



COMMISSION MEETING MINUTES  
November 28, 2017

<u>No.</u>	<u>Topic</u>	<u>Page</u>
1.	<a href="#"><u>Awards and Recognition</u></a>	3-4
	a. <a href="#"><u>Introduction of New Employee</u></a>	3
	b. <a href="#"><u>Awards</u></a>	4
2.	<a href="#"><u>Consent Agenda</u></a>	5
	a. <a href="#"><u>Approval of Minutes</u></a>	5
	b. <a href="#"><u>Task Orders</u></a>	5
	c. <a href="#"><u>Sole Source</u></a>	5
3.	<a href="#"><u>Series 2017 and 2018 Subordinate Wastewater Revenue Bonds – New Money and Refunding Resolution</u></a>	6-8
4.	<a href="#"><u>46<sup>th</sup> Street Diversion Sewer Rehabilitation/Replacement Initial Appropriation and Contract Award (&gt;\$200,000)</u></a>	9-10
5.	<a href="#"><u>Boat Harbor Outlet Sewer Improvements Initial Appropriation and Contract Award</u></a>	11-12
6.	<a href="#"><u>1317 Vernon Street, Vernon Street and Franklin Road, Gloucester Point, Virginia Disposition of Real Property</u></a>	13-14
7.	<a href="#"><u>Treatment Plant Dewatering Replacement Phase I Initial Appropriation</u></a>	15
8.	<a href="#"><u>Unfinished Business</u></a>	16
	a. <a href="#"><u>Lucas Creek – Woodhaven Interceptor Force Main Replacement (IFM) Phase I Determination of Public Need for Easement Acquisition</u></a>	16
	b. <a href="#"><u>Middlesex County Agreement</u></a>	16



COMMISSION MEETING MINUTES  
November 28, 2017

<u>No.</u>	<u>Topic</u>	<u>Page</u>
	c. <a href="#"><u>SWIFT Monitoring Lab</u></a>	16
9.	<a href="#"><u>New Business</u></a>	16
10.	<a href="#"><u>Commissioner Comments</u></a>	16
11.	<a href="#"><u>Public Comments Not Related to Agenda</u></a>	16
12.	<a href="#"><u>Informational Items</u></a>	17
	a. <a href="#"><u>Management Reports</u></a>	17
	b. <a href="#"><u>Strategic Planning Metrics Summary</u></a>	17
	c. <a href="#"><u>Effluent Summary</u></a>	17
	d. <a href="#"><u>Air Summary</u></a>	17
13.	<a href="#"><u>Closed Meeting</u></a>	18
	a. <a href="#"><u>Legal matters concerning probable litigation</u></a>	18
	b. <a href="#"><u>Acquisition of real property for a public purpose of publicly held real property located in the City of Portsmouth</u></a>	18
	c. <a href="#"><u>Award of a public contract</u></a>	18
14.	<a href="#"><u>Reconvened Meeting</u></a>	19



COMMISSION MEETING MINUTES  
November 28, 2017

Name	Title	Present for Item Nos.
Elofson, Frederick N.	Commission Chair	1-14
Lynch, Maurice P.	Commission Vice-Chair	1-14
Glenn, Michael E.	Commissioner	1-14
Lakdawala, Vishnu K.	Commissioner	1-14
Levenston, Jr., Willie	Commissioner	1-14
Rodriguez, Stephen C.	Commissioner	1-14
Taraski, Elizabeth	Commissioner	1-14
Templeman, Ann	Commissioner	1-14

Commissioner Taraski requested approval to participate in today’s meeting from Houston, Texas due to out of town travel.

**Roll call vote to allow remote participation:**                      **Ayes: 7            Nays: 0**

Note: Due to equipment issues, Dr. Taraski was not connected until mid-way through item 1.

1. **AWARDS AND RECOGNITION**

**Brief:**

a. Introduction of New Employee

The General Manager will introduce Mr. Adam Farnholtz, Condition Assessment Manager in the Asset Management Division of the Engineering Department. He holds a Bachelor of Science degree in Civil Engineering and a Master’s Degree in Engineering Management from the University of South Florida. He is a Licensed Professional Engineer with over 10 years of experience in structural evaluation and rehabilitation, project management and construction. His previous experience includes spending the past 5+ years as a senior civil engineer at the Palo Verde Nuclear Generating Station - Water Reclamation Facility in Tonopah, Arizona.



COMMISSION MEETING MINUTES  
November 28, 2017

b. Awards

The General Manager will recognize Ms. Christel Dyer, who was honored on October 17 as one of Hampton Roads' "Top Forty Under 40." ***Inside Business*** annually recognizes a group of outstanding young professionals who exemplify success in their profession, are active within their communities and who use their talents to advance the region. Honorees are chosen by an independent judging panel from publicly-submitted nominees.

We are very proud that Christel, a Senior Plant Manager in our Operations Department, was recognized for her devotion to public service.

Since joining HRSD in 2004 as a Water Quality Investigator in the Technical Services Division, Christel completed her Master's degree in Environmental Engineering at ODU and has gradually worked her way up within the organization to her current position overseeing the Boat Harbor, Nansemond and Atlantic Treatment Plants. Christel is currently the chair of the Virginia Water Environment Association's Sustainable Utilities Committee and has been actively involved in numerous other volunteer activities to include planning service projects, oyster gardening and being a zone captain for the Chesapeake Bay Foundations annual Clean the Bay Day.

**Attachment:** None

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

2. **CONSENT AGENDA**

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

<b>Moved:</b>	Willie Levenston	<b>Ayes:</b>	8
<b>Seconded:</b>	Vishnu Lakdawala	<b>Nays:</b>	0

**Brief:**

- a. Approval of minutes from previous meeting.
- b. Task Orders
  - 1. [Virginia Beach Boulevard Force Main Phase VI](#) \$1,193,887
- c. Sole Source
  - 1. [Fairbanks Morse Pump and Replacement Parts](#)

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

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

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

3. **SERIES 2017 AND 2018 SUBORDINATE WASTEWATER REVENUE BONDS – NEW MONEY AND REFUNDING RESOLUTION**

**Action:** Approve the terms and conditions of the resolution authorizing the issuance of one or more series of fixed-rate subordinate wastewater revenue bonds, Series 2017 and Series 2018, in an amount not to exceed \$200 million 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.

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

**Agreement Description:** Staff is seeking the flexibility to issue new money bonds to fund the Capital Improvement Program (CIP) through a competitive process, as opposed to a negotiated deal. In a competitive process, bonds are advertised for sale and the dealers submitting the lowest interest rates wins. Competitive sales are typically done by highly-rated, frequent issuers and straight-forward deals. In a negotiated deal, an underwriter finds investors to buy the bonds and any unsold bonds are purchased by the underwriter. This could be HRSD’s first competitive deal as previous deals were complex, which required underwriters to market our bonds.

Long-term interest rates continue to be at historically low levels and interest on escrowed securities have improved with the Federal Reserve rate hikes, creating potential refunding opportunities. Advanced refundings are similar to a mortgage refinancing whereby, entities can save on interest costs on a tax-exempt basis by taking advantage of lower interest rates. To date, HRSD has saved almost \$34 million present value. In an advanced refunding, new bonds are sold and the proceeds are invested in highly rated government securities. These proceeds are sized in an amount to pay the debt service on the refunded issue. Currently, bond issuers are allowed one advance refunding for a bond series.

On November 2, 2017, the House released the first version of its Tax Reform proposal and on November 9, 2017, the Senate released its proposal. In both proposals, the bill eliminates the tax-exempt advanced refunding of bonds after December 31, 2017. The House proposal was approved on November 16, 2017. Even if the bill is delayed into 2018, bankers advised us that the market will freeze for any tax-exempt advanced refundings after January 1 due to the uncertainty. Staff is accelerating the planned advanced refunding to save an estimated \$4.9



COMMISSION MEETING MINUTES  
November 28, 2017

million. In addition, it would have the added benefit of reducing our senior debt outstanding from 50 percent to 44 percent, by moving it to the subordinate level. The other option would be to wait until the bond series call date in year 2021, but future market conditions are uncertain for potential savings.

HRSD's Financial Policy regarding bond refundings requires a minimum of three percent net present value savings and consideration of a weighted average refunding efficiency of seventy percent or greater. With the draft tax reform bill eliminating advanced refunding, the refunding efficiency, which is a probabilistic calculation that quantifies the ideal refunding timing, becomes a difficult calculation. Staff is recommending that we focus on the net present value savings and not require a refunding efficiency of seventy-percent or greater. PFM has updated their refunding efficiency calculator, but it is heavily weighted on whether or not the advanced refunding component is eliminated.

HRSD is well positioned in our Plan of Finance to ride out this uncertainty. If the market is unstable, the Line of Credit with Bank of America provides flexibility to continue to fund the CIP expenses until the market becomes attractive for a new bond deal.

The attached [resolution](#) authorizes HRSD to issue fixed rate subordinate revenue bonds in an amount sufficient to finance HRSD's capital improvement program. The resolution also authorizes HRSD to issue subordinate revenue bonds for the purpose of refunding existing senior obligations for debt service savings.

The following bond documents are provided:

- a. [Resolution authorizing the issuance and award of one or more series of HRSD Wastewater Revenue Bonds, Series 2017 and Series 2018;](#)
- b. [Fifth Supplemental Trust Agreements, by and between HRSD and the Trustee, relating to the Refunding Bonds;](#)
- c. [Sixth Supplemental Trust Agreements, by and between HRSD and the Trustee, relating to the New Money Bonds;](#)
- d. [Preliminary Official Statement of HRSD;](#)
- e. [Bond Purchase Agreement, by and between HRSD and Merrill Lynch, Pierce Fenner & Smith Incorporated, as representative of the underwriters;](#)



COMMISSION MEETING MINUTES  
November 28, 2017

- f. [Continuing Disclosure Agreement, the form of which appears as Appendix E to the Preliminary Official Statement and a version of which will be delivered in connection with each of the 2017 and 2018 Fixed Rate Bonds;](#)
- g. [Escrow Deposit Agreement, by and between the District and a national banking association or similar bank or trust company qualified to do business in the Commonwealth, which will be delivered if the District issues any 2017 Bonds to refund the Refunding Candidates; and](#)
- h. [Notice of Sale for Subordinate Wastewater Revenue Bonds Series 2018A.](#)

Certain information in these documents cannot be completed until the bonds are priced. As a result of the market conditions and uncertainty around the proposed tax reform, HRSD plans to price the refunding bonds around December 5, if not a few days sooner. HRSD plans to sell the new money bonds around January 23, 2018. These documents have been reviewed by bond and local counsel.

**Discussion Summary:** Staff explained there is a savings by combining the issuance of new money and refunding bonds. The cost of issuance is approximately \$900,000.

**Attachment #2:** [Bond Documents](#)

**Public Comment:** None





COMMISSION MEETING MINUTES  
November 28, 2017

4. 46<sup>th</sup> STREET DIVERSION SEWER REHABILITATION/REPLACEMENT  
INITIAL APPROPRIATION AND CONTRACT AWARD (>\$200,000)

**Actions:**

- a. Appropriate total project funding in the amount of \$11,470,682.
- b. Award a contract to O'Brien and Gere Engineers, Inc. in the amount of \$307,740.

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

**CIP Project:** BH014600

**Type of Procurement:** Competitive Negotiation

<b>Proposers</b>	<b>Technical Points</b>	<b>Recommended Selection Ranking</b>
O'Brien and Gere Engineers, Inc.	83.8	1
Whitman, Requardt, and Associates, LLP	83.0	2
Rummel, Klepper, and Kahl, LLP	81.8	3
Johnson, Mirmiran, and Thompson, Inc.	74.8	4

**Contract Description:** A Public Notice was issued on August 6, 2017. Four firms submitted Proposals on September 6, 2017 and all firms were determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Request for Proposals. Four firms were short listed, interviewed and technically ranked. The Professional Services Selection Committee selected the firm of O'Brien and Gere Engineers, Inc. whose professional qualifications and proposed services best serve the interest of HRSD.

**Project Description:** This project will involve the rehabilitation and/or replacement of approximately 4,100 linear feet of gravity sewer main ranging from 18 to 24-inches including associated manholes, and approximately 1,700 linear feet of gravity sewer connections ranging from 8 to 42-inches including associated manholes. The work is located adjacent to Newport News Shipyard and is a part of the Consent Decree Rehabilitation Plan, Phase Two effort.



COMMISSION MEETING MINUTES  
November 28, 2017

**Funding Description:** The total cost estimate for this project is \$11,470,682. The estimate includes approximately \$800,000 in engineering costs, \$9,000,000 in construction costs, and a 20 percent project contingency. The estimate was developed by HRSD Operations and reviewed by HRSD Design and Construction.

**Analysis of Cost:** A meeting was held to discuss the project and scope of services. A fee of \$307,740 was negotiated with O'Brien and Gere Engineers, Inc. for preparation of the PER. This fee will provide the required professional services to develop a Preliminary Engineering Report based on the criteria and scope for the project. This cost is 2.7 percent of the total project budget which is comparable with similar projects. Future phases of the work will be negotiated after the PER is completed.

<b><u>Schedule:</u></b>	PER	December	2017
	Design	September	2018
	Bid	November	2019
	Construction	April	2020
	Closeout	February	2022

**Discussion Summary:** Staff explained how the technical rating was determined. Since the majority of the work will be located on the Newport News Shipyard property, a representative of the Shipyard was included in the selection committee as a non-voting member to ensure their needs were considered.

**Attachment:** None

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

5. **BOAT HARBOR OUTLET SEWER IMPROVEMENTS  
INITIAL APPROPRIATION AND CONTRACT AWARD (>\$200,000)**

**Actions:**

- a. Appropriate total project funding in the amount of \$4,100,082.
- b. Award a contract to Dewberry Engineers, Inc. in the amount of \$90,050.

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

**CIP Project: BH014700**

**Type of Procurement: Competitive Negotiation**

<b>Proposers</b>	<b>Technical Points</b>	<b>Recommended Selection Ranking</b>
Dewberry Engineers, Inc.	89	1
Whitman, Requardt & Associates, LLP	82	2

**Contract Description:** A Public Notice was issued on August 20, 2017. Six firms submitted Proposals on September 19, 2017 and all firms were determined to be responsive and deemed fully qualified, responsible and suitable to the requirements in the Request for Proposals. Two firms were short listed, interviewed and technically ranked. The Professional Services Selection Committee selected the firm of Dewberry whose professional qualifications and proposed services best serve the interest of HRSD.

**Project Description:** This project will rehabilitate or replace approximately 3,500 linear feet of gravity pipeline with associated manholes. Pipe diameters range from 48 to 54-inches. Rehabilitation work includes the 26<sup>th</sup> Street siphons and the associated chambers and is located along Jefferson Avenue in Newport News. The work is part of the Consent Decree Rehabilitation Plan, Phase One effort.

**Funding Description:** The total cost of this project is estimated to be \$4,100,082.



COMMISSION MEETING MINUTES  
November 28, 2017

**Analysis of Cost:** A meeting was held with Dewberry to discuss the project and scope of services. A fee of \$90,050 was negotiated for the preparation of a PER. This cost is 2.2 percent of the total project budget which is comparable with other projects of similar size and complexity. Future phases of the work will be negotiated after the PER is completed.

<b><u>Schedule:</u></b>	PER	December 2017
	Design	April 2018
	Bid	March 2019
	Construction	September 2019
	Project Completion	December 2020

**Discussion Summary:** Cost is not included in the technical ranking of the proposals and is negotiated after the selection has been made.

**Attachment:** None

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

6. **1317 VERNON STREET, VERNON STREET AND FRANKLIN ROAD,  
GLOUCESTER POINT, VIRGINIA (RPC NUMBERS: 24250, 11551, 20687, 20468,  
20296 AND 33746)  
DISPOSITION OF REAL PROPERTY**

**Action:** Accept the terms and conditions of the Real Estate Purchase Agreement (and subsequent Deed) with the Virginia Institute of Marine Science (VIMS), buyer, of HRSD owned-property in Gloucester Point (RPC Numbers: 24250, 11551, 20687, 20468, 20296 and 33746) 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.

<b>Moved:</b>	Ann Templeman	<b>Ayes:</b>	7
<b>Seconded:</b>	Willie Levenston	<b>Nays:</b>	0
		<b>Abstained:</b>	Maurice Lynch (due to potential appearance of conflict given his association with VIMS)

**Brief:** HRSD currently owns three vacant lots located in Gloucester Point, Virginia in close proximity to the Virginia Institute of Marine Science (VIMS) campus (RPC Numbers 20468, 20296 and 33746). These lots were purchased in 1992 with the intent to construct a future pressure reducing station (PRS) on the site. HRSD has determined that there is no longer a need for a PRS in this area. On August 30, 2016 HRSD also purchased three adjacent lots (RPC Numbers 20468, 20296 and 33746), and relocated the property owner in an effort to resolve the damage caused by excessive drainage and sediment runoff to the existing house.

HRSD has since demolished the existing structure on the property and the Virginia Institute of Marine Science (VIMS) has indicated interest in purchasing the vacant lots. They have previously sent a letter of interest in August 2016 (see [VIMS Letter](#) attached), and had an appraisal performed on the property which was \$95,000. In an effort to reimburse HRSD for the cost of asbestos mitigation and demolition, VIMS has agreed to an offer price of \$104,000.

**Agreement Description:** Upon approval of the [Real Estate Purchase Agreement](#) (attached), the conveyance deed for the six vacant parcels is forthcoming. Both documents will be reviewed by HRSD staff and legal counsel before execution. A [Facilities Orientation Map](#) is also provided for clarification purposes.



COMMISSION MEETING MINUTES  
November 28, 2017

**Analysis of Cost:** HRSD staff negotiated a purchase price with VIMS based upon their appraisal and the cost incurred by HRSD for asbestos removal and demolition.

**Attachment #3:** [VIMS Letter, Purchase Agreement and Facilities Map](#)

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

7. **TREATMENT PLANT DEWATERING REPLACEMENT PHASE I  
INITIAL APPROPRIATION**

**Action:** Appropriate total project funding in the amount of \$1,680,000.

<b>Moved:</b>	Vishnu Lakdawala	<b>Ayes:</b>	8
<b>Seconded:</b>	Willie Levenston	<b>Nays:</b>	0

**CIP Project: GN016400**

**Project Description:** This project is the first phase in replacing the aging centrifuges at all nine treatment plants to improve dewatering reliability by reducing repair costs and to improve power efficiency for dewatering. This phase will provide the replacement of one centrifuge at both the Atlantic Treatment Plant (ATP) and the Army Base Treatment Plant (ABTP) and will include comparing and testing of current dewatering technologies, the structural assessment for the locations for the replacement centrifuges, and the selection and installation of the new equipment.

**Funding Description:** The total cost for this project is estimated at \$1,680,000 and is proposed to be funded by the Virginia Clean Water Revolving Loan Fund (VCWRLF). The existing centrifuges are more than 30 years old and are losing efficiency in dewatering solids. HDR Engineering, Inc. will provide the initial services under the General Engineering Services annual contract for a fee of \$135,955 in order to establish a Preliminary Engineering Report for the ABTP and a Technical Memorandum for the ATP.

<b>Schedule:</b>	PER	December 2017
	Design	March 2018
	Bid	April 2018
	Construction	June 2018
	Project Completion	May 2019

**Discussion Summary:** Staff explained while there is only one make/brand of centrifuge (Sharples/Alfa Laval) at all treatment plants, the size and age varies by location. A new brand of centrifuge (Centrisys) will be installed at the James River and Nansemond Treatment Plant.

**Attachment:** None

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

8. **UNFINISHED BUSINESS**

- a. Lucas Creek – Woodhaven Interceptor Force Main Replacement (IFM) Phase I Determination of Public Need for Easement Acquisition – Status Update

At the October 31, 2017 meeting, the Commission conducted a public hearing to determine the public need for the easement acquisition and acquisition by condemnation or other means. Mr. Henifin explained the acquisition of the easement has been successfully negotiated with the property owner and condemnation will not be necessary.

- b. Middlesex County Agreement

At the February 28, 2017 meeting, the Commission approved the terms and conditions of an agreement with Middlesex County for cost sharing of sewer system projects. HRSD conducted several studies for Middlesex County exploring options for providing sewer service to various portions of the County. The agreement required the County Board of Supervisors to pre-approve future studies and for the County to reimburse HRSD for any study related costs for studies that do not lead to actual projects.

Mr. Henifin discussed changes to the agreement proposed by the County.

- c. SWIFT Monitoring Lab – The Commission and staff discussed the proposed legislation.

9. **NEW BUSINESS – None**

10. **COMMISSIONER COMMENTS – None**

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





COMMISSION MEETING MINUTES  
November 28, 2017

12. **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 #4:** [Informational Items](#)

**Public Comment:** None



COMMISSION MEETING MINUTES  
November 28, 2017

13. **CLOSED MEETING**

**Actions:** Motion to go into Closed Meeting for discussion with legal counsel and staff regarding:

- Item a.** : Legal matters concerning probable litigation  
**Purpose** : Briefing and consultation  
**Specific Exemptions** : (Va. Code §2.2-3711.A7)
  
- Item b.** : Acquisition of real property for a public purpose of publicly held real property located in the City of Portsmouth  
**Purpose** : Briefing and consultation  
**Specific Exemptions** : (Va. Code §2.2-3711.A3)
  
- Item c.** : Award of a public contract  
**Purpose** : Discussion of award of a public contract involving expenditure of public funds  
**Specific Exemptions** : (Va. Code §2.2-3711.A29)

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

**Brief:**

- a. Consultation with legal counsel and briefing by staff members pertaining to probable litigation, where such consultation or briefing in open meeting would adversely affect the negotiating or litigating posture of the public body.
- b. Discussion or consideration of the acquisition of real property for a public purpose of publicly held real property, where discussion in an open meeting would adversely affect the bargaining position or negotiating strategy of the public body.
- c. Discussion of the award of a public contract involving the expenditure of public funds, including interviews of bidders or offerors, and discussion of the terms or scope of such contract, where discussion in an open session would adversely affect the bargaining position or negotiating strategy of the public body.

**Roll call vote to return to Open Session:** **Ayes:** 8 **Nays:** 0



COMMISSION MEETING MINUTES  
November 28, 2017

14. **RECONVENED MEETING**

**Action:** No action required.

**Attachment:** None

**Public Comment:** None

**Next Commission Meeting Date:** December 19, 2017 at the HRSD South Shore Operations Complex, 1434 Air Rail Avenue, Virginia Beach, VA 23455

**Meeting Adjourned:** 10:31 a.m.

SUBMITTED:

*Jennifer Cascio*

---

Jennifer L. Cascio  
Secretary

APPROVED:

*Frederick N. Elofson*

---

Frederick N. Elofson, CPA  
Chair

HRSD COMMISSION MEETING MINUTES  
November 28, 2017

ATTACHMENT #1

AGENDA ITEM 1. – Consent Agenda

## CONSENT AGENDA ITEM 2.b.1. – November 28, 2017

**Subject:** Virginia Beach Boulevard Force Main Phase VI  
Task Order (>\$200,000)

**Recommended Action:** Approve a task order with Kimley-Horn and Associates, Inc. in the amount of \$1,193,887.

**CIP Project: CE011823**

Budget	\$ 15,913,000
Previous Expenditures and Encumbrances	(\$ 191,200)
Available Balance	\$ 15,721,800

<b>Contract Status:</b>	<b>Amount</b>
Original Contract with Kimley-Horn and Associates, Inc.	\$ 191,200
Total Value of Previous Task Orders	\$ 0
Requested Task Order	\$ 1,193,887
Total Value of All Task Orders	\$ 1,193,887
Revised Contract Value	\$ 1,385,087
Engineering Services as % of Construction	10.8%

**Project Description:** This project will upgrade approximately 7,500 linear feet of existing 24-inch reinforced concrete flat bottom pipe to a 42-inch pipe from North Lynnhaven Road to North Great Neck Road along Virginia Beach Boulevard in the City of Virginia Beach. This project must be substantially complete by June 2021. The project is needed to provide reliable capacity and maintain HRSD pressure policy when flow is diverted in support of the Chesapeake-Elizabeth Treatment Plant (CETP) closure and for the ultimate Regional Wet Weather Management Plan (RWWMP). This project was part of the CETP offline solution set developed by HRSD, CDM Smith, and Brown and Caldwell assuming a two-year level of service.

**Task Order Description and Analysis of Cost:** This task order will provide design services including plans and specifications development, permitting, traffic coordination, plat preparation, and environmental/geotechnical/corrosion/cultural resources assessments as well as bid phase services. The cost for this task order is based on hourly engineering rates and was compared to other pipeline projects of similar length.

<b>Schedule:</b>	PER	April 2017
	Design	January 2018
	Bid	May 2019
	Construction	August 2019
	Project Completion	April 2021

CONSENT AGENDA ITEM 2.c.1. – November 28, 2017

**Subject:** Fairbanks Morse Pump and Replacement Parts  
Sole Source (>\$10,000)

**Recommended Action:** Approve Sydnor Hydro, Inc. as the source for Fairbanks Morse dry pit, shaft driven sewage pumps and replacement parts for use at HRSD.

**Sole Source Justification:**

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

**Details:** Product includes replacement parts for dry pit, shaft driven sewage pumps, 5400 series. Fairbanks Morse dry pit sewage pumps are in service at several pump stations and are necessary to maintain adequate flows to treatment facilities and prevent sanitary sewage overflow. Parts will act as drop-in replacements for the pumps.

The Commission previously approved limited sole source authority for Fairbanks Morse pumps. This action supersedes previous actions and expands the scope to cover all HRSD applications of Fairbanks Morse pumps. Sydnor Hydro, Inc. is the only authorized distributor for Virginia.

HRSD COMMISSION MEETING MINUTES  
November 28, 2017

ATTACHMENT #2

AGENDA ITEM 3. – Series 2017 and 2018 Subordinate Wastewater Revenue Bonds –  
New Money and Refunding

- a. Resolution authorizing the issuance and award of one or more series of HRSD Wastewater Revenue Bonds, Series 2017 and Series 2018;
- b. Fifth Supplemental Trust Agreements, by and between HRSD and the Trustee, relating to the 2017 and 2018 Fixed Rate Bonds;
- c. Sixth Supplemental Trust Agreements, by and between HRSD and the Trustee, relating to the 2017 and 2018 Fixed Rate Bonds;
- d. Preliminary Official Statement of HRSD;
- e. Bond Purchase Agreement, by and between HRSD and Merrill Lynch, Pierce Fenner & Smith Incorporated, as representative of the underwriters;
- f. Continuing Disclosure Agreement, the form of which appears as Appendix E to the Preliminary Official Statement and a version of which will be delivered in connection with each of the 2017 and 2018 Fixed Rate Bonds;
- g. Escrow Deposit Agreement, by and between the District and a national banking association or similar bank or trust company qualified to do business in the Commonwealth, which will be delivered if the District issues any 2017 Bonds to refund the Refunding Candidates; and
- h. Notice of Sale for Subordinate Wastewater Revenue Bonds Series 2018A.

*Hampton Roads Sanitation District*  
*Resolution of*  
*November 28, 2017*

---

HAMPTON ROADS SANITATION DISTRICT COMMISSION

\*\*\*\*\*

A RESOLUTION  
AUTHORIZING THE ISSUANCE AND AWARD OF  
ONE OR MORE SERIES OF HAMPTON ROADS SANITATION DISTRICT  
SUBORDINATE WASTEWATER REVENUE BONDS

Adopted November 28, 2017

---



Resolution

Resolution Authorizing the Issuance and Award of  
One or More Series of Hampton Roads Sanitation  
District Subordinate Wastewater Revenue Bonds

**WHEREAS**, the Hampton Roads Sanitation District (the “District”) was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the “Commission”), created by said Chapter 407, is the governing body of the District; and

**WHEREAS**, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Act”), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District;

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Act and pledged for their payment, for the purpose of paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and

**WHEREAS**, as provided by the Act, the District is constituted a political subdivision of the Commonwealth of Virginia and established as a governmental instrumentality to provide for the public health and welfare; and

**WHEREAS**, the Commission has previously authorized the execution and delivery of a Trust Agreement, dated as of March 1, 2008 (as the same may be supplemented and further supplemented and amended from time to time, the “Senior Trust Agreement”), between the District and The Bank of New York, as Trustee (The Bank of New York Mellon Trust Company, N.A., as successor in interest to The Bank of New York, the “Senior Trustee”), to secure the payment of Senior Obligations (as defined in the Senior Trust Agreement) of the District, such Senior Obligations being payable from the Net Revenues (as defined in the Senior Trust Agreement) of the District; and

**WHEREAS**, the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement), the payment on which will be, in all cases, subordinate and junior in right of payment to the prior payment in full of the Senior Obligations; and

**WHEREAS**, to secure the payment of and provide for the issuance of such Subordinated Indebtedness, the Commission authorized the execution and delivery of a Trust Agreement, dated as of October 1, 2011 (the “Original Trust Agreement”), as amended and restated as of March 1, 2016 (the Original Trust Agreement, as so amended and restated, the “Trust agreement”), each by and between the District and The Bank of New York Mellon, as Trustee (in such capacity, the “Trustee”), to provide for the issuance of Parity Obligations (as defined in the Trust Agreement);

**WHEREAS**, the Commission has determined to provide for the issuance under the Trust Agreement, one or more series of Bonds of the District, which Bonds may be delivered at one or more times, in the aggregate principal amount of not to exceed Two Hundred Million Dollars (\$200,000,000) (the “New Bonds”) for the purpose of providing funds, together with other available funds, to (i) to finance a portion of the costs of its 2018-2027 Capital Improvement Program (the “Capital Improvement Program”), (ii) to refund certain Senior Obligations, Bonds, VRA Subordinate Obligations and Junior Obligations (each as defined in the Trust Agreement) (collectively, the “Refunding Candidates”) and (iii) pay certain expenses incurred in connection with the issuance of the New Bonds by the District;

**WHEREAS**, the Commission has determined that the portion, if any, of the New Bonds issued to refund any of the Refunding Candidates (such New Bonds, the “Refunding Bonds”), will be sold through a negotiated underwriting with one or more of the investment banking firms replying to the District’s request for proposals for investment banking services, dated July 7, 2017, to be selected by a Delegate (as defined below) in accordance with the provisions of Section 3(b) hereof (the investment banking firm or firms so selected, the “Underwriters”);

**WHEREAS**, the Commission has determined that the portion of the New Bonds issued to finance a portion of the costs of the Capital Improvement Program (such New Bonds, the “New Money Bonds”) will be sold in a competitive sale pursuant to bids received by the District; and

**WHEREAS**, there have been presented at this meeting draft copies of the following documents relating to the issuance and sale of the New Bonds:

(a) a Fifth Supplemental Trust Agreement (the “Fifth Supplemental Trust Agreement”), by and between the District and the Trustee, relating to the Refunding Bonds;

(b) a Sixth Supplemental Trust Agreement (the “Sixth Supplemental Agreement” and, together with the Fifth Supplemental Agreement, the “Supplemental Agreements”), by and between the District and the Trustee, relating to the New Money Bonds;

(c) a Preliminary Official Statement of the District, a version of which will be delivered in connection with each of the Refunding Bonds and the New Money Bonds, with such changes as may be approved in accordance with Section 10 hereof (the “Preliminary Official Statement”);

(d) a form of a Bond Purchase Agreement (the “Bond Purchase Agreement”), by and between the District and the Underwriters;

(e) a notice of sale calling for bids for the purchase of the New Money Bonds (the “Notice of Sale”);

(f) a Continuing Disclosure Agreement (the “Continuing Disclosure Agreement”), the form of which appears as Appendix E to the Preliminary Official Statement and a version of which will be delivered in connection with each of the New Money Bonds and the Refunding Bonds; and

(g) an Escrow Deposit Agreement (the “Escrow Deposit Agreement”), by and between the District and a national banking association or similar bank or trust company qualified to do business in the Commonwealth, which will be delivered if the District issues the Refunding Bonds; and

**Now, Therefore, the HAMPTON ROADS SANITATION DISTRICT COMMISSION DOES HEREBY RESOLVE, as follows:**

**Section 1. Definitions.** Capitalized words and terms used in this Resolution and not defined herein shall have the same meanings in this Resolution as such words and terms are given in the Trust Agreement and the Supplemental Agreements.

**Section 2. Authorization of Bonds.** In order to provide funds required to finance a portion of the costs of its Capital Improvement Program Costs, refund all or a portion of the Refunding Candidates and pay certain expenses incurred in connection with the New Bonds by the District and pursuant to the authority granted to it by the Act, the District hereby authorizes the issuance at one or more times and in one or more series of Hampton Roads Sanitation District Subordinate Wastewater Revenue Bonds, [Refunding] Series 201[\_][\_] (the blanks to be completed with the calendar year of issuance and an appropriate letter to identify the Series, respectively), in an aggregate principal amount not to exceed Two Hundred Million Dollars (\$200,000,000), dated as of such date, maturing on such dates in such years not later than thirty-five (35) years from their date of issuance and in such principal amounts and bearing interest at such rates, all as determined by the Chairman of the Commission, Vice Chairman of the Commission, the General Manager of the District and the Director of Finance of the District (each, a “Delegate”), any of whom may act, prior to the execution of each Bond Purchase Agreement and evidenced, in the case of the Refunding Bonds, in the Bond Purchase Agreement and the Fifth Supplemental Agreement, and, in the case of the New Money Bonds, in the Sixth Supplemental Agreement (and the Bond Purchase Agreement, if such Bonds are sold pursuant to negotiated sale, as permitted by Section 3(a)).

The Commission hereby determines that the issuance of the New Bonds will be in the best interests of the District.

The New Bonds shall be issued as fully registered bonds in denominations of \$5,000 or any whole multiple thereof or in any other denominations determined by the Delegates. The New Bonds shall be issuable in book-entry form as provided in the Trust Agreement. Payments of principal of, premium, if any, and interest on the New Bonds shall be forwarded by the Bond Registrar to the registered owners of the New Bonds in such manner as is set forth in the Trust Agreement.

### **Section 3. Method of Sale.**

(a) *New Money Bonds.* The New Money Bonds shall be sold in a competitive sale pursuant to bids received electronically via the PARITY Competitive Bidding System, or similar electronic based competitive bidding system, in accordance with the provisions, and subject to the terms and conditions, of the Notice of Sale, which shall be determined by District Representative, acting in consultation with PFM Financial Advisors LLC, Financial Advisor to the District (the “Financial Advisor”). The Commission approves the distribution and publication in substantially the form presented to the Commission at the meeting at which this resolution was adopted. A Delegate is authorized to award the New Money Bonds to the bidder submitting the best bid (as determined in accordance with the provisions of the Notice of Sale) or, if in the best interests of the District, to reject all bids and rebid the New Money Bonds in accordance with the procedures set forth in the Notice of Sale. Notwithstanding anything in this paragraph (a) to the contrary, if District Representatives, acting in consultation with the Financial Advisor, determine that based on then-current market conditions a negotiated sale of New Money Bonds would be advantageous for the District, a Delegate is authorized to execute a bond purchase agreement, substantially in the form of the Bond Purchase Agreement presented to this meeting of the Commission, with one or more underwriters selected in the same manner as set forth in paragraph (b) of this Section 3.

(b) *Refunding Bonds.* The Refunding Bonds, if any, shall be sold by negotiated sale with one or more Underwriters. A Delegate, acting in consultation with the Financial Advisor, is authorized to select such Underwriters, provided that each firm so selected shall have submitted a response to the District’s request for proposals for investment banking services, dated July 7, 2017, that has been deemed complete in all material respects. If any Refunding Bonds are issued, a Delegate is authorized to execute a Bond Purchase Agreement.

**Section 4. Redemption.** A Delegate is hereby authorized to determine the optional redemption provisions of a series of the New Bonds, if any, as such Delegate, in consultation with the Financial Advisor, in writing, may deem advisable, and the Delegate may, with the advice of the Financial Advisor and counsel to the District, provide that such series of the New Bonds shall not be subject to optional redemption before their respective maturities. A Delegate may further determine that any term New Bonds shall be subject to mandatory sinking fund redemption at a redemption price of 100% and shall have such amortization requirements as determined by such Delegate; provided that, in the case of the New Money Bonds sold by competitive sale, such term New Money Bonds, if any, shall have the amortization requirements set forth in the bid of the winning bidder, subject to the terms of the Notice of Sale. All such determinations by a Delegate shall be determined prior to the award of the New Money Bonds to the winning bidder (subject to adjustment as set forth in the Notice of Sale) and, in the case of the Refunding Bonds (and the New Money Bonds, if such New Money Bonds are sold pursuant to negotiated sale), prior to the execution of the Bond Purchase Agreement.

**Section 5. Application of Bond Proceeds.** The proceeds of the Refunding Bonds shall be applied as provided in Section 3.1 of the Fifth Supplemental Agreement and the Escrow Deposit Agreement, and the proceeds of the New Money Bonds shall be applied as provided in Section 3.1 of the Sixth Supplemental Agreement.

**Section 6. Authorization of Basic Documents.** The forms, terms and provisions of each of the Supplemental Agreements, the Bond Purchase Agreement, the Notice of Sale, the Continuing Disclosure Agreement and the Escrow Deposit Agreement (collectively, the “Basic Documents”) are hereby approved in all respects, and the District Representatives (hereinafter defined) are hereby authorized and directed to execute and deliver the Basic Documents in substantially the forms presented to this meeting, together with such changes, modifications and deletions as such District Representatives, with the advice of counsel, may deem necessary and appropriate; such execution and delivery shall be conclusive evidence of the approval and authorization thereof by the District.

**Section 7. Refunding Candidates.** A Delegate is authorized to determine the Refunding Candidates to be refunded with the proceeds of the Refunding Bonds (such Refunding Candidates, the “Refunded Bonds”) based on the following criterion: based on a determination by the Financial Advisor, in writing, if any of the Refunding Candidates are to be refunded, the aggregate net present value debt service savings achieved as a result of refunding such Refunding Candidates with the proceeds of the Refunding Bonds shall be equal to at least three percent (3%) of the par amount of the Refunded Bonds.

**Section 8. Execution of Bonds.** The forms of the New Bonds set forth in the Supplemental Agreements are hereby approved in all respects, and the Chairman or Vice Chairman and the Secretary or any Assistant Secretary of the Commission are hereby authorized and directed to execute, by manual or facsimile signature as provided in such forms of the New Bonds, and to deliver to the Bond Registrar for authentication on behalf of the District, the New Bonds in definitive form, with such changes, modifications and deletions as they, with the advice of counsel, may deem necessary, appropriate and consistent with the Trust Agreement and the Fifth Supplemental Agreement, in the case of the Refunding Bonds, and the Sixth Supplemental Agreement, in the case of the New Money Bonds; such execution and delivery shall be conclusive evidence of the approval and authorization thereof by the District.

**Section 9. Authorization and Delivery of the Bonds.** Upon their execution in the form and manner set forth in the Trust Agreement, each series of New Bonds shall be deposited with the Bond Registrar for authentication, and the Bond Registrar is hereby authorized and directed to authenticate such series of New Bonds and, upon the due and valid execution of the Basic Documents, the Trustee shall cause the Bond Registrar to deliver such series of New Bonds to The Depository Trust Company, New York, New York, for the account of the purchasers, in the case of the New Money Bonds, and for the account of the Underwriters, in the case of the Refunding Bonds, in each case in accordance with and subject to the provisions of Section 209 of the Trust Agreement.

**Section 10. Official Statements.** The form of the Preliminary Official Statement is hereby approved, and a Delegate is hereby authorized to approve the terms of and publish a Preliminary Official Statement, one with respect to the Refunding Bonds and one with respect to the New Money Bonds with such changes as are appropriate to reflect the differences between such New Bonds and, if the New Money Bonds are sold after the Refunding Bonds, updated to reflect subsequent events, describing the New Bonds in substantially the same form as the Preliminary Official Statement presented to this meeting and deem “final” such Preliminary Official Statement for purposes of Rule 15c2-12 under the Securities Exchange Act of 1934, as

amended; and a Delegate is hereby authorized to execute an official statement (the “Official Statement”) in substantially the form of the deemed “final” Preliminary Official Statement, together with such changes, modifications and deletions as such Delegate, with the advice of counsel, may deem necessary or appropriate; and the District hereby approves and authorizes the distribution and use of copies of the Official Statement and the Basic Documents, and, in the case of the New Money Bonds, the Notice of Sale, in connection with such sale.

**Section 11. District Representatives.** Each of the Chairman of the Commission, Vice Chairman of the Commission, General Manager and Director of Finance are hereby appointed a District Representative within the meaning of such term under the Trust Agreement, with full power to carry out the duties set forth therein. Any one or more of the District Representatives may act for and on behalf of the District.

**Section 12. Securities Depository.** The Depository Trust Company, New York, New York, is hereby appointed as the initial Securities Depository for the Bonds, with Cede & Co., a nominee thereof, being the initial Securities Depository Nominee and initial registered owner of each series of the New Bonds.

**Section 13. Further Actions.** The Delegates and the District Representatives are each authorized and directed (without limitation except as may be expressly set forth herein) 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 effectuate the transactions contemplated by the Basic Documents, the Trust Agreement and the Official Statement.

**Section 14. Delegates’ Certificate.** Each Delegate may execute a Certificate or Certificates evidencing the determinations made or other actions carried out pursuant to the authority granted in this Resolution, and any such Certificate shall be conclusive evidence of the actions or determinations as stated therein.

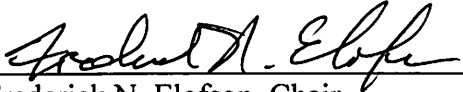
**Section 15. Sunset Provision.** New Bonds may not be issued pursuant to the authority provided by this Resolution after June 30, 2018.

**Section 16. Rate Schedule.** In compliance with Section 22 of the Act, incorporated herein the same as if set forth verbatim herein is the current “Rate Schedule For all Wastewater and Associated Charges effective July 1, 2017” for the use of, and for the services and facilities furnished or to be furnished by, the wastewater disposal system or systems and the wastewater improvements, for which the New Bonds are to be issued. Such schedule appears in full on the District’s website, [www.hrsd.com](http://www.hrsd.com).

**Section 17. Effective Date.** This Resolution shall take effect immediately upon its passage.

[END OF RESOLUTION]

**Adopted by the Hampton Roads Sanitation District Commission on November 28, 2017.**

  
Frederick N. Elofson, Chair

---

FIFTH SUPPLEMENTAL TRUST AGREEMENT

by and between

HAMPTON ROADS SANITATION DISTRICT

and

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,  
as Trustee

Dated as of December 1, 2017

Securing

[\$[2017A PAR]

Subordinate Wastewater Revenue Bonds  
Refunding Series 2017A

---



TABLE OF CONTENTS

ARTICLE I.

DEFINITIONS

Section 1.1 Meaning of Words and Terms.....4  
Section 1.2 Rules of Construction .....5

ARTICLE II.

DETAILS OF THE 2017A BONDS

Section 2.1 Details of 2017A Bonds.....6  
Section 2.2 Optional Redemption.....7  
Section 2.3 Mandatory Redemption .....7  
Section 2.4 Selection of 2017A Bonds to be Redeemed .....7  
Section 2.5 Redemption Notice.....7  
Section 2.6 Effect of Calling for Redemption.....8  
Section 2.7 Redemption of Portion of 2017A Bonds.....8  
Section 2.8 Cancellation .....9  
Section 2.9 Use of Defeasance Obligations to Redeem 2017A Bonds .....9

ARTICLE III.

APPLICATION OF THE PROCEEDS OF THE 2017A BONDS

Section 3.1 Creation of Subfunds.....10  
Section 3.2 Application of the Proceeds of the 2017A Bonds .....10

ARTICLE IV.

TAX COVENANTS

Section 4.1 Covenant as to Arbitrage .....11  
Section 4.2 Exclusion From Gross Income Covenant .....11  
Section 4.3 Payment of Rebate .....11

ARTICLE V.

DEFEASANCE

Section 5.1 Release of this Supplemental Trust Agreement .....12

ARTICLE VI.

MISCELLANEOUS

<b>Section 6.1</b>	<b><u>Manner of Giving Notice</u></b> .....	14
<b>Section 6.2</b>	<b><u>Substitute Mailing</u></b> .....	15
<b>Section 6.3</b>	<b><u>Parties, Bond Registrar and Holders Alone Have Rights under Trust Agreement</u></b> .....	15
<b>Section 6.4</b>	<b><u>Effect of Partial Invalidity</u></b> .....	15
<b>Section 6.5</b>	<b><u>Effect of Covenants</u></b> .....	16
<b>Section 6.6</b>	<b><u>No Recourse Against Members, Officers or Employees of Commission or District</u></b> .....	16
<b>Section 6.7</b>	<b><u>Dealing in 2017A Bonds</u></b> .....	16
<b>Section 6.8</b>	<b><u>Legal Holidays</u></b> .....	16
<b>Section 6.9</b>	<b><u>Multiple Counterparts</u></b> .....	17
<b>Section 6.10</b>	<b><u>Headings</u></b> .....	17
<b>Section 6.11</b>	<b><u>Further Authority</u></b> .....	17
TESTIMONIUM.....		S-1
SIGNATURES.....		S-1

EXHIBIT A – REFUNDED BONDS

EXHIBIT B – FORM OF 2017A BONDS

**THIS FIFTH SUPPLEMENTAL TRUST AGREEMENT**, dated for convenience of reference as of December 1, 2017 (“Supplemental Trust Agreement”), by and between

**HAMPTON ROADS SANITATION DISTRICT,**

a political subdivision of the Commonwealth of Virginia, by Hampton Roads Sanitation District Commission, the governing body of said District, and

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,**

a national banking association duly incorporated and validly existing under the laws of the United States of America and having a corporate trust office in Pittsburgh, Pennsylvania, which is authorized under such laws to exercise trust powers and is subject to examination by federal authority (said banking corporation and any bank or trust company becoming successor Trustee under this Supplemental Trust Agreement being hereinafter sometimes called the “Trustee”), supplements the Trust Agreement, dated as of October 1, 2011 (the “Original Trust Agreement”), as amended and restated as of March 1, 2016 (the “Amended and Restated Trust Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A. (the Amended and Restated Trust Agreement, as amended and supplemented from time to time, the “Trust Agreement”),

**WITNESSETH:**

**WHEREAS**, the Hampton Roads Sanitation District (the “District”) was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the “Commission”), created by said Chapter 407, is the governing body of the District; and

**WHEREAS**, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (said Chapter 66 as so amended being hereinafter sometimes called the “Enabling Act”), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District,

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Enabling Act and pledged for their payment, for the purpose of refunding the outstanding bonds, including the payment of any redemption premium thereon, paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and

**WHEREAS**, the Commission has previously executed and delivered a Master Trust Indenture, dated as of December 1, 1993, as amended and restated March 1, 2008 (as supplemented and as further amended and supplemented from time to time, the “Senior Trust Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A., as successor Trustee (in such capacity, the “Senior Trustee”) pursuant to which District may provide for issuance and incurrence of Senior Obligations (as defined in the Trust Agreement); and

**WHEREAS**, Section 705 of the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement) subject to the conditions recited therein; and

**WHEREAS**, on October 20, 2011, the Commission executed and delivered the Original Trust Agreement to provide for the issuance of Parity Obligations payable solely from the Net Revenues Available for Debt Service derived by the District from its Wastewater System and the money attributable to proceeds of the Bonds and the income from the investment thereof and, coincident with the delivery of the Trust Agreement, determined to execute and deliver a First Supplemental Trust Agreement, dated as of October 1, 2011, to authorize and secure under the Trust Agreement revenue bonds of the District in the aggregate principal amount of Twenty-five Million Dollars (\$25,000,000) (the “2011 Bonds”) for the purpose of providing funds, together with other available funds, to (i) provide funds required to finance a portion of the costs of its 2011-2020 Capital Improvement Program and (ii) pay certain expenses incurred in connection with the issuance of the 2011 Bonds by the District; and

**WHEREAS**, the Commission has determined to provide for the issuance under the Trust Agreement at this time of revenue bonds of the District in the aggregate principal amount of \_\_\_\_\_ Dollars (\$[2017A PAR]) (the “2017A Bonds”) for the purpose of providing funds, together with other available funds, to (i) refund the outstanding Senior Bonds (as defined in the Senior Trust Agreement) specified in Exhibit A and (ii) pay a portion of the expenses incurred in connection with the issuance of the 2017A Bonds by the District; and

**WHEREAS**, the District is entering into this Supplemental Trust Agreement for the purpose of fixing the details of the 2017A Bonds; and

**WHEREAS**, the Trustee has accepted the trusts created by this Supplemental Trust Agreement and in evidence thereof has joined in the execution hereof;

**NOW, THEREFORE, THIS SUPPLEMENTAL TRUST AGREEMENT WITNESSETH:** that in consideration of the premises, of the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of 2017A Bonds by the Holders (as defined in the Trust Agreement) thereof, and also for and in consideration of the sum of One Dollar in hand paid by the Trustee at or before the execution and delivery of this Supplemental Trust Agreement, and for other good and valuable consideration, the receipt whereof is hereby acknowledged, and for the purpose of fixing and declaring the terms and conditions upon which 2017A Bonds are to be issued, authenticated, delivered, secured and accepted by all persons who shall from time to time be or become Holders thereof, and to secure the payment of all 2017A

Bonds at any time issued and Outstanding under this Supplemental Trust Agreement and the interest thereon according to their tenor, purport and effect, and to secure the performance and observance of all the covenants, agreements and conditions, express or implied, therein and herein contained, the Commission has executed and delivered this Supplemental Trust Agreement in the name of and on behalf of the District, and has agreed and covenanted, and does hereby agree and covenant, with the Trustee and with the respective Holders, from time to time, of 2017A Bonds, or any part thereof, as follows:

(end of Preamble)

## ARTICLE I.

### DEFINITIONS

**Section 1.1 Meaning of Words and Terms.** In addition to words and terms defined in the Original Trust Agreement, which words and terms are used herein as therein defined, or elsewhere in this Supplemental Trust Agreement, the following words and terms as used in this Supplemental Trust Agreement shall have the following meanings, unless some other meaning is plainly intended.

**“Closing”** means the date on which this Supplemental Trust Agreement becomes legally effective, the same being the date on which the 2017A Bonds are delivered against payment therefor.

**“Defeasance Obligations”** means noncallable (i) Government Obligations, (ii) Senior debt obligations issued or guaranteed by, or investments otherwise stripped from senior debt obligations issued by, any federal agency, instrumentality, corporation, or government-sponsored enterprise, including but not limited to: (1) Federal Home Loan Bank System, (2) Export-Import Bank of the United States, (3) Federal Financing Bank, (4) Government National Mortgage Association, (5) Federal Home Loan Mortgage Company, (6) Federal Housing Administration, (7) Private Export Funding Corp, (8) Federal National Mortgage Association, (9) Federal Farm Credit Bank, (10) Resolution Funding Corporation, including interest strips and principal strips, (11) Rural Economic Community Development Administration (formerly, Farmers Home Administration), (iii) evidences of ownership of a proportionate interest in specified Government Obligations, which Government Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity of custodian, (iv) obligations issued pursuant to Section 21B(d)(3) of the Federal Home Loan Bank Act, as amended by Section 511(a) of the Financial Institutions Reform, Recovery and Enforcement Act of 1989, and commonly known as “interest strips” of the Resolution Funding Corporation, (v) Defeased Municipal Obligations, (vi) United States Agency for International Development (“US AID”) guaranteed notes (including stripped securities) provided that any US AID security shall mature at least 10 business days prior to any cash flow or escrow requirement, and (vii) evidences of ownership of a proportionate interest in specified Defeased Municipal Obligations, which Defeased Municipal Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity as custodian.

**“Defeased Municipal Obligations”** means obligations of state or local government municipal bond issuers which are rated the highest rating by at least two of the three Rating Agencies, meeting the following conditions:

(i) (A) such obligations cannot be redeemed prior to maturity or (B) the trustee for which has been given irrevocable instructions concerning their call for redemption, and the issuer of such obligations has covenanted not to redeem such obligations other than as set forth in such instructions;

(ii) such obligations are secured by Government Obligations that may be applied only to interest, principal, and premium payments on such obligations;

(iii) the principal of and interest on such Government Obligations (plus any cash in the escrow fund with respect to such pre-refunded obligations) are sufficient to meet the liabilities of the obligations;

(iv) the Government Obligations serving as security for the obligations are held by an escrow agent or trustee; and

(v) such Government Obligations are not available to satisfy any other claims, including those against the trustee or escrow agent.

**“Electronic Means”** means, e-mail, facsimile transmission, secure electronic transmission containing applicable authorization codes, passwords and/or authentication keys issued by the Trustee, or another method or system specified by the Trustee as available for use in connection with its services under this Supplemental Trust Agreement.

**“Escrow Agent”** means The Bank of New York Mellon Trust Company, N.A., its successors and assigns.

**“Escrow Deposit Agreement”** means the Escrow Deposit Agreement, dated as of December \_\_, 2017, between the District and The Bank of New York Mellon Trust Company, N.A., as Escrow Agent, providing for the payment of interest on the Refunded Bonds as the same comes due and payable and the principal of the Refunded Bonds at maturity or their respective maturity dates.

**“Escrow Fund”** means the Hampton Roads Sanitation District Series 2017 Escrow Fund created under the Escrow Deposit Agreement.

**“Interest Payment Date”** means each April 1 and October 1, beginning [April 1, 2018], to and including October 1, 20\_\_.

**“Principal Payment Date”** means October 1 of each of the years set forth in the tables in Section 2.1 and Section 2.3 below.

**“Regular Record Date”** means the fifteenth day (whether or not a business day) of the calendar month next preceding each Interest Payment Date.

**“Tax Certificate”** means the certificate, including the exhibits thereto, of that name delivered by the District in connection with the issuance of the 2017A Bonds.

**Section 1.2 Rules of Construction.** This Supplemental Trust Agreement shall have the same rules of construction as are provided for the Trust Agreement in its Section 102. Any provision of this Supplemental Trust Agreement referring to actions to be taken by the District shall be deemed to refer to the Commission to the extent that the Enabling Act authorizes the Commission to take such action instead of the District.

**ARTICLE II.**

**DETAILS OF THE 2017A BONDS**

**Section 2.1 Details of 2017A Bonds.** The 2017A Bonds shall be issued in accordance with and secured by the Trust Agreement, including in particular the provisions of Section 209 of the Trust Agreement, as supplemented by this Supplemental Trust Agreement, as Current Interest Bonds in the aggregate principal amount of \$[2017A PAR] for the purposes set forth in Sections 209 of the Trust Agreement and the Preamble of this Supplemental Trust Agreement, shall be dated their date of delivery, shall be designated “Subordinate Wastewater Revenue Bonds, Series 2017A,” shall be numbered R-1 and upwards, shall be issued in substantially the form set forth in Exhibit B hereto, shall bear interest (based on a 360-day year consisting of twelve 30-day months) from their dated date until their payment, such interest to the maturity thereof being payable semi-annually on the Interest Payment Dates, April 1 and October 1 in each year, commencing April 1, 2018, at the following rates, and shall be stated to mature on October 1, as the case may be, in the following years and amounts:

Due	Principal Amount	Interest Rate
	\$	%



**Section 2.2 Optional Redemption.** From any available moneys, the District may, at its option, redeem prior to their respective maturities, in whole or in part, the 2017A Bonds stated to mature on and after October 1, 20\_\_, on any date beginning October 1, 20\_\_, at a redemption price of par, together with interest accrued to the date fixed for redemption.

**Section 2.3 Mandatory Redemption.** The 2017A Bonds due on October 1, 20\_\_ are term bonds subject to mandatory sinking fund redemption on October 1 in the following years in the following principal amounts (“Sinking Fund Requirements”) at a redemption price equal to par, together with interest accrued to the date of redemption:

Series 2017A Term Bonds due October 1, 20\_\_

<u>Year</u>	<u>Sinking Fund Requirement</u>
-------------	---------------------------------

---

<sup>†</sup> Unamortized balance at maturity.

In the event of a partial optional redemption or purchase of any such term 2017A Bonds, the Trustee shall credit the principal amount of such term 2017A Bonds so purchased or redeemed against the Sinking Fund Requirements for the remaining term 2017A Bonds outstanding of the same maturity in such amounts and in such years as the District in its sole discretion shall direct.

**Section 2.4 Selection of 2017A Bonds to be Redeemed.** The 2017A Bonds shall be redeemed only in the minimum denomination authorized in Section 202 of the Trust Agreement or in whole multiples of such minimum denomination. In selecting 2017A Bonds for redemption, the Trustee shall treat each 2017A Bond as representing the number of 2017A Bonds that is obtained by dividing the principal amount of such 2017A Bond by the minimum denomination authorized by this Supplemental Trust Agreement. If less than all of the 2017A Bonds of a particular maturity shall be called for redemption, the particular 2017A Bonds or portions of 2017A Bonds to be redeemed shall be selected by the Trustee by such method as the Trustee in its sole discretion shall determine.

**Section 2.5 Redemption Notice.** At least thirty (30), but not more than ninety (90), days before the redemption date of any 2017A Bonds, whether such redemption be in whole or in part, optional or mandatory, the Trustee shall cause a notice of such redemption, in the name of the District, to be mailed, certified mail, return receipt requested to all Holders owning 2017A Bonds to be redeemed in whole or in part, but any defect in such notice or the failure so to mail any such notice to any Holder owning any 2017A Bonds shall not affect the validity of the proceedings for the redemption of any other 2017A Bonds. Each such notice shall set forth the 2017A Bonds or portions thereof to be redeemed, the date fixed for redemption, the redemption price to be paid, and if less than all the 2017A Bonds shall be called for redemption, the

maturities of the 2017A Bonds to be redeemed and, if less than all of the 2017A Bonds of any one maturity then outstanding shall be called for redemption, the distinctive numbers and letters, if any, of such 2017A Bonds to be redeemed and, in the case of 2017A Bonds to be redeemed in part only, the portion of the principal amount thereof to be redeemed. If any 2017A Bond is to be redeemed in part only, the notice of redemption shall state also that on or after the redemption date, upon surrender of such 2017A Bond, a new 2017A Bond in principal amount equal to the unredeemed portion of such 2017A Bond and of the same maturity will be issued.

**Section 2.6 Effect of Calling for Redemption.** On the date fixed for redemption, notice having been mailed in the manner and under the conditions hereinabove provided, the 2017A Bonds or portions thereof called for redemption shall become due and payable at the redemption price provided therefor, plus accrued interest to such date; provided, however, that the District may direct that the notice of an optional redemption, but not any mandatory redemption, may state that the call for redemption is expressly conditioned on there being on deposit with the Trustee on the redemption date sufficient moneys to effect the redemption at the applicable redemption price plus accrued interest, if any, and if such moneys shall not be so on deposit, the call for redemption shall be deemed cancelled, void and of no effect and all 2017A Bonds called for such redemption shall remain outstanding and if presented for payment, such 2017A Bonds shall be returned forthwith to their registered owners. If money or Government Obligations, or a combination of both, sufficient to pay the redemption price of the 2017A Bonds to be redeemed, plus accrued interest thereon to the date fixed for redemption, are held by the Bond Registrar in trust for the Holders of 2017A Bonds to be redeemed, interest on the 2017A Bonds called for redemption shall cease to accrue after the date fixed for redemption; such 2017A Bonds shall cease to be entitled to any benefits or security under this Supplemental Trust Agreement or to be deemed outstanding; and the Holders of such 2017A Bonds shall have no rights in respect thereof except to receive payment of the redemption price thereof, plus accrued interest to the date of redemption. 2017A Bonds and portions of 2017A Bonds for which irrevocable instructions to pay or to call for redemption on one or more specified dates have been given to the Trustee and the Bond Registrar in form satisfactory to them shall not thereafter be deemed to be outstanding under this Supplemental Trust Agreement and shall cease to be entitled to the security of or any rights under the Trust Agreement as supplemented by this Supplemental Trust Agreement, other than rights to receive payment of the redemption price thereof and accrued interest thereon, to be given notice of redemption in the manner provided in Section 2.5, and, to the extent hereinafter provided, to receive 2017A Bonds for any unredeemed portions of 2017A Bonds if money or Defeasance Obligations, or a combination of both, sufficient to pay the redemption price of such 2017A Bonds or portions thereof, together with accrued interest thereon to the date upon which such 2017A Bonds are to be paid or redeemed, are held in separate accounts by the Trustee or the Bond Registrar in trust for the holders of such 2017A Bonds.

**Section 2.7 Redemption of Portion of 2017A Bonds.** If a portion of an outstanding 2017A Bond shall be selected for redemption, the Holder thereof or his attorney or legal representative shall present and surrender such 2017A Bond to the Bond Registrar for payment of the principal amount thereof so called for redemption and the redemption premium, if any, on such principal amount, and the District shall execute and the Bond Registrar shall authenticate and deliver to or upon the order of such registered owner or his legal representative, without

charge therefor, for the unredeemed portion of the principal amount of the 2017A Bond so surrendered, a 2017A Bond of the same maturity and bearing interest at the same rate.

**Section 2.8 Cancellation.** 2017A Bonds so redeemed, presented and surrendered shall be cancelled upon the surrender thereof.

**Section 2.9 Use of Defeasance Obligations to Redeem 2017A Bonds.** For purposes of this Article, Defeasance Obligations shall be deemed to be sufficient to pay or redeem 2017A Bonds on a specified date if the principal of and the interest on such Defeasance Obligations, when due, will be sufficient to pay on such date the redemption price of, and the interest accruing on, such 2017A Bonds to such date.

(end of Article II)

**ARTICLE III.**

**APPLICATION OF THE PROCEEDS  
OF THE 2017A BONDS**

**Section 3.1**    **Creation of Subfunds.** For purposes of convenience and to enable the District to track the proceeds from the sale of the 2017A Bonds, the Trustee shall establish the “Series 2017A Issuance Subfund” within the 2011 Trust Agreement Issuance Fund (the “Issuance Fund”).

**Section 3.2**    **Application of the Proceeds of the 2017A Bonds.** Simultaneously with the delivery of the 2017A Bonds, the proceeds of the 2017A Bonds, shall be applied by the Trustee as follows:

- (1)    the credit of the Issuance Subfund, the amount of \$\_\_\_\_\_, and
- (2)    the balance of the proceeds, \$\_\_\_\_\_, shall be deposited to the credit of the Escrow Fund.

(end of Article III)

## ARTICLE IV.

### TAX COVENANTS

**Section 4.1 Covenant as to Arbitrage.** The District agrees that money on deposit in any fund or account maintained in connection with the 2017A Bonds, whether or not such money was derived from the proceeds of the sale of the 2017A Bonds or from any other sources, and whether or not the 2017A Bonds are Outstanding hereunder, (i) will not be used in a manner that would cause the 2017A Bonds to be, and (ii) will be used in a manner that will cause the 2017A Bonds not to be, “arbitrage bonds” within the meaning of Section 148 of the Code and applicable regulations thereunder. The District shall observe and not violate the requirements of Section 148 of the Code and any such applicable regulations. The Trustee agrees that, to the extent that it exercises discretion over the investment of funds, money on deposit in any fund or account maintained in connection with the 2017A Bonds, whether or not such money was derived from the proceeds of the sale of the 2017A Bonds or from any other sources, and whether or not the 2017A Bonds are Outstanding hereunder, will not be used in a manner that the Trustee actually knows would cause the 2017A Bonds to be “arbitrage bonds” within the meaning of Section 148 of the Code and applicable regulations thereunder; and, to that end, to the extent that it exercises discretion over the investment of funds, the Trustee shall not knowingly violate the requirements of Section 148 of the Code and any applicable regulations thereunder. The Trustee shall be protected in relying upon any investment instruction of the District given in compliance with the provisions of this Supplemental Trust Agreement and the Tax Certificate relative to the 2017A Bonds. In the event the District is of the opinion that it is necessary to restrict or limit the yield on the investment of money held by the Trustee pursuant to this Supplemental Trust Agreement, or to use such money in certain manners, in order to avoid the 2017A Bonds being considered “arbitrage bonds” within the meaning of Section 148 of the Code and the regulations thereunder as such may be applicable to the 2017A Bonds at such time, the District may issue to the Trustee a written certificate to such effect and appropriate instructions, in which event the Trustee shall take such action as is necessary to restrict or limit the yield on such investment or to use such money in accordance with such certificate and instructions, irrespective of whether the Trustee shares such opinion. The Trustee shall be required to take such action only if the District or a District Representative shall specify the specific Investment Obligations in which the Trustee is to invest money in order to effect the restriction or limitation provided for in the preceding sentence.

**Section 4.2 Exclusion From Gross Income Covenant.** The District covenants that it will not take any action that will, or fail to take any action which failure will, cause interest on the 2017A Bonds to become includable in the gross income of the owners thereof for federal income tax purposes pursuant to the provisions of the Code and regulations promulgated thereunder.

**Section 4.3 Payment of Rebate.** The District shall cause to be paid, at the times described in the Tax Certificate, the Rebate Requirement (as defined in the Tax Certificate) to the United States Government. The obligation of the District to make such payments shall survive the termination of this Supplemental Trust Agreement.

(end of Article IV)

## ARTICLE V.

### DEFEASANCE

**Section 5.1 Release of this Supplemental Trust Agreement.** When (a) the 2017A Bonds secured hereby shall have become due and payable in accordance with their terms or otherwise as provided in this Supplemental Trust Agreement, the whole amount of the principal and the interest so due and payable upon all 2017A Bonds shall be paid, (b) if the 2017A Bonds shall not have become due and payable in accordance with their terms, the Trustee or the Bond Registrar shall hold, sufficient money or Defeasance Obligations, or a combination of money and Defeasance Obligations, the principal of and the interest on which, when due and payable, will provide sufficient money to pay the principal of, and the interest on, all 2017A Bonds then Outstanding to the maturity date or dates of such 2017A Bonds and (c) sufficient funds shall also have been provided or provision made for paying all other obligations payable hereunder by the District, then and in that case the right, title and interest of the Trustee in the funds and accounts mentioned in this Supplemental Trust Agreement shall thereupon cease, determine and become void and, on demand of the District and upon being furnished with an opinion, in form and substance satisfactory to the Trustee, of counsel approved by the Trustee, to the effect that all conditions precedent to the release of this Supplemental Trust Agreement and the defeasance of the 2017A Bonds have been satisfied and, if the 2017A Bonds are to be redeemed more than ninety (90) days after the date the escrow therefor is established, a verification report prepared by an independent firm of certified public accountants or other qualified financial consultants stating that the money and Defeasance Obligations, together with investment earnings thereon, delivered to or held by the Trustee or Bond Registrar, will be sufficient to pay the principal and redemption price of, and interest on the 2017A Bonds called for redemption to their maturity or redemption date, as applicable, the Trustee shall release this Supplemental Trust Agreement and shall execute such documents to evidence such release as may reasonably be required by the District and, subject to the provisions of the Trust Agreement, shall turn over to the District any surplus in, and all balances remaining in, all funds and accounts. Otherwise, this Supplemental Trust Agreement shall be, continue and remain in full force and effect; provided, that, in the event Defeasance Obligations shall be deposited with and held by the Trustee or the Bond Registrar as hereinabove provided, (a) the Trustee shall nevertheless retain such rights, powers and privileges under this Supplemental Trust Agreement as may be necessary and convenient in respect of the 2017A Bonds for the payment of the principal and interest for which such Defeasance Obligations have been deposited, and (b) the Bond Registrar shall retain such rights, powers and privileges under this Supplemental Trust Agreement as may be necessary and convenient for the registration, transfer and exchange of 2017A Bonds.

(1) All money and Defeasance Obligations held by the Trustee (or the Bond Registrar) pursuant to this Section shall be held in trust and applied to the payment, when due, of the obligations payable therewith. If the District shall pay or cause to be paid to the Owners of less than all of the Outstanding 2017A Bonds the principal of and interest on such 2017A Bonds, or such portions thereof, which is and shall thereafter become due and payable upon such 2017A Bonds, or such portions thereof, such 2017A Bonds, or such portions thereof, shall cease to be entitled to any lien, benefit or security under this Supplemental Trust Agreement.

(2) Any Outstanding 2017A Bond (or any portion thereof) shall be deemed to have been paid for the purposes of subsection (a) or (b) of this Section when (i) there shall have been deposited with the Trustee or any other Depository either money in an amount which, or Defeasance Obligations the principal of and the interest on which when due, and without any reinvestment thereof, will provide money in an amount which, together with the money, if any, deposited with or held by the Trustee or any Depository or Paying Agent and available therefor, shall be sufficient to pay when due the principal of and interest due and to become due on such 2017A Bond (or portion thereof) on or prior to the maturity date thereof, (ii) in the event such 2017A Bond is not to mature within the next succeeding sixty (60) days, the District shall have given the Trustee irrevocable instructions to give notice to the Owner of such 2017A Bond (or portion thereof) stating that money or Defeasance Obligations have been deposited with the Trustee or any other Depository as provided in this Article V and that such 2017A Bond (or portion thereof) is deemed to have been paid in accordance with this Article and stating the maturity date upon which money is to be available for the payment of the principal thereof and interest thereon and (iii) provisions satisfactory to the Trustee shall have been made for the payment of the Trustee's and the Bond Registrar's fees and expenses, and any Paying Agent's or other Depository's fees and all fees and expenses payable by the District in connection with the defeasance of such 2017A Bond.

(3) The money and Defeasance Obligations deposited with the Trustee or any other Depository pursuant to this Section and all payments of principal or interest on any such Defeasance Obligations shall not be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal of and interest on the 2017A Bonds (or portions thereof) deemed to have been paid in accordance with this Section.

(4) If 2017A Bonds (or portions thereof) are deemed to have been paid in accordance with the provisions of this Article by reason of the deposit with the Trustee or any other Depository of moneys or Defeasance Obligations, no amendment to the provisions of this Section which would adversely affect the Owners of such 2017A Bonds (or portions thereof) shall be made without the consent of each Owner affected thereby.

(5) All money and Defeasance Obligations held pursuant to this Article shall be held in trust and applied to the payment, when due, of the 2017A Bonds (or portions thereof) payable therewith.

(end of Article V)

## ARTICLE VI.

### MISCELLANEOUS

**Section 6.1 Manner of Giving Notice.** All notices, demands and requests to be given to or made hereunder by the District or the Trustee shall be given or made in writing and shall be deemed to be properly given or made if sent by United States registered mail, return receipt requested, postage prepaid, addressed as follows:

- (a) As to the District—

Hampton Roads Sanitation District  
1434 Air Rail Avenue  
Virginia Beach, Virginia 23455  
Attention: General Manager

- (b) As to the Trustee—

The Bank of New York Mellon Trust Company, N.A.  
500 Ross Street, 12<sup>th</sup> Floor  
Pittsburgh, Pennsylvania 15262  
Attention: Corporate Trust Department

- (c) As to the Bond Registrar—

The Bank of New York Mellon Trust Company, N.A.  
500 Ross Street, 12<sup>th</sup> Floor  
Pittsburgh, Pennsylvania 15262  
Attention: Corporate Trust Department

Any such notice, demand or request may also be transmitted to the appropriate above-mentioned party by telegram, telecopy or telephone and shall be deemed to be properly given or made at the time of such transmission if, and only if, such transmission of notice shall be confirmed in writing and sent as specified above.

The Trustee agrees to accept and act upon instructions or directions, including funds transfer instructions (“Instructions”), pursuant to this Indenture or any other document reasonably relating to the Bonds sent by the District by Electronic Means, provided, however, that the District shall provide to the Trustee an incumbency certificate listing designated persons with the authority to provide such Instructions and containing specimen signatures of such designated persons, which incumbency certificate shall be amended whenever a person is to be added or deleted from the listing. If the District elects to give the Trustee Instructions by Electronic Means and the Trustee, in its discretion, elects to act upon such Instructions, the Trustee’s understanding of such Instructions shall be deemed controlling. The District understands and agrees that the Trustee cannot determine the identity of the actual sender of such Instructions and that the Trustee shall conclusively presume that directions that purport to have been sent by a designated person listed on the incumbency certificate provided to the Trustee have been sent by such designated person. The District shall be responsible for ensuring that



only designated persons transmit such Instructions to the Trustee and that the District and all designated persons are solely responsible to safeguard the use and confidentiality of applicable user and authorization codes, passwords or authentication keys upon receipt by the District. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such Instructions notwithstanding such Instructions conflict or are inconsistent with a subsequent written Instruction. The District agrees (i) to assume all risks arising out of the use of such Electronic Means to submit Instructions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized Instructions, and the risk of interception and misuse by third parties; (ii) that it is fully informed of the protections and risks associated with the various methods of transmitting Instructions to the Trustee and that there may be more secure methods of transmitting Instructions than the method(s) selected by the District; (iii) that the security procedures (if any) to be followed in connection with its transmission of Instructions provide to it a commercially reasonable degree of protection in light of its particular needs and circumstances; and (iv) to notify the Trustee immediately upon learning of any compromise or unauthorized use of the security procedures.

Any of such addresses may be changed at any time upon written notice of such change sent by United States registered mail, postage prepaid, to the other parties by the party effecting the change.

All documents received by the Trustee under the provisions of this Supplemental Trust Agreement, or photographic copies thereof, shall be retained in its possession until this Supplemental Trust Agreement shall be released under the provisions of Section 5.1 of this Supplemental Trust Agreement, subject at all reasonable times to the inspection of the District and any Holder and the agents and representatives thereof.

**Section 6.2 Substitute Mailing.** If, because of the temporary or permanent suspension of postal service, the District or the Trustee shall be unable to mail any notice required to be given by the provisions of this Supplemental Trust Agreement, the District or the Trustee shall give notice in such other manner as in the judgment of the District or the Trustee shall most effectively approximate mailing (but, if by unsecured facsimile or electronic transmission, then in compliance with and subject to the provisions of Section 6.1 above) and the giving of notice in such manner shall for all purposes of this Supplemental Trust Agreement be deemed to be in compliance with the requirement for the mailing thereof.

**Section 6.3 Parties, Bond Registrar and Holders Alone Have Rights under Trust Agreement.** Except as herein otherwise expressly provided, nothing in this Supplemental Trust Agreement, express or implied, is intended or shall be construed to confer upon any person, firm or corporation, other than the Trustee, the Bond Registrar, the District and the Holders, any right, remedy or claim, legal or equitable, under or by reason of this Supplemental Trust Agreement or any provision being intended to be and being for the sole and exclusive benefit of the Trustee, the District, the Bond Registrar and the Holders.

**Section 6.4 Effect of Partial Invalidity.** In case any one or more of the provisions of this Supplemental Trust Agreement or the 2017A Bonds shall for any reason be held to be illegal or invalid, such illegality or invalidity shall not affect any other provisions of this Supplemental Trust Agreement or the 2017A Bonds, but this Supplemental Trust Agreement and the 2017A

Bonds shall be construed and enforced as if such illegal or invalid provisions had not been contained therein. In case any covenant, stipulation, obligation or agreement contained in the 2017A Bonds or this Supplemental Trust Agreement shall for any reason be held to be in violation of law, then such covenant, stipulation, obligation or agreement shall be deemed to be the covenant, stipulation, obligation or agreement of the Commission or the District to the full extent permitted by law.

**Section 6.5 Effect of Covenants.** All covenants, stipulations, obligations and agreements of the District contained in this Supplemental Trust Agreement shall be deemed to be covenants, stipulations, obligations and agreements of the District to the full extent permitted by the Constitution and laws of the State. This Supplemental Trust Agreement is adopted with the intent that the laws of the State shall govern its construction.

**Section 6.6 No Recourse Against Members, Officers or Employees of Commission or District.** No recourse under, or upon, any statement, obligation, covenant, or agreement contained in this Supplemental Trust Agreement, or in any 2017A Bond hereby secured, or in any document or certification whatsoever, or under any judgment obtained against the Commission or the District or by the enforcement of any assessment or by any legal or equitable proceeding by virtue of any constitution or statute or otherwise or under any circumstances, shall be had against any member, officer or employee, as such, of the Commission or the District, either directly or through the Commission or the District, respectively, or otherwise, for the payment for or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may be due and unpaid upon any such 2017A Bond. Any and all personal liability of every nature, whether at common law or in equity or by statute or by constitution or otherwise, of any such member, officer or employee, as such, to respond by reason of any act or omission on his or her part or otherwise, for the payment for, or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may remain due and unpaid upon the 2017A Bonds hereby secured, is hereby expressly waived and released as an express condition of, and in consideration for, the execution of this Supplemental Trust Agreement and the issuance of the 2017A Bonds.

**Section 6.7 Dealing in 2017A Bonds.** The Trustee and the Bond Registrar and their directors, officers, employees or agents may in good faith, buy, sell, own, hold and deal in any 2017A Bonds issued under the provisions of this Supplemental Trust Agreement and may join in any action which any Holder may be entitled to take with like effects as if such Trustee were not a Trustee and such bank or trust company were not the Bond Registrar under this Supplemental Trust Agreement.

**Section 6.8 Legal Holidays.** In any case where the date of maturity of principal of and interest on the 2017A Bonds shall be on a day on which banking institutions at the place of payment are authorized by law to remain closed, then payment of such principal and interest need not be made on such date but may be made on the next succeeding day not a day on which banking institutions are authorized by law to remain closed with the same force and effect as if made on the date of maturity, and in the case of such payment, no interest shall accrue for the period from and after such date.

**Section 6.9 Multiple Counterparts.** This Supplemental Trust Agreement may be executed in multiple counterparts, each of which shall be regarded for all purposes as an original, and such counterparts shall constitute but one and the same instrument.

**Section 6.10 Headings.** Any heading preceding the text of the several articles hereof, and any table of contents or marginal notes appended to copies hereof, shall be solely for convenience of reference and shall not constitute a part of this Supplemental Trust Agreement, nor shall they affect its meaning, construction or effect.

**Section 6.11 Further Authority.** The officers of the Commission or the District, attorneys, engineers and other agents or employees of the Commission or the District are hereby authorized to do all acts and things required of them by this Supplemental Trust Agreement and the Agreement for the full, punctual and complete performance of all of the terms, covenants and agreements contained in the 2017A Bonds and this Supplemental Trust Agreement.

**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District has caused these presents to be signed in its name and on its behalf and attested by its duly authorized officers and to evidence its acceptance of the trusts hereby created, the Trustee has caused these presents to be signed in its name and on behalf by its duly authorized officer, all as of the 1<sup>st</sup> day of December, 2017.

