017

A. General

1. Capital Improvement Program (CIP) spending for the first month of Fiscal Year-2018 was \$5.35 million while the planned expenditure for the month was estimated at \$13.82 million. The first month of the fiscal year is often lower than planned due to accounting adjustments for projects associated with the previous fiscal year. A Water Quality Improvement Fund grant reimbursement of \$773,000 was received for the Virginia Initiative Plant Nutrient Reduction Improvement project.
2. The Engineering Department is working with the external auditor, SC&H, to conduct an audit of the procurement procedures used for the selection of consultants, contactors and vendors. The audit will focus on a review of the Engineering Department processes, policies and procedures when selecting outside firms to assist with design and construction-related work. The effort will also include a review of the documentation, use of the ERP system, and risk potential for procurement within the Engineering Department. A kick-off meeting was held in May and the audit should be completed later this year.
3. The Commonwealth of Virginia Department of General Services has recently published a report highlighting the use of Alternative Project Delivery by public entities for the prior fiscal year ending June 30. The report noted that there are 28 active Construction Management projects and 8 active Design-Build projects. The report also noted that there were no active Energy Savings Contracts or Job Ordering Contracts in place during the fiscal year. With the improving economy, it is expected that more public entities will be considering the use of Alternative Project Delivery in the coming years.

B. Asset Management Division

1. A pilot study was recently completed at the Atlantic Treatment Plant to evaluate data gaps in the Computerized Maintenance Management System (CMMS) to assess the condition of critical assets and to prepare an

Asset Management Plan. The results of this pilot study will be presented in September with a goal to consider expanding this program to other treatment plants in the coming years.

2. The Asset Management Implementation project is underway. This is a three year, \$1.7 million effort to enhance the planning process for repair and replacement of capital assets using a risk-based and data-driven methodology. A draft Asset Management Policy has been prepared for internal review and the team is working on a Change Management Strategy. This strategy will help to minimize disruptions to staff and define the needed communication efforts during the implementation of the Asset Management Program.

C. North Shore and South Shore Design & Construction Divisions

1. Work continues to replace the buried methanol storage tank at the Army Base Treatment Plant. The tank was only in service for a short while when leaks were observed. The tank could not be used due to the potential of leaking methanol into the ground and/or groundwater infiltrating back into the tank. Use of methanol is critical to our ability to meet the total nitrogen target of 5 mg/l. This target is needed to comply with the Virginia Department of Environmental Quality Water Quality Improvement Fund Grant Agreement. An effort is underway to replace this existing tank with a new above-ground tank. This work will be challenging due to the limited site area and the poor soils at this location. We expect to have the new tank installed and in service next year. This schedule could be impacted by a number of factors including permitting, procurement and challenges during the construction effort.
2. A new project has begun to stabilize and enhance approximately 750 feet of shoreline along the northern edge of the Nansemond Treatment Plant site. This area of concern is located along the James River adjacent to I-664 and was purchased back in 2015 from the Tidewater Community College Real Estate Foundation. The stabilization will include a living shoreline and armoring to stabilize the 12 to 15-foot tall eroding banks. A meeting was recently held with the Tidewater Community College and the City of Suffolk to discuss issues of common concern and the potential to link this project to future work planned on the land located on the west side of I-664.

D. Planning & Analysis Division

1. Staff continues to refine the PI Vision software program to provide staff with new ways to view and analyze data. The PI Vision software is already used for sharing flow, rainfall, tide and other weather data. The new PI Asset Management will include water consumption and peak flow recurrence data which can be used for comparison purposes with current flow and wet weather conditions. This tool is very valuable during emergency situations in which fast and important decisions need to be made.
2. Staff met with representatives from the City of Portsmouth, James City County and the City of Williamsburg. These meetings are part of an annual effort to meet with each local jurisdiction to review current projects, future development, operational issues and other issues of common interest.

E. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 4
 - a. Staff made a presentation on SWIFT at the Resilient Virginia Conference on August 1.
 - b. Staff assisted with the creation of a playground as part of the Roc Solid Foundation Program on August 18. This effort was done in cooperation with two of our consultants, Kimley Horn and RK&K with 30 individuals involved in this effort. The Roc Solid Foundation links volunteers with cancer patients to build hope for kids and families facing pediatric cancer.
 - c. Staff made a presentation on SWIFT at the Hampton Roads Resilience Forum on August 22.
 - d. Staff participated on a panel at the Potable Reuse Workshop entitled, Mid-Atlantic: Drivers, Trends and Success Stories on August 23.
2. Number of Community Partners: 1
 - a. Roc Solid Foundation
3. Number of Research Partners: 0

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Total Training Hours per Full Time Employee (39) - Current Month	Hours / #FTE	2.31
M-1.4b	Total Training Hours per Full Time Employee (39) - Cumulative Fiscal Year-to-Date	Hours / #FTE	3.03
M-5.2	Educational and Outreach Events	Number	4
M-5.3	Number of Community Partners	Number	1
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 August 2017
DATE: September 13, 2017

A. General

1. Customer Care Center employees along with HRSD Senior Staff and Commissioners participated in a Poverty Simulation Workshop on August 22, 2017. The goal of the simulation was for participants to get a better appreciation of the challenges faced by those struggling financially in our community. Customer Care staff appreciated the opportunity to participate at the simulation. One employee shared their experience as:

“When I volunteered to attend the Poverty Simulation, I really wasn’t sure what to expect. My experience hit a little too close to home. The feelings of anxiety and being completely overwhelmed were worse than I was prepared to feel. The good that came out of it was a better understanding of what those who are less fortunate than I must deal with on a daily basis. Even though it hit close to home, it still made me realize how much I have that others do not. I am very fortunate that I own my own vehicle and have access to a computer and the internet. I am able to drive myself to where I need to go and utilize the internet for paying my bills. However, I received a taste of what it must feel like to have to take public transportation to run errands, wait in long lines to accomplish those errands, and not be able to accomplish all that I set out to do on a daily basis due to time restrictions. It was extremely frustrating. I want to thank Ted and Melissa for giving Customer Care the ability to participate in this simulation. I know that I really appreciated the opportunity. On a side note, at the end of the simulation, the speaker advised us of a free 10 month course called Bank on Hampton Roads. It was something I really wanted to do but didn’t know existed. I signed up and have already attended my first class!”

2. HRSD closed on the Atlantic Treatment Plant Thermal Hydrolysis Process and Ferguson Interceptor Force Main Virginia Clean Water Revolving Loan Funds (VCWRLF) on August 9.
3. Staff decided to postpone the planned bond sale in November to January 2018. With long-term rates projected to remain low and liquidity levels relatively high, it makes sense to delay the sale. In addition, late January is historically a great time to issue bonds.
4. The Director of Finance attended the Water Finance conference on August 28 and 29. EPA’s Water Infrastructure Finance and Innovation Act (WIFIA) technical team presented at the conference. HRSD staff was able to get a number of key questions answered. Staff is working with the Virginia Resources Authority (VRA)

on the concept where DEQ/VRA applies for the WIFIA loan funds (rates capped at 30-year treasury yield) on behalf of HRSD and other localities. WIFIA would fund projects at 49 percent and VRA would fund the remaining 51 percent with subsidized VCWRLFs. This would ensure the lowest cost of capital for our planned capital projects, which is estimated at 2-2.25 percent lower than the rates assumed in our financial forecast.

5. For Fiscal Year (FY) 2017, VRS realized a 12.1 percent return and HRSD's OPEB (Retiree Health Trust) had a 10.7 percent return, exceeding our benchmark by 1 percent. VRS has a more aggressive portfolio allocation at 70/30 Equities/Fixed Income and they use a 7 percent discount rate (assumed rate of return). VRS ended the fiscal year with \$74 billion in assets an historic high. HRSD's portfolio is 60/40 Equities/Fixed Income and we use a conservative 6 percent discount rate (assumed rate of return). The Total OPEB portfolio value was \$37.4 million on July 1, 2016 and increased to \$41.0 million on July 1, 2017.
6. Revenues are slightly higher than budget with water consumption coming in significantly higher than 2017 actuals and the three year average. Expenses are slightly lower than budget to start the fiscal year. Personal services and fringe benefit expenses are below budget, at 15 percent and 16 percent of budget, respectively, consistent with the prior year. Most other expenses are below budget, typical for August and consistent with the prior year, since many purchases are using funds encumbered in FY-2017. Major repairs and capital assets expenses are significantly lower than budget at this time, since many purchases in July related to prior year encumbrances.

B. Interim Financial Report

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

	Amended Budget	Current YTD	Current YTD as % of Budget (17% Budget to Date)	Prior YTD as % of Prior Year Budget
Wastewater	\$ 265,662,693	\$ 47,720,891	18%	17%
Surcharge	1,900,000	276,024	15%	23%
Indirect Discharge	2,500,000	476,963	19%	18%
Norfolk Sludge	90,000	13,174	15%	11%
Fees	2,935,000	441,125	15%	19%
Municipal Assistance	700,000	163,630	23%	11%
Miscellaneous	720,000	59,969	8%	4%
Total Operating Revenue	274,507,693	49,151,776	18%	17%
Non Operating Revenues				
Facility Charge	6,000,000	1,152,440	19%	13%
Interest Income	1,800,000	440,913	24%	4%
Build America Bond Subsidy	2,400,000	-	0%	0%
Other	845,000	34,699	4%	2%
Total Non Operating Revenue	11,045,000	1,628,052	15%	8%
Total Revenues	285,552,693	50,779,828	18%	17%
Transfers from Reserves	9,760,286	1,626,714	17%	0%
Total Revenues and Transfers	\$ 295,312,979	\$ 52,406,542	18%	17%
Operating Expenses				
Personal Services	\$ 53,773,327	\$ 8,269,636	15%	15%
Fringe Benefits	24,700,569	4,039,631	16%	16%
Materials & Supplies	7,399,704	1,002,047	14%	16%
Transportation	1,423,974	124,204	9%	14%
Utilities	11,973,115	1,513,617	13%	12%
Chemical Purchases	10,620,594	1,259,251	12%	11%
Contractual Services	36,650,038	4,244,677	12%	15%
Major Repairs	10,429,168	550,349	5%	10%
Capital Assets	1,716,528	230,225	13%	9%
Miscellaneous Expense	2,396,234	543,095	23%	16%
Total Operating Expenses	161,083,251	21,776,732	14%	14%
Debt Service and Transfers				
Debt Service	59,949,120	13,340,583	22%	21%
Cost of Issuance Bonds	900,000	2,923	0%	0%
Transfer to CIP	58,802,000	9,800,334	17%	17%
Transfer to General Reserve	14,318,608	2,386,434	17%	0%
Transfer to Risk management	260,000	43,335	17%	17%
Total Debt Service and Transfers	134,229,728	25,573,609	19%	19%
Total Expenses and Transfers	\$ 295,312,979	\$ 47,350,341	16%	16%

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 August 31, 2017

	General	Risk Management	Reserve	Capital
Beginning of Period - July 1, 2017	\$ 169,127,728	\$ 3,000,520	\$ 30,760,330	\$ 37,452,225
Add: Current Year Sources of Funds				
Cash Receipts	57,686,700			
Capital Grants				772,728
Line of Credit				-
Bond Proceeds (includes interest)				179,359
Transfers In	494,006	43,335		9,800,334
Sources of Funds	<u>58,180,706</u>	<u>43,335</u>	<u>-</u>	<u>10,752,421</u>
Total Funds Available	<u>\$ 227,308,434</u>	<u>\$ 3,043,855</u>	<u>\$ 30,760,330</u>	<u>\$ 48,204,646</u>
Deduct: Current Year Uses of Funds				
Cash Disbursements	46,417,262			15,799,938
Transfers Out	9,843,669		494,006	-
Uses of Funds	<u>56,260,931</u>	<u>-</u>	<u>494,006</u>	<u>15,799,938</u>
End of Period - August 31, 2017	<u>\$ 171,047,503</u>	<u>\$ 3,043,855</u>	<u>\$ 30,266,324</u>	<u>\$ 32,404,708</u>

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

Classification/ Treatment Service Area	Expenditures		Year to Date		Total Expenditures	Outstanding Encumbrances	Available Balance
	Budget	prior to June 30, 2017	FY 2018 Expenditures				
Administration	\$ 42,661,073	\$ 39,190,854	\$ (177,747)	\$ 39,013,107	\$ 1,240,375	\$ 2,407,591	
Army Base	158,584,000	119,868,900	695,651	120,564,551	4,524,108	33,495,341	
Atlantic	116,579,479	41,761,333	393,700	42,155,033	62,348,575	12,075,871	
Boat Harbor	86,813,683	41,705,426	249,403	41,954,829	8,783,109	36,075,745	
Ches-Eliz	136,647,317	6,752,397	315,009	7,067,406	2,436,042	127,143,869	
James River	75,114,256	50,348,019	123,224	50,471,243	3,526,663	21,116,350	
Middle Peninsula	46,496,019	6,174,832	127,012	6,301,844	4,296,591	35,897,584	
Nansemond	76,560,570	33,514,465	455,423	33,969,888	5,398,087	37,192,595	
Surry	2,686,000	-	-	-	11,000	2,675,000	
VIP	271,381,603	225,845,835	1,700,917	227,546,752	19,131,842	24,703,009	
Williamsburg	11,396,383	8,607,181	(326,713)	8,280,468	894,515	2,221,400	
York River	45,160,886	38,699,490	6,506	38,705,996	1,684,442	4,770,448	
General	243,278,797	164,501,764	2,131,364	166,633,128	42,145,291	34,500,378	
	<u>\$1,313,360,066</u>	<u>\$ 776,970,496</u>	<u>\$ 5,693,749</u>	<u>\$ 782,664,245</u>	<u>\$ 156,420,640</u>	<u>\$374,275,181</u>	

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal July 2017	Principal Payments	Principal Draws	Principal August 2017	Interest Payments
Fixed Rate					
Senior	\$ 429,165	\$ (138)	\$ -	\$ 429,027	\$ (68)
Subordinate	300,305	(2,592)	1	297,714	(5,654)
Variable Rate					
Subordinate	50,000	-	-	50,000	(33)
Line of Credit	-	-	-	-	-
Total	<u>\$ 779,470</u>	<u>\$ (2,730)</u>	<u>\$ 1</u>	<u>\$ 776,741</u>	<u>\$ (5,755)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 09/01/17

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	0.92%	0.93%	0.01%
Average	0.22%	0.21%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 09/01/17	0.79%	0.78%	-0.01%

* Since October 20, 2011 HRSD has averaged 21 basis points on Variable Rate Debt

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

	Current YTD	Policy Minimum
Capital % Cash Funded	42%	15%
General Reserve as % of Operations	106%	75-100%
Risk Management Reserve as % of Projected Claims Costs	25%	25%

Total Return Strategy

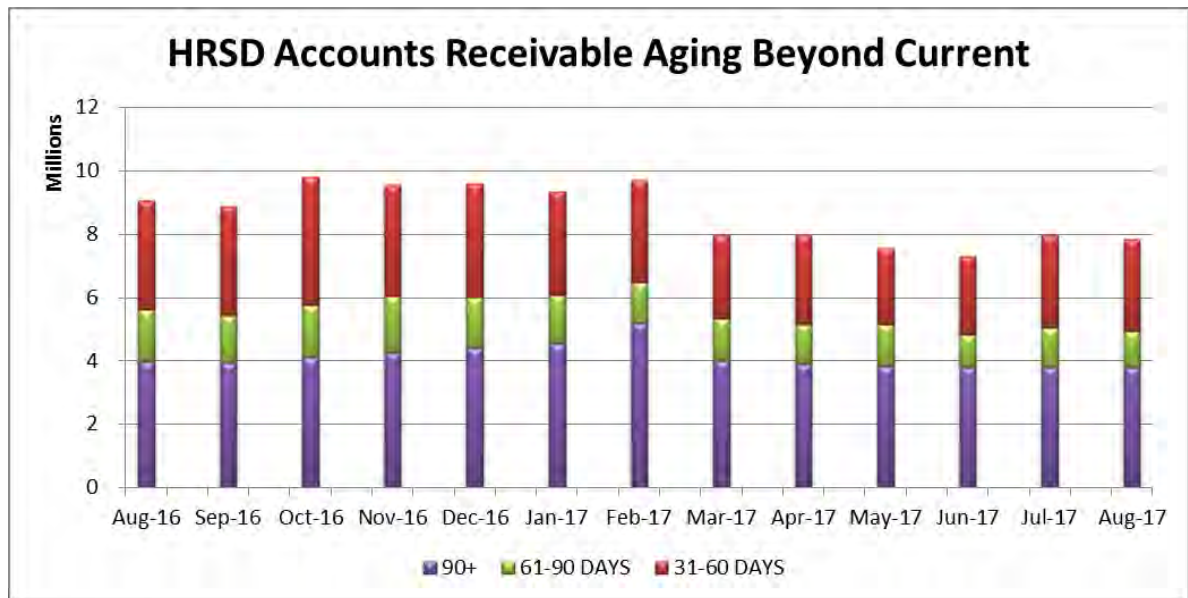
	Market Value June 30, 2017	YTD Buy/Sell	YTD Change in Market Value	YTD Adjustments	Market Value August 31, 2017
Investment Activity	\$ 123,844,438	\$ 300,896	\$ 251,932	\$ -	\$ 124,397,266
Unrestricted Debt Service Reserve Fund	30,760,330			(494,006)	30,266,324
	\$ 154,604,768	\$ 300,896	\$ 251,932	\$ (494,006)	\$ 154,663,590

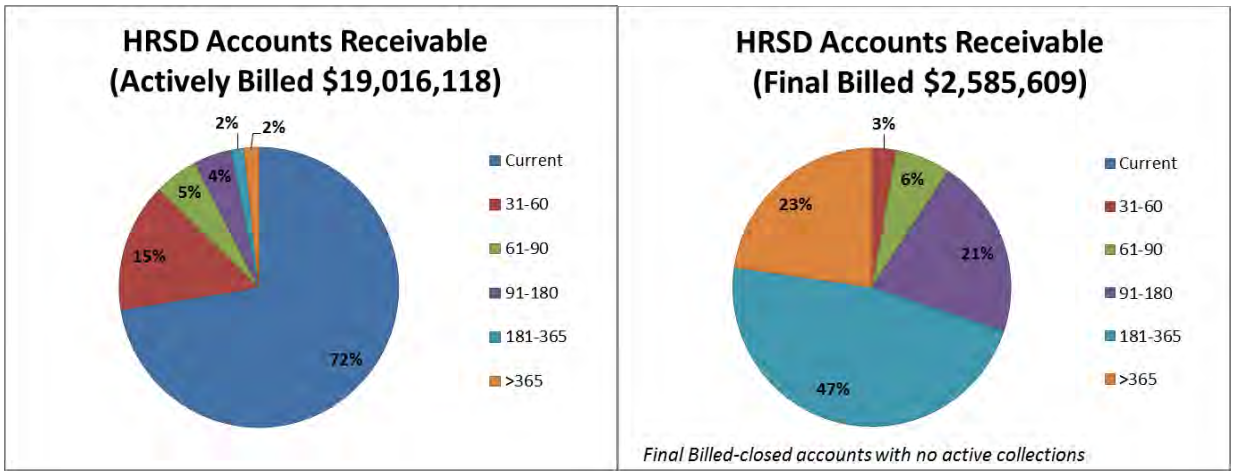
7. Summary of Billed Consumption

Summary of Billed Consumption (,000s ccf)							
Month	2018 Cumulative Budget Estimate	2018 Cumulative Actual	% Difference		% Difference		% Difference
			From Budget	Cumulative 2017 Actual	From 2017	Cumulative 3 Year Average	From 3 Year Average
July	4,427	4,869	10.0%	4,776	1.9%	4,798	1.5%
Aug	8,850	9,939	12.3%	9,275	7.2%	9,525	4.3%
Sept	13,271	-	N/A	14,227	N/A	14,215	N/A
Oct	17,689	-	N/A	19,017	N/A	18,999	N/A
Nov	22,104	-	N/A	23,282	N/A	23,223	N/A
Dec	26,516	-	N/A	27,761	N/A	27,583	N/A
Jan	30,925	-	N/A	32,036	N/A	31,959	N/A
Feb	35,331	-	N/A	36,263	N/A	35,878	N/A
March	39,734	-	N/A	40,516	N/A	40,678	N/A
Apr	44,135	-	N/A	44,383	N/A	44,834	N/A
May	48,532	-	N/A	48,553	N/A	49,058	N/A
June	52,927	-	N/A	53,373	N/A	53,644	N/A

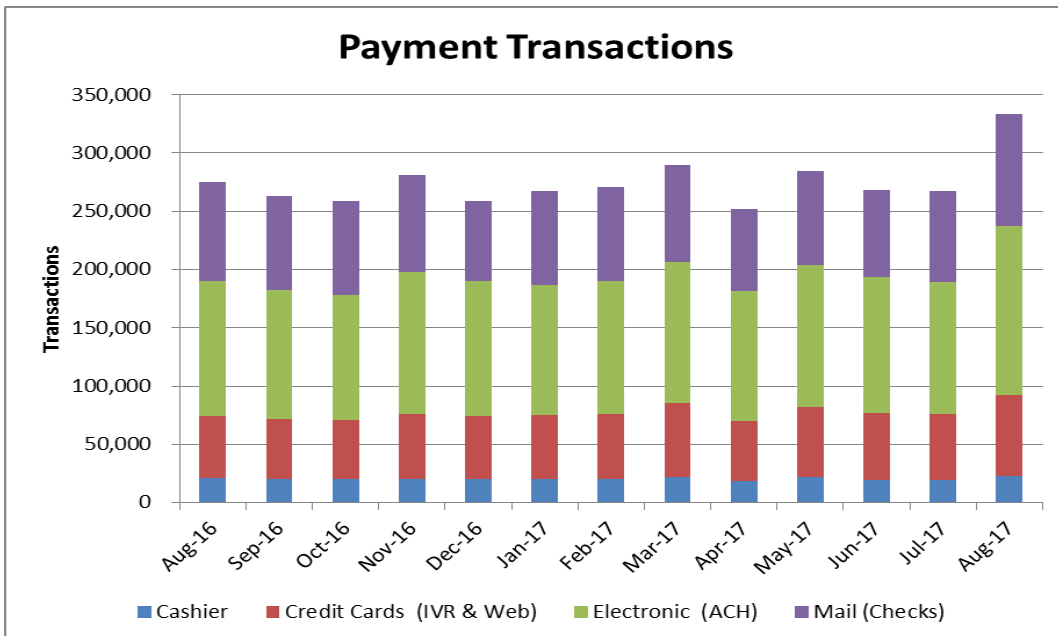
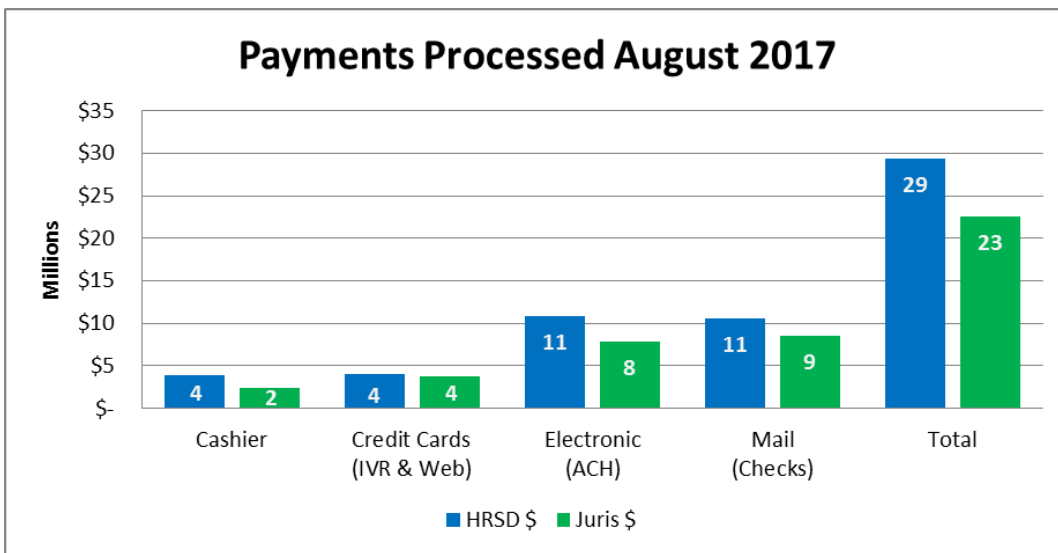
C. Customer Care Center