HAMPTON ROADS SANITATION DISTRICT

(Seal)

By: \_\_\_\_\_  
Director of Finance  
Hampton Roads Sanitation District Commission

Attest:

By: \_\_\_\_\_  
Secretary  
Hampton Roads Sanitation District Commission

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A., as Trustee

By: \_\_\_\_\_  
Authorized Officer

(Seal)

REFUNDED BONDS

FORM OF 2017A BONDS

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION (“DTC”), TO THE DISTRICT OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE, OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

No. R-\_\_ \$

HAMPTON ROADS SANITATION DISTRICT  
(VIRGINIA)  
SUBORDINATE WASTEWATER REVENUE BOND  
REFUNDING SERIES 2017A

<u>INTEREST RATE</u>	<u>MATURITY DATE</u>	<u>DATED DATE</u>	<u>CUSIP</u>
	October 1, 20__	December __, 2017	409327

Registered Owner: Cede & Co.  
Principal Amount: \_\_\_\_\_

Hampton Roads Sanitation District (the “District”), a political subdivision of the Commonwealth of Virginia, by the Hampton Roads Sanitation District Commission (the “Commission”), the Commission of the District, for value received, promises to pay, but solely from the sources and in the manner hereinafter provided, to the registered owner named above, or registered assigns, the principal amount set forth above on the Maturity Date set forth above, upon the presentation and surrender hereof, at the corporate trust office of The Bank of New York Mellon Trust Company N.A. (the “Bond Registrar”) located on the date hereof at The Bank of New York Mellon Trust Company, N.A., 500 Ross Street, 12<sup>th</sup> Floor, Pittsburgh, Pennsylvania 15262. The District also promises to pay, solely from such sources, interest on this Bond (calculated based upon a 360-day year consisting of twelve 30-day months) from the interest payment date next preceding the date on which it is authenticated, unless it is authenticated on an interest payment date, in which event it shall bear interest from such date, or unless it is authenticated prior to its dated date in which event it shall bear interest from its date, payable on April 1, 2018 and semi-annually thereafter on April 1 and October 1 of each year, at

the rate per annum set forth above until the principal sum hereof is paid. The interest so payable and punctually paid or duly provided for, on any interest payment date, will, as provided in the Trust Agreement hereinafter referred to, be paid to the person in whose name this Bond is registered at the close of business on the Regular Record Date for such interest, which shall be the fifteenth (15th) day (whether or not a business day) of the calendar month next preceding such interest payment date. Any such interest not so punctually paid or duly provided for shall forthwith cease to be payable to the registered owner on such Regular Record Date, and may be paid to the person in whose name this Bond is registered at the close of business on a Special Record Date for the payment of such defaulted interest to be fixed by the Trustee hereinafter mentioned, notice whereof being given to the registered owners not less than ten (10) days prior to such Special Record Date, or may be paid at any time in any other lawful manner not inconsistent with the requirements of any securities exchange on which the Bonds of this series may be listed and upon such notice as may be required by such exchange, or as more fully provided in said Trust Agreement. All such payments shall be made in such coin or currency of the United States of America as at the time of payment is legal tender for payment of public and private debts.

This Bond is one of a duly authorized series of revenue bonds of the District, designated "Hampton Roads Sanitation District (Virginia) Subordinate Wastewater Revenue Bonds, Series 2017A" (the "Bonds"), issued under a trust agreement, dated as of October 1, 2011 between the District and The Bank of New York Mellon Trust Company, N.A., Pittsburgh, Pennsylvania, as Trustee (said banking corporation and any bank or successor trustee under the Trust Agreement being hereinafter referred to as the "Trustee"), as amended and restated as of March 1, 2016, and as the same may be amended and supplemented from time to time (the "Trust Agreement"). The Bonds are being issued for the purpose of providing funds, together with other available funds, to (i) refund certain outstanding Senior Bonds (as defined in the Senior Trust Agreement) and (ii) to pay a portion of the expenses incurred in connection with the issuance of the 2017A Bonds by the District.

This Bond is issued and the Trust Agreement was made and entered into under and pursuant to the Constitution and laws of the Commonwealth of Virginia, and particularly in conformity with the provisions, restrictions and limitations of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended.

Indebtedness secured by the Trust Agreement is in all respects subordinate and inferior to the lien thereon of indebtedness ("Senior Obligations") secured by that certain trust agreement, dated as of March 1, 2008 (as the same may be amended and supplemented from time to time, the "Senior Trust Agreement"), between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the "Senior Trustee"), outstanding under the Senior Trust Agreement. The District may incur additional Senior Obligations, including notes, guaranties and other indebtedness secured by the Senior Trust Agreement on a pari passu basis (collectively, "Senior Obligations") for the purposes, under the terms and conditions and to the extent described therein.

The District has agreed to perform, observe and comply with certain covenants, conditions and agreements set forth in the Trust Agreement. The District may incur additional indebtedness, including notes, guaranties and other indebtedness secured by the Trust Agreement

on a pari passu basis (collectively, “Parity Obligations”) for the purposes, under the terms and conditions and to the extent described therein.

This Bond is a special obligation of the District and is payable solely from Net Revenues Available for Debt Service (as defined in this Trust Agreement) derived by the District from its Wastewater System (as defined in the Trust Agreement) and the money attributable to proceeds of the Bonds and the income from the investment thereof and not from any other fund or source. This Bond shall not be deemed to constitute a debt, or a pledge of the faith and credit, of the Commonwealth of Virginia or of any county, city, town or political subdivision thereof. The issuance of this Bond shall not directly or indirectly or contingently obligate the Commonwealth of Virginia or any county, city, town or political subdivision thereof to levy or to pledge any form of taxation whatever therefor.

The Bonds are issuable as fully registered Bonds in denominations of \$5,000 or any whole multiple thereof. Bonds may be exchanged at the corporate trust office of the Bond Registrar for the delivery of Bonds, in the manner and subject to the limitations and conditions provided in the Trust Agreement, for an equal aggregate principal amount of Bonds of the same series and maturity, of other authorized denominations and bearing interest at the same rate.

The transfer of this Bond is registrable by the registered owner hereof in person or by his attorney or legal representative at the corporate trust office of the Bond Registrar for the delivery of Bonds, but only in the manner and subject to the limitations and conditions provided in the Trust Agreement and upon surrender and cancellation of this Bond. Upon any such registration of transfer, the District shall execute and the Bond Registrar shall authenticate and deliver in exchange for this Bond a new Bond or Bonds, registered in the name of the transferee, of authorized denominations, in an aggregate principal amount equal to the principal amount of this Bond, of the same series and maturity and bearing interest at the same rate.

The District may, at its option, redeem prior to their respective maturities, in whole or in part, the Bonds of the series of which this Bond is one stated to mature on and after October 1, 20\_\_, on any date beginning October 1, 20\_\_, at a redemption price of par, together with interest accrued to the date fixed for redemption.

The Bonds due on October 1, 20\_\_, are subject to mandatory sinking fund redemption on October 1 in the following years in the following principal amounts (“Sinking Fund Requirements”) at a redemption price equal to the principal amount thereof, together with interest accrued to the date of redemption:

<u>Year</u>	<u>Sinking Fund Requirement</u>
-------------	---------------------------------

\$

†

---

† Unamortized balance at maturity.



In the event of a partial optional redemption or purchase of such term Bonds, the District will credit the principal amount of such term bonds so purchased or redeemed against the Sinking Fund Requirements for the remaining term bonds outstanding in such amounts and in such years as it in its sole discretion shall determine.

The Holder of this Bond shall have no right to enforce the provisions of the Trust Agreement or to institute action to enforce the covenants therein, or to take any action with respect to any event of default under the Trust Agreement, or to institute, appear in or defend any suit or other proceeding with respect thereto, except as provided in the Trust Agreement and except that any registered owner may institute action to enforce the payment of the principal of or the interest on such owner's Bond.

Upon the occurrence of certain events, and on the conditions, in the manner and with the effect set forth in the Trust Agreement, the principal of all Bonds then Outstanding under the Trust Agreement may become or may be declared due and payable before the stated maturities thereof, together with the interest accrued thereon.

Modifications or alterations of the Trust Agreement or any trust agreement supplemental thereto or this Trust Agreement or any indenture supplemental thereto, may be made only to the extent and in the circumstances permitted by the Trust Agreement.

This Bond is issued with the intent that the laws of the Commonwealth of Virginia shall govern its construction.

All acts, conditions and things required to happen, exist and be performed precedent to and in the issuance of this Bond and the execution of the Trust Agreement have happened, exist and have been performed as so required.

Neither the members, officers or employees of the Commission or the District, nor any person executing this Bond, is liable personally hereon or subject to any personal liability or accountability by reason of issuance hereof.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any benefit or security under the Trust Agreement until it shall have been authenticated by the execution by the Bond Registrar of the certificate of authentication endorsed hereon.

**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District has caused this Bond to be executed in its name and on its behalf with the signatures of the Chair and the Secretary of the Hampton Roads Sanitation District Commission and the official seal of said Commission to be impressed hereon and this Bond to be dated the \_\_ day of December, 2017.

HAMPTON ROADS SANITATION DISTRICT

By

Chair  
Hampton Roads Sanitation District Commission

By

Secretary  
Hampton Roads Sanitation District Commission

[FORM OF ASSIGNMENT]

FOR VALUE RECEIVED the undersigned hereby sells, assigns and transfers unto

---

---

---

[Please Print or Typewrite Name and Address of Transferee]

the within Bond and all rights thereunder, and hereby irrevocably constitutes and appoints \_\_\_\_\_ attorney to register the transfer of the within Bond on the books kept for registration thereof, with full power of substitution in the premises.

Date: \_\_\_\_\_

Signature Guaranteed:

\_\_\_\_\_  
NOTICE: Signature(s) must be guaranteed by an institution which is a participant in the Securities Transfer Agent Medallion Program (STAMP) or similar program.

\_\_\_\_\_  
NOTICE: The signature to this assignment must correspond with the name as it appears upon the face of the within Bond in every particular, without alteration or enlargement or any change whatever.

CERTIFICATE OF AUTHENTICATION

Date of authentication: \_\_\_\_\_, 20\_\_

This Bond is a Bond issued under the provisions of the within-mentioned Trust Agreement.

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A.,  
as Bond Registrar

By \_\_\_\_\_  
Authorized Signatory

---

SIXTH SUPPLEMENTAL TRUST AGREEMENT

by and between

HAMPTON ROADS SANITATION DISTRICT

and

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,  
as Trustee

Dated as of February 1, 2018

Securing

[\$[2018A PAR]

Subordinate Wastewater Revenue Bonds  
Series 2018A

---

TABLE OF CONTENTS

ARTICLE I.

DEFINITIONS

Section 1.1 Meaning of Words and Terms.....4  
Section 1.2 Rules of Construction .....5

ARTICLE II.

DETAILS OF THE 2018A BONDS

Section 2.1 Details of 2018A Bonds.....6  
Section 2.2 Optional Redemption.....7  
Section 2.3 Mandatory Redemption .....7  
Section 2.4 Selection of 2018A Bonds to be Redeemed .....7  
Section 2.5 Redemption Notice.....7  
Section 2.6 Effect of Calling for Redemption.....8  
Section 2.7 Redemption of Portion of 2018A Bonds.....8  
Section 2.8 Cancellation .....9  
Section 2.9 Use of Defeasance Obligations to Redeem 2018A Bonds .....9

ARTICLE III.

APPLICATION OF THE PROCEEDS OF THE 2018A BONDS

Section 3.1 Creation of Subfunds.....10  
Section 3.2 Application of the Proceeds of the 2018A Bonds .....10

ARTICLE IV.

TAX COVENANTS

Section 4.1 Covenant as to Arbitrage .....11  
Section 4.2 Exclusion From Gross Income Covenant .....11  
Section 4.3 Payment of Rebate .....11

ARTICLE V.

DEFEASANCE

Section 5.1 Release of this Supplemental Trust Agreement .....12

ARTICLE VI.

MISCELLANEOUS

<b>Section 6.1</b>	<b><u>Manner of Giving Notice</u></b> .....	14
<b>Section 6.2</b>	<b><u>Substitute Mailing</u></b> .....	15
<b>Section 6.3</b>	<b><u>Parties, Bond Registrar and Holders Alone Have Rights under Trust Agreement</u></b> .....	15
<b>Section 6.4</b>	<b><u>Effect of Partial Invalidity</u></b> .....	15
<b>Section 6.5</b>	<b><u>Effect of Covenants</u></b> .....	16
<b>Section 6.6</b>	<b><u>No Recourse Against Members, Officers or Employees of Commission or District</u></b> .....	16
<b>Section 6.7</b>	<b><u>Dealing in 2018A Bonds</u></b> .....	16
<b>Section 6.8</b>	<b><u>Legal Holidays</u></b> .....	16
<b>Section 6.9</b>	<b><u>Multiple Counterparts</u></b> .....	17
<b>Section 6.10</b>	<b><u>Headings</u></b> .....	17
<b>Section 6.11</b>	<b><u>Further Authority</u></b> .....	17
TESTIMONIUM.....		S-1
SIGNATURES.....		S-1

EXHIBIT A – FORM OF 2018A BONDS

**THIS SIXTH SUPPLEMENTAL TRUST AGREEMENT**, dated for convenience of reference as of February 1, 2018 (“Supplemental Trust Agreement”), by and between

**HAMPTON ROADS SANITATION DISTRICT,**

a political subdivision of the Commonwealth of Virginia, by Hampton Roads Sanitation District Commission, the governing body of said District, and

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,**

a national banking association duly incorporated and validly existing under the laws of the United States of America and having a corporate trust office in Pittsburgh, Pennsylvania, which is authorized under such laws to exercise trust powers and is subject to examination by federal authority (said banking corporation and any bank or trust company becoming successor Trustee under this Supplemental Trust Agreement being hereinafter sometimes called the “Trustee”), supplements the Trust Agreement, dated as of October 1, 2011 (the “Original Trust Agreement”), as amended and restated as of March 1, 2016 (the “Amended and Restated Trust Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A. (the Amended and Restated Trust Agreement, as amended and supplemented from time to time, the “Trust Agreement”),

**WITNESSETH:**

**WHEREAS**, the Hampton Roads Sanitation District (the “District”) was duly created under and pursuant to Chapter 407 of the Acts of Assembly of Virginia of 1940, and the Hampton Roads Sanitation District Commission (the “Commission”), created by said Chapter 407, is the governing body of the District; and

**WHEREAS**, by virtue of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (said Chapter 66 as so amended being hereinafter sometimes called the “Enabling Act”), the Commission is authorized and empowered:

(a) to construct, improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater treatment system or systems, either within or without or partly within and partly without the corporate limits of the District,

(b) to issue, at one time or from time to time, revenue bonds, notes or other obligations of the District payable solely from the special funds provided under the authority of the Enabling Act and pledged for their payment, for the purpose of refunding the outstanding bonds, including the payment of any redemption premium thereon, paying the cost of a wastewater treatment system or systems and extensions and additions thereto, and providing funds for any other authorized purpose of the Commission, and

(c) to fix, revise, charge and collect rates, fees and other charges for the use of, and for the services and facilities furnished or to be furnished by, any such wastewater treatment system; and



**WHEREAS**, the Commission has previously executed and delivered a Master Trust Indenture, dated as of December 1, 1993, as amended and restated March 1, 2008 (as supplemented and as further amended and supplemented from time to time, the “Senior Trust Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A., as successor Trustee (in such capacity, the “Senior Trustee”) pursuant to which District may provide for issuance and incurrence of Senior Obligations (as defined in the Trust Agreement); and

**WHEREAS**, Section 705 of the Senior Trust Agreement permits the issuance of Subordinated Indebtedness (as defined in the Senior Trust Agreement) subject to the conditions recited therein; and

**WHEREAS**, on October 20, 2011, the Commission executed and delivered the Original Trust Agreement to provide for the issuance of Parity Obligations payable solely from the Net Revenues Available for Debt Service derived by the District from its Wastewater System and the money attributable to proceeds of the Bonds and the income from the investment thereof and, coincident with the delivery of the Trust Agreement, determined to execute and deliver a First Supplemental Trust Agreement, dated as of October 1, 2011, to authorize and secure under the Trust Agreement revenue bonds of the District in the aggregate principal amount of Twenty-five Million Dollars (\$25,000,000) (the “2011 Bonds”) for the purpose of providing funds, together with other available funds, to (i) provide funds required to finance a portion of the costs of its 2011-2020 Capital Improvement Program and (ii) pay certain expenses incurred in connection with the issuance of the 2011 Bonds by the District; and

**WHEREAS**, the Commission has determined to provide for the issuance under the Trust Agreement at this time of revenue bonds of the District in the aggregate principal amount of \_\_\_\_\_ Dollars (\$[2018A PAR]) (the “2018A Bonds”) for the purpose of providing funds, together with other available funds, to (i) provide funds required to finance a portion of the costs of its 2018-2027 Capital Improvement Program and (ii) pay a portion of the expenses incurred in connection with the issuance of the 2018A Bonds by the District; and

**WHEREAS**, the District is entering into this Supplemental Trust Agreement for the purpose of fixing the details of the 2018A Bonds; and

**WHEREAS**, the Trustee has accepted the trusts created by this Supplemental Trust Agreement and in evidence thereof has joined in the execution hereof;

**NOW, THEREFORE, THIS SUPPLEMENTAL TRUST AGREEMENT WITNESSETH:** that in consideration of the premises, of the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of 2018A Bonds by the Holders (as defined in the Trust Agreement) thereof, and also for and in consideration of the sum of One Dollar in hand paid by the Trustee at or before the execution and delivery of this Supplemental Trust Agreement, and for other good and valuable consideration, the receipt whereof is hereby acknowledged, and for the purpose of fixing and declaring the terms and conditions upon which 2018A Bonds are to be issued, authenticated, delivered, secured and accepted by all persons who shall from time to time be or become Holders thereof, and to secure the payment of all 2018A

Bonds at any time issued and Outstanding under this Supplemental Trust Agreement and the interest thereon according to their tenor, purport and effect, and to secure the performance and observance of all the covenants, agreements and conditions, express or implied, therein and herein contained, the Commission has executed and delivered this Supplemental Trust Agreement in the name of and on behalf of the District, and has agreed and covenanted, and does hereby agree and covenant, with the Trustee and with the respective Holders, from time to time, of 2018A Bonds, or any part thereof, as follows:

(end of Preamble)

## ARTICLE I.

### DEFINITIONS

**Section 1.1 Meaning of Words and Terms.** In addition to words and terms defined in the Original Trust Agreement, which words and terms are used herein as therein defined, or elsewhere in this Supplemental Trust Agreement, the following words and terms as used in this Supplemental Trust Agreement shall have the following meanings, unless some other meaning is plainly intended.

**“Closing”** means the date on which this Supplemental Trust Agreement becomes legally effective, the same being the date on which the 2018A Bonds are delivered against payment therefor.

**“Defeasance Obligations”** means noncallable (i) Government Obligations, (ii) Senior debt obligations issued or guaranteed by, or investments otherwise stripped from senior debt obligations issued by, any federal agency, instrumentality, corporation, or government-sponsored enterprise, including but not limited to: (1) Federal Home Loan Bank System, (2) Export-Import Bank of the United States, (3) Federal Financing Bank, (4) Government National Mortgage Association, (5) Federal Home Loan Mortgage Company, (6) Federal Housing Administration, (7) Private Export Funding Corp, (8) Federal National Mortgage Association, (9) Federal Farm Credit Bank, (10) Resolution Funding Corporation, including interest strips and principal strips, (11) Rural Economic Community Development Administration (formerly, Farmers Home Administration), (iii) evidences of ownership of a proportionate interest in specified Government Obligations, which Government Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity of custodian, (iv) obligations issued pursuant to Section 21B(d)(3) of the Federal Home Loan Bank Act, as amended by Section 511(a) of the Financial Institutions Reform, Recovery and Enforcement Act of 1989, and commonly known as “interest strips” of the Resolution Funding Corporation, (v) Defeased Municipal Obligations, (vi) United States Agency for International Development (“US AID”) guaranteed notes (including stripped securities) provided that any US AID security shall mature at least 10 business days prior to any cash flow or escrow requirement, and (vii) evidences of ownership of a proportionate interest in specified Defeased Municipal Obligations, which Defeased Municipal Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity as custodian.

**“Defeased Municipal Obligations”** means obligations of state or local government municipal bond issuers which are rated the highest rating by at least two of the three Rating Agencies, meeting the following conditions:

(i) (A) such obligations cannot be redeemed prior to maturity or (B) the trustee for which has been given irrevocable instructions concerning their call for redemption, and the issuer of such obligations has covenanted not to redeem such obligations other than as set forth in such instructions;

(ii) such obligations are secured by Government Obligations that may be applied only to interest, principal, and premium payments on such obligations;

(iii) the principal of and interest on such Government Obligations (plus any cash in the escrow fund with respect to such pre-refunded obligations) are sufficient to meet the liabilities of the obligations;

(iv) the Government Obligations serving as security for the obligations are held by an escrow agent or trustee; and

(v) such Government Obligations are not available to satisfy any other claims, including those against the trustee or escrow agent.

**“Electronic Means”** means, e-mail, facsimile transmission, secure electronic transmission containing applicable authorization codes, passwords and/or authentication keys issued by the Trustee, or another method or system specified by the Trustee as available for use in connection with its services under this Supplemental Trust Agreement.

**“Interest Payment Date”** means each April 1 and October 1, beginning [April 1, 2018], to and including October 1, 20\_\_.

**“Principal Payment Date”** means October 1 of each of the years set forth in the tables in Section 2.1 and Section 2.3 below.

**“Regular Record Date”** means the fifteenth day (whether or not a business day) of the calendar month next preceding each Interest Payment Date.

**“Tax Certificate”** means the certificate, including the exhibits thereto, of that name delivered by the District in connection with the issuance of the 2018A Bonds.

**Section 1.2 Rules of Construction.** This Supplemental Trust Agreement shall have the same rules of construction as are provided for the Trust Agreement in its Section 102. Any provision of this Supplemental Trust Agreement referring to actions to be taken by the District shall be deemed to refer to the Commission to the extent that the Enabling Act authorizes the Commission to take such action instead of the District.

(end of Article I)

**ARTICLE II.**

**DETAILS OF THE 2018A BONDS**

**Section 2.1 Details of 2018A Bonds.** The 2018A Bonds shall be issued in accordance with and secured by the Trust Agreement, including in particular the provisions of Section 209 of the Trust Agreement, as supplemented by this Supplemental Trust Agreement, as Current Interest Bonds in the aggregate principal amount of \$[2018A PAR] for the purposes set forth in Sections 209 of the Trust Agreement and the Preamble of this Supplemental Trust Agreement, shall be dated their date of delivery, shall be designated “Subordinate Wastewater Revenue Bonds, Series 2018A,” shall be numbered R-1 and upwards, shall be issued in substantially the form set forth in Exhibit A hereto, shall bear interest (based on a 360-day year consisting of twelve 30-day months) from their dated date until their payment, such interest to the maturity thereof being payable semi-annually on the Interest Payment Dates, April 1 and October 1 in each year, commencing April 1, 2018, at the following rates, and shall be stated to mature on October 1, as the case may be, in the following years and amounts:

Due	Principal Amount	Interest Rate
	\$	%

**Section 2.2 Optional Redemption.** From any available moneys, the District may, at its option, redeem prior to their respective maturities, in whole or in part, the 2018A Bonds stated to mature on and after October 1, 20\_\_, on any date beginning October 1, 20\_\_, at a redemption price of par, together with interest accrued to the date fixed for redemption.

**Section 2.3 Mandatory Redemption.** The 2018A Bonds due on October 1, 20\_\_ are term bonds subject to mandatory sinking fund redemption on October 1 in the following years in the following principal amounts (“Sinking Fund Requirements”) at a redemption price equal to par, together with interest accrued to the date of redemption:

Series 2018A Term Bonds due October 1, 20\_\_

<u>Year</u>	<u>Sinking Fund Requirement</u>
-------------	---------------------------------

---

† Unamortized balance at maturity.

In the event of a partial optional redemption or purchase of any such term 2018A Bonds, the Trustee shall credit the principal amount of such term 2018A Bonds so purchased or redeemed against the Sinking Fund Requirements for the remaining term 2018A Bonds outstanding of the same maturity in such amounts and in such years as the District in its sole discretion shall direct.

**Section 2.4 Selection of 2018A Bonds to be Redeemed.** The 2018A Bonds shall be redeemed only in the minimum denomination authorized in Section 202 of the Trust Agreement or in whole multiples of such minimum denomination. In selecting 2018A Bonds for redemption, the Trustee shall treat each 2018A Bond as representing the number of 2018A Bonds that is obtained by dividing the principal amount of such 2018A Bond by the minimum denomination authorized by this Supplemental Trust Agreement. If less than all of the 2018A Bonds of a particular maturity shall be called for redemption, the particular 2018A Bonds or portions of 2018A Bonds to be redeemed shall be selected by the Trustee by such method as the Trustee in its sole discretion shall determine.

**Section 2.5 Redemption Notice.** At least thirty (30), but not more than ninety (90), days before the redemption date of any 2018A Bonds, whether such redemption be in whole or in part, optional or mandatory, the Trustee shall cause a notice of such redemption, in the name of the District, to be mailed, certified mail, return receipt requested to all Holders owning 2018A Bonds to be redeemed in whole or in part, but any defect in such notice or the failure so to mail any such notice to any Holder owning any 2018A Bonds shall not affect the validity of the proceedings for the redemption of any other 2018A Bonds. Each such notice shall set forth the 2018A Bonds or portions thereof to be redeemed, the date fixed for redemption, the redemption price to be paid, and if less than all the 2018A Bonds shall be called for redemption, the

maturities of the 2018A Bonds to be redeemed and, if less than all of the 2018A Bonds of any one maturity then outstanding shall be called for redemption, the distinctive numbers and letters, if any, of such 2018A Bonds to be redeemed and, in the case of 2018A Bonds to be redeemed in part only, the portion of the principal amount thereof to be redeemed. If any 2018A Bond is to be redeemed in part only, the notice of redemption shall state also that on or after the redemption date, upon surrender of such 2018A Bond, a new 2018A Bond in principal amount equal to the unredeemed portion of such 2018A Bond and of the same maturity will be issued.

**Section 2.6 Effect of Calling for Redemption.** On the date fixed for redemption, notice having been mailed in the manner and under the conditions hereinabove provided, the 2018A Bonds or portions thereof called for redemption shall become due and payable at the redemption price provided therefor, plus accrued interest to such date; provided, however, that the District may direct that the notice of an optional redemption, but not any mandatory redemption, may state that the call for redemption is expressly conditioned on there being on deposit with the Trustee on the redemption date sufficient moneys to effect the redemption at the applicable redemption price plus accrued interest, if any, and if such moneys shall not be so on deposit, the call for redemption shall be deemed cancelled, void and of no effect and all 2018A Bonds called for such redemption shall remain outstanding and if presented for payment, such 2018A Bonds shall be returned forthwith to their registered owners. If money or Government Obligations, or a combination of both, sufficient to pay the redemption price of the 2018A Bonds to be redeemed, plus accrued interest thereon to the date fixed for redemption, are held by the Bond Registrar in trust for the Holders of 2018A Bonds to be redeemed, interest on the 2018A Bonds called for redemption shall cease to accrue after the date fixed for redemption; such 2018A Bonds shall cease to be entitled to any benefits or security under this Supplemental Trust Agreement or to be deemed outstanding; and the Holders of such 2018A Bonds shall have no rights in respect thereof except to receive payment of the redemption price thereof, plus accrued interest to the date of redemption. 2018A Bonds and portions of 2018A Bonds for which irrevocable instructions to pay or to call for redemption on one or more specified dates have been given to the Trustee and the Bond Registrar in form satisfactory to them shall not thereafter be deemed to be outstanding under this Supplemental Trust Agreement and shall cease to be entitled to the security of or any rights under the Trust Agreement as supplemented by this Supplemental Trust Agreement, other than rights to receive payment of the redemption price thereof and accrued interest thereon, to be given notice of redemption in the manner provided in Section 2.5, and, to the extent hereinafter provided, to receive 2018A Bonds for any unredeemed portions of 2018A Bonds if money or Defeasance Obligations, or a combination of both, sufficient to pay the redemption price of such 2018A Bonds or portions thereof, together with accrued interest thereon to the date upon which such 2018A Bonds are to be paid or redeemed, are held in separate accounts by the Trustee or the Bond Registrar in trust for the holders of such 2018A Bonds.

**Section 2.7 Redemption of Portion of 2018A Bonds.** If a portion of an outstanding 2018A Bond shall be selected for redemption, the Holder thereof or his attorney or legal representative shall present and surrender such 2018A Bond to the Bond Registrar for payment of the principal amount thereof so called for redemption and the redemption premium, if any, on such principal amount, and the District shall execute and the Bond Registrar shall authenticate and deliver to or upon the order of such registered owner or his legal representative, without

charge therefor, for the unredeemed portion of the principal amount of the 2018A Bond so surrendered, a 2018A Bond of the same maturity and bearing interest at the same rate.

**Section 2.8 Cancellation.** 2018A Bonds so redeemed, presented and surrendered shall be cancelled upon the surrender thereof.

**Section 2.9 Use of Defeasance Obligations to Redeem 2018A Bonds.** For purposes of this Article, Defeasance Obligations shall be deemed to be sufficient to pay or redeem 2018A Bonds on a specified date if the principal of and the interest on such Defeasance Obligations, when due, will be sufficient to pay on such date the redemption price of, and the interest accruing on, such 2018A Bonds to such date.

(end of Article II)



**ARTICLE III.**

**APPLICATION OF THE PROCEEDS  
OF THE 2018A BONDS**

**Section 3.1 Creation of Subfunds.** For purposes of convenience and to enable the District to track the proceeds from the sale of the 2018A Bonds, the Trustee shall establish the following Subfunds within the 2011 Trust Agreement Issuance Fund (the “Issuance Fund”) and 2011 Trust Agreement Construction Fund (the “Construction Fund”) created pursuant to Article IV of the Trust Agreement:

- (1) within the Issuance Fund, the Series 2018A Issuance Subfund; and
- (2) within the Construction Fund, the Series 2018A Construction Subfund

The creation of such Subfunds shall not be deemed to create a preference in favor of the holders of the 2018A Bonds with respect to amounts on deposit therein.

**Section 3.2 Application of the Proceeds of the 2018A Bonds.** Simultaneously with the delivery of the 2018A Bonds, the proceeds of the 2018A Bonds, shall be applied by the Trustee as follows:

- (1) to the credit of the Series 2018A Construction Subfund, the amount of \$\_\_\_\_\_;
- and
- (2) to the credit of the Series 2018A Issuance Subfund, the amount of \$\_\_\_\_\_.

(end of Article III)

## ARTICLE IV.

### TAX COVENANTS

**Section 4.1 Covenant as to Arbitrage.** The District agrees that money on deposit in any fund or account maintained in connection with the 2018A Bonds, whether or not such money was derived from the proceeds of the sale of the 2018A Bonds or from any other sources, and whether or not the 2018A Bonds are Outstanding hereunder, (i) will not be used in a manner that would cause the 2018A Bonds to be, and (ii) will be used in a manner that will cause the 2018A Bonds not to be, “arbitrage bonds” within the meaning of Section 148 of the Code and applicable regulations thereunder. The District shall observe and not violate the requirements of Section 148 of the Code and any such applicable regulations. The Trustee agrees that, to the extent that it exercises discretion over the investment of funds, money on deposit in any fund or account maintained in connection with the 2018A Bonds, whether or not such money was derived from the proceeds of the sale of the 2018A Bonds or from any other sources, and whether or not the 2018A Bonds are Outstanding hereunder, will not be used in a manner that the Trustee actually knows would cause the 2018A Bonds to be “arbitrage bonds” within the meaning of Section 148 of the Code and applicable regulations thereunder; and, to that end, to the extent that it exercises discretion over the investment of funds, the Trustee shall not knowingly violate the requirements of Section 148 of the Code and any applicable regulations thereunder. The Trustee shall be protected in relying upon any investment instruction of the District given in compliance with the provisions of this Supplemental Trust Agreement and the Tax Certificate relative to the 2018A Bonds. In the event the District is of the opinion that it is necessary to restrict or limit the yield on the investment of money held by the Trustee pursuant to this Supplemental Trust Agreement, or to use such money in certain manners, in order to avoid the 2018A Bonds being considered “arbitrage bonds” within the meaning of Section 148 of the Code and the regulations thereunder as such may be applicable to the 2018A Bonds at such time, the District may issue to the Trustee a written certificate to such effect and appropriate instructions, in which event the Trustee shall take such action as is necessary to restrict or limit the yield on such investment or to use such money in accordance with such certificate and instructions, irrespective of whether the Trustee shares such opinion. The Trustee shall be required to take such action only if the District or a District Representative shall specify the specific Investment Obligations in which the Trustee is to invest money in order to effect the restriction or limitation provided for in the preceding sentence.

**Section 4.2 Exclusion From Gross Income Covenant.** The District covenants that it will not take any action that will, or fail to take any action which failure will, cause interest on the 2018A Bonds to become includable in the gross income of the owners thereof for federal income tax purposes pursuant to the provisions of the Code and regulations promulgated thereunder.

**Section 4.3 Payment of Rebate.** The District shall cause to be paid, at the times described in the Tax Certificate, the Rebate Requirement (as defined in the Tax Certificate) to the United States Government. The obligation of the District to make such payments shall survive the termination of this Supplemental Trust Agreement.

(end of Article IV)

## ARTICLE V.

### DEFEASANCE

**Section 5.1 Release of this Supplemental Trust Agreement.** When (a) the 2018A Bonds secured hereby shall have become due and payable in accordance with their terms or otherwise as provided in this Supplemental Trust Agreement, the whole amount of the principal and the interest so due and payable upon all 2018A Bonds shall be paid, (b) if the 2018A Bonds shall not have become due and payable in accordance with their terms, the Trustee or the Bond Registrar shall hold, sufficient money or Defeasance Obligations, or a combination of money and Defeasance Obligations, the principal of and the interest on which, when due and payable, will provide sufficient money to pay the principal of, and the interest on, all 2018A Bonds then Outstanding to the maturity date or dates of such 2018A Bonds and (c) sufficient funds shall also have been provided or provision made for paying all other obligations payable hereunder by the District, then and in that case the right, title and interest of the Trustee in the funds and accounts mentioned in this Supplemental Trust Agreement shall thereupon cease, determine and become void and, on demand of the District and upon being furnished with an opinion, in form and substance satisfactory to the Trustee, of counsel approved by the Trustee, to the effect that all conditions precedent to the release of this Supplemental Trust Agreement and the defeasance of the 2018A Bonds have been satisfied and, if the 2018A Bonds are to be redeemed more than ninety (90) days after the date the escrow therefor is established, a verification report prepared by an independent firm of certified public accountants or other qualified financial consultants stating that the money and Defeasance Obligations, together with investment earnings thereon, delivered to or held by the Trustee or Bond Registrar, will be sufficient to pay the principal and redemption price of, and interest on the 2018A Bonds called for redemption to their maturity or redemption date, as applicable, the Trustee shall release this Supplemental Trust Agreement and shall execute such documents to evidence such release as may reasonably be required by the District and, subject to the provisions of the Trust Agreement, shall turn over to the District any surplus in, and all balances remaining in, all funds and accounts. Otherwise, this Supplemental Trust Agreement shall be, continue and remain in full force and effect; provided, that, in the event Defeasance Obligations shall be deposited with and held by the Trustee or the Bond Registrar as hereinabove provided, (a) the Trustee shall nevertheless retain such rights, powers and privileges under this Supplemental Trust Agreement as may be necessary and convenient in respect of the 2018A Bonds for the payment of the principal and interest for which such Defeasance Obligations have been deposited, and (b) the Bond Registrar shall retain such rights, powers and privileges under this Supplemental Trust Agreement as may be necessary and convenient for the registration, transfer and exchange of 2018A Bonds.

(1) All money and Defeasance Obligations held by the Trustee (or the Bond Registrar) pursuant to this Section shall be held in trust and applied to the payment, when due, of the obligations payable therewith. If the District shall pay or cause to be paid to the Owners of less than all of the Outstanding 2018A Bonds the principal of and interest on such 2018A Bonds, or such portions thereof, which is and shall thereafter become due and payable upon such 2018A Bonds, or such portions thereof, such 2018A Bonds, or such portions thereof, shall cease to be entitled to any lien, benefit or security under this Supplemental Trust Agreement.

(2) Any Outstanding 2018A Bond (or any portion thereof) shall be deemed to have been paid for the purposes of subsection (a) or (b) of this Section when (i) there shall have been deposited with the Trustee or any other Depository either money in an amount which, or Defeasance Obligations the principal of and the interest on which when due, and without any reinvestment thereof, will provide money in an amount which, together with the money, if any, deposited with or held by the Trustee or any Depository or Paying Agent and available therefor, shall be sufficient to pay when due the principal of and interest due and to become due on such 2018A Bond (or portion thereof) on or prior to the maturity date thereof, (ii) in the event such 2018A Bond is not to mature within the next succeeding sixty (60) days, the District shall have given the Trustee irrevocable instructions to give notice to the Owner of such 2018A Bond (or portion thereof) stating that money or Defeasance Obligations have been deposited with the Trustee or any other Depository as provided in this Article V and that such 2018A Bond (or portion thereof) is deemed to have been paid in accordance with this Article and stating the maturity date upon which money is to be available for the payment of the principal thereof and interest thereon and (iii) provisions satisfactory to the Trustee shall have been made for the payment of the Trustee's and the Bond Registrar's fees and expenses, and any Paying Agent's or other Depository's fees and all fees and expenses payable by the District in connection with the defeasance of such 2018A Bond.

(3) The money and Defeasance Obligations deposited with the Trustee or any other Depository pursuant to this Section and all payments of principal or interest on any such Defeasance Obligations shall not be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal of and interest on the 2018A Bonds (or portions thereof) deemed to have been paid in accordance with this Section.

(4) If 2018A Bonds (or portions thereof) are deemed to have been paid in accordance with the provisions of this Article by reason of the deposit with the Trustee or any other Depository of moneys or Defeasance Obligations, no amendment to the provisions of this Section which would adversely affect the Owners of such 2018A Bonds (or portions thereof) shall be made without the consent of each Owner affected thereby.

(5) All money and Defeasance Obligations held pursuant to this Article shall be held in trust and applied to the payment, when due, of the 2018A Bonds (or portions thereof) payable therewith.

(end of Article V)

## ARTICLE VI.

### MISCELLANEOUS

**Section 6.1 Manner of Giving Notice.** All notices, demands and requests to be given to or made hereunder by the District or the Trustee shall be given or made in writing and shall be deemed to be properly given or made if sent by United States registered mail, return receipt requested, postage prepaid, addressed as follows:

(a) As to the District—

Hampton Roads Sanitation District  
1434 Air Rail Avenue  
Virginia Beach, Virginia 23455  
Attention: General Manager

(b) As to the Trustee—

The Bank of New York Mellon Trust Company, N.A.  
500 Ross Street, 12<sup>th</sup> Floor  
Pittsburgh, Pennsylvania 15262  
Attention: Corporate Trust Department

(c) As to the Bond Registrar—

The Bank of New York Mellon Trust Company, N.A.  
500 Ross Street, 12<sup>th</sup> Floor  
Pittsburgh, Pennsylvania 15262  
Attention: Corporate Trust Department

Any such notice, demand or request may also be transmitted to the appropriate above-mentioned party by telegram, telecopy or telephone and shall be deemed to be properly given or made at the time of such transmission if, and only if, such transmission of notice shall be confirmed in writing and sent as specified above.

The Trustee agrees to accept and act upon instructions or directions, including funds transfer instructions (“Instructions”), pursuant to this Indenture or any other document reasonably relating to the Bonds sent by the District by Electronic Means, provided, however, that the District shall provide to the Trustee an incumbency certificate listing designated persons with the authority to provide such Instructions and containing specimen signatures of such designated persons, which incumbency certificate shall be amended whenever a person is to be added or deleted from the listing. If the District elects to give the Trustee Instructions by Electronic Means and the Trustee, in its discretion, elects to act upon such Instructions, the Trustee’s understanding of such Instructions shall be deemed controlling. The District understands and agrees that the Trustee cannot determine the identity of the actual sender of such Instructions and that the Trustee shall conclusively presume that directions that purport to have been sent by a designated person listed on the incumbency certificate provided to the Trustee have been sent by such designated person. The District shall be responsible for ensuring that

only designated persons transmit such Instructions to the Trustee and that the District and all designated persons are solely responsible to safeguard the use and confidentiality of applicable user and authorization codes, passwords or authentication keys upon receipt by the District. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such Instructions notwithstanding such Instructions conflict or are inconsistent with a subsequent written Instruction. The District agrees (i) to assume all risks arising out of the use of such Electronic Means to submit Instructions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized Instructions, and the risk of interception and misuse by third parties; (ii) that it is fully informed of the protections and risks associated with the various methods of transmitting Instructions to the Trustee and that there may be more secure methods of transmitting Instructions than the method(s) selected by the District; (iii) that the security procedures (if any) to be followed in connection with its transmission of Instructions provide to it a commercially reasonable degree of protection in light of its particular needs and circumstances; and (iv) to notify the Trustee immediately upon learning of any compromise or unauthorized use of the security procedures.

Any of such addresses may be changed at any time upon written notice of such change sent by United States registered mail, postage prepaid, to the other parties by the party effecting the change.

All documents received by the Trustee under the provisions of this Supplemental Trust Agreement, or photographic copies thereof, shall be retained in its possession until this Supplemental Trust Agreement shall be released under the provisions of Section 5.1 of this Supplemental Trust Agreement, subject at all reasonable times to the inspection of the District and any Holder and the agents and representatives thereof.

**Section 6.2 Substitute Mailing.** If, because of the temporary or permanent suspension of postal service, the District or the Trustee shall be unable to mail any notice required to be given by the provisions of this Supplemental Trust Agreement, the District or the Trustee shall give notice in such other manner as in the judgment of the District or the Trustee shall most effectively approximate mailing (but, if by unsecured facsimile or electronic transmission, then in compliance with and subject to the provisions of Section 6.1 above) and the giving of notice in such manner shall for all purposes of this Supplemental Trust Agreement be deemed to be in compliance with the requirement for the mailing thereof.

**Section 6.3 Parties, Bond Registrar and Holders Alone Have Rights under Trust Agreement.** Except as herein otherwise expressly provided, nothing in this Supplemental Trust Agreement, express or implied, is intended or shall be construed to confer upon any person, firm or corporation, other than the Trustee, the Bond Registrar, the District and the Holders, any right, remedy or claim, legal or equitable, under or by reason of this Supplemental Trust Agreement or any provision being intended to be and being for the sole and exclusive benefit of the Trustee, the District, the Bond Registrar and the Holders.

**Section 6.4 Effect of Partial Invalidity.** In case any one or more of the provisions of this Supplemental Trust Agreement or the 2018A Bonds shall for any reason be held to be illegal or invalid, such illegality or invalidity shall not affect any other provisions of this Supplemental Trust Agreement or the 2018A Bonds, but this Supplemental Trust Agreement and the 2018A

Bonds shall be construed and enforced as if such illegal or invalid provisions had not been contained therein. In case any covenant, stipulation, obligation or agreement contained in the 2018A Bonds or this Supplemental Trust Agreement shall for any reason be held to be in violation of law, then such covenant, stipulation, obligation or agreement shall be deemed to be the covenant, stipulation, obligation or agreement of the Commission or the District to the full extent permitted by law.

**Section 6.5 Effect of Covenants.** All covenants, stipulations, obligations and agreements of the District contained in this Supplemental Trust Agreement shall be deemed to be covenants, stipulations, obligations and agreements of the District to the full extent permitted by the Constitution and laws of the State. This Supplemental Trust Agreement is adopted with the intent that the laws of the State shall govern its construction.

**Section 6.6 No Recourse Against Members, Officers or Employees of Commission or District.** No recourse under, or upon, any statement, obligation, covenant, or agreement contained in this Supplemental Trust Agreement, or in any 2018A Bond hereby secured, or in any document or certification whatsoever, or under any judgment obtained against the Commission or the District or by the enforcement of any assessment or by any legal or equitable proceeding by virtue of any constitution or statute or otherwise or under any circumstances, shall be had against any member, officer or employee, as such, of the Commission or the District, either directly or through the Commission or the District, respectively, or otherwise, for the payment for or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may be due and unpaid upon any such 2018A Bond. Any and all personal liability of every nature, whether at common law or in equity or by statute or by constitution or otherwise, of any such member, officer or employee, as such, to respond by reason of any act or omission on his or her part or otherwise, for the payment for, or to, the Commission or the District or any receiver of either of them, or for, or to, any Holder or otherwise, of any sum that may remain due and unpaid upon the 2018A Bonds hereby secured, is hereby expressly waived and released as an express condition of, and in consideration for, the execution of this Supplemental Trust Agreement and the issuance of the 2018A Bonds.

**Section 6.7 Dealing in 2018A Bonds.** The Trustee and the Bond Registrar and their directors, officers, employees or agents may in good faith, buy, sell, own, hold and deal in any 2018A Bonds issued under the provisions of this Supplemental Trust Agreement and may join in any action which any Holder may be entitled to take with like effects as if such Trustee were not a Trustee and such bank or trust company were not the Bond Registrar under this Supplemental Trust Agreement.

**Section 6.8 Legal Holidays.** In any case where the date of maturity of principal of and interest on the 2018A Bonds shall be on a day on which banking institutions at the place of payment are authorized by law to remain closed, then payment of such principal and interest need not be made on such date but may be made on the next succeeding day not a day on which banking institutions are authorized by law to remain closed with the same force and effect as if made on the date of maturity, and in the case of such payment, no interest shall accrue for the period from and after such date.

**Section 6.9 Multiple Counterparts.** This Supplemental Trust Agreement may be executed in multiple counterparts, each of which shall be regarded for all purposes as an original, and such counterparts shall constitute but one and the same instrument.

**Section 6.10 Headings.** Any heading preceding the text of the several articles hereof, and any table of contents or marginal notes appended to copies hereof, shall be solely for convenience of reference and shall not constitute a part of this Supplemental Trust Agreement, nor shall they affect its meaning, construction or effect.

**Section 6.11 Further Authority.** The officers of the Commission or the District, attorneys, engineers and other agents or employees of the Commission or the District are hereby authorized to do all acts and things required of them by this Supplemental Trust Agreement and the Agreement for the full, punctual and complete performance of all of the terms, covenants and agreements contained in the 2018A Bonds and this Supplemental Trust Agreement.



**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District has caused these presents to be signed in its name and on its behalf and attested by its duly authorized officers and to evidence its acceptance of the trusts hereby created, the Trustee has caused these presents to be signed in its name and on behalf by its duly authorized officer, all as of the 1<sup>st</sup> day of February, 2018.

HAMPTON ROADS SANITATION DISTRICT

(Seal)

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

Director of Finance

Hampton Roads Sanitation District Commission

Attest:

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

Secretary

Hampton Roads Sanitation District Commission

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A., as Trustee

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

Authorized Officer

(Seal)

FORM OF 2018A BONDS

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION (“DTC”), TO THE DISTRICT OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE, OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

No. R-\_\_ \$

HAMPTON ROADS SANITATION DISTRICT  
(VIRGINIA)  
SUBORDINATE WASTEWATER REVENUE BOND  
SERIES 2018A

<u>INTEREST RATE</u>	<u>MATURITY DATE</u>	<u>DATED DATE</u>	<u>CUSIP</u>
	October 1, 20__	December __, 2017	409327

Registered Owner: Cede & Co.  
Principal Amount: \_\_\_\_\_

Hampton Roads Sanitation District (the “District”), a political subdivision of the Commonwealth of Virginia, by the Hampton Roads Sanitation District Commission (the “Commission”), the Commission of the District, for value received, promises to pay, but solely from the sources and in the manner hereinafter provided, to the registered owner named above, or registered assigns, the principal amount set forth above on the Maturity Date set forth above, upon the presentation and surrender hereof, at the corporate trust office of The Bank of New York Mellon Trust Company N.A. (the “Bond Registrar”) located on the date hereof at The Bank of New York Mellon Trust Company, N.A., 500 Ross Street, 12<sup>th</sup> Floor, Pittsburgh, Pennsylvania 15262. The District also promises to pay, solely from such sources, interest on this Bond (calculated based upon a 360-day year consisting of twelve 30-day months) from the interest payment date next preceding the date on which it is authenticated, unless it is authenticated on an interest payment date, in which event it shall bear interest from such date, or unless it is authenticated prior to its dated date in which event it shall bear interest from its date, payable on April 1, 2018 and semi-annually thereafter on April 1 and October 1 of each year, at

the rate per annum set forth above until the principal sum hereof is paid. The interest so payable and punctually paid or duly provided for, on any interest payment date, will, as provided in the Trust Agreement hereinafter referred to, be paid to the person in whose name this Bond is registered at the close of business on the Regular Record Date for such interest, which shall be the fifteenth (15th) day (whether or not a business day) of the calendar month next preceding such interest payment date. Any such interest not so punctually paid or duly provided for shall forthwith cease to be payable to the registered owner on such Regular Record Date, and may be paid to the person in whose name this Bond is registered at the close of business on a Special Record Date for the payment of such defaulted interest to be fixed by the Trustee hereinafter mentioned, notice whereof being given to the registered owners not less than ten (10) days prior to such Special Record Date, or may be paid at any time in any other lawful manner not inconsistent with the requirements of any securities exchange on which the Bonds of this series may be listed and upon such notice as may be required by such exchange, or as more fully provided in said Trust Agreement. All such payments shall be made in such coin or currency of the United States of America as at the time of payment is legal tender for payment of public and private debts.

This Bond is one of a duly authorized series of revenue bonds of the District, designated "Hampton Roads Sanitation District (Virginia) Subordinate Wastewater Revenue Bonds, Series 2018A" (the "Bonds"), issued under a trust agreement, dated as of October 1, 2011 between the District and The Bank of New York Mellon Trust Company, N.A., Pittsburgh, Pennsylvania, as Trustee (said banking corporation and any bank or successor trustee under the Trust Agreement being hereinafter referred to as the "Trustee"), as amended and restated as of March 1, 2016, and as the same may be amended and supplemented from time to time (the "Trust Agreement"). The Bonds are being issued for the purpose of providing funds, together with other available funds, to (i) provide a portion of the funds required to finance the District's Capital Improvement Program Costs and (ii) to pay a portion of the expenses incurred in connection with the issuance of the 2018A Bonds by the District.

This Bond is issued and the Trust Agreement was made and entered into under and pursuant to the Constitution and laws of the Commonwealth of Virginia, and particularly in conformity with the provisions, restrictions and limitations of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended.

Indebtedness secured by the Trust Agreement is in all respects subordinate and inferior to the lien thereon of indebtedness ("Senior Obligations") secured by that certain trust agreement, dated as of March 1, 2008 (as the same may be amended and supplemented from time to time, the "Senior Trust Agreement"), between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the "Senior Trustee"), outstanding under the Senior Trust Agreement. The District may incur additional Senior Obligations, including notes, guaranties and other indebtedness secured by the Senior Trust Agreement on a pari passu basis (collectively, "Senior Obligations") for the purposes, under the terms and conditions and to the extent described therein.

The District has agreed to perform, observe and comply with certain covenants, conditions and agreements set forth in the Trust Agreement. The District may incur additional indebtedness, including notes, guaranties and other indebtedness secured by the Trust Agreement

on a pari passu basis (collectively, “Parity Obligations”) for the purposes, under the terms and conditions and to the extent described therein.

This Bond is a special obligation of the District and is payable solely from Net Revenues Available for Debt Service (as defined in this Trust Agreement) derived by the District from its Wastewater System (as defined in the Trust Agreement) and the money attributable to proceeds of the Bonds and the income from the investment thereof and not from any other fund or source. This Bond shall not be deemed to constitute a debt, or a pledge of the faith and credit, of the Commonwealth of Virginia or of any county, city, town or political subdivision thereof. The issuance of this Bond shall not directly or indirectly or contingently obligate the Commonwealth of Virginia or any county, city, town or political subdivision thereof to levy or to pledge any form of taxation whatever therefor.

The Bonds are issuable as fully registered Bonds in denominations of \$5,000 or any whole multiple thereof. Bonds may be exchanged at the corporate trust office of the Bond Registrar for the delivery of Bonds, in the manner and subject to the limitations and conditions provided in the Trust Agreement, for an equal aggregate principal amount of Bonds of the same series and maturity, of other authorized denominations and bearing interest at the same rate.

The transfer of this Bond is registrable by the registered owner hereof in person or by his attorney or legal representative at the corporate trust office of the Bond Registrar for the delivery of Bonds, but only in the manner and subject to the limitations and conditions provided in the Trust Agreement and upon surrender and cancellation of this Bond. Upon any such registration of transfer, the District shall execute and the Bond Registrar shall authenticate and deliver in exchange for this Bond a new Bond or Bonds, registered in the name of the transferee, of authorized denominations, in an aggregate principal amount equal to the principal amount of this Bond, of the same series and maturity and bearing interest at the same rate.

The District may, at its option, redeem prior to their respective maturities, in whole or in part, the Bonds of the series of which this Bond is one stated to mature on and after October 1, 20\_\_, on any date beginning October 1, 20\_\_, at a redemption price of par, together with interest accrued to the date fixed for redemption.

The Bonds due on October 1, 20\_\_, are subject to mandatory sinking fund redemption on October 1 in the following years in the following principal amounts (“Sinking Fund Requirements”) at a redemption price equal to the principal amount thereof, together with interest accrued to the date of redemption:

<u>Year</u>	<u>Sinking Fund Requirement</u>
-------------	---------------------------------

\$

†

---

† Unamortized balance at maturity.

In the event of a partial optional redemption or purchase of such term Bonds, the District will credit the principal amount of such term bonds so purchased or redeemed against the Sinking Fund Requirements for the remaining term bonds outstanding in such amounts and in such years as it in its sole discretion shall determine.

The Holder of this Bond shall have no right to enforce the provisions of the Trust Agreement or to institute action to enforce the covenants therein, or to take any action with respect to any event of default under the Trust Agreement, or to institute, appear in or defend any suit or other proceeding with respect thereto, except as provided in the Trust Agreement and except that any registered owner may institute action to enforce the payment of the principal of or the interest on such owner's Bond.

Upon the occurrence of certain events, and on the conditions, in the manner and with the effect set forth in the Trust Agreement, the principal of all Bonds then Outstanding under the Trust Agreement may become or may be declared due and payable before the stated maturities thereof, together with the interest accrued thereon.

Modifications or alterations of the Trust Agreement or any trust agreement supplemental thereto or this Trust Agreement or any indenture supplemental thereto, may be made only to the extent and in the circumstances permitted by the Trust Agreement.

This Bond is issued with the intent that the laws of the Commonwealth of Virginia shall govern its construction.

All acts, conditions and things required to happen, exist and be performed precedent to and in the issuance of this Bond and the execution of the Trust Agreement have happened, exist and have been performed as so required.

Neither the members, officers or employees of the Commission or the District, nor any person executing this Bond, is liable personally hereon or subject to any personal liability or accountability by reason of issuance hereof.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any benefit or security under the Trust Agreement until it shall have been authenticated by the execution by the Bond Registrar of the certificate of authentication endorsed hereon.

**IN WITNESS WHEREOF**, the Hampton Roads Sanitation District has caused this Bond to be executed in its name and on its behalf with the signatures of the Chair and the Secretary of the Hampton Roads Sanitation District Commission and the official seal of said Commission to be impressed hereon and this Bond to be dated the \_\_ day of February, 2018.

HAMPTON ROADS SANITATION DISTRICT

By

Chair  
Hampton Roads Sanitation District Commission

By

Secretary  
Hampton Roads Sanitation District Commission

[FORM OF ASSIGNMENT]

FOR VALUE RECEIVED the undersigned hereby sells, assigns and transfers unto

---

---

---

[Please Print or Typewrite Name and Address of Transferee]

the within Bond and all rights thereunder, and hereby irrevocably constitutes and appoints \_\_\_\_\_ attorney to register the transfer of the within Bond on the books kept for registration thereof, with full power of substitution in the premises.

Date: \_\_\_\_\_

Signature Guaranteed:

\_\_\_\_\_  
NOTICE: Signature(s) must be guaranteed by an institution which is a participant in the Securities Transfer Agent Medallion Program (STAMP) or similar program.

\_\_\_\_\_  
NOTICE: The signature to this assignment must correspond with the name as it appears upon the face of the within Bond in every particular, without alteration or enlargement or any change whatever.

CERTIFICATE OF AUTHENTICATION

Date of authentication: \_\_\_\_\_, 20\_\_

This Bond is a Bond issued under the provisions of the within-mentioned Trust Agreement.

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A.,  
as Bond Registrar

By \_\_\_\_\_  
Authorized Signatory



**NEW ISSUE BOOK-ENTRY ONLY**

**RATINGS: Standard & Poor's: "AA"  
Fitch: "AA"**

See "RATINGS" herein.

*In the opinion of Bond Counsel, assuming compliance with the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), as described herein, and subject to the conditions described in "TAX MATTERS" herein, interest on the Series 2017A Bonds will not be includable in the gross income of the owners thereof for federal income tax purposes under existing law. Interest on the Series 2017A Bonds will not be an item of tax preference for purposes of the federal individual or corporate alternative minimum tax but will be included in the calculation of a corporation's federal alternative minimum tax liability. The District's Enabling Act provides that the Series 2017A Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, shall be exempt from taxation by the Commonwealth of Virginia and by any political subdivision thereof. See "TAX MATTERS" herein for certain provisions regarding the Code that may affect the tax treatment of interest on the Series 2017A Bonds for certain bondholders.*



**\$62,560,000\***

**Hampton Roads Sanitation District, Virginia  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A**

**Dated: Date of Issue**

**Due: As shown on the inside cover**

The Series 2017A Bonds are being issued under an Amended and Restated Trust Agreement, dated as of March 1, 2016, as amended and supplemented (the "Trust Agreement"), between the Hampton Roads Sanitation District (the "District") and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the "Trustee"). The proceeds of the Series 2017A Bonds will be used, together with other available funds of the District, (i) to refund, subject to market conditions, a portion of the District's outstanding Senior Bonds (as defined herein) and outstanding Bonds (as defined herein) issued under the Trust Agreement, and (ii) to pay certain costs of issuing the Series 2017A Bonds.

The Series 2017A Bonds are issuable as registered bonds without coupons and will be initially registered only in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"), serving as securities depository for the Series 2017A Bonds. The Series 2017A Bonds will be available to purchasers in denominations of \$5,000 and any whole multiple thereof only under the book-entry system maintained by DTC through brokers and dealers that are, or that act through, DTC Participants.

Principal and interest will be paid by the Trustee, as bond registrar, to DTC or its nominee, which will remit the payments to the DTC Participants for subsequent disbursement. See "THE SERIES 2017A BONDS—Book-Entry Only System" herein. Interest on the Series 2017A Bonds is payable on each April 1 and October 1, commencing April 1, 2018.

The Series 2017A Bonds are subject to optional redemption prior to maturity as described herein.

THE SERIES 2017A BONDS ARE SPECIAL OBLIGATIONS OF THE DISTRICT PAYABLE SOLELY FROM THE NET REVENUES AVAILABLE FOR DEBT SERVICE AND OTHER FUNDS PLEDGED TO SECURE THE SERIES 2017A BONDS UNDER THE TRUST AGREEMENT. THE SERIES 2017A BONDS SHALL NOT BE DEEMED TO CONSTITUTE A DEBT, OR A PLEDGE OF THE FAITH AND CREDIT, OF THE COMMONWEALTH OF VIRGINIA OR OF ANY COUNTY, CITY, TOWN OR POLITICAL SUBDIVISION THEREOF. THE ISSUANCE OF THE SERIES 2017A BONDS SHALL NOT DIRECTLY OR INDIRECTLY OR CONTINGENTLY OBLIGATE THE COMMONWEALTH OF VIRGINIA OR ANY COUNTY, CITY, TOWN OR POLITICAL SUBDIVISION THEREOF TO LEVY OR TO PLEDGE ANY FORM OF TAXATION WHATEVER THEREFOR.

This cover page contains certain information for quick reference only. It is not a summary of this issue. Investors must read the entire Official Statement to obtain information essential to making an informed investment decision.

*The Series 2017A Bonds are offered when, as and if issued, subject to the approving opinion of Norton Rose Fulbright US LLP, Washington, D.C., Bond Counsel, and to certain other conditions. Certain legal matters will be passed upon for the District by Kellam, Pickrell, Cox & Anderson, a Professional Corporation, Norfolk, Virginia, and for the Underwriters by Kaufman & Canoles, P.C., Norfolk, Virginia. The Series 2017A Bonds are expected to be available for delivery to The Depository Trust Company in New York, New York, on or about December 19, 2017.*

**BofA Merrill Lynch**

**Citigroup**

**Morgan Stanley**

December \_\_, 2017

\*Preliminary, subject to change.

**\$62,560,000\***  
**Hampton Roads Sanitation District, Virginia**  
**Subordinate Wastewater Revenue Bonds, Refunding Series 2017A**

**MATURITIES, AMOUNTS, INTEREST RATES AND PRICES OR YIELDS**  
**Base CUSIP Number: 409327**

<u>Due October 1</u>	<u>Principal Amount*</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>CUSIP Suffix<sup>†</sup></u>
2028	\$3,405,000	%	%	
2029	8,055,000			
2030	8,470,000			
2031	4,390,000			
2032	4,610,000			
2033	4,855,000			
2034	5,100,000			
2035	5,365,000			
2036	5,640,000			
2037	6,210,000			
2038	6,460,000			

---

\*Preliminary, subject to change.

<sup>†</sup>CUSIP® is a registered trademark of the American Bankers Association. The CUSIP number listed above is being provided solely for the convenience of bondholders only, and the District does not make any representation with respect to such number or undertake any responsibility for its accuracy. The CUSIP number is subject to being changed after the issuance of the Series 2017A Bonds as a result of various subsequent actions including, but not limited to, a change in mode or defeasance as a whole or in part of the Series 2017A Bonds.

# HAMPTON ROADS SANITATION DISTRICT

## COMMISSIONERS

FREDERICK N. ELOFSON, CPA, *Chair*

MAURICE P. LYNCH, Ph.D., *Vice-Chair*

MICHAEL E. GLENN  
WILLIE LEVENSTON, JR.  
ELIZABETH A. TARASKI, Ph.D.

VISHNU K. LAKDAWALA, Ph.D.  
STEPHEN C. RODRIGUEZ  
ANN W. TEMPLEMAN

## STAFF

EDWARD G. HENIFIN, P.E.  
*General Manager*

JAY A. BERNAS, P.E.  
*Director of Finance and Treasurer*

CHARLES B. BOTT, Ph.D., P.E.  
*Director of Water Technology and  
Research*

DONALD C. CORRADO  
*Director of Information  
Technology*

STEVEN G. de MIK, CPA  
*Director of Operations*

PAULA A. HOGG  
*Director of Talent Management*

PHILLIP L. HUBBARD, P.E.  
*Special Assistant for Compliance  
Assurance*

BRUCE W. HUSSELBEE, P.E.  
*Director of Engineering*

JAMES J. PLETL, Ph.D.  
*Director of Water Quality*

LEILA E. RICE, APR  
*Director of Communications*

JENNIFER L. CASCIO  
*Secretary*

## COUNSEL, ADVISOR, TRUSTEE

KELLAM, PICKRELL, COX & ANDERSON, A PROFESSIONAL CORPORATION  
*General Counsel*

JONES, BLECHMAN, WOLTZ & KELLY, P.C.  
*Associate Counsel*

PFM FINANCIAL ADVISORS LLC  
*Financial Advisor*

NORTON ROSE FULBRIGHT US LLP  
*Bond Counsel*

AQUALAW, PLC  
*Special Counsel*

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.  
*Trustee and Bond Registrar*

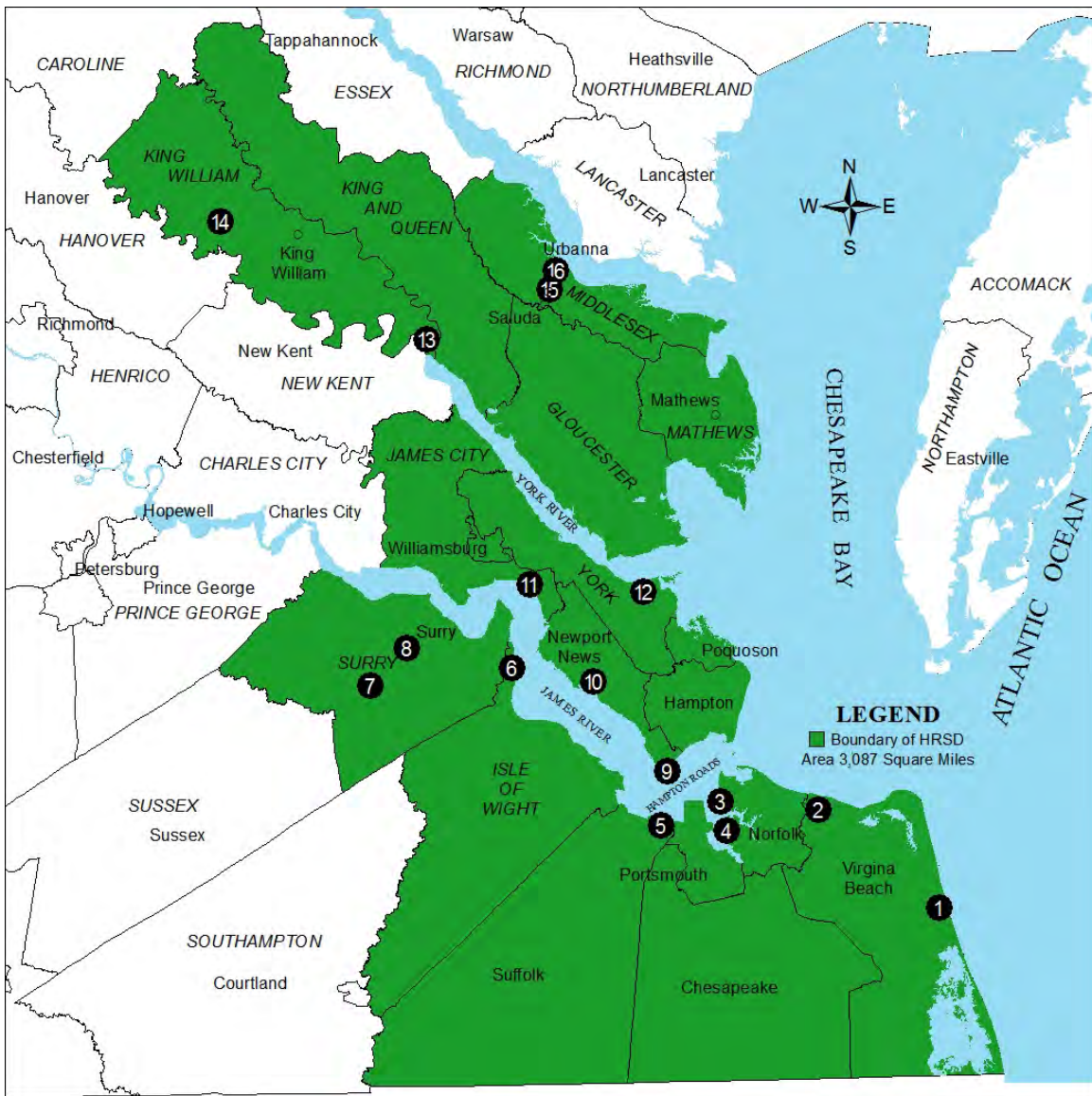
[This Page Is Intentionally Left Blank.]

## HRSD Service Area

Facilities include the following:

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Atlantic, Virginia Beach</li> <li>2. Chesapeake-Elizabeth, Va. Beach</li> <li>3. Army Base, Norfolk</li> <li>4. Virginia Initiative, Norfolk</li> <li>5. Nansemond, Suffolk</li> <li>6. Lawnes Point, Smithfield</li> <li>7. County of Surry</li> <li>8. Town of Surry</li> </ol> | <ol style="list-style-type: none"> <li>9. Boat Harbor, Newport News</li> <li>10. James River, Newport News</li> <li>11. Williamsburg, James City County</li> <li>12. York River, York County</li> <li>13. West Point, King William County</li> <li>14. King William, King William County</li> <li>15. Central Middlesex, Middlesex County</li> <li>16. Urbanna, Middlesex County</li> </ol> |
|---|---|

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



CERTAIN STATEMENTS INCLUDED IN THIS OFFICIAL STATEMENT CONSTITUTE “FORWARD-LOOKING STATEMENTS” WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED, AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED. SUCH STATEMENTS ARE GENERALLY IDENTIFIABLE BY TERMS SUCH AS “PLAN,” “PROJECT,” “EXPECT,” “ANTICIPATE,” “INTEND,” “BELIEVE,” “ESTIMATE,” “BUDGET” OR OTHER SIMILAR WORDS. THE ACHIEVEMENT OF CERTAIN RESULTS OR OTHER EXPECTATIONS CONTAINED IN SUCH FORWARD-LOOKING STATEMENTS INVOLVES KNOWN AND UNKNOWN RISKS, UNCERTAINTIES AND OTHER FACTORS THAT MAY CAUSE ACTUAL RESULTS, PERFORMANCE OR ACHIEVEMENTS DESCRIBED TO BE MATERIALLY DIFFERENT FROM ANY RESULTS, PERFORMANCES OR ACHIEVEMENTS EXPRESS OR IMPLIED BY SUCH FORWARD-LOOKING STATEMENTS. EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THE DISTRICT DOES NOT PLAN TO ISSUE ANY UPDATES OR REVISIONS TO THOSE FORWARD-LOOKING STATEMENTS DUE TO CHANGES IN ITS EXPECTATIONS OR SUBSEQUENT EVENTS, CONDITIONS OR CIRCUMSTANCES ON WHICH SUCH STATEMENTS ARE BASED.

This Official Statement speaks as of its date except where specifically noted otherwise and is subject to change without notice. Neither the delivery of this Official Statement, any sale made hereunder, nor any filing of this Official Statement shall under any circumstances create an implication that there has been no change in the affairs of the District since the date of this Official Statement or imply that any information herein is accurate or complete as of any later date.

The Series 2017A Bonds are exempt from registration under the Securities Act of 1933, as amended. As obligations of a political subdivision of the Commonwealth of Virginia, the Series 2017A Bonds are also exempt from registration under the securities laws of Virginia.

No dealer, salesman or any other person has been authorized to give any information or to make any representation, other than the information and representations contained herein, in connection with the offering of the Series 2017A Bonds, and, if given or made, such information or representations must not be relied upon. This Official Statement does not constitute an offer to sell or solicitation of an offer to buy any of the Series 2017A Bonds in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

*The Underwriters have provided the following sentence for inclusion in this Official Statement.* The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibility to investors under the federal securities laws as applied to the facts and circumstances of the transactions contemplated by this Official Statement, but the Underwriters do not guarantee the accuracy or completeness of such information.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS THAT STABILIZE OR MAINTAIN THE MARKET PRICE OF THE SERIES 2017A BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

**TABLE OF CONTENTS**

	Page
INTRODUCTION .....	1
PLAN OF REFUNDING .....	2
Plan of Refunding .....	2
Future Financings .....	3
SOURCES AND USES OF FUNDS .....	3
THE SERIES 2017A BONDS .....	4
Description.....	4
Book-Entry Only System.....	4
Optional Redemption.....	4
Notice of Redemption.....	4
SECURITY AND SOURCES OF PAYMENT .....	5
General.....	5
Rate Covenant.....	6
Outstanding Senior Obligations.....	6
Additional Senior Obligations .....	7
Parity Obligations .....	7
Additional Parity Obligations .....	8
Amendments relating to VRA Obligations.....	8
DEBT SERVICE REQUIREMENTS FOR PARITY OBLIGATIONS.....	10
DEBT SERVICE REQUIREMENTS FOR SENIOR OBLIGATIONS AND PARITY OBLIGATIONS.....	11
HAMPTON ROADS SANITATION DISTRICT .....	12
Authorization and Purpose.....	12
History .....	12
The Commission .....	12
Management and Staff.....	15
Awards.....	21
THE SERVICE AREA .....	23
Population Growth.....	23
Wastewater Flow .....	24
Expansion of Service Area.....	25
THE SYSTEM .....	25
System Improvements and Innovations .....	26
Capital Improvement Program.....	29
Regulation and Permits .....	30
State Consent Agreement and EPA Consent Decree .....	31
FINANCIAL MANAGEMENT .....	32
General.....	32
Budgeting and Accounting .....	35
Rates.....	36
Rate Making Process.....	36

Collection of Unpaid Wastewater Treatment Charges.....	37
LITIGATION.....	38
APPROVAL OF LEGAL PROCEEDINGS.....	38
TAX MATTERS.....	38
General.....	38
Original Issue Discount.....	39
Original Issue Premium .....	39
Backup Withholding .....	40
Collateral Tax Consequences.....	40
Virginia Taxes.....	40
Future Developments.....	40
UNDERWRITING .....	41
FINANCIAL ADVISOR .....	41
VERIFICATION OF MATHEMATICAL COMPUTATIONS FOR THE REFUNDED BONDS.....	41
RATINGS .....	42
CONTINUING DISCLOSURE.....	42
MISCELLANEOUS .....	43
Appendix A - Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2017, including as a part thereof, the Basic Financial Statements and Related Auditor’s Report for the Fiscal Year ended June 30, 2017, as rendered by KPMG LLP	
Appendix B - Certain Definitions	
Appendix C - Summary of Certain Provisions of the Trust Agreement	
Appendix D - Proposed Opinion of Bond Counsel	
Appendix E - Form of Continuing Disclosure Agreement	
Appendix F - The Depository Trust Company	



**Official Statement**

**Hampton Roads Sanitation District, Virginia**

**Relating to its**

**\$62,560,000\***

**Subordinate Wastewater Revenue Bonds, Refunding Series 2017A**

**INTRODUCTION**

This Official Statement, which includes the cover and inside cover pages hereof, the map and the appendices hereto, sets forth information concerning the Hampton Roads Sanitation District (the “District” or “HRSD”) and the District’s \$62,560,000\* aggregate principal amount of Subordinate Wastewater Revenue Bonds, Refunding Series 2017A (the “Series 2017A Bonds”).

The Series 2017A Bonds are being issued in accordance with the provisions of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Enabling Act”). On November 28, 2017, the Hampton Roads Sanitation District Commission (the “Commission”), the governing body of the District, authorized by resolution the issuance of the Series 2017A Bonds. The Commission is issuing the Series 2017A Bonds for the purpose of providing funds, together with other available funds, (i) to refund, in advance of their maturity, certain outstanding Senior Bonds and certain outstanding Bonds (the “Refunding Candidates”) and (ii) to pay certain expenses incurred in connection with the issuance of the Series 2017A Bonds by the District. The sale and delivery of a portion of the Series 2017A Bonds is contingent upon the ability of the District to achieve significant aggregate present value debt service savings on the Refunding Candidates. As a result, the sale and delivery of the Series 2017A Bonds is subject to market conditions.

The Series 2017A Bonds are special obligations of the District payable solely from the Net Revenues Available for Debt Service (hereinafter defined) derived by the District from the operation of its Wastewater System (hereinafter defined) and other funds pledged to secure the Series 2017A Bonds under the Trust Agreement (hereinafter defined). See “SECURITY AND SOURCES OF PAYMENT” and “THE SYSTEM” herein. The Commission has determined to provide for the issuance of the Series 2017A Bonds under the Amended and Restated Trust Agreement, dated as of March 1, 2016 (the “Amended and Restated Trust Agreement”), as supplemented by the Fifth Supplemental Trust Agreement, dated as of December 1, 2017 (the “Fifth Supplemental Trust Agreement” and the Amended and Restated Trust Agreement, as so supplemented and as the same may be amended and further supplemented, the “Trust Agreement”), each by and between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the “Trustee”).

This Official Statement contains a brief description of the Series 2017A Bonds and the District, including its service area, governance and information regarding its operations and finances.

Appendix A contains the District’s Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2017, and includes additional information regarding the District’s operations and financial condition. Appendix B contains the definitions of certain terms used in this Official Statement. Capitalized terms used but not defined herein shall have the meanings given to such terms in the Trust Agreement. Brief descriptions and summaries of certain provisions of the Series 2017A Bonds, the Trust Agreement and the Fifth Supplemental Trust Agreement are included in Appendix C.

---

\*Preliminary, subject to change.

**PLAN OF REFUNDING**

**Plan of Refunding**

Although the District anticipates that the refunding of the Refunding Candidates will produce debt service savings and other financial benefits for the District, the issuance of the Series 2017A Bonds and the refunding of all or any of the Refunding Candidates (the Refunding Candidates actually refunded with the proceeds of the Series 2017A Bonds, the “Refunded Bonds”) is subject to the District’s determination at the time of sale that it will achieve significant debt service savings. Consequently, the issuance of the Series 2017A Bonds and the refunding of the Refunding Candidates are dependent upon market conditions and other events beyond the control of the District.

The Refunding Candidates are the outstanding Senior Bonds issued under the Senior Trust Agreement and the outstanding Bonds issued under the Trust Agreement identified below:

**Wastewater Revenue Bonds, Series 2012A\***

<u>Maturity (January 1)</u>	<u>Principal Amount</u>	<u>Redemption Date</u>	<u>Redemption Price</u>	<u>CUSIPs</u>
2029	\$4,365,000	January 1, 2021	100%	409327FM0
2030	4,540,000	January 1, 2021	100	409327FN8
2031	4,725,000	January 1, 2021	100	409327FP3
2032	4,910,000	January 1, 2021	100	409327FQ1
2033	5,110,000	January 1, 2021	100	409327FR9
2034	5,315,000	January 1, 2021	100	409327FS7
2039	24,680,000	January 1, 2021	100	409327HY2

**Subordinate Wastewater Revenue Bonds, Series 2016A\***

<u>Maturity (August 1)</u>	<u>Principal Amount</u>	<u>Redemption Date</u>	<u>Redemption Price</u>	<u>CUSIPs</u>
2027	\$3,885,000	August 1, 2026	100%	409327HE6
2028	4,085,000	August 1, 2026	100	409327HF3
2029	4,295,000	August 1, 2026	100	409327HG1

The details of the Refunding Candidates that are selected to become Refunded Bonds will be set forth in the final Official Statement.

To effect the refunding, a sufficient amount of the proceeds of the Series 2017A Bonds will be deposited in an escrow account (the “Escrow Fund”) established by the District with The Bank of New York Mellon Trust Company, N.A. (in such capacity, the “Escrow Agent”), and will be invested in certain non-callable direct obligations or obligations the principal and interest on which are unconditionally guaranteed by the United States of America (“Defeasance Obligations”) that mature in amounts and pay interest at rates sufficient to pay, when due, the principal, applicable redemption premiums, if any, and interest on the Refunded Bonds through their respective maturity or redemption dates, as applicable. The sufficiency of the Escrow Fund, including Defeasance Obligations and the income thereon, to pay such amounts will be verified by Bingham Arbitrage Rebate Services Inc. See

---

\*Preliminary, subject to change.

“VERIFICATION OF MATHEMATICAL COMPUTATIONS FOR THE REFUNDED BONDS.” The Escrow Agent will be given irrevocable instructions to call the callable Refunded Bonds for redemption on the applicable redemption dates and at the applicable redemption prices.

**Future Financings**

The District anticipates that it will finance a portion of its Capital Improvement Program (“Capital Improvement Program” or “CIP”) through the issuance of Additional Bonds (as hereinafter defined), VRA Subordinate Obligations (as hereinafter defined), and other Indebtedness subordinate to Indebtedness secured by the Trust Agreement (“Junior Obligations”). See “SECURITY AND SOURCES OF PAYMENT—Outstanding Senior Obligations,” “—Additional Senior Obligations,” “—Parity Obligations,” and “—Additional Parity Obligations.” Any acceleration of the Capital Improvement Program could result in an acceleration of the date and, potentially, an increase the size of any issuance of Indebtedness by the District.

The District has entered into a Credit Agreement, dated as of October 30, 2015, with Bank of America, N.A. (the “Credit Agreement”), pursuant to which the bank provided a line of credit in the aggregate principal amount of up to \$90,000,000 (the “Line of Credit”). In August 2016, the District reduced the maximum outstanding authorization on the Line of Credit to \$1,000,000. The District does not intend to use the Line of Credit prior to February 1, 2018, to provide interim financing for projects included in the CIP. The Line of Credit constitutes a Junior Obligation under the Trust Agreement and is secured on a subordinate basis from the lien on Net Revenues Available for Debt Service securing Parity Obligations.

The District has no current plans to issue additional Senior Obligations under the Senior Trust Agreement and plans to use the Trust Agreement as the principal operating lien for the issuance of indebtedness to finance the District’s Capital Improvement Program. See “SECURITY AND SOURCES OF PAYMENT—Additional Senior Obligations” below.

**SOURCES AND USES OF FUNDS**

**Sources**

Principal Amount of Series 2017A Bonds.....	\$
Net Bond [Premium/Discount].....	
District Contribution.....	
Total Sources of Funds.....	<u>\$</u>

**Uses**

Deposit to Escrow Fund .....	\$
Costs of Issuance .....	
Underwriters’ Discount .....	
Total Uses of Funds.....	<u>\$</u>

## THE SERIES 2017A BONDS

### Description

The Series 2017A Bonds will be dated, bear interest and mature as set forth on the cover and inside cover pages of this Official Statement. The Series 2017A Bonds are issuable as registered bonds without coupons in the denomination of \$5,000 or any whole multiple thereof as provided in the Trust Agreement. Interest will be payable on each April 1 and October 1, commencing April 1, 2018. The principal of and the interest on the Series 2017A Bonds will be payable as described below under “—Book-Entry Only System.”

### Book-Entry Only System

The Depository Trust Company (“DTC”), New York, New York, will act as securities depository for the Series 2017A Bonds. The Series 2017A Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered bond certificate will be issued for each maturity of the Series 2017A Bonds and will be deposited with DTC. Additional information respecting DTC and its book entry system is contained in Appendix F.

*The information in this section and in Appendix F concerning DTC and DTC’s book-entry system has been obtained from sources that the District believes to be reliable, but the District takes no responsibility for the accuracy thereof.*

DTC may discontinue providing its services as depository with respect to the Series 2017A Bonds at any time by giving reasonable notice to the District. Under such circumstances, if a successor depository is not obtained, certificates for the Series 2017A Bonds are required to be printed and delivered.

The District may decide to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, certificates for the Series 2017A Bonds will be printed and delivered.

### Optional Redemption

The District may, at its option, redeem the Series 2017A Bonds due on and after October 1, 2027\*, prior to their respective maturities, as a whole or in part, on any date, beginning October 1, 2027\*, at a redemption price equal to the principal amount thereof, together with interest accrued to the date fixed for redemption.

### Notice of Redemption

Notice of redemption is to be given not more than 60 nor less than 30 days before the redemption date by first class mail to the registered owner or owners of the Series 2017A Bonds or portions thereof to be redeemed; provided, however, that any defect in such notice or the failure so to mail any such notice to any owners of any Series 2017A Bonds will not affect the validity of the proceedings for the redemption of any other Series 2017A Bonds. **During the period that DTC or its nominee is the registered holder of the Series 2017A Bonds, the Bond Registrar will not be responsible for mailing notices of redemption to the beneficial owners of the Series 2017A Bonds. See “—Book-Entry Only System”**

---

\*Preliminary, subject to change.

**above and Appendix F.** Each such notice will set forth the Series 2017A Bonds or portions thereof to be redeemed, the date fixed for redemption, the redemption price to be paid, and if less than all the Series 2017A Bonds will be called for redemption, the maturities of the Series 2017A Bonds to be redeemed and shall otherwise comply with Securities Exchange Act of 1934 Release No. 34-23856, dated December 3, 1986, including the requirement that notice be given to all organizations registered with the Securities and Exchange Commission as securities depositories, and to one or more information services of national recognition that disseminate redemption information with respect to tax-exempt securities. If any Series 2017A Bond is to be redeemed in part only, the notice of redemption will state also that on or after the redemption date, upon surrender of such Series 2017A Bond, a new Series 2017A Bond in an authorized denomination and in principal amount equal to the unredeemed portion of such Series 2017A Bond will be issued.

Any notice of optional redemption of the Series 2017A Bonds may state that it is conditioned upon there being available an amount of money sufficient to pay the redemption price, consisting of par plus interest accrued and unpaid to the redemption date, and any conditional notice so given may be rescinded at any time before the payment of the redemption price if any such condition so specified is not satisfied. If a redemption does not occur after a conditional notice is given due to an insufficient amount of funds on deposit with the Trustee, the corresponding notice of redemption will be deemed to be revoked.

If the District gives an unconditional notice of redemption, then on the redemption date the Series 2017A Bonds called for redemption will become due and payable. If the District gives a conditional notice of redemption and money to pay the redemption price of the affected Series 2017A Bonds has been set aside in escrow with the Trustee for the purpose of paying such Series 2017A Bonds, then on the redemption date such Series 2017A Bonds will become due and payable. In either case, if on the redemption date the Trustee holds money to pay the Series 2017A Bonds called for redemption, thereafter no interest will accrue on those Series 2017A Bonds, and a Bondholder's right will be to receive payment of the redemption price upon surrender of those Series 2017A Bonds.

## **SECURITY AND SOURCES OF PAYMENT**

THE SERIES 2017A BONDS ARE SPECIAL OBLIGATIONS OF THE DISTRICT PAYABLE SOLELY FROM THE NET REVENUES AVAILABLE FOR DEBT SERVICE AND OTHER FUNDS PLEDGED TO SECURE THE SERIES 2017A BONDS UNDER THE TRUST AGREEMENT. THE SERIES 2017A BONDS SHALL NOT BE DEEMED TO CONSTITUTE A DEBT, OR A PLEDGE OF THE FAITH AND CREDIT, OF THE COMMONWEALTH OF VIRGINIA OR OF ANY COUNTY, CITY, TOWN OR POLITICAL SUBDIVISION THEREOF. THE ISSUANCE OF THE SERIES 2017A BONDS SHALL NOT DIRECTLY OR INDIRECTLY OR CONTINGENTLY OBLIGATE THE COMMONWEALTH OF VIRGINIA OR ANY COUNTY, CITY, TOWN OR POLITICAL SUBDIVISION THEREOF TO LEVY OR TO PLEDGE ANY FORM OF TAXATION WHATEVER THEREFOR.

### **General**

Principal of and interest on the Series 2017A Bonds will be payable from "Net Revenues Available for Debt Service" of the District pledged to the payment thereof and money held in certain funds and accounts under the Trust Agreement.

"Net Revenues Available for Debt Service" means all Net Revenues less debt service on Senior Obligations.

The realization of amounts to be derived upon the enforcement of the Series 2017A Bonds will depend upon the exercise of various remedies specified in the Trust Agreement. These and other remedies may, in many respects, require judicial action of a nature that is often subject to discretion and delay. Under existing laws, the remedies specified in the Trust Agreement may not be readily available or may be limited. A court may decide not to order the specific performance of the covenants contained in the Trust Agreement. The various legal opinions to be delivered concurrently with the delivery of the Series 2017A Bonds will be qualified as to the enforceability of the various legal instruments by limitations imposed by state and federal laws, rulings and decisions affecting remedies and by bankruptcy, fraudulent conveyance, reorganization and other laws affecting the enforcement of creditors' rights generally.

Under the Trust Agreement, the District is subject to covenants relating to maintenance of a specified Long-Term Debt Service Coverage Ratio and restricting, among other things, incurrence of Indebtedness and the existence of liens on Property. See “—Limitations on Indebtedness” and “—Limitation on Creation of Liens” in Appendix C hereto.

### **Rate Covenant**

In the Trust Agreement, the District covenants to set and revise its rates and charges for facilities, services and products such that the Net Revenues, calculated at the end of each Fiscal Year, will equal at least 120% of the sum of (a) the Principal and Interest Requirements (as defined in the Senior Trust Agreement) on Senior Obligations and (b) the Principal and Interest Requirements on Parity Obligations (the “Rate Covenant”). If, for any reason, the Net Revenues are insufficient to satisfy the foregoing covenant, the District shall within one hundred and twenty (120) days adjust and increase its rates, fees and other charges (to the extent permitted by the Enabling Act) or reduce its current expenses so as to provide sufficient Net Revenues to satisfy the Rate Covenant.

On or before the last day of each Fiscal Year, the District will review the adequacy of its rates, fees and other charges for the next Fiscal Year, and, if such review indicates the District's rates, fees and other charges are insufficient to satisfy the Rate Covenant, the District will promptly take appropriate action to increase its rates, fees and other charges or reduce its current expenses to cure any deficiency. See “—Rate Covenant” in Appendix C hereto.

### **Outstanding Senior Obligations**

As of October 31, 2017, the District has outstanding five series of Bonds constituting Senior Obligations under the Senior Trust Agreement, including its Wastewater Revenue Bonds, Series 2008 (the “Senior 2008 Bonds”), of which \$5,465,000 principal amount is outstanding, its Wastewater Revenue Bonds, Series 2009 (the “Senior 2009 Bonds”), of which \$127,630,000 principal amount is outstanding, its Wastewater Revenue Bonds, Series 2011 (the “Senior 2011 Bonds”), of which \$4,400,000 principal amount is outstanding, its Wastewater Revenue Bonds, Series 2012 (the “Senior 2012 Bonds”) of which \$89,675,000 principal amount is outstanding and its Wastewater Revenue Bonds, Refunding Series 2014A (the “Senior 2014 Bonds”) of which \$111,345,000 principal amount is outstanding. See “PLAN OF REFUNDING” above.

Since May 2009, the District obtained seven loans from the Virginia Resources Authority Revolving Fund and issued, in evidence of its obligations to repay such loans, its bonds constituting Senior Obligations under the Senior Trust Agreement (the “VRA Senior Bonds” and, together with the Senior Bonds, “Senior Obligations”). Such VRA Senior Bonds are secured under the Senior Trust Agreement on a parity with all other Senior Obligations, including the Senior 2008 Bonds, the Senior 2009 Bonds, the Senior 2011 Bonds, the Senior 2012 Bonds and the Senior 2014 Bonds. As of October

31, 2017, \$88,047,893 of such VRA Senior Bonds were outstanding, with no remaining undrawn authorized amount. See also “—Parity Obligations” below.

### **Additional Senior Obligations**

Under the Senior Trust Agreement, the District may issue and incur additional Senior Obligations for the District’s Capital Improvement Program or to refund outstanding Senior Obligations subject to the District’s demonstrating its compliance with the conditions for the incurrence thereof under the Senior Trust Agreement or the new Senior Obligations qualifying for an exception thereto.

At this time, the District does not currently intend to issue additional Senior Obligations under the Senior Trust Agreement and instead plans to use the Trust Agreement as the principal operating lien for the issuance of indebtedness to finance the District’s Capital Improvement Program. In addition, as market conditions permit, the District intends to refund outstanding Senior Obligations with the proceeds of Bonds issued under the Trust Agreement and, subject to certain conditions, certain VRA Senior Bonds will become VRA Subordinate Obligations. Notwithstanding the District’s intention to use the Trust Agreement as its principal operating lien, the District has not formally closed the lien of the Senior Trust Agreement and may issue additional Senior Obligations for the purposes described above.

### **Parity Obligations**

As of October 31, 2017, the District has outstanding three series of Bonds constituting Parity Obligations under the Trust Agreement, including its Subordinate Wastewater Revenue Bonds, Refunding Series 2012 (Federally Taxable) (the “Subordinate 2012 Bonds”), of which \$905,000 principal amount is outstanding, its Subordinate Wastewater Revenue Bonds, Series 2016A (the “Subordinate 2016A Bonds”), of which \$240,920,000 principal amount is outstanding and its variable rate Subordinate Wastewater Revenue Bonds, Series 2016B (the “Subordinate 2016B Bonds,” and together with the Subordinate 2016A Bonds, the “Subordinate 2016 Bonds”), of which \$50,000,000 principal amount is outstanding.

In addition to the VRA Senior Bonds described under “—Outstanding Senior Obligations” above, since 1993, the District has borrowed over \$177 million from the Virginia Resources Authority Revolving Loan Fund and issued, in evidence of its obligations to repay such loans, 13 issues of bonds that are outstanding Parity Indebtedness and recognized as such under the Trust Agreement (the “VRA Subordinate Obligations” and collectively, with the Subordinate 2012 Bonds, the Subordinate 2016 Bonds, the Series 2017A Bonds, when, as and if issued, and other Bonds or additional VRA Subordinate Obligations issued from time to time under the provisions of the Trust Agreement, the “Parity Obligations”). As of October 31, 2017, the outstanding drawn amount of the VRA Subordinate Obligations was \$54.4 million and an undrawn authorized amount of \$61.5 million. The terms of the VRA Subordinate Obligations generally state that the lien thereof on the Net Revenues of the District is in all respects subordinate and inferior to the lien thereon of Senior Obligations outstanding under the Senior Trust Agreement. Generally, after an initial period where no interest accrues on such VRA Subordinate Obligations, interest accrues on the disbursed principal of the outstanding VRA Subordinate Obligations at interest rates ranging from 1.70% to 3.75% per annum, and principal and interest are payable in installments over the 20-year terms of the VRA Subordinate Obligations. The VRA Subordinate Obligations have been issued for various improvements and upgrades at several of the District’s treatment plants. See the table “DEBT SERVICE REQUIREMENTS FOR SENIOR OBLIGATIONS AND PARITY OBLIGATIONS” and “—Limitation on Creation of Liens” in Appendix C. The Series 2017A Bonds are on parity under the Trust Agreement with the Outstanding VRA Subordinate Obligations as to their subordinate lien on the Net Revenues of the District.

## **Additional Parity Obligations**

Under the Trust Agreement, the District may issue Additional Parity Obligations, including Additional Bonds and VRA Subordinate Obligations, for the District's Capital Improvement Program or to refund outstanding Senior Indebtedness or Parity Obligations subject to the District's demonstrating its compliance with the conditions for the incurrence thereof under the Trust Agreement or qualifying for an exception thereto. The District anticipates that it will finance a portion of its Capital Improvement Program with future issues of Additional Parity Obligations, which may be evidenced by additional VRA Subordinate Obligations, and Junior Obligations, which are subordinate to Parity Obligations. See "— Limitations on Indebtedness" in Appendix C.

## **Amendments relating to VRA Obligations**

Pursuant to a Master Financing Agreement, dated as of February 1, 2016, as amended and supplemented (the "VRA Financing Agreement"), between the District and VRA relating to the VRA Senior Bonds and the VRA Subordinate Obligations (collectively, the "VRA Obligations"), VRA and the District have amended and restated all of the Financing Agreements pursuant to which the VRA Obligations were issued and have agreed that, under certain conditions set forth in the VRA Financing Agreement, some or all of the VRA Senior Bonds will become VRA Subordinate Obligations secured as Parity Obligations under the Trust Agreement and will no longer be Senior Obligations secured under the Senior Trust Agreement (the "Migrating VRA Senior Bonds"). The Migrating VRA Senior Bonds will, from time to time, convert from senior lien status to parity lien status, subject to the following conditions set forth in the VRA Financing Agreement:

- (a) There are no existing defaults or events of default under the terms of any debt of the District;
- (b) The Senior Trust Agreement is legally closed to the issuance of additional debt;
- (c) The District maintains at least a "AA-" or equivalent rating by two nationally-recognized statistical rating organizations on its debt outstanding under the Trust Agreement;
- (d) The District has not issued any Senior Obligations after the date of the VRA Financing Agreement;
- (e) Beginning with its Fiscal Year ended June 30, 2017, the District demonstrates that it has complied with the budgetary principles of its financial policy in effect as of the dated date of the VRA Financing Agreement to budget for minimum total debt service coverage of 1.4 times, i.e., such budgetary principles providing in pertinent part that the District will adopt operating and capital budgets that it projects will enable the District to maintain net revenues at a minimum of 1.4 times total debt service requirements, and in calculating compliance with the foregoing, the District may make reasonable adjustments to net revenues as presented on a GAAP basis;
- (f) Receipt by the District of various certificates and opinions, in form and substance satisfactory to VRA; and
- (g) The District has amortized or defeased its Senior Obligations such that the total par amount of debt outstanding under the Senior Trust Agreement is 15% or less of the par amount of the District's total debt outstanding (taking into account the Migrating VRA Senior Bonds).



If only conditions (a) through (f) above are met (and condition (g) is not), the Migrating VRA Senior Bonds are to migrate from time to time to the position of Parity Obligations on a pro rata basis such that the ratio of VRA to District debt with a pledge of Net Revenues senior to the Parity Bonds is maintained at approximately 16.5% per Fiscal Year. Unless VRA and the District agree otherwise in writing, the Migrating VRA Senior Bonds are to migrate to the position of VRA Subordinate Obligations in reverse order of maturity. The Migrating VRA Senior Bonds may become VRA Subordinate Obligations without meeting any of the incurrence tests set forth in the Trust Agreement. See “—Limitations on Indebtedness” in Appendix C.

Once a Migrating VRA Senior Bond has migrated to the position of a Parity Obligation, such migration will not be reversed at a later date due to the District no longer meeting conditions (a), (c), (e) or (g) set forth above.

The conditions to migration of VRA Senior Bonds to parity lien status are not covenants with VRA (or under the Senior Trust Agreement or the Trust Agreement), and any failure of the District to meet such conditions will not constitute a default under the VRA Financing Agreement, the Senior Trust Agreement or the Trust Agreement. The sole consequence of a failure to meet any such condition under the VRA Financing Agreement would be that the VRA Senior Bonds would not convert from senior lien status to parity lien status pursuant to the VRA Financing Agreement.

**DEBT SERVICE REQUIREMENTS  
FOR PARITY OBLIGATIONS<sup>(1)</sup>**

<b>Fiscal Year Ending June 30,</b>	<u>Series 2017A Bonds</u>			<b>Outstanding Parity Obligations Debt Service<sup>(2)</sup></b>	<b>Total Parity Obligations Debt Service</b>
	<b><u>Principal</u></b>	<b><u>Interest</u></b>	<b><u>Debt Service</u></b>		
2018				\$21,323,976	\$21,323,976
2019				21,497,225	21,497,225
2020				24,191,588	24,191,588
2021				23,672,643	23,672,643
2022				26,288,512	26,288,512
2023				23,288,426	23,288,426
2024				23,079,367	23,079,367
2025				23,078,783	23,078,783
2026				23,491,932	23,491,932
2027				28,791,266	28,791,266
2028				25,680,863	25,680,863
2029				21,266,083	21,266,083
2030				21,264,375	21,264,375
2031				32,049,142	32,049,142
2032				30,061,767	30,061,767
2033				30,056,458	30,056,458
2034				30,057,650	30,057,650
2035				29,801,465	29,801,465
2036				26,818,314	26,818,314
2037				32,950,148	32,950,148
2038				26,474,419	26,474,419
2039				11,770,649	11,770,649
2040				11,748,265	11,748,265
2041				11,727,913	11,727,913
2042				11,702,798	11,702,798
2043				11,699,900	11,699,900
2044				11,695,793	11,695,793
2045				11,656,650	11,656,650
2046				11,603,370	11,603,370
2047				8,498,000	8,498,000
2048	-	-	-	78,592	78,592
<b>TOTAL</b>	<b><u>\$</u></b>	<b><u>\$</u></b>	<b><u>\$</u></b>	<b><u>\$647,366,332</u></b>	<b><u>\$647,366,332</u></b>

(1) Numbers may not add to totals due to rounding.

(2) Assumes that none of the VRA Senior Bonds become Migrating VRA Senior Bonds. The Subordinate 2016B Bonds, which constitute Variable Rate Indebtedness, are assumed to bear interest at 2.5%. No assurance can be given, however, that the rate on the Subordinate 2016B Bonds will not be higher than assumed above. Includes debt service on the Refunding Candidates. If any of the Refunding Candidates are refunded with a portion of the proceeds of the Series 2017A Bonds, the final Official Statement will show debt service net of the Refunded Bonds.

**DEBT SERVICE REQUIREMENTS  
FOR SENIOR OBLIGATIONS AND  
PARITY OBLIGATIONS<sup>(1)</sup>**

<b>Fiscal Year Ending June 30,</b>	<b>Total Senior Obligations Debt Service<sup>(2)</sup></b>	<b>Total Parity Obligations Debt Service<sup>(3)</sup></b>	<b>Total Debt Service</b>
2018	\$37,425,141	\$21,323,976	\$58,749,116
2019	37,037,728	21,497,225	58,534,953
2020	36,977,208	24,191,588	61,168,796
2021	35,355,172	23,672,643	59,027,814
2022	33,819,341	26,288,512	60,107,854
2023	37,001,964	23,288,426	60,290,391
2024	36,919,398	23,079,367	59,998,766
2025	36,834,572	23,078,783	59,913,355
2026	36,078,375	23,491,932	59,570,307
2027	30,607,838	28,791,266	59,399,104
2028	30,506,775	25,680,863	56,187,638
2029	34,762,749	21,266,083	56,028,832
2030	34,649,725	21,264,375	55,914,100
2031	24,281,287	32,049,142	56,330,429
2032	21,137,675	30,061,767	51,199,443
2033	19,188,485	30,056,458	49,244,942
2034	17,072,333	30,057,650	47,129,983
2035	16,935,146	29,801,465	46,736,611
2036	16,794,755	26,818,314	43,613,069
2037	10,494,825	32,950,148	43,444,973
2038	16,801,768	26,474,419	43,276,187
2039	16,638,999	11,770,649	28,409,648
2040	13,967,932	11,748,265	25,716,197
2041	5,615,400	11,727,913	17,343,313
2042	5,618,400	11,702,798	17,321,198
2043	5,613,600	11,699,900	17,313,500
2044	5,616,000	11,695,793	17,311,793
2045	-	11,656,650	11,656,650
2046	-	11,603,370	11,603,370
2047	-	8,498,000	8,498,000
2048	-	<u>78,592</u>	<u>78,592</u>
<b>TOTAL</b>	<b><u>\$653,752,593</u></b>	<b><u>\$647,366,332</u></b>	<b><u>\$1,293,469,331</u></b>

(1) Numbers may not add to totals due to rounding.

(2) See "SECURITY AND SOURCES OF PAYMENT—Outstanding Senior Obligations." Includes debt service on the Refunding Candidates. If any of the Refunding Candidates are refunded with a portion of the proceeds of the Series 2017A Bonds, the final Official Statement will show debt service net of the Refunded Bonds.

(3) Assumes that none of the VRA Senior Bonds become Migrating VRA Senior Bonds. The Subordinate 2016B Bonds, which constitute Variable Rate Indebtedness, are assumed to bear interest at 2.5%. No assurance can be given, however, that the rate on the Subordinate 2016B Bonds will not be higher than assumed above. Includes debt service on the Refunding Candidates. If any of the Refunding Candidates are refunded with a portion of the proceeds of the Series 2017A Bonds, the final Official Statement will show debt service net of the Refunded Bonds.

## **HAMPTON ROADS SANITATION DISTRICT**

### **Authorization and Purpose**

Creation of the District was approved in a 1940 public referendum authorized by the Virginia General Assembly. A political subdivision of the Commonwealth of Virginia (the “Commonwealth”), the District was established as a governmental instrumentality to provide for the public health and welfare. Chapter 66, Acts of the Assembly of 1960, validated and confirmed prior legislation creating the District and repealed earlier acts of the Virginia General Assembly enacted with respect to the District.

The District was created for the specific purpose of abating pollution in the Hampton Roads area of Virginia through the interception of existing wastewater outfalls, the construction of wastewater treatment facilities and the installation of interceptors throughout the service area. The District does not provide water, solid waste disposal or storm water mitigation. The cities, counties and military establishments the District serves provide those services. With the exception of the Counties of King William, King and Queen, Middlesex, Mathews and Surry, excluding the Town of Claremont, the collection system, consisting of lateral sewers and sub trunk facilities that carry wastewater from industries, homes, apartments and businesses to the District’s interceptor system, are the responsibility of the various cities, counties and military establishments within the District.

The District is a separate legal entity from the various cities, counties and military establishments within the District. See “—The Commission” below.

### **History**

The District traces its origins to 1925, when the Virginia Department of Health condemned a large oyster producing area in Hampton Roads. The closure resulted in the Virginia General Assembly creating in 1927 a “Commission to Investigate and Survey the Seafood Industry of Virginia.” Subsequent studies recommended a public body to construct and operate a sewage system in the area.

In 1934, the Virginia General Assembly created the Hampton Roads Sanitation Disposal Commission with instructions to plan the elimination of pollution in Hampton Roads. Recommendations were made to the General Assembly which resulted in the Sanitary Districts Law of 1938, along with “An Act to provide for and create the Hampton Roads Sanitation District.” In a referendum held on November 5, 1940, a majority of the voters approved the creation of the District.

The District’s first construction project, the Warwick County Trunk Sewer, began on June 26, 1946. The District commenced operations on July 1, 1946, using facilities acquired from the United States Government. The District’s first treatment plant, the Army Base Plant, commenced operations on October 14, 1947. Since that time, the facilities of the District have been expanded to provide wastewater treatment service to all major population centers within its boundaries.

### **The Commission**

The District operates under the direction of its governing body, the Hampton Roads Sanitation District Commission (the “Commission”), comprised of eight members appointed by the Governor for staggered terms of four years. Members of the Commission may be reappointed without limitation and may be suspended or removed by the Governor at his pleasure. The Commission annually elects one of its members as Chair and another as Vice-Chair. Under the Enabling Act, the eight members of the Commission must be residents of the cities and counties of the District as follows: one member from each of the cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach; one

member from the City of Suffolk, Isle of Wight County or Surry County; and one member from the City of Williamsburg or Poquoson, or Gloucester, James City, King William, King and Queen, Mathews, Middlesex, or York County or the Town of Urbanna.

The Commission is empowered, among other things, to (1) construct and to improve, extend, enlarge, reconstruct, maintain, equip, repair and operate a wastewater system or systems, either within or without or partly within and partly without the corporate limits of the District, and to construct wastewater improvements within the corporate limits of the District, (2) issue the District's bonds, payable solely from revenues, to pay all or part of the cost of a wastewater system, (3) fix, revise, charge and collect rates, fees and charges for the use of and for the services of any system operated by the District, (4) enter into contracts with any unit, including counties, cities and other authorities, relating to the furnishing of services of the District, and (5) acquire real or personal property necessary in connection with wastewater systems or wastewater improvements.

The current members of the Commission and their biographies are set forth below.

<u>Commissioners</u>	<u>Residence</u>	<u>Occupation</u>	<u>Term Expires June 7,</u>
Frederick N. Elofson, CPA, <i>Chair</i>	Newport News	Retired Certified Public Accountant and Personal Financial Specialist, Goodman & Company, LLP	2018
Maurice P. Lynch, Ph.D., <i>Vice-Chair</i>	Williamsburg	Professor Emeritus, Virginia Institute of Marine Science, College of William and Mary	2021
Michael E. Glenn	Norfolk	President, Luna Development Services, LLC	2019
Vishnu K. Lakdawala, Ph.D.	Virginia Beach	Associate Professor, Electrical and Computer Engineering, Old Dominion University	2018
Willie Levenston, Jr.	Portsmouth	Retired Supervisor Electronic Engineer, Norfolk Naval Shipyard	2019
Stephen C. Rodriguez	Chesapeake	Owner and President, Cruco, Inc.	2020
Elizabeth A. Taraski, Ph.D.	Suffolk	President and CEO, Nansemond River Preservation Alliance	2021
Ann W. Templeman	Hampton	Senior Business Support Analyst, Virginia Natural Gas	2020

**Frederick N. Elofson, CPA, Chair.** Mr. Elofson, a member of the Commission since July 1, 2006, is a Certified Public Accountant and retired senior partner in Dixon Hughes Goodman LLP, in Newport News. He earned a bachelor's degree in accounting from West Virginia University and has more than 30 years of accounting experience. A former chair of the board and treasurer of the Peninsula Chamber of Commerce, Mr. Elofson remains active in numerous professional and civic organizations. He is a past treasurer and board member of the Schooner Virginia Project, a past president of the Peninsula Estate Planning Council, treasurer and Sunday School teacher at First Baptist Church Newport News, member of the Committee on Investments for the City of Newport News Retirement Fund and has been honored as a Chamber of Commerce Volunteer of the Year. Mr. Elofson resides in the City of Newport News.

**Maurice P. Lynch, Ph.D., Vice-Chair.** Dr. Lynch, a member of the Commission since August 24, 2009, is professor emeritus of the College of William and Mary's Virginia Institute of Marine Science. Upon earning his bachelor's degree from Harvard College, Dr. Lynch was commissioned an ensign in the U.S. Navy Reserve and remained on active duty with the Underwater Demolition Team until July 1962. After filling numerous reserve billets, he retired in 1988 with the rank of Captain USNR. Dr. Lynch earned his master's and doctoral degrees from the College of William and Mary, where he has been a member of the faculty since 1972. He has been a liaison to numerous universities as well as state and federal agencies. He has served as the Virginia Sea Grant director, director of the Chesapeake Bay Research Consortium and director of the Chesapeake Bay National Estuarine Research Reserve in Virginia. He has been an officer of several professional organizations, including the Virginia Academy of Science, the Coastal Society and the National Estuarine Research Reserve Association. Dr. Lynch also has served two terms on the Chesapeake Bay Foundation ("CBF") board of trustees and been a leader of CBF's York chapter. He served on the Middle Peninsula Planning District Commission from 1997 to 2015 and has served as its chair. Dr. Lynch resides in Williamsburg.

**Michael E. Glenn, Commissioner.** Mr. Glenn, a member of the Commission since May 13, 2008, is president of Luna Development Services, LLC. The firm, which offers full-service general contracting and real estate development services, is a Certified Virginia Minority Business Enterprise. Before founding his firm in 2004, Mr. Glenn was Director of Operations, Real Estate Services and Contracts for Troutman Sanders, LLP. He also has served as a development executive for Armada Hoffer Development and as a Wachovia Bank vice president. Mr. Glenn received a bachelor's degree in psychology, with a minor in biology, from Old Dominion University. Mr. Glenn resides in the City of Norfolk.

**Vishnu K. Lakdawala, Ph.D., Commissioner.** Dr. Lakdawala, a member of the Commission since June 8, 2002, obtained his undergraduate degree in electrical engineering from Bangalore University in India in 1972 and his Master of Engineering in High Voltage Engineering from Indian Institute of Science in 1974. He worked as Research and Development Engineer in Jyoti Limited for three years in the high voltage instrument transformers division. He received his Ph.D. in electrical engineering from the University of Liverpool in 1980. After serving as senior research associate in the Department of Electrical Engineering and Electronics in the University of Liverpool for a year, he joined Oak Ridge National Laboratory, Oak Ridge, Tennessee, where he conducted research for a year. He joined the faculty of Old Dominion University in 1983 as Assistant Professor in the Department of Electrical and Computer Engineering. He is currently the Chief Departmental Advisor and Associate Professor of Electrical and Computer Engineering. Dr. Lakdawala has served as the president and chairman of the Board of Trustees of the Hindu Temple of Hampton Roads. Dr. Lakdawala resides in the City of Virginia Beach.

**Willie Levenston, Jr., Commissioner.** Mr. Levenston, a member of the Commission since September 9, 2014, earned his Bachelor of Science in Engineering from Southern University in Baton

Rouge, Louisiana. He retired from the Norfolk Naval Shipyard in 2008 after more than 40 years of service. In his capacity as Supervisor Electronics Engineer, Mr. Levenston was responsible for Surface Ship Exterior Radio Communications, Secure/Communication Information Processing, Naval Tactical Data Systems, Search Radar, Electronics Countermeasure/Navigational Aids, and the Submarine Communication sections. Mr. Levenston resides in the City of Portsmouth.

**Stephen C. Rodriguez, Commissioner.** Mr. Rodriguez, a member of the Commission since October 5, 2012, is the owner and president of Cruco Inc., which provides construction services in Hampton Roads. He currently serves chair of the board of directors of the Outer Banks Hospital. Mr. Rodriguez was named chairman of the Foundation for Virginia Natural Resources and has served as president of the Deep Creek Ruritan Club. He also has been a member of the Chesapeake School Board, the Chesapeake Economic Development Authority and the board of directors of Opportunity, Inc., and has served as vice chairman of the Chesapeake Regional Medical Center Board. He holds a bachelor's degree in civil engineering technology and a certificate in civic leadership from Old Dominion University. Mr. Rodriguez resides in the City of Chesapeake.

**Elizabeth A. Taraski, Ph.D., Commissioner.** Dr. Taraski, a member of the Commission since June 8, 2017, is the president and CEO of the Nansemond River Preservation Alliance in Suffolk, Virginia. Dr. Taraski previously served in senior fundraising management positions at Christopher Newport University, Old Dominion University and the University of Richmond. Before moving to Virginia in 1998, Dr. Taraski was Director, Administration and Industrial Relations, Multi-lifecycle Engineering Research Center, New Jersey Institute of Technology. Dr. Taraski is a member of the Suffolk Branch AAUW, the Suffolk Business Women's Club and she is also a board member of the Suffolk Rotary Club. She holds a Ph.D. from Seton Hall University; a Master of Science degree from New York University and a Master of Education degree from Rutgers University and completed her doctoral internship at the Alfred P. Sloan Foundation, NYC. Dr. Taraski resides in the City of Suffolk.

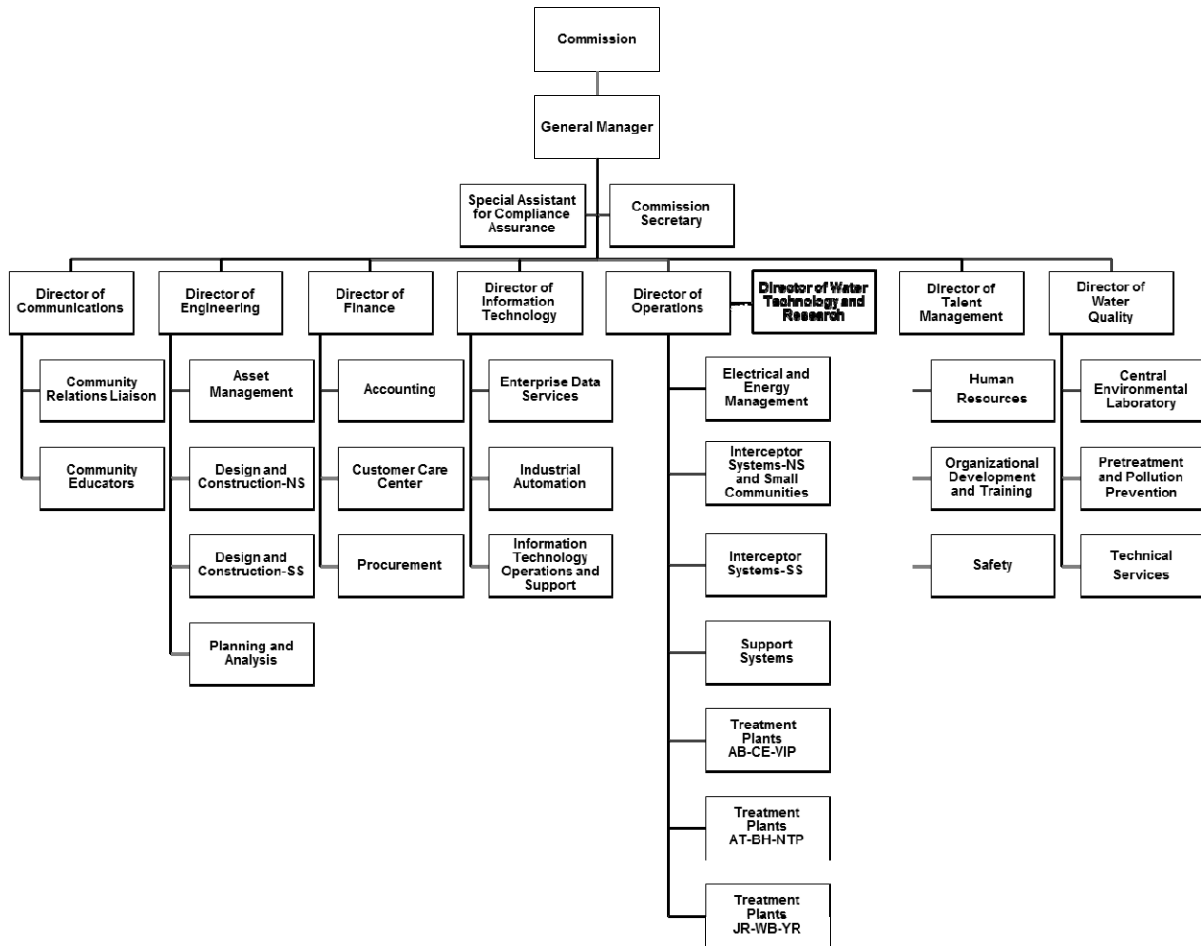
**Ann W. Templeman, Commissioner.** Ms. Templeman was appointed to the Commission on January 25, 2017 to serve an unexpired term. She is a Senior Business Support Analyst with Virginia Natural Gas, which provides natural gas service to approximately 284,000 residential, commercial and industrial customers in Hampton Roads. During her 30 years with the company, she has developed a diversified background in the areas of regulatory compliance, rate setting, forecasting, public affairs and human resources. Ms. Templeman earned a Masters of Business Administration from Old Dominion University and a Bachelor of Science in Business Management from Virginia Tech. Ms. Templeman resides in the City of Hampton.

## **Management and Staff**

The District is managed through seven departments, which are organized into functional divisions with their principal responsibilities summarized after the District's organizational chart set out below.

[Remainder of page intentionally left blank]

## HRSD Organizational Chart



### Communication

- **Community Relations:** Develops and provides community outreach and engagement around HRSD construction, infrastructure development and new initiatives.
- **Community Education:** Develops and provides educational materials and outreach related to HRSD's services, mission and vision.



## Engineering

- Design & Construction: Manages projects to ensure that contracted work is performed according to HRSD's quality standards, fiscal policies and environmental commitment.
- Planning & Analysis: Evaluates the service area's needs and determines the new facilities necessary to expand services. Projects future demand flows, and reviews service area expansions. Responsible for the Geographical Information System (GIS), Regional Hydraulic Model, Capital Planning, and Data Analysis.
- Asset Management: Provides systematic and risk-based analysis to manage sustainable lifecycle costs of capital assets and optimize maintenance programs. Responsible for the Computerized Maintenance Management System (CMMS).

## Finance

- Accounting: Performs accounting and budget operations and treasury, debt and risk management functions.
- Procurement: Acquires goods and services.
- Customer Care Center: Responsible for billings, collections, maintenance of customer accounts and liaison with HRSD customers.

## Information Technology

- Enterprise Data Services: Provides programming, configuration and support for enterprise software applications and associated databases.
- Industrial Automation: Provides instrumentation and control automation programming and support for the Interceptor and Treatment plant divisions.
- Information Technology Operations: Provides management and support services for HRSD's networked infrastructure and mobility solutions.

## Operations

- Electrical and Energy Management: Provides and/or coordinates engineering, electrical and instrumentation services to design, modify and implement electrical, instrumentation and energy management projects.
- Interceptor Operations North Shore: Operates and maintains the interceptor system in the Cities of Hampton, Newport News, Poquoson and Williamsburg, the Counties of Gloucester, James City and York.
- Interceptor Operations South Shore: Operates and maintains the interceptor system in the Cities of Chesapeake, Norfolk, Portsmouth, Suffolk and Virginia Beach and the County of Isle of Wight.

- Small Communities: Operates and maintains the collections systems and treatment plants that serve the Counties of King William, King and Queen, Middlesex, Mathews and Surry.
- Support Systems: Coordinates preventive and major corrective maintenance programs including Automotive Maintenance, Carpenter, Electrical and Machine Shop operations.
- Treatment Plants: Operates and maintains the Army Base, Atlantic, Chesapeake-Elizabeth and VIP, Boat Harbor, James River, Nansemond, Williamsburg and York River treatment plants.

#### Talent Management

- Human Resources: Responsible for human resources and benefits.
- Organizational Development and Training: Provides employee training and manages the apprenticeship program.
- Safety: Coordinates the safety program at HRSD.

#### Water Quality

- Central Environmental Laboratory: Performs laboratory accredited analysis for various HRSD programs and coordinates testing by contract laboratories as necessary.
- Pretreatment & Pollution Prevention: Controls all non-domestic waste discharged into the HRSD system.
- Technical Services: Provides scientific/technical support of all HRSD departments and administration of all HRSD permits.

The District’s administration is overseen by a General Manager, supported by eight directors and their staffs. For Fiscal Year 2018, the District has budgeted for 830 full-time employees. Current staffing is sufficient to operate all existing facilities. None of its employees is currently represented by a union.

The following individuals are responsible for the daily management and affairs of the District:

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

Ted Henifin joined HRSD November 1, 2006, as General Manager. He previously served as Director of Public Works for the City of Hampton. Mr. Henifin holds a Bachelor’s of Science in Civil Engineering from the University of Virginia. His career has spanned more than 35 years with a focus on public works and utilities in federal, regional and local government in Hampton Roads. He is a registered professional engineer and has been active with professional associations throughout his career. He currently serves on the board of directors for the National Association of Clean Water Agencies (“NACWA”) and Virginia Forever; is on the steering committee for the US Water Alliance’s Value of Water Campaign and is past president of the Virginia Association of Municipal Wastewater Agencies (“VAMWA”). Active in civic associations as well, he is president of the George Wythe Recreation Association, treasurer of the Hampton Neighborhood Development Partnership and is secretary of the board of directors for the Langley Federal Credit Union.

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

Jay Bernas was promoted to Director of Finance in October 2015. Before his promotion to this position, Mr. Bernas served as Chief of Planning and Analysis for 10 years and was responsible for planning HRSD's \$1.4 billion Capital Improvement Program, performing business case analyses, system capacity analyses to support regional growth and managing four technical sections: Geographic Information Systems, Data Analysis, Hydraulic Modeling and Capital Planning. Prior to joining HRSD, he was a project manager with the City of Virginia Beach. Mr. Bernas graduated from Old Dominion University in 1995 with a Bachelor's Degree in Civil Engineering and earned his MBA from the College of William and Mary in 2013. He also has completed the Kenan-Flagler Water and Wastewater Leadership Program and was part of the 2008 class for LEAD Hampton Roads. He received the George Robert House, Jr. Award for the young public administrator of the year from the American Society for the Public Administration in 2006 and was recognized by Inside Business as a "Top Forty under 40" in 2011. Appointed by the Virginia Beach City Council to serve on the Planning Commission from 2006-2013, Mr. Bernas was its chair for the last two years of his tenure. He is a member of the Dominion Virginia Power Community Advisory Council and currently serves as chair of the St. Gregory the Great's School Board.

**Charles B. Bott, Ph.D., P.E., Director of Water Technology and Research**

Dr. Charles B. Bott joined HRSD in 2009 and is the Director of Water Technology and Research. He manages technology innovation and research and development for HRSD's wastewater treatment plants and interceptor system. Dr. Bott is also an Adjunct Professor in the Departments of Civil and Environmental Engineering at Virginia Polytechnic Institute and State University ("Virginia Tech") and Old Dominion University. He was formerly an Associate Professor in the Department of Civil and Environmental Engineering at the Virginia Military Institute and a consulting engineer with Parsons Engineering Science. Dr. Bott has a Bachelor's Degree in Civil Engineering from the Virginia Military Institute, a Master's Degree in Environmental Engineering from the Johns Hopkins University, and a Ph.D. in Civil and Environmental Engineering from Virginia Tech. He is a fellow of the Water Environment Federation ("WEF") and a member of the Science and Technology Advisory Committee to the Chesapeake Bay Program Executive Council. Dr. Bott is a professional engineer in Virginia, a Board Certified Environmental Engineer, and a licensed Wastewater Treatment Plant Operator – Virginia Class I. He is a two-time winner of the WEF Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/processes research, he was a previous member of the WEF Board of Trustees, and he is the current co-chair of the WEF and Water Environment & Reuse Foundation Leaders Innovation Forum for Technology ("LIFT") program.

**Donald C. Corrado, Director of Information Technology**

Prior to his appointment in 2008, Don Corrado served as HRSD's Chief of Information Technology for nine years. In that capacity he was responsible for the implementation of a scalable, fully-licensed, standards-based wide area network capable of supporting the various enterprise-class applications required to meet HRSD's business needs. Mr. Corrado's career includes public and private sector experience as an IT manager, enterprise solutions architect, information systems security officer, project leader and contract specialist. He earned a bachelor's degree from Old Dominion University and is a Master Certified NetWare Engineer, Microsoft Certified Systems Engineer and Nortel Certified Enterprise Solutions Provider. Mr. Corrado is also a U.S. Department of Defense Certified Acquisition Professional and Checkpoint Firewall One Certified. He is a member of the Gartner Executive Panel, American Water Works Association ("AWWA") and WEF and has completed the Kenan-Flagler Water and Wastewater Leadership Program.

**Steven G. de Mik, MBA, CPA, Director of Operations**

Steve de Mik, who was named Director of Operations in 2015, joined HRSD in 2008. As Director of Operations, he leads a staff of over 500 who are responsible for the operation of HRSD's treatment plants and interceptor systems as well as various support services such as fleet management, carpentry and a machine shop. In his previous position as Director of Finance and Chief Financial Officer, Mr. de Mik was responsible for HRSD's general financial and business functions, including financial reporting, investment portfolio, debt and risk management, and customer billing. A certified public accountant, he holds an MBA from the College of William and Mary and has completed the Kenan-Flagler Water and Wastewater Leadership Program and the Virginia Natural Resources Leadership Program. Before joining HRSD, Mr. de Mik served for seven years as the Director of Finance and Business Services for the City of Norfolk. His duties in that post included managing the financial operations of the city including a pension system and a debt portfolio of approximately \$1 billion using three different credit structures. In addition, he was responsible for the city's parking, facilities maintenance and fleet operations. Mr. de Mik's years of public and private sector experience also include positions with Knox County, Tennessee; Knoxville, Tennessee; Chipman and McMurray, CPA of Hendersonville, Tennessee; and the Comptroller of the Treasury, Division of State Audit, Nashville, Tennessee. He received a bachelor's degree in accounting and business administration from Southwest Baptist University in Bolivar, Missouri. Mr. de Mik also serves as the treasurer for Heart for Orphans, a nonprofit organization based in the City of Williamsburg, Virginia.

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

Paula Hogg became Director of Talent Management when the position was established in 2014. A graduate of Virginia Tech and the Kenan-Flagler Water and Wastewater Leadership Program, Ms. Hogg began her HRSD career in 1983. Her progressively responsible positions led to her selection as the Chief of Laboratory in 2005. In that capacity, she oversaw the effective operation of HRSD's state-of-the-art Central Environmental Laboratory and ensured proper internal analysis and regulatory control. Ms. Hogg played a key role in the effort to bring HRSD's laboratory into full compliance with Virginia's Laboratory Accreditation regulation. She also has led various inter-departmental teams, was instrumental in the development of HRSD's quality program and served as one of the first facilitators. Ms. Hogg has been an active member of the WEF and the Virginia Water Environment Association, where she served as chair of the National Laboratory Practices Committee and as a member of the committee Leadership Council. She has also served on the Advocacy Committee for the National Environmental Laboratory Accreditation Conference Institute.

**Phillip L. Hubbard, P.E., Special Assistant for Compliance Assurance**

Phil Hubbard was the Sanitary Sewer Overflow Reduction Manager for the City of Virginia Beach prior to joining HRSD in 2007. In that capacity he ensured full compliance with regulatory orders, represented the City with the Virginia Department of Environmental Quality and the United States Environmental Protection Agency, served as Team Leader for the Regional Capacity Team, and managed contracts with consulting engineers. His extensive experience also includes more than 20 years as an operations manager in the city's public utilities department. A registered professional engineer, Mr. Hubbard holds a bachelor's degree in civil engineering from the Virginia Military Institute and has completed the Kenan-Flagler Water and Wastewater Leadership Program. He is a member of the American Society of Professional Engineers and WEF. He twice received the Virginia Beach City Manager's Creativity, Innovation and Public Service Award, and was named the Hampton Roads American Society Civil Engineers Government Engineer of the Year in 2010.

**Bruce W. Husselbee, P.E., Director of Engineering**

Bruce Husselbee became Director of Engineering in July 2005. Before his promotion to this senior leadership position, he was a Project Manager in the HRSD Design and Construction Division for nine years. Mr. Husselbee previously worked in the consulting engineering field for 12 years prior to joining HRSD. He holds a Bachelor's Degree in Civil Engineering and a Master's Degree in Environmental Engineering from George Washington University. He also has completed the Kenan-Flagler Water and Wastewater Leadership Program. He is currently pursuing a doctorate in coastal engineering at Old Dominion University. He is active in a number of professional organizations including the Old Dominion University Civil and Environmental Engineering Visiting Council and the WEF Utility Management Committee.

**James J. Pletl, Ph.D., Director of Water Quality**

Jim Pletl was promoted to Director of Water Quality in December 2011. Previously, he was the Chief of Technical Services for five years. In that capacity, he managed HRSD's environmental monitoring and permitting program. He also served as an Environmental Scientist for 17 years, providing technical reviews and conducting planning for water quality studies. Dr. Pletl holds a bachelor's degree in Biology from Alfred University and a Ph.D. in Biological Oceanography from Old Dominion University. He also is a graduate of the Kenan-Flagler Water and Wastewater Leadership Program. Dr. Pletl is the vice-chair of the NACWA Water Quality Committee and the chair of the VAMWA Water Quality Committee. He has served on two federal advisory committees for EPA and several advisory groups to the Virginia Department of Environmental Quality. Dr. Pletl has also served on numerous Water Environment and Reuse Foundation ("WERF") project oversight committees which define the goals and guide the work of WERF research relevant to wastewater utility issues. Dr. Pletl also serves on the Virginia Nutrient Credit Exchange Association Board of Governors.

**Leila E. Rice, APR, Director of Communications**

Leila Rice, who joined HRSD in March 2017, directs and guides overall strategic communication initiatives, internal and external communications, media relations, crisis communications, branding and oversight of community relations and community education programs. Prior to joining HRSD, she was the Public Affairs Manager for Elizabeth River Crossings, where she managed internal and external communications, media relations and community outreach for the Elizabeth River Tunnels Project. Her experience also includes serving as Community and Media Relations Manager for Norfolk-based non-profit agency, ForKids, Inc., and more than 20 years of media experience, including traffic reporter for several Hampton Roads radio and television stations and multi-market broadcast management, affiliate relations and product marketing with Westwood One's Metro Networks. She has also served as a morning radio show co-host and News and Public Affairs Director at WAFX-FM. Ms. Rice holds a Bachelor's degree in Communication Arts from James Madison University. She is a member of the Public Relations Society of America and WEF and also serves on the Hampton Roads Chamber of Commerce Regional Communication Committee and the NACWA Communication Committee.

**Awards**

HRSD has received numerous awards for excellence in plant operations and maintenance, environmental engineering and design, and financial reporting. To date, its treatment plants have earned 317 awards for outstanding compliance with National Pollutant Discharge Elimination System ("NPDES") permits since 1986, when the recognition program was established. All 13 treatment plants qualified for an award for outstanding permit compliance for calendar year 2014, when the Army Base Treatment Plant achieved 28 consecutive years of perfect permit compliance, a record unmatched in the

nation. During Fiscal Year 2013, HRSD received the prestigious Platinum Excellence in Management Award from the NACWA and the Honor Award in the Environmental Sustainability category for “HRSD York River Treatment Plant Demon Sidestream Deammonification Process Implementation” from the American Academy of Environmental Engineers & Scientists (AAEES). In addition, HRSD received the American Council of Engineering Companies (ACEC) Grand Prize for research accomplished in partnership with DC Water. The U.S. Green Building Council awarded Silver Leadership in Energy and Environmental Design (LEED) Certification to HRSD’s North Shore Operations Center, the Elizabeth River Project (ERP) recognized HRSD as a Sustained Distinguished Performance Model Level River Star business, and the Engineers Club of Hampton Roads named HRSD’s Force Main Condition Assessment Program the 2013 Project of the Year. Honors received during Fiscal Year 2014 included the Outstanding Agency Accreditation Achievement Award from the National Institute for Public Procurement (NIGP), a certificate from the Virginia Tech Wastewater Treatment Plant Operator Short School recognizing HRSD’s commitment to improving plant operations within the Commonwealth for 37 consecutive years, and the Hampton Roads Alliance for Environmental Education (HRAEE) 2013 Increasing Communications Award. Also, Team HRSD placed first overall in the Division 2 Operations Challenge competition held during the 2013 Water Environment Federation Technical Exhibition and Conference (WEFTEC) and ERP recognized HRSD for a second consecutive year as a Sustained Distinguished Performance Model Level River Star business.

Honors and awards received during Fiscal Year 2017 from NACWA include National Environmental Achievement Awards (NEAA) in the following categories: Public Information and Education –Education Program for the programs, *H2w0W: Wonders of Water*, Virginia STEAM Academy Program, and for *Living the Legacy: Operations and Environmental Performance for Molecular Tools for Environmental Management: Research and Technology for An International Collaboration: The InDENSE® Process*, and Water Resources Utility of the Future for *Sustainable Water Initiative for Tomorrow (SWIFT)*. Other NACWA awards received in Fiscal Year 2017 include Water Resources Utility of the Future. Thirteen HRSD treatment plants also earned NACWA Peak Performance Awards, including five Platinum, four Silver and three gold awards. Other notable awards include the ERP *Sustained Distinguished Performance as a Model Level River Star Business*: the River Star Hall of Fame Award from *Inside Business* and the 2016 Award of Merit for the HRSD Operations Center, Phase VII from the Design-Build Institute of America (DBIA). Fiscal Year 2018 honors received include the NACWA Excellence in Management Platinum Award and the Virginia Section American Water Works Association 2017 Public Information Award for Community Relations, large division for SWIFT Community Education and Outreach.

## THE SERVICE AREA

The District provides service to 3,087 square miles of land area within the boundaries of its service area. The geographical limits are shown on the map behind the inside front cover and include the following localities:

City of Chesapeake	Gloucester County
City of Hampton	Isle of Wight County
City of Newport News	James City County
City of Norfolk	King and Queen County
City of Poquoson	King William County
City of Portsmouth	Mathews County
City of Suffolk	Middlesex County
City of Virginia Beach	Surry County (excluding Town of Claremont)
City of Williamsburg	York County

The District and the Commission are independent of the localities served by the District. See “HAMPTON ROADS SANITATION DISTRICT—Authorization and Purpose” and “—The Commission.”

On October 1, 2017, Surry County (excluding the Town of Claremont) was added to the District’s service area. Surry County has an estimated 358 wastewater accounts.

### Population Growth

The area within the District has experienced substantial urban and suburban development and consequent population growth. The historical population within the District is presented below. Presently, the District contains approximately 21% of the population of the Commonwealth of Virginia.

#### Historical Population Growth in the District

<u>Year</u>	<u>Population</u> <sup>(1)</sup>	<u>Population Increase (%)</u> <sup>(2)</sup>
1960	660,338	--
1970	973,247	47
1980	1,085,332	12
1990	1,431,000	32
2000	1,551,000	8
2010	1,674,917	8

(1) Source – United States Bureau of the Census.

(2) Increase in population includes both increases in population within the District’s original service area, as well as the expansion of the District’s service area.

The District’s top ten ratepayers represented 9.7% of the District’s total rate base, as measured by wastewater treatment charges, in Fiscal Year 2017. The following table compares the top ten ratepayers in Fiscal Year 2017 with the ten largest ratepayers in Fiscal Year 2008.

**Wastewater Treatment Charges**  
**Ten Largest Customers**

<u>Customer</u>	<u>Type</u>	<u>Fiscal Year 2017</u>		<u>Fiscal Year 2008</u>	
		Amount <sup>(1)</sup>	% of Total	Amount <sup>(1)</sup>	% of Total
U.S. Navy – Norfolk Naval Base	Military Facility	\$4,888	1.9	\$2,765	2.1
Smithfield Foods	Meat Processor	4,723	1.9	2,457	1.9
Anheuser-Busch, Inc.	Brewery	2,819	1.1	5,956	4.6
Huntington Ingalls Industries <sup>(2)</sup>	Shipbuilding	2,138	0.8	871	0.7
Norfolk Navy Shipyard	Military Ship Repair	2,107	0.8	-	-
City of Norfolk	Municipality	1,936	0.8	1,359	1.0
Norfolk Redevelopment and Housing Authority	Housing Authority	1,876	0.7	918	0.7
Joint Expeditionary Base Little Creek – Fort Story <sup>(3)</sup>	Military Facility	1,681	0.7	463	0.4
City of Virginia Beach	Municipality	1,313	0.5	-	-
Fort Eustis	Military Facility	1,290	0.5	-	-
U.S Air Force – Langley	Military Facility	-	-	463	0.4
Marva Maid Dairy	Manufacturer – Dairy Products	-	-	367	0.3
Oceana Naval Air Station	Military Facility	-	-	338	0.3
<b>Totals<sup>(4)</sup></b>		<b><u>\$24,771</u></b>	<b><u>9.7%</u></b>	<b><u>\$15,957</u></b>	<b><u>12.4%</u></b>

<sup>(1)</sup> Dollar amounts in thousands.

<sup>(2)</sup> Formerly Northrop Grumman Newport News/Newport News Shipbuilding and Dry Dock Co.

<sup>(3)</sup> Formerly U.S. Navy – Little Creek Amphibious Base.

<sup>(4)</sup> Totals may not add due to rounding.

**Wastewater Flow**

During the past five years, there has been population growth in the service area, while the number of service connections has remained relatively stable. Billed water consumption has declined modestly during such period because of conservation efforts on the part of utility customers fostered by increasing water rates, improved construction materials and the installation of low flow plumbing fixtures.



**Wastewater Flows and Service Connections**

<b><u>Fiscal Year Ended June 30,</u></b>	<b><u>Average Daily Wastewater Flow<sup>(1)</sup></u></b>	<b><u>Total Billed Wastewater Flow<sup>(1,2)</sup></u></b>	<b><u>Service Connections<sup>(3)</sup></u></b>
2013	158	112	460
2014	154	113	462
2015	152	112	465
2016	155	111	467
2017	153	111	470

(1) Millions of Gallons per Day.

(2) Water meters are read for billing purposes by the participating jurisdictions.

(3) Number of service connections in thousands.

**Expansion of Service Area**

In most instances, the routine expansion of the service area results from the extension of the interceptor system performed at the request of a local government. The general policy is that HRSD will extend an interceptor sewer when the local government extends a public water system. The interceptor sewer is intended to serve an area within two miles of the interceptor pipeline.

**THE SYSTEM**

The Wastewater System consists of nine major treatment plants (248.5 million gallons per day (MGD) capacity), seven smaller plants and its interceptor system consisting of 134 pump and pressure reducing stations and approximately 645 miles of interceptors and collection sewer ranging in diameter from 6 to 66 inches. The interceptors, which are gravity and force mains, convey wastewater from the point of delivery by municipalities, industry and other users of the Wastewater System to the District's treatment plants.

The following table identifies the location of the District's major treatment plants, their design capacities and, for the Fiscal Year ended June 30, 2017, their average daily flows.

**Hampton Roads Sanitation District  
Treatment System Capacity & Flows  
(Millions of Gallons per Day)**

<u>Major Treatment Facilities</u>	<u>Average Design Capacity</u>	<u>FY 2017 Annual Average Daily Flow</u>
Army Base		
Norfolk	18.0	9.5
Atlantic		
Virginia Beach	54.0	28.2
Boat Harbor		
Newport News	25.0	13.9
Chesapeake-Elizabeth		
Virginia Beach	24.0	18.7
James River		
Newport News	20.0	12.3
Nansemond		
Suffolk	30.0	18.8
Virginia Initiative		
Norfolk	40.0	30.9
Williamsburg		
James City County	22.5	8.0
York River		
York County	<u>15.0</u>	<u>12.6</u>
TOTALS	<u>248.5</u>	<u>153.0</u>

In addition to the major facilities described above, the District operates seven additional small wastewater treatment plants: two in Middlesex County with a combined capacity of 0.125 MGD, one in West Point (King William County) with a capacity of 0.60 MGD, one in King William (King William County) with a capacity of 0.10 MGD, two in Surry County with a combined capacity of 0.125 MGD and one in Isle of Wight County with a capacity of 0.05 MGD. The interceptor system for these localities includes 39 pumping stations. In the Counties of King William, King and Queen, Middlesex, Mathews and Surry, HRSD is responsible for the collection, conveyance and treatment of wastewater.

**System Improvements and Innovations**

HRSD has completed significant renewals and improvements to its treatment plants, pump stations, interceptor sewers, operational and administrative facilities in recent years. Electrical equipment upgrades throughout all HRSD facilities have been made to replace aging system components as well as meet new arc flash safety requirements. The on-going infrastructure renewal program has replaced a number of major interceptor pipelines and pump stations in the southern portion of the District's service area over the Norchester Street Pump Station Replacement; the South Trunk Sewer Section G; and the State Street Pump Station Electrical Modifications in Norfolk; the Effingham Street 24-inch Interceptor Force Main Emergency Replacement in Portsmouth, and the Courthouse Pressure Reducing Station Installation in Virginia Beach. In the Peninsula portion of the service area major interceptor pipelines and pump station improvements include: the Center Avenue Pump Station, the Williamsburg to James River

Interceptor Force Main, the Warwick Blvd to James River Interceptor Force Main, the Jefferson Avenue Interceptor Force Main, and the 33rd Street Pump Station.

HRSD has directed significant effort to meet new mass discharge limits on nitrogen and phosphorus as a result of the six state efforts to restore the Chesapeake Bay. As a result of the capital projects at the York River, Nansemond, Army Base and James River Treatment Plants, HRSD has met these new stringent limits since calendar year 2011, the first compliance deadline. Through the use of creative design and phased construction, HRSD deploys cost-effective adaptive technologies to take advantage of the existing facilities and the diversity of treatment processes at each plant. There are over \$166 million in treatment plant improvements under construction at the Virginia Initiative Plant (“VIP”) to meet the next Chesapeake Bay compliance deadline in 2017. Based on these investments, HRSD estimates that additional infrastructure improvements are not needed to meet the projected nutrient limits in 2022, unless the state concludes that more stringent water quality standards are required based on the results of the Lower James River Chlorophyll Criteria Study. The purpose of this study is to provide a scientifically defensible basis for the tidal James River nutrient allocations under the Chesapeake Bay total maximum daily load. The study was designed to identify the causes and consequences of algal blooms and develop models to estimate their occurrence by linking Chlorophyll to nutrients and other environmental factors. In addition, the study is assessing the impact of algal blooms on aquatic life and other water quality indicators. Though the environmental monitoring and data analysis has been completed, the modeling is still in an active stage. HRSD expects the modeling and subsequent policy decisions regarding any changes in standards to be complete by the end of 2018.

A comprehensive metering network has been installed throughout the Wastewater System to aid in optimizing system operations and to provide flow data to HRSD’s new dynamic hydraulic model for calibration and validation purposes. The hydraulic model is one of the most sophisticated sewer modeling efforts in the country and is being used to guide placement and sizing of future system improvements to cost effectively address wet weather peak flows. In addition, HRSD uses the hydraulic model to evaluate new connections to the system to ensure capacity, size new pipelines and pump stations, develop contingency scenarios and improve system operational efficiency. The hydraulic model was also instrumental in HRSD’s decision to take the Chesapeake-Elizabeth Treatment Plant offline and divert the flow to use available capacity at the Atlantic Treatment Plant. To divert the flow and provide reliable service in the future, approximately \$100 million will be spent before December 2021 on various interceptor projects including replacing 7,500 linear feet of force main originally installed in 1965 with larger diameter pipe, wet weather storage, construction of the new Elbow Road Pressure Reducing Station and reliability upgrades at six additional pressure reducing stations. HRSD estimates that the 30-year net present value of savings realized from this decision will be between \$133 million to \$205 million.

HRSD owns the second Ostara nutrient recovery facility in the United States. The patented Ostara process recovers phosphorus and nitrogen from the wastewater treatment process, rather than releasing it into the Chesapeake Bay, and converts it to a slow-release, high-phosphorus content, commercial fertilizer.

The District continues to evaluate potential renewable energy projects, such as the Atlantic Treatment Plant Digester Gas Combined Heat and Power project completed in 2013. This project feeds internal combustion engines with treated digester gas to meet up to 40% of the 2.5 megawatt demand of the treatment plant and provide heating to the administration buildings and digesters. The digester gas treatment system uses a biological hydrogen sulfide gas scrubber, which is the first municipal installation in North America. In 2008, HRSD partnered with the Navy to use the Atlantic Treatment Plant’s effluent to act as a heat sink for a large Navy facility located adjacent to the plant. This system, similar in function to a geothermal system, saves the Navy \$3 million per year and won a Federal Facility Presidential Award in 2009.

HRSD owns 150 pump stations and pressure reducing stations that use various control scenarios using programmable controls to maintain various set points throughout the collection system. To provide a more reliable and robust control and monitoring system cellular communications will be implemented throughout HRSD's service areas and new control panels will be placed at every station and system control points. The new Supervisory Control and Data Acquisition (SCADA) system will allow for future capacity optimization control regimes, including Real Time Control and predictive measures to get the most out of the collection system. Current estimated cost of the system is \$23.5 million. Current completion date is expected to be spring of 2019.

At the Atlantic Treatment Plant, HRSD is constructing a new thermal hydrolysis process for biosolids handling. The process hydrolyzes and disintegrates sludge using pressure and temperature. As a result, biosolids are designated as Class "A," which means they are pathogen free and have far fewer land application restrictions, additional biogas is produced for the Combined Heat and Power system, and the process allows significant additional capacity to be gained from the existing anaerobic digesters. HRSD expects this project to be the second such installation in the United States.

The District is a leading agency in wastewater research and development. In collaboration with an international group of researchers and external partners, the District played a major role in patenting a process using mainstream external selectors to improve biomass settleability and stabilize biological phosphorus removal. This technology was installed at the James River Treatment Plant in 2015 and in one train at the Urbanna Treatment Plant in 2016. In addition, the District is collaborating with an international group of agencies and academic institutions to study a revolutionary wastewater process using a relatively new bacterium called anammox. The District started operating the first two full-scale sidestream treatment processes using anammox in the Western Hemisphere at York River Treatment Plant and James River Treatment Plant. HRSD developed and patented (pending) a new control system for one of those processes known as the AnitaMox process. HRSD, in collaboration with others, patented a suite of technologies associated with the treatment of nitrogen using low energy, low carbon, and intensified (smaller tanks) processes and based on mainstream nitrite shunt and deammonification (anammox). This technology suite is known as "AVN" and has been commercialized through a competitive process with World Water Works, Inc. HRSD installed this control system at the Boat Harbor Treatment Plant with significant improvements in nitrogen removal performance at very low cost.

The District is also investigating other innovative projects to reduce energy usage and limit the discharge of contaminants to the environment. The District is using ammonia-based aeration control at two plants to improve nutrient removal while reducing energy, alkalinity, hypochlorite and supplemental carbon demand. There are only a few plants in the United States using this control strategy.

The District has developed an innovative program called the Sustainable Water Initiative for Tomorrow ("SWIFT") to address the challenges of declining aquifer levels, land subsidence and saltwater intrusion and provide additional benefits to the region, including nutrient credits for urban stormwater and other needs. SWIFT will add advanced water treatment ("AWT") to up to seven of District's existing treatment plants to produce more than 100 MGD of water that meets drinking water standards and is compatible with the receiving aquifer. Water meeting drinking water standards ("SWIFT Water") will be injected into the Potomac Aquifer System as part of a groundwater replenishment program to counter the aquifer challenges described above.

The next step in the SWIFT program is the completion of a 1 MGD demonstration facility, known as the SWIFT Research Center ("SWIFTRC"), to demonstrate, on a meaningful scale, that AWT will produce SWIFT Water that meets primary drinking water standards and is compatible with the receiving aquifer. The SWIFTRC is under construction and will be operational in early 2018, and, assuming successful operation of the demonstration facility, the District is planning on moving forward

with full-scale AWT at up to seven of its existing treatment plants for a combined capacity of over 100 MGD.

### **Capital Improvement Program**

The District's Capital Improvement Program is designed to meet regulatory requirements, including both nutrient reduction and sanitary sewer overflow reduction, aging infrastructure renewals and replacements, biosolids management and increased capacity. The District uses a ten-year planning horizon for the CIP. The CIP is updated each year and modified as circumstances dictate. The Commission approves the overall program and the first year of the plan and appropriates funds on an individual project basis. The District also uses a CIP project prioritization program using a decision-analysis based process. This process allows each proposed project to be considered objectively against the merits of other proposed projects to ensure the right project is completed at the right time. Individual projects are scored using performance measures based on ten criteria and ranked. After the CIP review team considers each project score for consistency, the CIP leadership team makes final decisions on project acceptability and develops a prioritized project schedule based on projected capital funding availability.

The 2018-2027 CIP includes approximately \$2.35 billion in interceptor system, treatment plant and other facility improvements. Of that total, \$575 million is identified for the rehabilitation and upgrade of wastewater treatment plants. A number of interceptor sewer projects, totaling approximately \$527 million are in the planning, design or construction phase. These planned projects are proposed to address aging infrastructure issues within the extensive District interceptor sewer piping system. Upgrades to aging sewer pump stations and new pump stations to serve Hampton Roads are an important part of the CIP with over \$165 million of such improvements planned in the next ten years. The CIP includes \$50 million in anticipated biosolids management improvements.

The District will play a critical role in assisting the localities it serves to address the region's sanitary sewer overflow reduction program as mandated by the Consent Decree (as defined herein). As part of this effort, the District has implemented a significant regional interceptor sewer metering program, a hydraulic sanitary sewer computer model and a sanitary sewer evaluation study to develop a Regional Wet Weather Management Plan ("RWWMP"). In 2011, the District worked with the localities to develop a private property inflow and infiltration program as required by the Consent Decree. This program will reduce inflow and infiltration coming from private house laterals as well as commercial property. See "—State Consent Agreement and EPA Consent Decree" below.

[Remainder of page intentionally left blank]

The following table sets forth the District’s anticipated sources of funds for its Capital Improvement Plan in Fiscal Years 2018 through 2022.

**CIP, Fiscal Years 2018 to 2022**  
**(Dollar amounts in thousands)**  
**(As of Fiscal Years ended June 30)<sup>(1)</sup>**

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>Total (2018-22)</u>
Beginning Capital Reserves <sup>(2)</sup>	37,452	58,722	54,809	-	-	150,983
Debt Funded <sup>(3)</sup>	96,658	21,658	21,188	104,712	90,369	334,584
Cash	58,802	86,071	98,793	105,288	128,631	477,585
Grants and Other Reimbursements	5,810	3,359	210	-	1,000	10,379
<b>Total Sources</b>	<u>198,722</u>	<u>169,809</u>	<u>175,000</u>	<u>210,000</u>	<u>220,000</u>	<u>973,531</u>
Capital Expenditures	140,000	115,000	175,000	210,000	220,000	860,000
Ending Capital Reserves	58,722	54,809	-	-	-	

(1) Totals may not add due to rounding.

(2) Represents initial balance and unexpended Bond proceeds.

(3) Includes expected debt funding and approved Clean Water Revolving Loan Funds.

The District plans to fund the Capital Improvement Program through a combination of cash and debt financing as shown in the above table. The CIP also includes \$1.49 billion in funding in Fiscal Years 2023 through 2027, of which \$775 million is planned to be funded with debt proceeds and \$712 million with operating cash.

In addition to its ten-year planning horizon, the District undertakes preliminary planning for its CIP through 2037. While subject to change, the District estimates additional capital expenditures of \$2.6 billion for years 2028-2037, with approximately half to be financed with new debt. Capital expenditures include estimated costs associated with the RWWMP discussed under “—State Consent Agreement and EPA Consent Decree” below.

### **Regulation and Permits**

The Virginia State Water Control Law (Chapter 3.1, Title 62.1, Code of Virginia, 1950, as amended) provides that the plans and specifications for wastewater facilities to be constructed be approved by the Virginia Department of Health and the Virginia Department of Environmental Quality. The District operates all of its plants and interceptor systems under permits issued by the Virginia Department of Environmental Quality.

Except as described under “—State Consent Agreement and EPA Consent Decree” and described under “—System Improvements and Innovations” above relating to the Lower James River Chlorophyll Criteria Study, the District is not aware of any pending federal or state regulatory requirements proposed in the Federal Register or Virginia Register that, in themselves, would require significant expenditures for additional capital improvements; however, the District cannot predict the scope or effect of future federal or Commonwealth regulatory actions that could require significant expenditures for capital improvements.

## **State Consent Agreement and EPA Consent Decree**

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”) between HRSD, the Commonwealth and the United States 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 extended the RWWMP submission deadline to October 1, 2017, which deadline was met as set forth below. 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 CIP. These 45 projects total approximately \$306 million, the largest of which is its ongoing upgrade to the VIP to add nutrient removal technology required under the Chesapeake Bay Program. The VIP plant upgrade will cost approximately \$166 million. All 45 projects must be completed by February 23, 2018 (except for the VIP 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 Amended Consent Decree 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 SWIFT Program. This program will assist the Commonwealth to meet its Chesapeake Bay nutrient reduction commitments and save HRSD’s 14 localities approximately \$1 to \$2 billion in avoided Chesapeake Bay-related storm water control costs.

On September 29, 2017, HRSD submitted the IMP to EPA and the Commonwealth for approval. The IMP calls for investing approximately \$200 million in additional wet weather capacity-related sewer overflow controls between now and 2030 along with approximately \$1 billion to implement the SWIFT program. After 2030, the IMP commits HRSD to submit a Final Remediation Plan, which may call for full implementation of the RWWMP, a subset of priority projects from the scenario with the greatest environmental benefits, investments in emerging environmental issues including sea level rise adaptation, or some combination of these or other regional environmental priorities. While cost projections in this

time frame are inherently speculative, this subset of projects could cost \$1 billion or more over a 25-year period (through 2055).

## **FINANCIAL MANAGEMENT**

### **General**

Through its annual budget process, management seeks to ensure that operating revenues are sufficient to meet operating expenditures and sufficient reserves are available in the event actual billings do not meet budget estimates. The construction of new plants and extension of the interceptor system are financed by a combination of operating revenues and debt financing. The following table sets out the District's operating results and debt service coverage for the Fiscal Years ended June 30, 2013, through June 30, 2017.

[Remainder of page intentionally left blank]



**Summary of Operating Expenses and Debt Service Coverage**  
**(Dollar Amounts in Thousands)**  
**(As of Fiscal Years ended June 30)<sup>(1)</sup>**

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013<sup>(2)</sup></u>
Operating Revenues					
Wastewater Treatment Charges	\$254,961	\$234,020	\$221,626	\$211,538	\$199,318
Miscellaneous	<u>3,669</u>	<u>3,861</u>	<u>3,935</u>	<u>3,643</u>	<u>3,297</u>
<b>Total Operating Revenues</b>	<b><u>\$258,630</u></b>	<b><u>\$237,881</u></b>	<b><u>\$225,561</u></b>	<b><u>\$215,181</u></b>	<b><u>\$202,615</u></b>
Non-Operating Revenues (Expenses), excluding capital grants received					
Wastewater Facility Charges	\$7,511	\$6,699	\$7,428	\$6,640	\$5,851
Investment Earnings	2,287	1,563	1,695	1,872	1,705
Bond Interest Subsidy <sup>(3)</sup>	2,275	2,399	2,444	2,364	2,602
Disposal of Capital Assets	-	-	-	-	(1,649)
Bond Issue Costs	(42)	(1,713)	(768)	-	(658)
Change in Fair Value of Investments	<u>(1,119)</u>	<u>750</u>	<u>(286)</u>	<u>(422)</u>	<u>(714)</u>
<b>Total Non-Operating Revenues</b>	<b><u>10,912</u></b>	<b><u>9,698</u></b>	<b><u>\$10,513</u></b>	<b><u>\$10,454</u></b>	<b><u>\$7,137</u></b>
<b>Total Revenues</b>	<b><u>\$269,542</u></b>	<b><u>\$247,579</u></b>	<b><u>\$236,074</u></b>	<b><u>\$225,635</u></b>	<b><u>\$209,752</u></b>
Operating Expenses, Excluding Depreciation	<u>153,387</u>	<u>146,601</u>	<u>152,815<sup>(5)</sup></u>	<u>142,161</u>	<u>118,383</u>
<b>Net Revenues</b>	<b><u>\$116,155</u></b>	<b><u>\$100,978</u></b>	<b><u>\$83,259</u></b>	<b><u>\$83,474</u></b>	<b><u>\$91,369</u></b>
Total Senior Obligations Debt Service Coverage on Senior Obligations <sup>(4)</sup>	\$35,279 3.29	\$43,419 2.33	\$44,937 1.85	\$47,220 1.77	\$37,574 2.43
Total Senior Obligations and Parity Obligations Debt Service Coverage on Senior Obligations and Parity Obligations <sup>(4)</sup>	\$57,988 2.00	\$54,643 1.85	\$57,465 1.45	\$59,739 1.40	\$48,823 1.87

- (1) Revenues and Operating Expenses are presented in accordance with generally accepted accounting principles. Debt Service presented on a cash basis (i.e., debt service actually due during the related Fiscal Year).
- (2) In Fiscal Year 2015, HRSD restated the Fiscal Year 2013 financial statements to include inventory assets.
- (3) Actual Build America Bonds subsidy received from the federal government relating to interest on the Series 2009B Bonds.
- (4) Calculated based on actual debt service payable on a current year basis.
- (5) Effective July 1, 2015, HRSD adopted GASB Statement No. 68, Accounting and Financial Reporting for Pensions and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date.