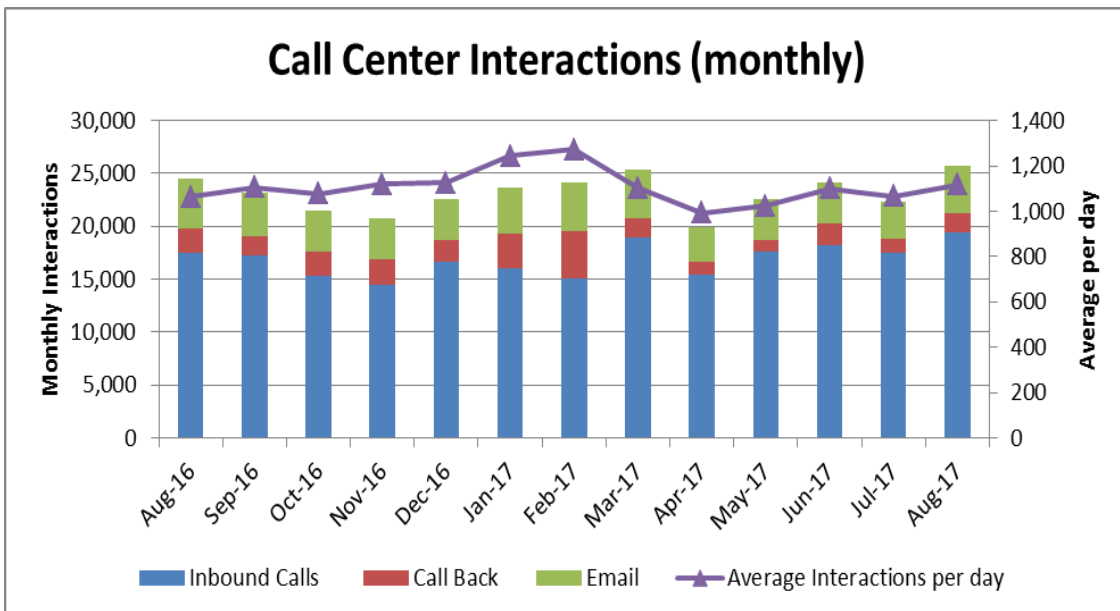
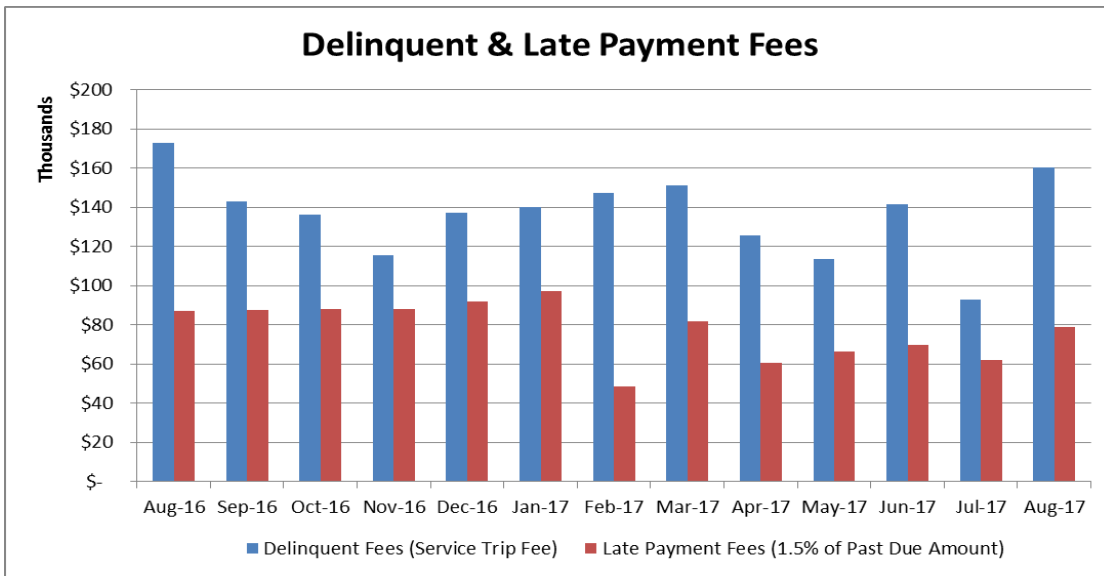
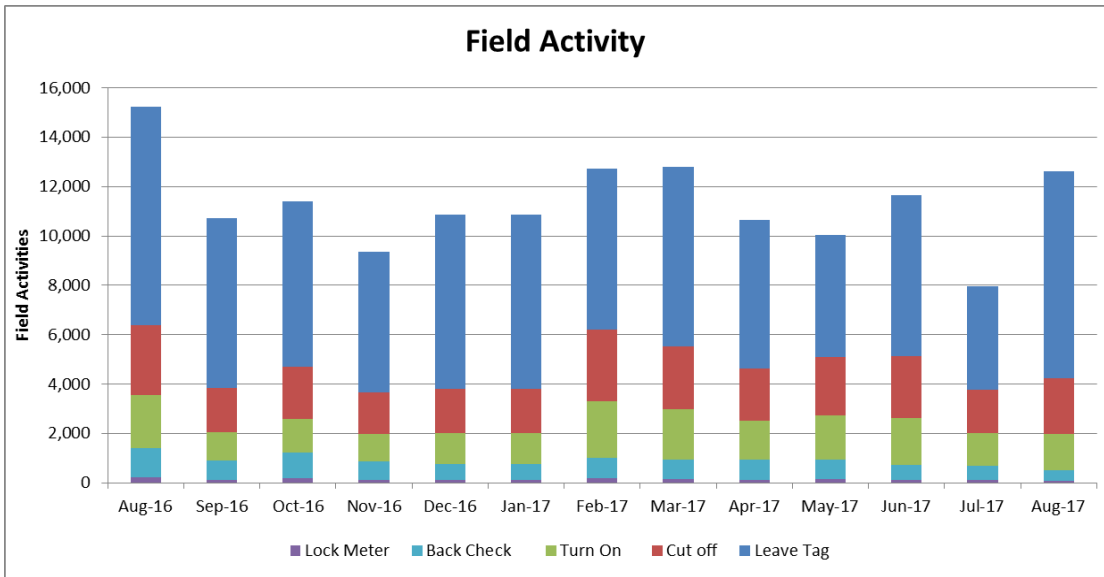
1. Accounts Receivable Overview

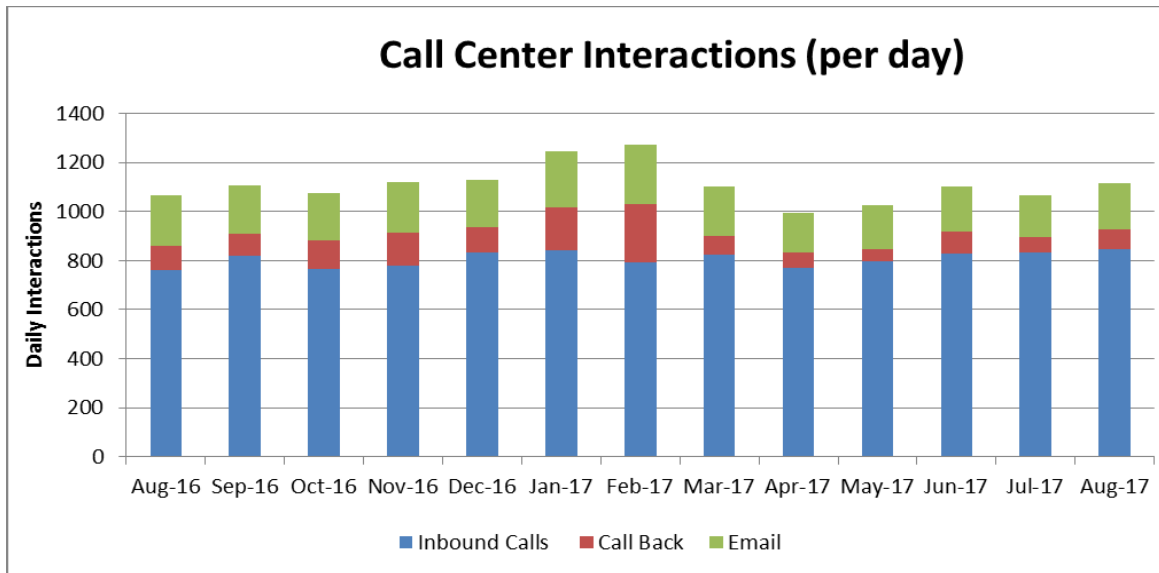




2. Customer Care Center Statistics



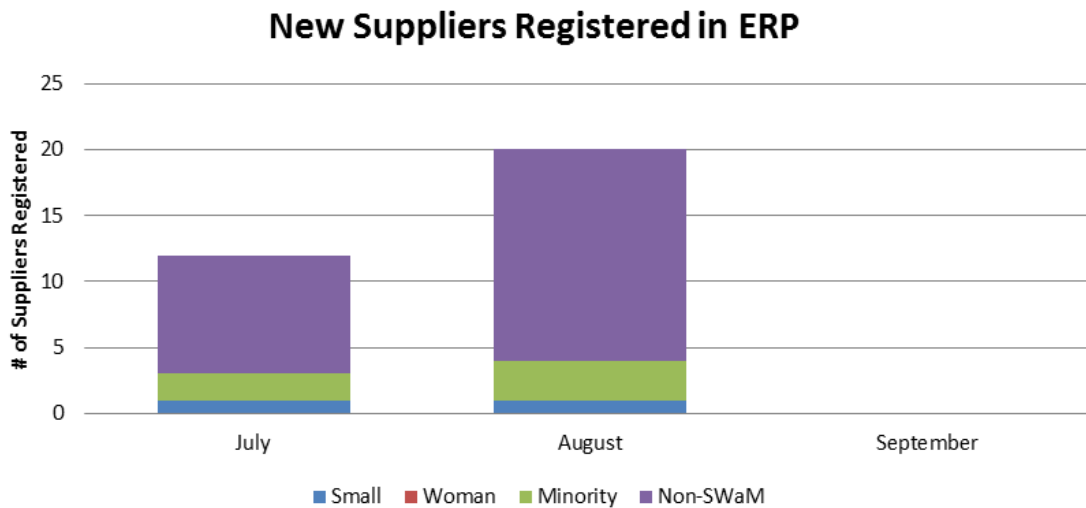




Customer Interaction Statistics	Mar	Apr	May	Jun	Jul	Aug
Calls Answered within 3 minutes	74%	79%	80%	70%	78%	75%
Average Wait Time (minutes)	2:08	1:44	1:37	2:25	1:46	2:04
Calls Abandoned	8%	7%	7%	9%	8%	8%

D. Procurement Statistics

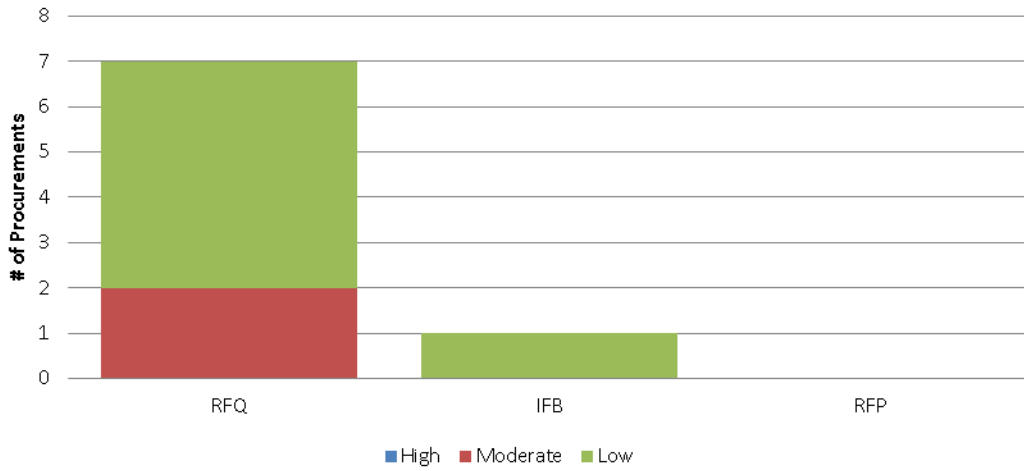
Savings	Current Period	FYTD
Competitive Savings ¹	\$70,186	\$172,486
Negotiated Savings ²	\$68,597	\$183,343
Salvage Revenues	\$3,071	\$18,534
Corporate VISA Card - Estimated Rebate	\$24,311	\$45,327



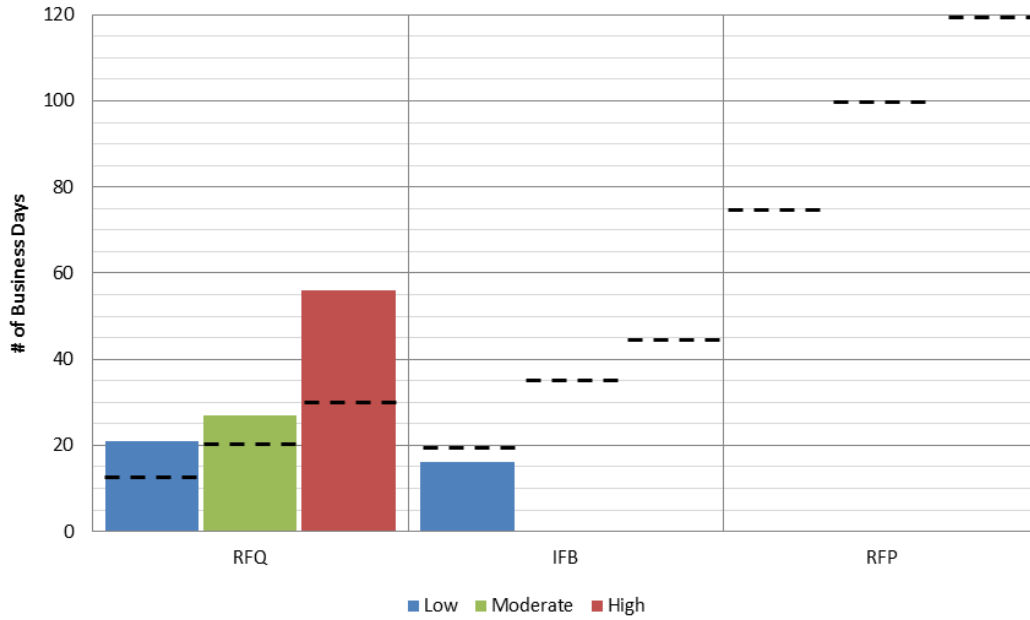
¹ Competitive savings are those savings obtained through the informal/formal bidding process. All bids received (except for the lowest responsive/responsible bid) added together and averaged. The average cost is subtracted from the apparent low responsive/responsible bidder.

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

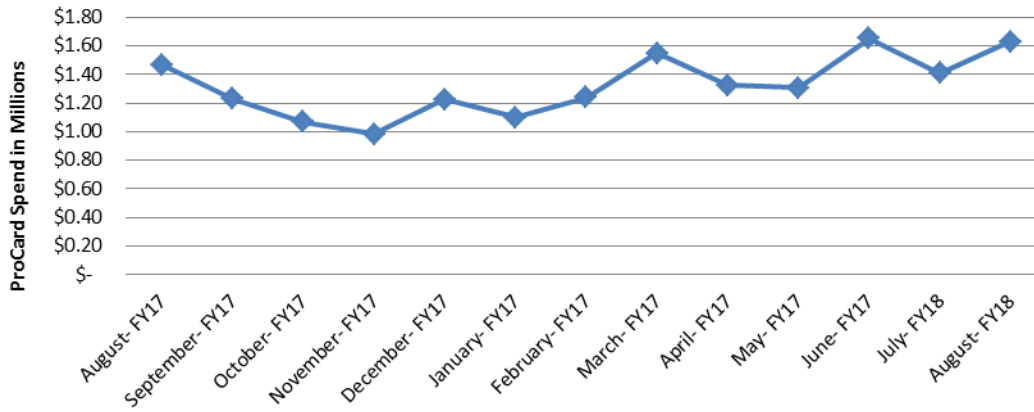


Dashed Line: Target Service Level Cycle Time

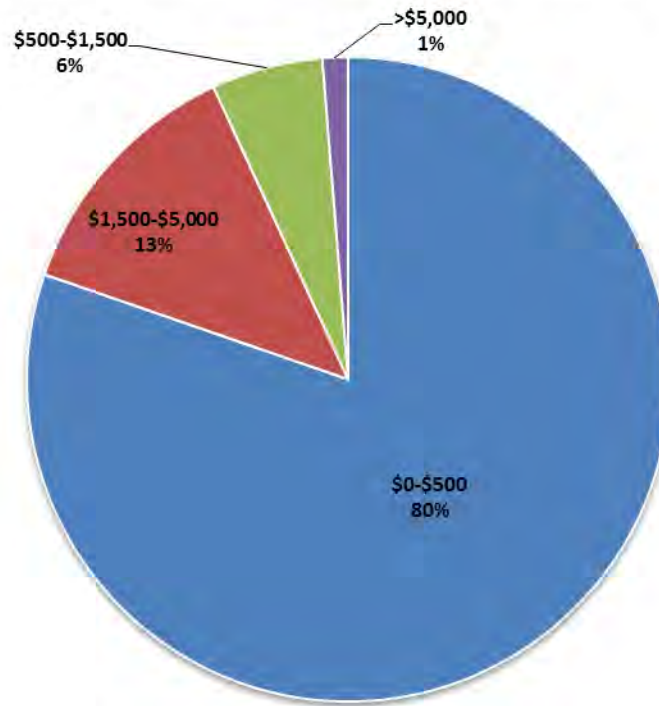
	High	Moderate	Low
RFQ	30	20	12
IFB	45	35	20
RFP	120	100	75

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

ProCard Spend



August ProCard Transaction Dollar Amounts



Procurement Client Training		
	August 2017	YTD
ProCard Policy and Process	3	8
Procurement Cycle	0	7
Additional Training Provided	0	0
Total	3	15

E. Business Intelligence – Enterprise Resource Planning (ERP)

1. ERP Helpdesk currently has 208 open work orders in the following statuses: 6 escalated, 70 in progress, 16 on hold, 111 open, 5 waiting on user. ERP Helpdesk received 243 work orders in August. In August, 284 work orders were closed and 104 were closed within one hour.
2. ERP staff continues to work with consultants on functionality and improvements to the system.

F. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1
 - a. 2017 The Institute for Public Procurement (NIGP) Vendor Expo
2. Community Partners: 1
 - b. NIGP
3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	16.33
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	18.35
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	1
	Wastewater Revenue	Percentage of budgeted	106%
	General Reserves	Percentage of Operating Budget less Depreciation	106%
	Accounts Receivable (HRSD)	Dollars	\$21,601,727
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	17%

4. Annual Metrics

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

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

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

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

TO: General Manager
FROM: Director of Information Technology (IT)
SUBJECT: Information Technology Department Report for August 2017
DATE: September 13, 2017

A. General

1. Staff is working on a new look and user-friendly feel for our web site, HRSD.COM. The changes are expected to be ready for go-live in January 2018.
2. Staff continues its work installing and testing broadband cellular and private data circuits in support of the new Supervisory Control And Data Acquisition (SCADA) platform. Preliminary testing of the first three sites is scheduled for the beginning of September with vendor participation and acceptance testing of ten sites, scheduled for the end of September into the beginning of October.
3. The network servers and supporting connectivity hardware and software were upgraded at the Williamsburg, York River, and Atlantic treatment plants.
4. The Small Communities Division network and communications facility is now complete. Relocation and installation of business and industrial automation networking hardware and software will begin next month.
5. The industrial automation programmers completed the installation, configuration and testing of the centrate pump controls part of the James River hydraulic improvement project.

B. Strategic Planning Metrics Summary

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

3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Training During Work Hours Per Full Time Employee (50) – Current Month	Total Training Hours / # FTE	1.98
M-1.4b	Total Training During Work Hours Per Full Time Employee (50) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	4.93
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 August 2017
DATE: September 5, 2017

A. Highlights

Staff assisted with the line stop insertion and removal on the Warwick-James River Treatment Plant (JRTP) interceptor force main project at the JRTP. This project completed a series of major infrastructure improvements on the southern influent line into the JRTP. It represents the culmination of eight CIP projects totaling approximately 7.2 miles of new pipe ranging in size from 24 to 42 inches. As part of the project, we also abandoned approximately 2.8 miles of 36-inch cast iron and flat bottom concrete cylinder pipe and 1.2 miles of the City of Newport News' 14-inch cast iron force main pipe. This is a significant accomplishment as multiple failures on both systems had occurred over the years.

B. Interceptor Systems

1. North Shore (NS) Interceptor Systems

- a. There were six sanitary sewer overflows (SSOs) this month. Five were associated with rains and tides during a significant event on August 29 and resulted in approximately 99,700 gallons of lost sewage. The other overflow was associated with a significant rain event on August 8. The amount spilled was unknown since staff never saw the overflow, just the evidence of a minor spill.
- b. There was one odor complaint, five interceptor complaints and thirteen system alarms during the month. Most of the system alarms were a result of the storm events on August 8 and 29. The odor complaint was at 14 Normandy Lane and was determined not to be an HRSD issue. The interceptor complaints were various complaints about the HRSD system to include an area of exposed pipe, an overflow clean up request, and responses to possible infrastructure leaks and station noise issues.
- c. Staff performed two caustic injections to shock the system and relieve pressures in the Gloucester system.

2. South Shore (SS) Interceptor Systems

- a. There were two SSOs reported this month.
 - 1) On August 10, an HRSD contractor was replacing an air vent riser pipe at the corner of East Little Creek Road and Simons Drive in Norfolk. While excavating the area around the pipe, the contractor noticed a leak on a severely corroded galvanized riser pipe. Staff quickly utilized a downstream pressure reducing station (PRS) to stop the leak which, subsequently, allowed staff to complete the repair. The leak released approximately 2,000 gallons.
 - 2) On August 12, it rained approximately 2.3 inches in the Suffolk Pump Station service area, which contributed to overflows in the upstream gravity system. After the rainstorm, staff noticed multiple manholes with displaced lids and debris along the gravity system pipeline that indicated an overflow had occurred. The amount spilled is unknown. We have been active in this area over the last several years; the area is frequently maintained and monitored. A Capital Improvement Project (CIP) to remove this gravity pipeline is currently in the design phase. In the interim, staff is working to modify the manholes to help limit future overflows. Staff is also working with the Water Quality Department on monitoring and sampling the affected areas to help quantify the impact of the unknown spills.
- b. Staff demolished an old clarifier building at the Washington District Pump Station in Chesapeake after a contractor completed the asbestos abatement.
- c. Staff brought the Ingleside Pump Station back into service. The station has been out of service since last May when a vehicle ran over and destroyed the control panel.

C. Major Treatment Plant Operations

1. Army Base Treatment Plant (ABTP)

- a. There were nine reportable air permit incidents this month. Four were for the use of the bypass stack due to power anomalies. Use of the bypass stack was also required during three other incidents: a clogged draft switch, an operator error, and a venture linkage break. On August 7, operators did not achieve the twelve-hour burn zone

temperature due an emergency burnout for a belt conveyor malfunction. On August 9, the total hydrocarbon unit did not record two consecutive readings due to a power anomaly.

- b. The methanol tank replacement project continues.
- c. Incinerator #1 passed air permit compliance tests.
- d. The aeration tank crack-injection project is complete, effectively mitigating all leaks from Aeration Tanks #3 through #6.
- e. Staff discovered a leak from an approximately 12-foot-deep underground secondary clarifier piping and hired a contractor to repair the leak. The volume of the leak is undetermined but a sump pump is recovering the water reaching the ground surface.

2. Atlantic Treatment Plant (ATP)

Staff successfully lowered the Dystor cover on Digester #6. The Dystor cover is a membrane cover that stores methane gas in the digester. Staff is now cleaning the digester, and contractors will make piping modifications inside of the digester in preparation for the Thermal Hydrolases Project. The digester should return to service in approximately two months.

3. Boat Harbor Treatment Plant (BHTP)

- a. On August 8, BHTP experienced a loss of data due to Distributive Control System (DCS) issues. Staff replaced a defective secondary feeder cable that functions as a backup to the primary system.
- b. On August 8, BHTP experienced a loss of Non Potable Water (NPW) flow to the incinerator, resulting in the loss of the Induced Draft (ID) fan and requiring the use of the bypass stack for 15 minutes. The NPW loss was due to a staff error while performing equipment rotation.
- c. Staff completed the rehabilitation of #1 primary clarifier. This project included replacement of upper flight brackets and tracks with fiberglass material.

4. Chesapeake-Elizabeth Treatment Plant (CETP)

- a. The plant experienced one air permit deviation. On August 5, a sudden drop in Venturi pressure required shut down of the ID fan and opening the Emergency Bypass Stack.
- b. A contractor replaced the steps to the number 7, 8 and 9 secondary clarifiers
- c. Staff completed installation of new dissolved oxygen probes at the aeration influent, the automatic caustic feed system for the incinerator, and an emulsion polymer feed system for secondary clarification.