For purposes of the Senior Trust Agreement, the Liquidity Ratio is the resulting dividend of unrestricted cash divided by the Maximum Annual Debt Service on Senior Obligations. Unrestricted cash includes "... cash, cash equivalents and marketable securities that do not constitute Restricted Funds held by the District for its various purposes, but not including cash, cash equivalents and securities which constitute proceeds of Indebtedness issued to finance capital improvements or funds held in the Bond Fund for Senior Obligations (or any similar sinking fund held by a trustee for the payment of Indebtedness) or the Debt Service Reserve Fund." The Senior Trust Agreement requires that the District maintain a minimum Liquidity Ratio of 1.35 or fund the Debt Service Reserve Fund at the Debt Service Reserve Fund Requirement. The following table reflects the Liquidity Ratio for Fiscal Years 2013 to 2017. Amounts held in the Debt Service Reserve Fund for the Senior Obligations are not security for the Subordinate Obligations.

**Historical Liquidity Ratio**  
**(Dollar amounts in thousands)**  
**(As of Fiscal Years ended June 30)**

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Cash and Cash Equivalents	\$92,076	\$68,314	\$7,825	\$37,924	\$38,355
Investments – Current	14,260	18,544	19,926	-	5,569
Investments - Non-Current	<u>109,489</u>	<u>105,009</u>	<u>101,649</u>	<u>111,861</u>	<u>108,721</u>
<b>Total Cash, Cash Equivalents and Investments – Unrestricted</b>	<b>\$215,763</b>	<b>\$191,867</b>	<b>\$129,400</b>	<b>\$149,785</b>	<b>\$152,645</b>
Cash and Cash Equivalents – Restricted	22,701	91,559	86,451	139,257	179,588
Investments – Current - Restricted	-	-	-	8,600	-
<b>Total Cash, Cash Equivalents and Investments*</b>	<b><u>\$238,464</u></b>	<b><u>\$283,426</u></b>	<b><u>\$215,851</u></b>	<b><u>\$297,642</u></b>	<b><u>\$332,233</u></b>
Maximum Annual Debt Service†	\$60,206	\$57,949	\$57,807	\$59,776	\$60,114
Liquidity Ratio	3.58	3.31	2.24	2.51	2.54
Required Liquidity Ratio†	1.35	1.35	1.35	1.35	1.35

\* Includes amounts set aside pursuant to the Senior Trust Agreement and Subordinate Trust Agreement for debt service.

† Ratio to be maintained without triggering requirement under the Senior Trust Agreement to fund the Debt Service Reserve Fund for Senior Bonds. Debt service is calculated in accordance with the Senior Trust Agreement calculation of the Liquidity Ratio, which includes adjustments for Balloon Long-Term Indebtedness and Variable Rate Long-Term Indebtedness.

Pension Fund and Other Post-Retirement Benefits. For a description of the District's participation in the Virginia Retirement System, a defined benefit plan offered by the Commonwealth of Virginia, and of the post-retirement health benefits for qualifying employees of the District, see the District's Comprehensive Annual Financial Report attached as Appendix A hereto.

Debt Management. The Commission has adopted a comprehensive financial policy designed to promote sound financial management. The policy addresses, but is not limited to the following areas: reserves, budgetary principles and controls, debt affordability, debt management, risk management,

derivatives and investments. The Commission has the right to change the financial policy from time to time.

The policy requires minimum debt service coverage requirements in excess of its obligations under the Trust Agreement. It also requires cash contributions to its capital program of not less than 15% of each year's capital improvement program. Additionally, the policy establishes parameters for the investment of idle funds.

*Projected Operating Results.* The following table shows projected Revenues and Current Expenses for the Fiscal Years ending June 30, 2018, through June 30, 2022, inclusive.

**Summary of Projected Revenues and Current Expenses**  
**(Dollar Amounts in Thousands)**  
**(As of Fiscal Years ended June 30)<sup>(1)</sup>**

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Operating Revenues	\$274,633	\$295,912	\$318,831	\$343,334	\$369,875
Non-Operating Revenues	10,920	11,208	11,143	11,137	11,253
Operating Expenses Excluding Depreciation	<u>164,216</u>	<u>162,904</u>	<u>167,482</u>	<u>180,455</u>	<u>191,125</u>
Net Revenues	<u>\$121,338</u>	<u>\$144,216</u>	<u>\$162,492</u>	<u>\$174,016</u>	<u>\$190,003</u>
Expenses on Assets not Owned by HRSD	<u>(1,831)</u>	<u>(2,164)</u>	<u>(5,740)</u>	<u>(5,515)</u>	<u>(12,120)</u>
Net revenues Less Expenses on Assets not Owned by HRSD	\$123,168	\$146,380	\$168,231	\$179,531	\$202,122
Senior Obligation Debt Service	\$37,425	\$37,038	\$36,977	\$35,355	\$33,819
Total Debt Service <sup>(2)</sup>	\$61,830	\$63,932	\$64,757	\$68,443	\$71,204
Total Debt Service Coverage Ratio <sup>(2)</sup>	1.99	2.29	2.60	2.62	2.84
<b>Key Assumptions<sup>(3)</sup></b>					
Rate Increases	9.1%	9.1%	9.1%	9.0%	9.1%
Miscellaneous Revenue Growth	Varies	Varies	Varies	Varies	Varies
Decline in Consumption	1.0%	1.0%	1.0%	1.0%	1.0%
Key Inflation Trends					
Average Inflation	3.0%	3.0%	3.0%	3.0%	3.0%
Personal Services and Employment Benefits	6.5%	6.5%	6.5%	6.5%	6.5%
Utilities/Chemicals/Contractual Services	3.0%	3.0%	3.0%	3.0%	3.0%
Bond Issuance	900	-	-	453	-

(1) Totals may not add due to rounding.

(2) Assumes debt service on variable rate Subordinate 2016B Bonds of 2.5% per annum. No assurance can be given, however, that the rate on the Subordinate 2016B Bonds will not be higher than assumed above.

(3) While the District believes the assumptions set forth above are reasonable, actual results may vary.

**Budgeting and Accounting**

*Budgetary Controls.* The District adopts an annual operating budget and a 10-year Capital Improvement Plan. The budget is approved on or before June 30 of each year. The District maintains budgetary controls on a departmental basis. With the exception of capital projects, unused fund appropriations lapse at year end. As part of the budget process, the District adopts a long-range financial forecast.

*Financial Statements.* In accordance with accounting principles generally accepted in the United States, the District's audited general purpose financial statements are prepared on an accrual basis of accounting. The District's audited basic financial statements and the report thereon by KPMG LLP, for the Fiscal Year ended June 30, 2017, are included in Appendix A. The District's independent auditor, KPMG LLP, has not been engaged to perform and has not performed, since the date of its report included in Appendix A, any procedures on the financial statements addressed in that report. KPMG LLP also has not performed any procedures relating to this Official Statement.

The Government Finance Officers Association of the United States and Canada has awarded a Certificate of Achievement for excellence in Financial Reporting to the District for its comprehensive annual financial reports for 34 consecutive Fiscal Years. The District will submit its report for the Fiscal Year ended June 30, 2017, and expects to receive another Certificate of Excellence. In order to be awarded a Certificate of Excellence, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such reports must satisfy both generally accepted accounting principles and applicable legal requirements.

## **Rates**

The District periodically reviews its rate structure and revises its charges as necessary to generate the revenues required to meet its current financial obligations. The most recent general increase in rates became effective July 1, 2017. The District's full rate schedule as of July 1, 2017, can be found in the District's Comprehensive Annual Financial Report attached as Appendix A hereto.

The District's typical residential customer pays less than \$32 per month for sewage interception and treatment services provided by the District. The District's sewage interception and treatment charge generally is the smallest public service utility bill its customers receive. Generally, the District bills and collects directly from its customers on a monthly, bimonthly, or quarterly basis depending upon the community. The jurisdictions provide the first point of customer contact and appropriate meter readings, which are the basis of the District's billing operation.

Effective July 1, 2012, the District began the process of restructuring its surcharge rates to reflect the incremental cost the District incurs to treat surcharge pollutants discharged by certain industrial customers. This incremental rate structure was fully implemented effective July 1, 2014. Other costs the District incurs to treat normal sewage concentrations from industrial and residential customers are recovered through the District's volumetric rate.

The District provides billing and cashing services to several of the jurisdictions it serves, including Chesapeake, James City County, Norfolk, Smithfield, Suffolk, King William, Urbanna and Surry County, excluding the Town of Claremont. The combined bill can include jurisdictional charges for water, solid waste disposal, sewage collection, storm water mitigation and District charges for sewage interception and treatment. To date these services have been provided at minimum cost to assist the jurisdictions and customers the District serves to minimize the number of bills the customers receive and number of payments they need to make.

## **Rate Making Process**

The Enabling Act provides that the Commission is to fix and revise rates, fees and charges to provide funds that, with other funds available for such purposes, will be sufficient at all times (a) to pay the cost of maintaining, repairing and operating the Wastewater System and all improvements thereto, including reserves for such purpose and for renewals and replacements and necessary extensions and additions to the Wastewater System, (b) to pay the principal of and the interest on such revenue bonds as

the same shall become due and to provide reserves therefor, and (c) to provide a margin of safety for making such payments.

The Enabling Act provides that before any revision of rates, fees and charges shall become effective the Commission shall publish a copy thereof for four consecutive weeks in a newspaper of general circulation within the District. If, on or before the last publication, the governing body of any city or county constituting a part of the District or five hundred or more qualified voters residing within the District file a petition with the Virginia State Corporation Commission complaining of the proposed revision, the State Corporation Commission may by order suspend the placing in effect of such revision for a period not exceeding sixty days from the filing of any such petition during which time it shall investigate whether such revision is just and equitable and in accordance with the provisions of the Enabling Act. If the State Corporation Commission does not enter an order suspending, approving or disapproving such revision within sixty days from the filing of any such petition, such revision will be deemed to be in effect. The District or the party or parties filing a petition may appeal to the Supreme Court of Virginia from any such order as may be entered by the State Corporation Commission.

### **Collection of Unpaid Wastewater Treatment Charges**

The Enabling Act provides that if any bill for wastewater treatment charges is not paid in full when the same becomes due, the owner, tenant or occupant of such lot or parcel of land shall, until wastewater treatment charges are paid, cease to dispose of wastewater or industrial wastes originating from or on such property by discharge thereof directly or indirectly into the Wastewater System, and if such owner, tenant or occupant does not cease such discharge within two months thereafter, it shall be the duty of each public or private agency supplying water to such property, within five days after receipt of notice of such facts from the District, to cease supplying water to such property. If the water supply is not stopped, the District has the power to enter into any public or private property to shut off the property's water supply.

If any wastewater treatment charges are not paid within 30 days after the same become due, the District may at the expiration of such 30-day period proceed to recover the amount of any such delinquent sewage treatment charges by any action, suit or proceeding permitted by law or in equity.

The District participates in the Virginia Set-Off Debt Collection Program administered by the Virginia Department of Taxation. This program provides a means for government units and courts to collect delinquent debts by attaching individual income tax refunds and certain state lottery winnings. Jurisdictions participating in the Hampton Roads Utility Billing Service (which is managed by the District) may have the District submit their balances along with the District's. This benefits the jurisdictions since, under the Debt Set-Off Collection Program, the District has a higher payoff priority than counties and cities. The following table shows the District's treatment charge collection rate for the last ten Fiscal Years.

**Hampton Roads Sanitation District  
Collection Rate**

<b><u>Fiscal Year Ended June 30,</u></b>	<b><u>Percentage of Wastewater Treatment Charges Collected</u></b>
2008 <sup>(1)</sup>	93.2%
2009	96.5
2010	99.2
2011	98.8
2012	99.1
2013	99.3
2014	99.3
2015	99.1
2016	99.1
2017	99.1

(1) During Fiscal Year 2008, HRSD installed a new customer billing system, which resulted in the removal of certain duplicative and dormant accounts. This resulted in a one-time decline in the collection rate.

**LITIGATION**

There is no litigation pending in any court (either state or federal) or, to the knowledge of the District, threatened against the District that in any way questions or affects the validity of or the security for the Series 2017A Bonds or that would have a material adverse effect on the District's condition, financial or otherwise.

**APPROVAL OF LEGAL PROCEEDINGS**

The Series 2017A Bonds are offered subject to the approving opinion of Norton Rose Fulbright US LLP, Washington, D.C., Bond Counsel. Certain legal matters will be passed upon for the District by its General Counsel, Kellam, Pickrell, Cox & Anderson, A Professional Corporation, Norfolk, Virginia, and for the Underwriters by Kaufman & Canoles, P.C., Norfolk, Virginia.

**TAX MATTERS**

**General**

In the opinion of Norton Rose Fulbright US LLP, Bond Counsel, assuming compliance by the District with its covenant to comply with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"), with respect to the Series 2017A Bonds, and except as provided in the following sentence, interest on the Series 2017A Bonds will not be includable in the gross income of the owners of the Series 2017A Bonds for purposes of federal income taxation under existing law. Interest on the Series 2017A Bonds will be includable in the gross income of the owners thereof retroactive to the date of issue of the Series 2017A Bonds in the event of a failure by the District to comply with applicable requirements of the Code and its covenants regarding use, expenditure and investment of the proceeds of the Series 2017A Bonds and timely payment of certain investment earnings to the United States Treasury. Bond

Counsel renders no opinion as to the exclusion from gross income of the interest on the Series 2017A Bonds for federal income tax purposes on or after the date on which any action is taken or not taken affecting such covenants upon the approval of counsel other than Bond Counsel.

Interest on the Series 2017A Bonds will not be an item of tax preference for purposes of the federal individual or corporate alternative minimum tax. Such interest will, however, be included in the calculation of a corporation's federal alternative minimum tax liability imposed by the Code. The Code contains other provisions that could result in tax consequences, as to which Bond Counsel renders no opinion, as a result of ownership of the Series 2017A Bonds or the inclusion in certain computations (including, without limitation, those related to the corporate alternative minimum tax) of interest that is excluded from gross income.

### **Original Issue Discount**

The excess, if any, of the amount payable at maturity of any maturity of the Series 2017A Bonds over the issue price thereof constitutes original issue discount. The amount of original issue discount that has accrued and is properly allocable to an owner of any maturity of the Series 2017A Bonds with original issue discount (a "Discount Bond") will be excludable from gross income for federal income tax purposes to the same extent as interest on the Series 2017A Bonds. In general, the issue price of a maturity of the Series 2017A Bonds is the first price at which a substantial amount of Series 2017A Bonds of that maturity was sold (excluding sales to bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents, or wholesalers), which may not be the same as the price shown on the inside cover of this official statement, and the amount of original issue discount accrues in accordance with a constant yield method based on the compounding of interest. A purchaser's adjusted basis in a Discount Bond will be increased by the amount of such accruing discount for purposes of determining taxable gain or loss on the sale, redemption or other disposition of such Discount Bond for federal income tax purposes.

A portion of the original issue discount that accrues in each year to an owner of a Discount Bond that is a corporation will be included in the calculation of the corporation's federal alternative minimum tax liability. In addition, original issue discount that accrues in each year to an owner of a Discount Bond will be included in the calculation of the distribution requirements of certain regulated investment companies and may result in some of the collateral federal income tax consequences discussed herein. Consequently, owners of any Discount Bond should be aware that the accrual of original issue discount in each year may result in an alternative minimum tax liability, additional distribution requirements or other collateral federal income tax consequences although the owner of such Discount Bond has not received cash attributable to such original issue discount in such year.

The accrual of original issue discount and its effect on the sale or other disposition of a Discount Bond that is not purchased in the initial offering at the first price at which a substantial amount of Discount Bonds of that maturity is sold to the public may be determined according to rules that differ from those described above. Owners of Discount Bonds should consult their tax advisors with respect to the determination for federal income tax purposes of the amount of original issue discount or interest properly accruable with respect to such Discount Bonds and with respect to state and local tax consequences of owning and disposing of such Discount Bonds.

### **Original Issue Premium**

The excess, if any, of the tax basis of the Series 2017A Bonds to a purchaser (other than a purchaser who holds such Series 2017A Bonds as inventory, stock in trade or for sale to customers in the ordinary course of business) who purchased such Series 2017A Bonds as part of the initial public offering

and at an issue price greater than the amount payable at maturity is “bond premium.” Bond premium is to be amortized over the term of such Series 2017A Bonds for federal income tax purposes (or, in the case of a bond with bond premium callable prior to its stated maturity, the amortization period and yield may be required to be determined on the basis of an earlier call date that results in the lowest yield on such bond). Owners of such Series 2017A Bonds are required to decrease their adjusted basis in such Series 2017A Bonds by the amount of amortizable bond premium attributable to each taxable year such Series 2017A Bonds are held. The amortizable bond premium on such Series 2017A Bonds attributable to a taxable year will not be deductible for federal income tax purposes; however, bond premium will be treated as an offset to qualified stated interest received on such Series 2017A Bonds. Owners of such Series 2017A Bonds should consult their tax advisors with respect to the determination for federal income tax purposes of the treatment of bond premium upon sale or other disposition of such Series 2017A Bonds and with respect to the state and local tax consequences of owning and disposing of such Series 2017A Bonds.

### **Backup Withholding**

Interest paid on the Series 2017A Bonds is subject to information reporting in a manner similar to interest paid on taxable obligations. While this reporting requirement does not, by itself, affect the excludability of interest from gross income for federal income tax purposes, the reporting requirement causes the payment of interest on the Series 2017A Bonds to be subject to backup withholding if such interest is paid to beneficial owners that (a) are not “exempt recipients,” and (b) either fail to provide certain identifying information (such as the beneficial owner’s taxpayer identification number) in the required manner or have been identified by the IRS as having failed to report all interest and dividends required to be shown on their income tax returns. Generally, individuals are not exempt recipients, whereas corporations and certain other entities are exempt recipients. Amounts withheld under the backup withholding rules from a payment to a beneficial owner are allowed as a refund or credit against such beneficial owner’s federal income tax liability so long as the required information is furnished to the IRS.

### **Collateral Tax Consequences**

Prospective purchasers of the Series 2017A Bonds should be aware that the ownership of tax-exempt obligations may result in collateral federal income tax consequences to certain taxpayers, including, without limitation, financial institutions, property and casualty insurance companies, certain foreign corporations doing business in the United States, certain S corporations with excess passive income, individual recipients of Social Security or Railroad Retirement benefits, taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry tax-exempt obligations and taxpayers who may be eligible for the earned income tax credit. Prospective purchasers of the Series 2017A Bonds should consult their tax advisors as to the applicability and impact of these consequences.

### **Virginia Taxes**

The Enabling Act provides that the Series 2017A Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, shall be free and exempt from taxation by the Commonwealth of Virginia and by any political subdivision thereof.

### **Future Developments**

Future or pending legislative proposals, if enacted, regulations, rulings or court decisions may cause interest on the Series 2017A Bonds to be subject, directly or indirectly, to federal income taxation or to State or local income taxation, or may otherwise prevent beneficial owners from realizing the full current benefit of the tax status of such interest. Legislation or regulatory actions and future or pending



proposals may also affect the economic value of the federal or state tax exemption or the market value of the Series 2017A Bonds. For example, legislation has been introduced in Congress to significantly change the income tax rates for individuals and corporations and to repeal the alternative minimum tax for individuals and corporations for tax years beginning after December 31, 2017, which, if enacted, may affect the economic and market value of the Series 2017A Bonds. Prospective purchasers of the Series 2017A Bonds should consult their tax advisors regarding any future, pending or proposed federal or state tax legislation, regulations, rulings or litigation as to which Bond Counsel expresses no opinion.

## **UNDERWRITING**

Pursuant and subject to the terms and conditions set forth in a Bond Purchase Agreement (the “Purchase Agreement”) dated December \_\_, 2017, between the District and Merrill Lynch, Pierce, Fenner & Smith Incorporated, Citigroup Global Markets Inc. and Morgan Stanley & Co. LLC (the “Underwriters”), for whom Merrill Lynch, Pierce, Fenner & Smith Incorporated is acting as representative, and the District, the Underwriters agree to purchase from the District, and the District agrees to sell to the Underwriters, all, but not less than all, of the Series 2017A Bonds at a purchase price that results in an Underwriters’ discount of \$\_\_\_\_\_ from the initial reoffering prices derived from the yields shown on the inside cover page. The Underwriters have supplied the information as to the prices or yields shown on the inside cover page.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Under certain circumstances, the Underwriters and their affiliates may have certain creditor or other rights against the District and its affiliates in connection with such activities. In the course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities or instruments of the District (directly, as collateral securing other obligations or otherwise) or persons and entities with relationships with the District. The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long or short positions in such assets, securities and instruments.

## **FINANCIAL ADVISOR**

The District has retained PFM Financial Advisors LLC, Arlington, Virginia, as financial advisor (the “Financial Advisor”) in connection with the issuance of the Series 2017A Bonds. Although the Financial Advisor assisted in the review of this Official Statement, the Financial Advisor is not obligated to undertake, and has not undertaken to make, an independent verification or to assume responsibility for the accuracy, completeness, or fairness of the information contained in this Official Statement. The Financial Advisor is a financial advisory, investment management and consulting organization and is not engaged in the business of underwriting municipal securities.

## **VERIFICATION OF MATHEMATICAL COMPUTATIONS FOR THE REFUNDED BONDS**

The accuracy of the arithmetical and mathematical computations (a) of the adequacy of the maturing principal amounts of the Defeasance Obligations in the Escrow Fund together with the interest

income thereon and uninvested cash, if any, to pay, when due, the principal of, redemption premium, if any, and interest on the Refunded Bonds, and (b) relating to the determination of compliance with certain regulations and rulings promulgated under the Code will be verified by Bingham Arbitrage Rebate Services Inc. Such verification of arithmetical accuracy and computations shall be based upon information and assumptions supplied by the District and on interpretations of the Code provided by Bond Counsel.

## **RATINGS**

The Series 2017A Bonds have been assigned ratings of “AA” and “AA” by Standard & Poor’s Global Ratings, a division of Standard & Poor’s Financial Services LLC, and Fitch Ratings, respectively. Such ratings reflect only the view of such organizations and a fuller explanation of the significance of such ratings may be obtained from the rating agencies. A rating is not a recommendation to buy, sell or hold the Series 2017A Bonds. The District furnished to such rating agencies certain information regarding its policies, practices and finances, including information that is not included in this Official Statement. There is no assurance that such policies, practices and finances or such ratings will continue for any given period of time or that such ratings will not be revised downward or withdrawn entirely by such rating agencies. Any such downward revision or withdrawal could have an adverse effect on the market price of the Series 2017A Bonds.

## **CONTINUING DISCLOSURE**

The Securities and Exchange Commission has adopted Rule 15c2-12 under the Securities Exchange Act of 1934, as amended (the “Rule”). In general, the Rule prohibits an underwriter from purchasing or selling municipal securities, such as the Series 2017A Bonds, unless it has determined that the issuer of such securities and other persons deemed to be material “obligated persons” have committed to provide to The Electronic Municipal Market Access (“EMMA”) system administered by the Municipal Securities Rulemaking Board (i) on an annual basis, certain financial information and operating data (“Annual Reports”), and audited financial statements, if available, or such unaudited financial statements as may be required by the Rule, and (ii) notice of various events described in the Rule (“Event Notices”).

The District will covenant in the Continuing Disclosure Agreement (the form of which appears in Appendix E) for the benefit of the holders of the Series 2017A Bonds to provide to EMMA annually, not later than December 31 of each year, commencing December 31, 2018, Annual Reports with respect to itself, as issuer. Similarly, the District will promptly provide Event Notices with respect to the Series 2017A Bonds to EMMA. In the five years preceding the date of this Official Statement, the District has materially complied with its other undertakings under the Rule. The District notes, however, that in connection with the District’s determination that it had entered a Reserve Funding Period on December 31, 2010, the District filed notice thereof with EMMA on October 15, 2014.

The Continuing Disclosure Agreement requires the District to provide only that information that is subject to the terms of the Continuing Disclosure Agreement and only at specific times. The District may, from time to time, provide certain information and data in addition to that required by the Continuing Disclosure Agreement. If the District chooses to provide such information and data, it has no obligation to update such information or data or to include it in a future disclosure.

The sole remedy for a default under the Continuing Disclosure Agreement is to bring an action for specific performance of the District’s covenants hereunder, and no assurance can be provided as to the outcome of any such proceeding.

**MISCELLANEOUS**

All of the foregoing summaries or descriptions of the provisions of the Enabling Act, the Series 2017A Bonds and the Trust Agreement are made subject to all of the detailed provisions thereof to which reference is made for further information. The foregoing summaries do not purport to be complete statements of any or all of the provisions thereof. Copies of the Trust Agreement are available upon request to the District at the following address: 1434 Air Rail Avenue, Virginia Beach, Virginia 23455, Phone (757) 460-2261.

Any statement in this Official Statement involving matters of opinion whether or not expressly so stated is intended as such and not as a representations of fact. The execution and delivery of this Official Statement have been duly authorized by the Commission.

---

Chair  
Hampton Roads Sanitation District Commission

---

General Manager  
Hampton Roads Sanitation District

---

Director of Finance  
Hampton Roads Sanitation District

[This Page Is Intentionally Left Blank.]

## APPENDIX A

### **Basic Financial Statements and Related Auditor's Report for the Fiscal Year ended June 30, 2017, as rendered by KPMG LLP<sup>(1)</sup>**

---

(1) This Appendix comprises the District's Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2017. In order to preserve cross-references within such pages, this Appendix has not been repaginated and, accordingly, retains the original pagination.

[This Page Is Intentionally Left Blank.]

# Comprehensive Annual Financial Report

FOR THE FISCAL YEARS ENDED JUNE 30, 2017 AND 2016

*Hampton Roads Sanitation District*  
*(A Component Unit Of The Commonwealth Of Virginia)*



**HRSD**

Ensuring future generations  
inherit clean waterways

The logo for Hampton Roads Sanitation District (HRSD) features the letters "HRSD" in a bold, black, sans-serif font. The letters are closely spaced and have a slightly stylized appearance. The logo is centered between two thick, horizontal black bars that extend across the width of the text.

Cleaning wastewater every day for a better Bay.

## **HAMPTON ROADS SANITATION DISTRICT**

*(A Component Unit of the Commonwealth of Virginia)*

# **COMPREHENSIVE ANNUAL FINANCIAL REPORT**

**For the fiscal years ended**

**June 30, 2017 and 2016**

**Prepared by:  
Finance Department**

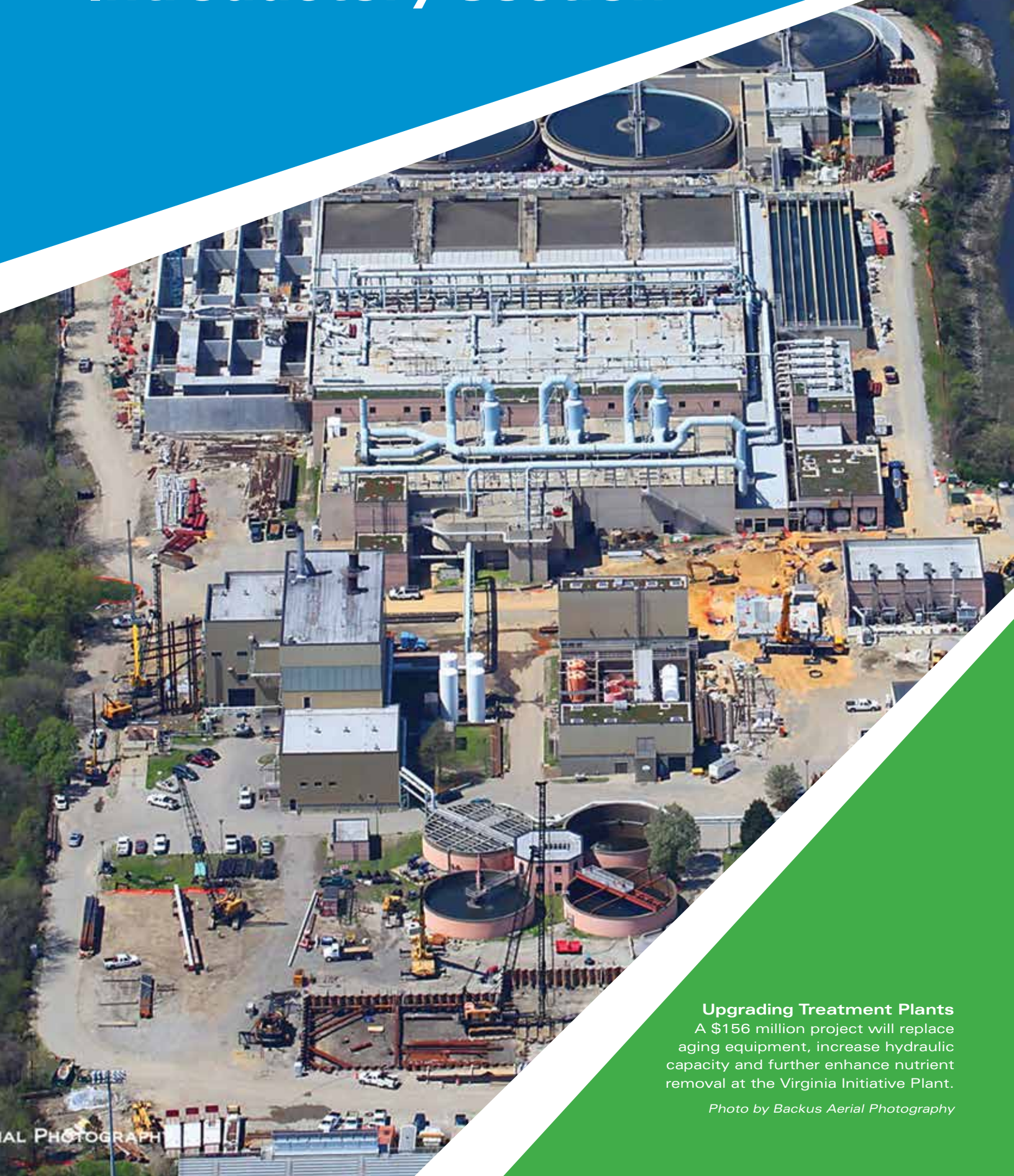


# HAMPTON ROADS SANITATION DISTRICT

## TABLE OF CONTENTS

	Page
<b>INTRODUCTORY SECTION</b>	
Transmittal Letter	1
GFOA Certificate of Achievement	4
Principal Officials	5
Organization Chart	6
Map	7
History	8
<b>FINANCIAL SECTION</b>	
Independent Auditors' Report	9
Management's Discussion and Analysis (Unaudited)	11
<b>Basic Financial Statements</b>	
Statements of Net Position	16
Statements of Revenues, Expenses and Changes in Net Position	18
Statements of Cash Flows	19
Notes to Financial Statements	20
<b>REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)</b>	
Schedule of Changes in Net Pension Liability and Related Ratios	39
Schedule of Employer Contributions	40
Schedule of Funding Progress	41
<b>STATISTICAL SECTION (UNAUDITED)</b>	
Statistical Section Narrative	43
Demographic and Other Miscellaneous Statistics	45
Schedule of Operating Expenses, Net Position by Component and Debt Service Expenditures	46
Objective Classification of Departmental Expenditures	48
Ratios of Outstanding Debt by Type	49
Rate Schedule - Wastewater Treatment Charges	50
Rate Schedule - Wastewater Facility Charges	51
Treatment Plant Operating Summary	52
Ten Largest Customers	54
Ten Largest Employers	55
Comparison of Treated Flow to Billed Flow	56
Number of Employees by Identifiable Activity	57
<b>OTHER SUPPLEMENTAL SECTION (UNAUDITED)</b>	
Summary of Primary Bonded Debt Service	59
Budgetary Comparison Schedule	60
Note to Budgetary Comparison Schedule	61
Schedule of Revenues, Expenditures and Debt Service for Operations	63
Objective Classification of Departmental Expenditures for Operations	64
Department Summary of Expenditures	66

# Introductory Section



## Upgrading Treatment Plants

A \$156 million project will replace aging equipment, increase hydraulic capacity and further enhance nutrient removal at the Virginia Initiative Plant.

*Photo by Backus Aerial Photography*

October 31, 2017

HRSD Commission  
Virginia Beach, Virginia

Dear Commissioners:

Political subdivisions of the Commonwealth of Virginia are required to publish a complete set of audited financial statements. This report fulfills that requirement for the fiscal year ended June 30, 2017.

HRSD's management assumes full responsibility for the completeness and reliability of information contained in this report, based on a comprehensive framework of internal control it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements.

KPMG LLP, Certified Public Accountants, has issued an unmodified ("clean") opinion on HRSD's financial statements for the year ended June 30, 2017. The independent auditors' report is located at the front of the financial section of this report.

Management's Discussion and Analysis (MD&A) immediately follows the independent auditors' report and provides a narrative introduction, overview and analysis of the basic financial statements. The MD&A, which complements this letter of transmittal, should be read in conjunction with it.

## **PROFILE OF HRSD**

HRSD is an independent political subdivision of the Commonwealth of Virginia (the Commonwealth) created by referendum on November 5, 1940. HRSD was established to abate water pollution in the Hampton Roads area by providing a system of interceptor mains and wastewater treatment plants.

Approximately 1.7 million individuals, more than one-fifth of Virginia's population, reside in HRSD's service area, which is located in the southeastern corner of the Commonwealth. HRSD's territory of approximately 3,100 square miles encompasses nine cities, nine counties and several large military facilities. A brief history of HRSD is provided on page 8. HRSD is required by its enabling act to meet its obligations by charging user fees for its wastewater treatment services; no taxing authority is authorized by the enabling act. Currently, HRSD provides service and bills to approximately 470,000 service connections.

A board of eight commissioners (the Commission), appointed by the Governor of Virginia, governs HRSD. Commission members, who serve four-year staggered terms, can be reappointed without limitation and may be suspended or removed by the Governor at his pleasure. The Commission appoints a General Manager, who appoints the senior staff.

HRSD owns and operates 13 treatment plants. The nine major plants in Hampton Roads have design capacities ranging in size from 15 to 54 million gallons per day (MGD). Five of the major plants are

located south of the James River and four are north of the James River (see map on page 7). The combined capacity of these nine plants is approximately 249 MGD. HRSD's five small rural treatment plants have a combined capacity of almost one MGD.

HRSD maintains 540 miles of pipelines ranging from six inches to 66 inches in diameter. Interceptor pipelines, along with 89 pump stations in Hampton Roads, interconnect into two independent systems, one south of the James River and one north of the James River. The system allows some flow diversions to provide for maintenance or emergency work. HRSD owns and maintains 33 pump stations on the Middle Peninsula.

## **LOCAL ECONOMY**

HRSD's service area includes nearly all of the Virginia Beach-Norfolk-Newport News Metropolitan Statistical Area (MSA). It is the ninth largest MSA in the southeastern United States and the thirty-seventh largest in the nation. Unlike many metropolitan areas, Hampton Roads' population nucleus is not confined to one central city. Instead, the approximately 1.7 million residents are spread among several cities and counties. Virginia Beach is the most populous city in the Commonwealth, with Norfolk and Chesapeake second and third, respectively. Suffolk is the largest city by land area. Unemployment rates remain below national averages in the region, which has a civilian labor force of 830,400.

The regional economy is supported by one of the highest military concentrations in the nation, diverse manufacturing and service sectors, shipbuilding and repair work, international port activities and tourism. Several state and private colleges and a large healthcare infrastructure also lend stability to the region.

A diverse customer base allows HRSD to maintain stable revenues. The ten largest customers account for only 9.7 percent of wastewater revenues for fiscal year 2017. In addition, HRSD's 2017 revenues contained only limited reliance (2.8 percent) on new customer connections.

## **LONG-TERM FINANCIAL PLANNING**

HRSD's Financial Policy helps it maintain its solid fiscal health. Budgetary principles include using ongoing revenues to pay for ongoing expenses, and establishing annual cash contribution goals of at least 15 percent of budgeted capital costs. Under the Financial Policy, senior debt service coverage and total adjusted debt service coverage ratios should not be less than 1.5 and 1.4 times annual debt service, respectively. Operating and ten-year capital improvement budgets are adopted annually. Included in the operating budget is a long-range financial forecast, which is guided by projections of operating and capital needs and the aforementioned Financial Policy requirements.

## **MAJOR INITIATIVES**

HRSD continues its ambitious \$2.4 billion, ten-year Capital Improvement Program. Regulatory requirements to reduce nutrient discharges, initiatives to ensure appropriate wet weather capacity exists within the regional sanitary sewer system, major plant upgrades and replacements of interceptor

pipelines drive the capital program. Major projects are currently under construction at the Army Base Treatment Plant and the Virginia Initiative Plant.

To minimize the impacts of its capital investments on ratepayers, HRSD continues to pursue grant opportunities when available. In 2017, HRSD received approximately \$8.6 million in grant reimbursements for improvements to several of its treatment plants.

## **AWARDS AND ACKNOWLEDGMENTS**

The Government Finance Officers Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to HRSD for its comprehensive annual financial report (CAFR) for the fiscal year ended June 30, 2016. This was the 34th consecutive year that HRSD has received this prestigious award. In order to be awarded a Certificate of Achievement, HRSD must publish an easily readable and efficiently organized CAFR that satisfies both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current CAFR continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

The preparation of this CAFR was made possible by the dedicated service of the entire Department of Finance staff. All members of the department have our sincere appreciation for their contributions to the preparation of this report. Credit must also be given to the Commission for their support for maintaining the highest standard of professionalism in the management of HRSD's finances.

Respectfully submitted,



Edward Henifin, P.E.  
General Manager



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



Carroll L. Acors, CPA  
Chief of Accounting



Government Finance Officers Association

Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting

Presented to

**Hampton Roads Sanitation District**  
**Virginia**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2016**

Executive Director/CEO

# Principal Officials

June 30, 2017

---

## **COMMISSIONERS**

Frederick N. Elofson, CPA, Chair

Maurice P. Lynch, PhD, Vice-Chair

Michael E. Glenn

Vishnu K. Lakdawala, PhD

Willie Levenston, Jr.

Stephen C. Rodriguez

Elizabeth A. Taraski, PhD

Ann W. Templeman

## **COMMISSION SECRETARY**

Jennifer L. Cascio

## **SENIOR STAFF**

Edward G. Henifin, PE  
General Manager

Jay A. Bernas, PE  
Director of Finance  
and Treasurer

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

Donald C. Corrado  
Director of Information  
Technology

Steven G. de Mik, CPA  
Director of Operations

Paula A. Hogg  
Director of Talent Management

Phillip L. Hubbard, PE  
Special Assistant for  
Compliance Assurance

Bruce W. Husselbee, PE  
Director of Engineering

James J. Pletl, PhD  
Director of Water Quality

Leila E. Rice  
Director of  
Communications

## **COUNSEL**

Kellam, Pickrell, Cox & Anderson, PC  
General Counsel

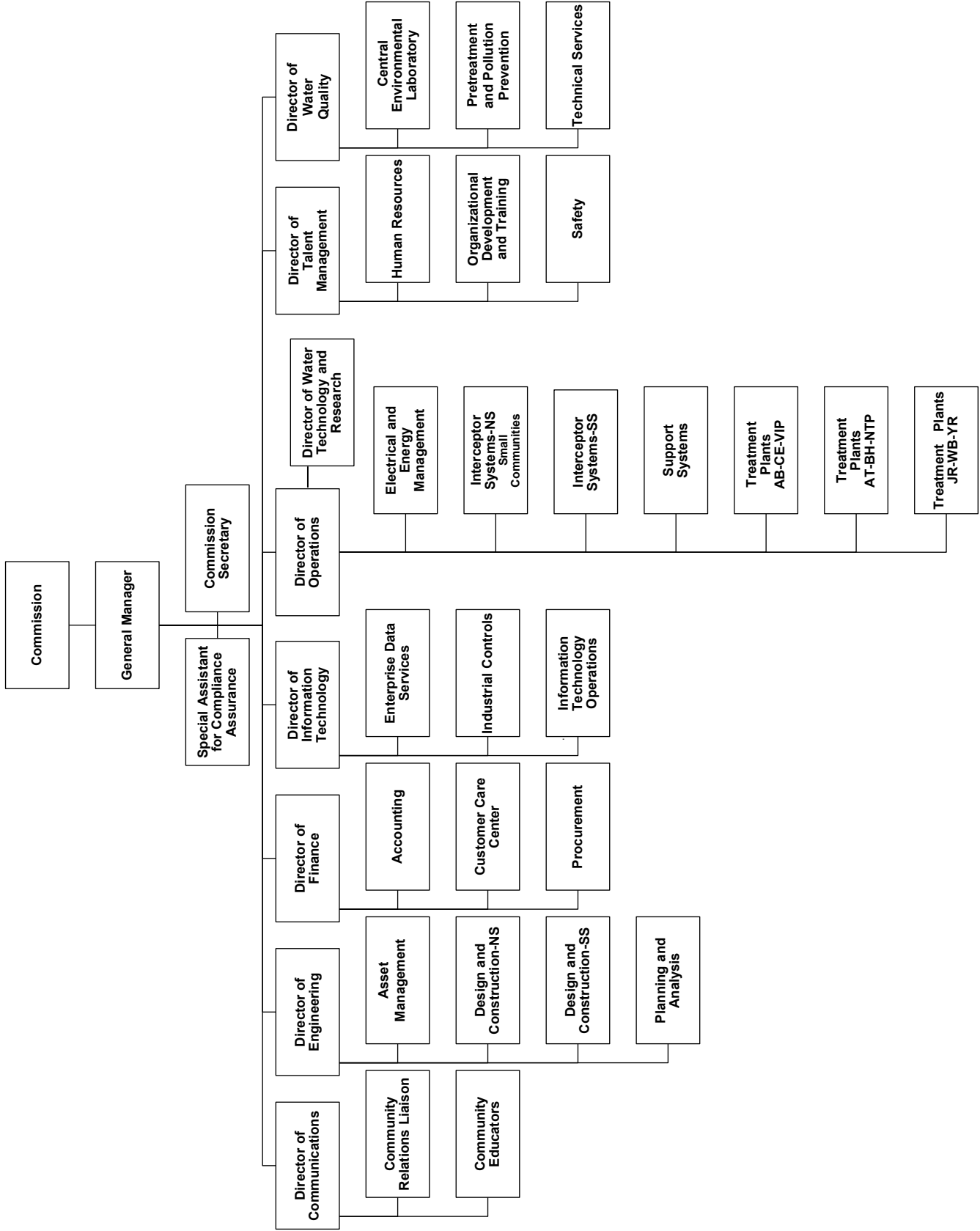
Jones, Blechman, Woltz & Kelly, PC  
Associate Counsel

AquaLaw, PLC  
Special Counsel

Norton Rose Fulbright US, LLP  
Bond Counsel

# HRSD Organization Chart

June 30, 2017



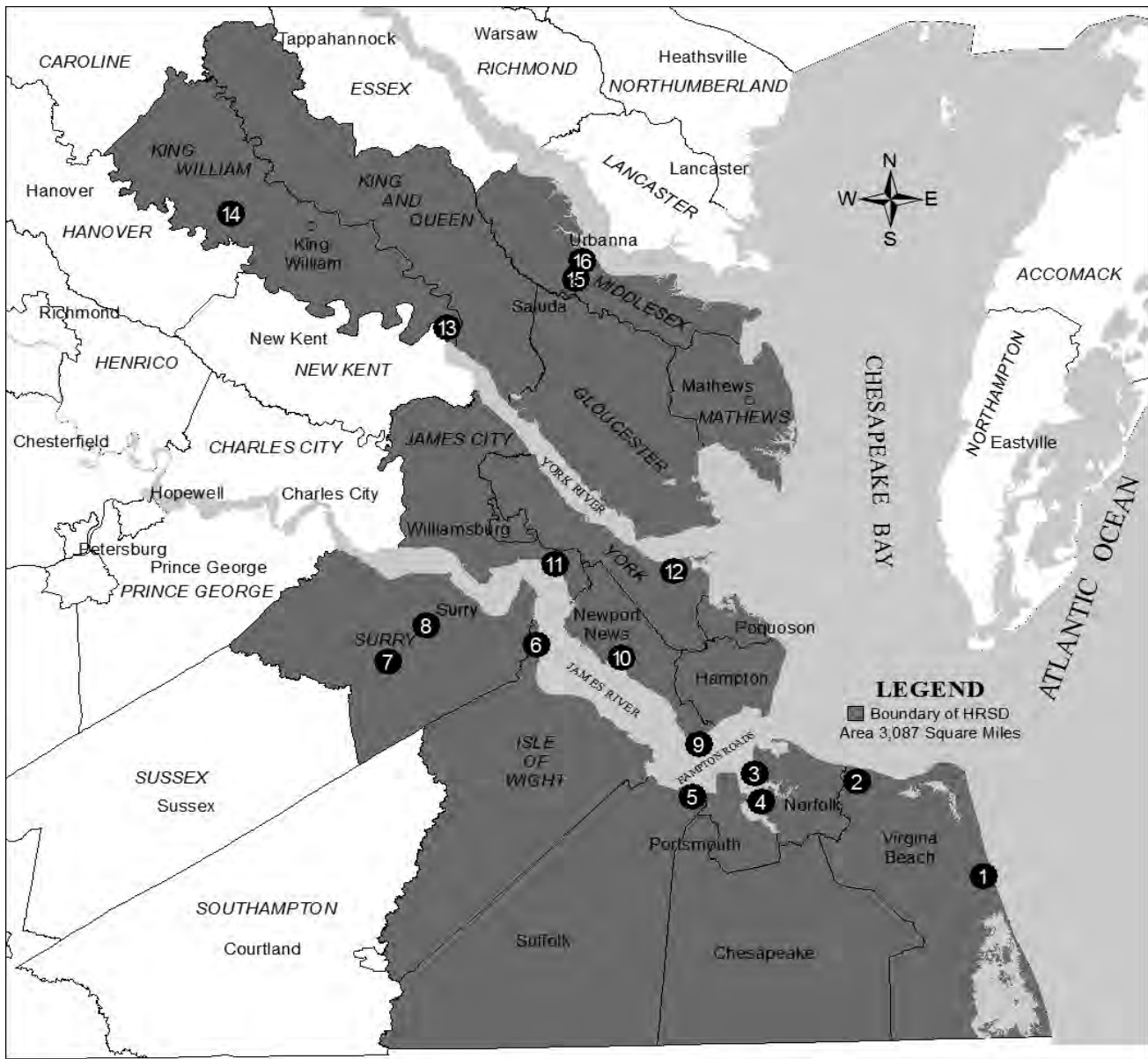


# HRSD Service Area

A Political Subdivision of the Commonwealth of Virginia

Facilities include the following:

- |   |   |  |
|---|---|--|
| <ol style="list-style-type: none"> <li>1. Atlantic, Virginia Beach</li> <li>2. Chesapeake-Elizabeth, Va. Beach</li> <li>3. Army Base, Norfolk</li> <li>4. Virginia Initiative, Norfolk</li> <li>5. Nansemond, Suffolk</li> <li>6. Lawnes Point, Smithfield</li> <li>7. County of Surry</li> <li>8. Town of Surry</li> </ol> | <ol style="list-style-type: none"> <li>9. Boat Harbor, Newport News</li> <li>10. James River, Newport News</li> <li>11. Williamsburg, James City County</li> <li>12. York River, York County</li> <li>13. West Point, King William County</li> <li>14. King William, King William County</li> <li>15. Central Middlesex, Middlesex County</li> <li>16. Urbanna, Middlesex County</li> </ol> | <p>Serving the Cities of<br/>Chesapeake, Hampton,<br/>Newport News, Norfolk,<br/>Poquoson, Portsmouth, Suffolk, Virginia<br/>Beach, Williamsburg and the Counties<br/>of Gloucester,<br/>Isle of Wight, James City,<br/>King and Queen, King William,<br/>Mathews, Middlesex, Surry* and York<br/>*Excluding the Town of Claremont</p> |
|---|---|--|



# History of HRSD

June 30, 2017

---

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

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

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

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

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

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

# Financial Section



**Building New Pipelines**  
Microtunneling is one of the methods used to replace 6,000 linear feet of pipe in Downtown Norfolk installed in the 1940s.

*Photo by Will Gibson, PE, AECOM Project Manager*



KPMG LLP  
Suite 1900  
440 Monticello Avenue  
Norfolk, VA 23510

## **Independent Auditors' Report**

The Commissioners  
Hampton Roads Sanitation District:

We have audited the accompanying financial statements of the Hampton Roads Sanitation District (HRSD), a component unit of the Commonwealth of Virginia, as of and for the years ended June 30, 2017 and 2016, and the related notes to the financial statements, which collectively comprise HRSD's basic financial statements for the years then ended as listed in the table of contents.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditors' Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of HRSD as of June 30, 2017 and 2016, and the changes in its financial position and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.



## **Other Matters**

### *Required Supplementary Information*

U.S. generally accepted accounting principles require that Management's Discussion and Analysis on pages 11 through 15 and the Schedule of Changes in Net Pension Liability and Related Ratios on page 39, the Schedule of Employer Contributions and notes to required supplementary information on page 40, and the Schedule of Funding Progress on page 41 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### *Supplementary and Other Information*

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise HRSD's basic financial statements. The Introductory Section, Statistical Section and Other Supplemental Section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Schedule of Operating Expenses, Net Position by Component, and Debt Service Expenditures, is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Operating Expenses, Net Position by Component, and Debt Service Expenditures is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

The Introductory Section, the remaining schedules in the Statistical Section, and the Other Supplemental Section have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

**KPMG LLP**

November 15, 2017

## MANAGEMENT'S DISCUSSION AND ANALYSIS (Unaudited)

This narrative overview and analysis of the financial activities of the Hampton Roads Sanitation District (HRSD) for the fiscal year ended June 30, 2017 is provided by HRSD's management. Readers of the accompanying financial statements are encouraged to consider this information in conjunction with that furnished in the letter of transmittal, which can be found on pages 1 through 3 of this report.

### FINANCIAL HIGHLIGHTS

- Total net position increased \$52.7 million, or 8.8 percent, in 2017 as a result of this year's operations.
- Total revenues increased \$20.3 million, or 8.1 percent. This increase is primarily attributable to wastewater revenue rate increases.
- Operating expenses increased \$10.4 million, or 5.4 percent, principally due to a \$5.4 million increase in contractual services and a \$3.6 million increase in depreciation expense, which was primarily due to the completion of major expansions of treatment plants and interceptor systems in 2016 and 2017.
- Non-operating expenses decreased \$3.8 million, or 14.3 percent, primarily due to a \$3.1 decrease in capital distributions to localities.
- HRSD received \$7.5 million in capital grants from the Commonwealth of Virginia in 2017 to help finance its capital improvement program.
- Restricted cash and cash equivalents decreased \$68.9 million, or 75.2 percent, primarily because \$67.8 million in bonds that were restricted for construction in 2016 were used to build capital asset. Unrestricted cash and cash equivalents and investments increased \$23.9 million, or 12.5 percent, primarily as a result of increased cash flows from wastewater rate increases.
- Net Property, Plant and Equipment increased \$55.5 million, or 4.6 percent, primarily due to expansion of treatment plants and interceptor systems.

### OVERVIEW OF FINANCIAL STATEMENTS

HRSD's Basic Financial Statements are comprised of the financial statements and the notes to the financial statements. This report also contains required supplementary information and other supplementary information in addition to the Basic Financial Statements.

The Basic Financial Statements, found on pages 16 through 19 of this report, are designed to provide readers with a broad overview of HRSD's finances in a manner similar to a private sector business.

The Statements of Net Position, found on pages 16 and 17 of this report, present information on all of HRSD's assets, deferred outflows of resources, liabilities, and deferred inflows of resources; the difference between these components is reported as net position. Over time, changes in net position may serve as a useful indicator of whether the financial position of HRSD is improving or deteriorating.

The Statements of Revenues, Expenses and Changes in Net Position, found on page 18 of this report, present all of HRSD's revenues and expenses, showing how HRSD's net position changed during the year. All changes in net position are reported as soon as the underlying event takes place, thus giving rise to the changes, regardless of the timing of the cash flows. Thus, revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods.

The Notes to Financial Statements, found on pages 20 through 38 of this report, provide additional information that is essential to a full understanding of the data provided in the financial statements.

In addition to the basic financial statements and the related notes, this report also presents certain required supplementary information concerning HRSD's progress in funding its obligations to provide pension and other post employment benefits to its employees.

Required Supplementary Information can be found beginning on page 39 of this report.

### FINANCIAL ANALYSIS

As noted earlier, net position may serve over time as a useful indicator of HRSD's financial position. Assets exceeded liabilities by \$654.3 million at June 30, 2017 and by \$601.6 million at June 30, 2016.

By far, the largest portion of HRSD's net position (65.5 percent and 68.2 percent at June 30, 2017 and 2016, respectively) reflects its net investment in capital assets (e.g., land, buildings, machinery and equipment) less any related debt used to acquire those assets still outstanding, net of unspent bond proceeds. HRSD uses these

capital assets to provide services to its customers; consequently, these assets are not available for future spending. Although HRSD's net investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, because the capital assets themselves cannot be liquidated to reduce these liabilities.

HRSD's net position is summarized in the following condensed Statements of Net Position as of June 30:

#### HRSD's Condensed Statements of Net Position

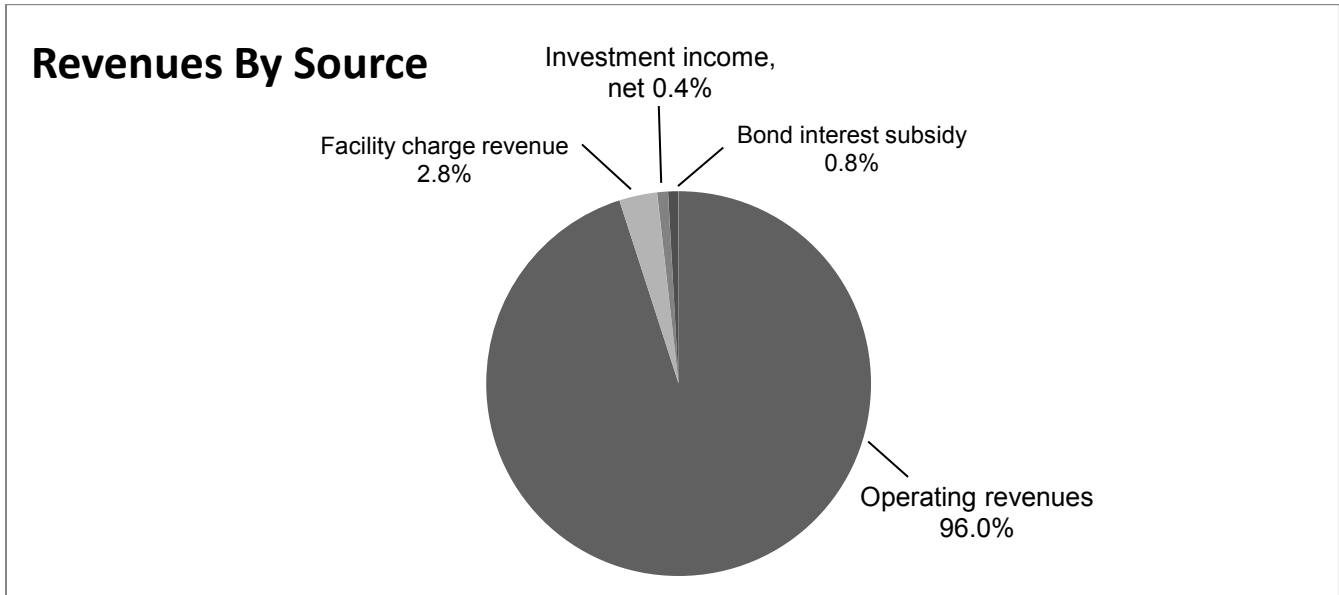
(in thousands)	2017	2016	2015	2017 vs. 2016	
				Dollars	Percent
Capital assets	\$ 1,255,952	\$ 1,200,404	\$ 1,101,351	\$ 55,548	4.6%
Current assets and noncurrent assets	310,534	357,804	291,573	(47,270)	-13.2%
<b>Total assets</b>	<b>\$ 1,566,486</b>	<b>\$ 1,558,208</b>	<b>\$ 1,392,924</b>	<b>\$ 8,278</b>	<b>0.5%</b>
<b>Deferred outflows of resources</b>	<b>\$ 30,822</b>	<b>\$ 25,638</b>	<b>\$ 16,587</b>	<b>\$ 5,184</b>	<b>20.2%</b>
Long-term liabilities	\$ 805,685	\$ 826,393	\$ 724,251	\$ (20,708)	-2.5%
Current liabilities	134,353	147,339	118,035	(12,986)	-8.8%
<b>Total liabilities</b>	<b>\$ 940,038</b>	<b>\$ 973,732</b>	<b>\$ 842,286</b>	<b>\$ (33,694)</b>	<b>-3.5%</b>
<b>Deferred inflows of resources</b>	<b>\$ 2,992</b>	<b>\$ 8,510</b>	<b>\$ 10,400</b>	<b>\$ (5,518)</b>	<b>-64.8%</b>
Net investment in capital assets	\$ 428,670	\$ 410,287	\$ 385,597	\$ 18,383	4.5%
Restricted for debt service	22,701	23,798	22,070	(1,097)	-4.6%
Restricted for debt service reserve fund	-	-	44,118	-	-
Unrestricted	202,907	167,519	105,040	35,388	21.1%
<b>Total net position</b>	<b>\$ 654,278</b>	<b>\$ 601,604</b>	<b>\$ 556,825</b>	<b>\$ 52,674</b>	<b>8.8%</b>

At June 30, 2017 HRSD had no unspent bond proceeds and at 2016 retained \$67.8 million of unspent bond proceeds. The increase in capital assets and the corresponding changes in current assets and noncurrent investments from 2015 through 2017 are primarily the result of issuing bonds in 2015 and 2016 and using these proceeds to fund capital improvements.

The changes in HRSD's net position can be determined by reviewing the following condensed Statements of Revenues, Expenses and Changes in Net Position:

#### HRSD's Condensed Statements of Revenues, Expenses and Changes in Net Position

(in thousands)	2017	2016	2015	2017 vs. 2016	
				Dollars	Percent
Operating revenues	\$ 258,630	\$ 237,881	\$ 225,561	\$ 20,749	8.7%
Facility charge revenues	7,511	6,699	7,428	812	12.1%
Investment income, net	1,168	2,313	1,409	(1,145)	-49.5%
Bond interest subsidy	2,275	2,399	2,444	(124)	-5.2%
<b>Total revenues</b>	<b>269,584</b>	<b>249,292</b>	<b>236,842</b>	<b>20,292</b>	<b>8.1%</b>
Operating expenses:					
Wastewater treatment	113,100	106,575	114,137	6,525	6.1%
General and administrative	40,287	40,026	38,678	261	0.7%
Depreciation and amortization	49,311	45,670	41,871	3,641	8.0%
Total operating expenses	202,698	192,271	194,686	10,427	5.4%
Non-operating expenses:					
Bond issuance costs	42	1,713	768	(1,671)	-97.5%
Capital distributions to localities	138	3,287	-	(3,149)	-95.8%
Interest expense	22,630	21,631	22,958	999	4.6%
Total non-operating expenses	22,810	26,631	23,726	(3,821)	-14.3%
<b>Total expenses</b>	<b>225,508</b>	<b>218,902</b>	<b>218,412</b>	<b>6,606</b>	<b>3.0%</b>
Income before capital contributions	44,076	30,390	18,430	13,686	45.0%
Capital contributions	8,598	14,389	19,519	(5,791)	-40.2%
Change in net position	52,674	44,779	37,949	7,895	17.6%
Total net position - beginning	601,604	556,825	518,876	44,779	8.0%
<b>Total net position - ending</b>	<b>\$ 654,278</b>	<b>\$ 601,604</b>	<b>\$ 556,825</b>	<b>\$ 52,674</b>	<b>8.8%</b>



Operating revenues increased 8.7 percent in 2017 and 5.5 percent in 2016. The majority of these increases are attributable to various rate increases in metered public wastewater services. Facility charge revenues increased \$0.8 million, or 12.1 percent, in 2017 due to an increase in new construction activity across the region after decreasing \$0.7 million, or 9.8 percent, in 2016.

Operating expenses increased 5.4 percent in 2017 and decreased 1.2 percent in 2016. Increases in 2017 were principally due to a \$5.4 million increase in contractual services and a \$3.6 million increase in depreciation expense. Decreases in 2016 were principally due to a \$5.3 million decrease in capital improvement asset expense, partially offset by a \$3.8 million increase in depreciation expense.

In 2017 and 2016, HRSD received \$8.6 million and \$14.4 million, respectively, in capital grants to help finance its capital improvement program.

### CAPITAL ASSETS AND DEBT ADMINISTRATION

#### Capital Assets

At the end of 2017 and 2016, HRSD had approximately \$1.3 billion and \$1.2 billion, respectively, invested in a broad range of capital assets, including wastewater treatment plants, interceptor mains, pump stations, automotive, administrative and maintenance buildings, and office and computer software and equipment. These amounts represent a net increase of \$55.5 million, or 4.6 percent, in 2017 and \$99.1 million, or 9.0 percent, in 2016.

The following summarizes HRSD's capital assets, net of accumulated depreciation, as of June 30:

#### HRSD's Capital Assets

(in thousands)	2017	2016	2015
Land	\$ 12,174	\$ 12,174	\$ 12,160
Treatment plants	543,616	557,145	446,624
Interceptor systems	368,666	351,828	329,271
Buildings	32,345	30,428	32,758
Small community facilities	18,288	18,649	15,446
Office equipment	3,774	5,314	6,909
Automotive	2,070	1,935	1,501
Other equipment	10,344	11,002	11,484
Software and intangible assets	16,616	21,108	15,817
	1,007,893	1,009,583	871,970
Construction in progress	248,049	190,821	229,381
<b>Net property, plant and equipment</b>	<b>\$ 1,255,942</b>	<b>\$ 1,200,404</b>	<b>\$ 1,101,351</b>



The following summarizes the changes in capital assets for the years ended June 30:

(in thousands)	2017	2016	2015
Balance at beginning of year	\$ 1,200,404	\$ 1,101,351	\$ 1,013,958
Additions	47,631	183,283	96,191
Retirements	-	-	(508)
Depreciation and amortization	(49,311)	(45,670)	(41,871)
Accumulated depreciation retired	-	-	508
Net increase (decrease) in construction in progress	57,228	(38,560)	33,073
<b>Balance at end of year</b>	<b>\$ 1,255,952</b>	<b>\$ 1,200,404</b>	<b>\$ 1,101,351</b>

The largest increase in capital assets in the past two years has been in treatment plant construction and interceptor system construction, which includes pipeline replacements, pump station rehabilitations and other improvements to the infrastructure. During 2017, HRSD invested significant funds in improvements to the Virginia Initiative and York River treatment plants, the Nansemond interceptor system, and the SWIFT Research facility. During 2016, HRSD invested significant funds in improvements to the Army Base and Virginia Initiative treatment plants and the Nansemond, Virginia Initiative and Williamsburg interceptor systems.

### Long-Term Debt

At June 30, 2017, HRSD had a total of \$846.8 million in revenue bonds outstanding versus \$879.3 million in 2016, a decrease of 3.7 percent. This decrease is due to payments on existing senior and subordinate debt.

The following summarizes HRSD's outstanding debt principal at June 30:

### HRSD's Outstanding Debt

(in thousands, net of premium)	2017	2016	2015
Senior revenue bonds	\$ 429,165	\$ 444,616	\$ 609,005
Subordinate revenue bonds	350,347	361,463	99,195
<b>Total outstanding debt</b>	<b>\$ 779,512</b>	<b>\$ 806,079</b>	<b>\$ 708,200</b>

HRSD's financial strengths are reflected in its high credit ratings:

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

The development of HRSD's Capital Improvement Program and its related debt programs are governed by revenue Trust Agreements. The Senior Trust agreement requires the senior debt coverage to be 1.2 times maximum annual debt service and total debt service coverage of 1.0 times maximum annual debt service both on a GAAP basis. One of the reasons the Amended and Subordinate Trust agreement was amended in 2016 was to account for future Consent Decree expenses related to Locality wet weather improvements that HRSD will not own. In the amended trust, Operating Expenses was redefined as shown below for the purposes of calculating an "Adjusted" debt service coverage on a cash basis:

"Operating Expenses" as defined by the Enabling Act and as used in the Senior Trust Agreement, operating expenses includes the cost of maintaining, repairing and operating such system or systems or sewer improvements and to provide such reserves therefor as may be provided in the resolution providing for the issuance of such revenue bonds or in the trust agreement securing the same. As defined in the Subordinate Trust Agreement, Operating Expenses includes those expenses required to pay the cost of maintaining, repairing and operating the Wastewater System, including, but not limited to, reasonable and necessary usual expenses of administration, operation, maintenance and repair, costs for billing and collecting the rates, fees and other charges for the use of or the services furnished by the Wastewater System, insurance premiums, credit enhancement and liquidity support fees, legal, engineering, auditing and financial advisory expenses, expenses and compensation of the Trustee, and deposits into a self-insurance program. Operating Expenses shall exclude allowance for depreciation and amortization and expenditures for extraordinary maintenance or repair or improvements. Operating Expenses shall also exclude expenses for improvements that will not be owned by HRSD but which will, in the reasonable

determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System.

The Amended and Subordinate Trust agreement requires total debt service coverage to be 1.2 times Maximum Annual Debt Service (MADS) on an Adjusted basis. HRSD's Financial Policy and operating and capital improvement plans were developed with the intent to maintain coverage ratios in excess of these requirements. HRSD's Financial Policy requires senior debt service coverage to be 1.5 times and total debt service coverage to be 1.4 times.

	Senior Debt Service Coverage		Total Debt Service Coverage	
	GAAP	Adjusted	GAAP	Adjusted
Senior Trust Agreement	1.20x (MADS)	None	1.00x (MADS)	None
Amended Subordinate Trust Agreement	None	None	None	1.20x (Current Year)
Financial Policy	None	1.50x (Current Year)	None	1.40x (Current Year)

More detailed information regarding HRSD's capital assets and long-term debt is presented in Notes 5 and 8, respectively.

### **ECONOMIC FACTORS AND RATES**

The five-year rolling average billed consumption has decreased over the last three fiscal years from approximately 114 million gallons per day (MGD) to approximately 112 MGD. HRSD's experience, primarily resulting from water conservation efforts throughout the region, is consistent with national trends.

In 2017, wastewater revenues increased as a result of planned rate increases needed, in large part, to fund HRSD's capital improvement program. Facility charge revenues, which are generally dependent on new growth and economic expansion, increased \$0.8 million, or 12.1 percent, in 2017 after decreasing \$0.7 million, or 9.8 percent, in 2016. Facility charge revenues comprised only 2.8 and 2.7 percent, respectively, of HRSD's total revenues in both 2017 and 2016.

Wastewater treatment rates for the 2017 fiscal year were increased by approximately 9 percent at the beginning of the year for the vast majority of HRSD customers. The increases are necessary to meet growing capital improvement needs and the increased cost of treatment operations.

It is anticipated that the average residential customer bill will rise by less than \$2.67 per month in fiscal year 2018.

### **CONTACTING HRSD'S FINANCIAL MANAGEMENT**

This financial report is designed to provide a general overview of HRSD's finances for all those with an interest. Questions concerning the information provided in this report or any requests for additional information should be addressed to the Director of Finance, 1434 Air Rail Avenue, Virginia Beach, Virginia 23455.

**HAMPTON ROADS SANITATION DISTRICT  
STATEMENTS OF NET POSITION  
AS OF JUNE 30, 2017 AND 2016**

**ASSETS AND DEFERRED OUTFLOWS OF RESOURCES**

(in thousands)

	2017	2016
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	\$ 92,076	\$ 68,314
Cash and cash equivalents - Restricted	22,701	48,952
Investments	14,260	18,544
Accounts receivable, net	39,627	38,796
Accrued interest	447	288
Other current assets	3,644	7,188
TOTAL CURRENT ASSETS	172,755	182,082
<b>NON-CURRENT ASSETS</b>		
Cash and cash equivalents - Restricted	-	42,607
Investments	109,427	105,009
Inventory	28,352	28,106
	137,779	175,722
<b>NET PROPERTY, PLANT AND EQUIPMENT</b>		
Land	12,174	12,174
Treatment plants	1,184,198	1,170,180
Interceptor systems	525,473	498,952
Buildings	48,735	45,359
Small community facilities	25,529	25,305
Office equipment	44,613	44,612
Automotive	18,180	17,342
Other equipment	36,066	34,011
Software and intangible assets	39,624	39,027
	1,934,592	1,886,962
Less: Accumulated depreciation and amortization	926,689	877,379
	1,007,903	1,009,583
Construction in progress	248,049	190,821
NET PROPERTY, PLANT AND EQUIPMENT	1,255,952	1,200,404
TOTAL NON-CURRENT ASSETS	1,393,731	1,376,126
<b>TOTAL ASSETS</b>	<b>1,566,486</b>	<b>1,558,208</b>
<b>DEFERRED OUTFLOWS OF RESOURCES</b>		
Deferred loss on debt refunding	19,501	21,416
Differences between expected and actual experience	2,404	-
Net difference between projected and actual earnings on pension plan investments	4,591	-
Pension contributions subsequent to measurement date	4,326	4,222
TOTAL DEFERRED OUTFLOWS OF RESOURCES	30,822	25,638
<b>TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES</b>	<b>\$ 1,597,308</b>	<b>\$ 1,583,846</b>

(continued)

See Accompanying Notes to Financial Statements

**HAMPTON ROADS SANITATION DISTRICT  
STATEMENTS OF NET POSITION  
AS OF JUNE 30, 2017 AND 2016**

**LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION**

(in thousands)

	2017	2016
<b>CURRENT LIABILITIES</b>		
Trade and contracts payable	\$ 21,573	\$ 32,718
Contract retention	6,527	7,742
Accrued salaries and wages	2,211	1,906
Current portion of bonds payable	31,895	32,421
Variable rate demand bonds	50,000	50,000
Current portion of compensated absences	5,279	4,672
Debt interest payable	11,803	10,818
Other liabilities	5,065	7,062
TOTAL CURRENT LIABILITIES	134,353	147,339
<b>LONG-TERM LIABILITIES</b>		
Compensated absences	3,124	3,403
Net pension liability	37,673	26,117
Bonds payable	764,888	796,873
TOTAL LONG-TERM LIABILITIES	805,685	826,393
TOTAL LIABILITIES	940,038	973,732
<b>DEFERRED INFLOWS OF RESOURCES</b>		
Differences between expected and actual experience	2,992	3,951
Net difference between projected and actual earnings on pension plan investments	-	4,559
TOTAL DEFERRED INFLOWS OF RESOURCES	2,992	8,510
<b>NET POSITION</b>		
Net investment in capital assets	428,670	410,287
Restricted for debt service	22,701	23,798
Unrestricted	202,907	167,519
TOTAL NET POSITION	654,278	601,604
<b>TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION</b>	<b>\$ 1,597,308</b>	<b>\$ 1,583,846</b>

See Accompanying Notes to Financial Statements

**HAMPTON ROADS SANITATION DISTRICT**  
**STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**  
**FOR THE FISCAL YEARS ENDED JUNE 30, 2017 and 2016**

(in thousands)

	<u>2017</u>	<u>2016</u>
<b>OPERATING REVENUES</b>		
Wastewater treatment charges	\$ 254,961	\$ 234,020
Miscellaneous	3,669	3,861
TOTAL OPERATING REVENUES	<u>258,630</u>	<u>237,881</u>
<b>OPERATING EXPENSES</b>		
Wastewater treatment	113,100	106,575
General and administrative	40,287	40,026
Depreciation and amortization	49,311	45,670
TOTAL OPERATING EXPENSES	<u>202,698</u>	<u>192,271</u>
<b>OPERATING INCOME</b>	<u>55,932</u>	<u>45,610</u>
<b>NON-OPERATING REVENUES (EXPENSES)</b>		
Wastewater facility charges	7,511	6,699
Investment income	2,287	1,563
Bond interest subsidy	2,275	2,399
Change in fair value of investments	(1,119)	750
Capital distributions to localities	(138)	(3,287)
Bond issuance costs	(42)	(1,713)
Interest expense	(22,630)	(21,631)
NET NON-OPERATING EXPENSES	<u>(11,856)</u>	<u>(15,220)</u>
INCOME BEFORE CAPITAL CONTRIBUTIONS	<u>44,076</u>	<u>30,390</u>
<b>CAPITAL CONTRIBUTIONS (DISTRIBUTIONS)</b>		
State capital grants received	7,462	14,389
Other capital contributions	1,136	-
CAPITAL CONTRIBUTIONS	<u>8,598</u>	<u>14,389</u>
<b>CHANGE IN NET POSITION</b>	52,674	44,779
<b>TOTAL NET POSITION - Beginning</b>	<u>601,604</u>	<u>556,825</u>
<b>TOTAL NET POSITION - Ending</b>	<u><u>\$ 654,278</u></u>	<u><u>\$ 601,604</u></u>

See Accompanying Notes to Financial Statements

**HAMPTON ROADS SANITATION DISTRICT  
STATEMENTS OF CASH FLOWS  
FOR THE FISCAL YEARS ENDED JUNE 30, 2017 and 2016**

(in thousands)

	2017	2016
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Cash received from customers	\$ 256,532	\$ 235,808
Other operating revenues	3,669	3,861
Cash payments to suppliers for goods and services	(105,998)	(102,740)
Cash payments to employees for services	(52,768)	(51,006)
Net cash provided by operating activities	101,435	85,923
<b>CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES</b>		
Capital distributions to localities	(138)	(3,287)
<b>CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES</b>		
Wastewater facility charges	7,511	6,699
Acquisition and construction of property, plant and equipment	(110,822)	(137,316)
Proceeds from capital debt	-	150,022
Bond interest subsidy	2,275	2,399
Principal paid on capital debt	(26,568)	(28,181)
State capital grants	10,658	17,367
Other capital contributions	1,136	-
Bond issuance costs	(42)	(1,713)
Interest paid on capital debt	(31,416)	(26,600)
Net cash used in capital and related financing activities	(147,268)	(17,323)
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Purchases of investments	(97,549)	(181,239)
Sales and maturities of investments	96,296	180,011
Interest and dividends on investments	2,128	1,512
Net cash provided by investing activities	875	284
<b>NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS</b>	(45,096)	65,597
<b>CASH AND CASH EQUIVALENTS, AT BEGINNING OF YEAR</b>	159,873	94,276
<b>CASH AND CASH EQUIVALENTS, AT END OF YEAR</b>	\$ 114,777	\$ 159,873

**Reconciliation of Operating Income to Net Cash Provided by Operating Activities**

(in thousands)

Operating income	\$ 55,932	\$ 45,610
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation and amortization	49,311	45,670
(Increase) decrease in operating assets		
Accounts receivable	(831)	(658)
Inventory	(246)	(553)
Net change in other current assets	348	(372)
Increase (decrease) in operating liabilities		
Trade and contracts payable	(654)	(3,255)
Accrued salaries and wages	305	424
Compensated absences	328	371
Net change in other liabilities	(1,997)	1,938
Pension liabilities	(1,061)	(3,252)
<b>NET CASH PROVIDED BY OPERATING ACTIVITIES</b>	<b>\$ 101,435</b>	<b>\$ 85,923</b>
Noncash Capital and Related Financing Activities:		
Proceeds of refunding debt principal	\$ -	\$ 170,785
Refunding of debt principal	-	(170,785)
Accrual for capital expenditures	(10,491)	(304)
Amortization of premium	(5,943)	(4,360)
Amortization of deferred loss on bond refunding	(1,915)	(1,433)

See Accompanying Notes to Financial Statements

**HAMPTON ROADS SANITATION DISTRICT  
NOTES TO FINANCIAL STATEMENTS  
JUNE 30, 2017 and 2016**

---

**NOTE 1 - GENERAL INFORMATION**

Organization and Administration

The Hampton Roads Sanitation District (HRSD) was created by the Virginia General Assembly in 1940, as a political subdivision of the Commonwealth of Virginia (the Commonwealth), to construct, maintain, and operate a wastewater treatment system in the Hampton Roads area. The Hampton Roads Sanitation District Commission (the Commission) is HRSD's governing body and consists of eight members, appointed by the Governor. The Commission's functions were updated by Chapter 66 of the Acts of the Assembly of Virginia of 1960, as amended. The administration of HRSD is under the direction of a General Manager, supported by seven department directors.

Regulatory Oversight

HRSD's operations are subject to regulations established by the United States Environmental Protection Agency and the Virginia Department of Environmental Quality. HRSD currently meets all of its permit requirements. Changes in these regulations could require HRSD to modify its treatment processes and require additional capital investment and/ or incur additional costs.

Purpose of HRSD

HRSD was created for the specific purpose of abating pollution in the Hampton Roads area through the interception of wastewater outfalls, installation of interception service into new areas as necessary and providing treatment facilities. HRSD provides points of interception throughout the region. The responsibility of providing lateral sewers and subtrunk facilities to carry sewage from industries, residences and businesses is generally the responsibility of the local municipal governments.

Corporate Limits of HRSD

The geographical limits of HRSD include:

City of Chesapeake	City of Suffolk	King and Queen County
City of Hampton	City of Virginia Beach	King William County
City of Newport News	City of Williamsburg	Mathews County
City of Norfolk	Gloucester County	Middlesex County
City of Poquoson	Isle of Wight County	Surry County*
City of Portsmouth	James City County	York County

\*Excluding the Town of Claremont

**NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

Reporting Entity

HRSD is a political subdivision of the Commonwealth and a government instrumentality. The Commission is granted corporate powers by the *Code of Virginia*. The Governor of the Commonwealth appoints the Commission members, who serve at his pleasure. HRSD is reported in the Commonwealth's Comprehensive Annual Financial Report as a discretely presented component unit. The Commonwealth is not obligated to repay HRSD's debt. HRSD derives its revenues primarily from charges for wastewater treatment services. HRSD has no taxing authority.

Basis of Accounting

The accompanying financial statements report the financial position and results of operations of HRSD in accordance with U.S. generally accepted accounting principles (GAAP). Because HRSD is a political subdivision of the Commonwealth, the preparation of HRSD's financial statements are governed by the pronouncements of the Governmental Accounting Standards Board (GASB). These statements are prepared on an enterprise fund basis and present HRSD's operating revenues and expenses in a manner similar to a private business, where the costs, including depreciation, of providing services to the general public on a continuing basis are financed or recovered primarily through user charges.

An enterprise fund, a proprietary fund type, is accounted for on an economic resources measurement focus. All assets and liabilities, whether current or noncurrent, associated with its activities are included on its statements of net position. Proprietary fund type operating statements present increases (revenues) and decreases (expenses) in fund equity. The financial statements are presented using the accrual basis of accounting, whereby revenues are recognized when earned and expenses are recognized when incurred.

#### Budgetary Accounting and Control

HRSD operates in accordance with annual operating and capital budgets prepared on a basis of accounting that is different from generally accepted accounting principles. The operating budget is adopted by department, with budgetary controls exercised administratively by management at the department level. The General Manager is authorized to transfer funds among departments without further approval by the Commission. Appropriations lapse at the end of the fiscal year. The Capital Budget represents a ten-year plan. Funds for the Capital Budget are appropriated throughout a fiscal year on a project basis. Transfers among projects require approval by the Commission. Appropriations for these budgets continue until the purpose of the appropriation has been fulfilled.

#### Cash Equivalents

All short-term investments that are highly liquid are considered to be cash equivalents. Cash equivalents are readily convertible to cash, and at the day of purchase, have an original maturity date of no longer than three months. Current restricted cash and cash equivalents are revenue bond proceeds held for construction of assets within the next 12 months, as well as cash restricted for debt service payments payable within the next year. Money market investments include accounts that are invested in government securities and are valued at net asset value (NAV) and in the Commonwealth of Virginia Local Government Investment Pool (LGIP), which is measured at amortized cost. See Notes 3 and 12 for additional discussion of cash and cash equivalent and investment valuations. Noncurrent restricted cash and cash equivalents are revenue bond proceeds held for the construction of noncurrent assets expected to be spent after 12 months (see Note 3).

#### Investments

Investments, which consist of U.S. government obligations including agencies, FDIC-guaranteed corporate notes and other corporate notes and bonds, and municipal bonds, are reported at fair value. HRSD's investment practices are governed by its formal investment policy.

#### Allowance for Uncollectible Accounts

HRSD provides an allowance for estimated uncollectible accounts receivable based on its bad debt experience. The balance in the allowance for uncollectible accounts is considered by management to be sufficient to cover anticipated losses on reported receivable balances.

#### Inventory

Inventory is carried at the lower of cost or market value and consists primarily of operating and maintenance materials.

#### Property, Plant and Equipment

HRSD funds its capital improvement program through the issuance of debt and its own resources. The proceeds of debt are reported as restricted assets. Generally, for projects funded with both debt proceeds and other resources, it is HRSD's policy to use available debt proceeds to pay project expenditures prior to using its own resources.

Property, plant and equipment purchased or constructed are reported at cost, including interest cost on funds borrowed to finance the construction of major capital additions. The capitalization threshold is \$5,000. Donated assets are reported at acquisition value at the date of donation. Property, plant and equipment are depreciated using the straight-line method over the following estimated useful lives:

Treatment plants, buildings and facilities	30 years
Interceptor systems	50 years
Office furniture and equipment	5-10 years
Software and intangible assets	5-7 years
Automotive	5 years

Depreciation and amortization recognized on property, plant and equipment is an operating expense.



### Deferred Outflows and Inflows of Resources

In addition to assets, the statements of net position reports a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to future periods and so will not be recognized as an outflow of resources (expenses) until then. HRSD has four items that qualify for reporting in this category. The first is the deferred charge on refunding reported in the statements of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. The second and third amounts are differences between expected and actual experience and the net difference between projected and actual earnings on pension plan investments, which will be recognized in pension expense in future reporting periods. The fourth is pension contributions to the Virginia Retirement System made subsequent to the measurement dates of June 30, 2016 and 2015. These contributions will be recognized as a reduction of the Net Pension Liability during the years ended June 30, 2018 and 2017, respectively.

In addition to liabilities, the statements of net position reports a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time. HRSD has two types of this item, the differences between expected and actual experience and the net difference between projected and actual earnings on pension plan investments, which will be recognized in pension expense in future reporting periods.

### Revenue Recognition

Generally, wastewater treatment charges are computed based on a user's water consumption. These charges are recognized as revenue when billed. Revenues earned but unbilled through June 30 of each fiscal year are accrued at year-end. Wastewater facility charges are computed based on a new connection's water meter size and potential for high strength pollutant discharges, and are recognized as revenue prior to the issuance of a building or operating permit.

### Operating and Non-operating Revenues and Expenses Recognition

HRSD distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses result from providing services and producing and delivering goods in connection with HRSD's principal service of providing wastewater treatment. The majority of operating revenues are from wastewater treatment, but other associated miscellaneous income from other related services and charges are also included. Revenues and expenses not meeting the operating definition are reported as non-operating. These consist mainly of wastewater facility charges, investment income, capital contributions and interest expense.

### Compensated Absences

All permanent employees earn leave upon starting a full-time position. The amount and type of leave earned is based upon the employee's date of hire and years of service and is expensed as employees earn the right to these benefits.

Permanent employees hired prior to January 1, 2014 earn from 15 to 27 days of annual leave per year. The maximum annual leave an employee may accumulate at year-end varies by the years of service, with the maximum being 54 days. An employee has a vested right to their annual leave when earned. These employees also earn eight hours per month of sick leave regardless of the number of years of service. The amount of sick leave that may be accumulated is unlimited. After five years of service with HRSD, an employee has vested rights to 35 percent of accumulated sick leave to a maximum of \$10,000. For these employees, long-term disability (LTD) insurance is an optional employee paid benefit that replaces part of their income if the employee suffers a serious illness or injury and can't work for an extended period of time.

Permanent employees hired after January 1, 2014 earn 8 hours of paid time off for each two-week pay period. Employees may use accumulated paid time off for any type of absence from work, subject to supervisor approval. The maximum paid time off an employee may accumulate at year-end is 208 hours. After five years of service with HRSD, an employee has vested rights to 50 percent of their accumulated paid time off at separation. For these employees, HRSD also provides a state mandated long-term disability (LTD) benefit since these employees are not eligible for disability retirement benefits through Virginia Retirement System. The long-term disability benefit provides income replacement for employees who become disabled and unable to work for an extended period of time due to a non work-related or work-related condition (as determined under the Virginia Workers' Compensation Act). Long-term disability benefits begin at the expiration of an additional state mandated employer paid short-term disability (STD) benefit period of 125 days.

## Pensions

HRSD employees participate in an agent multiple-employer defined benefit pension plan administered by the VRS, which acts as a common investment and administrative agent for political subdivisions in the Commonwealth. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of HRSD's Retirement Plan and the additions to or deductions from HRSD's Retirement Plan's net fiduciary position have been determined on the same basis as they were reported to HRSD by VRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms.

## Use of Estimates

The preparation of these financial statements requires management to make estimates and assumptions. These estimates affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from management's estimates.

## **NOTE 3 - DEPOSITS AND INVESTMENTS**

### Deposits

*Custodial Credit Risk.* This risk is associated with the inability of a governmental entity to recover deposits from a financial institution in the event of a failure. At June 30, 2017 and 2016, the carrying values of HRSD's deposits were \$21,904,000 and \$47,891,000, respectively, and the bank balances were \$25,325,000 and \$48,864,000, respectively. All of the bank balances at June 30, 2017 were covered by federal depository insurance or collateralized in accordance with the Virginia Security for Public Deposits Act (the Act). In accordance with the Act, the depository institution pledged collateral in the form of federal obligations with a fair value equal to 110 percent of HRSD's deposits with a third party trustee in the name of the Treasurer of the Commonwealth. In the event that the banking institution fails, the Treasurer will take possession of the collateral, liquidate it and reimburse HRSD up to the value of its deposits. The State Treasury Board is responsible for monitoring compliance with the collateralization and reporting requirements of the Act and for notifying local governments of compliance by banks.

*Credit Risk.* HRSD invests overnight in money market accounts that are invested in government securities and the PFM Funds Prime Series – SNAP Fund Class (SNAP) and in the Commonwealth of Virginia Local Government Investment Pool (LGIP), for which oversight is provided by the Treasury Board of Virginia. As of June 30, 2017 and 2016, HRSD had deposits in Merrill Lynch's FFI Government Fund and Fidelity's Government Money Market Fund that were rated AAAM by Standard & Poor's. HRSD's investment in the LGIP was rated AAAAM by Standard & Poor's.

### Investments

As of June 30, HRSD had the following investments and maturities:

As of June 30, 2017	<u>Investment Maturities (in years)</u>		
	<u>Fair Value</u>	<u>Less Than 1</u>	<u>1-3</u>
<u>Investment Type</u>			
U.S. Treasury Securities	\$ 38,809	\$ -	\$ 38,809
Federal Agency Notes / Bonds	33,688	-	33,688
Certificates of Deposit	12,110	7,207	4,903
Commercial Paper	2,424	2,424	-
Corporate Notes / Bonds	24,913	3,503	21,410
Municipal Bonds	2,166	-	2,166
Supranationals	9,577	1,126	8,451
<b>Total</b>	<b>\$ 123,687</b>	<b>\$ 14,260</b>	<b>\$ 109,427</b>
<u>As of June 30, 2016</u>	<u>Fair Value</u>	<u>Less Than 1</u>	<u>1-3</u>
<u>Investment Type</u>			
U.S. Treasury Securities	\$ 57,220	\$ 7,792	\$ 49,428
Federal Agency Notes / Bonds	23,471	1,000	22,471
Certificates of Deposit	9,704	-	9,704
Commercial Paper	9,752	9,752	-
Corporate Notes / Bonds	19,815	-	19,815
Supranationals	3,591	-	3,591
<b>Total</b>	<b>\$ 123,553</b>	<b>\$ 18,544</b>	<b>\$ 105,009</b>

*Interest Rate Risk.* In accordance with its investment policy, HRSD manages its exposure to declines in fair values by limiting the weighted average maturity of various portfolios in a manner that meets HRSD's liquidity needs.

*Custodial Credit Risk.* For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, HRSD will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. HRSD's policy is to utilize its Trustee for its investments, The Bank of New York Trust Department, as recipient of all investment transactions on a delivery versus pay basis. The Trustee may not be a counterparty to the investment transaction. At June 30, 2017 and 2016, the Trust Department of the Bank of New York held approximately \$123,687,000 and \$123,553,000, respectively, in investments in the Trustee's name for HRSD.

*Credit Risk.* HRSD's Trust Agreement permits HRSD to invest in investment instruments that are authorized by the Commonwealth. HRSD's investment securities using the Standard & Poor's credit quality ratings scale are presented below:

As of June 30, 2017		Standard & Poor's Credit Rating by Investment Type						
<u>Investments</u>	AAA	AA+	AA	AA-	A+	A-1+	A-1	Total
(in thousands)								
U.S. Treasury Securities	\$ -	\$ 38,809	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 38,809
Federal Agency Notes / Bonds	-	33,688	-	-	-	-	-	33,688
Certificates of Deposit	-	-	-	9,608	-	2,502	-	12,110
Commercial Paper	-	-	-	-	-	-	2,424	2,424
Corporate Notes / Bonds	3,015	5,245	1,867	12,581	2,205	-	-	24,913
Municipal Bonds	-	-	-	-	2,166	-	-	2,166
Supranationals	9,577	-	-	-	-	-	-	9,577
<b>Total Investments</b>	<b>\$ 12,592</b>	<b>\$ 77,742</b>	<b>\$ 1,867</b>	<b>\$ 22,189</b>	<b>\$ 4,371</b>	<b>\$ 2,502</b>	<b>\$ 2,424</b>	<b>\$ 123,687</b>

As of June 30, 2016		Standard & Poor's Credit Rating by Investment Type						
<u>Investments</u>	AAA	AA+	AA	AA-	A-1+	A-1	Total	
(in thousands)								
U.S. Treasury Securities	\$ -	\$ 57,220	\$ -	\$ -	\$ -	\$ -	\$ 57,220	
Federal Agency Notes / Bonds	-	23,471	-	-	-	-	23,471	
Certificates of Deposit	-	-	-	4,727	4,977	-	9,704	
Commercial Paper	-	-	-	-	-	9,752	9,752	
Corporate Notes / Bonds	3,047	2,851	1,326	12,591	-	-	19,815	
Supranationals	3,591	-	-	-	-	-	3,591	
<b>Total Investments</b>	<b>\$ 6,638</b>	<b>\$ 83,542</b>	<b>\$ 1,326</b>	<b>\$ 17,318</b>	<b>\$ 4,977</b>	<b>\$ 9,752</b>	<b>\$ 123,553</b>	

*Concentration of Credit Risk.* HRSD's investment policy includes a maximum exposure for each individual issuer for its permitted investment categories. U.S. Treasury obligations, collateralized bank deposits, money market funds and local government investment pools, however, are not subject to these issuer limits. Federal agency obligations and repurchase agreements are limited to 35 percent per issuer. Municipal obligations, commercial paper, and bankers acceptances are limited to 5 percent per issuer. Corporate notes and negotiable certificates of deposit are limited to 3 percent per issuer.

The change in fair value for the years ended June 30 is calculated as follows:

(in thousands)	2017	2016
Fair value of investments, end of year	\$ 123,687	\$ 123,553
Add: Proceeds of investments sold or maturing during the year	96,296	180,011
Less: Cost of investments purchased during the year	(97,549)	(181,239)
Less: Fair value of investments, beginning of year	(123,553)	(121,575)
Change in fair value of investments	<u>\$ (1,119)</u>	<u>\$ 750</u>

The components of restricted cash and cash equivalents and investments at June 30 are as follows:

(in thousands)	<u>2017</u>	<u>2016</u>
Debt service	\$ 22,701	\$ 23,798
Revenue bond construction funds - current	-	25,154
Revenue bond construction funds - noncurrent	-	42,607
Total cash, cash equivalents and investments - restricted	<u>\$ 22,701</u>	<u>\$ 91,559</u>

#### NOTE 4 - ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS

An analysis of the allowance for uncollectible accounts for the years ended June 30 is as follows:

(in thousands)	<u>2017</u>	<u>2016</u>
Balance, beginning of year	\$ 2,282	\$ 1,949
Add: Current provision for uncollectible accounts	2,402	2,446
Less: Charge-off of uncollectible accounts	(2,239)	(2,113)
Balance, end of year	<u>\$ 2,445</u>	<u>\$ 2,282</u>

HRSD's collection ratio for the years ended June 30, 2017 and 2016 was 99.1 percent for each year.

#### NOTE 5 - PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment activity for the years ended June 30 was as follows:

(in thousands)	Balance <u>6/30/15</u>	<u>Additions</u>	<u>Transfers/ Retirements</u>	Balance <u>6/30/16</u>	<u>Additions</u>	<u>Transfers/ Retirements</u>	Balance <u>6/30/17</u>
<u>Non-Depreciable Capital Assets</u>							
Land	\$ 12,160	\$ 14	\$ -	\$ 12,174	\$ -	\$ -	\$ 12,174
Construction in progress	229,381	108,420	(146,980)	190,821	101,957	(44,729)	248,049
<u>Depreciable Capital Assets</u>							
Treatment plants	1,036,055	134,125	-	1,170,180	14,018	-	1,184,198
Interceptor systems	467,277	31,675	-	498,952	26,521	-	525,473
Buildings	45,296	63	-	45,359	3,376	-	48,735
Small community facilities	22,551	2,754	-	25,305	224	-	25,529
Office equipment	44,364	248	-	44,612	1	-	44,613
Automotive	16,217	1,125	-	17,342	838	-	18,180
Other equipment	31,976	2,035	-	34,011	2,055	-	36,066
Software and intangible assets	27,783	11,244	-	39,027	598	(1)	39,624
Total	<u>\$ 1,933,060</u>	<u>\$ 291,703</u>	<u>\$ (146,980)</u>	<u>\$ 2,077,783</u>	<u>\$ 149,588</u>	<u>\$ (44,730)</u>	<u>\$ 2,182,641</u>
Less accumulated depreciation and amortization							
Treatment plants	(589,431)	(23,604)	-	(613,035)	(27,547)	-	(640,582)
Interceptor systems	(138,006)	(9,119)	-	(147,125)	(9,683)	-	(156,808)
Buildings	(13,489)	(1,441)	-	(14,930)	(1,451)	-	(16,381)
Small community facilities	(6,154)	(502)	-	(6,656)	(585)	-	(7,241)
Office equipment	(37,455)	(1,843)	-	(39,298)	(1,541)	-	(40,839)
Automotive	(14,716)	(691)	-	(15,407)	(703)	-	(16,110)
Other equipment	(20,492)	(2,517)	-	(23,009)	(2,712)	-	(25,721)
Software and intangible assets -amortization	(11,966)	(5,953)	-	(17,919)	(5,089)	1	(23,007)
Total	<u>(831,709)</u>	<u>(45,670)</u>	<u>-</u>	<u>(877,379)</u>	<u>(49,311)</u>	<u>1</u>	<u>(926,689)</u>
Net property, plant and equipment	<u>\$ 1,101,351</u>	<u>\$ 246,033</u>	<u>\$ (146,980)</u>	<u>\$ 1,200,404</u>	<u>\$ 100,277</u>	<u>\$ (44,729)</u>	<u>\$ 1,255,952</u>

Additions include \$5,743,000 and \$6,135,000 capitalized interest June 30, 2017 and 2016, respectively.

**NOTE 6 - COMPENSATED ABSENCES**

The liability for vested annual, sick, paid time off and compensatory leave at June 30 is as follows:

(in thousands)	Balance			Balance			Balance
	6/30/15	Earned	Taken	6/30/16	Earned	Taken	
Annual leave	\$ 4,841	\$ 3,216	\$ (3,063)	\$ 4,994	\$ 3,384	\$ (3,326)	\$ 5,052
Sick leave	2,687	1,312	(1,288)	2,711	1,416	(1,348)	2,779
Paid time off	<u>176</u>	<u>515</u>	<u>(321)</u>	<u>370</u>	<u>807</u>	<u>(605)</u>	<u>572</u>
Total	7,704	<u>\$ 5,043</u>	<u>\$ (4,672)</u>	8,075	<u>\$ 5,607</u>	<u>\$ (5,279)</u>	8,403
Less: Current liability	<u>2,696</u>			<u>4,672</u>			<u>5,279</u>
Long-term liability	<u>\$ 5,008</u>			<u>\$ 3,403</u>			<u>\$ 3,124</u>

**NOTE 7 - DEFINED BENEFITS PLANS**

**Post-Retirement Health Benefit Plan**

Plan Description

HRSD provides other postemployment benefits (OPEB) for its employees through the Hampton Roads Sanitation District Retiree Health Plan (the Plan), a single employer defined benefit plan. The Plan was established and may be amended by the Commission. HRSD administers the Plan through the Hampton Roads Sanitation District Retiree Health Trust (the Trust), an irrevocable trust to be used solely for providing benefits to eligible retired employees and their beneficiaries (members) in the Plan. HRSD’s contributions to the Trust are dedicated irrevocably to providing post-retirement health benefits, the Plan assets are exclusively dedicated to providing benefits to members, and the Plan assets of the Trust are not subject to the claims of HRSD creditors or the Plan administrator. Employer contributions are recorded in the year they are made. Investments are reported at market value based on published prices and quotations. The Plan does not issue stand-alone financial statements.

HRSD’s plan provides two different health and dental benefit plans for eligible members. Members become eligible for benefits provided the retired HRSD employee has 15 years of service with HRSD or 10 years of service with HRSD plus 10 years of service with a Virginia Retirement System (VRS) employer with a retiree health plan; are qualified for unreduced retirement benefits from VRS; and are enrolled in the HRSD Health Insurance Plan prior to retirement. Participating beneficiaries may continue coverage under the plan after the death of the retiree. Medicare-eligible members may participate in a Medicare supplement plan. Members not eligible for Medicare may participate in a high deductible health plan.

Funding Policy

Contribution requirements are actuarially determined. Funding is subject to approval by the Commission. Medicare-eligible members contribute \$45 per month for retiree-only coverage and from \$442 to \$460 per month for retiree and dependent coverage. Members not eligible for Medicare contribute \$120 per month for retiree-only coverage and from \$517 to \$535 per month for retiree and dependent coverage. HRSD shares the cost of coverage under the plan with participating retirees by paying the difference between the contributions it requires retirees to make and the annual required contribution (ARC). The current contribution rate is 5 percent of annual covered payroll.

## Annual OPEB Cost

HRSD's annual OPEB cost is calculated based on an actuarially determined ARC. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and to amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed 30 years. Information related to the HRSD's annual OPEB cost, ARC, actual contributions, and changes to the net OPEB obligation is as follows:

(in thousands)					Percentage of	
Fiscal Year Ended	ARC	Actuarial Adjustment	Annual OPEB Cost	Annual ARC Contributed	Net OPEB Obligation	
2017	\$ 2,558	\$ -	\$ 2,558	100%	\$ -	
2016	\$ 2,178	\$ -	\$ 2,178	100%	\$ -	
2015	\$ 2,177	\$ -	\$ 2,177	100%	\$ -	

## Funded Status and Funding Progress

The funded status of the plan as of June 30, 2017 and 2016 was as follows:

(in thousands)	2017	2016
Actuarial accrued liability (AAL)	\$ 49,303	\$ 45,337
Actuarial value of plan assets	42,468	39,272
Unfunded actuarial accrued liability (UAAL)	<u>\$ 6,835</u>	<u>\$ 6,065</u>
Funded ratio (actuarial value of plan assets/AAL)	86.1%	86.6%
Annual covered payroll (active plan members)	\$ 49,286	\$ 47,838
UAAL as a percentage of covered payroll	13.9%	12.7%

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the possibility of occurrence of events far into the future. Examples include assumptions about future employment, investment returns, mortality and healthcare cost trends. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multiyear trend information that shows whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

## Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by HRSD and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

The information presented in the required supplemental schedules was determined as part of the actuarial valuations at the dates indicated. The actuarial value of plan assets is equal to fair value.

Additional information at June 30, 2017, the date of the most recent valuation, follows:

Actuarial cost method	Projected unit credit method
Amortization method	Level percent of pay, closed
Amortization period	An experience gain/loss base is created each year and amortized over a 15 year period
Asset valuation	Smoothed market value with phase-in, using a 5-year smoothing period
Actuarial assumptions:	
Discount Rate	6%
Medical cost trend:	
Pre Medicare	5.3%, stable at 5.3% after 3 years and decreasing to 3.6% after 53 years
Post Medicare	5.3%, stable at 5.3% after 3 years and decreasing to 3.4% after 53 years
Assumed rate of inflation	2.2%

## **Defined Benefit Pension Plan**

### Plan Description

HRSD employees participate in an agent multiple-employer defined benefit pension plan administered by the Virginia Retirement System (VRS). All full-time, salaried permanent employees of HRSD are automatically covered by the Plan upon employment. Members earn one month of service credit for each month they are employed and for which they and their employer pay contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the *Code of Virginia*, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave and previously refunded service.

VRS administers three different benefit structures for covered employees – Plan 1, Plan 2 and the Hybrid Retirement Plan (HRP). The specific information for each plan is set out below:

- Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 1 if their membership date is before July 1, 2010 and they were vested as of January 1, 2013. Non-hazardous duty members are eligible for an unreduced retirement benefit beginning at age 65 with at least five years of service credit or at age 55 with at least 30 years of service credit. They may retire with a reduced benefit as early as age 55 with at least five years of service credit or age 50 with at least 10 years of service credit.
- Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 2 if their membership date is on or after July 1, 2010, and they were not vested as of January 1, 2013. Non-hazardous duty members are eligible for an unreduced benefit beginning at their normal Social Security retirement age with at least five years of service credit or when the sum of their age and service equals 90. They may retire with a reduced benefit as early as age 60 with at least five years of service credit.
- The Hybrid Retirement Plan (HRP) combines the features of a defined benefit plan and a defined contribution plan. Most members hired on or after January 1, 2014 are in this plan, as well as Plan 1 and Plan 2 members who were eligible and opted into the plan during a special election window from January 1 through April 30, 2014. The employee's retirement benefit is funded through mandatory and voluntary contributions made by the employee and HRSD to both the defined benefit and the defined contribution components of the plan. Non-hazardous duty members are eligible for an unreduced benefit beginning at their normal Social Security retirement age with at least five years of service credit or when the sum of their age and service equals 90. They may retire with a reduced benefit as early as age 60 with at least five years of service credit.

Members in Plan 1 and Plan 2 contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. HRSD makes a separate actuarially determined contribution to VRS for all covered employees. The retirement benefit for members in the HRP is funded through mandatory and voluntary contributions made by the member and HRSD to both the defined benefit and the defined contribution components of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.

Members in Plan 1 and Plan 2 earn creditable service for each month they are employed in a covered position, and vest when they have at least five years (60 months) of creditable service. Members in the HRP earn one month of service credit for each month they are employed in a covered position for the defined benefit component, and service credits are used to determine vesting for the employer contribution portion of the plan. HRP members are always 100% vested in the defined contributions they make, and upon retirement or leaving covered employment are eligible to withdraw employer contributions of 50%, 75%, or 100% after two, three, or four years of service, respectively.

The VRS Basic Benefit for Plan 1 and Plan 2 members, and the defined benefit component for HRP members, is a lifetime monthly benefit based on a retirement multiplier as a percentage of the member's average final compensation multiplied by the member's total service credit. Under Plan 1, average final compensation is the average of the member's 36 consecutive months of highest compensation. Under Plan 2 and the HRP, average final compensation is the average of the member's 60 consecutive months of highest compensation. The retirement multiplier for non-hazardous duty members in Plan 1 is 1.7%; in Plan 2 the multiplier is 1.7% for service earned, purchased or granted prior to January 1, 2013 and 1.65% after that date. The multiplier is 1% for members in the

HRP. At retirement, members can elect the Basic Benefit, the Survivor Option, a Partial Lump-Sum Option Payment (PLOP) or the Advance Pension Option. A retirement reduction factor is applied to the Basic Benefit amount for members electing the Survivor Option, PLOP or Advance Pension Option or those retiring with a reduced benefit.

Retirees are eligible for an annual cost-of-living adjustment (COLA) effective July 1 of the second calendar year of retirement. Under Plan 1, the COLA cannot exceed 5%; under Plan 2 and for the HRP defined benefit component, the COLA cannot exceed 3%. During years of no inflation or deflation there is no COLA adjustment. The VRS also provides death and disability benefits.

VRS issues a publically available comprehensive annual financial report that includes financial statements and required supplementary information for VRS. A copy of that report may be downloaded from their website at <http://www.varetire.org/publications/index.asap> or obtained by writing to VRS at P.O. Box 2500, Richmond, Virginia 23218-2500.

Employees Covered by Benefit Terms

As of the June 30, 2015 and 2014 actuarial valuation dates, the following employees were covered by the benefit terms of the pension plan:

	<u>2015</u>	<u>2014</u>
Inactive Members or Their Beneficiaries Currently Receiving Benefits	343	301
Inactive Members		
Vested	107	103
Non-Vested	141	180
Active Elsewhere in VRS	<u>77</u>	<u>81</u>
Total Inactive Members	325	364
Active Members	<u>752</u>	<u>759</u>
Total	<u><u>1,420</u></u>	<u><u>1,424</u></u>

Contributions

The contribution requirement for active employees is governed by Section 51.1-145 of the Code of Virginia, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5% of their compensation toward their retirement. Prior to July 1, 2012, all or part of the 5% member contribution may have been assumed by the employer. Beginning July 1, 2012, new employees were required to pay the 5% member contribution. In addition, for existing employees, employers were required to begin making the employee pay the 5% member contribution. This could be phased in over a period of up to 5 years and the employer is required to provide a salary increase equal to the amount of the increase in the employee-paid member contribution. HRSD’s contractually required contribution rate for the year ended June 30, 2017 and 2016 were 7.70% and 8.96% of covered compensation. These rates are based on actuarially determined rates from actuarial valuations as of June 30, 2015 and 2014.

These rates, when combined with employee contributions, are expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Employer contributions to the pension plan were \$4,327,000 and \$4,222,000 for the years ended June 30, 2017 and 2016, respectively.

Net Pension Liability

HRSD’s net pension liability as of June 30, 2017 and 2016 was measured as of June 30, 2016 and 2015, respectively. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2015 and 2014, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement dates of June 30, 2016 and 2015.



## Actuarial Assumptions

The total pension liability as of June 30, 2017 and 2016 for employees in HRSD's retirement plan was based on actuarial valuations as of June 30, 2015 and 2014, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement dates of June 30, 2016 and 2015, respectively.

Inflation	2.5%
Salary increases, including inflation	3.5% to 5.35%
Investment rate of return	7%, net of pension plan investment expense, including inflation *
Cost of living adjustments	2.25% to 2.50%

\* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7% to simplify preparation of pension liabilities.

Mortality rates: 14% of deaths are assumed to be service related

Pre Retirement, RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with males set forward 4 years and females set back 2 years

Post Retirement, RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with males set forward 1 year

Post Disablement, RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with males set back 3 years and no provision for future mortality improvement

The actuarial assumptions used in the June 30, 2015 and 2014 valuations were based on the results of an actuarial experience study for the period July 1, 2008 through June 30, 2012. Changes to the actuarial assumptions as a result of the experience study are as follows:

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

## Long-Term Expected Rate of Return

The long-term expected rate of return on pension system investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected real rates of return (expected returns, net of pension system investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The asset target allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
U.S. Equity	19.50%	6.46%	1.26%
Developed Non-U.S. Equity	16.50%	6.28%	1.04%
Emerging Market Equity	6.00%	10.00%	0.60%
Fixed Income	15.00%	0.09%	0.01%
Emerging Debt	3.00%	3.51%	0.11%
Rate Sensitive Credit	4.50%	3.51%	0.16%
Non-Rate Sensitive Credit	4.50%	5.00%	0.23%
Convertibles	3.00%	4.81%	0.14%
Public Real Estate	2.25%	6.12%	0.14%
Private Real Estate	12.75%	7.10%	0.91%
Private Equity	12.00%	10.41%	1.25%
Cash	1.00%	-1.50%	-0.02%
Total	<u>100.00%</u>		<u>5.83%</u>
		Inflation	<u>2.50%</u>
		* Expected arithmetic nominal return	<u>8.33%</u>

\* Using stochastic projection results provides an expected range of real rates of return over various time horizons. Looking at one year results produces an expected real rate of 8.33% but also has a high standard deviation, which means there is high volatility. Over larger time horizons the volatility declines significantly and provides a median return of 7.44%, including expected inflation of 2.50%.

#### Discount Rate

The discount rate used to measure the total pension liability, as of June 30, 2016 and 2015, was 7.0%. The projection of cash flows used to determine the discount rate assumed that VRS member contributions will be made per the VRS statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2018, the rate contributed by the HRSD for the retirement plan will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2018 on, participating employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in Net Pension Liability

(in thousands)	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2014	\$ 197,928	\$ 170,464	\$ 27,464
Changes for the year - Increase (Decrease):			
Service cost	4,115	-	4,115
Interest	13,559	-	13,559
Difference between expected and actual experience	(4,910)	-	(4,910)
Contributions - employer	-	4,099	(4,099)
Contributions - employee	-	2,314	(2,314)
Net investment income	-	7,807	(7,807)
Benefit payments, including refunds of employee contributions	(8,446)	(8,446)	-
Administrative expense	-	(107)	107
Other changes	-	(2)	2
Net changes	4,318	5,665	(1,347)
Balances at June 30, 2015	202,246	176,129	26,117
Changes for the year - Increase (Decrease):			
Service cost	4,025	-	4,025
Interest	13,872	-	13,872
Difference between expected and actual experience	2,980	-	2,980
Contributions - employer	-	4,083	(4,083)
Contributions - employee	-	2,286	(2,286)
Net investment income	-	3,062	(3,062)
Benefit payments, including refunds of employee contributions	(8,161)	(8,161)	-
Administrative expense	-	(109)	109
Other changes	-	(1)	1
Net changes	12,716	1,160	11,556
Balances at June 30, 2016	\$ 214,962	\$ 177,289	\$ 37,673

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

Net Pension Liability (in thousands)	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
June 30, 2016	\$ 67,989	\$ 37,673	\$ 12,576
June 30, 2015	\$ 55,532	\$ 26,117	\$ 1,774

Pension Expenses and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

HRSD recognized pension expense of \$3,126,000 and \$863,000 for the years ended June 30, 2017 and 2016, respectively. At June 30, 2017 and 2016, HRSD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(in thousands)	
Year ended June 30, 2017:		
Differences between expected and actual experience	\$ 2,404	\$ 2,992
Net difference between projected and actual earnings on plan investments	4,591	-
Employer contributions subsequent to the measurement date	4,326	-
	<u>\$ 11,321</u>	<u>\$ 2,992</u>
Year ended June 30, 2016:		
Differences between expected and actual experience	\$ -	\$ 3,951
Net difference between projected and actual earnings on plan investments	-	4,559
Employer contributions subsequent to the measurement date	4,222	-
	<u>\$ 4,222</u>	<u>\$ 8,510</u>

HRSD reported \$4,326,000 and \$4,222,000 as of June 30, 2017 and 2016, respectively, as deferred outflows of resources resulting from HRSD's contributions subsequent to the measurement date, which will be recognized as reductions of the Net Pension Liability in the years ended June 30, 2018 and 2017, respectively. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year ended June 30, 2017:	(in thousands)
2018	\$ 332
2019	332
2020	(2,268)
2021	(2,301)
2022	(98)
Thereafter	-
Year ended June 30, 2016:	(in thousands)
2017	\$ 2,749
2018	2,749
2019	2,749
2020	148
2021	115
Thereafter	-

## NOTE 8 – LONG-TERM DEBT

HRSD issues revenue bonds for various capital improvements including but not limited to wastewater treatment plants and interceptor system improvements. In addition to HRSD's publicly issued revenue bonds, HRSD is indebted for bond issues payable to the Virginia Resources Authority (VRA) as administrator of the Virginia Water Facilities Fund. HRSD is required to adhere to and is in compliance with the rebate and reporting requirements of the federal regulations pertaining to arbitrage.

HRSD has \$50 million outstanding in subordinate variable rate demand bonds, Series 2016B, to partially finance its capital improvement plan. The bonds bear interest in either a Weekly Period or a Long-term Period, as defined. The bonds were initially issued in a Weekly Interest Period and bear interest at a varying interest rate until, at HRSD's option, they are converted to the Long-term Period. Liquidity to pay the purchase price of the bonds that are tendered and not remarketed is provided by HRSD. Maturities of the principal and interest for these bonds are shown in the following table as if held to maturity. The bonds are subject to optional redemption by HRSD prior to their maturity. Through June 30, 2017, the bonds have been successfully remarketed by the Remarketing Agent. The interest rate for the bonds at June 30, 2017 and 2016 was 0.82% and 0.38%, respectively. The 2017 rate was used to calculate interest maturity amounts shown below.

All bonds are secured by the revenues of HRSD and are payable over the duration of that issue. A summary of activity for the years ended June 30 is as follows:

(in thousands)	Balance at			Balance at			Balance at	Due within
	6/30/15	Additions	Deductions	6/30/2016	Additions	Deductions	6/30/2017	One year
Series-2016A	\$ -	\$ 246,845	\$ -	\$ 246,845	\$ -	\$ (3,525)	\$ 243,320	\$ 2,400
Series-2016B VR	-	50,000	-	50,000	-	-	50,000	50,000
Series-2014	111,345	-	-	111,345	-	-	111,345	-
Series-2012 A	111,915	-	(19,760)	92,155	-	(2,480)	89,675	2,580
Series-2012 Subordinate	8,955	-	(4,925)	4,030	-	(2,825)	1,205	300
Series-2011FR	32,545	-	(26,785)	5,760	-	(1,360)	4,400	1,410
Series-2011VR	25,000	-	(25,000)	-	-	-	-	-
Series-2009B	134,725	-	(3,505)	131,220	-	(3,590)	127,630	3,690
Series-2008	113,410	-	(104,945)	8,465	-	(3,000)	5,465	5,465
Series-2003	4,645	-	(4,645)	-	-	-	-	-
Virginia Resources Authority								
Senior bonds	100,420	-	(4,749)	95,671	-	(5,021)	90,650	5,235
Subordinate bonds	65,240	-	(4,652)	60,588	-	(4,767)	55,821	4,882
	<u>708,200</u>	<u>296,845</u>	<u>(198,966)</u>	<u>806,079</u>	<u>-</u>	<u>(26,568)</u>	<u>779,511</u>	<u>75,962</u>
Unamortized bond premiums	40,197	42,244	(9,226)	73,215	-	(5,943)	67,272	5,933
Total Bonds Outstanding	<u>\$ 748,397</u>	<u>\$ 339,089</u>	<u>\$ (208,192)</u>	<u>\$ 879,294</u>	<u>\$ -</u>	<u>\$ (32,511)</u>	<u>\$ 846,783</u>	<u>\$ 81,895</u>

A summary of the senior bonds outstanding at June 30, 2017 is as follows:

(in thousands)	Issue	Principal Outstanding			Interest to	Interest	Duration	Final Maturity
	Amount	Total	Current	Long-Term	Maturity	Rates	of Issue	
Series 2014	\$ 111,345	\$ 111,345	\$ -	\$ 111,345	\$ 41,408	5.00%	15 years	July 1, 2029
Series 2012A	130,480	89,675	2,580	87,095	69,129	4.00 - 5.00%	30 years	January 1, 2044
Series-2011FR	45,705	4,400	1,410	2,990	269	3.00 - 4.00%	8 years	November 1, 2019
Series-2009B	134,725	127,630	3,690	123,940	96,873	4.51 - 5.81%	30 years	November 1, 2039
Series-2008	223,170	5,465	5,465	-	218	4.00 - 5.07%	10 years	April 1, 2018
VRA - Metering	9,989	7,758	465	7,293	1,578	2.65%	20 years	March 1, 2031
VRA - WTP	5,727	4,476	279	4,197	696	2.05%	20 years	March 1, 2031
VRA - NTP	19,395	15,024	899	14,125	3,056	2.65%	20 years	March 1, 2031
VRA - JRTP	13,431	10,267	642	9,625	2,013	2.65%	20 years	September 1, 2030
VRA - ABTP	50,000	41,763	2,315	39,448	7,198	2.05%	20 years	September 1, 2032
VRA - BHTP	7,584	5,967	357	5,610	961	2.05%	20 years	September 1, 2031
VRA - ATP	6,318	5,395	278	5,117	1,188	2.31%	20 years	February 1, 2033
Total		<u>\$ 429,165</u>	<u>\$ 18,380</u>	<u>\$ 410,785</u>	<u>\$ 224,587</u>			

Maturities of senior bond principal and interest as of June 30, 2017 are as follows:

(in thousands)

June 30,	Principal	Interest
2018	\$ 18,380	\$ 19,046
2019	18,801	18,237
2020	19,520	17,457
2021	18,682	16,673
2022	17,977	15,842
2023-2027	112,462	64,980
2028-2032	104,196	41,143
2033-2037	57,451	23,034
2038-2042	51,105	7,537
2043-2047	10,591	638
	<u>\$ 429,165</u>	<u>\$ 224,587</u>

A summary of the subordinate revenue bonds outstanding at June 30, 2017 is as follows:

(in thousands)	Issue Amount	Principal Outstanding			Interest to Maturity	Interest Rates	Duration of Issue	Final Maturity
		Total	Current	Long-term				
Series-2016A	\$ 246,845	\$ 243,320	\$ 2,400	\$ 240,920	\$ 171,537	3.74%-5.00%	27 years	August 1, 2043
Series-2012 Sub Disinfection	22,680	1,205	300	905	42	1.19% - 1.92%	8 years	October 1, 2020
BH Odor	6,490	1,305	420	885	81	3.50%	20 years	March 1, 2020
York River Reuse	2,380	690	144	546	62	3.50%	20 years	September 1, 2021
AB Aeration	2,476	811	142	669	42	1.70%	20 years	September 1, 2022
Ches-Eliz Off Gas	1,759	608	106	502	31	1.70%	20 years	October 1, 2022
AB Generator	1,070	393	60	333	49	3.75%	20 years	March 1, 2023
Atlantic Expansion	1,235	648	66	582	63	2.00%	20 years	April 1, 2026
Ches-Eliz Expansion	7,340	4,241	385	3,856	483	2.10%	20 years	February 1, 2027
Williamsburg PS	40,330	23,183	2,106	21,077	2,641	2.10%	20 years	June 1, 2027
York River Expansion	1,605	965	83	882	115	2.10%	20 years	July 1, 2027
	29,683	22,977	1,369	21,608	4,806	2.72%	20 years	March 1, 2031
		300,346	7,581	292,765	179,952			
Series-2016B VR	50,000	50,000	50,000	-	10,111	Variable (0.82% at June 30, 2017)	30 years	August 1, 2046
Total		<u>\$ 350,346</u>	<u>\$ 57,581</u>	<u>\$ 292,765</u>	<u>\$ 190,063</u>			

Maturities of subordinate bond principal and interest as of June 30, 2017 are as follows:

(in thousands)

June 30,	Principal	Interest
2018	\$ 57,582	\$ 12,903
2019	7,826	12,656
2020	8,085	12,399
2021	9,235	12,101
2022	10,687	11,735
2023-2027	47,035	54,172
2028-2032	66,724	43,075
2033-2037	99,900	22,530
2038-2042	29,040	7,165
2043-2047	14,232	1,327
	<u>\$ 350,346</u>	<u>\$ 190,063</u>

## NOTE 9 – NET POSITION

### Restricted Portions of Net Position

*Restricted for debt service and restricted for debt service reserve fund.* HRSD's Trust Agreement requires that funds be set aside for its revenue bond debt service and, if needed, for a debt service reserve fund. No funds were required for the debt service reserve fund during the fiscal years ended June 30, 2017 and 2016.

### Unrestricted Portion of Net Position

*Reserved for Improvement.* HRSD's Master Trust Agreement requires a reserve for improvements. There is no specific funding mechanism established by the Trust Agreement. At June 30, 2017 and 2016, \$902,000 and \$2,065,000, respectively, was contained in the unrestricted net position. HRSD was in compliance with all funding requirements of this reserve during the fiscal years ended June 30, 2017 and 2016.

*Reserved for Construction.* A reserve for the construction program is based on funds designated by HRSD's Commission for such purposes. At June 30, 2017 and 2016, \$37,452,000 and \$12,525,000, respectively, was contained in the unrestricted net position.

## NOTE 10 - RISK MANAGEMENT

HRSD is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; employee dishonesty; injuries to employees; and natural disasters. HRSD purchases commercial insurance for specific types of coverage including property, liability, auto, crime, public officials and worker's compensation. There were no significant reductions in insurance coverage from the prior year. Claim settlements and judgments not covered by commercial insurance are covered by operating resources. The amount of settlements did not exceed insurance coverage for each of the past three years. Claim expenditures and liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated.

HRSD has a self-insured health, dental and vision care benefits program for all employees. Certain health claims expenses paid on behalf of each employee during a single policy year are covered by excess loss insurance with a specific stop-loss limit of \$250,000. HRSD also maintains an aggregate insurance policy whereby total medical claims costs in excess of 125 percent of expected costs are subject to reimbursement. Claims processing and payments for all health care claims are made through third-party administrators. HRSD uses the information provided by the third-party administrators and a health care benefits consultant to aid in the determination of self-insurance reserves.

Changes in HRSD's claims liability for fiscal years 2016 through 2017 are as follows:

(in thousands)	Beginning of Fiscal Year	Estimated Claims Incurred	Claims Paid	End of Fiscal Year
2016	\$ 4,316	\$ 10,326	\$ (10,646)	\$ 3,996
2017	\$ 3,996	\$ 9,704	\$ (10,345)	\$ 3,355

## NOTE 11 – COMMITMENTS AND CONTINGENCIES

HRSD is party to a federal consent decree with the federal and state governments (the Consent Decree), which requires HRSD to evaluate the wet weather capacity of the regional sewer system, including collection systems owned by 14 of the localities which HRSD serves in the Hampton Roads area. Based upon that evaluation, HRSD, in consultation with the localities, has developed a regional wet weather management plan (RWWMP) for submittal to the federal and state environmental agencies for their approval. The recommended plan includes an implementation schedule, identifies the attainable level of wet weather capacity in individual areas of the region and/or on a region-wide basis, and summarizes the major projects and programs that must be implemented in order to achieve the specified level of regional wet weather capacity.

HRSD and the localities believe that addressing wet weather capacity issues from a regional perspective will result in the most affordable and cost-effective approach for ratepayers throughout the region. Toward that end, HRSD and the localities entered into a legally binding Memorandum of Agreement in March of 2014 (the MOA). The MOA commits HRSD to (1) develop the RWWMP in consultation with the localities, (2) fund the approved plan through a regional rate imposed on all regional ratepayers, (3) design and construct the necessary improvements, and (4) assume responsibility for wet weather capacity throughout the region in each area once the RWWMP is implemented. In exchange, the localities have 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.

HRSD has also developed an Integrated Management Plan (IMP). The IMP includes a combination of projects that will improve water quality of the Chesapeake Bay. The first project will be the Sustainable Water Initiative for Tomorrow (SWIFT) initiative, which will allow HRSD to reduce nitrogen, phosphorus and total suspended solids. This program is estimated to cost \$1 billion and may take approximately 10 years to implement. During this time HRSD will be investing approximately \$200 million in additional wet weather capacity-related sewer overflow controls between now and 2030. After 2030, the IMP commits HRSD to submit a Final Remediation Plan which may call for full implementation of the RWWMP, a subset of priority projects from the scenario with the greatest environmental benefits, investments in emerging environmental issues including sea level rise adaptation, or some combination of these or other regional environmental priorities. While speculative at this time, those needs could cost upwards of \$1 billion over a 20-25 year period (through 2055). HRSD has submitted the IMP to the federal and state governments for approval.

The Consent Decree and MOA also contemplate that the localities' obligation to maintain the integrity of their sewer systems to industry standards was embodied in a State administrative order. Management currently believes that HRSD is on schedule to complete these projects.

HRSD has a major capital improvement and expansion program funded through the issuance of debt and its own resources. At June 30, 2017, HRSD has outstanding commitments for contracts in progress of approximately \$113,977,000.

## **NOTE 12 – FAIR VALUE MEASUREMENTS**

HRSD categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets. Level 2 inputs are significant other observable inputs. Level 3 inputs are significant unobservable inputs.

Debt securities reported as investments are classified in Level 2 of the fair value hierarchy and are valued using the following approaches:

- U.S. Treasury securities are valued using quoted prices for identical or similar securities.
- All other investments are valued based on matrix pricing using observable data of securities with similar attributes.

Investments reported as cash and cash equivalents are not included of the fair value hierarchy and are valued using the following approaches:

- SNAP Fund – money market mutual funds. HRSD's holdings of the PFM Prime Series (SNAP) fund units are valued at NAV, which is used as a practical expedient for fair value. There are no imposed redemption restrictions and the plan does not have any contractual obligations to further invest in the fund. The underlying investments of the fund are primarily short-term, high quality debt instruments including U.S. Treasuries, U.S. Agencies, U.S. Municipals, and repurchase agreements secured by U.S. Government Obligations. Underlying investments are measured at amortized cost, which approximates fair value.
- Local Government Investment Pool (LGIP) – HRSD holdings of the Virginia LGIP fund units are valued at amortized cost based on their qualification under GASB 79 as being managed as a "2a-7 like" investment. The fund does not have any limitations or restrictions on withdrawals such as redemption notice periods, maximum transaction amounts, or liquidity fees or redemption gates. The underlying investments of the fund are primarily short-term, high quality debt instruments including U.S. Treasuries, U.S. Agencies, U.S. Municipals, and repurchase agreements secured by U.S. Government Obligations. Underlying investments are measured at amortized cost, which approximates fair value. HRSD's total investment in the LGIP was \$92,714,000 and \$44,120,000 as of June 30, 2017 and 2016, respectively.



**Balance at June 30, 2017 (in thousands)****Investments by Fair Value Level**

	<u>Fair Value</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
U.S. Treasury Securities	\$ 38,809	\$ -	\$ 38,809	\$ -
Federal Agency Notes / Bonds	33,688	-	33,688	-
Corporate Notes / Bonds	24,913	-	24,913	-
Commercial Paper	2,424	-	2,424	-
Certificates of Deposit	12,110	-	12,110	-
Municipal Bonds	2,166	-	2,166	-
Supranationals	9,577	-	9,577	-
Total Investments by Fair Value Level	<u>\$ 123,687</u>	<u>\$ -</u>	<u>\$ 123,687</u>	<u>\$ -</u>

**Cash Equivalents Measured at Net Asset Value**

Fidelity	<u>\$ 157</u>
----------	---------------

**Balance at June 30, 2016 (in thousands)****Investments by Fair Value Level**

	<u>Fair Value</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
U.S. Treasury Securities	\$ 57,220	\$ -	\$ 57,220	\$ -
Federal Agency Notes / Bonds	23,471	-	23,471	-
Corporate Notes / Bonds	19,815	-	19,815	-
Commercial Paper	9,752	-	9,752	-
Certificates of Deposit	9,704	-	9,704	-
Supranationals	3,591	-	3,591	-
Total Investments by Fair Value Level	<u>\$ 123,553</u>	<u>\$ -</u>	<u>\$ 123,553</u>	<u>\$ -</u>

**Cash and Cash Equivalents Measured at Net Asset Value**

Fidelity	\$ 96
SNAP	<u>67,761</u>
Total Cash Equivalents measured at Net Asset Value	<u>\$ 67,857</u>

# Required Supplementary Information (Unaudited)



## **Increasing Energy Efficiency**

The Atlantic Treatment Plant system that generates renewable power and heat from digester gas provides 35 percent of the plant's electricity.

*Photo by Mark Rhodes*

**HAMPTON ROADS SANITATION DISTRICT  
SCHEDULE OF CHANGES IN  
NET PENSION LIABILITY AND RELATED RATIOS**

	(in thousands)	2016	2015	2014
<b>Total pension liability</b>				
Service cost		\$ 4,025	\$ 4,115	\$ 3,943
Interest		13,872	13,559	12,907
Differences between expected and actual experience		2,980	(4,910)	-
Benefit payments, including refunds of employee contributions		(8,161)	(8,446)	(6,607)
<b>Net change in total pension liability</b>		<u>12,716</u>	<u>4,318</u>	<u>10,243</u>
<b>Total pension liability - beginning</b>		202,246	197,928	187,686
<b>Total pension liability - ending (a)</b>		<u>\$ 214,962</u>	<u>\$ 202,246</u>	<u>\$ 197,929</u>
<b>Plan fiduciary net position</b>				
Contributions - employer		\$ 4,083	\$ 4,099	\$ 4,114
Contributions - employee		2,286	2,314	2,267
Net investment income		3,062	7,807	23,313
Benefit payments, including refunds of employee contributions		(8,161)	(8,446)	(6,607)
Administrative expense		(109)	(107)	(125)
Other		(1)	(2)	1
<b>Net change in plan fiduciary net position</b>		<u>1,160</u>	<u>5,665</u>	<u>22,963</u>
<b>Plan fiduciary net position - beginning</b>		176,129	170,464	147,501
<b>Plan fiduciary net position - ending (b)</b>		<u>\$ 177,289</u>	<u>\$ 176,129</u>	<u>\$ 170,464</u>
<b>Net pension liability - ending (a) - (b)</b>		\$ 37,673	\$ 26,117	\$ 27,465
<b>Plan fiduciary net position as a percentage of the total pension liability (b)/(a)</b>		82.47%	87.09%	86.12%
<b>Covered-employee payroll ( c )</b>		\$ 49,286	\$ 47,838	\$ 47,674
<b>Net pension liability as a percentage of the covered-employee payroll ((a)-(b))/( c )</b>		76.44%	54.59%	57.61%

This schedule is presented to show information for 10 years. However, until a full ten-year trend is compiled, HRSD will present information for those years for which information is available.

Unaudited – See accompanying independent auditors' report and notes to required supplementary information

**HAMPTON ROADS SANITATION DISTRICT  
SCHEDULE OF EMPLOYER CONTRIBUTIONS  
FOR THE YEARS ENDED JUNE 30, 2008 THROUGH 2017**

Date	Contractually Required Contribution	Contributions in Relation to Contractually Required Contribution	Contribution Deficiency (Excess)	Employer's Covered Payroll	Contributions as a % of Covered Payroll
2017	\$ 4,326,000	\$ 4,326,000	-	\$ 49,286,000	8.78%
2016	4,222,000	4,222,000	-	47,838,000	8.83%
2015	4,207,000	4,207,000	-	47,674,000	8.82%
2014	4,107,000	4,107,000	-	46,096,000	8.91%
2013	4,075,000	4,075,000	-	45,044,000	9.05%
2012	4,580,000	4,580,000	-	42,166,000	10.86%
2011	4,438,000	4,438,000	-	40,462,000	10.97%
2010	3,900,000	3,900,000	-	39,407,000	9.90%
2009	3,699,000	3,699,000	-	37,608,000	9.84%
2008	4,363,000	4,363,000	-	34,050,000	12.81%

**Changes of benefit terms** - There have been no actuarially material changes to the VRS benefit provisions since the prior actuarial valuation. The 2014 valuation includes Hybrid Retirement Plan members for the first time. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. Because this was a new benefit and the number of participants was relatively small, the impact on the liabilities as of the measurement date of June 30, 2016 WAS not material.

**Changes of assumptions** - The following changes in actuarial assumptions were made effective June 30, 2013 based on the most recent experience study of the retirement system for the four-year period ending June 30, 2012:

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

Information pertaining to Pensions can be found in Notes 2 and 7 to the financial statements.

Unaudited – See accompanying independent auditors' report and notes to required supplementary information

**HAMPTON ROADS SANITATION DISTRICT  
SCHEDULE OF FUNDING PROGRESS  
FOR THE YEARS ENDED JUNE 30, 2013 THROUGH 2017**

The table below provides detail on the funding progress for the Post-Retirement Health Benefit Plan for HRSD.

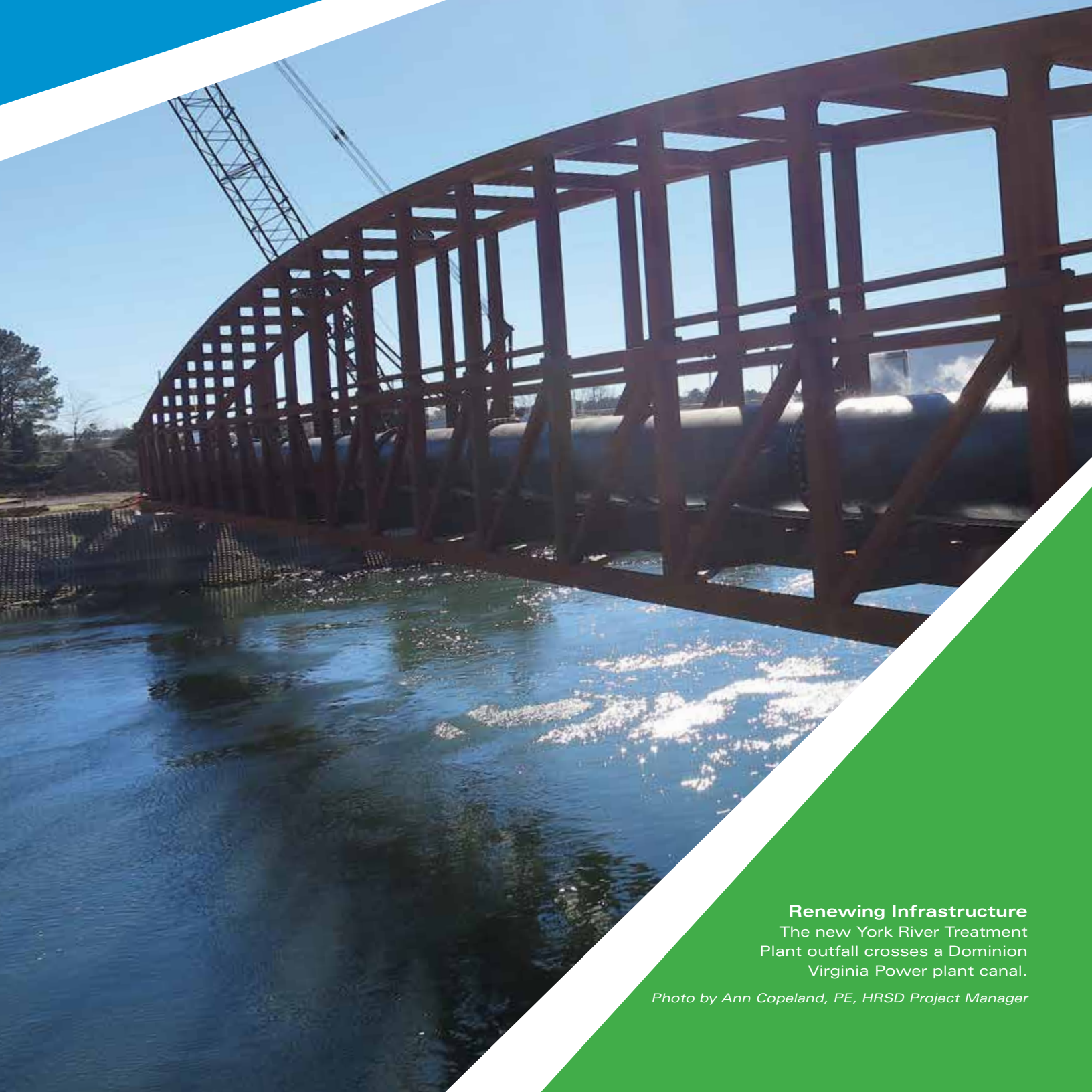
Valuation as of	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL) (2) - (1)	Funded Ratio Assets as % of AAL (1) / (2)	Annual Covered Payroll	UAAL as a % of Covered Payroll (3) / (5)
(in thousands)	(1)	(2)	(3)	(4)	(5)	(6)
6/30/2017	\$42,468	\$49,303	\$6,835	86.1%	\$49,286	13.9%
6/30/2016	\$39,272	\$45,337	\$6,065	86.6%	\$47,838	12.7%
6/30/2015	\$37,008	\$42,017	\$5,009	88.1%	\$47,674	10.5%
6/30/2014	\$34,115	\$39,422	\$5,307	86.5%	\$46,096	11.5%
6/30/2013	\$28,030	\$35,552	\$7,522	78.8%	\$45,032	16.7%

Unaudited – See accompanying independent auditors' report

This page was intentionally left blank

# Statistical Section

(Unaudited)



## Renewing Infrastructure

The new York River Treatment Plant outfall crosses a Dominion Virginia Power plant canal.

*Photo by Ann Copeland, PE, HRSD Project Manager*

## HAMPTON ROADS SANITATION DISTRICT STATISTICAL SECTION (UNAUDITED)

---

This section of HRSD's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures and required supplementary information says about HRSD's overall financial health.

<b>Contents</b>	<b>Page(s)</b>
<b>Demographic and Economic Information</b>	
This schedule offers demographic and economic indicators to help the reader understand the environment within which HRSD's financial activities take place and to help make comparisons over time and with other governments.	45
<b>Financial Trends</b>	
These schedules contain trend information to help the reader understand how HRSD's financial performance and well-being have changed over time.	46-48
<b>Debt Capacity</b>	
This schedule presents information to help the reader assess the affordability of HRSD's current levels of outstanding debt and HRSD's ability to issue additional debt in the future.	49
<b>Revenue Capacity</b>	
These schedules contain information to help the reader assess the factors affecting HRSD's ability to generate revenue from rate payers.	50-51 54-56
<b>Operating Information</b>	
These schedules contain information about the HRSD's operations and resources to help the reader understand how the HRSD's financial information relates to the services HRSD provides and the activities it performs.	52-53 57

**Sources:** Unless otherwise noted the information in these schedules is derived from the comprehensive annual financial reports and accounting records for the relevant year.

Unaudited – See accompanying independent auditors' report



This page was intentionally left blank

**HAMPTON ROADS SANITATION DISTRICT  
DEMOGRAPHIC AND OTHER MISCELLANEOUS STATISTICS  
JUNE 30, 2017**

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Date of Incorporation - 1940										
Area in Square Miles (1)	3,087	2,808	2,808	2,808	2,808	2,808	2,808	2,808	2,808	2,808
Present Service Area in Square Miles (1)	758	672	672	672	672	672	672	672	672	672
Treatment Plants (Major)	9	9	9	9	9	9	9	9	9	9
Plant Capacity (Millions of Gallons per Day)										
Amy Base Plant, Norfolk	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Atlantic Plant, Virginia Beach	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
Boat Harbor Plant, Newport News	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Chesapeake-Elizabeth Plant, Virginia Beach	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
James River Plant, Newport News	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Nansemond Plant, Suffolk	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Virginia Initiative Plant, Norfolk	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Williamsburg Plant, James City County	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
York River Plant, York County	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Treatment Plants (Major) Capacity	248.5	248.5	248.5	248.5	248.5	248.5	248.5	248.5	230.5	230.5
Small Communities Treatment Plants	5	4	4	4	4	5	5	4	4	4
Central Middlesex, Middlesex County	0.025	0.025	0.025	0.03	0.03	0.03	0.03	-	-	-
King William Plant, King William County	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Mathews Plant, Mathews County (2)	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10
Urbanna Plant, Middlesex County	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
West Point Plant, King William County	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Lawnes Point, Isle of Wight County (2)	0.05	-	-	-	-	-	-	-	-	-
Total Small Communities Treatment Plants Capacity	0.875	0.825	0.825	0.83	0.83	0.93	0.93	0.90	0.90	0.90
Miles of Interceptor Systems (3)	540	536	532	531	531	532	528	483	483	514
Interceptor Pump Stations	89	88	83	83	83	83	82	81	82	82
Small Communities Pump Stations (3)	38	33	33	33	29	29	29	25	20	20
Maintenance Facilities	2	2	2	2	2	2	2	2	2	2
Number of Service Connections (in thousands)	470	467	465	462	460	458	457	455	452	442
Daily Average Treatment in Millions of Gallons	153	155	152	154	158	147	144	171	151	146
Bond Ratings										
Moody's Investors Service	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2	Aa3	Aa3
Standard & Poor's	AA+	AA+	AA+	AAA	AAA	AAA	AAA	AAA	AA+	AA+
Subordinate Long-term	AA	AA	AA	AA+	AA+	AA+	-	-	-	-
Subordinate Short-term	A-1+	A-1+	A-1+	A-1+	A-1+	A-1+	-	-	-	-
Fitch	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA	AA
Subordinate Long-term	AA	AA	AA	AA	AA	AA	-	-	-	-
Subordinate Short-term	F1+	F1+	F1+	F1+	F1+	F1+	-	-	-	-

(1) HRSD added additional service areas in the counties of Isle of Wight and Surry

(2) The Mathews Treatment Plant has been closed. Wastewater from the area is now handled by the York River Treatment Plant. Lawnes Point was acquired during the year ended June 30, 2017.

(3) HRSD conducted evaluations of the system during the years ended June 30, 2009 and 2011 and revised the miles of pipes and the number of small community pump stations.

**HAMPTON ROADS SANITATION DISTRICT**  
**SCHEDULE OF OPERATING EXPENSES, NET POSITION BY COMPONENT**  
**AND DEBT SERVICE EXPENDITURES LAST TEN FISCAL YEARS**

(in thousands)

	2017	2016	2015	(adjusted) 2014	(adjusted) 2013
<b>OPERATING REVENUES</b>					
Wastewater treatment charges	\$ 254,961	\$ 234,020	\$ 221,626	\$ 211,538	\$ 199,318
Miscellaneous	3,669	3,861	3,935	3,643	3,297
<b>TOTAL OPERATING REVENUES</b>	<b>258,630</b>	<b>237,881</b>	<b>225,561</b>	<b>215,181</b>	<b>202,615</b>
<b>OPERATING EXPENSES</b>					
Wastewater treatment	113,100	106,575	114,137	109,149	86,973
General and administrative	40,287	40,026	38,678	33,012	31,410
Depreciation	49,311	45,670	41,871	42,761	45,414
<b>TOTAL OPERATING EXPENSES</b>	<b>202,698</b>	<b>192,271</b>	<b>194,686</b>	<b>184,922</b>	<b>163,797</b>
<b>OPERATING INCOME</b>	<b>55,932</b>	<b>45,610</b>	<b>30,875</b>	<b>30,259</b>	<b>38,818</b>
<b>NON-OPERATING REVENUES (EXPENSES)</b>					
Wastewater facility charges	7,511	6,699	7,428	6,640	5,851
Investment income	2,287	1,563	1,695	1,872	1,705
Bond interest subsidy	2,275	2,399	2,444	2,364	2,602
Change in fair value of investments	(1,119)	750	(286)	(422)	(714)
Capital distributions to localities	(138)	(3,287)	-	-	-
Bond issuance costs	(42)	(1,713)	(768)	-	(658)
Disposal of capital assets	-	-	-	-	(1,649)
Interest expense	(22,630)	(21,631)	(22,958)	(25,650)	(24,330)
<b>NET NON-OPERATING REVENUES (EXPENSES)</b>	<b>(11,856)</b>	<b>(15,220)</b>	<b>(12,445)</b>	<b>(15,196)</b>	<b>(17,193)</b>
<b>INCOME (LOSS) BEFORE CONTRIBUTIONS</b>	<b>44,076</b>	<b>30,390</b>	<b>18,430</b>	<b>15,063</b>	<b>21,625</b>
<b>CAPITAL CONTRIBUTIONS</b>					
State capital grants	7,462	14,389	16,519	13,888	10,172
Other capital contributions	1,136	-	3,000	-	-
<b>CHANGE IN NET POSITION</b>	<b>\$ 52,674</b>	<b>\$ 44,779</b>	<b>\$ 37,949</b>	<b>\$ 28,951</b>	<b>\$ 31,797</b>
<b>NET POSITION</b>					
Net Investment in capital assets	\$ 428,670	\$ 410,287	\$ 385,597	\$ 351,191	\$ 337,342
Restricted for debt service	22,701	23,798	22,070	24,064	23,843
Restricted for debt service reserve fund	-	-	44,118	45,207	-
Unrestricted	202,907	167,519	105,040	134,485	164,811
<b>TOTAL NET POSITION</b>	<b>\$ 654,278</b>	<b>\$ 601,604</b>	<b>\$ 556,825</b>	<b>\$ 554,947</b>	<b>\$ 525,996</b>
<b>DEBT SERVICE EXPENDITURES</b>					
Senior debt	\$ 35,837	\$ 38,198	\$ 43,842	\$ 47,331	\$ 37,574
Subordinate debt	\$ 23,603	\$ 17,068	\$ 13,091	\$ 14,112	\$ 11,243
Senior Debt Service Coverage (GAAP)	3.10	2.56	1.90	1.76	2.48
Subordinate Debt Service Coverage (GAAP)	5.09	5.72	6.36	5.92	8.27
Total Debt Service Coverage (GAAP)	1.93	1.77	1.46	1.36	1.91
Total Debt (Adjusted Cash Basis)	\$ 57,988	\$ 54,643	-	-	-
Total Debt Service Coverage (Adjusted Cash Basis)	2.00	1.85	-	-	-

Notes:

FY2013 - HRSD implemented GASB Statement 65 effective July 1, 2012, which requires expensing bond issuance costs in the year incurred.

FY2013 - HRSD adjusted the financial records to include inventory assets.

FY2014 - HRSD implemented GASB Statements 68 and 71 effective July 1, 2014, which requires recording pension liability.

FY2016 - HRSD is showing Debt Service Coverage on both a GAAP basis and an Adjusted Cash basis to account for distributions to localities in accordance with its Amended Subordinate Trust Agreement Section 705(a) enacted in March 2016.

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT**  
**SCHEDULE OF OPERATING EXPENSES, NET POSITION BY COMPONENT**  
**AND DEBT SERVICE EXPENDITURES LAST TEN FISCAL YEARS**

(in thousands)	(adjusted) 2012	2011	2010	2009	2008
<b>OPERATING REVENUES</b>					
Wastewater treatment charges	194,817	\$ 183,526	\$ 167,807	\$ 156,642	\$ 129,583
Miscellaneous	2,996	3,890	3,645	3,088	2,623
<b>TOTAL OPERATING REVENUES</b>	<b>197,813</b>	<b>187,416</b>	<b>171,452</b>	<b>159,730</b>	<b>132,206</b>
<b>OPERATING EXPENSES</b>					
Wastewater treatment	110,783	103,225	98,022	86,850	72,034
General and administrative	31,163	28,622	29,435	28,853	31,756
Depreciation	41,250	36,191	30,441	28,414	27,282
<b>TOTAL OPERATING EXPENSES</b>	<b>183,196</b>	<b>168,038</b>	<b>157,898</b>	<b>144,117</b>	<b>131,072</b>
<b>OPERATING INCOME</b>	<b>14,617</b>	<b>19,378</b>	<b>13,554</b>	<b>15,613</b>	<b>1,134</b>
<b>NON-OPERATING REVENUES (EXPENSES)</b>					
Wastewater facility charges	6,276	5,083	5,754	5,086	8,339
Investment income	1,681	1,699	1,541	3,998	3,999
Bond interest subsidy	2,602	2,602	1,655	-	-
Change in fair value of investments	(224)	(19)	40	162	656
Capital distributions to localities	-	-	-	-	-
Bond issuance costs	(2,206)	-	-	-	-
Disposal of capital assets	-	-	-	-	-
Interest expense	(22,760)	(20,516)	(19,973)	(15,263)	(5,867)
<b>NET NON-OPERATING REVENUES (EXPENSES)</b>	<b>(14,631)</b>	<b>(11,151)</b>	<b>(10,983)</b>	<b>(6,017)</b>	<b>7,127</b>
<b>INCOME (LOSS) BEFORE CONTRIBUTIONS</b>	<b>(14)</b>	<b>8,227</b>	<b>2,571</b>	<b>9,596</b>	<b>8,261</b>
<b>CAPITAL CONTRIBUTIONS</b>					
State capital grants	14,806	16,097	41,606	16,678	-
Other capital contributions	-	-	-	-	-
<b>CHANGE IN NET POSITION</b>	<b>14,792</b>	<b>\$ 24,324</b>	<b>\$ 44,177</b>	<b>\$ 26,274</b>	<b>\$ 8,261</b>
<b>NET POSITION</b>					
Net Investment in capital assets	348,407	\$ 351,618	\$ 348,572	\$ 319,594	\$ 301,760
Restricted for debt service	15,736	14,896	12,253	7,542	7,377
Restricted for debt service reserve fund	-	-	-	-	-
Unrestricted	130,056	110,688	92,053	81,565	73,290
<b>TOTAL NET POSITION</b>	<b>494,199</b>	<b>\$ 477,202</b>	<b>\$ 452,878</b>	<b>\$ 408,701</b>	<b>\$ 382,427</b>
<b>DEBT SERVICE EXPENDITURES</b>					
Senior debt	33,023	\$ 28,257	\$ 21,081	\$ 17,453	\$ 4,699
Subordinate debt	13,694	\$ 10,640	\$ 10,695	\$ 10,694	\$ 11,992
Senior Debt Service Coverage (GAAP)	1.94	2.30	2.51	3.05	8.81
Subordinate Debt Service Coverage (GAAP)	4.67	6.10	4.95	4.98	3.45
Total Debt Service Coverage (GAAP)	1.37	1.67	1.67	1.89	2.48
Total Debt (Adjusted Cash Basis)	-	-	-	-	-
Total Debt Service Coverage (Adjusted Cash Basis)	-	-	-	-	-

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES  
FOR OPERATIONS - LAST TEN FISCAL YEARS**

(in thousands)	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Personal Services	\$ 53,401	\$ 51,801	\$ 52,357	\$ 50,538	\$ 49,361	\$ 47,319	\$ 44,284	\$ 42,529	\$ 40,840	\$ 37,333
Fringe Benefits	19,106	17,974	18,249	20,170	20,039	17,800	17,692	15,217	12,410	12,573
Repairs and Maintenance (1)	19,933	22,824	31,451	22,320	23,075	26,057	21,234	23,445	14,176	10,704
Materials and Supplies	8,310	7,843	4,343	5,764	5,700	6,143	8,381	6,284	5,715	5,965
Transportation	1,386	1,537	1,297	1,417	1,376	1,319	1,196	1,009	972	965
Utilities	11,523	11,249	10,503	11,126	12,295	12,027	11,026	10,755	13,218	11,601
Chemicals	8,020	7,512	7,119	7,752	7,892	8,587	8,084	7,571	8,342	8,032
Contractual Services	26,977	21,573	15,127	14,222	13,993	12,312	11,118	10,333	8,642	9,064
Miscellaneous	2,329	1,842	2,880	1,274	1,172	1,324	1,148	1,049	1,028	897
General (2)	2,402	2,446	9,489	7,578	6,487	6,852	7,684	9,265	10,360	6,656
Subtotal, Expense before Depreciation	153,387	146,601	152,815	142,161	141,390	139,740	131,847	127,457	115,703	103,790
Depreciation	49,311	45,670	41,871	42,761	45,414	41,250	36,191	30,441	28,414	27,282
Total Operating Expenses	\$ 202,698	\$ 192,271	\$ 194,686	\$ 184,922	\$ 186,804	\$ 180,990	\$ 168,038	\$ 157,898	\$ 144,117	\$ 131,072

(1) Excludes capital distributions to localities

(2) Includes bad debt expense

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
RATIOS OF OUTSTANDING DEBT BY TYPE  
JUNE 30, 2017**

(in thousands)					
As of June 30,	No. Of Service Conections	Senior Revenue Bonds	Subordinate Revenue Bonds	Total Outstanding Debt	Debt Per Service Connection
2017	470,000	\$ 429,165	\$ 350,347	\$ 779,512	\$ 1,659
2016	467,000	476,734	402,560	879,294	1,883
2015	465,000	649,202	99,195	748,397	1,609
2014	462,000	656,503	109,850	766,353	1,659
2013	460,000	670,272	120,231	790,503	1,718
2012	458,000	510,951	128,335	639,286	1,396
2011	457,000	450,335	110,661	560,996	1,228
2010	455,000	395,215	152,103	547,318	1,203
2009	452,000	250,165	109,971	360,136	797
2008	442,000	255,635	104,269	359,904	814

Note: Unamortized bond premiums are included in both senior and subordinate revenue bonds.

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
RATE SCHEDULE  
WASTEWATER TREATMENT CHARGES  
LAST TEN FISCAL YEARS**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<u>Residential - Metered</u>										
Per CCF * (single step)	\$ 4.51	\$ 4.13	\$ 3.83	\$ 3.55	\$ 3.29	\$ 3.05	\$ 2.82	\$ 2.52	-	-
First 30 CCF* per 30-day period	-	-	-	-	-	-	-	-	\$ 2.28	\$ 1.98
In excess of 30 CCF* per 30-day per	-	-	-	-	-	-	-	-	2.06	1.79
Minimum Charges										
Per day	0.30	0.25	0.25	0.25	0.25	0.25	0.25	0.25	-	-
2 CCF* or less per 30-day period	-	-	-	-	-	-	-	-	6.50	5.65
<u>Residential - Unmetered per 30-day period</u>										
Flat rate accounts	29.32	26.32	26.32	26.32	26.32	24.40	22.56	20.16	-	-
First toilet	-	-	-	-	-	-	-	-	10.25	8.91
Second toilet	-	-	-	-	-	-	-	-	6.83	5.94
Additional, each	-	-	-	-	-	-	-	-	3.42	2.97
<u>Non-Residential - Special Category</u>										
Biochemical Oxygen Demand (BOD)										
Excess over 250 mg/liter										
Per mg/liter per CCF	0.000206	0.000485	0.000612	0.001558	0.002451	-	-	-	-	-
Per Hundred Pounds	-	-	-	-	-	46.77	39.71	35.39	31.95	27.71
Total Suspended Solids (TSS)										
Excess over 250 mg/liter										
Per mg/liter per CCF	0.000454	0.000448	0.000417	0.001244	0.001865	-	-	-	-	-
Per Hundred Pounds	-	-	-	-	-	36.70	34.73	30.25	28.54	24.82
Total Phosphorus (TP)										
Excess over 6 mg/liter										
Per mg/liter per CCF	0.011642	0.004361	0.004344	0.011714	0.012790	-	-	-	-	-
Per Hundred Pounds	-	-	-	-	-	300.57	300.57	293.41	283.10	252.52
Total Kjeldahl Nitrogen (TKN)										
Excess over 35 mg/liter										
Per mg/liter per CCF	0.001660	0.000917	0.000756	0.001752	0.002085	-	-	-	-	-
Per Hundred Pounds	-	-	-	-	-	74.51	63.39	61.88	59.73	53.96
Unusual wastes not covered by this schedule may be assigned a special rate.										
<u>Septic Tank Waste</u>										
Per gallon	0.1366	0.1362	0.1267	0.1258	0.1146	-	-	-	-	-
Per each 500 gallons or part thereof	-	-	-	-	-	48.57	44.46	38.51	35.84	31.21

\*CCF = 100 Cubic Feet (Approx. 748 gallons)

Note: Rates can be adjusted by the Commission.

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
RATE SCHEDULE  
WASTEWATER FACILITY CHARGES  
LAST TEN FISCAL YEARS**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,715	\$ 1,715	\$ 1,655	\$ 1,607
Residential										
Commercial/Industrial										
Volume based facility charges:										
5/8" Meter	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,895	\$ 1,715	\$ 1,715	\$ 1,655	\$ 1,607
3/4" Meter	4,830	4,830	4,830	4,830	4,510	2,885	2,605	2,605	2,515	2,443
1" Meter	8,170	8,170	8,170	8,170	7,630	5,370	4,850	4,850	4,685	4,548
1 1/2" Meter	17,260	17,260	17,260	17,260	16,130	13,035	11,780	11,780	11,365	11,040
2" Meter	30,510	29,420	29,420	29,420	27,490	24,420	22,065	22,065	21,290	20,681
3" Meter	70,800	67,350	63,600	62,270	58,180	59,140	53,440	53,440	51,565	50,088
4" Meter	128,660	122,400	115,580	106,060	99,110	110,860	100,175	100,175	96,660	93,892
6" Meter	298,610	284,070	268,250	224,650	209,920	268,675	242,780	242,780	234,260	227,556
8" Meter	542,680	516,260	487,510	382,670	357,580	503,350	454,835	454,835	438,875	426,315
10" Meter	862,550	820,560	774,860	587,820	540,610	819,310	740,340	740,340	714,355	693,915
12" Meter	1,259,520	1,198,210	1,131,490	-	-	-	-	-	-	-
14" Meter	1,734,700	1,650,250	1,558,360	-	-	-	-	-	-	-
16" Meter	2,289,010	2,177,580	2,056,330	-	-	-	-	-	-	-
Strength based facility charges: (per permitted pound)										
Biochemical Oxygen Demand (BOD) Excess over 250 mg/liter	-	-	\$ 728	\$ 987	\$ 928	-	-	-	-	-
Total Suspended Solids (TSS) Excess over 250 mg/liter	-	-	424	624	587	-	-	-	-	-
Total Phosphorus (TP) Excess over 6 mg/liter	-	-	8,420	5,846	5,502	-	-	-	-	-
Total Kjeldahl Nitrogen (TKN) Excess over 35 mg/liter	-	-	3,812	1,313	1,235	-	-	-	-	-

Notes:  
One charge per connection.  
HRSD eliminated strength based facility charges effective 7/1/2015.