5. JRTP

- a. There was one reportable wastewater event and no odor deviations. A contractor discharged approximately 7,200 gallons of non-potable water onto the roadway and into a storm drain, none of which was recovered. The contractor was using non-potable water to pressure test the influent force main bypass piping and failed to discharge the non-potable water into a designated plant drain.
- b. Staff took #3 and #4 primary clarifiers out-of-service, cleaned the tanks and performed annual maintenance tasks and made modifications to the scum trough on primary clarifier #4. Similar modifications are planned for primary clarifier #3.
- c. Staff continued construction on the digested solids magnesium hydroxide feed system that will aid with phosphorus removal.
- d. Integrated Fixed Film Activated Solids (IFAS) tanks were in dissolved oxygen mode for the entire month with the nitrified recycle pumps mainly controlled by nitrate probes. This resulted in very good nitrogen removal.
- e. Staff took IFAS tank #3 out of service and modified nitrified recycle piping to provide an anaerobic zone at the influent of the tank for biological phosphorus removal. This brings the total number of IFAS tanks modified to five, with four remaining.

6. Nansemond Treatment Plant (NTP)

- a. Cleaning of digester #2 is complete and the digester coatings work is beginning. Once the coatings work is complete, both digesters will return to service and the temporary diversion of 10 to 20 percent of the solids to temporary tanks will no longer be required and tanks will be removed.
- b. The Struvite Recovery Facility (SRF), responsible for phosphorus recovery from the liquid portion of solids dewatering, has improved significantly over the past couple of weeks due to the completion of work in removing old solids, grit and struvite from the number 2 digester. Staff continues to optimize operations and maintenance of the digesters. The Waste Activated Sludge Stripping to Remove Internal Phosphorus (WASSTRIP) Capital Improvement Project (CIP) will significantly reduce the amount of struvite that develops internally to the digesters, which will result in a decrease in the required frequency for cleaning the digesters.
- c. Staff continues to work on multiple plant improvement projects, cleaning and painting throughout the plant site.

7. Virginia Initiative Plant (VIP)

- a. There was one air permit deviation when the incinerator bypass damper opened during a power outage. There were two reportable odor control deviations, one occurred when a scrubber pH probe malfunctioned and one occurred because of high sulfide loadings.
- b. Staff relocated the aeration tanks' dissolved oxygen probes from cell 3 to cell 2. This change will improve the dissolved oxygen control, which is critical to the biological process.
- c. The raw influent pumps shut down when an electrical panel malfunctioned. The panel supplies power to the DCS cabinets as well as to sensors that measure wet well levels. The pumps shut down based on a false wet well reading level. To avoid a bypass, staff operated the pumps manually by observing wet well levels and provided temporary power where needed to restore control of the raw influent pumps. Staff replaced the feeder breaker, and the system is now properly functioning. The pumping system under the new construction project includes an independent control system to operate the influent pumps if DCS becomes unavailable.

8. Williamsburg Treatment Plant (WBTP)

- a. On August 16, a power loss resulted in an air permit deviation when there was a 17-minute use of the incinerator bypass stack.
- b. Staff continued work on a coatings project in the secondary clarifier, which will take several months to complete. This clarifier was last coated about 25 years ago.
- a. Staff took the #1 and #2 primary clarifiers out-of-service, cleaned the tanks and performed annual maintenance tasks.

9. York River Treatment Plant (YRTP)

Staff continued the implementation of the Environmental Data Management System Daily Plant Operations Report. Work this month focused on staff training. Our plan is to start parallel data entry in September for at least a month.

D. Small Communities Division (SCD)

1. SC Treatment

Urbanna Treatment Plant

The new laboratory construction continues; this work is being done in house.

2. Collections System

a. Urbanna System

Condition Assessment work began in the Urbanna System and should be complete by end of October at the latest.

b. Mathews System

Phase V of the valve replacement CIP project construction continues to progress well.

3. Operations Center

We received substantial completion for the new Supervisory Control and Data Acquisition (SCADA) room. Generator startup and training was completed. The Operations Center now has full backup power.

E. Surry

1. County of Surry

- a. Staff performed minor maintenance and improvements at the plant.
- b. Contractors made repairs to two more leaks found on steel tanks and performed coatings work in highly corroded areas.
- c. Staff replaced badly corroded steel guide rails and supports at the plant drain pump station.

2. Town of Surry

Staff is preparing to take over the operations of the Town of Surry system October 1. The plant is in disrepair and we anticipate operation and compliance with the permit to be a challenge.

F. Lawnes Point

1. Staff installed flow meters at the Lawnes Point Treatment Plant and performed two pump and haul operations. Work continues on obtaining proper treatment of the pond water.
2. Staff continues to address the high solids concentrations in the treatment ponds. Our goal remains achievement of permit limits in the pond water in order to discharge from the plant. Elevated Total Suspended Solids (TSS), however, is preventing staff from discharging the pond contents through the plant's outfall. The team continues to explore ideas to resolve the issue.
3. There was a spill of approximately 100 gallons of treated pond water out of the effluent sump onto the ground around the sump.

G. Support Systems

1. Automotive

Staff observed the startup and load bank tests of the following: the new emergency generator at West Point Operations Center; the NS Operations Center; the SS Main Office Complex, and at the Bainbridge Boulevard, Big Bethel, Greensprings, Kempsville Road, Laskin Road, North Shore Road, and Richmond Crescent pump stations (PSs). All generators operated as designed and were returned to service.

2. Carpentry Shop

The SS Carpenters completed 12 projects to include constructing a removable cover for the odor control blower at Norchester Avenue PS; riser platforms for reactors at CETP, and the remodeling of the #2 washroom for Technical Services Division (TSD).

3. Condition Assessment (Coatings and Concrete)

- a. The Supervisory Control and Data Acquisition (SCADA) project continues. Condition Assessment (CA), through use of Closed-Circuit Television (CCTV), inspected 5,796 lineal feet (LF) of gravity force main, completing two lines, and inspected 30 manholes. Staff supported the SCD personnel with the CCTV inspection of two sumps in Mathews County for valve replacement.
- b. Staff conducted inspection assessments on aeration tank #6 at the NTP, on primary clarifiers #3 and #4 and contact tanks #1-3 at JRTP, and secondary clarifier #3 at YRTP.
- c. A contractor completed 1,600 LF of crack repairs in the new aeration tanks and the restoration of the steel tank exterior at the ABTP. The rake arm assembly repairs on the secondary clarifier #2 and the protective coatings of #1 contact tank at the ATP were completed. Rehabilitation work on the #1 gravity thickener at JRTP is also complete.

4. Machine Shop

Staff completed 17 projects to include rebuilding the sluice gate for Dozier's Corner PS, modifying 250-meter lock covers for the Customer Care Center, fabricating sampling brackets and down rods for Technical Services Division, sprocket idlers for BHTP, and a mixer stand for the Sustainable Water Initiative for Tomorrow (SWIFT) project.

H. Electrical and Energy Management (EEM)

1. EEM continues to investigate harmonic filter failures at ABTP with the filter manufacturer. The investigation has expanded to filters of the same manufacturer located at BHTP and JRTP. Staff provided recorded data, heat scan information and pictures of critical components to the manufacturer to help determine a root cause of the failures.

2. Staff worked with a contractor to install a new control panel at Ingleside Road Pump Station (PS), replacing the old one which was destroyed when a car ran over it. Work involved replacing the panel with all associated control equipment, developing a new control program and coordinating the utility work with Dominion Energy to install a new transformer, service drop and meter. The control panel was installed, tested and placed in service. In addition, new bollards will be installed in front of the cabinet.
3. Kingsmill Pressure Control Valve (PCV) is on line. Staff designed, built, programmed and installed the control panel for this PCV.
4. Staff began installation of two new motor control centers (MCC's) at the ATP. The existing MCC's are unsafe due to corrosion and rust that resulted in multiple equipment failures. The new MCC's are scheduled for full service by mid-October.
5. Staff found a ground problem with the utility service transformer at Elmhurst PS. Staff coordinated an outage with Dominion Energy and SS Operations to correct the problem and to install new current transformers that were required due to the change.

I. Water Technology and Research

The month of August was busy with a wide range of briefings and presentations on SWIFT. Charles Bott presented keynotes at the International Water Association Resource Recovery Conference in New York and the International Ozone Association (IOA) Conference in Washington, DC. Research Interns, Ramola Vaidya and Peter Buehlmann also gave technical podium presentations at the IOA conference on emerging contaminant and pathogen removal and on bromate control, respectively. Charles also presented a SWIFT overview and John J. Dano participated in a panel discussion at the Mid-Atlantic Potable Reuse Workshop hosted by the Water Research Foundation and the Water Environment & Reuse Foundation at the Fairfax Water Griffith Water Treatment Plant. Jamie Mitchel and Charles Bott offered a two-hour web meeting to VDH and VADEQ staff to cover very specific technical issues concerning advanced treatment and our piloting results to date for the carbon-based system. This included a detailed data review of total organic carbon, pathogen, and emerging contaminant removal with special focus on the control of bromate, N-nitrosodimethylamine, and 1,4-dioxane control.

J. Strategic Measurement Data

1. Education and Outreach Events: 12

- a. CE Plant Tour for Hampton Roads Homeschool Group - 2
- b. Charles Wright and Jeff Scarano participated in an HRSD partnering activity with the Roc Solid Foundation to construct a playground set for a child fighting cancer in Virginia Beach on August 18.
- c. Charles Bott provided a SWIFT Briefing as an invited Keynote for the International Water Association Resource Recovery Conference
- d. Charles Bott provided an AVN Control podium presentation at the WEF Intensification Conference
- e. Charles Bott provided a SWIFT presentation as an invited Keynote for International Ozone Association
- f. Research Intern, Ramola Vaidya, provided a podium presentation on SWIFT Emerging Contaminant Removal at the International Ozone Association conference
- g. Research Intern, Peter Buehlmann, provided a podium presentation on SWIFT Bromate Control at the International Ozone Association conference
- h. Charles Bott provide an SWIFT Overview during the Water Environment & Reuse Foundation and Water Research Foundation Mid-Atlantic Potable Reuse Workshop
- i. Charles Bott and Jaimee Mitchell (TSD), provided a SWIFT pilot, deep dive on data presentation to the Virginia Department of Health and the Department of Environmental Quality staff
- j. NTP Tour for staff from the City of Atlanta, Department of Watershed Management
- k. NTP Tour for Newport News Shipyard Staff

2. Community Partners: 5

- a. Roc Solid Foundation
- b. Virginia Institute of Marine Science
- c. Old Dominion University
- d. Chesapeake Bay Foundation – oyster restoration
- e. Newport News Shipyard

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (511) – Current Month-	Hours / FTE	2.56
M-1.4b	Total Training During Work Hours per FTE (511) – Cumulative Year-to-Date	Hours / FTE	5.16
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	30,865.75
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	39.17
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	26.97
M-2.3d	Planned Maintenance-Projects	% of Total Maintenance Hours	33.86
M- 4.1a	Energy Use: Treatment *reported for July 2017	kWh/MG	2,385
M-4.1b	Energy Use: Pump Stations *reported for July 2017	kWh/MG	168
M-4.1c	Energy Use: Office Building *reported for July 2017	kWh/MG	118
M-5.2	Educational and Outreach Events	Number	12
M-5.3	Number of Community Partners	Number	5

Respectfully submitted,
Steve de Mik
Director of Operations

TO: General Manager
FROM: Special Assistant for Compliance Assurance
SUBJECT: Monthly Report for August 2017
DATE: September 8, 2017

A. General

HRSD continues implementing the hybrid regionalized approach to the Regional Wet Weather Management Plan (RWWMP) with the next major Consent Decree milestone, the submittal of the Integrated Plan/RWWMP, scheduled for October 1, 2017.

B. Submittals Completed in August 2017 – No submittals required this period.

C. Activities

1. **Phase 6 – Rehabilitation Plan.** Work continues on the Rehab Action Plan projects with the next major milestone on May 5, 2018 for Phase 0. Several projects are underway with completions reported in the Semi-Annual and Annual Reports. Other work associated with Prompt Repairs or other items in the Sewer Repair contract are as follows:
 - SR 037 – Bay Shore Lane: Addressing manhole repair issues prior to closing out project.
 - SR 040 – Woodland Ave: Construction underway to replace sections of pipeline.
 - SR 054 – Beach Road: Pipelining work completed and project nearly complete.
 - SR 072 – Ingleside Road PS Hatches: Hatches have been repaired and project is complete.

2. **Phase 7 – RWWMP.** Sequencing and scheduling the RWWMP projects is complete. The plan was presented to the HRSD Commission on August 22. A meeting with HRSD staff to review the master schedule and capital costs was held on August 23. The final RWWMP is being prepared for submission at the end of September.

The Technical Coordination Team met on August 3, 17 and 31 to review overall progress. The HRSD program manager for the Chesapeake-Elizabeth Treatment Plant Closure continues attending monthly coordination meetings as part of an ongoing effort to ensure that closure of this treatment plant is properly modeled and accounted for in the final RWWMP.

3. **Phase 8 – EPA Consent Decree Services.** HRSD continues sharing information with the localities through the regional SharePoint site and flow, pressure and rainfall data portal. A Capacity Team meeting was held on Monday, August 28 to review the RWWMP. A review meeting was held on August 6 regarding the Interim System Improvement Project cost reporting.
4. **Phase 9 – Supplemental Services.** Management, Operations and Maintenance (MOM) Program elements are ongoing, including the Hydrogen Sulfide (H₂S) Monitoring Program and implementation of a Business Intelligence (BI) system for the Small Communities Division (SCD). This includes a MOM update manual guidance document for use on the next major update, expected in 2018.

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

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

- FMP2 035 Hampton Trunk: Draft Work Order under development.
- FMP2 039 Bowers Hill: Commission approved contractor authorization. Final Work Order signed and issued to contractor. Work is scheduled for late September.
- FMP2 043 Kempsville Road: Work is in progress. Work order will be completed early September.

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

- WO GMP2 043 FY17 SS Manhole Inspection: completed in July with the exception of several manholes due to permit delays and access issues. These manholes are tentatively scheduled for inspection in September, pending permit acquisition.
- Due to ongoing repairs at PS 148, WO GMP2 052 Ingleside Road is scheduled for CCTV inspection in September.

- WO GMP2 SCD 014 Rappahannock PS: Work is in progress and will be completed in September.

The Fiscal Year 2016 Condition Assessment Annual Report was finalized in August. The final report with supporting data was received. A review meeting was held on August 23 to discuss the FY18 Condition Assessment Program priorities.

D. Next Submittals

1. RWWMP – Due October 1, 2017
2. Annual Report – November 1, 2017

E. Program Budget Status

The overall program budget is \$132,985,133, excluding the Master Metering Program. A summary of appropriations and expenses is attached.

F. Strategic Planning Metrics Summary

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

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Total Training Hours Per Full Time Employee (1) – Current Month	Total Training Hours / # FTE	0
M-1.4b	Total Training Hours Per Full Time Employee (1) – Cumulative Fiscal Year to Date	Total Training Hours / # FTE	0
M-5.2	Educational and Outreach Events	Number	0
M-5.3	Number of Community Partners	Number	0

Respectfully submitted,

Phil Hubbard, P.E.

Attachments: [Consent Order State & EPA Expenditures](#)

Consent Order State & EPA Expenditures

	Total Appropriation	August 2017 Obligations	Available Balance
Regional Consent Order and Other Consent Order Requirements			
Regional Hydraulic Model	\$108,931,987	\$109,297,644	-\$365,657
Manhole Rehab/Replacement Phase I & North Shore Siphon Chamber	\$2,834,000	\$464,732	\$2,369,268
Locality System Monitoring and Condition Assessment	\$21,219,146	\$20,398,571	\$820,575
Subtotal - In progress	\$132,985,133	\$130,160,947	\$2,824,186
Completed Work			
Regional Consent Order and Other Consent Order Requirements		(Included in subtotal above)	
Master Metering Program III		\$2,005,140	
Master Metering Program IV		\$13,628,635	
Total		\$145,794,722	

TO: General Manager
FROM: Director of Talent Management
SUBJECT: Monthly Report for August 2017
DATE: September 13, 2017

A. Human Resources (HR)

1. Recruitment Summary

New Recruitment Campaigns	11
Job Offers Accepted – Internal Selections	12
Job Offers Accepted – External Selections	3
Internal Applications	45
External Applications	155
Average Days to Fill Position	44

2. Enterprise Resource Planning (ERP)

- a. Affordable Care Act filings with the Internal Revenue Service were successfully completed.
- b. HRSD worked with the Managed Services consultant on the following:
 - (1) Benefit plan setup
 - (2) Cigna Interface
- c. Worked with Information Technology staff on the following:
 - (1) Interface updates
 - (2) Apprenticeship transcript updates

3. Benefits and Compensation

- a. Request for Proposal requirements were finalized for Benefit Consulting Services.
- b. Staff worked with Finance and HRSD Benefits Consultant to evaluate and select options for Medicare Surround and Part D Prescription plan renewals for retiree health care.

- c. Staff continued to meet with vendors to obtain information on various optional benefit plans.

4. Wellness

a. Participation Activities

Year 3 Participation Activities	Unit	August 2017	Year to Date (March 2017–February 2018)
Biometric Screenings	Number	6	9
Preventive Health Exams	Number	13	26
Preventive Health Assessments	Number	79	179
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	81	305
Web-MD Online Health Tracking	Number	172	829
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	16	75

- b. Nine plants were visited to complete Financial Wellness presentations by PNC Bank.
- c. The Wellness Specialist participated in a *Healthy around the World* food demonstration at Virginia Initiative Plant (VIP).
- d. The Wellness Specialist completed CPR Training/Testing.

5. Workers Compensation

Ten new cases were opened with 17 cases remaining active.

6. Employee Relations

- a. Staff continued to partner and meet with work center supervisors and employees to support employee relations and address HR issues. Staff continued updating Operations Department job descriptions.
- b. Several policies were updated and presented to the QST for approval including Employee Assistance Program referrals, standards of

conduct, leave donations, grievance procedures, safety shoes and uniforms and transfers.

7. General

- a. Staff continued to address several administrative issues associated with the new Defense Biometric ID System for HRSD employee access to military installations. Several employees successfully completed the process and obtained new passes.
- b. Brenda Matesig, HR Manager, was awarded an International Public Management Association Fellowship which will provide tuition assistance for an advanced degree in the Human Resources field.
- c. Information regarding HRSD's experience with Public Works Academy summer internships was provided for a case study featured in *One Water for America Listening Sessions Report*.
- d. Staff participated in the following training:
 - (1) HR Manager BI Dashboard training
 - (2) Several Oracle e-Business Suite webinars
 - (3) An On-Line Material Safety Data Sheet (MSDS) webinar
- e. Staff participated in the HRSD – *People* Strategic Planning workgroup

B. Organization Development and Training (OD&T)

1. The Quality Facilitators kicked off Annual Planning Day events. In addition to assisting work centers with brainstorming ideas for improvement, organizational data will be captured through a Strength, Weakness, Opportunity and Threat (SWOT) exercise.
2. The HRSD University team worked with IT staff on an accessible storage site for the Biological Nutrient Removal training module. Several revisions were made to finalize the Benefits module.
3. The OD&T Manager continued work with the Chesapeake- Elizabeth Treatment Plant (TP) Manager on an abridged Supervisor Workshop to provide specific skills for Lead Operators. A series of abbreviated lessons from several quality and leadership training programs will be provided through various training delivery methods.

4. Work continued with Engineering on development of an *Effective Collaborative Meeting Workshop*. A pilot will be presented to the QST.
5. The Project Management Team met and developed a framework for a workshop focused on improving project management capabilities.
6. Apprenticeship Program
 - a. The 2017 Apprentice Class Graduation and Commission Dinner was held. Sixteen apprentices graduated in five trades: Small Communities Operator, Maintenance Operator, Plant Operator, Interceptor Technician and Machinist. The program included a video featuring apprentice tributes to Debbie Crofford, Training Superintendent, retiring in September with 34 years of service.
 - b. Christina Perez was selected as the new Training Superintendent. Christina has held several positions within Water Quality and has served as an Apprenticeship Program Chemistry instructor.
 - c. Preparations continued for the 2017- 2018 Apprenticeship School Year. An expanded class size of 19 apprentices is anticipated.
 - d. The Training Superintendent continued working on curriculums: *Wastewater Analysis, Wastewater Laboratory, Disinfection, and Collection System Maintenance*.
 - e. OD&T and Human Resources staff continued to evaluate math skills testing and *Math Refresher* course performance data to identify possible trends and areas for improvement.
7. Staff attended *Intensive Coaching* training by Mentor Coach

C. Safety

1. Mishaps and Work Related Injuries
 - a. HRSD-Wide Injury Mishap Status to Date (OSHA Recordable)

	<u>2016</u>	<u>2017</u>
Mishaps	42	29
Lost Time Mishaps	8	9
<i>Numbers subject to change pending HR review of each case.</i>		

b. MOM Program Year Performance Measure Work Related Injuries

August 2017 Injuries For Operations	July 2017 Injuries for Other HRSD Departments	Total Lost Time Injuries Since July 2017	Total HRSD Injuries Since July 2017
6	2	4	9

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

2. HRSD Safety Training

Strategic Planning Measure	Unit	August 2017
Total Safety Training Hours per Full Time Employee (830) All HRSD – July 2017	348.29 Hours / 830 FTE	0.42
Total Safety Training Hours Per Full Time Employee (830) – Cumulative July 2017	1187.51 Hours / 830 FTE	1.43

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

- a. Ten external briefings for contractors working at HRSD treatment plants and pump stations
- b. A Forklift Safety training class for Atlantic TP employees
- c. Electrical Safety Program training at the following work centers:
 - (1) North Shore Operations
 - (2) South Shore Automotive, Electrical and Machine Shops
 - (3) South Shore Interceptor Systems

4. Safety Inspections, Testing and Monitoring

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

- (1) Sustainable Water Initiative for Tomorrow (SWIFT) Demonstration at Nansemond TP
- (2) Virginia Initiative Plant (VIP)
- (3) James River TP

b. Quarterly safety inspections of the following work centers:

- (1) Air Rail Avenue Complex
- (2) Central Environmental Lab
- (3) South Shore Pretreatment and Pollution Prevention
- (4) Technical Services Division
- (5) VIP
- (6) York River TP

c. Monitoring and testing for the following:

- (1) Monthly hood velocity tests on Central Environmental Laboratory and Technical Services lab hoods
- (2) Conducted a sound level survey of Atlantic TP Blower Equipment Room
- (3) Air Vent Sampling for North and South Shore Interceptor Systems
- (4) Air Sampling of the Williamsburg TP airline system used for coatings work

5. Safety Programs

a. The following was performed for the Electrical Safety Program:

- (1) Prepared and delivered revised electrical safety job briefing, energized electrical work permit and arc flash risk assessment forms to HRSD work centers
- (2) Updated the daily job briefing for Electrical and Energy Management Division

b. The following was performed for the Respiratory Protection Program:

- (1) Developed a respirator clearance questionnaire
- (2) Continued to schedule physicals for employees who did not pass respirator fit testing

- c. Employee audiometric testing results were reviewed to ensure all results have been entered into the system in preparation for annual audiometric testing.
- d. The Safety Manager worked with the OD&T Manager to address Customer Care Center field emergency response and security training needs.
- e. Staff evaluated a new platform installed for equipment access at the York River Pilot Plant.
- f. Safety and Operations staff continued to evaluate and implement an on-line MSDS program.
- g. A confined space permit for VIP was evaluated.
- h. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

6. General

- a. The Safety Manager attended a meeting on the Nansemond TP Land Acquisition and Stabilization Project with the consultant and Engineering Department staff.
- b. The Safety Manager worked with Operations to streamline requirements for Plant Manager Safety training.

D. Monthly Strategic Planning Metrics Summary

1. Education and Outreach Events: 7

- a. Presented information on HRSD's Apprenticeship Program at the Hampton Roads Planning District Commission's (HRPDC) Director of Utilities meeting
- b. The Safety Manager served as a Virginia Tech Wastewater Short School safety instructor
- c. Attended the City of Suffolk's Local Emergency Planning meeting
- d. Presented information regarding HRSD Operations at a City of Virginia Beach Local Emergency Planning meeting

- e. Attended the City of Norfolk’s Local Emergency Planning meeting
 - f. Attended a Poverty Simulation conducted by Family and Consumer Sciences, Virginia Cooperative Extension
 - g. The Virginian Pilot Diversity Career Fair
2. Community Partners: 7
- a. HRPDC
 - b. Virginia Tech
 - c. City of Norfolk Local Emergency Planning
 - d. City of Virginia Beach Local Emergency Planning
 - e. City of Suffolk Local Emergency Planning
 - f. Virginia Cooperative Extension, City of Virginia Beach Office
 - g. The Virginian Pilot
3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	Aug 2017
M-1.1a	Employee Turnover Rate (Total)	Percentage	1.91
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0
M-1.4a	Total Training Hours Per Full Time Employee (15) – Current Month	Total Training Hours/ FTE	0.73
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	2.70
M-5.2	Educational and Outreach Events	Number	7
M-5.3	Community Partners	Number	7

Respectfully submitted,
Paula A. Hogg
 Director of Talent Management

TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for August 2017

DATE: September 12, 2017

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.
2. The Director attended the Water Environment & Reuse Foundation's (WE&RF) Research Advisory Council meeting in Alexandria, VA as a Council member. The Council met to review and discuss current research conducted by WE&RF on behalf of its subscribers, as well as topics for future research. The Director again emphasized the need for WE&RF to be responsive to its subscribers' needs and that these needs often change over months versus years. Therefore, more emphasis on very specific research projects, rather than broad multi-year programs is in order and WE&RF's funding approach should support that emphasis. The Director is also the primary municipal representative to the Council with regards to emerging contaminant (pharmaceuticals, personal care products, etc.) issues and developing linkages between surface water management actions and water quality goals. These topics continue to be important to the wastewater sector and, therefore, research in these areas will continue.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) did not report activity for the month of August.
2. The Technical Services Division (TSD) Technology Team is currently evaluating the ESRI ArcGIS Data Collector application to see if this will aid in the division's field data and post-laboratory data capture needs. In house research continues on this product. An available working demo is anticipated by the end of September.
3. The WQ Communication Team continues monitoring and measuring inter-divisional communication issues within the WQ Department.