Unaudited – See accompanying independent auditors' report



**HAMPTON ROADS SANITATION DISTRICT  
TREATMENT PLANT OPERATING SUMMARY  
LAST TEN FISCAL YEARS  
(Average Quantity per Day)**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>District Total</b>										
Flow (MGD)	152.9	155.1	152.2	154.0	157.9	147.1	144.4	170.9	151.4	146.3
Influent (1,000 lbs.)										
BOD	288.2	282.5	286.0	288.6	274.4	254.6	273.1	275.2	300.9	332.1
TSS	215.9	228.8	198.6	204.7	198.1	200.3	205.9	210.7	203.6	211.3
TP	7.0	6.9	8.6	6.8	6.6	6.7	7.0	7.4	7.8	6.7
TKN	46.4	45.7	45.8	47.9	48.9	48.3	49.8	48.2	49.0	51.4
Effluent (1,000 lbs.)										
BOD	8.9	9.8	9.9	9.6	9.3	7.5	9.3	11.5	8.7	9.2
TSS	9.4	9.3	8.9	9.1	9.3	10.5	9.2	13.1	10.5	10.8
TP	0.9	0.9	1.0	1.1	1.0	1.1	1.0	1.0	1.0	1.1
TKN	7.7	8.0	9.8	11.2	12.0	10.1	12.3	14.9	13.3	11.2
<b>Army Base Plant</b>										
Flow (MGD)	9.5	9.6	9.9	10.7	11.8	10.2	10.0	12.6	10.4	9.7
Influent (1,000 lbs.)										
BOD	13.2	13.3	16.4	19.0	18.5	17.4	16.9	17.0	18.1	18.9
TSS	11.7	13.3	12.5	14.2	14.4	13.7	12.9	13.5	12.9	13.0
TP	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
TKN	2.7	2.7	2.9	3.5	3.7	3.5	3.2	3.2	3.1	3.4
Effluent (1,000 lbs.)										
BOD	0.3	0.3	0.8	0.8	0.8	0.9	0.8	1.0	0.8	1.0
TSS	0.4	0.5	0.6	0.8	0.9	0.8	1.0	1.1	0.8	1.1
TP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TKN	0.1	0.1	2.1	2.6	2.8	2.5	2.3	2.3	2.3	2.4
<b>Atlantic Plant</b>										
Flow (MGD)	28.2	27.2	30.9	25.7	26.7	29.0	29.7	30.4	26.6	26.3
Influent (1,000 lbs.)										
BOD	53.2	55.6	66.6	52.7	51.3	56.0	58.6	55.1	52.0	55.7
TSS	38.7	38.5	42.9	37.3	36.4	43.8	46.9	43.3	40.2	41.7
TP	1.4	1.4	1.5	1.3	1.3	1.5	1.8	1.8	1.9	-
TKN	11.0	10.9	11.4	10.4	10.5	11.7	12.3	11.3	10.5	10.7
Effluent (1,000 lbs.)										
BOD	2.3	2.7	3.0	2.2	2.6	2.0	3.0	2.3	1.8	1.9
TSS	1.9	1.9	2.4	2.0	1.9	1.8	2.0	2.9	2.2	2.0
<b>Boat Harbor Plant</b>										
Flow (MGD)	13.9	15.6	14.4	14.9	15.5	13.6	12.6	16.7	13.0	11.6
Influent (1,000 lbs.)										
BOD	17.4	18.3	20.0	19.2	19.3	19.9	19.4	19.9	19.9	19.6
TSS	15.7	18.1	16.3	16.7	16.0	16.9	15.6	17.5	15.2	14.6
TP	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5
TKN	3.8	3.8	3.6	3.7	3.7	3.7	3.8	3.7	3.6	3.6
Effluent (1,000 lbs.)										
BOD	0.6	1.0	0.7	0.7	0.7	0.6	0.6	1.1	0.6	0.9
TSS	0.7	0.9	0.6	0.8	0.8	0.9	0.7	1.3	0.7	0.7
TP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TKN	1.2	1.8	2.2	2.4	2.9	3.0	2.8	2.8	2.6	2.3
<b>Chesapeake-Elizabeth Plant</b>										
Flow (MGD)	18.7	18.0	16.3	19.1	18.4	15.2	16.3	20.1	19.5	18.7
Influent (1,000 lbs.)										
BOD	35.4	35.2	30.2	38.7	32.1	24.8	30.1	32.7	36.0	38.3
TSS	26.6	26.1	22.9	26.6	25.1	21.0	22.6	26.9	27.1	27.5
TP	0.8	0.8	2.7	0.8	0.8	0.7	0.7	0.8	0.9	1.0
TKN	6.6	6.4	5.1	6.7	6.4	5.4	6.1	6.2	6.9	7.2
Effluent (1,000 lbs.)										
BOD	2.8	2.3	2.0	2.5	2.2	1.5	1.8	2.2	2.1	2.0
TSS	3.2	2.3	1.8	1.9	2.1	1.8	1.9	2.2	2.2	2.1
TP	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2
TKN	4.5	4.1	3.6	4.5	4.2	3.2	3.9	3.9	4.2	3.8

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
TREATMENT PLANT OPERATING SUMMARY  
LAST TEN FISCAL YEARS  
(Average Quantity per Day)**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>James River Plant</b>										
Flow (MGD)	12.3	13.2	12.7	13.6	14.3	12.9	12.2	14.9	12.3	12.7
Influent (1,000 lbs.)										
BOD	25.5	24.4	25.7	27.5	25.5	25.3	26.2	24.7	23.0	25.4
TSS	17.4	17.8	18.0	19.4	19.2	19.0	19.8	19.9	17.6	19.6
TP	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7
TKN	4.3	4.2	4.0	4.2	4.4	4.4	4.4	4.3	4.2	4.2
Effluent (1,000 lbs.)										
BOD	0.4	0.4	0.3	0.5	0.7	0.7	0.9	1.2	0.8	1.1
TSS	0.4	0.5	0.4	0.6	0.8	0.8	0.9	1.8	1.4	1.5
TP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TKN	0.5	0.4	0.4	0.2	0.6	0.5	2.3	2.6	1.2	1.0
<b>Nansemond Plant</b>										
Flow (MGD)	18.8	18.5	16.6	16.9	17.1	16.2	15.9	18.0	17.1	17.2
Influent (1,000 lbs.)										
BOD	40.7	35.8	28.5	29.0	27.0	23.7	27.9	30.2	31.6	32.3
TSS	40.3	38.4	21.9	23.1	22.9	22.6	22.6	24.5	23.1	24.5
TP	1.5	1.5	1.1	1.1	1.1	1.0	1.0	1.1	1.1	1.3
TKN	7.4	7.0	5.6	5.8	5.9	6.0	6.1	6.0	6.2	6.4
Effluent (1,000 lbs.)										
BOD	0.8	0.7	0.8	0.9	0.6	0.6	0.8	1.2	0.7	0.6
TSS	0.8	0.9	0.9	1.1	0.8	0.9	1.1	1.3	1.0	1.4
TP	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
TKN	0.5	0.5	0.6	0.5	0.3	0.3	0.5	2.3	1.3	0.3
<b>Virginia Initiative Plant</b>										
Flow (MGD)	30.9	31.7	30.5	30.7	31.9	29.8	28.5	35.7	29.9	25.4
Influent (1,000 lbs.)										
BOD	50.1	50.4	47.5	45.8	45.8	42.3	42.8	43.0	46.9	47.2
TSS	31.3	32.0	30.2	30.6	31.6	32.3	31.8	31.7	31.1	27.3
TP	1.0	1.0	1.1	1.2	1.1	1.1	1.1	1.2	1.3	1.4
TKN	7.3	7.4	7.1	7.4	7.5	7.6	7.3	7.2	7.5	7.1
Effluent (1,000 lbs.)										
BOD	1.2	1.7	1.9	1.4	0.9	0.8	0.7	1.7	1.3	1.2
TSS	1.4	1.9	1.6	1.7	1.4	1.5	1.1	1.7	1.5	1.2
TP	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2
TKN	0.4	0.7	0.8	0.6	0.5	0.5	0.4	0.8	1.5	1.1
<b>Williamsburg Plant</b>										
Flow (MGD)	8.0	8.6	8.4	9.2	8.9	9.1	8.6	10.0	12.0	14.4
Influent (1,000 lbs.)										
BOD	36.1	33.2	34.7	40.4	37.7	33.5	37.5	37.9	59.9	79.0
TSS	19.1	27.9	16.2	19.9	16.8	16.7	19.0	19.6	23.4	30.6
TP	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.6	0.8	1.0
TKN	3.3	3.6	3.2	3.3	3.3	3.4	3.5	3.5	4.3	5.2
Effluent (1,000 lbs.)										
BOD	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4
TSS	0.2	0.3	0.3	0.3	0.4	0.6	0.3	0.4	0.3	0.5
TP	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TKN	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.2
<b>York River Plant</b>										
Flow (MGD)	12.6	12.7	12.6	13.2	13.3	11.2	10.8	12.5	10.7	10.2
Influent (1,000 lbs.)										
BOD	16.7	16.3	18.2	17.9	17.2	13.3	15.5	16.3	15.5	15.8
TSS	15.1	16.7	16.9	16.4	15.7	14.1	14.3	14.0	12.6	12.4
TP	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
TKN	3.6	3.5	3.5	3.6	3.5	3.2	3.6	3.3	3.3	3.7
Effluent (1,000 lbs.)										
BOD	0.3	0.4	0.4	0.4	0.5	0.2	0.5	0.4	0.4	0.3
TSS	0.2	0.1	0.2	0.1	0.2	0.1	0.3	0.5	0.5	0.4
TP	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TKN	0.2	0.3	0.3	0.3	0.4	0.1	0.1	0.2	0.3	0.1

Note: HRSD implemented a surcharge for Total Kjeldahl Nitrogen (TKN) on July 1, 2007.

**HAMPTON ROADS SANITATION DISTRICT  
TEN LARGEST CUSTOMERS  
CURRENT YEAR AND NINE YEARS AGO**

(in thousands)

<u>Customer</u>	<u>Type</u>	<u>2017</u>		<u>2008</u>	
		<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
U.S. Navy - Norfolk Naval Base	Military Facility	\$ 4,888	1.9%	\$ 2,765	2.1%
Smithfield Foods	Meat Processor	4,723	1.9%	2,457	1.9%
Anheuser - Busch, Inc.	Brewery	2,819	1.1%	5,956	4.6%
Huntington Ingalls Industries (formerly Northrop Grumman Newport News/ Newport News Shipbuilding and Drydock)	Shipbuilding	2,138	0.8%	871	0.7%
Norfolk Naval Shipyard	Military Ship Repair	2,107	0.8%	-	-
City of Norfolk	Municipality	1,936	0.8%	1,359	1.0%
Norfolk Redevelopment & Housing Authority	Housing Authority	1,876	0.7%	918	0.7%
Joint Expeditionary Base Little Creek - Fort Story (formerly U.S. Navy - Little Creek Amphibious Base)	Military Facility	1,681	0.7%	463	0.4%
City of Virginia Beach	Municipality	1,313	0.5%	-	-
Fort Eustis	Military Facility	1,290	0.5%	-	-
U.S. Air Force - Langley	Military Facility	-	-	463	0.4%
Marva Maid Dairy	Manufacturer - Dairy Products	-	-	367	0.3%
Oceana Naval Air Station	Military Facility	-	-	338	0.3%
Total		<u>\$ 24,771</u>	<u>9.7%</u>	<u>\$ 15,957</u>	<u>12.4%</u>

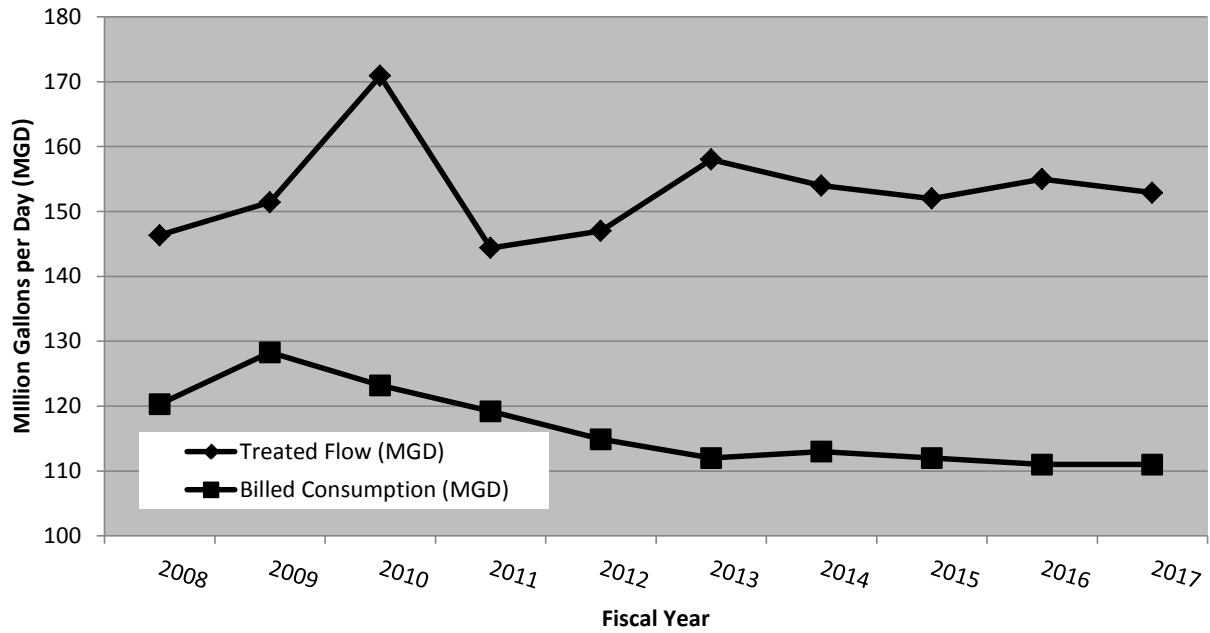
Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
WASTEWATER TREATMENT CHARGES  
TEN LARGEST EMPLOYERS  
CURRENT YEAR AND NINE YEARS AGO**

<u>Employer</u>	<u>Type</u>	2017			2008		
		Number of Employees	Rank	Percent of Regional Employment	Number of Employees	Rank	Percent of Regional Employment
Naval Station Norfolk	Military Facility	64,828	1	7.0%	96,000	1	9.2%
Huntington Ingalls Industries	Shipbuilding and repair	24,000	2	2.6%	19,000	3	1.8%
Sentara Healthcare	Health care network	22,000	3	2.4%	17,000	4	1.6%
Joint Expeditionary Base Little Creek - Fort Story	Military Facility	19,668	4	2.1%	16,372	5	1.6%
Joint Base Langley-Eustis	Military Facility	19,624	5	2.1%	21,182	2	2.0%
Oceana Naval Air Station	Military Facility	16,555	6	1.8%	16,261	6	1.6%
Norfolk Naval Shipyard	Shipbuilding and repair	14,124	7	1.5%	7,500	8	0.7%
Virginia Beach Public Schools	Public schools	10,576	8	1.1%	10,527	7	1.0%
Riverside Health System	Health care network	8,000	9	0.9%	7,050	9	0.7%
Norfolk City Public Schools	Public schools	7,000	10	0.8%	6,917	10	0.7%
Total		<u>206,375</u>		<u>22.3%</u>	<u>217,809</u>		<u>21.0%</u>

Sources:  
Hampton Roads Economic Development Alliance  
Hampton Roads Statistical Digest  
Confirmation with employers

**HAMPTON ROADS SANITATION DISTRICT  
COMPARISON OF TREATED FLOW TO BILLED FLOW  
LAST TEN FISCAL YEARS**



<u>Year ended June 30,</u>	<u>Treated Flow (MGD)</u>	<u>Billed Consumption (MGD)</u>
2008	146	120
2009	151	128
2010	171	123
2011	144	119
2012	147	115
2013	158	112
2014	154	113
2015	152	112
2016	155	111
2017	153	111

Unaudited – See accompanying independent auditors’ report

**HAMPTON ROADS SANITATION DISTRICT  
NUMBER OF EMPLOYEES BY IDENTIFIABLE ACTIVITY  
LAST TEN FISCAL YEARS**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<u>General Management</u>										
General Manager	3	3	3	3	3	4	4	4	4	4
Support Staff	1	1	1	1	1	1	1	1	1	1
	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
<u>Talent Management</u>										
Human Resources	6	5	5	5	5	5	6	6	5	5
Safety	3	3	0	0	0	0	0	0	0	0
Training	2	2	2	2	2	2	2	2	2	0
Support Staff	4	4	3	3	3	3	3	3	3	2
Total Finance & Administration	<u>15</u>	<u>14</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>11</u>	<u>11</u>	<u>10</u>	<u>7</u>
<u>Finance &amp; Administration</u>										
Accounting & Finance	10	10	10	10	10	10	10	10	10	10
Customer Care Center	77	77	69	69	68	69	69	69	63	61
Procurement	10	10	9	9	9	7	7	8	8	8
Support Staff	3	2	3	3	3	3	3	3	3	2
Total Finance & Administration	<u>100</u>	<u>99</u>	<u>91</u>	<u>91</u>	<u>90</u>	<u>89</u>	<u>89</u>	<u>90</u>	<u>84</u>	<u>81</u>
<u>Information Technology</u>										
Information Technology	47	45	39	35	35	33	33	33	21	21
Support Staff	1	1	1	1	1	2	2	2	3	3
Total Information Services	<u>48</u>	<u>46</u>	<u>40</u>	<u>36</u>	<u>36</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>24</u>	<u>24</u>
<u>Operations</u>										
Army Base Treatment Plant	34	31	32	32	32	32	32	32	32	32
Atlantic Base Treatment Plant	35	32	33	33	33	32	32	32	33	33
Boat Harbor Treatment Plant	35	32	33	33	33	33	33	34	34	34
Chesapeake-Elizabeth Treatment Plant	32	31	32	32	32	32	32	32	32	32
Interceptor System Maintenance	117	115	120	120	120	121	122	122	106	93
James River Treatment Plant	22	20	21	21	21	21	21	21	21	21
Maintenance Shops	70	83	86	86	86	86	86	86	81	78
Nansemond Treatment Plant	32	30	31	31	31	30	30	30	30	30
Virginia Initiative Plant	33	30	31	31	31	31	31	31	31	31
Williamsburg Treatment Plant	29	28	29	29	29	31	31	31	31	34
York River Treatment Plant	24	22	23	23	23	23	23	23	23	23
Small Communities Division	23	21	17	17	17	17	17	15	15	15
Support Staff	23	24	25	25	25	24	24	24	24	30
Total - Operations	<u>509</u>	<u>499</u>	<u>513</u>	<u>513</u>	<u>513</u>	<u>513</u>	<u>514</u>	<u>513</u>	<u>493</u>	<u>486</u>
<u>Engineering</u>										
Design and Construction	25	25	21	19	19	17	15	15	15	14
Support Staff	14	14	14	14	14	14	14	14	14	13
Total - Engineering	<u>39</u>	<u>39</u>	<u>35</u>	<u>33</u>	<u>33</u>	<u>31</u>	<u>29</u>	<u>29</u>	<u>29</u>	<u>27</u>
<u>Water Quality</u>										
Pretreatment & Pollution Prevention	26	26	25	24	24	24	24	24	24	24
Technical Services	29	28	25	23	21	21	21	20	20	20
Laboratory	45	42	40	38	38	38	38	38	38	38
Support Staff	6	6	6	6	6	3	3	3	3	3
Total - Water Quality	<u>106</u>	<u>102</u>	<u>96</u>	<u>91</u>	<u>89</u>	<u>86</u>	<u>86</u>	<u>85</u>	<u>85</u>	<u>85</u>
<u>Total Employees</u>	<u>821</u>	<u>803</u>	<u>789</u>	<u>778</u>	<u>775</u>	<u>769</u>	<u>769</u>	<u>768</u>	<u>730</u>	<u>715</u>

Unaudited – See accompanying independent auditors' report

This page was intentionally left blank

# Other Supplemental Section (Unaudited)



**Inspiring  
the next  
generation  
to pursue  
environmental  
careers**

HRSD offers challenging internship opportunities that attract top students. HRSD continues to lead international research efforts to reduce the cost of removing nutrients from wastewater. HRSD's research work is leveraged with partnerships with leading universities and other innovative wastewater utilities throughout the world. Putting the knowledge gained into practice is yielding a significant return on our investment by reducing operational costs for nutrient removal as well as minimizing the capital investment required to construct new systems.

*Photo by Mark Rhodes*



**HAMPTON ROADS SANITATION DISTRICT  
SUMMARY OF PRIMARY BONDED DEBT SERVICE  
JUNE 30, 2017**

(in thousands)

As of June 30,	Senior Bonds			Subordinate Bonds	Total Debt
	Principal	Interest	Debt Service	Debt Service	Service
2018	18,380	19,046	37,426	20,485	57,911
2019	18,801	18,237	37,038	20,482	57,520
2020	19,520	17,457	36,977	20,484	57,461
2021	18,682	16,673	35,355	21,336	56,691
2022	17,977	15,842	33,819	22,422	56,241
2023	22,000	15,002	37,002	19,184	56,186
2024	22,882	14,038	36,920	18,973	55,893
2025	23,821	13,013	36,834	18,976	55,810
2026	24,134	11,944	36,078	19,387	55,465
2027	19,625	10,983	30,608	24,687	55,295
2028	20,390	10,117	30,507	21,575	52,082
2029	25,548	9,215	34,763	17,164	51,927
2030	26,550	8,100	34,650	17,160	51,810
2031	17,093	7,188	24,281	27,945	52,226
2032	14,615	6,523	21,138	25,955	47,093
2033	13,296	5,892	19,188	25,954	45,142
2034	11,780	5,292	17,072	25,953	43,025
2035	12,295	4,640	16,935	25,701	42,636
2036	12,835	3,960	16,795	22,760	39,555
2037	7,245	3,250	10,495	28,952	39,447
2038	13,985	2,817	16,802	22,532	39,334
2039	14,595	2,044	16,639	7,887	24,526
2040	12,730	1,238	13,968	7,923	21,891
2041	4,800	815	5,615	7,968	13,583
2042	4,995	623	5,618	8,005	13,623
2043	5,190	424	5,614	8,015	13,629
2044	5,401	214	5,615	8,021	13,636
2045	-	-	-	8,090	8,090
2046	-	-	-	8,173	8,173
2047	-	-	-	8,260	8,260
Totals	<u>\$ 429,165</u>	<u>224,587</u>	<u>\$ 653,752</u>	<u>\$ 540,409</u>	<u>\$ 1,194,161</u>

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
BUDGETARY COMPARISON SCHEDULE  
JUNE 30, 2017**

(in thousands)

	<u>Budgeted Amounts</u>		<u>Actual Amounts</u>	<u>Variance under Final Budget</u>	<u>Percent Variance</u>
	<u>Original</u>	<u>Final</u>			
<b>OPERATING BUDGET EXPENSES</b>					
General Management	\$ 953	\$ 1,080	\$ 1,054	\$ 26	2.4%
Talent Management	2,243	2,299	2,062	237	10.3%
Finance	13,274	13,390	12,282	1,108	8.3%
Information Technology	15,319	16,908	13,739	3,169	18.7%
Operations	90,914	97,333	90,425	6,908	7.1%
Engineering	5,667	6,094	5,713	381	6.3%
Water Quality	13,478	13,771	13,027	744	5.4%
General	4,177	7,766	3,034	4,732	60.9%
Debt Service	63,847	59,132	58,030	1,102	1.9%
TOTAL	<u>209,872</u>	<u>217,773</u>	<u>199,366</u>	<u>\$ 18,407</u>	8.5%
Transfer to CIP	52,101	52,101			
Transfer to Risk Management	260	260			
	<u>\$ 262,233</u>	<u>\$ 270,134</u>			
Add:					
Unbudgeted Depreciation			49,311		
Unbudgeted Bad Debt Expense			2,402		
Capital Improvement Program items expensed			12,641		
Less:					
Capitalized Assets			2,854		
Debt Service			58,030		
Capital distributions to localities			138		
TOTAL OPERATING EXPENSES			<u>\$ 202,698</u>		

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
NOTE TO BUDGETARY COMPARISON SCHEDULE  
JUNE 30, 2017**

---

**BUDGETARY HIGHLIGHTS**

HRSD's Commission adopts an Annual Operating Budget that contains the day-to-day operating expenses of the District. The Operating Budget as adopted for FY-17 was \$209,871,702 and contains personnel costs, fringe benefits, material and supplies, electricity, chemicals, insurance, contractual services, debt service and other miscellaneous expenses. There were several modifications to the Operating Budget during the year to reflect changes in spending patterns. Transfers totaling \$7,901,331 for major repairs and equipment replacements resulted in a final budget of \$217,773,033. All adjustments to the Annual Budget were approved from surplus fund balances or from transfers within or among departments.

**NOTE – BUDGETARY ACCOUNTING AND CONTROL**

**Budget Preparation**

HRSD prepares its Annual Budget under the provisions of its enabling legislation, used to establish rates, fees and other charges, and of Section 3.12 of the Master Trust Indenture, dated December 1, 1993, and the Trust Agreement, dated March 1, 2008. In accordance with those provisions, the following process is used to adopt the Annual Budget:

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

The HRSD Commission appoints a Finance Committee consisting of two Commissioners. The two Commissioners meet in early April to review the Budgets, which are presented by staff at the April Commission meeting. HRSD's Commission reviews these budgets at that meeting.

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

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

The 2008 Trust Agreement requires Debt Service Coverage of 1.20 times for senior and 1.00 times for total debt based on maximum annual debt service. The 2008 Subordinate Trust Agreement was amended in 2016 to account for Consent Decree expenses related to Locality wet weather improvements that HRSD will not own and requires total debt service coverage to be 1.2 times on an adjusted cash basis. There are no adjustments that would affect coverage at this time. The HRSD Commission has a policy of providing senior revenue and total revenue bonded debt service coverage ratios of not less than 1.5 and 1.4 times annual debt service on an adjusted cash basis, respectively.

**Budget Accounting**

The Annual Budget is prepared on a basis of accounting consistent with accounting principles generally accepted in the United States of America, however, no provision is provided for non-cash items such as depreciation and bad debt expense. The FY-17 Annual Budget consists of two parts: an operating budget that covers day-to-day operations and a capital budget that identifies all major capital project requirements over the next ten years. All operating budget amounts lapse at year-end. The Commission annually adopts only the first year of the capital budget. HRSD's Commission separately approves all contracts that are awarded under the capital budget.

This page was intentionally left blank

**HAMPTON ROADS SANITATION DISTRICT  
SCHEDULE OF REVENUES , EXPENDITURES AND  
DEBT SERVICE FOR OPERATIONS - ACTUAL TO BUDGET  
FOR THE FISCAL YEAR ENDED JUNE 30, 2017**

(in thousands)

	<u>Actual</u>	<u>Amended Budget</u>	<u>Variance Favorable/ (Unfavorable)</u>	<u>Budget Variance Percentage</u>
<b>OPERATING REVENUE</b>				
Wastewater Treatment Charges	\$ 254,961	\$ 249,743	\$ 5,218	2%
Miscellaneous	3,669	2,840	829	29%
<b>TOTAL OPERATING REVENUE</b>	<u>258,630</u>	<u>252,583</u>	<u>6,047</u>	2%
<b>CURRENT EXPENDITURES</b>				
General Management	1,054	1,080	26	2%
Talent Management	2,062	2,299	237	10%
Finance	12,282	13,390	1,108	8%
Information Technology	13,739	16,908	3,169	19%
Operations	90,425	97,333	6,908	7%
Engineering	5,713	6,094	381	6%
Water Quality	13,027	13,771	744	5%
General	3,034	7,766	4,732	61%
<b>TOTAL CURENT EXPENDITURES</b>	<u>141,336</u>	<u>158,641</u>	<u>17,305</u>	11%
<b>EXCESS OF OPERATING REVENUES OVER EXPENDITURES</b>	<u>117,294</u>	<u>93,942</u>	<u>23,352</u>	25%
<b>NON-OPERATING REVENUE (EXPENSE)</b>				
Wastewater Facility Charge	7,511	5,850	1,661	28%
Interest Income	1,168	1,400	(232)	-17%
Bond Interest Subsidy	2,275	2,400	(125)	-5%
Capital distributions to localities	-	-	-	0%
<b>TOTAL NON-OPERATING REVENUE</b>	<u>10,954</u>	<u>9,650</u>	<u>1,304</u>	14%
<b>INCOME BEFORE CAPITAL CONTRIBUTIONS</b>	128,248	103,592	24,656	24%
<b>CAPITAL CONTRIBUTIONS</b>				
State Capital Grants	8,598	-	8,598	100%
<b>AMOUNT AVAILABLE FOR DEBT</b>	136,846	103,592	33,254	32%
<b>DEBT EXPENDITURES</b>				
Principal & Interest	57,988	58,232	244	0%
Cost of Issuance	42	900	858	95%
<b>TOTAL DEBT EXPENDITURES</b>	<u>58,030</u>	<u>59,132</u>	<u>1,102</u>	2%
<b>AMOUNT AVAILABLE TO REINVEST</b>	<u>\$ 78,816</u>	<u>\$ 44,460</u>	<u>\$ 34,356</u>	77%

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES  
FOR OPERATIONS - ACTUAL TO BUDGET  
FOR THE FISCAL YEAR ENDED JUNE 30,2017**

(in thousands)

	General Management	Talent Management	Finance	Information Technology	Operations	Engineering
Personal Services	\$ 704	\$ 1,273	\$ 5,412	\$ 3,885	\$ 31,549	\$ 3,370
Fringe Benefits	205	505	2,380	1,411	14,205	1,249
Materials & Supplies	11	54	105	1,062	5,696	25
Transportation	35	30	83	60	963	54
Utilities	-	-	215	1,323	9,484	-
Chemical Purchases	-	-	-	-	8,020	-
Contractual Services	89	21	3,875	4,339	11,689	903
Major Repairs	-	-	-	1,509	5,663	-
Capital Assets	-	-	57	1	2,370	-
Miscellaneous Expense	10	179	155	149	786	112
<b>Total Department Expenditures</b>	<b>\$ 1,054</b>	<b>\$ 2,062</b>	<b>\$ 12,282</b>	<b>\$ 13,739</b>	<b>\$ 90,425</b>	<b>\$ 5,713</b>

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
OBJECTIVE CLASSIFICATION OF DEPARTMENTAL EXPENDITURES  
FOR OPERATIONS - ACTUAL TO BUDGET  
FOR THE FISCAL YEAR ENDED JUNE 30,2017**

(in thousands)

	Water Quality	General	Total	Percent of Total	FY-2017 Budget	Variance Favorable/ (Unfavorable)
Personal Services	\$ 6,931	\$ 277	\$ 53,401	27%	\$ 54,711	\$ 1,310
Fringe Benefits	2,855	(3,704)	19,106	10%	24,788	5,682
Materials & Supplies	1,337	20	8,310	4%	7,375	(935)
Transportation	156	5	1,386	1%	1,474	88
Utilities	2	499	11,523	6%	12,361	838
Chemical Purchases	-	-	8,020	4%	9,361	1,341
Contractual Services	700	5,361	26,977	13%	32,595	5,618
Major Repairs	258	-	7,430	4%	9,846	2,416
Capital Assets	426	-	2,854	1%	3,252	398
Miscellaneous Expense	362	576	2,329	1%	2,878	549
<b>Total Department Expenditures</b>	<b>\$ 13,027</b>	<b>\$ 3,034</b>	<b>141,336</b>	<b>71%</b>	<b>158,641</b>	<b>17,305</b>
Debt Service			57,988	29%	58,232	244
Cost of Issuance Bonds			42	0%	900	858
Total Debt Expenditures			58,030	29%	59,132	1,102
Total Department and Debt Expenditures			<u>\$ 199,366</u>	<u>100%</u>	<u>\$ 217,773</u>	<u>\$ 18,407</u>

Unaudited – See accompanying independent auditors' report

**HAMPTON ROADS SANITATION DISTRICT  
DEPARTMENT SUMMARY OF EXPENDITURES  
ACTUAL TO BUDGET  
FOR THE FISCAL YEAR ENDED JUNE 30, 2017**

(in thousands)

	Actual	Amended Budget	Variance Favorable/ (Unfavorable)
<b>General Management</b>			
Personal Services	\$ 704	\$ 714	\$ 10
Fringe Benefits	205	200	(5)
Materials & Supplies	11	10	(1)
Transportation	35	33	(2)
Contractual Services	89	106	17
Miscellaneous Expense	10	17	7
	1,054	1,080	26
<b>Talent Management</b>			
Personal Services	1,273	1,330	57
Fringe Benefits	505	558	53
Materials & Supplies	54	66	12
Transportation	30	26	(4)
Contractual Services	21	64	43
Miscellaneous Expense	179	255	76
	2,062	2,299	237
<b>Finance</b>			
Personal Services	5,412	5,868	456
Fringe Benefits	2,380	2,622	242
Materials & Supplies	105	132	27
Transportation	83	108	25
Utilities	215	267	52
Contractual Services	3,875	4,089	214
Capital Assets	57	63	6
Miscellaneous Expense	155	241	86
	12,282	13,390	1,108
<b>Information Technology</b>			
Personal Services	3,885	4,230	345
Fringe Benefits	1,411	1,579	168
Materials & Supplies	1,062	1,011	(51)
Transportation	60	69	9
Utilities	1,323	1,425	102
Contractual Services	4,339	6,333	1,994
Major Repairs	1,509	1,899	390
Capital Assets	1	104	103
Miscellaneous Expense	149	258	109
	13,739	16,908	3,169

(Continued)

Unaudited – See accompanying independent auditors' report



**HAMPTON ROADS SANITATION DISTRICT  
DEPARTMENT SUMMARY OF EXPENDITURES  
ACTUAL TO BUDGET  
FOR THE FISCAL YEAR ENDED JUNE 30, 2017**

(in thousands)

	Actual	Amended Budget	Variance Favorable/ (Unfavorable)
<b>Operations</b>			
Personal Services	\$ 31,549	\$ 31,696	\$ 147
Fringe Benefits	14,205	14,905	700
Materials & Supplies	5,696	4,871	(825)
Transportation	963	973	10
Utilities	9,484	10,133	649
Chemical Purchases	8,020	9,361	1,341
Contractual Services	11,689	14,301	2,612
Major Repairs	5,663	7,707	2,044
Capital Assets	2,370	2,465	95
Miscellaneous Expense	786	921	135
	<u>90,425</u>	<u>97,333</u>	<u>6,908</u>
<b>Engineering</b>			
Personal Services	3,370	3,527	157
Fringe Benefits	1,249	1,403	154
Materials & Supplies	25	25	-
Transportation	54	72	18
Contractual Services	903	936	33
Miscellaneous Expense	112	131	19
	<u>5,713</u>	<u>6,094</u>	<u>381</u>
<b>Water Quality</b>			
Personal Services	6,931	6,996	65
Fringe Benefits	2,855	2,966	111
Materials & Supplies	1,337	1,200	(137)
Transportation	156	193	37
Utilities	2	-	(2)
Contractual Services	700	1,125	425
Major Repairs	258	240	(18)
Capital Assets	426	620	194
Miscellaneous Expense	362	431	69
	<u>13,027</u>	<u>13,771</u>	<u>744</u>
<b>General</b>			
Personal Services	277	350	73
Fringe Benefits	(3,704)	555	4,259
Materials & Supplies	20	60	40
Transportation	5	-	(5)
Utilities	499	536	37
Contractual Services	5,361	5,641	280
Miscellaneous Expense	576	624	48
	<u>3,034</u>	<u>7,766</u>	<u>4,732</u>
<b>TOTAL DEPARTMENTAL EXPENDITURES</b>	<u>\$ 141,336</u>	<u>\$ 158,641</u>	<u>\$ 17,305</u>

Unaudited – See accompanying independent auditors' report

This page was intentionally left blank

The logo for HRSD, consisting of the letters 'HRSD' in a bold, sans-serif font, centered between two horizontal white lines.

**HRSD**

1434 Air Rail Avenue  
Virginia Beach, VA 23455  
[www.hrsd.com](http://www.hrsd.com)

*Printed on recycled paper using environmentally friendly inks*

[This Page Is Intentionally Left Blank.]

## APPENDIX B

### CERTAIN DEFINITIONS

*The following is a brief summary of certain definitions of certain terms contained in the Trust Agreement and the Fifth Supplemental Trust Agreement and used in this Official Statement. This summary does not purport to be complete or definitive and qualified in its entirety by reference to the Trust Agreement and the Fifth Supplemental Trust Agreement, copies of which are available for examination at the offices of the Trustee.*

**“Additional Bonds”** means Bonds, if any, issued by the District, subsequent to the issuance of the Subordinate 2011 Bonds, pursuant to the Trust Agreement, including Additional Bonds issued in exchange for other such Additional Bonds or in replacement for mutilated, destroyed, stolen or lost Additional Bonds.

**“Audited Financial Statements”** means the annual financial statements of the District as audited and reported on by a firm of independent public accountants, for a twelve-month period constituting a Fiscal Year or other period indicated, prepared in accordance with generally accepted accounting principles.

**“Balloon Long-Term Indebtedness”** means Long-Term Indebtedness 25% or more of the principal payments of which is due in a single year, which portion of the principal is not required by the documents pursuant to which such Indebtedness is issued to be amortized by redemption prior to such date.

**“Bond Registrar”** means the Bond Registrar at the time serving as such under the Trust Agreement whether the original or a successor bond registrar.

**“Bonds”** means, the Subordinate 2011 Bonds, the Subordinate 2012 Bonds, the Subordinate 2016 Bonds, the Series 2017A Bonds, and any Additional Bonds under the Trust Agreement, including such Bonds issued in exchange for other such Bonds and Bonds issued in replacement for and upon the cancellation of mutilated Bonds or in lieu of and in substitution for destroyed, stolen or lost Bonds.

**“Capital Appreciation Bonds”** means Bonds the interest on which is compounded at the rates and on the dates set forth in the Series Agreement authorizing the issuance of such Bonds and is payable upon redemption or on the maturity date of such Bonds. Nothing in the Trust Agreement prohibits the District from designating in such Series Agreement any such Bonds by a name other than Capital Appreciation Bonds.

**“Coincidental Maximum Annual Debt Service”** means the highest amount of debt service due and payable on the Senior Obligations and Parity Obligations in the then-current or any succeeding Fiscal Year. For purposes of this definition, debt service due and payable on the Senior Obligations for any Fiscal Year is to be determined by reference to the Principal and Interest Requirements (as defined in the Senior Trust Agreement) and debt service due and payable on Parity Obligations for any Fiscal Year is to be determined by reference to the Principal and Interest Requirements (as defined in the Trust Agreement).

**“Commission”** means the Hampton Roads Sanitation District Commission, which is the governing body of the District.

**“Contracted Services”** means services rendered or facilities provided to the District for the performance for or on behalf of the District of functions similar to those performed by the District from a specific project, projects or systems, pursuant to a contract, whether a financing lease, a service agreement or another arrangement.

**“Credit Facility”** means a line of credit, letter of credit, standby bond purchase agreement or similar credit enhancement or liquidity facility, including self-liquidity provided by the District, established to provide credit or liquidity support for Indebtedness.

**“Cross-over Date”** means, with respect to Cross-over Refunding Indebtedness, the date on which the principal portion of the related Cross-over Refunded Indebtedness is to be paid or redeemed from the proceeds of such Cross-over Refunding Indebtedness.

**“Cross-over Refunded Indebtedness”** means Indebtedness refunded by Cross-over Refunding Indebtedness.

**“Cross-over Refunding Indebtedness”** means Indebtedness issued for the purpose of refunding other Indebtedness if the proceeds of such refunding Indebtedness are irrevocably deposited in escrow to secure the payment on the applicable redemption date or maturity date of the refunded Indebtedness, and the earnings on such escrow deposit (i) are required to be applied to pay interest on such Refunding Indebtedness until the Cross-over Date and (ii) are not to be used directly or indirectly to pay interest on the Refunded Indebtedness.

**“Current Interest Bonds”** means Bonds the interest on which is payable on the Interest Payment Dates provided therefor in the Series Agreement authorizing the issuance of such Bonds.

**“Debt Service Component of Contracted Services”** means that part of the payment for Contracted Services for which the District is obligated to pay that the chief financial officer of the District shall have determined in writing in an Officer’s Certificate at the time the District commits to receive such Contracted Services to be for the purpose of paying a fixed charge or the principal of and interest on obligations, directly or indirectly associated with rendering the Contracted Services, of the person providing the Contracted Services.

**“Debt Service Reserve Fund”** means the Hampton Roads Sanitation District (Virginia) Subordinate Wastewater Revenue Bonds 2011 Trust Agreement Debt Service Reserve Fund created and so designated by the Trust Agreement.

**“Debt Service Reserve Fund Requirement”** means (i) on the date of issuance of the Series 2017A Bonds, zero (0) and (ii) if, and to the extent, the District in its sole discretion determines to fund the Debt Service Reserve Fund, the Debt Service Reserve Fund Requirement specified in a Series Agreement.

**“Defaulted Interest”** means any interest on any Bond which is payable, but is not punctually paid or duly provided for, on any Interest Payment Date.

**“Defeasance Obligations”** means, except as otherwise provided in a Series Agreement, noncallable (i) Government Obligations, (ii) Obligations issued or guaranteed by any of the following: (1) Federal Home Loan Bank System, (2) Export-Import Bank of the United States, (3) Federal Financing Bank, (4) Government National Mortgage Association, (5) Federal Home Loan Mortgage Company, (6) Federal Housing Administration, (7) Private Export Funding Corp., (8) Federal National Mortgage Association, (9) Federal Farm Credit Bank, (10) Resolution Funding Corporation, and (11) Rural

Economic Community Development Administration (formerly, Farmers Home Administration), (iii) evidences of ownership of a proportionate interest in specified Government Obligations, which Government Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity of custodian, (iv) obligations issued pursuant to Section 21B(d)(3) of the Federal Home Loan Bank Act, as amended by Section 511(a) of the Financial Institutions Reform, Recovery and Enforcement Act of 1989, and commonly known as “interest strips” of the Resolution Funding Corporation, (v) Defeased Municipal Obligations, and (vi) evidences of ownership of a proportionate interest in specified Defeased Municipal Obligations, which Defeased Municipal Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity as custodian.

“**Defeased Municipal Obligations**” means, except as otherwise provided in a Series Agreement, obligations of state or local government municipal bond issuers which are rated at the time of acquisition the highest rating by at least two of the three Rating Agencies, meeting the following conditions:

(i) (A) such obligations are not to be redeemed prior to maturity or the Trustee has been given irrevocable instructions concerning their call for redemption, and (B) the issuer of such obligations has covenanted not to redeem such obligations other than as set forth in such instructions;

(ii) such obligations are secured by Government Obligations that may be applied only to interest, principal, and premium payments on such obligations;

(iii) the principal of and interest on such Government Obligations (plus any cash in the escrow fund with respect to such pre-refunded obligations) are sufficient to meet the liabilities of the obligations;

(iv) the Government Obligations serving as security for the obligations are held by an escrow agent or trustee; and

(v) such Government Obligations are not available to satisfy any other claims, including those against the trustee or escrow agent.

“**Derivative Agreement**” means, without limitation, (i) any contract known as or referred to or which performs the function of an interest rate swap agreement, forward payment conversion agreement or futures contract; (ii) any contract providing for payments based on levels of, or changes or differences in, interest rates or other indices; (iii) any contract to exchange cash flows or payments or series of payments; (iv) any type of contract called, or designed to perform the function of, interest rate floors or caps, options, puts or calls, to hedge or minimize any type of financial risk, including, without limitation, payment, rate or other financial risk; and (v) any other type of contract or arrangement that the District determines is to be used, or is intended to be used, to manage or reduce the cost of Indebtedness, to convert any element of Indebtedness from one form to another or to protect against any type of financial risk or uncertainty.

“**Derivative Agreement Counterparty**” means, with respect to a Derivative Agreement, the person that is identified in such agreement as the counterparty to, or contracting party with, the District.

“**Derivative Indebtedness**” means all or any portion of Indebtedness of the District, which bears interest at

(a) a variable rate for any period of time meeting the following requirements: (i) the District has issued or entered into a Derivative Agreement in respect of all or such portion of such Indebtedness, and (ii) such Derivative Agreement provides that, during the period that such Indebtedness bears interest at a variable rate, the District will pay a fixed rate and the provider of the Derivative Agreement will pay a variable rate, then in such case such Indebtedness, taken together with the Derivative Agreement, is to be deemed to result in a net fixed rate payable by the District for such period of time (the “Hedged Fixed Rate”), for so long as the District and the party with whom the District has entered into the Derivative Agreement makes all payments required to be made by the terms of the Derivative Agreement, or

(b) a fixed rate for any period of time meeting the following requirements: (i) the District has issued or entered into a Derivative Agreement in respect of all or such portion of such Indebtedness, and (ii) such Derivative Agreement provides that during the period that such Indebtedness bears interest at a fixed rate the District will pay a variable rate and the provider of the Derivative Agreement will pay a fixed rate, then such Indebtedness, taken together with the Derivative Agreement, is to be deemed to result in a net variable rate payable by the District for such period of time (the “Hedged Variable Rate”), assuming the District and the party with whom the District has entered into the Derivative Agreement make all payments required to be made by the terms of the Derivative Agreement.

“**Designated Office**” of the Trustee means the designated office of the Trustee, which office at the date of acceptance by the Trustee of the duties and obligations imposed on the Trustee by the Fifth Supplemental Trust Agreement is located at 500 Ross Street, 12<sup>th</sup> Floor, Pittsburgh, Pennsylvania 15262.

“**District**” means the Hampton Roads Sanitation District, a political subdivision of the Commonwealth of Virginia.

“**District Representative**” means each of the persons at the time designated to act on behalf of the District in a written certificate furnished to the Trustee, which certificate is to contain the specimen signature(s) of such person(s) and is to signed on behalf of the Commission by its Chairman or Vice Chairman or the General Manager of the District.

“**Financial Statements**” means the unaudited financial statements of the District for the Fiscal Year or other period indicated, pro forma or otherwise, and containing the same financial information as the Audited Financial Statements.

“**Fiscal Year**” means the twelve-month period beginning on July 1 of one calendar year and ending on June 30 of the following calendar year or such other twelve-month period designated by the Commission.

“**Government Obligations**” means direct obligations of, or obligations the payment of principal of and interest on which are fully and unconditionally guaranteed by, the United States of America.

“**Hedged Fixed Rate**” means Hedged Fixed Rate as defined in the definition of Derivative Indebtedness.

“**Hedged Variable Rate**” means Hedged Variable Rate as defined in the definition of Derivative Indebtedness.

“**Holder**” means an owner of any Obligation issued in other than bearer form.



**“Indebtedness”** means (i) all indebtedness of the District for borrowed money, (ii) all installment sales, conditional sales and capital lease obligations incurred or assumed by the District, and (iii) the Debt Service Component of Contracted Services.

**“Independent Consultant”** means a firm or firms which are not, and no member, stockholder, director, officer, trustee or employee of which is, an officer, director, trustee or employee of the District, and which is a professional management or engineering consultant of national repute for having the skill and experience necessary to render the particular report required by the provision of the Trust Agreement in which such requirement appears.

**“Independent Insurance Consultant”** means a firm or person selected by the District, who is not an officer, director, trustee or employee of the District, and which or who is qualified to survey risks and to recommend insurance coverage for wastewater treatment systems and organizations engaged in such operations and is selected by the District.

**“Interest Payment Date”** means each date described as such in a Series Agreement, and, for the Series 2017A Bonds, means each April 1 or October 1, as the case may be, beginning April 1, 2018.

**“Interest Requirements”** for any Fiscal Year means the amount that is required to pay interest on all Outstanding Parity Obligations.

**“Investment Obligations”** means any and all investment obligations authorized by (A) the Investment of Public Funds Act, being Section 2.2-4500 *et seq.*, Code of Virginia, 1950, as amended, (B) the Government Non-Arbitrage Investment Act, being Section 2.2-4700 *et seq.*, Code of Virginia, 1950, as amended, and (C) successor statutes to those described in (A) and (B) above, as the same may be from time to time amended.

**“Issuance Costs”** means all issuance costs incurred in connection with the Bonds. Examples of such issuance costs include, but are not limited to, the following, if any: (a) counsel fees; (b) financial advisor fees incurred in connection with the issuance of the Bonds; (c) Rating Agency fees; (d) depository fees incurred in connection with the issuance of the Bonds; (e) trustee, paying agent and certifying and authenticating agent fees related to the issuance of the Bonds; (f) accountant fees related to the issuance of the Bonds; (g) printing costs; (h) costs incurred in connection with the required public approval process; and (i) costs of engineering and feasibility studies necessary to the issuance of the Bonds.

**“Junior Obligations”** means Indebtedness of the District the terms of which shall provide that it will be subordinate and junior in right of payment to the prior payment in full of the Senior Obligations and the Parity Obligations to the extent and in the manner set forth below:

In the event (a) of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization, arrangement or other similar proceedings in connection therewith, relative to the District or to its Property, or in the event of any proceedings for voluntary liquidation, dissolution or other winding-up of the District whether or not involving insolvency or bankruptcy, (b) any Junior Obligation is declared or otherwise becomes due and payable before its expressed maturity because of the occurrence of an event of default occurring under the documents pursuant to which such Junior Obligation is issued; and such declaration has not been rescinded and annulled, or (c) any “Event of Default” (as defined in the Senior Trust Agreement) under the Senior Trust Agreement shall occur and be continuing with respect to any Senior Obligation or any Event of Default under the Trust Agreement shall occur and be continuing with respect to any Parity Obligation and (1) written notice of such default shall have been given to the District and (2) judicial proceedings shall be commenced in respect of such Event of Default within 180 days in the case of a default in payment of principal or interest on Senior Obligations or Parity

Obligations and within 90 days in the case of any other default after the giving of such notice, then, *first*, the Holders of Senior Obligations shall be entitled to receive payment in full of all principal, premium and interest on all Senior Obligations before the Holders of the Parity Obligation are entitled to receive any payment on account of principal or interest upon the Parity Obligations and, *second*, the Holders of Parity Obligations shall be entitled to receive payment in full of all principal, premium and interest on all Parity Obligations before the Holders of the Junior Obligations are entitled to receive any payment on account of principal, premium or interest upon the Junior Obligations.

“**Lien**” means any mortgage, deed of trust or pledge of, security interest in or encumbrance on any Property of the District which secures any Indebtedness or any other obligation of the District.

“**Long-Term Debt Service Coverage Ratio**” means, for any period of time, the ratio determined by dividing the Net Revenues by Coincidental Maximum Annual Debt Service.

“**Long-Term Debt Service Requirement**” means, for any period of 12 consecutive calendar months for which such determination is made, the aggregate of the payments to be made in respect of principal and interest (whether or not separately stated) on Outstanding Long-Term Indebtedness during such period, also taking into account:

(i) with respect to Balloon Long-Term Indebtedness that is not amortized by the terms thereof (a) the amount of principal that would be payable in such period if such principal were amortized from the date of incurrence thereof over a period of the lesser of 30 years and the number of years until the final maturity of such Indebtedness on a level debt service basis, at an interest rate equal to the market rate for a fixed rate obligation set forth in an opinion, delivered to the District and the Trustee, of a banking institution, an investment banking institution or an independent registered municipal advisor, selected by the District and knowledgeable in municipal finance, as the interest rate at which the District could reasonably expect to borrow the same by incurring Indebtedness with the same term as the period assumed above; provided, however, that if the date of calculation is within 12 calendar months of the actual final maturity of such Indebtedness, the full amount of principal payable at maturity is to be included in such calculation or (b) principal payments or deposits with respect to Indebtedness secured by an irrevocable letter of credit issued by, or an irrevocable line of credit with, a bank or other financial institution, provided such credit arrangement is rated in one of the three highest rating categories by at least two of the Rating Agencies or rated in the highest short-term rating category by at least two of the Rating Agencies, nominally due in the last Fiscal Year in which such Indebtedness matures may, at the option of the District, be treated as if such principal payments or deposits were due as specified in any credit agreement issued in connection with such letter of credit, line of credit or insurance policy or pursuant to the repayment provisions of such letter of credit, line of credit or insurance policy, and interest on such Indebtedness after such Fiscal Year is to be assumed to be payable pursuant to the terms of such credit agreement or repayment provisions;

(ii) with respect to Long-Term Indebtedness which is Variable Rate (but not Hedged Fixed Rate) Indebtedness, the interest on such Indebtedness is to be calculated at 120% of the rate which is equal to the average of the actual interest rates which were in effect (weighted according to the length of the period during which each such interest rate was in effect) for the most recent twelve-month period immediately preceding the date of calculation for which such information is available (or shorter period if such information is not available for a twelve-month period), except that with respect to new Variable Rate Indebtedness the interest rate for such Indebtedness for the initial interest rate period is 120% of the average of the SIFMA Swap Index for last 12 whole months for which such Index is available and thereafter will be calculated as set forth above;

(iii) with respect to any Credit Facility, (a) to the extent that such Credit Facility has not been used or drawn upon, the principal and interest relating to such Credit Facility will not be included in the Long-Term Debt Service Requirement and (b) to the extent such Credit Facility has been drawn upon, the payment provisions of such Credit Facility with respect to repayment of principal and interest thereon will be included in the Long-Term Debt Service Requirement;

(iv) with respect to Derivative Indebtedness, (i) for any historical computation, the interest on such Indebtedness is to be calculated by adding (A) the amount of interest payable by the District on such Derivative Indebtedness pursuant to its terms and (B) the amount of regularly scheduled payments made by the District pursuant to the Derivative Agreement and subtracting (C) the amount of regularly scheduled payments made by the Derivative Agreement Counterparty pursuant to the Derivative Agreement; (ii) for any historical pro forma or forecasted computation, if the Derivative Agreement Counterparty has a long-term credit rating of at least “A” (without regard to any rating refinement or gradation by numerical modifier or otherwise) assigned to it by at least one Rating Agency then rating the Indebtedness and does not have a long-term rating of less than “A” (without regard to any rating refinement or gradation by numerical modifier or otherwise) from any Rating Agency then rating the Indebtedness and has not defaulted on its payment obligations thereunder as of the date of computation, the interest on such Derivative Indebtedness is to be calculated at the Hedged Fixed Rate or the Hedged Variable Rate, as the case may be; and (iii) in all other instances, the amount of interest payable by the District on such Derivative Indebtedness is to be calculated as if such Derivative Agreement had not been executed; and

(v) in the case of Indebtedness having the benefit of a Credit Facility that provides for a term loan facility that requires the payment of the principal in one year or more, the Indebtedness is to be considered Balloon Long-Term Indebtedness and is to be assumed to have the maturity schedule described in paragraph (i)(a) of this definition;

provided, however, that (i) interest is to be excluded from the determination of Long-Term Debt Service Requirement to the extent the same is provided from the proceeds of the Long-Term Indebtedness, (ii) the aggregate of the payments to be made with respect to principal and interest on Outstanding Long-Term Indebtedness will not include principal and interest payable from Qualified Escrow Funds, and (iii) principal is to be excluded from the determination of Long-Term Debt Service Requirement on Short-Term Indebtedness described in paragraph (c) under the caption “—Limitations on Indebtedness in Appendix C.

**“Long-Term Indebtedness”** means all obligations having a maturity of a term longer than one year for borrowed money incurred or assumed by the District, including (a) Short-Term Indebtedness if secured by a Credit Facility containing a commitment to provide financing to retire such Short-Term Indebtedness and such commitment provides for the repayment of principal on terms which would, if such commitment were implemented, constitute Long-Term Indebtedness, and (b) the current portion of Long-Term Indebtedness, for any of the following:

(1) money borrowed for an original term, or renewable at the option of the borrower for a period from the date originally incurred, longer than one year;

(2) leases which are required to be capitalized in accordance with generally accepted accounting principles having an original term, or renewable at the option of the lessee for a period from the date originally incurred, longer than one year;

(3) installment sale or conditional sale contracts having an original term in excess of one year; and

(4) the Debt Service Component of Contracted Services in connection with Contracted Services rendered or provided pursuant to a contract having an original term of more than one year.

**“Maximum Annual Debt Service”** means, at any given time of determination, the greatest Long-Term Debt Service Requirement for the then current or any succeeding Fiscal Year.

**“Maximum Annual Debt Service on the Parity Obligations”** means, at any given time of determination, the maximum coincidental Principal and Interest Requirements for the Parity Obligations for the then-current or any succeeding Fiscal Year.

**“Maximum Interest Rate”** means, for all Series 2017A Bonds, the lesser of (i) 12% per annum and (ii) the maximum rate permitted by law.

**“Net Book Value”** when used in connection with Property, Plant and Equipment or other Property, means the value of such property, net of accumulated depreciation, as recognized by the District in conformity with generally accepted accounting principles.

**“Net Revenues”** means all revenues received by the District from its Wastewater System less Operating Expenses, provided that Net Revenues will not include any Transition charge.

**“Net Revenues Available for Debt Service”** means all Net Revenues less debt service on Senior Obligations.

**“Officer’s Certificate”** means a certificate signed by a District Representative. Each Officer’s Certificate presented pursuant to the Trust Agreement is to state that it is being delivered pursuant to (and is to identify the section or subsection of), and incorporate by reference and use in all appropriate instances all terms defined in, the Trust Agreement. Each Officer’s Certificate is to state (i) that the terms thereof are in compliance with the requirements of the section or subsection pursuant to which such Officer’s Certificate is delivered or to state in reasonable detail the nature of any non-compliance and the steps being taken to remedy such non-compliance and (ii) that it is being delivered together with any opinions, schedules, statements or other documents required in connection therewith.

**“Operating Expenses”** means those current expenses paid by the District that may be required to pay the cost of maintaining, repairing and operating the Wastewater System, including, but not limited to, reasonable and necessary usual expenses of administration, operation, maintenance and repair, costs for billing and collecting the rates, fees and other charges for the use of or the services furnished by the Wastewater System, insurance premiums, credit enhancement and liquidity support fees, legal, engineering, auditing and financial advisory expenses, expenses and compensation of the Trustee, and deposits into a self-insurance program. Operating Expenses excludes allowance for depreciation and amortization and expenditures for extraordinary maintenance or repair or improvements. Operating Expenses also excludes expenses for improvements that will not be owned by the District but that will, in the reasonable determination of the Commission, as evidenced by a resolution thereof, maintain or improve the integrity of the Wastewater System.

**“Opinion of Bond Counsel”** means an opinion in writing signed by an attorney or firm of attorneys acceptable to the Trustee and experienced in the field of municipal bonds whose opinions are generally accepted by purchasers of municipal bonds.

**“Opinion of Counsel”** means an opinion in writing signed by an attorney or firm of attorneys who may be counsel for the District or other counsel selected by the District.

**“Outstanding,”** when used with reference to Bonds or other Parity Obligations, means, as of a particular date, all Bonds and Parity Obligations theretofore issued under the Trust Agreement, except:

(1) Bonds and Parity Obligations theretofore cancelled by the Bond Registrar or delivered to the Bond Registrar for cancellation;

(2) Bonds and Parity Obligations for the payment of which money, Defeasance Obligations, or a combination of both, sufficient to pay, on the date when such Bonds are to be paid, the principal amount of, and the interest accruing to such date on, the Bonds to be paid, has been deposited with the Trustee or the Bond Registrar in trust for the Holders of such Bonds; Defeasance Obligations shall be deemed to be sufficient to pay Bonds on a specified date if the principal of and the interest on such Defeasance Obligations, when due, will be sufficient to pay on such date the principal of, and the interest accruing on, such Bonds to such date;

(3) Bonds and Parity Obligations in exchange for or in lieu of which other Bonds or Parity Obligations have been issued; and

(4) Bonds and Parity Obligations deemed to have been paid in accordance with the provisions for defeasance contained in such Bonds or Parity Obligations (See “Defeasance” in Appendix C);

provided, however, that Bonds and Parity Obligations owned or held by or for the account of the District or any affiliate or any subsidiary or controlled affiliate of the District shall not be deemed Outstanding Bonds or Outstanding Parity Obligations for the purpose of any consent or other action or any calculation of Outstanding Bonds or Outstanding Parity Obligations provided for in the articles of the Trust Agreement relating to default and remedies, Supplemental Agreements and release of the Trust Agreement, and neither the District nor any affiliate, subsidiary or controlled affiliate of the District as registered owners of such Bonds or Parity Obligations shall be entitled to consent or take any other action provided for in default and remedies, Supplemental Agreements and release of the Trust Agreement. Notwithstanding the foregoing, Bonds or Parity Obligations owned or held for the account of the District or an or any affiliate or any subsidiary or controlled affiliate of the District shall not be deemed to be paid unless the District delivers, or causes such Bonds or Parity Obligations to be delivered, to the Trustee with the express written instructions of a District Representative directing the Trustee to cancel such Bonds in accordance with the procedures set forth in the Trust Agreement.

**“Parity Obligations”** means Bonds and VRA Subordinate Obligations.

**“Principal and Interest Requirements”** for any Fiscal Year means the sum of the Principal Requirements and Interest Requirements for such Fiscal Year.

**“Principal Payment Date”** means each date described as such in a Series Agreement.

**“Principal Requirements”** for any Fiscal Year means the amount required to pay the principal of all Parity Obligations coming due in such Fiscal Year.

**“Property”** means any and all rights, titles and interests in and to any and all property whether real or personal, tangible or intangible and wherever situated.

**“Property, Plant and Equipment”** means all Property of the District which is property, plant and equipment under generally accepted accounting principles.

**“Qualified Escrow Funds”** means amounts deposited in a segregated escrow fund, or other similar fund or account, in connection with the issuance of Indebtedness which fund is required by the documents establishing such fund to be applied toward the District’s payment obligations with respect to principal or interest on (a) the Indebtedness secured thereby which is issued under the documents establishing such fund or (b) Indebtedness secured thereby which was issued prior to the establishment of such fund.

**“Qualified Reserve Fund Substitute”** means (i) an irrevocable letter of credit, naming the Trustee as beneficiary, issued by any domestic or foreign bank, or any branch or agency thereof, whose long-term debt obligations are rated in one of the two highest rating categories by at least two of the Rating Agencies that will rate such obligations, or (ii) a policy of reserve fund insurance naming the Trustee as beneficiary, issued by an insurance company or financial institution whose claims paying ability is rated in one of the two highest rating categories by at least two of the Rating Agencies that rate such obligations, in either case (A) in an amount not less than the Debt Service Reserve Fund Requirement, (B) the terms of which allow the Trustee to make the draws required to fund the Debt Service Reserve Fund if and as required (See “Debt Service Reserve Fund; Qualified Reserve Fund Substitute” in Appendix C) and (C) that provides that the issuer of which has not been given a lien on any portion of the property of the District unless such lien also secures the Bonds on a parity basis.

**“Rate Covenant”** means the rate covenant of the District set out in the Trust Agreement and described under the caption “—Rate Covenant” in Appendix C hereto.

**“Rating Agency”** or **“Rating Agencies”** means one or more of Fitch, Moody’s or Standard & Poor’s for so long as it is a nationally recognized statistical rating organization and any new nationally recognized statistical rating organization.

**“Senior Bonds”** has the meaning given the term “Bonds” by the Senior Trust Agreement.

**“Senior Debt Service Reserve Fund”** means the Hampton Roads Sanitation District (Virginia) Wastewater Revenue Bonds Debt Service Reserve Fund created and so designated by the Senior Trust Agreement.

**“Senior Indebtedness”** means Indebtedness secured on a parity with the Senior Bonds under the terms of the Senior Trust Agreement.

**“Senior Obligations”** means, collectively, Senior Bonds and Senior Indebtedness, and, if the District is required to fund the Senior Debt Service Reserve Fund pursuant to the terms of the Senior Trust Agreement, the District’s funding obligations thereunder.

**“Senior Trust Agreement”** means that certain trust agreement, dated as of March 1, 2008, as the same may be supplemented and amended from time to time, between the District and The Bank of New York Mellon Trust Company, N.A., as successor Trustee (in such capacity, the **“Senior Trustee”**).

**“Series Agreement”** means a supplemental trust agreement entered into or the resolution adopted by the Commission providing for the issuance of Bonds or Parity Obligations pursuant to the Trust Agreement. A Series Agreement will include any Officer’s Certificate delivered by a District Representative or Representatives to whom authority has been delegated by the terms of the Series Agreement to provide the details of such Bonds and, for purposes of additional VRA Subordinate

Obligations, a Series Agreement will include such resolutions adopted by the Commission or financing agreements authorized thereby specifying the details of such additional VRA Subordinate Obligations.

“**Short-Term Indebtedness**” means all obligations for borrowed money, other than the current portion of Long-Term Indebtedness, incurred or assumed by the District for any of the following:

- (1) money borrowed for an original term, or renewable at the option of the borrower for a period from the date originally incurred, of one year or less;
- (2) leases which are capitalized in accordance with generally accepted accounting principles having an original term, or renewable at the option of the lessee for a period from the date originally incurred, of one year or less; and
- (3) installment purchase or conditional sale contracts having an original term of one year or less.

“**SIFMA Swap Index**” means The Securities Industry and Financial Market Association Municipal Swap Index as of the most recent date for which such index was published or such other weekly, high-grade index comprised of seven-day, Tax-Exempt variable rate demand notes published by Bloomberg, or its successor, or otherwise designated by The Securities Industry and Financial Market Association; provided, however, that, if such index is no longer available or its successor, the “SIFMA Swap Index” will mean such other reasonably comparable index selected by the remarketing agent appointed by the District in connection with Variable Rate Indebtedness.

“**Supplement**” means an agreement, including a Series Agreement, supplemental to, and authorized and executed pursuant to the terms of, the Trust Agreement.

“**Tax-Exempt**” with reference to Bonds or other Parity Obligations means any Bonds or Parity Obligations so designated in the related Series Agreement.

“**Tax Certificate**” means a certificate or comparable instrument of the District that contains undertakings of the District with reference to Tax-Exempt Parity Obligations.

“**Total Operating Revenues**” means, with respect to the District, as to any period of time, as total operating revenues as determined in accordance with generally accepted accounting principles.

“**Transition Charge**” means any rates, fees, charges or surcharges relating to the Wastewater System or the customers thereof established by irrevocable rate order or other action or instrument, and applicable to or by the District, in conjunction with the issuance of debt or other securities under a separate resolution, indenture or similar instrument (other than the Senior Trust Agreement, the Trust Agreement or other instrument securing Indebtedness secured by revenues of the Wastewater System) to the extent such rates, fees, charges or surcharges are pledged or otherwise encumbered or conveyed as security for such debt or other securities.

“**Trust Agreement**” means the trust agreement entered into by and between Hampton Roads Sanitation District and The Bank of New York Mellon Trust Company, N.A., as Trustee, dated as of October 1, 2011, as amended and restated as of March 1, 2016, including any Series Agreement and any other trust agreement amendatory thereto or supplemental thereto.

“**Variable Rate Indebtedness**” means any portion of Indebtedness the interest rate on which is not established at the time of incurrence at a fixed or constant rate until maturity.

**“VRA Subordinate Obligations”** means the District’s VRA Subordinate Obligations or other evidences of indebtedness heretofore issued, and such additional Parity Obligations issued to VRA payable on a parity with Parity Obligations issued pursuant to the Trust Agreement.

**“Wastewater System”** means the wastewater treatment system of the District as it may exist at any time and includes all improvements and expansions thereof and additions thereto except as may otherwise be provided by resolution of the Commission.



## APPENDIX C

### SUMMARY OF CERTAIN PROVISIONS OF THE TRUST AGREEMENT

*The following is a brief summary of certain provisions of the Trust Agreement. This summary does not purport to be complete or definitive and qualified in its entirety by reference to the Trust Agreement, a copy of which is available for examination at the offices of the Trustee.*

#### **Establishment of Funds**

The Trust Agreement provides for an Issuance Fund, a Construction Fund, a Bond Fund, and a Debt Service Reserve Fund. It requires that the money and securities in each Fund be held in trust by the Trustee and applied as provided in the Trust Agreement, and pending such application be subject to a lien and charge in favor of the Holders and for the further security of the Holders until paid or transferred pursuant to the Trust Agreement.

#### **Issuance Fund and Construction Fund**

The Trust Agreement also requires that money in the Issuance Fund be applied to the payment of Issuance Costs incurred in connection with the issuance of the Bonds, to be financed from Bonds proceeds. Money in the Construction Fund will be applied to Capital Improvement Program Costs. Unexpended fund balances in the Issuance Fund and the Construction Fund will be applied as provided in the applicable Series Agreement. The Series Agreement for the Series 2017A Bonds provides any such unexpended fund balances are to be applied as directed by the District.

The District may, in any Series Agreement, create Subfunds within the Issuance Fund and the Construction Fund.

#### **Bond Fund**

The District will make payments directly to the Trustee for deposit in the Bond Fund in amounts sufficient to pay in full, when due, all Bonds issued under the Trust Agreement, together with the interest thereon. In the event the balance in the Bond Fund is insufficient for such purposes, upon notification by the Trustee, the District is to deliver to the Trustee an amount sufficient to cure the same. If such amount is insufficient, the Trustee is required to transfer to the Bond Fund the amount necessary to remedy the deficiency from the Debt Service Reserve Fund. Each such payment shall be made only in the event and to the extent that, as of the date of such payment, the District shall have paid to the Senior Trustee for the account of the Senior Bond Fund all amounts attributable to the principal of and interest on any outstanding Senior Obligations due and owing thereon, plus any amounts required to be deposited to the credit of the Senior Debt Service Reserve Fund in accordance with the terms of the Senior Trust Agreement, as of such date.

#### **Debt Service Reserve Fund; Qualified Reserve Fund Substitute**

No funds will be deposited to the credit of the Debt Service Reserve Fund upon the delivery of the Series 2017A Bonds. If the District elects to fund the Debt Service Reserve Fund, then an amount equal to the Debt Service Reserve Fund Requirement, as the same shall be specified in a Supplemental Agreement, shall be deposited to the Debt Service Reserve Fund Requirement.

The Trustee will use amounts in the Debt Service Reserve Fund to make transfers to the Bond Fund to the extent necessary to pay interest on and principal of the Bonds, whenever and to the extent that

the money on deposit in the Bond Fund is insufficient for such purposes and the District has failed to cure such deficiency.

The District may, at any time, deliver to the Trustee a Qualified Reserve Fund Substitute. In such event, if the District also delivers to the Trustee a written statement setting forth the use of the cash and Investment Obligations then on deposit to the credit of the Debt Service Reserve Fund, accompanied by an Opinion of Bond Counsel to the District, addressed to the Trustee, to the effect that such proposed use will not cause the interest on the Tax-Exempt Bonds to be includable in the gross income of the owners thereof for purposes of federal income taxation, the Trustee is to transfer to the District all amounts on deposit to the credit of the Debt Service Reserve Fund. If any Qualified Reserve Fund Substitute is in effect, the Trustee is to give such notices and execute such documents as required to assure that funds (i) are available in such amounts and at such times to assure timely payment of principal of and interest on the Bonds and (ii) are drawn to fund the Debt Service Reserve Fund in an amount equal to the Debt Service Reserve Fund Requirement at least six months prior to the expiration date of the Qualified Reserve Fund Substitute unless (a) the Trustee has received a substitute Qualified Reserve Fund Substitute to replace such expiring Qualified Reserve Fund Substitute or (b) the expiration date of the expiring Qualified Reserve Fund Substitute is no earlier than the final stated maturity date of the Bonds.

### **Payment of Principal and Interest**

The District will cause to be paid, when due, the principal of (whether at maturity, by acceleration or otherwise) and interest on the Bonds at the places, on the dates and in the manner provided in the Trust Agreement and in said Bonds; provided that it is understood that the Bonds are not general obligations of the District but are special obligations and are payable solely from Net Revenues Available for Debt Service derived by the District from its Wastewater System and the money attributable to proceeds of Bonds and the income from the investment thereof and not from any other fund or source. To secure the prompt payment of the principal of, redemption premium, if any, and the interest on the Senior Obligations and the performance by the District of its other obligations under the Trust Agreement, the District grants to the Trustee a security interest in its Net Revenues Available for Debt Service.

### **Investment of Money**

Money held for the credit of all funds and accounts created under the Trust Agreement is to be continuously invested and reinvested by the Trustee in Investment Obligations, to the extent practicable in accordance with the instructions of a District Representative, subject to the yield restrictions set forth in the Tax Certificate. The Trust Agreement requires that any Investment Obligations mature not later than the respective dates when the money held for the credit of such funds or accounts will be required for the purposes intended; provided, however, that Investment Obligations deposited in the Debt Service Reserve Fund mature no later than the final maturity date of the Bonds secured by the Debt Service Reserve Fund.

Unless a Qualified Reserve Fund Substitute is in effect, the District is to reimburse the Debt Service Reserve Fund for any loss resulting from a decline in the value of Investment Obligations in which money held for the credit of the Debt Service Reserve Fund is invested if on any date of valuation the amount on deposit in the Debt Service Reserve Fund is less than the Debt Service Reserve Fund Requirement.

Investment Obligations acquired with money and credited to any fund or account established under the Trust Agreement are required to be held by or under the control of the Trustee and will be deemed at all times to be part of such fund or account in which such money was originally held. Interest accruing on such Investment Obligation and any profit or loss realized upon the disposition or maturity of such investment will be credited to or charged against such fund or account. The Trustee is required to

sell at the best price attainable or reduce to cash a sufficient amount of such Investment Obligations whenever it is necessary to provide money to make any payment or transfer of money from any such fund or account. The Trustee will not be liable or responsible for any loss resulting from any such investment.

### **Valuation**

For the purpose of determining the amount on deposit in any fund or account, Investment Obligations in which money in such fund or account is invested are to be valued (a) if such Investment Obligations mature, or are subject to redemption at the option of the holder thereof, within five years or less from the date of valuation thereof, such Investment Obligations are to be valued at amortized cost, and (b) if such Investment Obligations mature, or are subject to redemption at the option of the holder thereof, more than five years from the date of valuation thereof, such Investment Obligations are to be valued at the market value or the amortized cost thereof, whichever is lower.

The Trustee will value the Investment Obligations in the funds and accounts five Business Days prior to each Interest Payment Date. In addition, subject to prior notice, the Investment Obligations will be valued by the Trustee at any time requested by the District Representative, but not more than once in any calendar month other than as provided in the Trust Agreement.

### **Limitations on Indebtedness**

The District may issue Additional Bonds or incur other Parity Obligations, provided that, after giving effect to all other Indebtedness incurred by the District, such Additional Bonds or other Parity Obligations are incurred only in the manner and pursuant to the terms set forth below provided, however, that VRA Senior Obligations may become VRA Subordinate Obligations without limitation:

(a) Long-Term Indebtedness may be incurred if, prior to incurrence of the Long-Term Indebtedness, there is delivered to the Trustee:

(i) an Officer's Certificate of a District Representative certifying that the Long Term Debt Service Coverage Ratio for the most recent period of twelve (12) full consecutive calendar months preceding the date of delivery of the certificate of the District Representative for which there are Financial Statements available, adjusted for revenues and expenses resulting from anticipated new customers and any planned program of rate increases that has been approved by the Commission, taking all Long Term Indebtedness incurred after such period and the proposed Long Term Indebtedness into account as if such Long Term Indebtedness had been incurred at the beginning of such period, is not less than 120%;

(ii) an Officer's Certificate of a District Representative certifying that the District is expected to comply with the Rate Covenant set forth in the Trust Agreement for the five Fiscal Years following the date of issuance of the proposed Long-Term Indebtedness. Such certificate is to be accompanied by a statement of the relevant assumptions upon which such pro forma Financial Statements for the District are based, including but not limited to, adjustments to revenues and expenses resulting from anticipated new customers and any planned program of rate increases that has been approved by the Commission;

(iii) if the Long-Term Indebtedness is authorized for any purpose other than the refunding of the outstanding Senior Obligations or Outstanding Parity Obligations, an Officer's Certificate of a District Representative to the effect, and to the extent applicable, that in his or her opinion (a) the improvements or property to which the proceeds from the issuance of the Long-Term Indebtedness are to be applied will be a part of the Wastewater System, (b) the

proceeds of the Long-Term Indebtedness and other specified sources will be sufficient to pay the estimated cost of such improvements or property, (c) the period of time that will be required to complete such improvements or acquire such property, and (d)(1) the proceeds of the Long-Term Indebtedness are necessary to complete the project to be financed thereby, (2) the failure to make such improvements or acquire or construct such property will result in an interruption or reduction of Net Revenues, or (3) during the first two Fiscal Years following the completion of the improvements or the acquisition of the property, the projected Net Revenues will satisfy the Rate Covenant described below. In providing this certificate, the District Representative may take into consideration future Wastewater System rate increases, provided that such rate increases have been duly approved by the Commission and any other person and entity required to give approval for the rate increase to become effective. In addition, he or she may take into consideration additional future revenues of the Wastewater System to be derived under then existing contractual agreements entered into by the District and from reasonable estimates of growth in the customer base of the District; or

(iv) an Officer's Certificate of a District Representative certifying compliance with the Rate Covenant set forth in the Trust Agreement for the most recent period of 12 full consecutive calendar months for which there are Financial Statements available preceding the date of delivery of the certificate.

(b) Long-Term Indebtedness may be incurred for the purpose of refunding Outstanding Long-Term Indebtedness if, either (i) a certificate of an independent financial advisor to the effect that, the Long-Term Indebtedness issued to refund outstanding Senior Obligations or Outstanding Parity Obligations will have, in the aggregate, a lower Long-Term Debt Service Requirement than the Long-Term Debt Service Requirement on the Senior Obligations or Outstanding Parity Obligations to be refunded with the proceeds thereof, or (ii) an Officer's Certificate of a District Representative to the effect that during the first two complete Fiscal Years following the issuance of the refunding Long-Term Indebtedness, the projected Net Revenues will satisfy the Rate Covenant described under the heading "—Rate Covenant" below. In providing the certificate described in clause (b), the Officer's Certificate may take into account the factors described in the last two sentences of subsection (a)(iii) of this Section. In addition, the Trustee shall receive an Opinion of Counsel stating that upon the incurrence of such proposed Long-Term Indebtedness and application of the proceeds thereof (on the Cross-over Date, in the case of Cross-over Refunding Indebtedness), the Outstanding Long-Term Indebtedness to be refunded thereby will no longer be Outstanding.

(c) Short-Term Indebtedness may be incurred as a Parity Obligation subject to the same tests that apply to the incurrence of Parity Obligations generally; provided, however, that notwithstanding such limitation, the District may incur as a Parity Obligation from time to time and have outstanding at any one time Short-Term Indebtedness in an amount up to 10% of its Total Operating Revenues as reflected in the Financial Statements of the District for the most recent period of twelve consecutive months for which Financial Statements are available, and provided, further, that the District may incur Short-Term Indebtedness secured by a Credit Facility without limitation. Short-Term Indebtedness may be incurred as Junior Obligations without compliance with the tests that apply to the incurrence of Parity Obligations.

(d) Additional VRA Subordinate Obligations may be incurred by the District subject to the delivery of an Officer's Certificate of a District Representative demonstrating compliance with the incurrence test for the issuance of Long-Term Indebtedness described above in paragraphs (a) or (b) above and the Rate Covenant described below, *provided, however*, anything in the Trust Agreement notwithstanding, the District may make such additional covenants in a supplemental resolution, financing agreement or other agreement authorizing and securing a VRA Subordinate Obligations as may be required by VRA as a condition of selling such VRA Subordinate Obligations.

(e) Junior Obligations may be incurred without limitation.

(f) For purposes of demonstrating compliance with the incurrence test for the issuance of Long-Term Indebtedness described above in paragraph (a), the District may (but is not required to) elect in the applicable Series Agreement to treat all or any Parity Obligations authorized in a Credit Facility (including, for example and without limitation, a self-liquidity arrangement provided by the District, a line of credit or a liquidity facility supporting a commercial paper program), but not immediately issued or incurred under such Credit Facility, as subject to such incurrence test as of a single date, notwithstanding that none, or less than all, of the authorized principal amount of such Parity Obligations have been issued or incurred as of such date.

(g) Notwithstanding the foregoing provisions regarding limitations on Indebtedness described above, nothing contained in the Trust Agreement will preclude the District from incurring any obligation under a Credit Facility.

### **Rate Covenant**

(a) The District has covenanted and agreed in the Trust Agreement that it will fix and collect rates, fees and other charges for the use of and for services furnished or to be furnished by the Wastewater System, and will from time to time revise such rates, fees and other charges so that in each Fiscal Year the Net Revenues will equal at least 120% of the sum of (a) the Principal and Interest Requirements (as defined in the Senior Trust Agreement on Senior Obligations and (b) the Principal and Interest Requirements. If, for any reason, the Net Revenues are insufficient to satisfy the foregoing covenant, the District shall within one hundred twenty (120) days adjust and increase its rates, fees and other charges (to the extent permitted by the Enabling Act), or reduce its operating and maintenance expenses so as to provide sufficient Net Revenues to satisfy such requirement.

(b) If at any time the District fails to comply with its Rate Covenant described in paragraph (a) above, the District is to immediately notify the Trustee, such notice also containing an Officer's Certificate of a District Representative as to (i) the amount of the deficiency in Net Revenues which existed for the applicable period and the rates, fees and other charges which must be established by the District to cure such deficiency, and (ii) during the Fiscal Year in which the certificate is delivered, the projected Net Revenues will satisfy the Rate Covenant made by the District and described in paragraph (a) above, or, if not, the rates, fees and other charges the District must establish to satisfy such rate covenant. In addition, the District agrees, to the extent permitted by law, to take appropriate action to increase its rates, fees and other charges or reduce its operating and maintenance expenses to cure any deficiency.

(c) On or before the last day of each Fiscal Year, the District will review the adequacy of its rates, fees and other charges for the next Fiscal Year, and, if such review indicates the District's rates, fees and other charges are insufficient to satisfy the Rate Covenant described in paragraph (a) above, the District is to promptly take appropriate action to increase its rates, fees and other charges or reduce its operating and maintenance expenses to cure any deficiency.

### **Limitation on Creation of Liens**

The District agrees that it will not create or permit the existence of any Lien on its Property or upon its Net Revenues other than Permitted Liens.

“Permitted Liens” consist of the following:

(a) Liens arising by reason of good faith deposits with the District in connection with leases of real estate, bids or contracts (other than contracts for the payment of money), deposits by the District to secure public or statutory obligations, or to secure, or in lieu of, surety, stay or appeal bonds, and deposits as security for the payment of taxes or assessments or other similar charges;

(b) Any Lien arising by reason of deposits with, or the giving of any form of security to, any governmental agency or any body created or approved by law or governmental regulation as a condition to the transaction of any business or the exercise of any privilege or license, or to enable the District to maintain self-insurance or to participate in any funds established to cover any insurance risks or in connection with any workers' compensation, unemployment insurance, pension or profit sharing plans or other social security, or to share in the privileges or benefits required for companies participating in such arrangements;

(c) Any judgment lien against the District so long as such judgment is being contested in good faith and execution thereon is stayed;

(d) (i) Rights reserved to or vested in any municipality or public authority by the terms of any right, power, franchise, grant, license, permit or provision of law, affecting any Property; (ii) any liens on any Property for taxes, assessments, levies, fees, water and sewer rents, and other governmental and similar charges and any liens of mechanics, materialmen, laborers, suppliers or vendors for work or services performed or materials furnished in connection with such Property, which are not due and payable or which are not delinquent or which, or the amount or validity of which, are being contested and execution thereon is stayed or, with respect to liens of mechanics, materialmen, laborers, suppliers or vendors, have been due for less than 90 days; (iii) easements, rights-of-way, servitudes, restrictions, oil, gas or other mineral reservations and other minor defects, encumbrances, and irregularities in the title to any Property which do not materially impair the use of such Property or materially and adversely affect the value thereof; (iv) to the extent that it affects title to any Property, the Trust Agreement; and (v) landlord's liens;

(e) Any Lien that was existing on the date of authentication and delivery of the Series 2011 Bonds issued under the Trust Agreement; provided that no such Lien may be increased, extended, renewed or modified to apply to any Property of the District not subject to such Lien on such date or to secure Indebtedness not Outstanding on the date of issuance of the Series 2011 Bonds, unless such Lien as so extended, renewed or modified otherwise qualifies as a Permitted Lien under the Trust Agreement;

(f) Any lien on pledges, gifts or grants to be received in the future, including any income derived from the investment thereof;

(g) The Lien of the Senior Trust Agreement;

(h) Any Lien securing Parity Obligations on a parity basis;

(i) Any Liens on Property received by the District through gifts, grants or bequests, such liens being due to restrictions on such gifts, grants or bequests of Property or the income thereon;

(j) Any Lien on moveable equipment securing Indebtedness incurred to purchase such moveable equipment, provided that the total of such Indebtedness does not exceed 15% of

the Net Book Value of the Property, Plant and Equipment of the District as shown on the Financial Statements for the prior Fiscal Year; and

(k) Any Lien on Net Revenues securing Junior Indebtedness; provided that such lien is expressly subordinate and junior to the Lien on Net Revenues Available for Debt Service granted to the Trustee for the payment of principal of, redemption premium, if any, and the interest on the Parity Obligations and to secure the prompt payment of the and the performance by the District of its other obligations under the Trust Agreement.

### **Designation of Funds**

No later than the last Business Day of each month, the District will specifically earmark cash, cash equivalents or marketable securities or any combination thereof in an amount equal to the interest on and the principal of Bonds that will accrue in the next month, taking into account any scheduled maturities of interest or principal scheduled to become due and payable in such month and the funds theretofore earmarked for such purpose. The District may assume that both interest and principal accrue daily from the prior payment date or date of issuance but not more than 12 months prior to a payment date.

### **Maintenance of Properties**

The District covenants in the Trust Agreement:

(a) to cause its Property to be maintained, preserved and kept in good repair, working order and condition and all needed and proper repairs, renewals and replacements thereof to be made; provided, however, that nothing described in this paragraph (a) will be construed to (i) prevent it from ceasing to operate any portion of its Property, if in its judgment (supported, in the case of such a cessation other than in the ordinary course of business by an opinion or certificate of an Independent Consultant) it is advisable not to operate the same, or if it intends to sell or otherwise dispose of the same and within a reasonable time endeavors to effect such sale or other disposition, or (ii) obligate it to retain, preserve, repair, renew or replace any Property, leases, rights, privileges or licenses no longer used or, in the judgment of the Commission, useful in the conduct of its business;

(b) To do all things reasonably necessary to conduct its affairs and carry on its business and operations in such manner as to comply with any and all applicable laws of the United States and the Commonwealth of Virginia and duly observe and conform to all valid orders, regulations or requirements of any governmental authority relative to the conduct of its business and the ownership of its Properties; provided, nevertheless, that nothing contained in the Trust Agreement requires it to comply with, observe and conform to any such law, order, regulation or requirement of any governmental authority so long as the validity thereof or the applicability thereof to it is contested in good faith;

(c) To pay promptly all lawful taxes, governmental charges and assessments at any time levied or assessed upon or against it or its Property; provided, however, that it will have the right to contest in good faith any such taxes, charges or assessments or the collection of any such sums and pending such contest may delay or defer payment thereof;

(d) To pay promptly or otherwise satisfy and discharge all of its Indebtedness and all demands and claims against it as and when the same become due and payable, other than any

thereof (exclusive of the Indebtedness created and Outstanding under the Trust Agreement) whose validity, amount or collectability is being contested in good faith;

(e) At all times to comply with all terms, covenants and provisions of any Liens at such time existing upon its Property or any part thereof or securing any of its Indebtedness; and

(f) To procure and maintain all necessary licenses and permits for the operation of its Wastewater System;

provided, however, that it need not comply with the covenants described in this section if and to the extent that the Commission determines in good faith, evidenced by a resolution of the Commission, that such compliance is not in its best interests and that lack of such compliance would not materially impair its ability to pay its Indebtedness when due.

### **Insurance**

(a) The District agrees that it will maintain, or cause to be maintained, the following types of insurance, subject to the provisions described in subsection (b) below, in such amounts as, in its judgment, are adequate to protect it and its Property and operations from material financial loss: (i) comprehensive general liability insurance, and (ii) property coverage on an “all risk” basis.

(b) If the District is self-insured (excluding deductibles) for any coverage described in (a) above, the District is to provide the Trustee a report of an Independent Insurance Consultant selected by the District not less than every three years, which report is to state whether the anticipated funding of any self-insurance fund is sufficient, and if not, the required funding to obtain such result, and any such self-insurance coverage will be reviewed by the Independent Insurance Consultant not less frequently than annually. If the Independent Insurance Consultant determines in any such report that the anticipated funding of any self-insurance fund is not sufficient, the District covenants that it will undertake to fund such self-insurance fund in the manner recommended by the Independent Insurance Consultant.

### **Insurance and Condemnation Proceeds**

(a) Amounts that do not exceed 20% of the Net Book Value of the Property, Plant and Equipment of the District received by the District as insurance proceeds with respect to any casualty loss or as condemnation awards may be used in such manner as the District may determine, including, without limitation, applying such money to the partial payment or prepayment of any Indebtedness in accordance with the terms thereof and of any pertinent Supplement.

(b) Amounts that exceed 20% of the Net Book Value of the Property, Plant and Equipment received by the District as insurance proceeds with respect to any casualty loss or as condemnation awards will be applied in such manner as the District may determine; provided, however, that the District is to notify the Trustee and within 12 months after the casualty loss or taking, deliver to the Trustee a report of an Independent Consultant stating the Independent Consultant’s recommendations, including recommendations as to the use of such proceeds or awards, to cause the Long-Term Debt Service Coverage Ratio for each of the two periods of 12 full consecutive calendar months following the date on which such proceeds or awards are expected to have been fully applied to be not less than 120%, or, if in the opinion of the Independent Consultant the attainment of such level is impracticable, at the highest practicable level.



## **Annual Budget**

The District covenants that on or before the first day of the last month preceding the beginning of each Fiscal Year the Commission will adopt a budget of operating and non-operating revenues and expenses for the ensuing Fiscal Year.

## **Senior Trust Agreement**

The District covenants to observe the covenants of the Commission contained in the Senior Trust Agreement, which are expressly incorporated by reference by the Trust Agreement until there shall be no outstanding Senior Obligations. To the extent the covenants in the Trust Agreement and the covenants contained in the Senior Trust Agreement conflict, for so long as there shall be any outstanding Senior Obligations, the provisions of the covenants contained in the Senior Trust Agreement shall control.

## **Events of Default**

Events of Default under the Trust Agreement are as follows: (a) payment of the purchase price of any Bond shall not be made by the District when the same shall become due and payable; or (b) payment of any installment of interest on any Bond is not made by the District when the same becomes due and payable; or (c) payment of the principal of any Bond is not made by the District when the same becomes due and payable, whether at maturity or by acceleration or otherwise; or (d) default in the due and punctual performance of any other of the covenants, conditions, agreements and provisions contained in the Trust Agreement or any Supplement to the Trust Agreement, including any covenant, condition, agreement or provision in the Trust Agreement applicable to the District and incorporated by reference in the Trust Agreement, and such default continues for 30 days after receipt by the District of a written notice from the Trustee specifying such default and requiring the same to be remedied; provided, however, if prior to the expiration of such 30 day period the District institutes action reasonably designed to cure such default, no Event of Default is to be deemed to have occurred upon the expiration of such 30-day period for so long as the District pursues such curative action with reasonable diligence and provided that such curative action can be completed within a reasonable time.

## **Remedies for Default**

Upon the happening and continuance of an Event of Default, the Trustee may take whatever action at law or in equity is necessary or desirable (i) in the case of an Event of Default specified in (a), (b) or (c) in the immediately preceding paragraph, to collect the payments of interest installments or principal then due under the Trust Agreement or the Bonds, or (ii) in the case of an Event of Default specified in (d) in the immediately preceding paragraph, to enforce performance, observance or compliance by the District with any covenant, condition, agreement or provision under the Trust Agreement.

Upon the happening and continuance of an Event of Default, the Trustee may, and upon the written request of the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding is required to, by notice in writing to the District, declare the principal of all Bonds then Outstanding (if not then due and payable) to be due and payable immediately.

However, if at any time after the principal of Bonds has been declared to be due and payable, and before the entry of final judgment or decree in any suit, action or proceeding instituted on account of such default, or before the completion of the enforcement of any other remedy under the Trust Agreement, (i) money has accumulated in or has been paid into the Bond Fund sufficient to pay the principal of all matured Bonds and all arrears of interest, if any, upon all Bonds then Outstanding (except the principal of

any Bond not then due and payable by its terms and the interest accrued on such Bond since the last Interest Payment Date), and the charges, compensations, expenses, disbursements, advances and liabilities of the Trustee and (ii) all amounts then payable by the District under the Trust Agreement have been paid or a sum sufficient to pay the same has been deposited with the Trustee, and (iii) every other default known to the Trustee in the observance or performance of any covenant, condition or agreement contained in the Bonds or in the Trust Agreement (other than a default in the payment of the principal of such Bonds then due only because of a declaration of acceleration of maturities) has been remedied to the satisfaction of the Trustee, then the Trustee may, and upon the written request of the Holders of not less than a majority in aggregate principal amount of Bonds not then due and payable by their terms (Bonds then due and payable only because of a declaration of acceleration will not be deemed to be due and payable by their terms) and then Outstanding is required to, by written notice to the District, rescind and annul such declaration and its consequences, but no such rescission or annulment will extend to or affect any subsequent Event of Default or impair any right consequent thereon.

Upon the happening and continuance of an Event of Default, the Trustee may, and upon the written request of the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding, and upon satisfactory indemnification, is required to, proceed either at equity or at law, or by proceedings in the office of any board or officer having jurisdiction to protect and enforce its rights and the rights of the Holders under the laws of the Commonwealth of Virginia or under the Trust Agreement as the Trustee, being advised by counsel chosen by the Trustee, deems most effectual to protect and enforce such rights. The Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding, upon indemnification satisfactory to the Trustee, have the right to direct the method and place of all remedial proceedings to be taken by the Trustee, provided that such direction is in accordance with law and the provisions of the Trust Agreement.

#### **Restrictions upon Actions by Individual Holders**

Except for the right of any Holder to enforce the payment of the principal of and interest on such Holder's Bond, no Holder will have any right to institute any suit, action or proceeding in equity or at law on any Bond or for the execution of any trust under the Trust Agreement or for any other remedy under the Trust Agreement unless (a) such Holder previously has given to the Trustee written notice of the particular Event of Default, (b) also the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding have made a request of the Trustee after the right to exercise such powers or right of action has accrued, and such Holder has afforded the Trustee a reasonable opportunity either to proceed to exercise the powers granted in the Trust Agreement or to institute such action, suit or proceedings in its or their name, and (c) there has been offered to the Trustee reasonable security and indemnity against the costs, expenses and liabilities (including attorney's fees, costs and expenses to be incurred therein or thereby, and the Trustee has refused or neglected to comply with such request within a reasonable time. Notwithstanding the foregoing provisions and without complying therewith, the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding may institute any such suit, action or proceeding in their own names for the benefits of all Holders of the Bonds.

#### **Notice of Default to Holders**

The Trustee is required to give written notice to all Holders of the occurrence of any Event of Default within 30 days after the Trustee has actual notice thereof, provided, however, except upon the occurrence of an Event of Default due to failure by the District to make payments of any installment of interest on or principal or purchase price of any Bond when the same become due and payable within 30 days after the Trustee received notice of the same, the Trustee may withhold such notice to the Holders if in its opinion such withholding is in the interest of the Holders.

## **Pro-Rata Application of Funds**

Notwithstanding anything in the Trust Agreement to the contrary, if at any time the money in the Bond Fund is not sufficient to pay the interest on or the principal of Bonds as the same become due and payable (either by their terms or by acceleration of maturities under the provisions of the Trust Agreement), such money, together with any money then available or thereafter becoming available for such purpose, is to be applied, subject to the compensation and indemnification to the Trustee and Bond Registrar, as follows:

(a) if the principal of all Bonds has not become or has not been declared due and payable, all such money in the Bond Fund is to be applied:

first: to the payment to the persons entitled thereto of all installments of interest on Bonds then due and payable in the order in which such installments became due and payable and, if the amount available is not sufficient to pay in full any particular installment, then to the payment, ratably according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in such Bonds;

second: to the payment to the persons entitled thereto of the unpaid principal of any Bonds that have become due and payable (other than Bonds called for redemption for the payment of which money is held pursuant to the provisions of the Trust Agreement), in the order of their due dates, and, if the amount available is not sufficient to pay in full the principal of Bonds due and payable on any particular date, then to the payment ratably according to the amount of such principal due on such date, to the persons entitled thereto without any discrimination or preference; and

third: to the payment of the interest on and the principal of Bonds, to the purchase and retirement of Bonds due to the redemption of Bonds in accordance with the Trust Agreement and the applicable Series Agreement.

(b) If the principal of all Bonds has become or has been declared due and payable, all such money is to be applied to the payment of principal and interest then due upon the Bonds without preference to the persons entitled thereto, without preference or priority of principal over interest or interest over principal, or of any installment of interest over any other installment of interest or any Bond over any other Bond ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference.

(c) If the principal of all Bonds has been declared due and payable and if such declaration is thereafter rescinded and annulled due to the remediation of an Event of Default, then, subject to the provisions described in paragraph (b) of this section, in the event that the principal of all Bonds later becomes due and payable or is declared due and payable, the money then remaining in and thereafter accruing to the Bond Fund is to be applied in accordance with the provisions described in paragraph (a) above.

## **Subordination**

Notwithstanding any other provision of the Trust Agreement to the contrary:

(a) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the

District, as such, or to its property, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the District, whether or not involving insolvency or bankruptcy, the holders of all Senior Obligations then outstanding shall be entitled to receive payment in full of all principal and interest due on all such Senior Obligations in accordance with the provisions of Senior Trust Agreement and the resolutions or other instruments authorizing their issuance before the Trustee and the Holders of the Parity Obligations are entitled to receive any payment from the Net Revenues Available for Debt Service or other money pledged to the Parity Obligations on account of principal (and premium, if any) or interest upon the Parity Obligations.

(b) In the event that the Parity Obligations are declared due and payable before their stated maturity because of the occurrence of an Event of Default (under circumstances when the provisions described in paragraph (a) above are not applicable), the holders of all Senior Obligations outstanding at the time the Parity Obligations become due and payable because of such occurrence of such an Event of Default shall be entitled to receive payment in full of all principal and interest on all such Senior Obligations before the Holders of the Parity Obligations are entitled to receive any accelerated payment from the Net Revenues Available for Debt Service and other money pledged to the Parity Obligations of principal (and premium, if any) or interest upon the Parity Obligations.

(c) If any event of default with respect to the Senior Obligations shall have occurred and be continuing (under circumstances when the provisions described in paragraph (a) above are not applicable), the holders of all such Senior Obligations then outstanding shall be entitled to receive payment in full of all principal and interest on all such Senior Obligations as the same become due and payable before the Holders of the Parity Obligations are entitled to receive, subject to the provisions of paragraph (e) below, any payment from the Net Revenues Available for Debt Service and other money pledged to the Parity Obligations under the Trust Agreement of principal (and premium, if any) or interest upon the Parity Obligations.

(d) No holder of Senior Obligations shall be prejudiced in his right to enforce subordination of the Parity Obligations by any act or failure to act on the part of the District.

(e) The provisions described in paragraphs (a), (b), (c) and (d) above are solely for the purpose of defining the relative rights of the holders of the Senior Obligations on the one hand, and the Holders of Parity Obligations on the other hand, and nothing in the Trust Agreement is to impair, as between the District and the Holders of the Parity Obligations, the obligation of the District, which shall be unconditional and absolute, to pay to the Holders of the Parity Obligations the principal thereof and premium, if any, and interest on the Parity Obligations, respectively, in accordance with their terms, nor shall anything in the Trust Agreement prevent the Holders of the Parity Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights described in paragraphs (a), (b), (c) and (d) above of the holders of the Senior Obligations to receive cash, property or securities from the Net Revenues and other money pledged to such Senior Obligations otherwise payable or deliverable to the Holders of the Parity Obligations; and insofar as the Bond Registrar, Depository or Trustee is concerned, the foregoing provisions shall not prevent the application of any money deposited with the Bond Registrar, Depository or Trustee for the purpose of the payment of or on account of the principal (and premium, if any) and interest on the Parity Obligations if it did not have written notice or actual knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

### **Supplemental Trust Agreements without Consent of Holders**

The District and the Trustee may without the consent of or notice to any of the Holders, enter into agreements supplemental to the Trust Agreement as are substantially consistent with the terms and provisions of the Trust Agreement:

- (a) to cure any ambiguity or formal defect or omission, to correct or supplement any provision of the Trust Agreement that may be inconsistent with any other provision of the Trust Agreement, to make any other provisions with respect to matters or questions arising under the Trust Agreement, or to modify, alter, amend, add to or rescind, in any particular, any of the terms or provisions contained in the Trust Agreement, or
- (b) to grant to or confer upon the Trustee for the benefit of the Holders any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Holders or the Trustee, or
- (c) to add to the provisions of the Trust Agreement other conditions, limitations and restrictions thereafter to be observed, or
- (d) to add to the covenants and agreements of the District in the Trust Agreement other covenants and agreements thereafter to be observed by the District or to surrender any right or power reserved in the Trust Agreement to or conferred upon the District, or
- (e) to permit the qualification of the Trust Agreement under any federal statute now or hereafter in effect or under any state Blue Sky law, and, in connection therewith, if the District so determines, to add to the Trust Agreement or any supplemental trust agreement such other terms, conditions and provisions as may be permitted or required by such federal statute or Blue Sky law, or
- (f) to provide for the issuance of Bonds under a book-entry system, or
- (g) to make any other change in the Trust Agreement that, in the judgment of the District, expressed in a resolution of the Commission, and the Trustee, each of which may rely upon a written Opinion of Counsel, will not materially and adversely affect the Holders of the Bonds of each series that will be affected by such supplement.

### **Modification of Trust Agreement with Consent of Holders**

The Holders of not less than a majority of the aggregate principal amount of Bonds then Outstanding will have the right to consent to and approve the execution and delivery by the District and the acceptance by the Trustee of such trust agreement or trust agreements supplemental to the Trust Agreement as deemed necessary or desirable by the District for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, the Trust Agreement; provided, however, that nothing contained in the Trust Agreement will permit, or be construed as permitting (a) an extension of the maturity of the principal of or the interest on any Bonds issued under the Trust Agreement without the consent of the Holders of such Bonds, or (b) a reduction in the principal amount of any Bonds or the rate of interest thereon without the consent of the Holders of such Bonds, or (c) the creation of a pledge of receipts and revenues superior to the pledge created by the Trust Agreement without the consent of the Holders of all Bonds Outstanding, or (d) a preference or priority of any Bond over any other Bond without the consent of the Holders of all Bonds Outstanding, or (e) a reduction in the aggregate principal

amount of Bonds required for consent to such supplemental trust agreement without the consent of the Holders of all Bonds Outstanding.

If the District requests the Trustee to enter into any supplemental trust agreement described in the immediately preceding paragraph, the Trustee will cause notice of the proposed supplemental trust agreement to be mailed to all Holders. If the Holders of not less than a majority in aggregate principal amount of Bonds Outstanding at the time of the execution of such supplemental trust agreement have consented to and approved the execution, no Holder will have any right to object to the adoption of such supplemental trust agreement.

### **Defeasance**

(a) When the Bonds become due and payable and the whole amount of the principal and the interest so due and payable upon all Bonds is required to be paid, and (b) if the Bonds have not become due and payable, the Trustee or the Bond Registrar holds, sufficient money or Defeasance Obligations, or a combination of money and Defeasance Obligations, the principal of and the interest on which, when due and payable, will provide sufficient money to pay the principal of, and the interest on, all Bonds then Outstanding to the maturity date or dates of such Bonds and (c) sufficient funds also have been provided or provision has been made for paying all other obligations payable under the Trust Agreement by the District, then and in that case the right, title and interest of the Trustee in the funds and accounts mentioned in the Trust Agreement will thereupon cease, determine and become void and, on demand of the District and upon being furnished with an opinion, satisfactory to the Trustee, of counsel approved by the Trustee, to the effect that all conditions precedent to the release of the Trust Agreement have been satisfied, the Trustee will release the Trust Agreement and will execute such documents to evidence such release as may reasonably be required by the District and will turn over to the District any surplus in, and all balances remaining in, all funds and accounts.

Otherwise, the Trust Agreement will continue to be and remain in full force and effect; provided, that, in the event Defeasance Obligations are deposited with and held by the Trustee or the Bond Registrar as provided for above, (i) the Trustee will nevertheless retain such rights, powers and privileges under the Trust Agreement as may be necessary and convenient in respect of the Bonds for the payment of the principal and interest for which such Defeasance Obligations have been deposited, and (ii) the Bond Registrar will retain such rights, powers and privileges under the Trust Agreement as may be necessary and convenient for the registration, transfer and exchange of Bonds.

### **Release of Fifth Supplemental Trust Agreement**

When (a) the Series 2017A Bonds have become due and payable in accordance with their terms or otherwise as provided in the Fifth Supplemental Trust Agreement, the whole amount of the principal and the interest so due and payable upon all Series 2017A Bonds is paid, (b) if the Series 2017A Bonds have not become due and payable in accordance with their terms, the Trustee or the Bond Registrar holds, sufficient money or Defeasance Obligations, or a combination of money and Defeasance Obligations, the principal of and the interest on which, when due and payable, will provide sufficient money to pay the principal of, and the interest on, all Series 2017A Bonds then Outstanding to the maturity date or dates of such Series 2017A Bonds and (c) sufficient funds also have been provided or provision made for paying all other obligations payable under the Fifth Supplemental Trust Agreement by the District, then and in that case the right, title and interest of the Trustee in the funds and accounts mentioned in the Fifth Supplemental Trust Agreement will thereupon cease, determine and become void and, on demand of the District and upon being furnished with an opinion, in form and substance satisfactory to the Trustee, of Bond Counsel, to the effect that all conditions precedent to the release of the Fifth Supplemental Trust Agreement and the defeasance of the Series 2017A Bonds have been satisfied, the Trustee is to release the

Fifth Supplemental Trust Agreement and is to execute such documents to evidence such release as may reasonably be required by the District and, subject to the provisions of the Trust Agreement, is to turn over to the District any surplus in, and all balances remaining in, all funds and accounts.

### **Removal of Trustee**

The Trustee may be removed at any time by an instrument or concurrent instruments in writing, (i) executed by the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding and filed with the District, or (ii) so long as no Event of Default has occurred and is continuing, an instrument executed by the District, not less than 60 days before such removal is to take effect as stated in said instrument or instruments. The Trustee may also be removed at any time for acting or proceeding in violation of, or for failing to act or proceed in accordance with, any provisions of the Trust Agreement with respect to the duties and obligations of the Trustee by any court of competent jurisdiction upon the application of the District or the Holders of not less than a majority in aggregate principal amount of Bonds then Outstanding.

[This Page Is Intentionally Left Blank.]



**APPENDIX D**

**PROPOSED OPINION OF BOND COUNSEL**

\_\_\_\_\_, 2017

Hampton Roads Sanitation District Commission  
Virginia Beach, Virginia

We have examined Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Act”), and certified copies of the proceedings of the Hampton Roads Sanitation District Commission (the “Commission”), the governing body of Hampton Roads Sanitation District (a political subdivision of the Commonwealth of Virginia and herein sometimes called the “District”), authorizing the execution and delivery of a Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016, and as supplemented (the “Trust Agreement”), including as supplemented by the Fifth Supplemental Trust Agreement, dated as of December 1, 2017, each by and between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (the “Trustee”), and the issuance of

§ \_\_\_\_\_  
**HAMPTON ROADS SANITATION DISTRICT**  
**Subordinate Wastewater Revenue Bonds,**  
**Refunding Series 2017A**

Dated, maturing, subject to redemption, and bearing interest,  
all as provided in the Trust Agreement.

Pursuant to the Trust Agreement, as security for the payment of the amounts due on the above-captioned bonds (the “Bonds”), the District has pledged its Net Revenues Available for Debt Service to the Trustee. The District’s Net Revenues Available for Debt Service consist of all revenues derived by the District from the Wastewater System (as defined in the Trust Agreement) except such part of such revenues as may be required to pay (i) the cost of maintaining, repairing and operating such Wastewater System and (ii) Senior Obligations.

For purposes of the opinions in paragraphs 1, 2 and 3 below, we have relied upon the opinion of Kellam, Pickrell, Cox & Anderson, A Professional Corporation, to the effect that the resolutions of the Commission authorizing the Bonds and approving the Trust Agreement were duly adopted.

We have also examined one of the Bonds, as executed and authenticated.

Based upon such examination, we are of the opinion that:

1. The Bonds have been duly authorized, executed and issued for the purpose of providing funds, together with other available funds, to refund certain of the District’s outstanding bonds and to pay certain costs of issuing the Bonds.

2. The Trust Agreement has been duly authorized and executed by the District and, assuming due authorization and execution by the Trustee, is a valid, binding and enforceable obligation of the District in accordance with its terms.

3. The Bonds are valid and binding special obligations of the District payable solely from the Net Revenues Available for Debt Service and other funds pledged as security therefor under the Trust Agreement.

4. The Bonds do not constitute a debt of the Commonwealth of Virginia or of any county, city, town or political subdivision thereof, or a pledge of the faith and credit of the Commonwealth of Virginia or of any county, city, town or political subdivision thereof. The issuance of the Bonds does not directly or indirectly or contingently obligate the Commonwealth of Virginia or any county, city, town or political subdivision thereof to levy or to pledge any form of taxation whatever therefor.

5. Assuming compliance by the District with its covenant to comply with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"), with respect to the Bonds, and except as provided in the following sentence, interest on the Bonds is not includable in the gross income of the owners of the Bonds for purposes of federal income taxation under current law. Interest on the Bonds will be includable in the gross income of the owners thereof retroactive to the date of issue of the Bonds in the event of a failure by the District to comply with applicable requirements of the Code, and its covenants regarding use, expenditure, and investment of proceeds of the Bonds and the timely payment of certain investment earnings to the United States Treasury. We render no opinion as to the exclusion from gross income of the interest on the Bonds for federal income tax purposes on or after the date on which any action is taken affecting such covenants upon the approval of counsel other than us. Interest on the Bonds is not an item of tax preference for purposes of the federal individual or corporate alternative minimum tax. Such interest will, however, be included in the calculation of the federal alternative minimum tax imposed on corporations by the Code. The Code contains other provisions that could result in tax consequences, as to which we express no opinion, as a result of ownership of the Bonds or the inclusion in certain computations (including without limitation those related to the corporate alternative minimum tax) of interest that is excluded from gross income.

6. As provided by the Act, the Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, shall be free and exempt from taxation by the Commonwealth of Virginia and any political subdivision thereof.

The enforceability of the Trust Agreement and the obligations of the District with respect to such documents described above are subject to bankruptcy, insolvency, fraudulent conveyance, reorganization and other laws affecting creditors' rights generally. To the extent that the remedies under the Trust Agreement require enforcement by a court of equity, the enforceability thereof may be limited by such principles of equity as the court having jurisdiction may impose.

Respectfully submitted,

## APPENDIX E

### FORM OF CONTINUING DISCLOSURE AGREEMENT

This Continuing Disclosure Agreement (this “Disclosure Agreement”), dated as of December \_\_, 2017, is executed and delivered by Hampton Roads Sanitation District (the “District”) in connection with the issuance by the District of its Subordinate Wastewater Revenue Bonds, Refunding Series 2017A (the “Bonds”), pursuant to the provisions of an Amended and Restated Trust Agreement, dated as of March 1, 2016, as supplemented (the “Trust Agreement”), by and between the District and The Bank of New York Mellon Trust Company, N.A., as trustee. The proceeds of the Bonds are being used by the District to provide funds for to finance a portion of the District’s capital improvement program and to refund certain senior indebtedness. The District hereby covenants and agrees as follows:

SECTION 1. Purpose of the Disclosure Agreement. This Disclosure Agreement is being executed and delivered by the District for the benefit of the holders of the Bonds and in order to assist the Participating Underwriters (defined below) in complying with the Rule (defined below). The District acknowledges that it is undertaking primary responsibility for any reports, notices or disclosures that may be required under this Disclosure Agreement.

SECTION 2. Definitions. In addition to the definitions set forth in the Trust Agreement, which apply to any capitalized term used in this Disclosure Agreement unless otherwise defined in this Section, the following capitalized terms shall have the following meanings:

“Annual Report” shall mean any Annual Report provided by the District pursuant to, and as described in, Sections 3 and 4 of this Disclosure Agreement.

“Dissemination Agent” shall mean the District, acting in its capacity as Dissemination Agent hereunder, or any successor Dissemination Agent designated in writing by the District and which has filed with the District a written acceptance of such designation.

“Filing Date” shall have the meaning given to such term in Section 3(A) hereof.

“Fiscal Year” shall mean the twelve-month period at the end of which financial position and results of operations are determined. Currently, the District’s Fiscal Year begins July 1 and continues through June 30 of the next calendar year.

“Holder” or “holder” shall mean, for purposes of this Disclosure Agreement, any person who is a record owner or beneficial owner of a Bond.

“Listed Events” shall mean any of the events listed in subsection (b)(5)(i)(C) of the Rule, which are as follows:

- (i) principal and interest payment delinquencies;
- (ii) non-payment related defaults, if material;
- (iii) unscheduled draws on debt service reserves reflecting financial difficulties;
- (iv) unscheduled draws on credit enhancements reflecting financial difficulties;
- (v) substitution of credit or liquidity providers, or their failure to perform;

- (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Notes, or other material events affecting the tax status of the Notes;
- (vii) modifications to rights of security holders, if material;
- (viii) bond calls, if material, and tender offers;
- (ix) defeasances;
- (x) release, substitution, or sale of property securing repayment of the Notes, if material;
- (xi) rating changes;
- (xii) bankruptcy, insolvency, receivership or similar event of the District;
- (xiii) the consummation of a merger, consolidation, or acquisition involving the District or the sale of all or substantially all of the assets of the District, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and appointment of a successor or additional paying agent or the change of name of a paying agent, if material; and
- (xiv) appointment of a successor or additional paying agent or the change of name of a paying agent, if material.

“Participating Underwriter” shall mean each original underwriter of the Bonds required to comply with the Rule in connection with the offering of such Bonds.

“Repository” shall mean The Electronic Municipal Market Access (“EMMA”) system administered by the Municipal Securities Rulemaking Board. EMMA is recognized as the sole Repository for purposes of the Rule.

“Rule” shall mean Rule 15c2-12 adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time.

### SECTION 3. Provision of Annual Reports.

A. The District shall, or shall cause the Dissemination Agent to, provide to the Repository an Annual Report which is consistent with the requirements of Section 4 of this Disclosure Agreement. Such Annual Report shall be filed on a date (the “Filing Date”) that is not later than December 31 after the end of any Fiscal Year (commencing with its Fiscal Year ending June 30, 2018). Not later than ten (10) days prior to the Filing Date, the District shall provide the Annual Report to the Dissemination Agent (if applicable). In such case, the Annual Report (i) may be submitted as a single document or as separate documents comprising a package, (ii) may cross-reference other information as provided in Section 4 of this Disclosure Agreement and (iii) shall include the District’s audited financial statements or, if audited financial statements are not available, such unaudited financial statements as may be required by the Rule.

In any event, audited financial statements of the District must be submitted, if and when available, together with or separately from the Annual Report.

B. The annual financial statements of the District shall be prepared on the basis of generally accepted accounting principles and will be audited. Copies of the audited annual financial statements, which may be filed separately from the Annual Report, will be filed with the Repository when they become publicly available.

C. If the District fails to provide an Annual Report to the Repository by the date required in subsection A hereto or to file its audited annual financial statements with the Repository when they become publicly available, the District shall send a notice to the Repository in substantially the form attached hereto as Exhibit B.

SECTION 4. Content of Annual Reports. Except as otherwise agreed, any Annual Report required to be filed hereunder shall contain or incorporate by reference, at a minimum, annual financial information relating to the District, including operating data, updating such information relating to the District as described in Exhibit A, all with a view toward assisting the Participating Underwriter in complying with the Rule.

Any or all of such information may be incorporated by reference from other documents, including official statements of securities issues with respect to which the District is an “obligated person” (within the meaning of the Rule), which have been filed with the Repository or the Securities and Exchange Commission. If the document incorporated by reference is a final official statement, it must be available from the Repository. The District shall clearly identify each such other document so incorporated by reference.

SECTION 5. Reporting of Listed Events. The District will provide in a timely manner, not in excess of ten business days after the occurrence of the event, to the Repository, notice of any of the Listed Events, if material.

SECTION 6. Termination of Reporting Obligation. The District’s obligations under this Disclosure Agreement shall terminate upon the earlier to occur of the legal defeasance and final retirement of all the Bonds.

SECTION 7. Dissemination Agent. The District may, from time to time, appoint or engage a Dissemination Agent to assist it in carrying out its obligations under this Disclosure Agreement and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. If at any time there is not any other designated Dissemination Agent, the District shall be the Dissemination Agent.

SECTION 8. Amendment. Notwithstanding any other provision of this Disclosure Agreement, the District may amend this Disclosure Agreement, if such amendment is supported by an opinion of independent counsel with expertise in federal securities laws, to the effect that such amendment is permitted or required by the Rule.

SECTION 9. Additional Information. Nothing in this Disclosure Agreement shall be deemed to prevent the District from disseminating any other information, using the means of dissemination set forth in this Disclosure Agreement or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Agreement. If the District chooses to include any information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is specifically required by this

Disclosure Agreement, the District shall have no obligation under this Disclosure Agreement to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

SECTION 10. Default. Any person referred to in Section 12 (other than the District) may take such action as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the District to file its Annual Report or to give notice of a Listed Event. The holders of not less than a majority in aggregate principal amount of Bonds Outstanding may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to challenge the adequacy of any information provided pursuant to this Disclosure Agreement, or to enforce any other obligation of the District hereunder. A default under this Disclosure Agreement shall not be deemed an event of default under the Trust Agreement or the Bonds, and the sole remedy under this Disclosure Agreement in the event of any failure of the District to comply herewith shall be an action to compel performance. Nothing in this provision shall be deemed to restrict the rights or remedies of any holder pursuant to the Securities Exchange Act of 1934, the rules and regulations promulgated thereunder, or other applicable laws.

SECTION 11. Format of Filings. Unless otherwise required by the Repository, all notice, documents and information provided to the Repository pursuant to this Disclosure Agreement shall be provided to EMMA, the current Internet address of which is [www.emma.msrb.org](http://www.emma.msrb.org). All notices, documents and information provided to the EMMA shall be provided in an electronic format prescribed by the Repository (currently, portable document format (pdf) which must be word-searchable except for non-textual elements) and shall be accompanied by identifying information as prescribed by the Repository.

SECTION 12. Beneficiaries. This Disclosure Agreement shall inure solely to the benefit of the District, the Participating Underwriters and the holders from time to time of the Bonds, and shall create no rights in any other person or entity.

HAMPTON ROADS SANITATION DISTRICT

By: \_\_\_\_\_  
Director of Finance

**CONTENT OF ANNUAL REPORT  
HAMPTON ROADS SANITATION DISTRICT**

(a) **Financial Information.** Updated information including summary financial results, treatment charge collection rate, revenue collections from the District's largest customers, and a five-year comparison of revenues, expenses, debt service and debt service coverage ratios.

(b) **Debt Information.** Updated information including the debt service requirements of long-term indebtedness.

(c) **Operating Data.** Updated operating data including wastewater flows to the Wastewater System and its major treatment plants, the treatment capacities of its major treatment plants, total billed wastewater flows, and changes in rates and charges.

In general, the foregoing will include information as of the end of the most recent fiscal year or as of the most recent practicable date. Where information for the fiscal year just ended is provided, it may be preliminary and unaudited. Where information has historically been provided for more than a single period, comparable information will in general be provided for the same number of periods where valid and available. Where comparative demographic or economic information for the District and the United States as a whole is contemporaneously available and, in the judgment of the District, informative, such information may be included. Where, in the judgment of the District, an accompanying narrative is required to make data presented not misleading, such narrative will be provided.

**NOTICE OF FAILURE TO FILE ANNUAL REPORT  
[AUDITED ANNUAL FINANCIAL STATEMENTS]**

**Re: HAMPTON ROADS SANITATION DISTRICT  
SUBORDINATE WASTEWATER REVENUE BONDS,  
REFUNDING SERIES 2017A**

**CUSIP NO.: 409327 \_\_\_\_**

Dated: December \_\_, 2017

NOTICE IS HEREBY GIVEN that Hampton Roads Sanitation District has not provided an Annual Report [Audited Annual Financial Statements] as required by Section 3 of the Continuing Disclosure Agreement, which was entered into in connection with the above-named bonds, the proceeds of which were used to finance a portion of the District's capital improvement program. [The District anticipates that the Annual Report [Audited Annual Financial Statements] will be filed by \_\_\_\_\_.]

Dated: \_\_\_\_\_

HAMPTON ROADS SANITATION DISTRICT

By \_\_\_\_\_



## APPENDIX F

### THE DEPOSITORY TRUST COMPANY

The Depository Trust Company (DTC), the world's largest depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provision of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 2.2 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments from over 100 countries that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC, in turn, is owned by a number of Direct Participants of DTC and Members of the National Securities Clearing Corporation, Fixed Income Clearing Corporation, and Emerging Markets Clearing Corporation, (NSCC, FICC, and EMCC, also subsidiaries of DTCC), as well as by the New York Stock Exchange, Inc., the American Stock Exchange LLC, and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at [www.dtcc.com](http://www.dtcc.com).

Purchases of Series 2017A Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2017A Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2017A Bond (the "Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2017A Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Series 2017A Bonds, except if use of the book-entry system for the Series 2017A Bonds is discontinued.

To facilitate subsequent transfers, all Series 2017A Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Series 2017A Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2017A Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2017A Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial

Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Series 2017A Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2017A Bonds unless authorized by a Direct Participant in accordance with DTC's procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the District as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2017A Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal, premium, if any, and interest payments on the Series 2017A Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the District on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC nor its nominee, or the District, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, premium, if any, and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the District, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

[This Page Is Intentionally Left Blank.]



\${PAR}  
Hampton Roads Sanitation District  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A

---

BOND PURCHASE AGREEMENT

---

December \_\_, 2017

Hampton Roads Sanitation District  
1434 Air Rail Avenue  
Virginia Beach, Virginia 23455  
Attn: Jay A. Bernas, PE, Director of Finance

Ladies and Gentlemen:

The undersigned, Merrill Lynch, Pierce, Fenner & Smith Incorporated (the “Representative”) offers to enter into this Bond Purchase Agreement (this “Purchase Agreement”) between the Hampton Roads Sanitation District, a political subdivision of the Commonwealth of Virginia (the “District”), and the Representative, acting on behalf of itself, Citigroup Global Markets Inc. and Morgan Stanley & Co. LLC, as the Underwriters (collectively, the “Underwriters”), for the purchase by the Underwriters and the sale by the District of the District’s \${PAR} Subordinate Wastewater Revenue Bonds, Refunding Series 2017A (the “Bonds”). This offer is made subject to acceptance, which will be evidenced by the District’s execution and delivery to the Underwriters of this Agreement at or before 11:00 a.m., Virginia Beach, Virginia, time, on December \_\_, 2017, and, if not so accepted, will be subject to withdrawal by the Representative upon notice delivered to the District at any time thereafter.

The District has heretofore delivered to the Representative the Official Statement of the District with respect to the Bonds in preliminary form dated November \_\_, 2017 (the “Preliminary Official Statement”), and will deliver an Official Statement in final form dated December \_\_, 2017 (the “Official Statement”), as provided herein. Capitalized terms used herein and not otherwise defined herein shall have the meanings given such terms in the Official Statement.

1. Agreement to Purchase and Sell; Good Faith Deposit. Upon the terms and conditions, and based upon the representations, warranties and agreements set forth herein, the Underwriters hereby agree to purchase from the District for offering to the public and the District hereby agrees to sell and deliver to the Underwriters, all (but not less than all) of the Bonds.

The Bonds shall be dated the date of delivery thereof and shall mature in the principal amounts, bear interest at the rates, and be subject to the redemption provisions, all as described in the Official Statement and in Schedule A attached hereto. The aggregate purchase price of the Bonds shall be \$\_\_\_\_\_ (representing the sum of the \${PAR} par amount of the Bonds,

plus net original issue premium of \$\_\_\_\_\_, less an underwriting discount of \$\_\_\_\_\_ on such Bonds.

The Representative has delivered to the District, and the District acknowledges receipt of, a wire transfer in the aggregate amount of \$\_\_\_\_\_, representing the good faith deposit of the Underwriters. At the Closing (as defined in Section 7 below), the good faith deposit, exclusive of any interest earned on such amount, which shall accrue to the benefit of the District, will be deducted from the amount payable by the Underwriters with respect to the aggregate purchase price of the Bonds (and applied by the District as proceeds of the Bonds), and the Underwriters will pay \$\_\_\_\_\_ (representing the \$\_\_\_\_\_ purchase price, less the \$\_\_\_\_\_ good faith deposit). If the District fails to deliver the Bonds at the Closing, or if the District is unable on or before the Closing to satisfy the conditions to the Underwriters' obligations contained in this Agreement, or if the obligations of the Underwriters are terminated for any reason permitted by this Agreement, the good faith deposit (with no credit for interest thereon) will be returned to the Representative. If the Underwriters fail (other than for a reason permitted in this Agreement) to accept and pay for the Bonds upon their tender by the District as provided in this Agreement, the good faith deposit will be retained by the District as full liquidated damages for such failure and for any and all defaults on the part of the Underwriters, and the delivery of the good faith deposit will constitute satisfaction, and will result in full release and discharge of the Underwriters and their affiliates from all claims and damages for such failure and for any and all defaults.

2. Description of the Bonds; Public Offering. The following is provided for informational purposes only and shall not affect or control the actual terms and conditions of the Bonds.

(a) The Bonds are authorized to be issued pursuant to the provisions of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the "Enabling Act"), a resolution adopted on November 28, 2017 (the "Bond Resolution"), by the Hampton Roads Sanitation District Commission (the "Commission"), the governing body of the District, and the Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016, by and between the District and The Bank of New York Mellon Trust Company, N.A., as further supplemented by the Fifth Supplemental Trust Agreement, dated as of December 1, 2017 (collectively, the "Trust Agreement").

(b) The proceeds of the Bonds are being used to (a) refund a portion of the District's outstanding Senior Bonds (as defined in the Official Statement) and (b) pay the Underwriters' discount and costs of issuance of the Bonds.

To assist the Underwriters in complying with Rule 15c2-12 under the Securities Exchange Act of 1934, as amended (the "Rule"), the District will execute a Continuing Disclosure Agreement, dated as of the Closing Date (as defined in Section 7 below), for the benefit of the holders of the Bonds (the "Continuing Disclosure Agreement"). The District will agree in the Continuing Disclosure Agreement to provide annual financial information and operating data and notices of the occurrence of specified events. A description of the Continuing Disclosure Agreement is set forth in, and a form of such agreement is attached as an appendix to,

the Preliminary Official Statement and the Official Statement. In addition, the District will enter into an Escrow Deposit Agreement, dated as of the Closing Date (the “Escrow Agreement”), with The Bank of New York Mellon Trust Company, N.A. (in such capacity, the “Escrow Agent”), to provide for the payment of the Refunded Bonds (as defined in the Official Statement). This Agreement, the Trust Agreement, the Continuing Disclosure Agreement and the Escrow Agreement are hereinafter collectively referred to as the “District Documents.”

3. Concurrent Delivery of Official Statement. Upon the acceptance, execution and delivery of this Agreement by the District, the District will deliver to the Representative a sufficient number of copies of the final version of the Official Statement, which shall be signed by the Chairman or the Vice Chairman, the General Manager and the Director of Finance of the District, to enable the Underwriters to comply with the Rule. The Underwriters’ approval of the Official Statement will be conclusively evidenced by the Representative’s execution and delivery of this Agreement.

4. Representations Warranties and Covenants of the District. The District represents and warrants to, and agrees with, the Underwriters as follows:

(a) The District is a political subdivision of the Commonwealth duly created and validly existing under the laws of the Commonwealth;

(b) The District has complied with all applicable provisions of the Constitution and laws of the Commonwealth, including the Enabling Act, with respect to the consummation of, and has full power and authority to consummate, all transactions contemplated by this Purchase Agreement, the Trust Agreement, and the Continuing Disclosure Agreement, executed by the District pursuant to the provisions of the Trust Agreement, and any other agreements relating thereto the District Documents;

(c) The District is authorized under the provisions of the Enabling Act to issue the Bonds for the purposes described in the Trust Agreement and the Official Statement;

(d) The Bond Resolution has been duly adopted by the Commission at a meeting duly called and held and duly and validly authorizes the issuance, sale and delivery of the Bonds pursuant to the Trust Agreement and the execution and delivery of the District Documents, and the Bond Resolution and the Trust Agreement, as of the date hereof, have not been amended, modified or repealed, in any material respect (other than as contemplated herein or by the Official Statement);

(e) The Commission has duly and validly authorized all necessary action to be taken by it or the District for (i) the issuance, sale, and delivery of the Bonds upon the terms set forth herein, (ii) the execution, delivery, and performance of the District Documents, including the Trust Agreement which provides for the issuance and delivery of and security for the Bonds, (iii) the carrying out, giving effect to, and consummation of the transactions contemplated hereby, and (iv) the consent to the distribution by the Underwriters of the Official Statement;

(f) The District Documents, when executed by the other parties thereto, if any, will have been duly and validly executed and delivered by the District and will be in full

force and effect as to the District, and such District Documents constitute legal, valid and binding obligations of the District, enforceable in accordance with their respective terms, subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws and principles of equity relating to or affecting the enforcement of creditors' rights; and the Bonds, when issued, authenticated and delivered to the Underwriters in accordance with the Bond Resolution will constitute legal, valid and binding obligations of the District enforceable in accordance with their terms, subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws and principles of equity relating to or affecting the enforcement of creditors' rights;

(g) Except as described in the Official Statement, there is no action, suit, proceeding, inquiry or investigation, at law or in equity before or by any court, governmental agency or public board or body, pending or, to the best knowledge of the District, threatened against the District that (i) may affect the existence of the District or the titles or rights of its officers to their respective offices, (ii) may affect or that seeks to prohibit, restrain or enjoin (A) the sale, issuance or delivery of the Bonds or (B) the collection or payment of the Net Revenues or the pledge and assignment thereof by the District to make payments on the Bonds, (iii) in any way contests or affects the validity or enforceability of the District Documents, (iv) contests in any way the completeness or accuracy of the Official Statement, or (v) contests the powers of the District or, to the best knowledge of the District, any authority or proceedings for the issuance, sale or delivery of the Bonds, the District Documents or any of them or the transactions contemplated thereby, nor, to the best knowledge of the District, is there any basis therefor wherein an unfavorable decision, ruling or finding would materially adversely affect the validity or enforceability of the Bonds, the Bond Resolution or any of the other District Documents;

(h) The District is not in any material respect in breach of or default under any applicable constitutional provision, law or administrative regulation of the Commonwealth of Virginia or the United States or any applicable judgment or decree or any loan agreement, indenture, bond, note, ordinance, resolution, agreement or other instrument to which the District is a party or to which the District or any of the property or assets of the District are otherwise subject; no event has occurred and is continuing that constitutes or with the passage of time or the giving of notice, or both, would constitute a default or event of default by the District under any such instrument; and the execution and delivery of this Purchase Agreement and the other District Documents, and the compliance with the provisions thereof, will not conflict with or constitute on the part of the District a violation of, breach of, or default under (i) the Enabling Act, (ii) in any material respect, any indenture, mortgage, lease or note agreement or any other material agreement or instrument to which the District is a party or by which the District is bound, or (iii) any constitutional provision or statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over the District or any of its activities or properties;

(i) All consents, approvals, authorizations and orders of governmental or regulatory authorities that are required to be obtained by the District in connection with the execution and delivery of this Purchase Agreement and the other District Documents and the consummation of the transactions contemplated thereby to be consummated on or before the Closing Date have been or will be, at Closing, duly obtained and in full force and effect; provided, that no representation or warranty is expressed as to any action required under



applicable federal or state securities laws or Blue Sky laws of any jurisdiction in connection with the issuance and sale of the Bonds.

(j) At the time of the District's acceptance hereof and (unless an event occurs of the nature described in Section 5(b)) at all times subsequent hereto during the period up to and including twenty-five (25) days subsequent to the end of the underwriting period, as hereinafter defined, the Official Statement was and will be true and correct in all material requests and did not and will not contain any untrue or misleading statement of a material fact or omit to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, no representation or warranty is made as to any of the information described in the proviso of Section 4(o) below;

(k) If the Official Statement is supplemented or amended pursuant to Section 5(b), at the time of each supplement or amendment thereto and (unless subsequently again supplemented or amended pursuant to such paragraph) at all times subsequent thereto during the period up to and including twenty-five (25) days subsequent to the end of the underwriting period, the Official Statement as so supplemented or amended will be true and correct in all material requests and will not contain any untrue or misleading statement of a material fact or omit to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, no representation or warranty is made as to any of the information described in the proviso of Section 4(o) below;

(l) The District will execute and deliver the Disclosure Agreement, at or prior to the Closing, in substantially the form attached to the Official Statement as "APPENDIX E - FORM OF CONTINUING DISCLOSURE AGREEMENT;"

(m) During the 5-year period ending on the date hereof, except as set forth in the Official Statement, the District has not failed in any material respect to comply with all previous undertakings made by it of the type specified in paragraph (b)(5)(i) of the Rule;

(n) During the 5-year period ending on the date hereof, except as set forth in the Official Statement, no notice of the type specified in paragraph (b)(5)(i)(D) of the Rule has been filed by or on behalf of the District;

(o) (i) Other than the hereinafter defined Excluded Information, the information concerning the District and the System contained in the Preliminary Official Statement is, and as of the Closing Date will be, true and correct in all material respects and does not and will not, as applicable, contain any untrue statement of a material fact or omit to state a material fact that is necessary to make the statements contained therein, in the light of the circumstances under which they were made, not misleading, and (ii) notwithstanding the foregoing, the District has not provided the information in and does not provide any assurance that the information relating to "Price or Yield" of the Bonds and CUSIP numbers on the inside cover, or the first paragraph of page (iv) thereof, or contained in the sections or appendices, as the case may be, captioned "TAX MATTERS," "UNDERWRITING," "APPENDIX D - PROPOSED OPINION OF BOND COUNSEL," and "APPENDIX F - THE DEPOSITORY

TRUST COMPANY” (the “Excluded Information”) in the Official Statement is true and correct in all material respects;

(p) The financial statements of, and other financial information regarding the District in the Official Statement and Appendix A thereof, fairly present the financial position and results of the operations of the District as of the dates and for the periods therein set forth; and the audited financial statements have been prepared in accordance with U.S. generally accepted accounting principles consistently applied;

(q) The District will cause the Trustee to authenticate and deliver the Bonds when ready for delivery;

(r) To the best of the District’s knowledge, neither the Securities and Exchange Commission (“SEC”) nor any of the securities commission of any jurisdiction has issued or threatened to issue any order preventing or suspending the use of the Official Statement;

(s) No person, whether generally or through an enterprise, fund, or account of such person, other than the District, is committed by contract or other arrangement structured to support payment of all, or part, of the obligations on the Bonds for purposes of and within the meaning of the Rule;

(t) Any certificate signed by any of the District’s authorized officers and delivered to the Underwriters shall be deemed a representation and warranty by it to the Underwriters as to the statements made therein; and

(u) The District acknowledges and agrees that (i) the primary role of the Underwriters, as underwriters, is to purchase securities, for resale to investors, in an arm’s length commercial transaction between the District and the Underwriters, and the Underwriters have financial and other interests that differ from those of the District; (ii) the Underwriters are acting solely as principals and are not acting as municipal advisors, financial advisors or fiduciaries to the District and have not assumed any advisory or fiduciary responsibility to the District with respect to the transaction contemplated hereby and the discussions, undertakings and procedures leading thereto (irrespective of whether the Underwriters have provided other services or are currently providing other services to the District on other matters); (iii) the only obligations the Underwriters have to the District with respect to the transaction contemplated hereby expressly are set forth in this Purchase Agreement; and (iv) the District has consulted its own financial, municipal, legal, accounting, tax and other advisors, as applicable, to the extent it has deemed appropriate.

All representations, warranties and agreements of the District shall remain operative and in full force and effect, regardless of any investigations made by any Underwriter or on the Underwriters’ behalf, and shall survive the delivery of the Bonds.

5. Compliance with the Rule; Other Covenants; Method of Determining Issue Price.

(a) The Preliminary Official Statement has been deemed final by the District in accordance with the Rule and remains as such on the date hereof. The District agrees to supply, at the District's expense, within the earlier of seven (7) business days from the date hereof and in any event not later than two (2) business days before the Closing, sufficient quantities of the Official Statement to enable the Representative to send copies of the Official Statement to any potential customer upon request in compliance with paragraph (b)(4) of the Rule and the rules and regulations of the Municipal Securities Rulemaking Board ("MSRB"). The Official Statement shall be in substantially the same form as the Preliminary Official Statement and, other than information permitted to have been omitted by the Rule, the District shall only make such other additions, deletions and revisions in the Official Statement that are approved by the Representative. The District agrees to deliver to the Representative an electronic copy of the Official Statement in a form that permits the Representative to satisfy its obligations under the rules and regulations of the MSRB and the SEC. The Representative agrees to file the Official Statement with the MSRB in compliance with MSRB Rule G-32.

(b) The District covenants and agrees to notify the Representative if, during the period commencing on the date hereof through the date twenty-five (25) days after the "end of the underwriting period," as hereinafter defined, any event shall occur including, but not limited to, any material adverse change in the financial position, results of operations or condition, financial or otherwise, of the District, and of which the District has knowledge, that would cause the Official Statement to contain any untrue or incorrect statement of a material fact or to omit to state a material fact that should be included therein for the purpose for which the Official Statement is to be used or that is necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, and, if in the reasonable opinion of the Representative such event requires any amendment or supplement to the Official Statement, the District will at the District's expense promptly amend or supplement the Official Statement in a form and manner jointly approved by the District and the Representative. Anything in this Section 5(b) to the contrary notwithstanding, in no event shall the District be under any obligation to perform any continuing due diligence or monitoring to determine if any event described in this Section 5(b) has occurred subsequent to the end of the underwriting period. The "end of the underwriting period" means the Closing Date unless the Representative advises in writing on such Closing Date that as of such date there remains an unsold balance of the Bonds, in which case the "end of the underwriting period" means the date as of which the Representative notifies the District that the Underwriters no longer retain an unsold balance of the Bonds for sale to the public; however, in no event shall the "end of the underwriting period" extend beyond the date that is thirty-five (35) days from the Closing Date.

(c) Subject to Section 9, the District shall furnish such information, execute such instruments and take such other action in cooperation with the Representative as the Representative may reasonably request to qualify the Bonds for offering and sale under the securities or "blue sky" laws of such states and other jurisdictions of the United States as the Representative may designate; provided, however, the District shall not be obligated to accept, or consent to accept, service of process, or to appoint an agent to accept service of process, outside the Commonwealth of Virginia.

(d) The Underwriters agree to make a bona fide public offering of all of the Bonds of each maturity at a price not in excess of the respective initial public offering price or yields not greater than the yields set forth in the front portion of the Official Statement. After such bona fide public offering, and subject to the provisions of paragraph (e) and the provisions of the issue price certificate, a form of which appears as Exhibit 4, the Underwriters may change such prices or yields as they may deem necessary or desirable in connection with the offering and sale of the Bonds and to sell the Bonds to dealers (including dealer banks and dealers depositing the Bonds into investment trusts) and others at prices lower than the initial offering prices or yields greater than the yields indicated on the front portion of the Official Statement.

(e) [Issue Price Language]

(f) The Representative agrees on behalf of the Underwriters that the Bonds will only be offered pursuant to the Official Statement and only in jurisdictions where such offer is legal and that a copy of the final version of the Official Statement will be delivered to each purchaser of the Bonds.

6. Conditions to Underwriters' Obligations. The Underwriters' obligation to purchase and pay for the Bonds shall be subject to the performance by the District of its obligations to be performed hereunder and in the documents delivered at the Closing, and the accuracy in all material respects of the representations and warranties contained hereunder and shall also be subject to the satisfaction of each of the following conditions, both as of the date hereof and the Closing Date:

(a) The Representative will not have discovered any material error, misstatement or omission in the representations and warranties made by the District in this Agreement, which representations and warranties will be deemed to have been made again at and as of the time of the Closing and will then be true, accurate and complete in all material respects;

(b) The Bond Resolution, the Act and the District Documents will be in full force and effect and will not have been amended, modified or supplemented, and the Official Statement will not have been supplemented or amended, except as may have been agreed or consented to by the Representative;

(c) At the time of the Closing, all official action of the District relating to this Agreement, the Bonds and the other District Documents will be in full force and effect and will not have been amended, modified or supplemented except as otherwise agreed to by the Representative;

(d) At the time of the Closing, there will have been no material adverse change in the condition, financial or otherwise, of the District from that set forth in the Official Statement that in the reasonable judgment of the Representative makes it impracticable to market the Bonds on the terms and in the manner contemplated in the Official Statement;

(e) The Representative will have received the Official Statement, and each supplement or amendment, if any, to it, executed on behalf of the District by its General

Manager and its Director of Finance and a fully-executed copy of each of the District Documents;

(f) The Representative will have received from Norton Rose Fulbright US LLP, Bond Counsel for the District (“Bond Counsel”), an approving opinion with respect to the Bonds, dated the Closing Date and addressed to the District, in substantially the form set forth in Appendix D to the Official Statement;

(g) The Representative will have received from Bond Counsel a supplemental opinion or opinions with respect to the Bonds, dated the Closing Date and addressed to the Underwriters, in substantially the form set forth as Exhibit 1 hereto;

(h) The Representative will have received from the Counsel to the District opinions dated the Closing Date and addressed to the Underwriters, in substantially the forms set forth as Exhibit 2 hereto;

(i) The Representative will have received from Kaufman & Canoles, a Professional Corporation, as counsel to the Underwriters, an opinion dated the Closing Date and addressed to the Underwriters, in substantially the form set forth as Exhibit 3 hereto;

(j) The Representative will have received a certificate of the General Manager and the Director of Finance of the District setting forth facts, estimates and circumstances (including covenants of the District) in existence on the Closing Date sufficient to support the conclusion that it is not expected that the proceeds of the Bonds will be used in a manner that would cause the Bonds to be “arbitrage bonds” within the meaning of Section 148 of the Internal Revenue Code of 1986, as amended, and applicable rules and regulations;

(k) The Representative will have received a certificate of the District as to the receipt of payment for the Bonds;

(l) A certificate, dated the Closing Date, signed by the General Manager of the District to the effect that (a) the representations and agreements of the District contained herein are true and correct in all material respects as of the date of the Closing; (b) except as described in the Official Statement, no litigation is pending or, to his knowledge, threatened (i) seeking to restrain or enjoin the execution or delivery of any of the District Documents, (ii) in any way contesting or affecting any authority for the Bond Resolution or any District Document, (iii) in any way contesting the creation, existence or powers of the District or the application of the proceeds of the Bonds, or (iv) which, if adversely determined, could materially adversely affect the District's financial position or operating condition of the District or the transactions contemplated by the Official Statement or any District Document; and (c) the Official Statement is true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, except no review has been made of information described in the proviso of Section 4(o) above;

(m) A certificate, dated the Closing Date, signed by the General Manager of the District, in form and substance satisfactory to the Representative, to the effect that (i) the

financial statements of the District as of June 30, 2017, fairly represent the receipts, expenditures, assets, liabilities and cash balances of such amounts and, insofar as presented, other funds of the District as of the dates and for the periods therein set forth and (ii) except as disclosed in the Official Statement, since June 30, 2017, no materially adverse change has occurred, or any development involving a prospective material change, in the financial position or results of operations of the District, and the District has not incurred since June 30, 2017, any material liabilities other than in the ordinary course of business or as set forth in or contemplated by the Official Statement;

(n) The verification report (the “Verification Report”) of \_\_\_\_\_ (A) verifying the accuracy of (i) the mathematical computations of the adequacy of the maturing principal of, premium, if any, and interest earned on the obligations to be held pursuant to the Escrow Agreement together with cash deposited thereunder, if any, to provide for the payment of the principal of and interest on the Refunded Bonds when due, and (ii) the mathematical computations of the yield for federal tax purposes on the Escrow Fund established under the Escrow Agreement and on the Bonds and (B) consenting to the reference to them and to their Verification Report under the caption of the Official Statement “VERIFICATION OF MATHEMATICAL COMPUTATIONS FOR THE REFUNDED BONDS”;

(o) The Representative will have received confirmations of long-term ratings from Standard & Poor’s Ratings Services (“S&P”) and Fitch Ratings (“Fitch”) indicating that the Bonds have been rated “\_\_” and “\_\_”, respectively, which ratings will remain in effect on the Closing Date; and

(p) The Representative will have received a certified copy of the Bond Resolution and fully executed copies of the District Documents.

If the District shall be unable to satisfy or cause to be satisfied any material (in the sole judgment of the Representative) condition to the obligations of the Underwriters contained in this Agreement, or if the obligations of the Underwriters shall be terminated for any reason permitted by this Agreement, this Agreement shall terminate, and neither the Underwriters nor the District shall be under any further obligations or liabilities hereunder, except for the return or retention of the good faith deposit as provided in Section 1 hereof and the respective obligations of the District and the Underwriters for the payment of expenses as provided in Section 9 hereof, which obligations shall continue in full force and effect.

7. Closing. By 11:00 a.m. Virginia Beach, Virginia time, on December \_\_, 2017, or such other time or date as shall otherwise be mutually agreed upon by the District and the Representative (such date is herein sometimes called the “Closing Date”), the District will deliver or cause to be delivered to the Underwriters either at the New York City office of The Depository Trust Company (“DTC”), or at such other location as shall have been mutually agreed upon by the District and the Representative, the Bonds and, subject to the terms and conditions hereof, the Underwriters will accept such delivery and pay to the District the purchase price of the Bonds as set forth in Section 1 hereof, such purchase price to be payable in same day Federal Funds. Such delivery and such acceptance and payment are herein sometimes called the “Closing.” Delivery of the other documents as aforesaid shall be made at the offices of Bond

Counsel in Washington, D.C. The Bonds shall be made available to the Underwriters, or delivered at their direction to such place and at such time as shall be mutually agreed upon, prior to the Closing. At the direction of the Underwriters, the District will deliver the Bonds in definitive form for registration through a book-entry only system of registration as described in the Official Statement, registered in the name of Cede & Co., as nominee for DTC. It is anticipated that the CUSIP identification numbers will be printed on the Bonds, but neither the failure to print such numbers nor any error with respect thereto shall constitute a cause for failure or refusal by the Underwriters to accept delivery of the Bonds in accordance with the terms of this Agreement.

8. Termination. The Representative may terminate the obligation of the Underwriters to purchase the Bonds by notification to the District in writing, if between the date hereof and the Closing:

(1) legislation shall be introduced in or enacted by the Congress of the United States or adopted by either House thereof, or shall have been recommended to the Congress by the President of the United States, or shall have been introduced and favorably reported for passage to either House of Congress by any committee of such House to which such legislation had been referred for consideration, or a decision shall have been rendered by or adopted by a court of the United States or the Tax Court of the United States, or an order, ruling or regulation shall have been issued or proposed by or on behalf of the Treasury Department of the United States or the Internal Revenue Service, with respect to federal income taxation of interest received on obligations of the general character of the Bonds, which, in the Representative's reasonable judgment, materially adversely affects the market price of the Bonds; or

(2) legislation shall have been introduced in or enacted by or a bill shall be favorably reported out of committee of either house of Congress or recommended for passage by the President of the United States, or a decision by a court of the United States shall be rendered, or a ruling, regulation, proposed regulation or statement by or on behalf of the Commission or any other agency of the federal government having jurisdiction of the subject matter shall be made, to the effect that the Bonds are not exempt from the registration requirements of the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended; or

(3) legislation shall have been enacted by the Congress of the United States to become effective on or prior to the Closing, or a decision of a court of the United States shall be rendered, or a stop order, ruling, regulation or proposed regulation by or on behalf of the Securities and Exchange Commission or other agency having jurisdiction over the subject matter shall be issued or made, to the effect that the issuance, sale and delivery of the Bonds or the District is in violation of the Securities Act of 1933, as amended, or with the purpose or effect of otherwise prohibiting the offering, issuance, sale or delivery of the Bonds as contemplated hereby or by the Official Statement or of obligations of the general character of the Bonds; or

(4) an event shall have occurred which (A) makes untrue or incorrect in any material respect, as of the time of such event, any statement or information contained in the Preliminary Official Statement or the Official Statement or which is not reflected in the Preliminary Official Statement or the Official Statement but should be reflected therein in order to make the statements and information contained therein not misleading in any material respect and (B) in the judgment of the Representative, materially adversely affects the market for the Bonds or the sale, at the contemplated offering prices, by the Underwriters of the Bonds; or

(5) there shall have occurred (whether or not foreseeable) any engagement in, or escalation of hostilities or other national or international calamity or crisis, or any material adverse change in the financial or economic conditions affecting the United States, the effect of such engagement, escalation, calamity, crisis or change on the financial markets of the United States being such as, in the Representative's reasonable judgment, would have a material adverse impact on the market price of the Bonds; or

(6) there shall have occurred a major financial crisis, a material disruption in commercial banking or securities settlement or clearance services, or a material disruption or deterioration in the fixed income or municipal securities market or there shall be in force a general suspension of trading on any national securities exchange or minimum or maximum prices for trading shall have been fixed and be in force, or maximum ranges for prices for securities shall have been required and be in force on any national securities exchange whether by virtue of a determination by that exchange or by order of the Securities and Exchange Commission, or any other governmental authority having jurisdiction that, in the Representative's reasonable judgment, would have a material adverse impact on the market price of the Bonds; or

(7) a general banking moratorium shall have been declared by federal, Commonwealth of Virginia or State of New York authorities; or

(8) any legislation, ordinance, rule or regulation shall be introduced in, or be enacted by, any governmental body, department or agency in the Commonwealth of Virginia, or a decision by any court of competent jurisdiction within the Commonwealth of Virginia shall be rendered which, in the Representative's reasonable judgment, would render interest received on obligations of the general character of the Bonds taxable for Commonwealth of Virginia income tax purposes or otherwise have a material adverse effect on the market price of the Bonds; or

(9) there shall have been (i) any downgrading, suspension or withdrawal of any rating assigned to the Bonds by S&P or Fitch, as applicable, or (ii) any placement of the District on credit watch negative or the equivalent by S&P or Fitch that, in the reasonable judgment of the Representative, would have a material adverse impact on the market price of the Bonds; or



(10) any litigation shall be instituted or be pending on the Closing Date to restrain or enjoin the issuance, sale or delivery of the Bonds, or in any way contesting or affecting any authority for or the validity of the proceedings authorizing and approving the Act, the Bond Resolution, the District Documents or the existence or powers of the District.

9. Expenses. Except as set forth herein, the Underwriters shall not be under any obligation to pay, and the District agrees to pay, any expenses incident to the performance of the District's obligations hereunder, including but not limited to: (i) the cost of preparation of the Bond Resolution; (ii) the costs of the preparation and printing of the definitive Bonds; (iii) the fees and disbursements of Bond Counsel; (iv) the fees and disbursements of the accountants, advisors and consultants retained by the District; (v) the cost of publication of all required notices; (vi) the disbursements of District officials and employees and any expenses incurred by the Underwriters on behalf of the District's employees and representatives which are incidental to implementing this Agreement, including without limitation meals, transportation, lodging and entertainment of such employees and representatives; (vii) fees for ratings on the Bonds; and (viii) the cost of the preparation and printing of a reasonable number of copies of the Official Statement and any amendments or supplements thereto and a reasonable number of copies required for distribution in connection with the public offering of the Bonds.

The Underwriters shall pay the fees and disbursements of Underwriters' counsel, the cost of preparation and printing of this Agreement, all advertising expenses in connection with the public offering of the Bonds and all other expenses incurred by them in connection with the public offering and distribution of the Bonds, including the cost of printing any Preliminary and Final Blue Sky Memoranda, and all other underwriting documents (which may be included as an expense component of the Underwriters' discount). The District shall not be under any obligation to pay any such expenses incident to the performance of the obligations of the Underwriters hereunder.

10. Issue Price Certificate. The Representative agrees to provide to Bond Counsel a certificate regarding the "issue price" of the Bonds substantially in the form attached hereto as Exhibit 4 (the "Issue Price Certificate"). Any changes to such form are subject to the reasonable approval of the District and Bond Counsel. It is expressly understood that the Representative is responsible for obtaining such information as may be necessary to demonstrate the compliance of the Representative with the provisions of Section 5(d) above and to make the certifications required in the Issue Price Certificate. It shall be a condition precedent to the District's obligations to deliver the Bonds that the Issue Price Certificate be provided to Bond Counsel.

11. Notices. Any notice or other communication to be given under this Agreement may be given by delivering the same in writing (a) to the District at the District's address set forth above, with a copy to PFM Financial Advisors LLC, 4350 N. Fairfax Drive, Suite 580, Arlington, Virginia 22203, Attention: Sarah Frey, Director, and (b) to the Representative at Merrill Lynch, Pierce, Fenner & Smith Incorporated, 214 N. Tryon Street, Charlotte, North Carolina 28255, Attention: D. Scott Detar, Jr.

12. Successors and Assigns. This Agreement is made solely for the benefit of the District and the Underwriters (including the successors or assigns of the Underwriters), and no other person shall acquire or have any right hereunder or by virtue hereof. All of the representations, warranties and agreements of the District contained in this Agreement shall remain operative and in full force and effect, and shall survive the delivery of the Bonds, regardless of any investigations made by or on behalf of the Underwriters.

13. Counterparts. This Agreement may be executed in one or more counterparts, each of which will be regarded as an original and all of which will constitute one and the same document.

14. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, without regard to its choice of laws principles.

15. Effective Date. This Agreement shall become effective upon the execution of the acceptance hereof by the District and shall be valid and enforceable as of the time of such acceptance and approval.

[Signature Pages Follow]

Very truly yours,

MERRILL LYNCH, PIERCE, FENNER & SMITH  
INCORPORATED  
CITIGROUP GLOBAL MARKETS INC.  
MORGAN STANLEY & CO. LLC

BY: MERRILL LYNCH, PIERCE, FENNER & SMITH  
INCORPORATED, as Representative

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

Name: D. Scott Detar, Jr.

Title: Director

By our acceptance of this Bond  
Purchase Agreement, given this \_\_\_ day  
of December, 2017 at \_\_\_\_\_ a.m., we  
agree to be bound by the provisions of  
this Bond Purchase Agreement.

HAMPTON ROADS SANITATION DISTRICT

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

Name: Jay A. Bernas, PE

Title: Director of Finance

SCHEDULE A

\$[PAR]  
Hampton Roads Sanitation District  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A

(Base CUSIP Number 409327)

Maturities, Amounts and Interest Rates

Year of Maturity (October 1)	Principal Amount	Interest Rate
------------------------------------	---------------------	------------------

---

\$ \_\_\_\_\_ .\_\_% Term Bond Due October 1, 20\_\_

Redemption Provisions:

*Optional Redemption.* The Bonds maturing on or before October 1, 20\_\_ are not subject to optional redemption prior to maturity. The Bonds maturing on or after October 1, 20\_\_, are subject to redemption prior to their respective maturities on or after October 1, 20\_\_ at the option of the District, in whole or in part (in increments of \$5,000) at any time, at a redemption price equal to 100% of the principal amount of such Bonds to be redeemed, plus the unpaid interest accrued thereon to the date fixed for redemption.

*Mandatory Sinking Fund Redemption.* The Bonds maturing on \_\_\_\_\_ 1, \_\_\_\_\_ are subject to mandatory sinking fund redemption in part on (or October) 1, in the years and amounts set forth below, at \_\_\_\_\_ redemption price equal to 100% of the principal amount of such Bonds to be redeemed plus the unpaid interest accrued thereon to the date fixed for redemption:

**Year**

**Amount**

---

\*\* Final Maturity

December \_\_, 2017

Merrill Lynch, Pierce, Fenner & Smith Incorporated  
Charlotte, North Carolina

Citigroup Global Markets Inc.  
Philadelphia, Pennsylvania

Morgan Stanley & Co. LLC  
Washington, D.C.