C. Municipal Assistance

HRSD provided sampling and analytical services to Hanover County and the Town of South Hill to support their respective Virginia Pollution Discharge Elimination System (VPDES) permit application processes.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 1

- a. CEL staff gave a SWIFT focused tour of the Water Quality Services Building to home-schooled high school students.

2. Community Partners: 9

- a. City of Norfolk
- b. City of Newport News
- c. Virginia Department of Health Division of Shellfish Sanitation
- d. Virginia Department of Environmental Quality
- e. City of Chesapeake
- f. City of Suffolk
- g. Elizabeth River Project
- h. Virginia Department of Health Office of Epidemiology
- i. Hampton Roads Planning District Commission

Item #	Strategic Planning Measure	Unit	August 2017
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	4.99
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	10.98
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	7
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	1:8,873
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	31,583,474

Item #	Strategic Planning Measure	Unit	August 2017
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	17%
M-5.2	Educational and Outreach Events	#	1
M-5.3	Community Partners	#	9
	Average Daily Flow	Total MGD for all Treatment Plants	149.09
	Industrial Waste Related System Issues	#	0

Annual Metrics

Item #	Strategic Planning Measure	Unit	FY-2017
M-3.3	Carbon Footprint	Tons per MG	1.58
M-4.2	R & D Budget	Percentage of Total Revenue	1.3%
M-5.4	Value of Research	Number	143%
M-5.5	Number of Research Partners	Number	15
	Rolling 5 Year Average Daily Flow	MGD	154.24
	Rainfall reported at Norfolk International Airport	Number	66.66"

Respectfully submitted,
James Plett, Ph.D
 Director of Water Quality



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

I. Projects in Process

Procurement/ ProCard Process Review

- **Tasks Completed (August 2017)**
 - Finalized report and provided to management for distribution to HRSD Commission

Engineering Procurement Process Review

- **Tasks Completed (August 2017)**
 - Received testing populations from process owners
 - Selected samples, provided to process owners, and obtained additional testing documentation
 - Conducted testing to complete steps outlined in the audit work program
- **Upcoming Tasks (September 2017)**
 - Finalize testing to complete steps outlined in the audit work program
 - Schedule fieldwork exit conference with process owners
 - Draft final audit report

IT: Network Security/ Cybersecurity

- **Tasks Completed (August 2017)**
 - Held process interviews with client
 - Reviewed process document materials provided by client
 - Developed draft audit work program and associated test steps
 - Identified in-scope systems for testing
 - Reviewed process documentation as received
- **Upcoming Tasks (September 2017)**
 - Finalize audit work program
 - Perform walkthroughs for in-scope areas
 - Request testing documentation
 - Conduct fieldwork
 - Begin drafting final audit report

****Engagement Notes/ Delays***

SC&H has noted delays in the scheduling of process walkthrough meetings in the performance of the Engineering Procurement review that were the result of timing and availability constraints for process owners. Additionally, we noted delays in the receipt of testing documentation related to the Engineering Procurement review from process owners in order to complete testing. These delays have not been significant and SC&H is continuing to work with the team to move this project forward.



II. Upcoming Projects (FY2018)

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

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

III. Management Action Plan (MAP) Monitoring

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

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

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

Design and Construction: CIP Project Management Review MAP Status

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

Upcoming MAP Monitoring

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

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

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



Expertise that Works

Internal Audit

Procurement and ProCard Management

Hampton Roads Sanitation District

August 23, 2017

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I. Executive Summary

Background

SC&H conducted an internal audit of the management procedures for the Hampton Roads Sanitation District's (HRSD) Procurement and ProCard Programs.

The Procurement Division (Procurement) is a component of HRSD's Finance Department. Procurement is responsible for purchasing, renting, leasing, or acquiring goods, professional and non-professional services, and certain construction services for HRSD. Purchasing of specialized, technical services, including construction and design-build acquisitions, is generally performed by the Engineering Department procurement function. In addition to traditional purchasing procedures, Procurement manages HRSD's procurement card (ProCard) program, which provides access to a line of credit for small dollar purchasing to staff throughout HRSD.

The HRSD Procurement function follows the authority of the Virginia Public Procurement Act (VPPA). The VPPA communicates a detailed framework for purchasing, which HRSD has incorporated into its Procurement policies and procedures.

The initiation of most procurements begins at the department, or work center, level. Upon the identification of a need, the work center staff determines the appropriate channel of purchase or requisition. Purchases of \$10,000 or less may be made using a ProCard. Requisitions greater than \$10,000 are administered by the Procurement Division through competitive solicitation when competition is practicably available. Competitive solicitations are prepared using standard pre-determined templates in which the requirements, terms, and conditions are modified based upon the procurement. Types of solicitations include the following:

- Invitation for Bid (IFB): Formal IFBs are created for requisitions for goods and non-professional services \$100,000 or greater and require formal competitive sealed bidding. The IFB is posted publicly to the HRSD website for a minimum of 10 business days.
- Request for Proposal (RFP): Formal RFPs are created for requisitions for goods and non-professional services \$100,000 or greater and for professional services \$60,000 or greater. The RFP is posted publicly to the HRSD website for a minimum of 10 business days, but may vary depending upon the procurement. In addition, the RFP is advertised in the newspaper for one to two calendar days.
- Request for Quote (RFQ): Informal RFQs are created for requisitions for goods and non-professional services under \$100,000 and for professional services under \$60,000. The RFQ is posted publicly to the HRSD website for five to seven business days or less. It is the discretion of the Procurement Official to adjust this as necessary depending on the urgency of the procurement.

The workflow and procedures performed for these solicitations occur in Oracle enterprise resource planning (ERP) system, HRSD's fully integrated, comprehensive suite of business applications.

Since its inception in April 2015, the ERP system has been used to administer all aspects, both internal and external, of the Procurement and ProCard functions. This includes a systematic workflow which was created to guide requestors, approvers, and Procurement staff through the complete process. This workflow is designed to include application controls and approval thresholds to ensure required information is entered into the system and procurements follow HRSD policy. The ERP system is also used as the system of record for Procurement and ProCard data.

Daily management of the ProCard program is the responsibility of the ProCard Administrator who uses the Bank of America (the third party provider responsible for administering ProCards and tracking transactions) Works application and the ERP system to monitor and review ProCard transactions. This includes transaction auditing, violation monitoring, card issuance, and cardholder termination.

Objectives

The following audit objectives were established based on the internal audit's planning procedures.

- A. Identify and document key management procedures, process risks, and controls within the Procurement and ProCard processes.
- B. Assess the process design and compliance with regulation of the current Procurement procedures, including solicitation creation and contract awards.
- C. Perform data analysis over the complete FY16 ProCard transactions to identify usage trends and potential variation from policy.
- D. Evaluate ProCard transactions on a sample basis to ensure compliance with HRSD ProCard policies and procedures and the effectiveness of process controls.
- E. Evaluate the cardholder violations monitoring and tracking process to ensure compliance with policy.
- F. Analyze ProCard transactions to identify whether ProCard purchases are also being submitted for personal expense reimbursement by employees.
- G. Ensure terminated employees' ProCards are appropriately deactivated in a timely manner.
- H. Examine the Procurement Division ProCard auditing and administration procedures to evaluate whether ProCard transactions are appropriately tested and reconciled.
- I. Examine the user access rights for the Procurement system to ensure they are current and appropriate.

Scope

The internal audit was initiated in January 2017 and fieldwork procedures completed in May 2017. The internal audit focused on the policies and procedures in place at the time of this review with samples selected from the most recent twelve months at the time of sample selection (4/1/16

through 3/31/17). Analytical procedures were performed over all available ProCard data from the date of ERP implementation in April 2015.

Methodology and Approach

In order to achieve the objectives of this internal audit, SC&H performed the following procedures.

Process Walkthrough and Flowchart Creation

SC&H obtained and reviewed current Procurement/ ProCard process documentation from department contacts at the outset of this review. Eighteen key process areas were identified, 11 within the Procurement function and seven within the ProCard function, based upon this initial review. SC&H then met with members off the Procurement/ ProCard management teams to conduct detailed walkthrough discussions of their procedures. These discussions focused on process flow, required approval, inputs/ outputs, and other control points. Based on these discussions and review of the procedural documentation, SC&H created summarized flowcharts to document our understanding of the process. The processes identified and documented include:

- **Procurement Flowcharts**
 - New Requestor Set-up
 - Request Initiation
 - Blanket Agreements
 - Change Requests
 - Sole Source
 - Contract Renewal
 - Assignment of Requisition
 - Solicitation Creation
 - Acceptance/ Award of Bid
 - Purchase Order Creation
 - New Supplier Set-up

- **ProCard Flowcharts**
 - New Cardholder Application
 - Card Issuance
 - Card Usage
 - Monthly Reconciliation
 - Improper Usage
 - Card Suspensions/ Terminations
 - Card Data Changes

Audit Program Creation

Based on the understanding of the processes, risks, and related controls, SC&H developed an audit program to achieve the objectives described above. This program included detailed steps to address each objective with the goal of assessing risk and identifying opportunities for improvement, where necessary.

Audit Program Execution

SC&H executed the audit program by completing the following tasks:

- Inspected pertinent process documentation and reports
- Inquired about the processes and met with process owners to document process understanding
- Examined compliance of policy with state law
- Performed detailed, desk-side walkthroughs of key Procurement processes
- Analyzed complete ERP ProCard transaction data for approximately 80,000 transactions executed from FY15 through FY17
- Inspected a sample of ProCard transactions for policy and procedural compliance
- Examined the process for internal auditing of card violations and usage
- Examined terminated cardholders for timely deactivation
- Reviewed Procurement and ProCard ERP module user access for appropriateness


Summary of Work

After reviewing the processes in place and evaluating the current control environment, SC&H concludes that there are improvement opportunities within the Procurement/ ProCard processes which can help to increase process efficiency and effectiveness and reduce risks.

The following section provides detailed observations and recommendations regarding six separate topics.

We appreciate the assistance and cooperation of the management and staff involved in HRSD's Procurement and ProCard management processes. Please contact us if you have any questions or comments regarding any of the information contained in the internal audit report.

SC&H Group, Inc.



Matthew Simons, CPA, CIA, CGAP
Principal

II. Detailed Observations and Recommendations

Observation 1

Cardholders' single transaction spending limits appear higher than necessary given the nature and dollar value of the majority of transactions executed with ProCards.

Observation Detail

ProCard holders are assigned both a single transaction spending limit and monthly spending limit when their ProCard account is created in the Bank of America system. Presently, the single transaction spending limit is \$10,000 and the monthly spending limit is \$100,000 for all cardholders. These limits were established in accordance with HRSD Procurement policy to ensure that all cardholders are able to make the necessary purchases of goods/ services to facilitate the day-to-day operations of their departments.

SC&H performed an analysis of ProCard spending data for FY15, FY16, and FY17 through March 31, 2017. This analysis included a stratification of ProCard transactions by dollar amounts. SC&H found that approximately 90% of ProCard transactions occurring during the years under review were for \$1,000 or less, indicating most cardholders do not reach the current spending limits. Based upon benchmarking of similar organizations, SC&H has noted that single transaction limits are typically \$2,500 to \$3,000, or approximately 70-75% less than HRSDs standard single transaction limit.

Risk

Higher spending limits may increase HRSD's exposure to inappropriate spending via ProCards. Spending is reconciled and reviewed on a monthly basis. A cardholder may spend large dollar amounts on inappropriate transactions over the course of a month, up to the monthly limit, and leave the organization before the spending is noted by a reviewer. HRSD would then incur additional funds and effort to attempt to recover the amount misappropriated. Additionally, there is a risk of excessive use of a ProCard due to the fact that the high spending limit allows cardholders to be less conservative with spending habits.

Recommendation 1.1

Procurement should consider lowering the single transaction and monthly transaction limit for most ProCard holders. Different thresholds can be created in order to meet the day-to-day needs of various members of each department. Updating the spending limits of cardholders may reduce the risk of excessive high-dollar value transactions and misappropriation of funds.

Management's Action Plan and Implementation Date

After an extensive evaluation by management in March 2014, HRSD's Commission approved the increase of HRSD's small purchasing limit from \$5,000 to \$10,000. This change was based on the volume of requisitions submitted less than \$10,000 and the efficient use of Procurement

Division staff to manage workload with a focus on more complex procurements requiring formal and informal competition.

To date, HRSD has not had any issues with the increased exposure on our ProCards, but we agree that we should evaluate a tailored approach to ProCard limits to reduce our risk. We plan to analyze the spend data and work with the departments on understanding their ProCard needs.

We plan to implement an annual recertification process. Both cardholders and approvers will be required to sign the cardholder or approver agreement and completion of a re-certification quiz. This will be implemented in October 2017.

The evaluation of the spend data will be completed in the next six months (January 2018) as it will take a significant amount of time. An implementation schedule will be developed when the evaluation is completed.

Recommendation 1.2

In conjunction with lowering the single and monthly transaction limits for the majority of the employees that have a ProCard, Procurement may consider implementing a process to allow for temporary increases in spending limits to accommodate unexpected or unusual business needs. This would allow for flexibility in ProCard usage while reducing the current standard limit to mitigate the risk of employees making inappropriate purchases of high-dollar value goods/services.

Management's Action Plan and Implementation Date

We will evaluate this process in conjunction with Recommendation 1.1.

Observation 2

Terminated cardholders' access may not be deactivated in a timely manner in order to prevent unauthorized usage following the end of employment.

Observation Detail

SC&H reviewed the Card Status Report for fifteen terminated cardholders to verify that card access was deactivated in a timely manner. Access was not deactivated in a timely manner for two of the fifteen employees.

Specifically, the first of the two employees ended employment on April 29, 2016, yet their card was not deactivated until July 11, 2016 (73 days later). The second of the two employees left HRSD on July 9, 2016, yet their card was not deactivated until August 18, 2016 (40 days later).

Additionally, SC&H noted two cardholders whose ProCards were deactivated after their termination dates, but within one business week of termination. One employee left HRSD on June 30, 2016 and their card was deactivated on July 1, 2016. Likewise, another employee left HRSD on May 12, 2016 and their card was deactivated on May 17, 2016. For the second employee, SC&H noted that only three business days transpired between the date the employee left employment and the card was deactivated.

SC&H reviewed spending activity for each of the cardholders above and noted that none used their ProCard following termination.

Risk

Delayed deactivation of a ProCard following termination increases the risk of misappropriation through unauthorized purchases. As the cardholder is no longer an employee, obtaining reimbursement for inappropriate expenses may be difficult.

Recommendation 2.1

Procurement should work with the Human Resources Division to implement policies and procedures which ensure that the Procurement Division is notified of an impending employee termination as soon as Human Resources is made aware. Immediate notification of terminations by the Human Resources Division will allow the Procurement Division to deactivate or suspend cardholder accounts as soon as an employment status change occurs. This will help to mitigate the risk of cardholders retaining access to their ProCards beyond the appropriate period of time.

Management's Action Plan and Implementation Date

This concern has been addressed with the Human Resources Division in the past. The delay in getting this information from Human Resources is due to the confidentiality required in some situations.

We will work with the Human Resources Division to develop a formal process that can be put in place for sensitive situations where the information can be given to the Chief of Procurement instead of the ProCard Administrator so the ProCard can be suspended until a final decision is reached regarding the employee's final status.

Implementation of a new process will be made in the next 90 days (October 2017).

Recommendation 2.2

In conjunction with the above recommendation, Procurement should work with the Human Resources Division to update off-boarding paper work to include the collection and destruction of an employee's ProCard. While conducting the standard off-boarding procedures, Human Resources can inquire as to whether the employee possesses a ProCard and can take the necessary action to collect the card and provide it to the Procurement Division for appropriate destruction and deactivation. This will further help to mitigate the risk of employees retaining access to their ProCards after employment.

Management's Action Plan and Implementation Date

During implementation of the ERP, a section was built in the system to accommodate this type of process. We will work with the Human Resources Division to determine if this process can be fully implemented at this time, and if not, come up with a manual process for tracking this information.

Implementation of this new process will be in conjunction with the above recommendation in 2.1.

Observation 3

ProCard holders may not be providing adequate support in conjunction with purchases made on ProCards, specifically with regard to the payment of utility expenses.

Observation Detail

SC&H reviewed the supporting documentation for 30 ProCard transactions executed in FY17. Of the 30 transactions reviewed, one was not appropriately supported in the ERP system. When paying the Verizon Wireless phone bill on a monthly basis, the ProCard holder creates an Excel spreadsheet reconciliation document that tracks the expenses by individual account number. These individual expenses are entered as separate line items when reconciling the transaction within the ERP system. The Excel spreadsheet is attached as support of the transaction within the system, but the invoice from Verizon is not maintained. The line item selected for testing was \$109.44, while the entire bill totaled \$16,211.73. Annualizing the total bill over 12 months results in approximately \$200,000 of ProCard spending that is not supported in the ERP system by original third party documentation each year.

Upon further discussion with the ProCard Administrator, it was noted that several other types of utility payments were made via ProCard. It was noted that detailed invoice support was maintained for all utility payments except the Verizon Wireless bill.

Risk

The lack of original, third-party support creates an opportunity for inappropriate purchase of goods or services that are not for a valid business purpose. By only provided supporting documentation created by the cardholder, information about the purchase can be omitted and/ or manipulated. Without the presence of original third-party support, the purchase cannot be appropriately validated and approved. Additionally, there is the potential for human error, specifically related to account coding. When creating a reconciliation, the cardholder may enter an incorrect account string which could result in funds being incorrectly applied to the wrong department. Similarly, without original third-party support, the account coding cannot be validated as appropriate.

Recommendation 3.1

Procurement should ensure that all ProCard transactions are appropriately supported with independent documentation. Employees should be reminded that a receipt or invoice must be provided as support in addition to any internal reconciliations or schedules that are prepared. This will help to ensure that all purchases being made with a ProCard are appropriate, complete, accurate, free from manipulation, and serve an immediate business purpose.

Management's Action Plan and Implementation Date

This was a unique situation. Due to the very large size of this particular bill and some system limitations, it was agreed that the spreadsheet would be scanned and uploaded to the ERP system as documentation for this transaction instead of a copy of the bill. This process has been re-

evaluated and we are now able to load a copy of the bill to the transaction in the ERP. This process was changed in June 2017 and now our current practice.

Observation 4

Formal policy and procedures have not been implemented to reflect current audit practices and violation tracking performed by the Procurement Card Administrator.

Observation Detail

SC&H noted that procedures surrounding transactional audits and violation tracking have not been formalized and performed on a regular basis. SC&H obtained the audit documentation for a series of audits performed in February and March 2017. In examining the documentation, the criteria used by various members of Procurement to determine if transactions were reasonable was inconsistent. In addition, audit forms were not fully completed and the results of each audit were not made apparent. SC&H determined that the documentation was insufficient to effectively complete an audit and was unable to recreate the performed procedures.

Additionally, SC&H obtained the most current version of the Violation Tracker used to monitor ProCard misuse at HRSD. Based on inspection of the document and inquiry with HRSD, this tracker was not regularly updated to document various instances of cardholder misuse.

Risk

Without adequate documentation and formalized procedures surrounding violation tracking and transactional auditing, employees with multiple instances of ProCard misuse may continue to make inappropriate purchases without repercussions. Additionally, Procurement may not be able to consistently and effectively monitor ProCard usage across all departments at HRSD.

Recommendation 4.1

Procurement should develop detailed policy and procedure documentation describing the duties required to perform the ProCard transactional audit and effectively track violations by cardholders. Recommendations include, but are not limited to:

- Developing detailed policy and procedure/ SOP documentation detailing HRSD auditing policies and day-to-day responsibilities.
- Developing uniform audit testing and violation tracking documentation to detail the results of each individual audit and monitor violations by individual cardholders.
- Evaluating the functions of the ERP system to determine if auditing of transactions can be tracked within the system. For example, ERP may have functionality to denote whether a transaction has been audited and the results of the audit.

Management's Action Plan and Implementation Date

Due to the lack of Procurement staffing over the last year and a half and the new data retrieval process in our ERP system, it has been very difficult to perform proper ProCard audits. Audits were not being performed timely and consistently. A detailed SOP has been recently developed and the audit procedures have been updated in the ProCard policy as of July 2017 and will be

implemented in August 2017. Staffing resources will be evaluated to ensure timely and consistent audits are performed as outlined in the SOP and audit procedures. This will be completed by September 2017.

Recommendation 4.2

Procurement should re-evaluate the number of transactions reviewed for each cardholder. At present, up to four years of transactions are subject to audit for each cardholder reviewed, which may result in unnecessary effort for the member of Procurement conducting the transactional audit for a particular month. HRSD should consider reducing the audit scope to more recent transactions to ensure relevance of findings, as well as efficiency in review. This decision will likely be based on the amount of risk HRSD is willing to accept and the cost vs. benefit of evaluating extended amounts of time.

Management's Action Plan and Implementation Date

We have discussed this recommendation and will make the appropriate adjustments to our audit procedures. We have discussed looking at only three months of data for 40% of our cardholders, however the updated scope has not been finalized at this time.

Final determination of audit scope and implementation of revised audit procedures will be made in the next 90 days (October 2017).

Observation 5

Adequate documentation is not maintained to support the transactional audit performed by the Accounts Payable Division to verify that ProCard expenses are not being submitted for duplicate expense reimbursement.

Observation Detail

SC&H obtained the reimbursement spreadsheet generated by the Accounts Payable Division for January 2017, but, upon request, was unable to obtain similar documentation for additional months. Per Procurement staff, Accounts Payable investigates a sample of expenses to determine if they are reasonable and will include information about the expense type. SC&H was unable to recreate these testing procedures as documentation was not maintained. As such, SC&H is not able to confirm that a review is being performed to ensure ProCard expenses are not being duplicated as expense reimbursements.

Risk

Without adequate procedures and documentation to support a review of expenses to ensure ProCard expenses are not duplicated as expense reimbursements, HRSD is at risk of paying more than once for ProCard expenses. There is currently an opportunity for an employee to purchase an item with a ProCard and submit the receipt for additional reimbursement on an expense report, resulting in a misappropriation of funds.

Recommendation 5.1

Procurement and Accounts Payable should formalize the process of reviewing ProCard transactions against expense reports to identify potential duplicate submissions. Additionally, process owners should ensure that detailed documentation is maintained for all audits conducted regarding expense reimbursements and ProCard transactions.

Management's Action Plan and Implementation Date

This is currently a function performed by Accounts Payable. Procurement and Accounts Payable will work to develop a formal and efficient process for ensuring there are no duplicate submissions and detailed documentation is maintained.

Implementation of a new process will be made in the next six months (January 2018).

Recommendation 5.2

Procurement and Accounts Payable should consider combining the expense reimbursement audit with the current audit procedures conducted by the Procurement Card Administrator. The Procurement Card Administrator has more knowledge as to which employees possess ProCards and may be more efficient in identifying transactions that were submitted as part of the ProCard reconciliation as well as for expense reimbursement.

Management's Action Plan and Implementation Date

Expense reports are a function managed by Accounts Payable and ProCard transactions are a small purchase method managed by Procurement. Procurement and Accounts Payable will evaluate this recommendation to find the most effective and efficient process based on available resources.

A decision to implement or not will be made in the next 90 days (October 2017).

Observation 6

Individuals may have access to aspects of the ERP system that do not serve a necessary function with regard to conducting their day-to-day job responsibilities.

Observation Detail

SC&H obtained the user access rights and abilities within the Procurement module of the ERP system. We reviewed user capabilities for each user profile and considered whether the employees listed had access to the module based on their daily job requirements. SC&H identified multiple users outside of the Procurement Division with access to the ERP Procurement Super User profile. Per discussion with HRSD staff, the majority of the users are members of the IT Department who require access in order to troubleshoot errors reported within the system. However, based on review and discussion, the following access right issues were noted:

- Additionally, one user is a member of the Accounts Payable Division. This user has access in order to open and close accounting periods. However, the user does not require access to any of the other functions associated with a Super User.
- There is not a formalized, periodic user access rights review within Procurement that assesses for appropriateness or user activity via a system audit trail.

Risk

If access to certain functions within the ERP system are not appropriately restricted to only those that require access to complete their daily job requirements, someone can make unauthorized changes within the system that could impact the procurement functions.

Recommendation 6.1

Procurement should review all user access listings to determine whether access is appropriate for all employees that utilize the Procurement functions within the ERP system. Periodic access reviews should be performed to re-evaluate whether individuals' access and rights should be removed if they are not required to conduct day-to-day job responsibilities. This will help to mitigate the risk of individuals having inappropriate access and making unauthorized updates within the ERP system.

Management's Action Plan and Implementation Date

Procurement does not have the ability to view who has access to different roles/responsibilities in the ERP system. This task would need to be performed by an ERP Business Analyst or someone from the Information Technology Department.

We will work with the ERP Team to develop a standard process for periodic reviews of ERP roles/responsibility access.

Implementation of a formal review process will be completed in the next 90 days (October 2017).

Recommendation 6.2

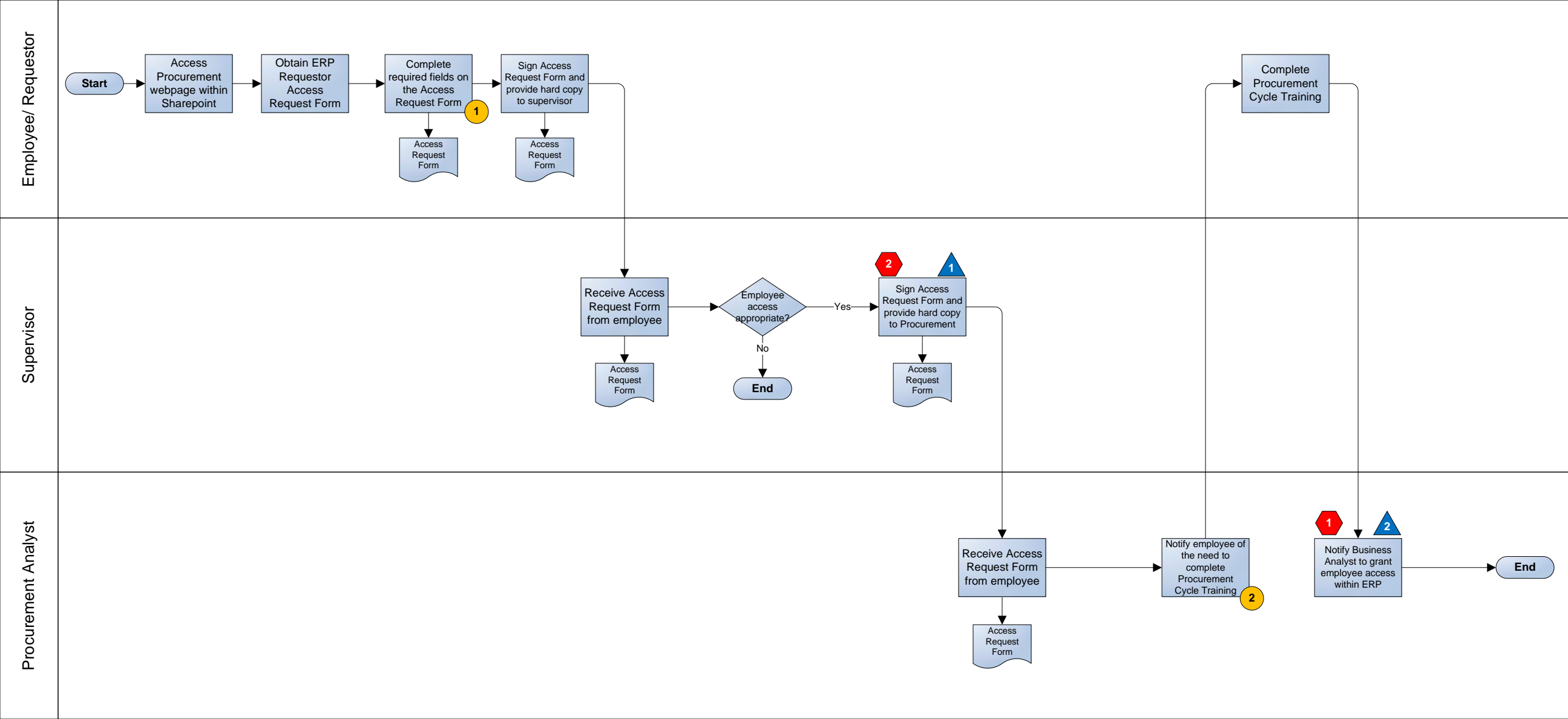
HRSD has the capability to create customized user groups and restrict access within the system in order to create a group specific to the functions needed by the Accounting Division. Procurement should work with the IT Department to create more specialized user groups derived from capabilities available to Super Users. This will help to mitigate the risk of individuals having inappropriate access and making unauthorized updates within the ERP system.

Management's Action Plan and Implementation Date

Procurement will work with an ERP Business Analyst and/or Information Technology Department to determine if a special role can be created for this function.

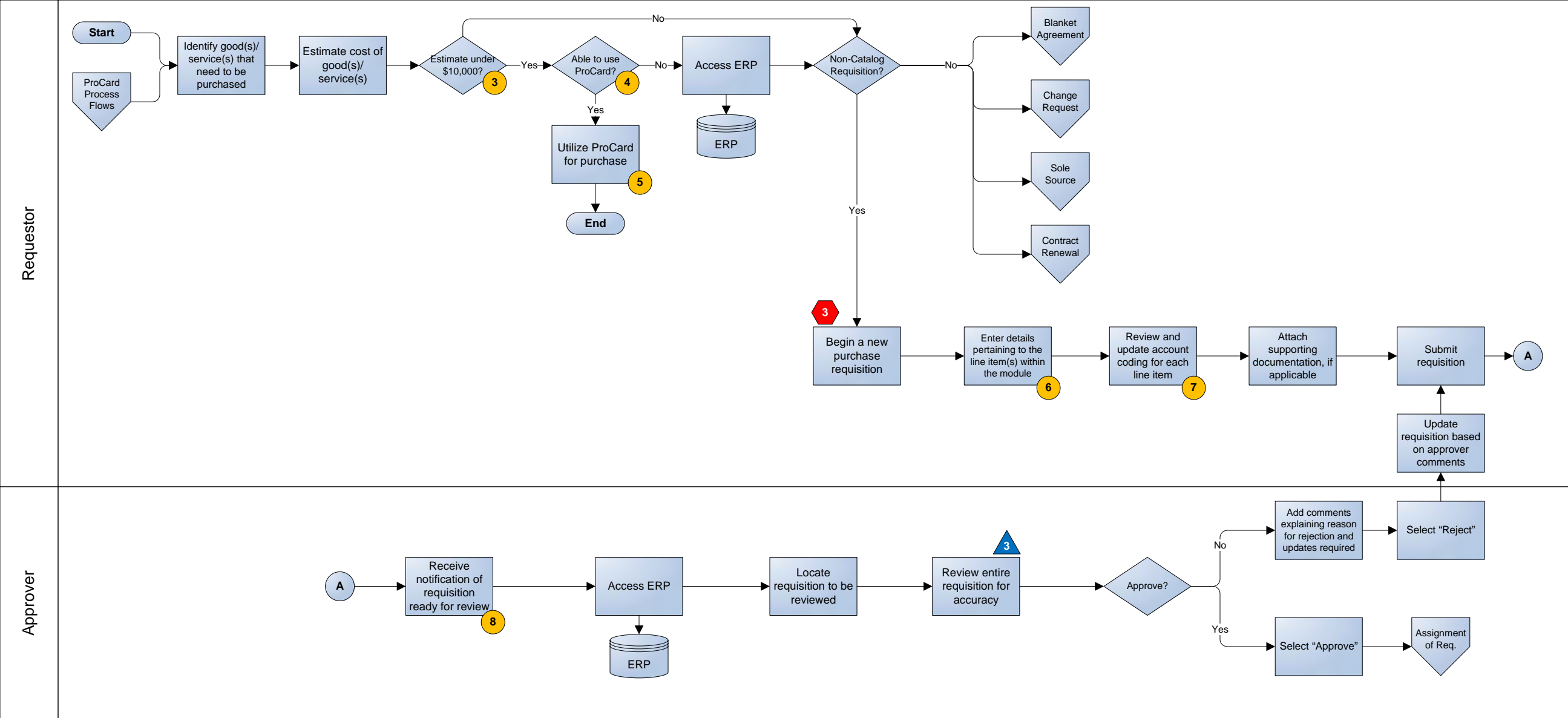
A decision to implement or not will be made in the next 90 days (October 2017).

Sub-Process	New Requestor Set-Up	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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Control	Gap	Process	Document
Risk	Note	Decision	System
		Off-Page Reference	On-Page Reference
		Flow Begin/End	

Key Personnel:	Amy Murphy, Chief of Procurement Linda Wade, Strategic Sourcing Manager Dominique Solano, Procurement Analyst Stephanie Atienza, Procurement Specialist
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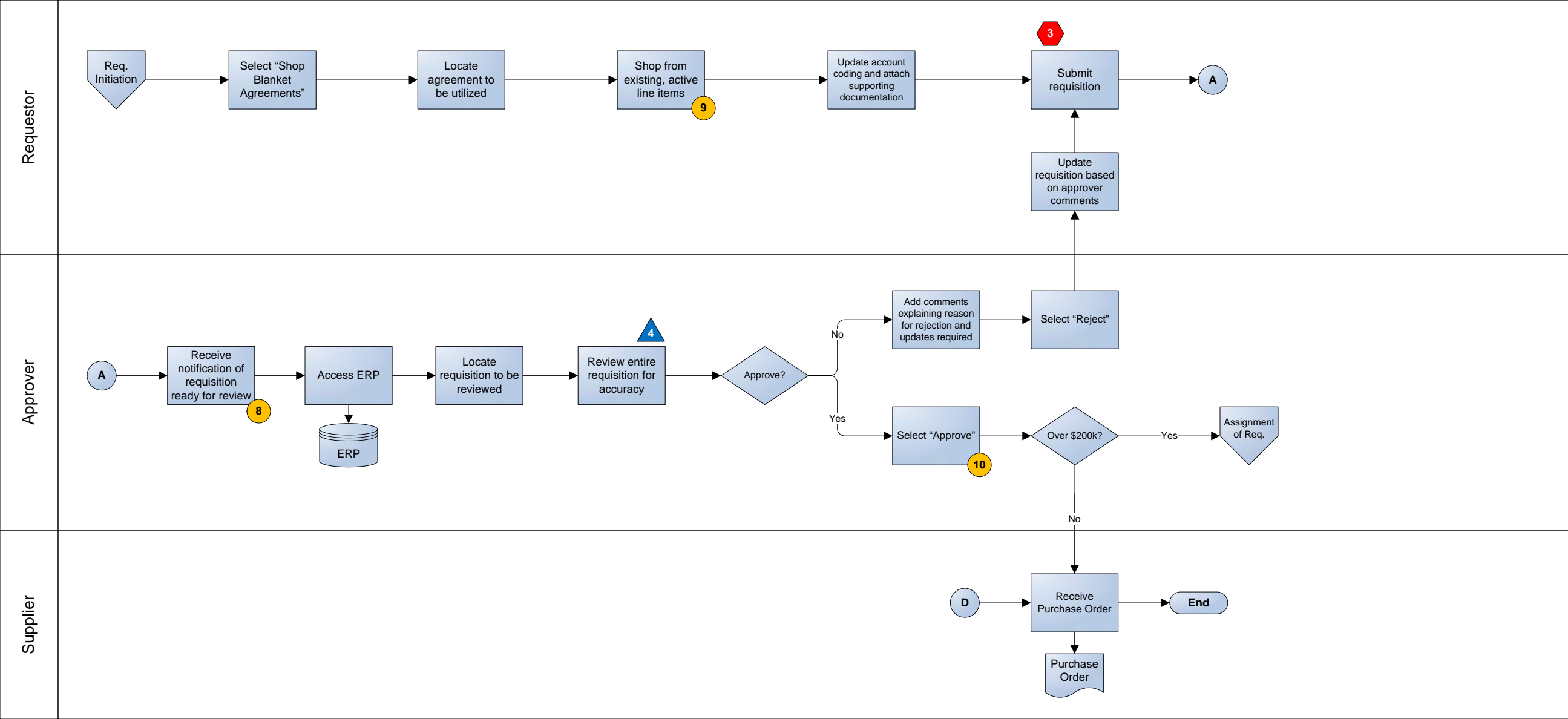
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Risk	Note	Decision	System	On-Page Reference
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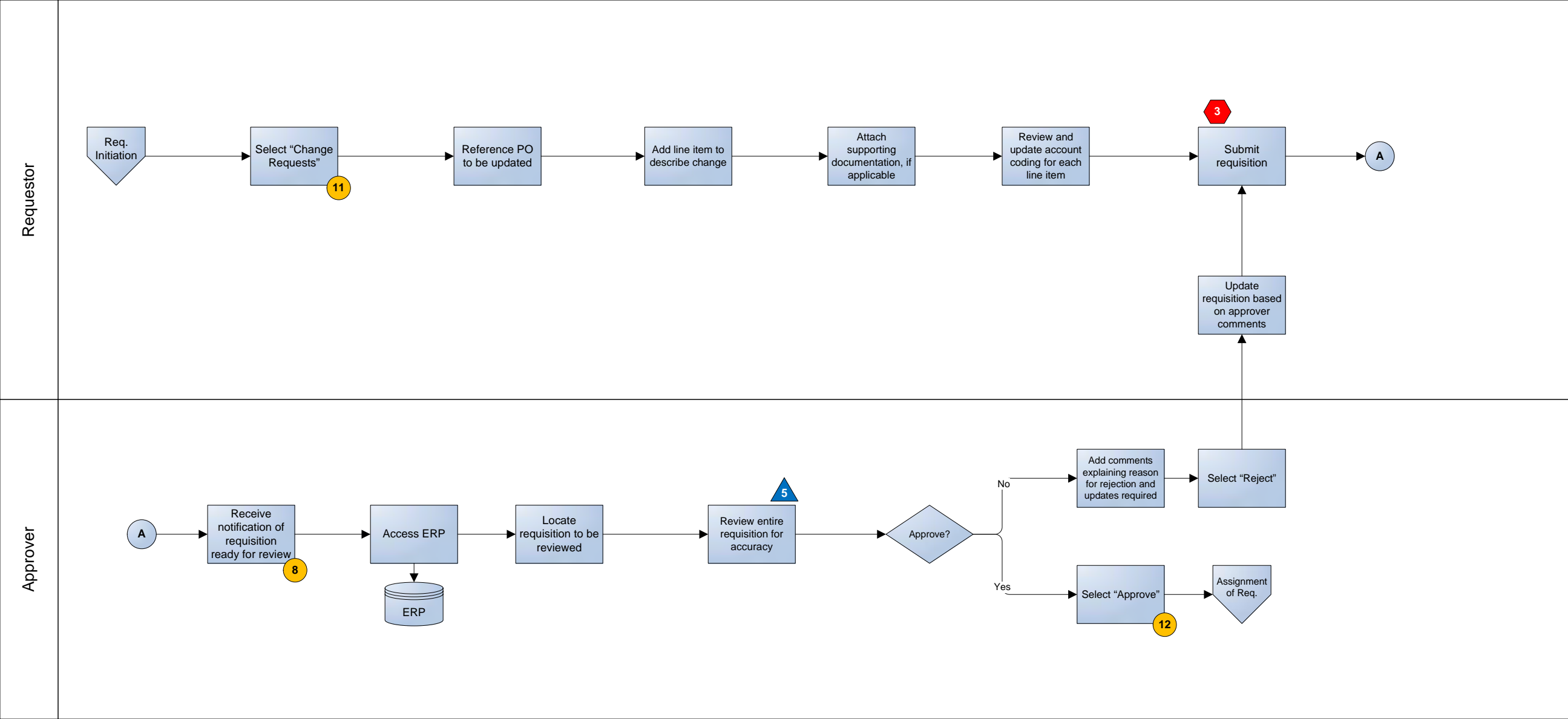
Sub-Process	Requisition: Blanket Agreement	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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	Risk		System
	Note		Decision
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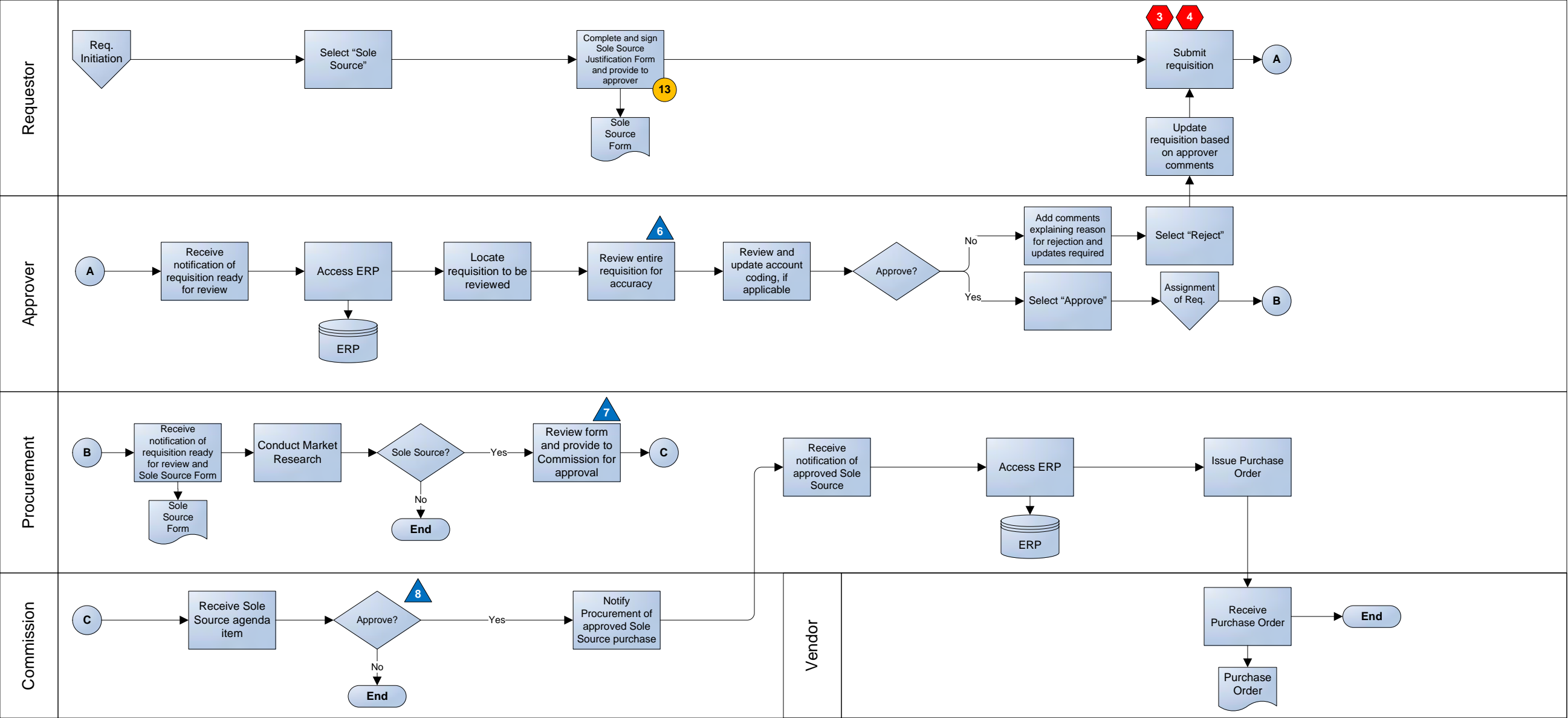
Key Personnel:	Amy Murphy, Chief of Procurement Linda Wade, Strategic Sourcing Manager Dominique Solano, Procurement Analyst Stephanie Atienza, Procurement Specialist
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Sub-Process	Requisition: Change Request	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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	# Risk		# Note		Decision
	Document		System		Off-Page Reference
	On-Page Reference		Flow Begin/End		

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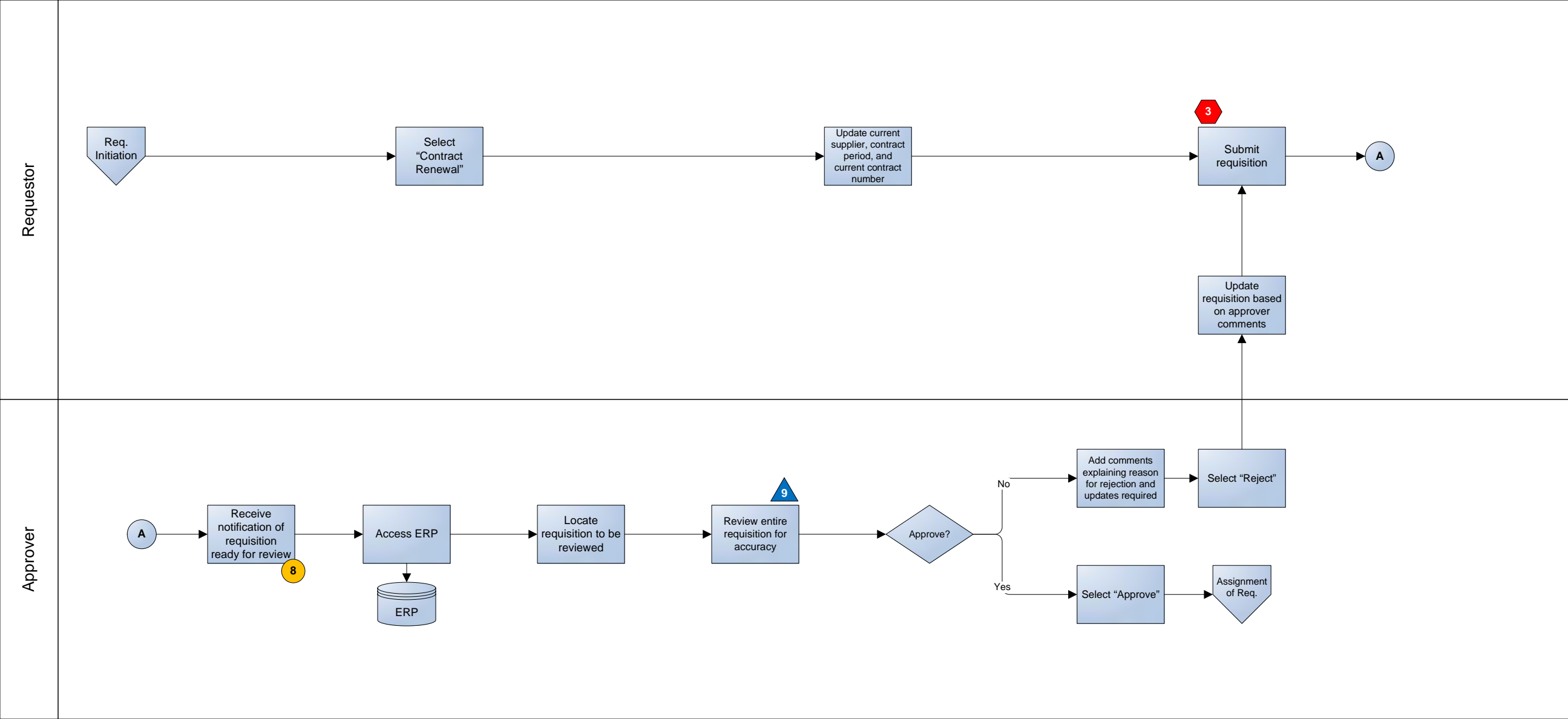


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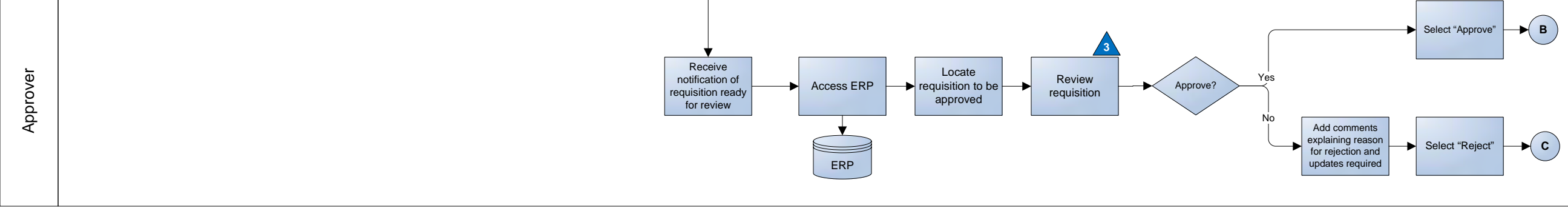
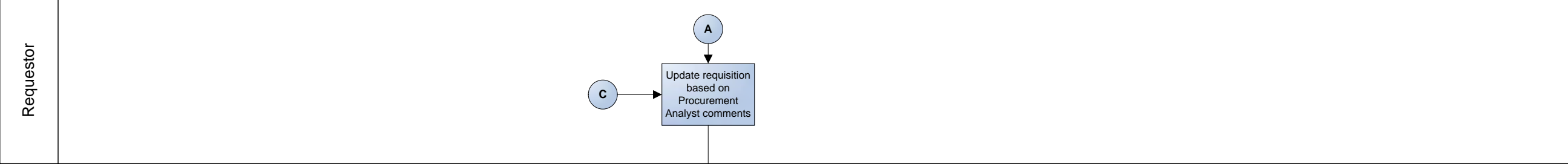
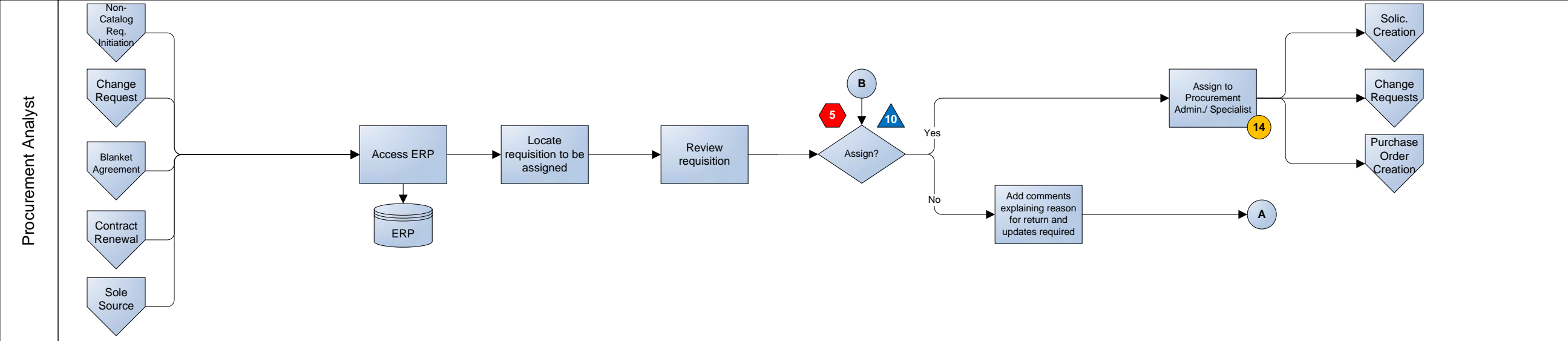
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Risk	Note	Decision	System	On-Page Reference
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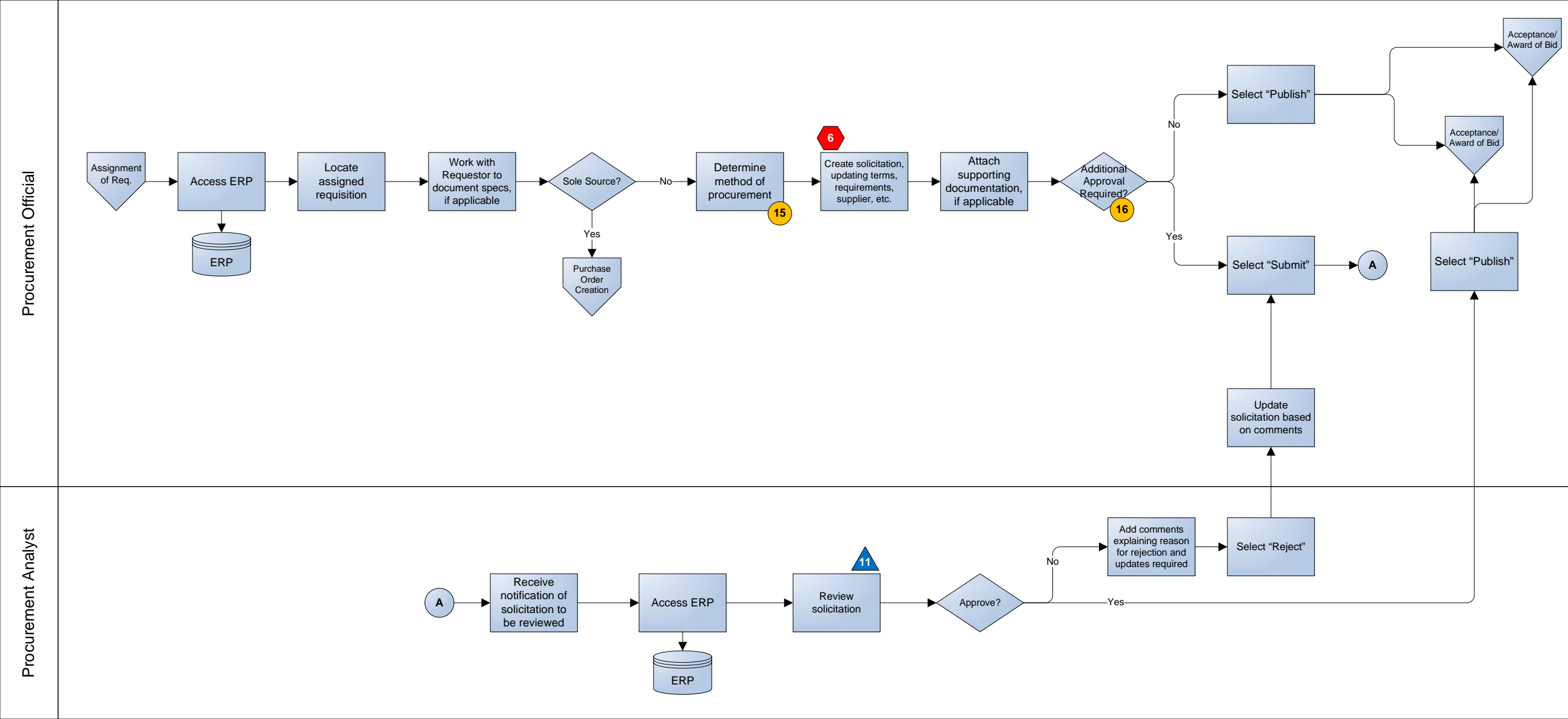
Sub-Process	Assignment of Requisition	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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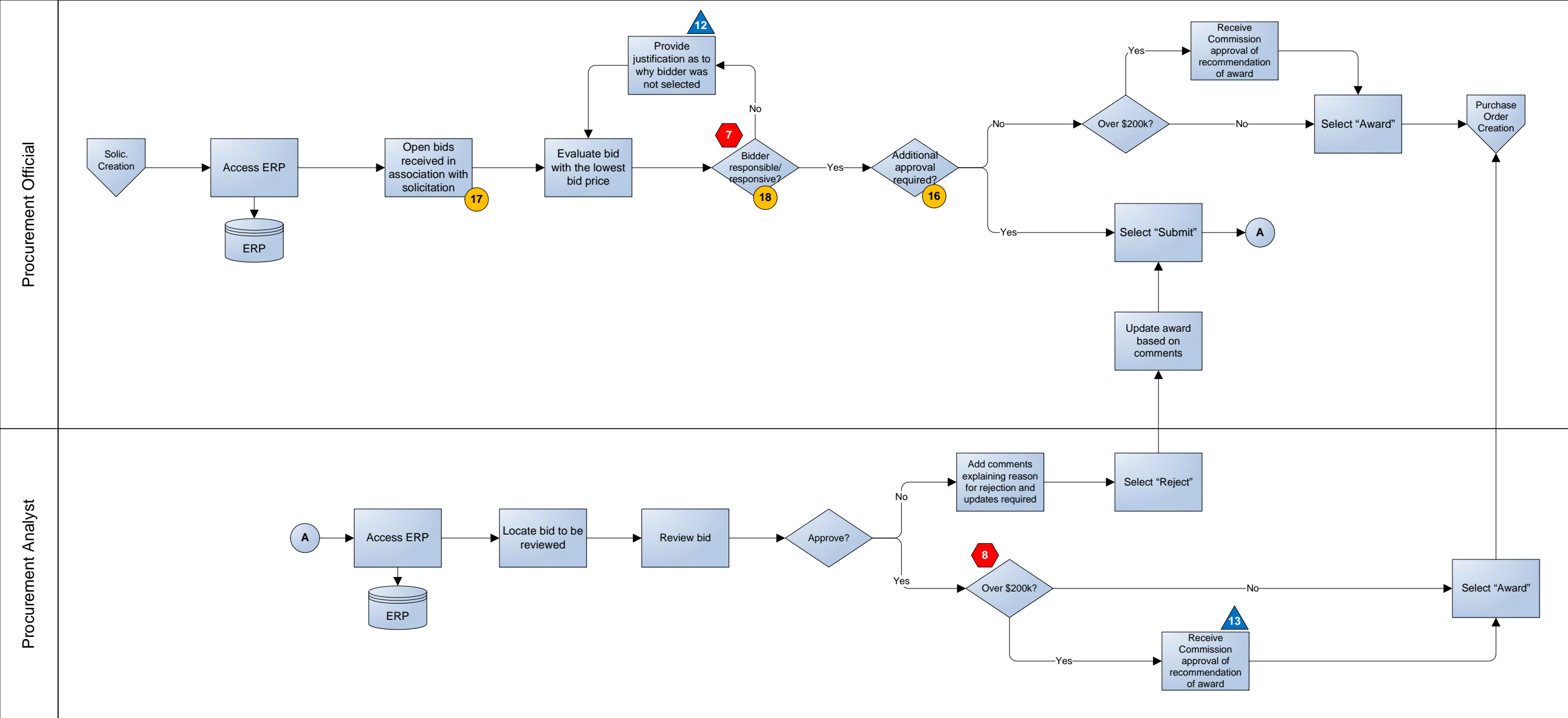


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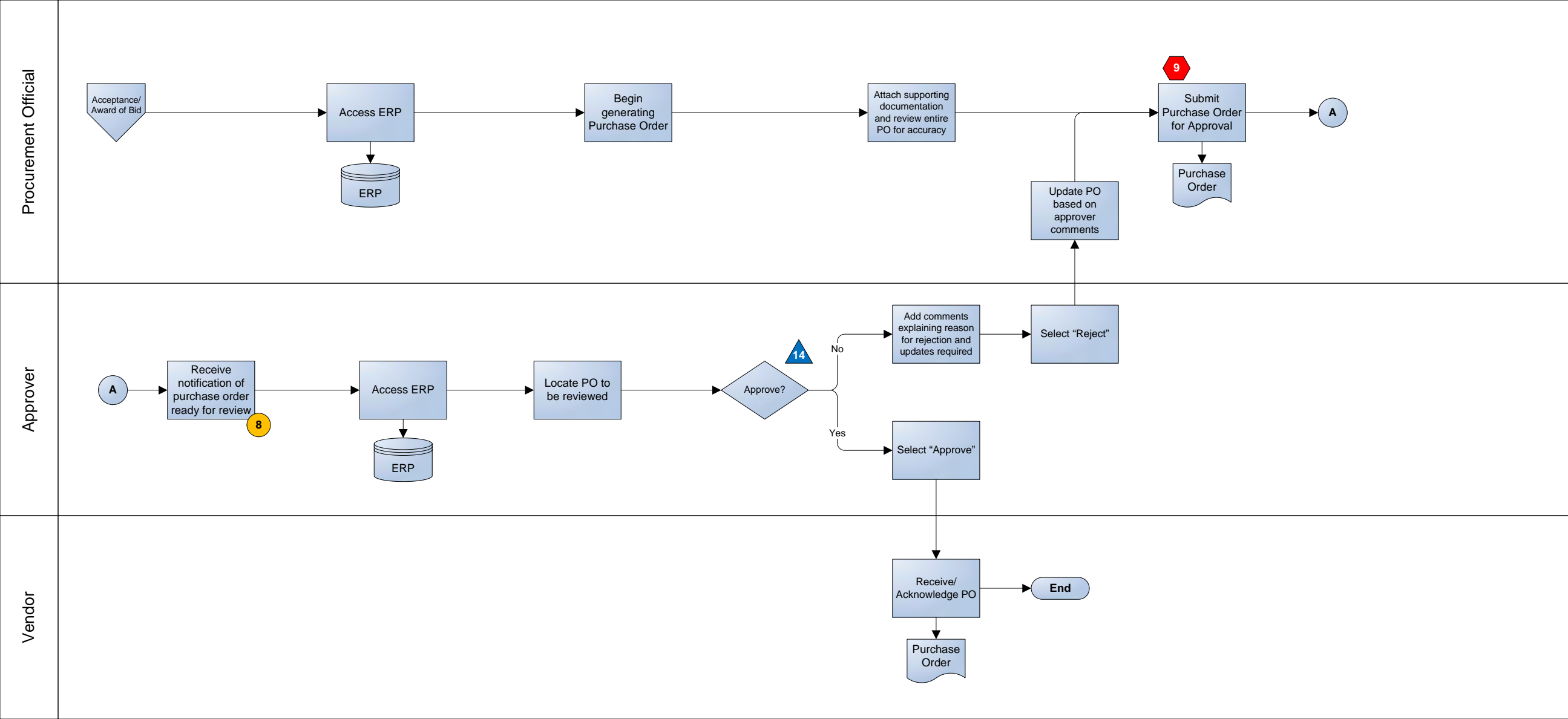


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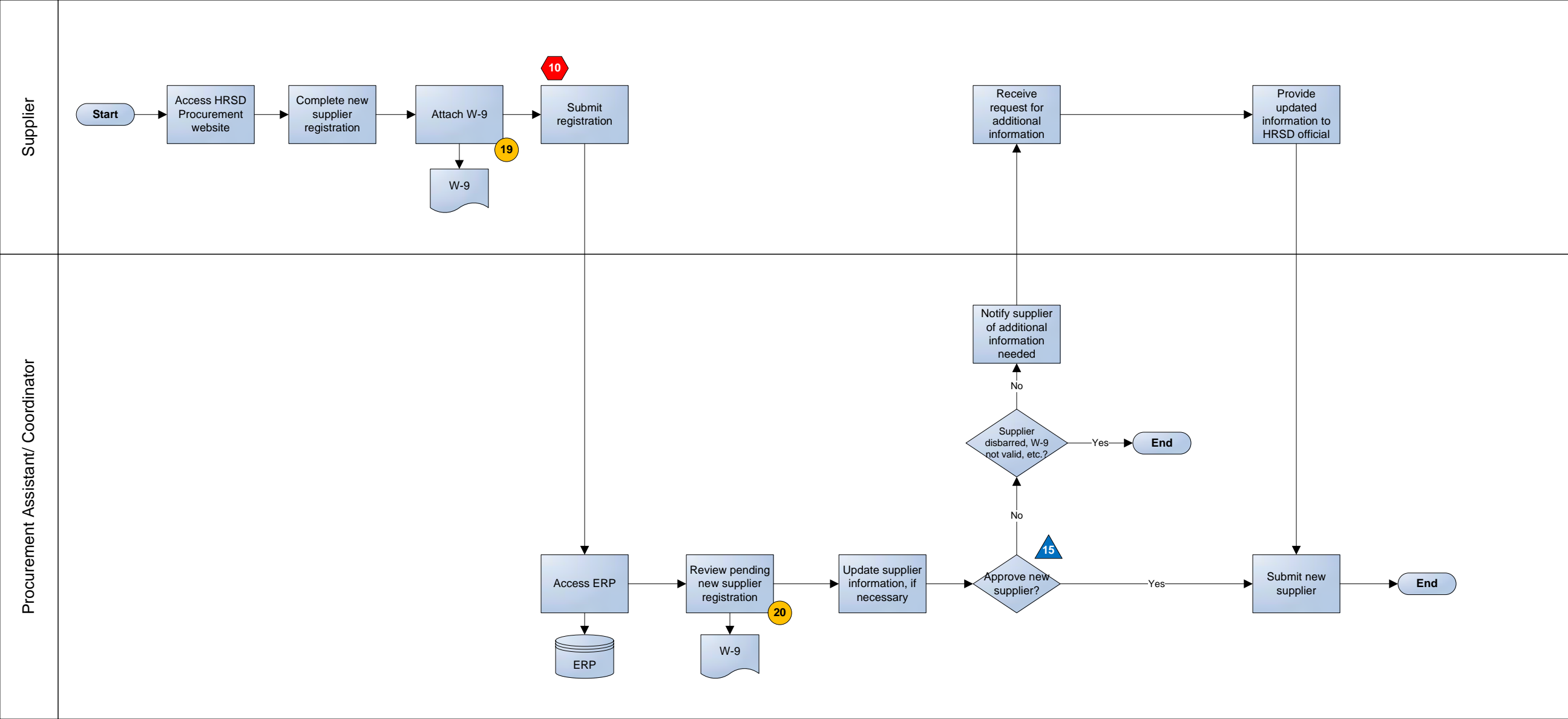


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Risks	Controls
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	Employees are inappropriately assigned requestor access in ERP.	Mitigating Control(s): 1, 2 Gap(s):
	Employees are not knowledgeable of procurement purchasing requirements.	Mitigating Control(s): 2 Gap(s):
	Requisitions, blanket agreement requests, change order requests, contract renewals, or sole source requests are inappropriately or incorrectly prepared and submitted.	Mitigating Control(s): 3, 4, 5, 6, 9 Gap(s):
	Sole source purchases are inappropriately administered, forgoing required competitive bidding.	Mitigating Control(s): 6, 7, 8 Gap(s):
	Approved requisitions are not appropriately assigned to the correct Procurement staff member for completion in ERP.	Mitigating Control(s): 10 Gap(s):
	Solicitations are not completely or appropriately prepared.	Mitigating Control(s): 11 Gap(s):
	Lowest bidder is inappropriately rejected and noted as non-responsive.	Mitigating Control(s): 12 Gap(s):
	High dollar value purchases are not approved with sufficient authority.	Mitigating Control(s): 13 Gap(s):
	Purchase orders are not completed completely and accurately.	Mitigating Control(s): 14 Gap(s):
	Supplier/Vendor information in ERP is not complete or accurate.	Mitigating Control(s): 15 Gap(s):

	Employee supervisor reviews and approves Access Request Form and provides completed form to Procurement before requestor status is provided in ERP.
	Procurement reviews employee Procurement Cycle Training completions and records the date of completion prior to granting requestor access.
	Approvers review procurement requisition initiation requests for appropriateness and provide electronic approval in ERP. Requisitions may be approved by several approver levels prior to processing, based upon the dollar amount or nature of requisition.
	Approvers review blanket agreement initiation requests for appropriateness and provide electronic approval in ERP. Requisitions may be approved by several approver levels prior to processing, based upon the dollar amount or nature of requisition.
	Approvers review change request initiation requests for appropriateness and provide electronic approval in ERP. Requisitions may be approved by several approver levels prior to processing, based upon the dollar amount or nature of requisition.
	Approvers review sole source request initiation requests for appropriateness and provide electronic approval in ERP. Requisitions may be approved by several approver levels prior to processing, based upon the dollar amount or nature of requisition.
	Sole source request forms are reviewed and approved and market research is conducted by Procurement prior to request finalization.
	Sole source requests are reviewed and approved by the HRSD Commission prior to finalization.
	Approvers review contract renewal requests for appropriateness and provide electronic approval in ERP. Requisitions may be approved by several approver levels prior to processing, based upon the dollar amount or nature of requisition.
	The Procurement Analyst reviews approved requisitions and assigns them to the appropriate Procurement Admin/ Specialist for solicitation creation.
	Procurement Analyst reviews solicitation created by assistant for completeness and accuracy and approves in ERP.
	Procurement Specialist/ Assistant reviews solicitation, documents reason for rejection, and provides justification to vendor as to why the bid was not selected.



Hampton Roads Sanitation District Procurement



Risks Controls

13

Solicitations over \$200,000 must be approved by the HRSD Commission prior to finalization. Commission approval is verified by the Procurement Analyst.

14

Approvers review purchase orders for appropriateness and provide electronic approval in ERP. Purchase orders may be approved by several approver levels prior to processing, based upon the dollar amount or nature.

15

New supplier applications are reviewed and approved by the Procurement Assistant/ Coordinator for completeness prior to acceptance.

Notes

- 1 Employees can request access to be a requestor and/ or an approver within ERP. If an employee has both requestor and approver access, they are unable to approve their own requisition requests.
- 2 The Procurement Analyst administers a webinar training to all new requestors. Once an approved Access Request Form is received in Procurement, the employee is notified that they must complete the Procurement Cycle Training. When possible, the training will be administered to multiple employees at one time. Once the training is complete, Procurement will note the date of completion on the Form.
- 3 Per the HRSD Procurement Policy, all purchases \$10,000 or under should be made using a ProCard. If the requestor does not have a ProCard account, they may apply for a card or request that another member of their Work Center with a ProCard account make the purchase. Refer to the Procurement Card Flowcharts for a detailed walkthrough of the processes related to making a purchase with a ProCard.
- 4 Certain suppliers do not accept ProCards as a form of payment. As such, a purchase requisition must be utilized to execute the purchase.
- 5 Refer to the *Procurement Card Flowcharts* for a detailed walkthrough of the processes related to making a purchase with a ProCard.
- 6 For every requisition, the requestor must provide detailed line item information, a best guess estimate of the price of the good(s)/ service(s), an accurate "Need By" date, accurate account coding, a suggested supplier, and scope of work, specifications, or drawings. Depending on the item(s) being requested, more attachments may be required.
- 7 A default account coding automatically populates for each line item. Once all line items have been added, the requestor must update the account coding for every line item. Each line item can be split across multiple account codes, depending on what is being requested.
- 8 Depending on the dollar value of the requisition and the workflows established within the system, a requisition can go through multiple levels of review. When completing the requisition, the requestor can view the workflow and add additional approvers if they deem it appropriate. Approvers have the authority of designating a proxy who has the authority to review and approve requisitions on their behalf. Approvers also have the ability to reassign a requisition to another approver who they feel is better suited to review the information being requested. Additionally, both requestors and approvers have the ability to set vacation rules within the system.
- 9 When utilizing an existing blanket agreement, the requestor can only shop from active, approved line items. The effective date must be current, or they will not be able to make a selection. Likewise, if a contract is currently being modified or updated, a Purchase Order cannot be issued and the request will automatically go to Procurement for review and approval.
- 10 Once a request utilizing a blanket agreement or sole source has been fully approved, it will automatically be generated into a Purchase Order within the system. This Purchase Order is automatically sent to the supplier for them to begin fulfilling the request.
- 11 Change requests can be submitted by a requestor for any changes needed. This includes, but is not limited to, updating the account code, adding/removing a line item, increasing/decreasing quantity or canceling the order.
- 12 The Procurement Official reviews each Change Request Requisition assigned to determine if the affected Purchase Order or Agreement original contract value will be exceeded by more than \$50,000 or 25%. If so, Commission approval is required. The Procurement Official prepares and submits the agenda item and it is reviewed and approved by the Commission. Procurement is notified of the approval and the change request Requisition is processed by the Procurement Official.
- 13 The Sole Source Justification Form is utilized to provide Procurement with additional information regarding the sole source purchase. Information provided on the form includes, but is not limited to, the original requisition number, vendor name and address, impact of the purchase across work centers, and practicality of utilizing the vendor selected. This information helps Procurement to determine the necessity of using a sole source for the purchase of a good/service and prepare the sole source agenda item for Commission if necessary.
- 14 It is the responsibility of the Procurement Analyst to assign all approved requisitions to the appropriate Procurement Official. There is an established client structure which details which Specialist is responsible for various work centers.

- 15 There are three standard types of solicitations that are generated within Procurement. Depending on the type of solicitation, more information is required. The criteria are:
 1) **Request for Quote (RFQ)**: RFQs are created for requisitions under \$100,000 and are an informal quote. The RFQ is posted publicly to the HRSD website for a anywhere from 5 to 7 business days or less. It is the discretion of the Procurement Official to adjust this as necessary depending on the urgency of the procurement. A standard pre-determined template is used to draft the solicitation and the requirements and terms and conditions are added or removed as necessary depending upon the procurement.
 2) **Invitation for Bid (IFB)**: IFBs are created for requisitions \$100,000 and above and require formal competitive sealed bidding. The IFB is posted publicly to the HRSD website for a minimum of 10 business days. A standard pre-determined template is used to draft the solicitation and the requirements and terms and conditions are added or removed as necessary depending upon the procurement. IFBs may require more details than an RFQ.
 3) **Request for Proposal (RFP)**: RFPs are created for requisitions for goods and non-professional services \$50,000 or over and for professional services \$30,000 or over. The RFP is posted publicly to the HRSD website for a minimum of 10 business days but can vary depending upon the procurement. In addition, the RFP is advertised in the newspaper for 1 to 2 calendar days. A standard pre-determined template is used to draft the solicitation and the requirements and terms and conditions are added or removed as necessary depending upon the procurement. RFPs require more details relating to the requirements and a more detailed, comprehensive response from the potential Offerors.
- 16 In general, Procurement Assistants and/or a Procurement Coordinator are only allowed to create solicitations for RFQs. They will be assigned a requisition by the Procurement Analyst and proceed to create the solicitation within ERP. The Analyst receives notice to approve the solicitation. If the solicitation is rejected, the Assistant/Coordinator will modify based on Analyst's comments and re-submit. Once completed and approved the Assistant/Coordinator is able to publish the posting directly to the HRSD website, open the solicitation, evaluate and submit award summary to the Analyst for approval. This process exists no matter if the Procurement Assistant/Procurement Coordinator is a new hire, in a probation and/or training period. The only variance is for a Procurement Official who is a new hire, in a probation and/or training period when creating any type of solicitation. The Procurement Official will follow the same path as noted above for the Assistant/Coordinator until all training is complete.
- 17 The process for accepting a bid and awarding a contract varies based on the type of solicitation:
 1) **RFQ/IFB**: Once the bidding period closes, the Procurement Specialist or Assistant will unseal the bids and open the bid with the lowest cost estimate. For bid tabulation inquiries, the supplier may view or be directed to the ERP site to see the supplier name and total bid price. They will review the proposed goods or services and, if they are deemed responsive and responsible, will award the bid to the vendor.
 2) **RFP**: Once the bidding period closes, the Procurement Official will open the bid. For bid tabulation inquiries, the Procurement Official will only make available the names of the Offerors who have submitted. All other information is not available until an award is complete. The Procurement Official will perform an initial review the proposals received for responsiveness and then notify the pre-determined evaluation committee. The committee performs an initial ranking on a form containing pre-determined evaluation criteria and weights for each Offerors proposal. The committee performs a final ranking on the same form based on any applicable interviews, demonstrations and final negotiations with the Offerors. The score generated from the final ranking determines the committee's recommendation for award of the RFP.
- 18 In order to be awarded a bid, a bidder must prove to be responsive and responsible:
 1) **Responsive**: Bidder meets or exceeds the bid specifications and all requirements stated in the solicitation.
 2) **Responsible**: Bidder has the capability to fully perform the contract requirements, and has the experience, reliability, capacity, facilities, equipment, and financial resources to assure good faith performance.

 Additional steps are required to determine responsive and responsible bidder in the following scenarios:
 1) **Only 1 Bid Received**: In accordance with the VPPA, the Procurement Official contacts the supplier to negotiate the price for a single bid response. The Procurement Official then makes contact with several other suppliers on the solicitation list to inquire as to why they did not respond. They may also utilize an automated supplier survey to obtain the same results. Based on the feedback from the suppliers, this helps determine if a re-bid of the solicitation is necessary. If not, all information is documented on the bid tabulation and/or the Purchase Orders Basis of Award.
 2) **Low Responsive/Responsible Bid exceeds Requisition Estimate**: The Procurement Official contacts the supplier to negotiate the price for a response that exceeds the funds budgeted for the procurement. If bid price still exceeds the Requisition estimate, an additional approval is required that is performed outside the ERP system. An email with an approval request template is sent to the original approver of the Requisition and the electronic response is attached to the bid tabulation.
- 19 Suppliers may be required to provide supplemental information along with their W-9 when registering as a new vendor.
- 20 New supplier requests are reviewed for all proper documentation, W-9, commodity codes, etc.



Hampton Roads Sanitation District Procurement



Process Information

Positions

Requestor: Employees who have take the Procurement Cycle Training and can create purchase requisitions within the system.

Approver: The supervisor or appropriate work center official who reviews and approves all requisitions created by a Requestor.

Procurement Specialist: A member of Procurement who reviews requisitions, creates solicitations, reviews and award bids, and creates purchase orders.

Procurement Analyst: A member of Procurement who reviews and assigns all requisitions to the appropriate Procurement Specialist/Assistant. Additionally, they review the solicitations and awards of Procurement Assistants prior to publication.

Procurement Assistant: A member of Procurement who reviews requisitions and creates solicitations and awards to be reviewed by the Procurement Analyst and subsequently published.

Chief of Procurement: The head of the Procurement Department that oversees the administration of all processes.

Procurement Official: A member of Procurement who reviews requisitions, creates solicitations, reviews and award bids, and creates purchase orders.

Systems

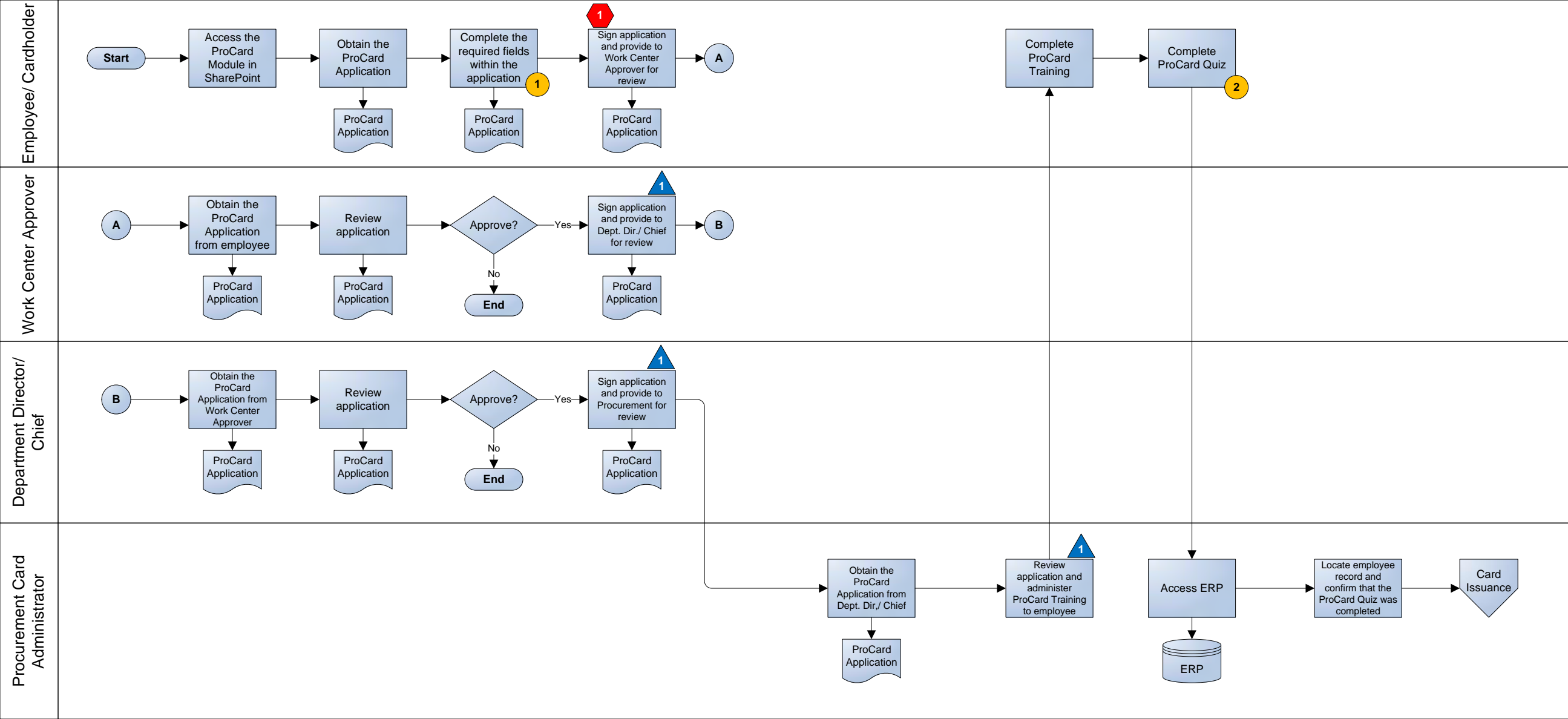
ERP: The system utilized by HRSD to create and administer all purchase requisitions, solicitations, and purchase orders, in addition to other functions.

Other

Access Request Form: When an employee wants to be granted requestor rights within the ERP system, the must complete this form and have it approved. Once fully approved, the employee will be administered the Procurement Cycle Training and be granted requestor access. They can then create purchase requisitions within the system.

Sole Source Justification Form: When a requestor is looking to procure a good/service from a specific vendor they must complete this form justifying the need for a sole source purchase.

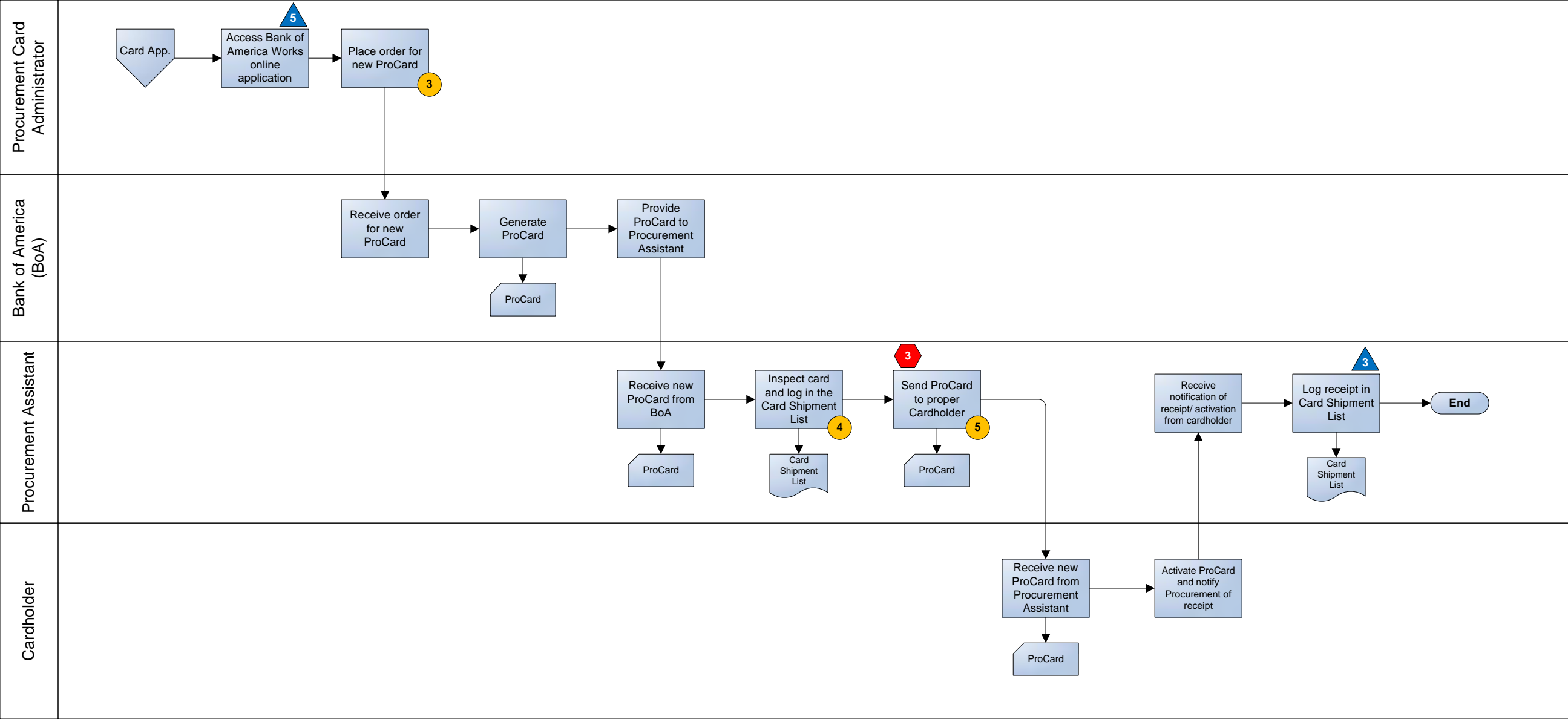
Sub-Process	New Cardholder Application	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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Legend	
Control	Gap
Process	Document
Risk	Note
Decision	System
Off-Page Reference	Card
On-Page Reference	Flow Begin/End

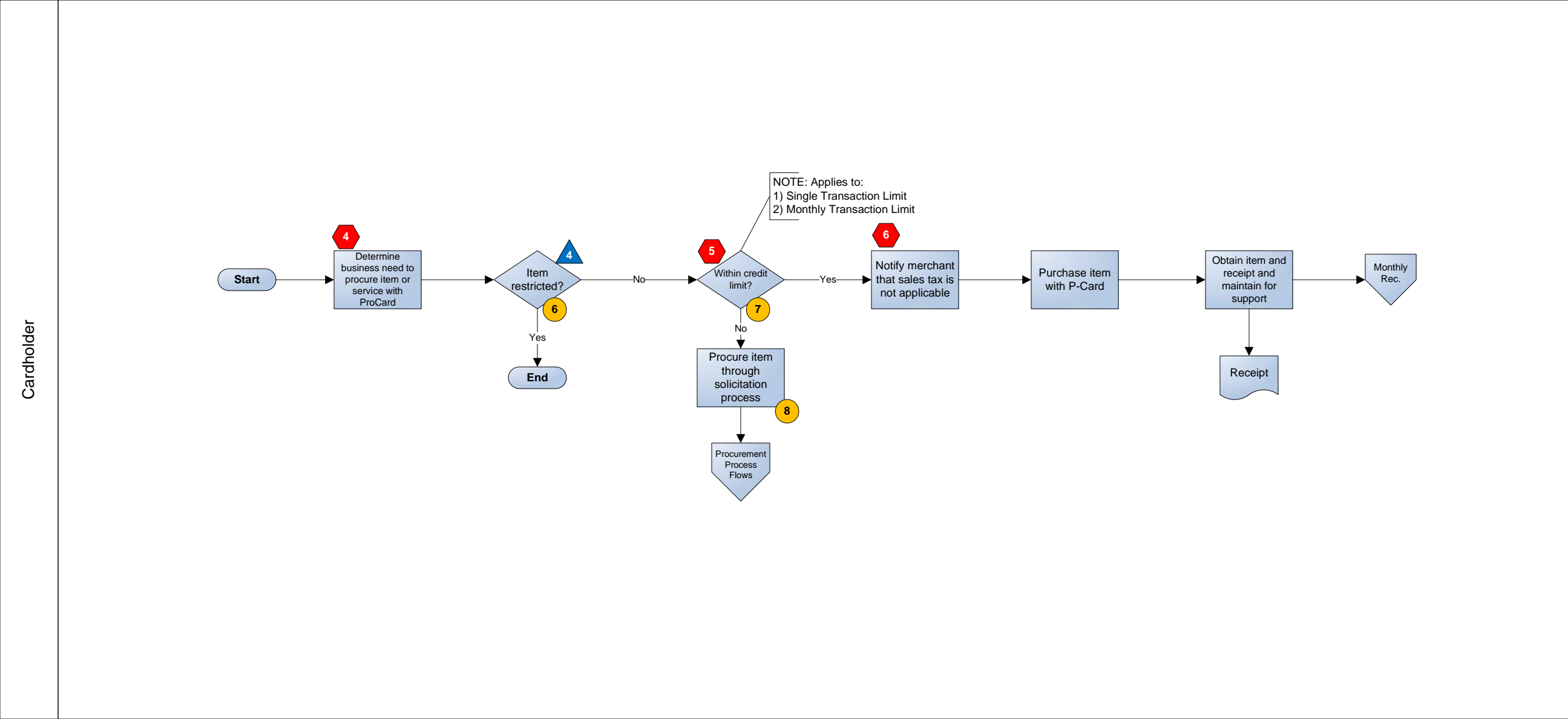
Key Personnel:
 Amy Murphy, Chief of Procurement
 Stephanie Atienza, Procurement Specialist
 Katie Markle, Procurement Card Administrator

Sub-Process	Card Issuance	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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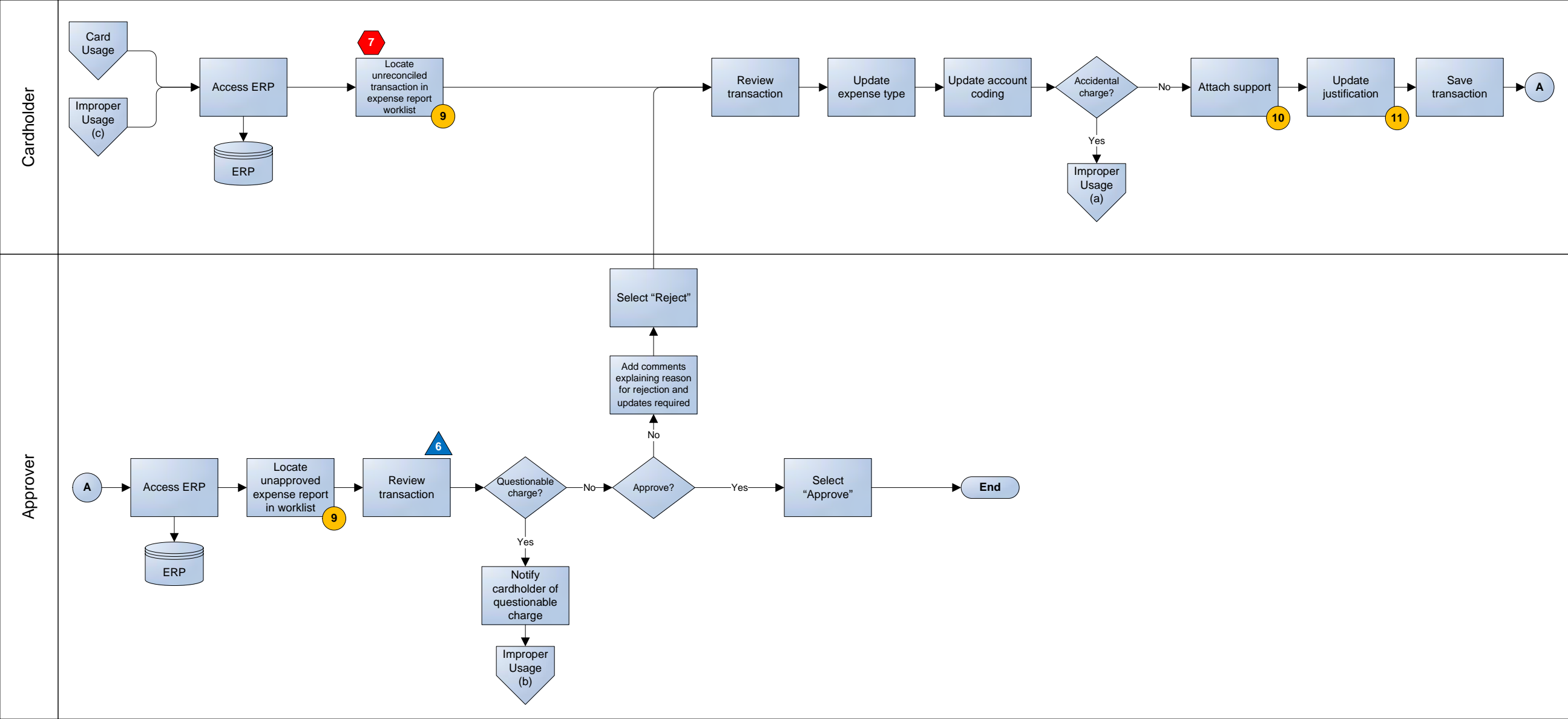
Legend	
Control	Gap
Process	Document
Risk	Note
Decision	System
Card	Off-Page Reference
On-Page Reference	Flow Begin/End

Key Personnel:
 Amy Murphy, Chief of Procurement
 Stephanie Atienza, Procurement Specialist
 Katie Markle, Procurement Card Administrator



Legend	
# Control	# Gap
# Risk	# Note
# Decision	# System
# Off-Page Reference	# On-Page Reference
# Flow Begin/End	

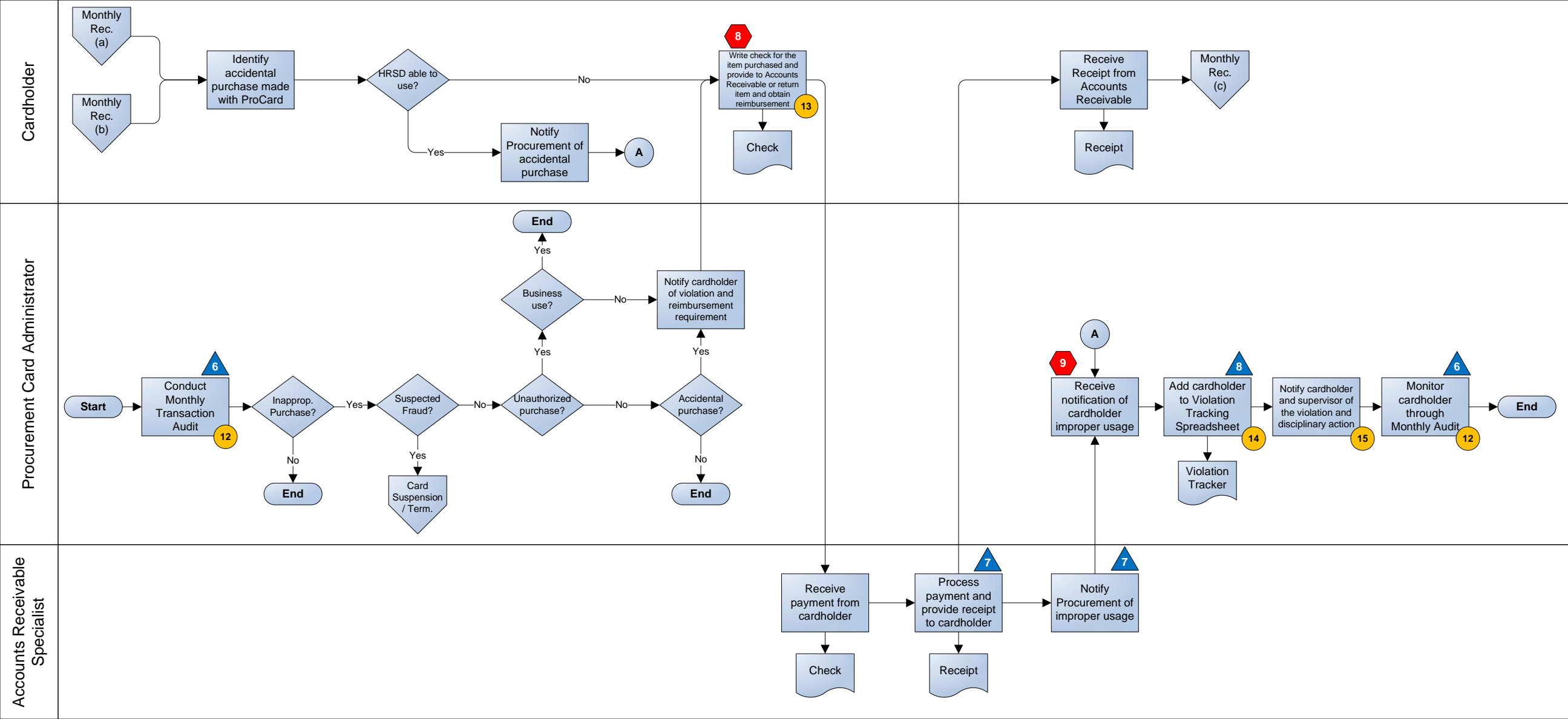
Key Personnel:	Amy Murphy, Chief of Procurement Stephanie Atienza, Procurement Specialist Katie Markle, Procurement Card Administrator
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Legend

Control #	Gap #	Process	Document	Off-Page Reference
Risk #	Note #	Decision	System	On-Page Reference
		Card		Flow Begin/End

Key Personnel:
 Amy Murphy, Chief of Procurement
 Stephanie Atienza, Procurement Specialist
 Katie Markle, Procurement Card Administrator



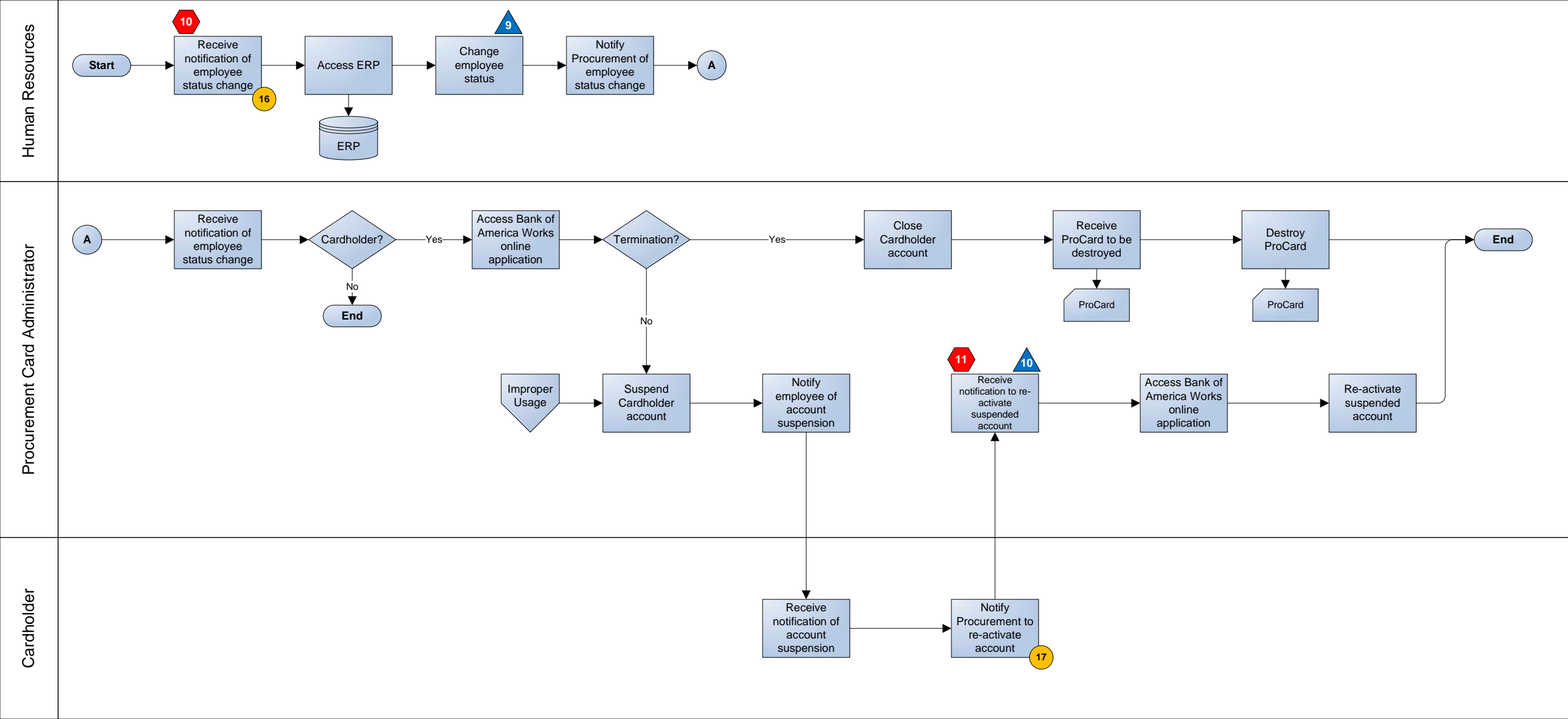
Legend

Control	Gap	Process	Document	Off-Page Reference
Risk	Note	Decision	System	Card
		On-Page Reference	Flow Begin/End	

Key Personnel:

- Amy Murphy, Chief of Procurement
- Stephanie Atienza, Procurement Specialist
- Katie Markle, Procurement Card Administrator

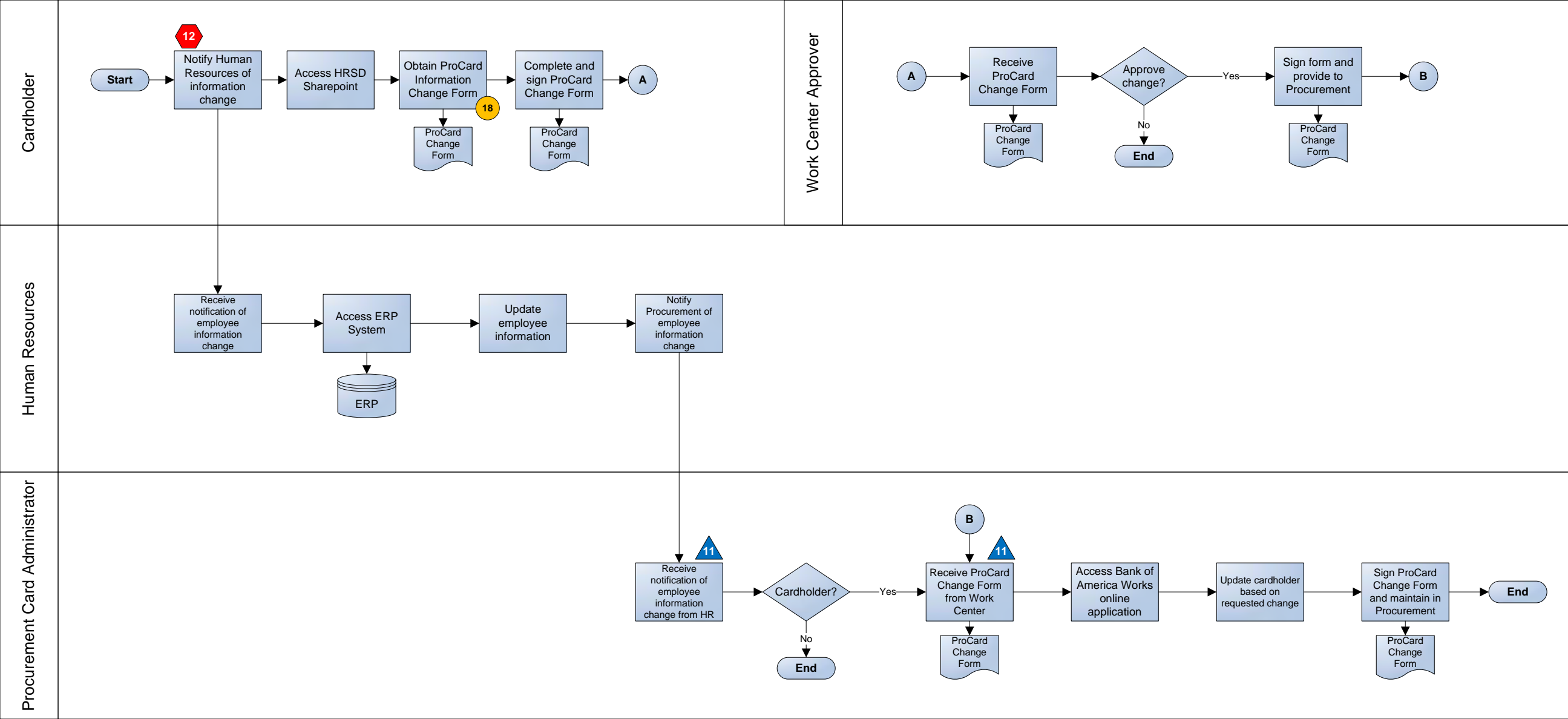
Sub-Process	Card Suspensions/Terminations	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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Legend	
Control	Gap
Process	Document
Risk	Note
Decision	System
Off-Page Reference	Card
On-Page Reference	Flow Begin/End

Key Personnel:
 Amy Murphy, Chief of Procurement
 Stephanie Atienza, Procurement Specialist
 Katie Markle, Procurement Card Administrator

Sub-Process	Card Data Changes	Business Unit	Procurement	Location	Hampton Roads Sanitation District (HRSD)	Year	2017
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Legend	
Control	Gap
Risk	Note
Process	Document
System	Card
Decision	Off-Page Reference
Flow Begin/End	On-Page Reference

Key Personnel:
 Amy Murphy, Chief of Procurement
 Stephanie Atienza, Procurement Specialist
 Katie Markle, Procurement Card Administrator

Risks	Controls
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1	ProCards are not appropriately assigned to the correct HRSD staff.	Mitigating Control(s): 1 Gap(s):
2	New cardholders are not aware of ProCard use policies and procedures.	Mitigating Control(s): 2 Gap(s):
3	New ProCard is not provided to the correct staff member or is misplaced during assignment.	Mitigating Control(s): 3 Gap(s):
4	ProCard is used to make inappropriate purchases.	Mitigating Control(s): 4, 6 Gap(s):
5	Cardholder spending exceeds transaction/monthly spending limits.	Mitigating Control(s): 5 Gap(s):
6	Sales tax is inappropriately paid at point of sale.	Mitigating Control(s): 6 Gap(s):
7	ProCard transactions are inappropriately coded, classified or supported.	Mitigating Control(s): 6 Gap(s):
8	HRSD is not appropriately reimbursed for inappropriate cardholder purchases.	Mitigating Control(s): 7 Gap(s):
9	Violations are not monitored or tracked to identify cardholders with repeated inappropriate purchases.	Mitigating Control(s): 6, 8 Gap(s):
10	The ProCard Administrator is not informed of a cardholder status change such as extended leave or termination, resulting in periods of inappropriate access.	Mitigating Control(s): 9 Gap(s):
11	Cardholders are inappropriately reacted following extended leave.	Mitigating Control(s): 10 Gap(s):
12	Cardholder data is inappropriately changed.	Mitigating Control(s): 11 Gap(s):

1	New cardholder applications are reviewed by the workcenter approver, department director/chief, and ProCard administrator prior to approval.
2	HRSD staff must complete ProCard training and the ProCard Quiz prior to being accepted as a cardholder. This is confirmed by the ProCard Administrator prior to issuance.
3	ProCards received from BOA are logged in a Card Shipment List by the Procurement Assistant. When the card is received by the Cardholder, the Cardholder notifies the Procurement Assistant who notes appropriate receipt on the Card Shipment List.
4	Certain vendors and purchases are automatically restricted via the vendor MCC by BOA as directed by HRSD,
5	Transactional and monthly spending limits are established with BOA for each cardholder at the time of card set-up.
6	ProCard transactions are reviewed and approved by the designated approvers during the monthly reconciliation process and are further reviewed by the ProCard Administrator during monthly audits.
7	Payments for improper usage will be provided to AR, which provides the Cardholder with a receipt and notifies Procurement of the payment.
8	The ProCard Administrator adds cardholders to the Violation Tracking Spreadsheet, which triggers additional cardholder transaction audit procedures and may result in card cancellation or supervisor notification, as necessary.
9	Human Resources notifies the ProCard Administrator of cardholder status change in ERP. The ProCard Administrator then updates cardholder access with BOA as appropriate.
10	The ProCard Administrator will only reactivate a cardholder when notification is received from the original person who requested the card suspension (e.g. cardholder or HR).
11	Notification of cardholder data change is provided to the ProCard Administrator by HR, as well as via an approved ProCard Change Form from the cardholders approver.



Hampton Roads Sanitation District Procurement Card Program



Notes

- 1) When completing the ProCard Application, the employee enters their name, birth date, employee number, department and work center, and work center mailing information. Additionally, the employee completes a Procurement Card Employee Agreement, which certifies their understanding of their responsibility to uphold the rules surrounding the appropriate use of the ProCard to make business purchases.
- 2) There is currently not a passing score requirement for the ProCard Quiz. Employees must still complete the quiz, but will not be denied a ProCard based on the score they receive.
- 3) Only the Procurement Chief, Procurement Specialist, and Procurement Administrator are currently able to request new ProCards within the Bank of America system. HRSD is currently transitioning full responsibility to the Procurement Administrator. Once this transition is complete, on the Procurement Administrator and Procurement Analyst will have the ability to add new cardholders within the system. HRSD always maintains two individuals with the ability to add new cardholders to ensure that there is no delay in requesting ProCards.
- 4) Procurement Assistants are responsible for the maintenance of the Card Shipment List. The list is a log of all the new cardholders. When a new ProCard is issued, it is sent to the Procurement Office. The Procurement Assistant receives the card, opens and inspects the card, and logs the cardholder name and date the card was received in the list. Once the cardholder receives the ProCard, they are required to provide acknowledgment of receipt to Procurement. The Assistant logs the date of receipt by the cardholder in the list. If a cardholder does not provide acknowledgment of receipt, it is the responsibility of the Procurement Assistant to follow-up with the cardholder.
- 5) Cards are sent to cardholders through interoffice mail.
- 6) Per the *HRSD ProCard Policies and Procedures*, "...some vendors will be blocked on the card such as cash, jewelry, massage parlors, gambling and other high-risk areas of purchase." Additional purchase categories that are not permitted are charitable or political contributions, computers (or other IT related items), money orders, cash advances, personal purchases, and establishing term contracts for goods, services, agreements, etc. Furthermore, per HRSD IT Policy, only members of IT may purchase IT items.
- 7) Purchase limits are the same for all HRSD employees, with a single transaction limit of \$10,000 and a monthly transaction limit of \$100,000. In special instances, employees will be granted higher single transaction and monthly limits. For example, members of the Accounts Payable Department that are responsible for paying higher dollar value bills are granted higher limits in order to execute their duties more effectively.
- 8) Refer to the *Procurement Flowcharts* for a detailed walkthrough of the processes related to making a purchase through solicitations.
- 9) Per the *HRSD ProCard Policies and Procedures*, cardholders are required to reconcile and submit transactions by the 10th of each month. Additionally, approvers must review and approve all transactions by the 15th of each month. Failure to meet these deadlines may result in the cardholders privileges may be revoked.
- 10) Receipts/Invoices are required for all purchases made with a ProCard. If a cardholder loses a receipt, they may denote this within the ERP system by checking a box marked "Missing Receipt." Depending on the purchase dollar value and the circumstances surrounding why there is no support, the employee may need to go back to the vendor to obtain proof of the purchase.
- 11) Cardholders are not required to provide a justification within ERP. However, it is encouraged they do, so that the approver can easily determine if the purchase is a reasonable business expense.
- 12) The Monthly Transaction Audit is performed by the Procurement Administrator.
- 13) Payment for reimbursement of an accidental/ inappropriate purchase made on a ProCard can be made via check, cash, or credit card. All payments are received by the Accounts Receivable Department. If HRSD is able to use the item that was accidentally purchased, reimbursement by the cardholder is not required. However, they will still be added to the violation tracker and monitored for additional instances of misuse.
- 14) Violations remain on a cardholder's record for three years following the violation.

- 15) Violations can fall into various categories. Those categories are:
 - 1) Accidental Personal Purchase: The ProCard was used to purchase something not for the use or ownership by HRSD.
 - 2) Personal Use Fraud: Knowingly using the ProCard to purchase something not for the use or ownership by HRSD.
 - 3) Unauthorized Purchase: Making a purchase with HRSD funds that was not previously approved by a supervisor.
 - 4) Cash or Cash-Type Transaction: Using the ProCard to obtain a cash advance, money order, cash in lieu of credit for return or exchange, etc.
 - 5) Split Purchase: A single purchase exceeding \$10,000 split into multiple transactions to circumvent the single transaction limit.
 - 6) Failure to Meet Monthly Reconciliation Requirements: The cardholder does not allocate and sign-off on their transactions by the 10th of each month or does not maintain supporting documentation for the required three years.

For all violations, except Personal use fraud, multiple levels of disciplinary action exist. The cardholder and their supervisor are notified and reimbursement is sought. Multiple violations could result in the suspension or termination of an employees ProCard. When personal use fraud is identified, the ProCard is immediately cancelled and the employee, their supervisor, and Department Director are notified.

Additionally, repayment for improper purchases can be handled two ways:

 - 1) If the item cannot be used for a business purpose, reimbursement in the full amount of the purchase is required to be made to HRSD.
 - 2) If the item can be used for a business purpose, reimbursement is not required and the item is utilized.
- 16) Cardholder status changes can be a suspension or termination of a cardholder account. When a cardholder goes on extended leave, they can suspend their card, which causes the account to become inactive. When a cardholder voluntarily or involuntarily terminates their employment with HRSD, their account is closed and card de-activated.
- 17) Procurement must receive a request to re-activate a suspended account from the person or department that originally initiated the suspension. For example, if Human Resources requests a suspension of a ProCard, only Human Resources can request that the card be re-activated.
- 18) The types of changes that may be requested by a cardholder are location, general information, and name changes.



Hampton Roads Sanitation District Procurement Card Program



Process Information

Positions

Cardholder: An employee of HRSD that uses a ProCard to regularly make purchases of goods/ services.

Work Center Approver: An employee of HRSD responsible for the review and approval of cardholder ProCard purchases at a particular Work Center.

Department Director/ Chief: The member of a Department/ Work Center in charge of overseeing day-to-day operations.

Procurement Card Administrator: A member of Procurement in charge of the administration of the Procurement Card Program.

Procurement Assistant: A member of Procurement who helps to administer the Procurement Card Program on a regular basis.

Accounts Receivable Specialist: A member of the Accounts Receivable Department responsible for accepting and processing payments made to HRSD.

Human Resources: The department responsible for the maintenance of employee personnel files within HRSD.

Systems

ERP: The system utilized by HRSD to administer the Procurement Card program, in addition to other functions.

Works: The third-party application provided by Bank of America to help administer the Procurement Card Program.

Other

Bank of America (BoA): The third party vendor who generates and provide ProCards to HRSD.

ProCard Application: The document utilized by prospective cardholders to request a ProCard from Procurement.

Card Shipment List: A tracking document used to log the movement of ProCards between departments/ offices.

Violation Tracker: A tracking document used by the ProCard Administrator to monitor violations made by cardholders.

ProCard Change Form: A document utilized by cardholders when a change needs to be made to their ProCard profile within Works and ERP.

Annual Metrics											
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17
M-1.1a	Employee Turnover Rate (Total)	Percentage	< 8%	5.63%	4.09%	6.64%	7.62%	8.22%	9.97%	6.75%	6.66%
M-1.1b	Employee Turnover Rate within Probationary Period		0%		2.22%	8.16%	14.58%	9.68%	0.66%	0.13%	0.90%
M-1.2	Internal Employee Promotion Eligible	Percentage	100%		59%	80%	69.57%	71.43%	64.00%	69.00%	68.00%
M-1.3	Average Time to Fill a Position	Calendar Days	< 30		70	60	52	43.76	51	56	67
M-1.4	Training Hours per Employee - cumulative fiscal year-to-date	Hours	> 40		30.0	43.8	37.5	35.9	42.8	49.0	48.4
M-1.5a	Safety OSHA 300 Incidence Rate Total Cases	# per 100 Employees	< 3.5	6.57	6.15	5.8	11.2	5.07	3.87	7	5.5
M-1.5b	Safety OSHA 300 Incidence Rate Cases with Days Away	# per 100 Employees	< 1.1	0.74	1.13	1.33	0.96	1.4	0.82	1.9	1
M-1.5c	Safety OSHA 300 Incidence Rate Cases with Restriction, etc.	# per 100 Employees	< 0.8	3.72	4.27	2.55	4.5	2	1.76	3.6	2.8
M-2.1	CIP Delivery - Budget	Percentage			113%	96%	124%	149%	160%	151%	156%
M-2.2	CIP Delivery - Schedule	Percentage			169%	169%	161%	150%	190%	172%	173%
M-2.3a	Total Maintenance Hours	Total Available Mtc Labor Hours Monthly Avg			16,495	22,347	27,615	30,863	35,431	34,168	28,786
M-2.3b	Planned Maintenance	Percentage of Total Mtc Hours Monthly Avg			20%	27%	70%	73%	48%	41%	43%
M-2.3c	Corrective Maintenance	Percentage of Total Mtc Hours Monthly Avg			63%	51%	12%	10%	18%	25%	25%
M-2.3d	Projects	Percentage of Total Mtc Hours Monthly Avg			18%	22%	20%	18%	32%	34%	32%
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	2%		8.18%	6%	6%	4%	7%	7%	*
M-3.3	Carbon Footprint	Tons per MG Annual Total			1.61	1.57	1.47	1.46	1.44	1.45	1.58
M-3.6	Alternate Energy	Total KWH			0	0	0	5,911,289	6,123,399	6,555,096	6,052,142
M-4.1a	Energy Use: Treatment	kWh/MG Monthly Avg			2,473	2,571	2,229	2,189	2,176	2,205	2,294
M-4.1b	Energy Use: Pump Stations	kWh/MG Monthly Avg			197	173	152	159	168	163	173
M-4.1c	Energy Use: Office Buildings	kWh/MG Monthly Avg			84	77	102	96	104	97	104
M-4.2	R&D Budget	Percentage of Total Revenue	> 0.5%		1.0%	1.4%	1.0%	1.3%	1.0%	0.8%	1.3%
M-4.3	Total Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow		\$1,028	\$1,095	\$1,174	\$1,232	\$1,249	\$1,279	\$1,246	*
M-4.4	Affordability	8 CCF Monthly Charge/ Median Household Income	< 0.5%		0.48%	0.48%	0.41%	0.43%	0.53%	0.55%	*
M-4.5	Total Operating Cost/MGD	Total Operating Expense/ 365/5-Year Average Daily Flow		\$2,741	\$2,970	\$3,262	\$3,316	\$3,305	\$3,526	\$3,434	*
M-5.1	Name Recognition	Percentage (Survey Result)	100%	67%	71%	N/A	62%	N/A	60%	N/A	N/A
M-5.4	Value of Research	Percentage - Total Value/HRSD Investment			129%	235%	177%	149%	181%	178%	143%
M-5.5	Number of Research Partners	Annual Total Number			42	36	31	33	28	35	15
	Rolling 5 Year Average Daily Flow	MGD		157.8	155.3	152	154.36	155.2	151.51	153.09	154.24
	Rainfall	Annual Total Inches		66.9	44.21	56.21	46.65	46.52	51.95	54.14	66.66
	Billed Flow	Annual Percentage of Total Treated		71.9%	82.6%	78%	71%	73%	74%	72%	*
	Senior Debt Coverage	Net Revenue/Senior Annual Debt Service	> 1.5	2.51%	2.30%	2.07%	1.88%	1.72%	1.90%	2.56%	*
	Total Debt Coverage	Net Revenue/Total Annual Debt	>1.4	1.67%	1.67%	1.46%	1.45%	1.32%	1.46%	1.77%	*

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

Monthly Updated Metrics													
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18 Jul-17	FY-18 Aug-17
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	139.2	149.1
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	2	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	100%	106%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	115%	106%
	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	\$22,638,934	\$21,601,727
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	17%	17%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	1	7
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	1:4436	1:8873
M-3.2	Odor Complaints	Number	0		6	2	7	11	5	9	7	1	0
M-3.4	Pollutant Removal (total)	Total Pounds Removed			178,163,629	171,247,526	176,102,248	185,677,185	180,168,546	193,247,790	189,765,922	15,727,825	31,583,474
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	20%	22%	17%	17%	17%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	34	42
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	31	29

EFFLUENT SUMMARY FOR AUGUST 2017

PLANT	FLOW mgd	% of Design	BOD mg/l	TSS mg/l	FC #/UBI	ENTERO #/UBI	TP mg/l	TP CY Avg	TN mg/l	TN CY Avg	TKN mg/l	NH3 mg/l	CONTACT TANK EX
ARMY BASE	8.93	50%	2	3.1	3	5	0.62	0.64	8.1	7.2	NA	NA	23
ATLANTIC	27.94	52%	6	4.9	7	4	NA	NA	NA	NA	NA	NA	11
BOAT HARBOR	14.46	58%	2	4.0	6	7	0.40	0.54	15	14	NA	NA	1
CENT. MIDDLESEX	0.016	63%	<2	<1.0	1	<1	NA	NA	NA	NA	NA	NA	NA
CHES-ELIZ	17.86	74%	13	15	20	15	1.2	1.3	28	31	NA	NA	6
JAMES RIVER	13.14	66%	2	3.6	5	2	0.73	0.49	7.6	9.2	NA	NA	0
KING WILLIAM	0.044	44%	<2	<1.0	NA	<1	0.045	0.037	0.45	0.81	0.11	NA	NA
NANSEMOND	18.62	62%	7	4.9	2	7	0.90	0.89	7.5	7.4	NA	NA	17
URBANNA	0.063	63%	2	8.0	3	4	6.5	5.6	15	22	NA	0.14	NA
VIP	27.18	68%	1	3.0	5	6	0.95	0.77	3.9	7.3	NA	NA	2
WEST POINT	0.308	51%	21	14	11	13	3.5	3.0	17	17	NA	5.98	0
WILLIAMSBURG	8.52	38%	1	2.3	2	6	1.1	0.66	4.1	4.7	NA	NA	7
YORK RIVER	12.02	80%	2	2.1	1	3	0.22	0.26	1.8	2.0	NA	NA	2
	<u>149.09</u>												

	% of Capacity
North Shore	58%
South Shore	61%
Mid Peninsula	50%

Tributaries	Tributary Summary					
	Annual Total Nitrogen			Annual Total Phosphorus		
	Discharged	Operational		Discharged	Operational	
	YTD	Projection	CY17	YTD	Projection	CY17
	%	Lbs	%	%	Lbs	%
James River	58%	4,043,190	89%	56%	290,136	91%
York River	24%	154,691	54%	48%	14,625	76%
Rappahannock	163%	NA	NA	634%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY18 to Date: 1:8,873
Pounds of Pollutants Removed in FY18 to Date: 31,583,474
Pollutant Lbs Discharged/Permitted Discharge FY18 to Date: 17%

	Rainfall (inch)		
	North Shore (PHF)	South Shore (ORF)	Small Communities (FYJ)
	Month	8.83"	9.04"
Normal for Month	6.03"	5.92"	4.88"
Year to Date Total	35.64"	38.54"	33.55"
Normal for YTD	34.42"	33.40"	33.03"

AIR EMISSIONS SUMMARY FOR AUGUST 2017

MHI PLANT	No. of Permit Deviations below 129 SSI Rule Minimum Operating Parameters								Part 503e Limits		
	BZ Temp	Venturi(s) PD	Precooler Flow	Spray Flow	Venturi Flow	Tray/PBs Flow	Scrubber	Any	THC	THC	BZ Temp
	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	12 hr ave	pH	Bypass	Mo. Ave	DC	Daily Ave
(F)	(in. WC)	(GPM)	(GPM)	(GPM)	(GPM)	(GPM)	3 hr ave	Stack Use	(PPM)	(%)	Days >Max
ARMY BASE	1	0	0	0	0	1	0	6	19	100	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	78	100	0
CHES-ELIZ	0	0	0	0	0	0	0	1	30	100	0
VIP	0	0	0	n/a	0	0	0	1	77	100	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	9	99	0

ALL OPERATIONS

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