\$[PAR]  
Hampton Roads Sanitation District  
Subordinate Wasterwater Revenue Bonds,  
Refunding Series 2017A

Ladies and Gentlemen:

We have delivered to you copies of our approving opinion as Bond Counsel, dated this date, rendered in connection with the issuance by the Hampton Roads Sanitation District, a political subdivision of the Commonwealth of Virginia (the “District”), for the purchase by the Underwriters and the sale by the District of the District’s \$[PAR] Subordinate Wastewater Revenue Bonds, Series 2017A (the “Bonds”). The Bonds are issued pursuant to the provisions of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Enabling Act”), a resolution adopted on November 28, 2017 (the “Bond Resolution”), by the Hampton Roads Sanitation District Commission (the “Commission”), the governing body of the District, and the Trust Agreement dated as of October 1, 2011, as amended and restated as of March 1, 2016, as as further supplemented by the fifth Supplemental Trust Agreement dated as of December 1, 2017 (collectively, the “Trust Agreement”).

You may rely upon our approving opinions as if each was addressed to you.

At your request, we have reviewed, in addition to the proceedings and other papers described in our approving opinions, the following:

(a) The Bond Purchase Agreement, dated December \_\_, 2017 (the “Purchase Agreement”);

(b) The Preliminary Official Statement, dated November \_\_, 2017, with respect to the Bonds, together with the final version of the Official Statement, dated December \_\_, 2017, with respect to the Bonds (the “Official Statement”); and

(c) The Continuing Disclosure Agreement, dated the date of its execution and delivery, for your benefit and the benefit of the holders of the Bonds (the “Continuing Disclosure Agreement”).

Based on the foregoing and upon such other information and papers as we consider necessary for the purposes of rendering this opinion, we are of the opinion that:

1. The Purchase Agreement and the Continuing Disclosure Agreement have been duly authorized, executed and delivered by the District and, assuming their due authorization, execution and delivery by the other parties thereto, constitute valid and legally binding agreements of the District, enforceable against the District in accordance with their terms. The enforceability of the Purchase Agreement and the Continuing Disclosure Agreement may be limited by the provisions of bankruptcy, insolvency, reorganization, moratorium, or similar laws, now or hereafter in effect, and by equitable principles which may limit the specific enforcement of certain remedies.

2. The offering, sale and delivery of the Bonds do not require their registration under the Securities Act of 1933, as amended. No opinion is expressed with respect to the necessity of the registration of the Bonds under the “Blue Sky” or securities laws of any state, federal district, territory or possession of the United States.

In our capacity as Bond Counsel, we have participated in the preparation and have reviewed those portions of the Official Statement contained under the captions “PLAN OF REFUNDING,” “THE SERIES 2017A BONDS,” “SECURITY AND SOURCES OF PAYMENT,” “TAX MATTERS,” and “CONTINUING DISCLOSURE” (other than information under such caption with respect to the District’s compliance with previous undertakings under Rule 15c2-12, as to which no opinion is expressed) and in Appendices B, C, and D. In our opinion, the statements relating to the Bonds and the summaries of documents, statutes and opinions contained in the sections of the Official Statement referred to above fairly summarize the material provisions of the Bonds and the documents, statutes and opinions referred to therein. We offer no other opinion or view as to the information contained in the Official Statement.

This letter is furnished by us in our capacity as Bond Counsel to the District. No attorney-client relationship has existed or exists between our firm and the addressees hereof in connection with the Bonds, the Official Statement or by virtue of this opinion. This opinion is delivered to, and is solely for the benefit of, the addressees hereof and is not to be used, circulated, quoted or otherwise referred to or relied upon by any person other than you. This opinion is not intended to be relied upon by the Trustee (as described in the Bond Purchase Agreement) or the holders or the beneficial owners of the Bonds.

Very truly yours,

**OPINIONS OF KELLAM, PICKRELL, COX & ANDERSON, P.C., COUNSEL FOR  
THE DISTRICT**

December \_\_, 2017

Merrill Lynch, Pierce, Fenner & Smith Incorporated  
Charlotte, North Carolina

Citigroup Global Markets Inc.  
Philadelphia, Pennsylvania

Morgan Stanley & Co. LLC  
Washington, D.C.

\$(PAR)  
Hampton Roads Sanitation District  
Subordinate Wasterwater Revenue Bonds,  
Refunding Series 2017A

Ladies and Gentlemen:

We have acted as counsel to the Hampton Roads Sanitation District (the “District”) in connection with the issuance and sale of the above-referenced bonds (the “Bonds”). The Bonds are being issued under the Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016, between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (in such capacity, the “Trustee”). The Bonds will be secured by such Trust Agreement, as further supplemented by the Fifth Supplemental Trust Agreement, dated as of December 1, 2017, between the District and the Trustee (collectively, the “Trust Agreement”). Unless otherwise defined, the capitalized terms used in this opinion have the meanings set forth in the Bond Purchase Agreement (as hereinafter defined).

In connection with our opinion, we have examined the following:

- (1) Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Enabling Act”);
- (2) the resolution adopted by the District on November 28, 2017 (the “Resolution”);
- (3) the Trust Agreement;
- (4) the Bonds;
- (5) the Bond Purchase Agreement, dated December \_\_, 2017 (the “Bond Purchase Agreement”), between you and the District;



- (6) the Escrow Deposit Agreement, dated December \_\_, 2017 (the “Escrow Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A., as Escrow Agent (in such capacity, the “Escrow Agent”);
- (7) the Official Statement, dated December \_\_, 2017 (the “Official Statement”), prepared in connection with the offering of the Bonds; and
- (8) the Continuing Disclosure Agreement, dated as of December \_\_, 2017 (the “Continuing Disclosure Agreement”), delivered by the District for the benefit of the Underwriters and the holders of the Bonds.

The Trust Agreement, the Continuing Disclosure Agreement, the Escrow Agreement and the Bond Purchase Agreement are referred to collectively as the “District Documents.”

As to questions of fact material to this opinion, we have relied upon representations of, and the compliance as of the date hereof with the covenants by, the District contained in the District Documents, certifications of public officials furnished to us, and certifications and representations contained in certificates of the District and others delivered at Closing; provided that nothing has come to our attention that would lead us to believe that reliance upon such representations and certifications is unreasonable. We have assumed that all signatures on documents, certificates, and instruments examined by us are genuine, all documents, certificates, and instruments submitted to us as originals are authentic, and all documents, certificates, and instruments submitted to us as copies conform to the originals. In addition, we have assumed that all documents, certificates, and instruments relating to this financing have been duly authorized, executed, and delivered by all parties to them.

Based upon the foregoing, we are of the opinion that:

1. The District is a political subdivision of the Commonwealth of Virginia duly created and validly existing under the Enabling Act and has full power and authority under the Enabling Act to (i) execute and deliver the District Documents and the Bonds, (ii) issue, sell and deliver the Bonds pursuant to the Trust Agreement, and (iii) consummate the transactions contemplated by, and perform its obligations under, the District Documents. The directors and officers of the District identified in the District's general certificate delivered the date hereof have been duly appointed and are qualified to serve as such.

2. The Resolution has been duly adopted, complies with the Enabling Act and is in full force and effect on this date. The Bonds and the District Documents have been duly authorized and executed by the District.

3. The District has duly approved the Official Statement and its use in connection with the public offering of the Bonds.

4. The authorization, execution and delivery of the District Documents and the Bonds and the performance by the District of its obligations thereunder will not conflict with or constitute a violation or breach of or default under (i) any federal or Virginia constitutional provision or any other provision of Virginia law, (ii) any material agreement or other material instrument to which the District is a party or by which the District is bound, or (iii) to the best of

our knowledge, any order, rule or regulation of any court or governmental agency or body having jurisdiction over the District or any of its properties.

5. There is no litigation at law or in equity or any proceeding before any governmental agency pending against the District, nor, to the best of our knowledge, threatened with respect to (i) the organization or existence of the District, (ii) the District's authority to execute and deliver the District Documents and the Bonds, (iii) the validity or enforceability of any of the District Documents and the Bonds against the District or the transactions contemplated by them, (iv) the title of the officers of the District who executed the District Documents and the Bonds to their offices, or (v) any authority or proceedings of the District relating to the execution and delivery of any of the District Documents and the Bonds by the District. The District has expressly disclosed that the District and the United States Environmental Protection Agency ("EPA") have modified the consent agreement with the Commonwealth of Virginia and the Order from EPA into a federal consent decree lodged with the federal district court for the eastern district of Virginia. Such consent decree could impose penalties and other relief, as set forth in the Official Statement under "THE SYSTEM-State Consent Agreement and EPA Consent Decree." A separate opinion will be issued by AquaLaw as to these matters, and we express no opinion as to these matters.

We express no view as to any part of the Official Statement as to financial statements and other financial and statistical data included in the Official Statement or elsewhere.

6. No further consent, approval, authorization or order of any governmental or regulatory authority is required to be obtained by the District as a condition precedent to the issuance of the Bonds, the execution and delivery of the Bonds or the District Documents, or the performance by the District thereunder (provided no opinion is expressed as to any action required under federal or state securities or Blue Sky laws in connection with the purchase or distribution of the Bonds by the Underwriters).

Our services as counsel to the District have been limited to rendering the foregoing opinions based upon our review of such legal proceedings as we have deemed necessary. We express no opinion as to the accuracy or completeness of any information that may have been relied upon by the purchasers of the Bonds.

This letter is furnished by us in our capacity as counsel for the District. No attorney-client relationship has existed or exists between our firm and the addressees hereof in connection with the Bonds, the Official Statement or by virtue of this opinion. This opinion is delivered to, and is solely for the benefit of, the addressees hereof and is not to be used, circulated, quoted or otherwise referred to or relied upon by any person other than you. This opinion may not be relied upon by the Trustee or the holders of the Bonds.

To the best of our knowledge, the information contained in the Official Statement is true and correct and does not contain any untrue statement of a material fact and does not omit to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. We do not express any opinion or belief, to any financial statements or any other financial or statistical information contained in the Official Statement, and we express no opinion as to the tax-exempt status of the interest on the Bonds or the necessity for the registration of the Bonds or the qualification of the Trust Agreement under

applicable law, including the Securities Act of 1933, as amended, and the Trust Indenture Act of 1939, as amended.

KELLAM, PICKRELL, COX & ANDERSON,  
P.C.

By \_\_\_\_\_  
William A. Cox, III, President

December \_\_, 2017

The Bank of New York Mellon Trust Company, N.A.,  
as Trustee  
Pittsburgh, Pennsylvania

\$[PAR]  
Hampton Roads Sanitation District  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A

Ladies and Gentlemen:

We have served as general counsel to the Hampton Roads Sanitation District (the “District”) in connection with the issuance and sale of the above-captioned bonds (the “Bonds”). The Bonds are being issued under the Trust Agreement, dated as of October 1, 2011, as amended and restated as of March 1, 2016, between the District and The Bank of New York Mellon Trust Company, N.A., as trustee (the “Trustee”). The Bonds are secured by such Trust Agreement, as further supplemented by the Fifth Supplemental Trust Agreement, dated as of December 1, 2017, between the District and the Trustee (collectively, the “Trust Agreement”). Unless otherwise defined, the capitalized terms used in this opinion have the meanings set forth in the Trust Agreement.

In connection with our opinion, we have examined the following:

- (1) Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended;
- (2) the resolution adopted by the Hampton Roads Sanitation District Commission on November 28, 2017 (the “Resolution”);
- (3) the Trust Agreement; and
- (4) the Bonds.

As to questions of fact material to this opinion, we have relied upon representations of, and the compliance as of the date hereof with the covenants by, the District contained in the Trust Agreement, certifications of public officials furnished to us, and certifications and representations contained in certificates of the District and others delivered in connection with the issuance of the Bonds; provided that nothing has come to our attention that would lead us to believe that reliance upon such representations and certifications is unreasonable. We have assumed that all signatures on documents, certificates, and instruments examined by us are genuine, all documents, certificates, and instruments submitted to us as originals are authentic, and all documents, certificates, and instruments submitted to us as copies conform to the originals. In addition, we have assumed that all documents, certificates, and instruments relating to the Bonds have been duly authorized, executed, and delivered by all parties to them other than the District.

Based upon the foregoing and upon such other information and documents as we consider necessary, we are of the opinion that:

(1) the District has the power and authority to execute and deliver the Trust Agreement and the Bonds and to consummate the transactions contemplated by such instruments;

(2) the Trust Agreement and the Bonds have been duly authorized, executed and delivered by the District;

(3) the District has received, and there are currently in full force and effect with respect to the District, all consents, approvals, authorizations and orders of governmental or regulatory authorities, if any, necessary to conduct its business as it is currently being conducted; and

(4) the execution and delivery of the Trust Agreement and the Bonds by the District and its compliance with the terms of such instruments, under the circumstances contemplated by such instruments, do not and will not in any material respect conflict with, or constitute on the part of the District a breach of or default under, any indenture, mortgage, deed of trust, agreement or other instrument to which the District is a party or by which the District or any of its property is bound or conflict with, violate or result in a breach of any law, public administrative rule or regulation, judgment, court order or consent decree to which the District or any of its property is subject.

We express no opinion as to the tax-exempt status of the interest on the Bonds or the necessity for the registration of the Bonds or the qualification of the Trust Agreement under applicable law, including the Securities Act of 1933, as amended, and the Trust Indenture Act of 1939, as amended.

KELLAM, PICKRELL, COX & ANDERSON,  
P.C.

By: \_\_\_\_\_  
William A. Cox, III, President

**[FORM OF OPINION OF AQUALAW PLC, SPECIAL COUNSEL FOR THE  
DISTRICT]**

December \_\_, 2017

Hampton Roads Sanitation District  
Virginia Beach, Virginia

Merrill Lynch, Pierce, Fenner & Smith Incorporated  
Charlotte, North Carolina

Citigroup Global Markets Inc.  
Philadelphia, Pennsylvania

Morgan Stanley & Co. LLC  
Washington, D.C.

\$(PAR)  
Hampton Roads Sanitation District  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A

Ladies and Gentlemen:

We are writing as outside environmental counsel to the Hampton Roads Sanitation District (“HRSD”) regarding statements made in the Official Statement, dated December \_\_, 2017, of HRSD (the “Official Statement”) concerning federal and State enforcement initiatives for HRSD’s sewage collection system. These initiatives relate to the portion of HRSD’s system which serves localities in the Hampton Roads, Virginia, region.

Specifically, I am writing to confirm that the statements contained in the Official Statement under the caption “THE SYSTEM—State Consent Agreement and EPA Consent Decree” present a fair and accurate summary of the matters purported to be summarized therein. These statements do not contain an untrue statement of a material fact. Nor do they omit to state any material fact necessary in order to make such statements, in the light of the circumstances under which they were made, not misleading as of the date of the Official Statement and as of the date hereof.

Sincerely,

AquaLaw, PLC

December \_\_, 2017

Hampton Roads Sanitation District  
Virginia Beach, Virginia

Merrill Lynch, Pierce, Fenner & Smith Incorporated  
Charlotte, North Carolina

Citigroup Global Markets Inc.  
Philadelphia, Pennsylvania

Morgan Stanley & Co. LLC  
Washington, D.C.

\$[PAR]  
Hampton Roads Sanitation District  
Subordinate Wastewater Revenue Bonds,  
Refunding Series 2017A

Ladies and Gentlemen:

We have acted as your counsel in connection with your purchase of the Hampton Road Sanitation District (the “District”) \$[PAR] Subordinate Wastewater Revenue Bonds, Refunding Series 2017A (the “Bonds”), pursuant to a Bond Purchase Agreement, dated December \_\_, 2017 (the “Purchase Agreement”). Capitalized terms used and not defined herein shall have the meanings given such terms in the Bond Purchase Agreement.

We have examined originals, or copies certified or otherwise identified to our satisfaction, of the following documents:

- (a) The Bond Purchase Agreement, dated December \_\_, 2017 (the “Purchase Agreement”);
- (b) The Preliminary Official Statement, dated November 28, 2017, with respect to the Bonds, together with the final version of the Official Statement dated December \_\_, 2017 with respect to the Bonds (the “Official Statement”); and
- (c) The Continuing Disclosure Agreement, dated as of December 1, 2017, for your benefit and the benefit of the holders of the Bonds (the “Continuing Disclosure Agreement”).

Based on the foregoing and upon such other information and papers as we consider necessary for the purposes of rendering this opinion, we are of the opinion that:

1. It is not necessary in connection with the public offering and sale of the Bonds to register any security under the Securities Act of 1933, as amended.

2. Based upon our participation in the preparation of the Official Statement as your counsel and without having undertaken to determine independently the accuracy or completeness of the statements contained in the Official Statement, we have no reason to believe (a) that the Official Statement, as of its date (except for the financial and statistical data included therein, the opinions expressed therein by Bond Counsel and the information contained in the Appendices thereto, as to all of which no view is expressed), contained an untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading or (b) that the Official Statement (except for the financial and statistical data included therein, the opinions expressed therein by Bond Counsel and the information contained in the Appendices thereto, as to all of which no view is expressed) as of the date of this opinion contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

3. Based upon our review of the Continuing Disclosure Agreement, the undertakings made by the District in the Continuing Disclosure Agreement provide a suitable basis for you reasonably to determine that the District has undertaken to provide, directly or indirectly through a designated agent, the information required to be provided in connection with the Bonds pursuant to paragraph (b)(5)(i) of Rule 15c2-12 of the Securities and Exchange Commission, as amended.

We express no view as to compliance by you or the District with any Federal or state statute, ruling or regulation applicable to the initial issuance or any subsequent sale of the Bonds except as expressly set forth herein. We express no opinion as to the treatment of interest on the Bonds for Federal income tax purposes or for purposes of income taxation by any state, or as to the consequences of the receipt of interest on, or the ownership of, the Bonds.

This opinion may not be relied upon by or furnished to any other person, firm or corporation without our prior written consent. This opinion letter speaks as of its date, and we do not undertake to advise you of any changes in the opinions expressed herein from matters that might hereafter arise or be brought to our attention.

Very truly yours,



**ISSUE PRICE CERTIFICATE OF THE UNDERWRITERS**

[To Come]

**HAMPTON ROADS SANITATION DISTRICT**

**and**

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,**

**as ESCROW AGENT**

---

**Escrow Deposit Agreement**

**Dated December 1, 2017**

## ESCROW DEPOSIT AGREEMENT

This ESCROW DEPOSIT AGREEMENT, dated as of December 1, 2017, by and among Hampton Roads Sanitation District (the “District”) and The Bank of New York Mellon Trust Company, N.A., as trustee under the Trust Agreement, dated as of March 1, 2008, as supplemented (the “Trust Agreement”), and its successor or successors and any other corporation which may be substituted in its place pursuant to the Trust Agreement and as Paying Agent for the Refunded Bonds (as hereinafter defined) (the “Trustee”) and as escrow agent hereunder (hereinafter referred to, in either or both capacities, as the “Escrow Agent”).

WHEREAS, the District, under and pursuant to the provisions of that certain Trust Agreement, dated as of March 1, 2008, as supplemented (the “Senior Trust Agreement”), authorized and issued multiple series of Senior Bonds under the Trust Agreement; and

WHEREAS, the District wishes to refund all or a portion of its outstanding Wastewater Revenue Bonds, Series 2012A, such Senior Obligations being more particularly identified in **Exhibit A** (the “Refunded Bonds”); and

WHEREAS, the District has determined to issue its Subordinate Wastewater Revenue Bonds, Refunding Series 2017A (the “Series 2017A Bonds”) under the Trust Agreement; and

WHEREAS, pursuant to the Trust Agreement, a portion of the proceeds of the Series 2017A Bonds will be provided to the Trustee, along with certain other moneys, to enable the Trustee to purchase securities in order to pay the Refunded Bonds and discharge and satisfy the covenants, agreements and other obligations of the District to the holders of the Refunded Bonds under the Trust Agreement; and

WHEREAS, the purchase and deposit of Escrow Securities (as defined below) and the deposit of the Cash Amount (as defined below) with the Trustee will accomplish the discharge and satisfaction of the covenants, agreements and other obligations of the District to the holders of the Refunded Bonds under the Trust Agreement;

NOW THEREFORE, in consideration of the foregoing and of the mutual covenants hereinafter set forth, the parties hereto agree as follows:

1. All capitalized terms used herein and not otherwise defined herein shall have the same meanings in this Escrow Deposit Agreement as such terms are given in the Trust Agreement. Reference herein to or citation herein of any provisions of the Trust Agreement shall be deemed to incorporate the same as a part hereof in the same manner and with the same effect as if the same were fully set forth herein.

2. The Bank of New York Mellon Trust Company, N.A. is hereby appointed as Escrow Agent by the District and, by its execution and delivery hereof, The Bank of New York Mellon Trust Company, N.A. accepts appointment as Escrow Agent hereunder.

3. There is hereby created and established with the Escrow Agent a special and irrevocable fund designated the “Hampton Roads 2017 Refunding Escrow Deposit Fund” (the

“Escrow Fund”) to be held by the Escrow Agent separate and apart from all other funds of the District or the Escrow Agent.

On December \_\_, 2017, the District shall cause to be transferred Series 2017A Bond proceeds in the amount of \$\_\_\_\_\_ (the “Bond Proceeds Escrow Deposit”) to the Escrow Agent, and the Escrow Agent shall acknowledge receipt of the Bond Proceeds Escrow Deposit.

The District directs the Escrow Agent, and the Escrow Agent agrees to deposit the Bond Proceeds Escrow Deposit in the Escrow Fund and to apply amounts credited to the Escrow Fund to the purchase of the Defeasance Obligations listed in **Exhibit B** (such Defeasance Obligations together with any Defeasance Obligations substituted therefore and any Defeasance Obligations purchased pursuant to paragraphs (4) or (5) hereof are collectively referred to herein as the “Escrow Securities”), which, as provided in paragraph (6) hereof, are intended to mature at times and in amounts sufficient (excluding reinvestment earnings) to pay principal or redemption price of and interest when due on the Refunded Bonds, respectively. Except as otherwise provided below under subparagraph (b) of paragraph (4) with respect to the Escrow Securities, the Escrow Agent shall have no power or duty to invest any moneys held hereunder or to make substitutions of the Escrow Securities held hereunder or to sell, transfer, or otherwise dispose of the Escrow Securities or moneys acquired hereunder except in accordance with written instructions of the District. Any amounts derived from Escrow Securities not required to be applied to the payment of the principal or redemption price of and interest when due on the Refunded Bonds shall, to the extent practicable, be reinvested at the written direction of the District.

4. (a) Other than as hereinafter provided in this paragraph (4), or in paragraph (5) below, with respect to any amounts received from principal or interest payments on such Escrow Securities (as defined above) remaining in the Escrow Fund, and principal or redemption price of and interest due or to become due on the Refunded Bonds, the Escrow Agent shall leave such amounts received from the maturing principal of and interest on the Escrow Securities to the extent not then used to pay the principal or redemption price of or interest on the Refunded Bonds uninvested in the Escrow Fund.

(b) The District hereby directs the Escrow Agent to enter into this Escrow Deposit Agreement, and to invest and reinvest the amount held in the Escrow Fund pursuant to the terms hereof. The Escrow Agent hereby agrees that it will take all of the actions required to be taken by it in its capacity as Trustee under the Trust Agreement and as Escrow Agent hereunder in order to effectuate this Escrow Deposit Agreement. The liability of the Escrow Agent for the payment of the Refunded Bonds, pursuant to this paragraph and the Trust Agreement shall be limited to the application thereto of the Escrow Securities and the interest earnings thereon available for such purposes in the Escrow Fund. The Escrow Agent shall have no responsibility for any investment losses resulting from the investment, reinvestment, liquidation or substitution of Escrow Securities in accordance with the written direction of the District. The Escrow Agent shall invest amounts held in the Escrow Fund in accordance with the terms of this Escrow Deposit Agreement. The Escrow Agent, at the written direction of the District and upon receipt of the opinions and certificates described below, shall invest and reinvest in Defeasance Obligations any moneys remaining from time to time in the Escrow Fund until such time that they are needed to provide for the payment of the principal or redemption price of and interest on the Refunded Bonds, except as provided by paragraph (5) below. Such moneys shall be

reinvested at the direction of the District in Defeasance Obligations maturing no later than when required to meet an interest or principal payment on the Refunded Bonds, and at such interest rates or yields and for such periods that the District shall direct, provided that the Escrow Agent shall have received (i) a written opinion of a lawyer or a firm of lawyers nationally recognized in the field of municipal finance and satisfactory to the Escrow Agent (an “Opinion of Counsel”) to the effect that such reinvestment of such moneys and the interest rates or yields on such moneys and substitute Defeasance Obligations will not adversely affect the exclusion of interest on the Series 2017A Bonds or the Refunded Bonds from gross income for Federal income tax purposes and (ii) a certification from a nationally recognized verification agent that, immediately following such transaction, the principal of and interest on the Defeasance Obligations in the Escrow Fund when due and paid will, without reinvestment, together with any other moneys or securities held in the Escrow Fund for such purpose, be sufficient to pay the principal of, redemption premium, if any, and interest on the Refunded Bonds when due.

5. The District may withdraw from the Escrow Fund at any time moneys or Defeasance Obligations not then or thereafter needed to pay the principal or redemption price of and interest due or to become due on the Refunded Bonds resulting from any activity described in paragraphs (3) or (4) above or any other action of the District permitted by the Trust Agreement (including that certain of the Refunded Bonds have ceased to be Outstanding by virtue of the fact that such Refunded Bonds have been acquired by the Escrow Agent or the Trustee at the direction of the District) or this Escrow Agreement; the District shall provide to the Trustee an Accountant’s Report that after any such withdrawal the principal of and interest on the moneys and securities on deposit in the Escrow Fund, together with other moneys or securities held in the Escrow Fund for such purpose, shall be sufficient to pay without reinvestment, when due, the principal or redemption price of and interest on the Refunded Bonds.

6. The District hereby represents, warrants and certifies to the Escrow Agent that the Escrow Securities deposited in the Escrow Fund are and shall be Defeasance Obligations and that the Escrow Securities mature at such times and in such amounts such that, based solely upon calculations and certifications made to it by [Bingham Arbitrage Rebate Services, Inc.] verification agent, the maturing principal of and the interest on the Escrow Securities and the Cash Amount not applied to the purchase of the Escrow Securities, collectively, will be sufficient to pay when due the principal or redemption price, if applicable, of and interest due and to become due on the Refunded Bonds, on and prior to the redemption date or maturity date thereof, as the case may be, provided that amounts received from the Escrow Securities and not needed to pay amounts due on the Refunded Bonds, on the date received shall be held uninvested until applied to pay amounts due on the Refunded Bonds, or reinvested as provided in paragraph (4), all in accordance with and in satisfaction of the provisions of the Trust Agreement and this Escrow Deposit Agreement.

7. The District hereby irrevocably designates the Refunded Bonds for redemption on the dates set forth in **Exhibit A** hereto. The forms of the notice required to be mailed pursuant to the requirements of the applicable Series Agreement are attached hereto as **Appendix A** and the District hereby irrevocably instructs the Trustee to mail such notices at the times and in the manner required by the applicable Series Agreement. Further, the District hereby irrevocably

instructs the Trustee to deliver the notice of defeasance, the form of which is attached hereto as **Appendix B**, on the date hereof.

8. The District irrevocably covenants that it will take, or cause to be taken, all actions necessary to cause any Refunded Bonds anticipated to be redeemed to be so redeemed, including the timely mailing or publication of notices of redemption and the Escrow Agent shall have no obligation or liability with respect thereto.

9. The deposit of the Escrow Securities and moneys in the Escrow Fund shall constitute an irrevocable deposit in trust solely for the payment of the Refunded Bonds, and the principal of and interest earnings on such Escrow Securities and moneys shall be used solely for such purposes, as necessary, subject to paragraphs (4) and (5) hereof.

10. Neither the District nor the Escrow Agent shall sell, transfer or otherwise dispose of the Escrow Securities or the funds held uninvested under this Escrow Deposit Agreement, except as otherwise provided in paragraphs (4) and (5) hereof and except that the Escrow Agent may effect the transfer of such Escrow Securities or funds to a successor escrow agent in accordance with the Trust Agreement relating to the transfer of rights and property to successor trustees.

11. Subject to the provisions of paragraphs (4) and (5) hereof, the lien and pledge hereby created shall be irrevocable and the holders of the Refunded Bonds shall have an express lien on all moneys and Escrow Securities deposited in the Escrow Fund pursuant to paragraphs (3), (4) and (5) hereof and the interest earnings thereon until paid out, used and applied in accordance with this Escrow Deposit Agreement. Nothing in this Escrow Deposit Agreement shall be deemed to imply that the Refunded Bonds have been paid or deemed paid by reason of the execution of this Escrow Deposit Agreement.

12. In consideration of the services rendered by the Escrow Agent under this Escrow Deposit Agreement, the District agrees to and shall pay to the Escrow Agent such fees and expenses as the District and the Escrow Agent shall agree in writing, including all reasonable expenses, charges, counsel fees and other disbursements incurred by the Escrow Agent or by its attorneys, agents and employees in and about the performance of their powers and duties hereunder, from any moneys of the District lawfully available therefor and the Escrow Agent shall have no lien, claim, or right of setoff whatsoever upon or against any of the Escrow Securities, Defeasance Obligations, or the funds held uninvested in said Escrow Fund for the payment of such fees and expenses. The District further agrees, to the extent permitted by law, to indemnify and save the Escrow Agent, any successor escrow agent, and its officers, directors, agents, and employees harmless against any extraordinary expenses, services or liabilities which it may incur as a result of entering into this Escrow Deposit Agreement or which it may incur in the exercise and performance of its powers and duties hereunder and which are not due to the Escrow Agent's willful misconduct or bad faith. The provisions of this paragraph (12) shall survive the discharge of this Escrow Deposit Agreement or the earlier resignation or removal of the Escrow Agent.

13. The District hereby acknowledges that the rights, duties, immunities and indemnities of the Trustee set out in Article IX of the Trust Agreement, and the obligations of the

District in respect thereof shall be applicable to the Trustee in its capacity as Escrow Agent hereunder.

14. The Escrow Agent will have no duties or responsibilities to the District or any other person in connection herewith except those specifically provided herein and will not be responsible for anything done or omitted to be done by it except for its own negligence, gross negligence, willful or intentional misconduct or default in the performance of any obligation imposed on it hereunder.

15. The Escrow Agent may consult with legal counsel or other experts concerning its duties hereunder, and the opinion of such counsel will be full and complete authority and protection to the Escrow Agent as to any action taken or omitted by it in good faith and in accordance with such opinion.

The Escrow Agent may perform its duties hereunder by or through attorneys, agents, receivers, or employees. The Escrow Agent shall not be obligated to use or risk its own funds in the performance of its duties hereunder or to pay the principal of, premium, if any, or interest on the Refunded Bonds.

16. Notices. All notice and communications to the District shall be addressed in writing to:

Jay A. Bernas  
Director of Finance and CFO  
Hampton Roads Sanitation District  
1434 Air Rail Avenue  
Virginia Beach, Virginia 23455

or at such other address as is furnished from time to time by the District.

All notices and communications to the Escrow Agent shall be addressed in writing to:

The Bank of New York Mellon Trust Company, N.A.  
500 Ross Street, 12th Floor  
Pittsburgh, Pennsylvania, 15262  
Attention: Corporate Trust - Public Finance

or at such other address as is furnished from time to time by the Escrow Agent.

17. Resignation and Discharge of Escrow Agent. The Escrow Agent may resign and thereby become discharged from the trusts hereby created, by written notice mailed to the District by registered or certified mail. Such resignation shall take effect upon the appointment of a new Escrow Agent hereunder and acceptance of the trusts hereby created. The Escrow Agent shall continue to serve as Escrow Agent until a successor is appointed by the District, and the Escrow Agent may, after 60 days subsequent to its resignation, petition the Circuit Court of the City of Virginia Beach, Virginia, for the appointment of a successor Escrow Agent if one has not yet been appointed.

18. This Escrow Deposit Agreement shall terminate when the Escrow Agent shall have transferred all amounts to be transferred hereunder in accordance with **Exhibit C** hereto.

19. This Escrow Deposit Agreement and the rights and duties of the parties hereunder shall be governed by, and construed in accordance with, the law of the Commonwealth of Virginia.

20. If any one or more of the covenants or agreements provided in this Escrow Deposit Agreement on the part of the District or the Escrow Agent to be performed should be determined by a court of competent jurisdiction to be contrary to law, such covenant or agreement shall be deemed and construed to be severable from the remaining covenants and agreements herein contained and shall in no way affect the validity of the remaining provisions of this Escrow Deposit Agreement.

21. This Escrow Deposit Agreement may be executed in several counterparts, all or any of which shall be regarded for all purposes as one original and shall constitute and be but one and the same instrument.



IN WITNESS WHEREOF, the parties hereto have each caused this Escrow Deposit Agreement to be executed by their duly authorized officers as of the date first above written.

HAMPTON ROADS SANITATION DISTRICT

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

Name: Jay A. Bernas

Title: Director of Finance

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A.

*as Escrow Agent*

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

Name:

Title:

**Refunded Bonds****Wastewater Revenue Bonds, Series 2012A**

<b><u>Maturity (January 1)</u></b>	<b><u>Principal Amount</u></b>	<b><u>Redemption Date</u></b>	<b><u>Redemption Price</u></b>	<b><u>CUSIPs</u></b>
2029	\$4,365,000	January 1, 2021	100%	409327FM0
2030	4,540,000	January 1, 2021	100	409327FN8
2031	4,725,000	January 1, 2021	100	409327FP3
2032	4,910,000	January 1, 2021	100	409327FQ1
2033	5,110,000	January 1, 2021	100	409327FR9
2034	5,315,000	January 1, 2021	100	409327FS7
2039 <sup>1</sup>	24,680,000	January 1, 2021	100	409327FT5

---

<sup>1</sup> Denotes partially refunded maturity. The refunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_ and the unrefunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_. As permitted by the Fifth Supplemental Indenture authorizing the issuance of the Series 2012A Bonds, the District will direct the Trustee to credit the principal amount of the Series 2012A Bonds maturing January 1, 2039, against the Sinking Fund Requirement due on such bonds due January 1, 20\_\_.



**Escrow Cash Flows**

**FORM OF NOTICE OF REDEMPTION**

## HAMPTON ROADS SANITATION DISTRICT, VIRGINIA

## Wastewater Revenue Bonds, Series 2012A

Dated Date: December 27, 2012  
 Redemption Date: January 1, 2021

<b><u>Maturity (January 1)</u></b>	<b><u>Principal Amount</u></b>	<b><u>Redemption Price</u></b>	<b><u>CUSIPs*</u></b>
2029	\$4,365,000	100%	409327FM0
2030	4,540,000	100	409327FN8
2031	4,725,000	100	409327FP3
2032	4,910,000	100	409327FQ1
2033	5,110,000	100	409327FR9
2034	5,315,000	100	409327FS7
2039 <sup>1</sup>	26,680,000	100	409327FT5

NOTICE IS HEREBY GIVEN that pursuant to the provisions of the Trust Agreement, dated as of March 1, 2008, as supplemented, between Hampton Roads Sanitation District (the “District”) and The Bank of New York Mellon Trust Company, N.A., as successor Trustee (the “Trustee”), securing the Bonds described above, the District has called and does hereby call for redemption on January 1, 2021, the bonds described above at the redemption price set forth above, together with accrued interest to the date fixed for redemption.

The bonds will become and be due and payable by wire transfer to The Depository Trust Company, New York, New York, or its nominee, as registered owner of the bonds. From January 1, 2021, interest on the above-described bonds will cease to accrue.

Under the Jobs and Growth Tax Relief Reconciliation Act of 2003, payers are required to withhold 28% of the amount paid upon redemption to those bondholders who have not returned a correctly completed Form W-9 entitled “Payer’s Request for Taxpayer Identification Number”. If you need a copy of the Form W-9, you should be able to obtain one at your local bank or IRS Service Center. Please return a correctly completed Form W-9 with your bonds to avoid any such withholding.

<sup>1</sup> Denotes partially refunded maturity. The refunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_ and the unrefunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_. As permitted by the Fifth Supplemental Indenture authorizing the issuance of the Series 2012A Bonds, the District will direct the Trustee to credit the principal amount of the Series 2012A Bonds maturing January 1, 2039, against the against the Sinking Fund Requirement due on such bonds due January 1, 20\_\_.

Dated: November \_\_, 2020

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A.,  
as Trustee under the Trust Agreement and as  
Escrow Agent

\*None of the District, the Escrow Agent or the Trustee shall be responsible for the accuracy of the CUSIP numbers provided above. The CUSIP numbers are provided solely for the convenience of the bondholders.

**FORM OF NOTICE OF DEFEASANCE**

NOTICE OF ESTABLISHMENT OF ESCROW FUND

HAMPTON ROADS SANITATION DISTRICT, VIRGINIA

Wastewater Revenue Bonds, Series 2012A

Dated Date: December 27, 2012

Redemption Date: January 1, 2021

NOTICE IS HEREBY GIVEN by Hampton Roads Sanitation District (the “District”) to the holders of the Bonds described below that, pursuant to the terms of an Escrow Agreement, dated as of December 1, 2017 (the “Escrow Agreement”), between the District and The Bank of New York Mellon Trust Company, N.A., in its capacity as escrow agent (the “Escrow Agent”), there has been deposited, in trust, with the Escrow Agent, cash and Defeasance Obligations in an amount that, together with interest thereon, will provide for the payment, when due, of the principal of and the interest on the portion of said bonds (collectively, the “Defeased Bonds”) to their respective maturity dates, as set forth below:

<b><u>Maturity (January 1)</u></b>	<b><u>Principal Amount</u></b>	<b><u>Redemption Date</u></b>	<b><u>Redemption Price</u></b>	<b><u>CUSIPs</u></b>
2029	\$4,365,000	January 1, 2021	100%	409327FM0
2030	4,540,000	January 1, 2021	100	409327FN8
2031	4,725,000	January 1, 2021	100	409327FP3
2032	4,910,000	January 1, 2021	100	409327FQ1
2033	5,110,000	January 1, 2021	100	409327FR9
2034	5,315,000	January 1, 2021	100	409327FS7
2039 <sup>1</sup>	24,680,000	January 1, 2021	100	409327FT5

This notice is provided solely for informational purposes and does not constitute a notice of redemption. There is no need for the holders of the Defeased Bonds to take any action with respect to the Defeased Bonds.

Dated: December \_\_\_, 2017

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A.,

<sup>1</sup> Denotes partially refunded maturity. The refunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_ and the unrefunded portion of the maturity has been assigned the CUSIP Number 409327\_\_\_. As permitted by the Fifth Supplemental Indenture authorizing the issuance of the Series 2012A Bonds, the District will direct the Trustee to credit the principal amount of the Series 2012A Bonds maturing January 1, 2039, against the Sinking Fund Requirement due on such bonds due January 1, 20\_\_.

as Trustee under the Trust Agreement and as  
Escrow Agent

\*None of the District, the Escrow Agent or the Trustee shall be responsible for the accuracy of the CUSIP numbers provided above. The CUSIP numbers are provided solely for the convenience of the bondholders.



## NOTICE OF SALE

### HAMPTON ROADS SANITATION DISTRICT

\$ \_\_\_\_\_\*

### Subordinate Wastewater Revenue Bonds Series 2018A

Electronic Bids, BiDCOMP/Parity Competitive Bidding System (“BiDCOMP/Parity”) only, will be received by Hampton Roads Sanitation District (the “District”), until \_\_\_ a.m.\*, Virginia Beach, Virginia Time, on [Wednesday], \_\_\_\_\_, **2018** (unless such time or date is changed as described herein) for the purchase of all, but not less than all, of the District’s \$ \_\_\_\_\_\* Subordinate Wastewater Revenue Bonds, Series 2018A (the “Series 2018A Bonds”).

#### *Preliminary Official Statement*

The District has authorized the preparation and distribution of a Preliminary Official Statement, dated \_\_\_\_\_, 2017 (the “Preliminary Official Statement”), containing information relating to the Series 2018A Bonds. The Notice of Sale and the Preliminary Official Statement may be obtained without cost via the Internet at [www.i-dealprospectus.com](http://www.i-dealprospectus.com). The Preliminary Official Statement at its date is “deemed final” by the District for purposes of the Securities and Exchange Commission Rule 15c2-12 adopted under the Securities Exchange Act of 1934, as amended (the “Rule”), but is subject to revision, amendment and completion.

#### *The Series 2018A Bonds*

#### **Authorization and Security**

*Set forth below is a brief summary of the Series 2018A Bonds. Such summary is not comprehensive and is qualified in its entirety by reference to the Preliminary Official Statement and the appendices thereto. Capitalized terms used but not defined herein have the meanings given such terms in the Preliminary Official Statement.*

The Series 2018A Bonds are being issued in accordance with the provisions of Chapter 66 of the Acts of Assembly of Virginia of 1960, as amended (the “Enabling Act”). On [October 31,] 2017, the Hampton Roads Sanitation District Commission (the “Commission”), the governing body of the District, authorized by resolution the issuance of the Series 2018A Bonds. The Commission is issuing the Series 2018A Bonds for the purpose of providing funds, together with other available funds, (i) to finance a portion of the costs of the District’s Capital Improvement Program and (ii) to pay certain expenses incurred in connection with the issuance of the Series 2018A Bonds by the District.

The Series 2018A Bonds are special obligations of the District payable solely from the Net Revenues Available for Debt Service derived by the District from the operation of its

---

\* Preliminary, subject to change.

Wastewater System and other funds pledged to secure the Series 2018A Bonds under the Trust Agreement (hereinafter defined). The District's Net Revenues Available for Debt Service consist of all revenues derived by the District from the Wastewater System except such part of such revenues as may be required to pay (i) the cost of maintaining, repairing and operating such Wastewater System and (ii) Senior Obligations.

The Commission has determined to provide for the issuance of the Series 2018A Bonds under the Amended and Restated Trust Agreement, dated as of March 1, 2016 (the "Amended and Restated Trust Agreement"), as supplemented by the Sixth Supplemental Trust Agreement, dated as of [February 1, 2018] (the "Sixth Supplemental Trust Agreement" and the Amended and Restated Trust Agreement, as so supplemented and as the same may be amended and further supplemented from time to time, the "Trust Agreement"), each by and between the District and The Bank of New York Mellon Trust Company, N.A., as trustee.

### **Details of Series 2018A Bonds; Book-Entry Only**

The Series 2018A Bonds will be dated their date of delivery. Interest on the Series 2018A Bonds will be payable semiannually on April 1 and October 1, commencing [April 1, 2018]. The Series 2018A Bonds will be issued as fully registered bonds only in book-entry form payable to a nominee of The Depository Trust Company, New York, New York ("DTC") as securities depository for the bonds. Reference is made to the Preliminary Official Statement relating to the Series 2018A Bonds for the applicable provisions relating to the transfer of beneficial ownership, manner of redemption, the responsibilities of DTC participants and the right of the District to discontinue use of the book-entry only system.

### **Maturity Schedule**

The principal of the Series 2018A Bonds will be due (subject to the right of prior redemption as hereinafter set forth) on the 1st day of October in the following years and in the following amounts, respectively

**Series 2018A Bonds**  
**Initial Maturity Schedule\***

Maturity Date (____ 1)	Principal <u>Amount</u>	Maturity Date (____ 1)	Principal <u>Amount</u>
20__	\$	20__	\$
20__		20__	
20__		20__	
20__		20__	
20__		20__	
20__		20__	
20__		20__	
20__		20__	
20__		20__	
20__		20__	

**Changes to Maturity Schedule**

The Initial Maturity Schedule set forth above represents an estimate of the principal amount of Series 2018A Bonds to be sold. The District hereby reserves the right to change the Initial Maturity Schedule, based on market conditions immediately prior to the sale, by announcing any such change not later than one hour prior to the scheduled sale time, on the date for receipt of bids via TM3 (www.tm3.com). The resulting schedule of maturities will become the “Bid Maturity Schedule.” If no such change is announced, the Initial Maturity Schedule will become the Bid Maturity Schedule.

**Changes to Bid Maturity Schedule**

The District hereby further reserves the right to change the Bid Maturity Schedule after the determination of the winning bidder, by increasing or decreasing the aggregate principal amount of the Series 2018A Bonds, subject to the limitation of no more than a **10% increase or decrease** in the aggregate principal amount of the Series 2018A Bonds. The District anticipates that it will communicate the final principal amounts by 4:00 p.m. on the bid date, but reserves the right to communicate the final principal amounts no later than 11:00 a.m. on the day following the bid date.

THE SUCCESSFUL BIDDER MAY NOT WITHDRAW ITS BID OR CHANGE THE INTEREST RATES BID OR THE INITIAL REOFFERING TERMS (AS HEREAFTER DEFINED) AS A RESULT OF ANY CHANGES MADE TO THE PRINCIPAL AMOUNTS WITHIN THESE LIMITS. The dollar amount bid by the successful bidder will be adjusted to reflect any adjustments in the final aggregate principal amount of the Series 2018A Bonds. Such adjusted bid price will reflect changes in the dollar amount of the underwriters’ discount and

---

\* *Preliminary, subject to change.*

original issue discount/premium, if any, but will not change the selling compensation per \$1,000 of par amount of Bonds from the selling compensation that would have been received based on the purchase price in the winning bid and the Initial Reoffering Terms. The interest rates specified by the successful bidder for the various maturities at the Initial Reoffering Terms will not change. The District anticipates that the final annual principal amounts and the final aggregate principal amount of the Series 2018A Bonds will be communicated to the successful bidder within twenty-four hours of the District's receipt of the initial public offering prices and yields of the Series 2018A Bonds (the "Initial Reoffering Terms").

### **Term Bond Option**

[The bidders may designate two or more of the consecutive serial maturities as one, but not more than one, term bond maturity equal in aggregate principal amount, and with amortization requirements corresponding, to such designated serial maturities.]

### **Optional Redemption**

The Series 2018A Bonds that are stated to mature after October 1, 2027\* may be redeemed prior to their respective maturities, at the option of the District, from any moneys that may be made available for such purpose, either in whole or in part, on any date beginning [October 1, 2027\*], at a redemption price of par, together with the interest accrued thereon to the date fixed for redemption.

---

\* *Preliminary, subject to change.*  
28620966.4

**Bid Parameters Table for the Series 2018A Bonds \***

<b>INTEREST</b>		<b>PRICING</b>	
Anticipated Delivery Date:	_____, 2018	Max. Aggregate Bid Price:	____%
Interest Payment Dates:	___/1 and ___/1	Min. Aggregate Bid Price:	____%
First Interest:	___/1/18	High Coupon per Maturity:	20__ to 20__ – ____% 20__ to 20__ – ____%
Coupon Multiples:	1/8 or 1/20 of 1%	Min. Coupon per Maturity:	20__ to 20__ – None 20__ to 20__ – ____%
Zero Coupons:	Not Permitted	Max. True Interest Cost:	____%
Split Coupons:	Not Permitted	Low Price Per Maturity:	____%
<b>PRINCIPAL</b>		<b>PROCEDURAL</b>	
Post-bid Principal Increases in Aggregate:	10%	Sale Date and Time:	Bids due _____, 2018, at _____ a.m. Virginia Beach Time
Post-bid Principal Reductions in Aggregate:	10%	Bid Submission:	Electronic bids through BiDCOMP/PARITY Only
First Optional Redemption:	_____ 1, 20__ at _____%	All or None?	Yes
Term Bonds:	(Any two or more consecutive maturities may be designated as term bonds)	Bid Award Method:	Lowest TIC
		Good Faith Deposit:	1% of aggregate par amount, as more fully described on page 7, under “Good Faith Deposit”

***Electronic Bidding and Bidding Procedures***

**Registration to Bid**

All prospective bidders must be contracted customers of i-Deal LLC’s BiDCOMP/Parity Competitive Bidding System. If you do not have a contract with BiDCOMP/Parity, call (212) 404-8102 to inquire about becoming a customer. By submitting a bid for the Series 2018A Bonds, a prospective bidder represents and warrants to the District that such bidder’s bid for the

\* *Subject to the detailed provisions of this Notice of Sale.*

purchase of the Bonds (if a bid is submitted in connection with the sale) is submitted for and on behalf of such prospective bidder by an officer or agent who is duly authorized to bind the prospective bidder to a legal, valid and enforceable contract for the purchase of the Bonds. By contracting with BiDCOMP/Parity a prospective bidder is not obligated to submit a bid in connection with the sale.

**IF ANY PROVISIONS OF THIS NOTICE OF SALE SHALL CONFLICT WITH INFORMATION PROVIDED BY BiDCOMP/Parity AS APPROVED PROVIDER OF ELECTRONIC BIDDING SERVICES, THIS NOTICE OF SALE, AS IT MAY BE AMENDED BY THE DISTRICT AS DESCRIBED WITHIN, SHALL CONTROL.** Further information about BiDCOMP/Parity, including any fee charged, may be obtained from BiDCOMP/Parity at (212) 404-8102.

### **Disclaimer**

Each prospective bidder shall be solely responsible to register to bid via BiDCOMP/Parity. Each qualified prospective bidder shall be solely responsible to make necessary arrangements to access BiDCOMP/Parity for purposes of submitting its bid in a timely manner and in compliance with the requirements of this Notice of Sale. Neither the District nor BiDCOMP/Parity shall have any duty or obligation to undertake such registration to bid for any prospective bidder or to provide or assure such access to any qualified prospective bidder, and neither the District nor BiDCOMP/Parity shall be responsible for a bidder's failure to register to bid or for proper operation of, or have any liability for any delays or interruptions of, or any damages caused by, BiDCOMP/Parity. The District is using BiDCOMP/Parity as a communication mechanism, and not as the District's agent, to conduct the electronic bidding for the Series 2018A Bonds. The District is not bound by any advice and determination of BiDCOMP/Parity to the effect that any particular bid complies with the terms of this Notice of Sale and in particular the "Bid Specifications" hereinafter set forth. All costs and expenses incurred by prospective bidders in connection with their registration and submission of bids via BiDCOMP/Parity are the sole responsibility of the bidders; and the District is not responsible, directly or indirectly, for any of such costs or expenses.

If a prospective bidder encounters any difficulty in registering to bid or submitting, modifying or withdrawing a bid for the Series 2018A Bonds, it should telephone BiDCOMP/Parity and notify Public Financial Management, Inc., the District's financial advisor, by telephone at (703) 741-0175. After receipt of bids is closed, the District through BiDCOMP/Parity will indicate the apparent successful bidder. Such message is a courtesy only for viewers, and does not constitute the award of the Bonds. Each bid will remain subject to review by the District to determine its true interest cost rate and compliance with the terms of this Notice of Sale.

### **Bidding Procedures**

Bids must be submitted electronically for the purchase of the Bonds (all or none "AON") by means of the Hampton Roads Sanitation District AON Bid Form (the "Bid Form") via BiDCOMP/Parity. Bids must be communicated electronically to BiDCOMP/Parity by \_\_\_ a.m., Virginia Beach, Virginia Time on the Scheduled Bid Date unless postponed as described herein

(see “Change of Bid Date and Closing Date; Other Changes to Notice of Sale”). Prior to that time, a prospective bidder may input and save the proposed terms of its bid in BiDCOMP/Parity. Once the final bid has been saved in BiDCOMP/Parity, the bidder may select the final bid button in BiDCOMP/Parity to submit the bid to BiDCOMP/Parity. Once the bids are released electronically via BiDCOMP/Parity to the District, each bid will constitute an **IRREVOCABLE** offer to purchase the Series 2018A Bonds on the terms therein provided. For purposes of the electronic bidding process, the time as maintained on BiDCOMP/Parity shall constitute the official Virginia Beach, Virginia Time. For information purposes only, bidders are requested to state in their bids the true interest cost to the District, as described under “Award of Series 2018A Bonds” below, represented by the rate or rates of interest and the bid price specified in their respective bids.

**REVOCABLE BIDS ARE NOT PERMITTED.**

**By submitting a bid for the Series 2018A Bonds, each underwriter certifies it has an established industry reputation for underwriting new issuances of municipal bonds.** The District will not accept bids from firms without an established industry reputation for underwriting new issuances of municipal bonds.

No bids will be accepted in written form, by facsimile transmission or in any other medium or on any system other than by means of the Bid Form via BiDCOMP/Parity. No bid will be received after the time for receiving such bids specified above.

**Good Faith Deposit**

After receipt of bids is closed and prior to the award (no later than \_\_\_ p.m., Virginia Beach, Virginia time), the apparent successful bidder indicated on BidCOMP/Parity must submit a good faith deposit (the “Deposit”) for 1% of the amount of the Bid Maturity Schedule to the District by wire transfer. The award to the apparent successful bidder is contingent upon receipt of the Deposit by not later than \_\_\_\_\_ p.m. (Virginia Beach, Virginia Time) on the date of the sale, and the Series 2018A Bonds will not be awarded to such bidder until District has confirmation of receipt of the Deposit.

Wire instructions for the Deposit are as follows:

Bank Name: \_\_\_\_\_  
ABA: \_\_\_\_\_  
Account Name: \_\_\_\_\_  
Account Number: \_\_\_\_\_  
Attention: \_\_\_\_\_, \_\_\_\_\_

Reference your company, company contact, phone number or other helpful identification.

**Award of Series 2018A Bonds**

Award or rejection of bids will be made by the District prior to \_\_\_ p.m., Virginia Beach, Virginia Time on the date of receipt of bids. **ALL BIDS SHALL REMAIN FIRM UNTIL \_\_\_\_\_**

P.M., VIRGINIA BEACH, VIRGINIA TIME, ON THE DATE OF RECEIPT OF BIDS. An award of the Series 2018A Bonds, if made, will be made by the District within such five-hour period of time (\_\_\_\_ a.m. – \_\_\_ p.m.).

The Series 2018A Bonds will be awarded to the bidder offering to purchase the Series 2018A Bonds at the lowest “True or Canadian” interest cost (“TIC”), such cost to be calculated by determining the annual interest rate (compounded semi-annually) at which the sum of the payments of the principal of and interest on the Series 2018A Bonds equals the aggregate price bid of the Series 2018A Bonds. If two or more bidders offer to purchase the Series 2018A Bonds at the same lowest TIC, the successful bidder will be selected by the District by lot from among all such bidders. There will be no auction.

Award of the Series 2018A Bonds or rejection of bids will be made by or on behalf of the District on the date above stated for the receipt of bids. The proceeds of the Deposit will be held as security for the performance of the successful bidder’s bid and applied to the purchase price of the Series 2018A Bonds, but, in the event the successful bidder shall fail to comply with the terms of its bid, the Deposit will be retained as and for full liquidated damages. No interest will be allowed thereon.

### **Initial Reoffering Terms**

The apparent successful bidder will provide the initial public offering prices to the public (the “Initial Public Offering Prices”) and yields of each maturity of the Series 2018A Bonds (collectively the “Initial Reoffering Terms”) within 30 minutes of receipt of notice that it is the apparent winning bidder.

### **Right of Rejection**

The District expressly reserves the right (i) to waive any informalities, (ii) to reject all bids, any incomplete bid or any bid not fully complying with all of the requirements set forth herein, and (iii) to solicit new bids or proposals for the sale of the Series 2018A Bonds or otherwise provide for the public sale of the Series 2018A Bonds if all bids are rejected or the winning bidder defaults, including, without limitation, sale of the Series 2018A Bonds to one or more of the losing or rejected bidders without regard to their original bid or its relationship to any other bid.

The District reserves the right to reject bids on the Series 2018A Bonds.

### ***Changes to Bid Date and Time; Changes to Notice of Sale***

The District reserves the right to postpone, from time to time, the date established for the receipt of bids and will undertake to announce any such change via TM3 ([www.tm3.com](http://www.tm3.com)).

Any postponement of the bid date will be announced via TM3 not later than one hour prior to the announced time for receipt of the bids. An alternative bid date and time will be announced via TM3 at least 18 hours prior to such alternative bid date.



On such alternative bid date and time, the District will accept bids for the purchase of the Series 2018A Bonds, such bids to conform in all respects to the provisions of this Notice of Sale, except for the changes in the date and time for bidding and any other changes announced via TM3 at the time the bid date and time are announced.

The District may change the scheduled delivery date for the Series 2018A Bonds by notice given in the same manner as set forth for a change in the date for the receipt of bids.

The District reserves the right to otherwise change this Notice of Sale. The District anticipates that it would communicate any such changes via TM3 by \_\_\_ p.m., Virginia Beach, Virginia Time on the date prior to the scheduled date for receipt of bids but no later than one hour prior to the scheduled time and date for receipt of bids.

### **Establishment of Issue Price**

[NTD – HRSD should consider, as an alternative to hold the price rule, stating in the Notice of Sale that if HRSD receives fewer than 3 qualifying bids, it will not award bonds, rather than invoking hold the price.]

The successful bidder shall assist the District in establishing the issue price of the Series 2018A Bonds and shall execute and deliver to the District prior to Closing a certificate acceptable to Bond Counsel setting forth the reasonably expected Initial Public Offering Price, or the sales price or prices of the Series 2018A Bonds, together with the supporting pricing wires or equivalent communications, substantially in the form attached hereto as Exhibit A, with such modifications as may be appropriate or necessary in the reasonable judgment of the successful bidder, the District or Bond Counsel.

The District intends that the provisions of Treasury Regulation Section 1.148-1(f)(3)(i) (defining “competitive sale” for purposes of establishing the issue price of the Bonds) will apply to the initial sale of the Bonds (the “competitive sale requirements”) because:

- (1) the District shall disseminate this Notice of Sale to potential underwriters in a manner that is reasonably designed to reach potential underwriters;
- (2) all bidders shall have an equal opportunity to bid;
- (3) the District may receive bids from at least three underwriters of municipal bonds who have established industry reputations for underwriting new issuances of municipal bonds; and
- (4) the District anticipates awarding the sale of the Series 2018A Bonds to the bidder that submits a firm offer to purchase the Series 2018A Bonds at the highest price (or lowest interest cost), as set forth in this Notice of Sale.

If the District receives less than three bids that conform to the parameters contained herein such that the competitive sale requirements are not satisfied, the District intends to treat the Initial Public Offering Price of each maturity of the Series 2018A Bonds as the issue price of that maturity (the “hold-the-offering-price rule”). Consequently, bidders should assume for

purposes of making their bid that for each maturity of the Series 2018A Bonds, the District will treat the Initial Public Offering Prices as of the Sale Date of the Series 2018A Bonds as the issue price of the Series 2018A Bonds. The District will advise the apparent winning bidder within one hour of receipt of bids if the hold the offering price rule will apply. If the competitive sale requirements are not satisfied, the issue price certificate shall be modified as necessary in the reasonable judgment of Bond Counsel and the District.

By submitting a bid, the successful bidder shall, on behalf of the underwriters participating in the purchase of the Series 2018A Bonds, (i) confirm that the underwriters have offered or will offer each maturity of the Series 2018A Bonds to the public on or before the date that the Series 2018A Bonds are awarded by the District to the successful bidder (“Sale Date”) at the Initial Public Offering Price set forth in the bid submitted by the winning bidder, and (ii) agree, on behalf of the underwriters participating in the purchase of the Series 2018A Bonds, that the underwriters will neither offer nor sell any maturity of the Series 2018A Bonds to any person at a price that is higher than the Initial Public Offering Price for such maturity during the period starting on the Sale Date and ending on the earlier of the following:

- (1) the close of the fifth business day after the Sale Date; and
- (2) the date on which the underwriters have sold at least 10% of that maturity of the Series 2018A Bonds to the public at a price that is no higher than the Initial Public Offering Price for such maturity.

The winning bidder shall promptly advise the District when the underwriters have sold 10% of that maturity of the Series 2018A Bonds to the public at a price that is no higher than the Initial Public Offering Price if that occurs prior to the close of the fifth (5<sup>th</sup>) business day after the Sale Date.

The District acknowledges that, in making the representation set forth above, the successful bidder will rely on (i) the agreement of each underwriter to comply with the hold-the-offering-price rule, as set forth in an agreement among underwriters and the related pricing wires, (ii) in the event a selling group has been created in connection with the initial sale of the Series 2018A Bonds to the public, the agreement of each dealer who is a member of the selling group to comply with the hold-the-offering-price rule, as set forth in a selling group agreement and the related pricing wires, and (iii) in the event that an underwriter is a party to a retail distribution agreement that was employed in connection with the initial sale of the Series 2018A Bonds to the public, the agreement of each broker-dealer that is a party to such agreement to comply with the hold-the-offering-price rule, as set forth in the retail distribution agreement and the related pricing wires. The District further acknowledges that each underwriter shall be solely liable for its failure to comply with its agreement regarding the hold-the-offering-price rule and that no underwriter shall be liable for the failure of any other underwriter, or of any dealer who is a member of a selling group, or of any broker-dealer that is a party to a retail distribution agreement to comply with its corresponding agreement regarding the hold-the-offering-price rule as applicable to the Series 2018A Bonds.

By submitting a bid, each bidder confirms that:

(i) any agreement among underwriters, any selling group agreement and each retail distribution agreement (to which the bidder is a party) relating to the sale of the Series 2018A Bonds to the public, together with the related pricing wires, contains or will contain language obligating each underwriter, each dealer who is a member of the selling group, and each broker-dealer that is a party to such retail distribution agreement, as applicable, to

(A) report the prices at which it sells to the public the Series 2018A Bonds of each maturity allotted to it until it is notified by the successful bidder that either the 10% test has been satisfied as to the Series 2018A Bonds of that maturity or all Series 2018A Bonds of that maturity have been sold to the public and

(B) comply with the hold-the-offering-price rule, if and for so long as directed by the successful bidder and in the related pricing wires, and

(ii) any agreement among underwriters relating to the sale of the Series 2018A Bonds to the public, together with the related pricing wires, contains or will contain language obligating each underwriter that is a party to a retail distribution agreement to be employed in connection with the initial sale of the Series 2018A Bonds to the public to require each broker-dealer that is a party to such retail distribution agreement to

(A) report the prices at which it sells to the public the unsold Series 2018A Bonds of each maturity allotted to it until it is notified by the successful bidder or such underwriter that either the 10% test has been satisfied as to the Series 2018A Bonds of that maturity or all Series 2018A Bonds of that maturity have been sold to the public and

(B) comply with the hold-the-offering-price rule, if and for so long as directed by the successful bidder or such underwriter and as set forth in the related pricing wires.

Sales of any Series 2018A Bonds to any person that is a related party to an underwriter shall not constitute sales to the public for purposes of this Notice of Sale. Further, for purposes of this Notice of Sale:

- (i) “public” means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an underwriter or a related party,
- (ii) “underwriter” means (A) any person that agrees pursuant to a written contract with the District (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Series 2018A Bonds to the public and (B) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (A) to participate in the initial sale of the Series 2018A Bonds to the public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Series 2018A Bonds to the public), and
- (iii) a purchaser of any of the Series 2018A Bonds is a “related party” to an underwriter if the underwriter and the purchaser are subject, directly or

indirectly, to (i) at least 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (ii) more than 50% common ownership of their capital interests or profits interests, if both entities are partnerships (including direct ownership by one partnership of another), or (iii) more than 50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership (including direct ownership of the applicable stock or interests by one entity of the other).

### *Closing; Miscellaneous*

#### **Undertakings of the Successful Bidder**

The successful bidder shall make a bona fide public offering of all of the Series 2018A Bonds to the general public (excluding bond houses, brokers, or similar persons acting in the capacity of underwriters or wholesalers who are not purchasing for their own account as ultimate purchasers without a view to resell) and will, within 30 minutes after being notified of the award of the Series 2018A Bonds, advise the District's financial advisor of the Initial Reoffering Terms. Prior to the delivery of the Series 2018A Bonds, the successful bidder will furnish a certificate acceptable to Bond Counsel as to the "issue price" of the Series 2018A Bonds within the meaning of Section 1273 of the Internal Revenue Code of 1986. A draft of such issue price certificate is attached as Exhibit A to this Notice of Sale, which draft anticipates meeting the competitive sales requirement. It will be the responsibility of the successful bidder to institute such syndicate reporting requirements, to make such investigation, or otherwise to ascertain the facts necessary to enable it to make such certification with reasonable certainty.

CUSIP numbers are to be applied for by the successful bidder with respect to the Series 2018A Bonds. The District will assume no obligation for the assignment of such numbers or for the correctness of such numbers, and no error with respect thereto shall constitute cause for failure or refusal by the successful bidder to accept delivery or make payment for the Series 2018A Bonds.

The District expects the successful bidder to deliver copies of the final Official Statement to persons to whom such bidder initially sells the Series 2018A Bonds and the Municipal Securities Rulemaking Board (the "MSRB"). The successful bidder will be required to acknowledge receipt of such final Official Statement, to certify that it has made delivery of the final Official Statement to such repositories, to acknowledge that the District expects the successful bidder to deliver copies of such final Official Statement to persons to whom such bidder initially sells the bonds and to certify that the bonds will only be offered pursuant to the final Official Statement and only in states where the offer is legal.

To assist the successful bidder in complying with the requirements of the Rule, as amended, the MSRB will be provided annual information respecting the District, including audited financial statements.

## **Official Statements**

After the award of the Series 2018A Bonds, the District will prepare copies of the Official Statement (no more than 300) and will include therein such additional information concerning the reoffering of the Series 2018A Bonds as the successful bidder may reasonably request; provided, however, that the District will not include in the Official Statement an “NRO” (“not reoffered”) designation with respect to any maturity of the Series 2018A Bonds. The successful bidder will be responsible to the District in all respects for the accuracy and completeness of information provided by such successful bidder with respect to such reoffering. The District expects the successful bidder to deliver copies of such Official Statement to persons to whom such bidder initially sells the Series 2018A Bonds and to the Electronic Municipal Market Access System (“EMMA”) administered by the Municipal Securities Rulemaking Board. The successful bidder will be required to acknowledge receipt of such Official Statement, to certify that it has made delivery of the Official Statement to EMMA and to acknowledge that the District expects the successful bidder to deliver copies of such Official Statement to persons to whom such bidder initially sells the Series 2018A Bonds and to certify that the Series 2018A Bonds will only be offered pursuant to such Official Statement and only in states where the offer is legal. The successful bidder will be responsible to the District in all respects for the accuracy and completeness of information provided by such successful bidder with respect to such reoffering.

Official Statements will be provided within seven (7) business days after the date of the award of the Series 2018A Bonds.

## **Delivery**

The Series 2018A Bonds will be delivered on or about \_\_\_\_\_, 2017, in New York, New York, at DTC against payment of the purchase price therefor (less the amount of the Deposit) in Federal Reserve funds.

The approving opinion of Norton Rose Fulbright US LLP, Washington D.C. in substantially the form appearing in the Preliminary Official Statement, will be furnished without cost to the successful bidder. There will also be furnished the usual closing papers, including certifications as to the Official Statement and no-litigation.

## **Conflict Waiver**

Norton Rose Fulbright US LLP is serving as Bond Counsel in connection with the issuance and sale of the Series 2018A Bonds. By placing a bid, each bidder represents that it understands that Norton Rose Fulbright US LLP, in its capacity as Bond Counsel, represents the District, and the successful bidder waives any conflict of interest that Norton Rose Fulbright US LLP’s involvement in connection with the issuance and sale of the Series 2018A Bonds to such successful bidder presents.

## **Additional Information**

Further information will be furnished upon application to Public Financial Management, Inc., at (703) 741-0175.

28620966.4

**HAMPTON ROADS SANITATION DISTRICT**

**By:**

**EXHIBIT A**

**[\$PRINCIPAL AMOUNT]**

**HAMPTON ROAD SANITATION DISTRICT  
SUBORDINATE WASTEWATER REVENUE BONDS, SERIES 2017A**

**ISSUE PRICE CERTIFICATE**

**(for Competitive Sales to be modified if Hold the Offering Price Rule applies)**

The undersigned, on behalf of [NAME OF UNDERWRITER] (“[SHORT NAME OF UNDERWRITER]”), hereby certifies as set forth below with respect to the sale of the above-captioned obligations (the “Bonds”) of Hampton Roads Sanitation District (the “Issuer”).

**1. *Reasonably Expected Initial Offering Price.***

(a) As of the Sale Date, the reasonably expected initial offering prices of the Bonds to the Public by [SHORT NAME OF UNDERWRITER] are the prices listed in Schedule A (the “Expected Offering Prices”). The Expected Offering Prices are the prices for the Maturities of the Bonds used by [SHORT NAME OF UNDERWRITER] in formulating its bid to purchase the Bonds. Attached as Schedule B is a true and correct copy of the bid provided by [SHORT NAME OF UNDERWRITER] to purchase the Bonds.

(b) [SHORT NAME OF UNDERWRITER] was not given the opportunity to review other bids prior to submitting its bid.

(c) The bid submitted by [SHORT NAME OF UNDERWRITER] constituted a firm offer to purchase the Bonds.

**2. *Defined Terms.***

(a) *Maturity* means Bonds with the same credit and payment terms. Bonds with different maturity dates, or Bonds with the same maturity date but different stated interest rates, are treated as separate Maturities.

(b) *Public* means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter. The term “related party” for purposes of this certificate generally means any two or more persons who have greater than 50 percent common ownership, directly or indirectly.

(c) *Sale Date* means the first day on which there is a binding contract in writing for the sale of a Maturity of the Bonds. The Sale Date of the Bonds is [DATE].

(d) *Underwriter* means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to participate

in the initial sale of the Bonds to the Public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Bonds to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents [SHORT NAME OF UNDERWRITER]'s interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in the Tax Certificate with respect to the Bonds and with respect to compliance with the federal income tax rules affecting the Bonds, and by Norton Rose Fulbright US LLP in connection with rendering its opinion that the interest on the Bonds is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that it may give to the Issuer from time to time relating to the Bonds.

[NAME OF UNDERWRITER]

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

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_



**SCHEDULE A**  
**EXPECTED OFFERING PRICES**

*(Attached)*

HRSD COMMISSION MEETING MINUTES  
November 28, 2017

ATTACHMENT #3

AGENDA ITEM 6. – 1317 Vernon Street, Vernon Street and Franklin Road, Gloucester Point, Virginia (RPC Numbers: 24250, 11551, 20687, 20468, 20296 and 33746)  
Disposition of Real Property

- [VIMS Letter](#)
- [Real Estate Purchase Agreement](#)
- [Facilities Orientation Map](#)

August 8, 2016

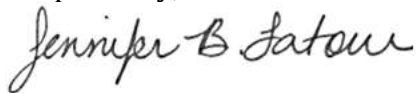
Ayanna Williams, SR/WA  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

Dear Ms. Williams:

Per our meeting on July 6, 2016, I write today to provide you with a written commitment that the Virginia Institute of Marine Science (VIMS) intends to purchase the three parcels of land that the Hampton Roads Sanitation District (HRSD) currently owns and the three that it will purchase from Ms. Donna Cline on Vernon Street in Gloucester Point, Virginia; specifically, tax map numbers 51(A)-11, 11B, 11D, 11E, 11F, and 11G.

VIMS looks forward to working with HRSD on this property acquisition.

Respectfully,



Jennifer B. Latour  
Chief Financial & Administrative Officer

cc: Joe Martinez, Chief Operations Officer  
Mark Brabham, Director, Facilities Management

## **REAL ESTATE PURCHASE AGREEMENT**

### ARTICLE I

#### Basic Terms

**Date:**

**Seller:** **HAMPTON ROADS SANITATION DISTRICT, A  
POLITICAL SUBDIVISION OF THE COMMONWEALTH  
OF VIRGINIA**

**Purchaser:** COMMONWEALTH OF VIRGINIA, WILLIAM & MARY

**Property:** The Real Property, the Personal Property, and the Leases are sometimes hereinafter referred to collectively as the "Property."

**Real Property:** The real estate consisting of approximately **0.5** acres of land and commonly known as **1317 Vernon Street** located in the County of **Gloucester**, Virginia more particularly described on **Exhibit A**.

**Personal Property:** No personal property is being conveyed with the sale of the Real Property.

**Leases:** None.

**Current Use:** The Property consists of undeveloped lots.

**Purchase Price:** \$104,000.00

**Deposit:** \$10.00

**Effective Date:** The date upon which this Real Estate Purchase Agreement (this "Agreement") is finally executed by Seller and by Purchaser as required by Section 3.01 of this Agreement.

**Due Diligence Period:** The Effective Date commences on **XX XX, 2017** and ends **thirty (30)** days after the Effective Date.

**Due Diligence Documents:** The documents listed on **Exhibit D**.

**Settlement Date:** Shall be held on or before **XX XX, 201X** or as soon thereafter as practical allowing a reasonable time for preparation and approval of closing documents and correction of defects reported as a result of any title examination, survey or inspections of the Property by Purchaser.

**Purchaser's Notice  
Address:**

**CWM/Virginia Institute of Marine Science  
PO Box 1346  
Gloucester Point, Virginia 23062-1346**

**Seller's Notice Address:**

**Hampton Roads Sanitation District  
c/o Ayanna R. Williams, SR/WA  
Real Estate Manger  
HRSD  
P.O. Box 5911  
Virginia Beach, Virginia 23471-0911**

**with copy to:**

**Conway H. Sheild, III, Esq.  
Matthew D. Meadows, Esq.  
Jones, Blechman, Woltz & Kelly, P.C.  
701 Town Center Drive, Suite 800  
Newport News, Virginia 23606**

**Seller's Broker:**

**N/A**

**Purchaser's Broker:**

**N/A**

**Settlement Agent:**

**TBD**

**List of Exhibits**

Exhibit A	Real Property	
Exhibit B	Personal Property	<b>NOT USED</b>
Exhibit C	Form of Bill of Sale and Assignment Agreement	
Exhibit D	Due Diligence Documents	
Exhibit E	Exceptions as to Seller's Representations and Warranties	
Exhibit F	Form of Seller's Certificate as to Representations and Warranties	
ExhibitG	Leases	<b>NOT USED</b>

Exhibit H	Assignment of Leases	<b>NOT USED</b>
Exhibit I	Rent Roll	<b>NOT USED</b>
Exhibit J	Form of Tenant Estoppel	<b>NOT USED</b>

## ARTICLE II

### Basic Terms; Purchase and Sale; Deposit

2.01 Basic Terms; Exhibits. Each capitalized term used but not defined below, shall have the meaning set forth in Article I of this Agreement. If a conflict exists between Article I of this Agreement and remaining provisions of this Agreement, the remaining provisions will control. Each of the Exhibits listed in Article I are incorporated into the terms of this Agreement by this reference.

2.02 Purchase and Sale. Subject to the terms of this Agreement, Seller agrees to sell to Purchaser, and Purchaser agrees to purchase from Seller, the Property for the Purchase Price, which shall be payable, less any deductions herein authorized, by cash, wire transfer or check from Purchaser, delivered to the Settlement Agent and disbursed to Seller at closing of the transaction contemplated by this Agreement ("Settlement").

2.03 Deposit. Upon selection of the Settlement Agent by Purchaser, the Deposit shall be delivered by Purchaser to the Settlement Agent and deposited into the Settlement Agent's escrow account. If so requested by Purchaser, Settlement Agent shall place the Deposit in an interest bearing account, in which case "Deposit" shall include all interest earned thereon. Upon default hereunder or upon any cancellation of this Agreement, the Deposit shall be paid to the person or entity lawfully entitled thereto pursuant to law or otherwise as expressly provided in this Agreement.

## ARTICLE III

### Approvals of the Commonwealth

3.01. Effective Date. This Agreement shall be effective and binding upon Purchaser only after Purchaser's execution hereof and upon approval as to form by the Office of University Counsel.

3.02 Settlement. William & Mary's authority to execute this purchase contract is governed by Subchapter 3, (§23.38.91 et seq.) of the Restructured Higher Education Administrative and Operations Act, Chapter 4.10 (§23-38.88 et seq.) of Title 23 of the Code of Virginia, effective July 1, 2006, as amended.

3.03 Phase I Environmental Assessment. Seller acknowledges that Purchaser is required to prepare a Phase I Environmental Assessment for the Property. If the Phase I Environmental Assessment shows environmental impacts or existing conditions that would adversely affect Purchaser's use of the Property and if Seller, in its sole discretion, is unwilling or unable within a reasonable period of time to have such impacts or conditions remedied, then Purchaser, at its sole option and discretion, may terminate this Agreement by giving written notice to Seller. Seller agrees that the approval of the institution's Board of Visitors is an additional condition precedent to Purchaser's obligations under this Agreement. If Purchaser fails to obtain the approvals required by this Section 3.03, the Deposit shall be returned to Purchaser immediately and no party shall have any further liability hereunder.

3.04 Appraisal. Seller acknowledges that Purchaser has not yet received an appraisal for the Property. If Purchaser's appraisal shall estimate the fair market value of the Property at less than the amount of the Purchase Price, then Purchaser may, at its sole option and discretion, terminate this Agreement by written notice to Seller. If Purchaser terminates this Agreement pursuant to this section, the Deposit shall be returned to Purchaser immediately and neither party shall have any further liability to the other under this Agreement.

## ARTICLE IV

### Due Diligence

4.01 Due Diligence Period. Purchaser shall make its various inspections of the Property and review of the books and records concerning the Property during the Due Diligence Period. The inspections and reviews of Purchaser shall be ordered or conducted by Purchaser or its agents or persons selected by Purchaser, at Purchaser's sole cost and expense. If, during the Due Diligence Period, as a result of the referenced inspections and reviews, or for any other reason, or for no reason, Purchaser shall determine in its sole discretion that it is not satisfied with the Property in any respect, then Purchaser shall have the right to terminate this Agreement by giving Seller written notice thereof, in which event the Deposit shall immediately be returned to Purchaser and neither party shall have any further liability to the other under this Agreement.

4.02 Due Diligence Documents. Seller shall furnish to Purchaser all information concerning the Property that Purchaser may reasonably request and which is in the possession or control of Seller, including but not limited to the Due Diligence Documents. Seller shall deliver the Due Diligence Documents to Purchaser not later than five (5) days after the Effective Date, at no cost to Purchaser.

4.03 Access and Inspection. Until termination of this Agreement or Settlement, Seller hereby grants to Purchaser and its agents a license to enter upon the Property for the purpose of inspecting and testing the condition or status of the Property, undertaking any and all tests and inspections Purchaser desires, and verifying Seller's representations, warranties and covenants set forth in this Agreement. Seller acknowledges and agrees that such inspections and tests may result in damage to the Property. Purchaser shall, at its expense, restore the Property to its prior condition to the extent of any changes made by its agents or representatives in the event Purchaser elects not to proceed to Settlement, which obligation shall survive the termination of this Agreement by Purchaser.

4.04 Acknowledgement. Nothing in this Agreement shall bar the Commonwealth of Virginia or any agency thereof from enforcing any applicable laws or regulations if contamination by toxic or hazardous substances is discovered on the Property.

## ARTICLE V

### Seller Representations and Warranties



Seller represents and warrants that the following are true and correct as of the date hereof and shall be true at Settlement unless disclosed on the attached **Exhibit E** or otherwise disclosed to Purchaser as provided in this Article V:

(a) Organization, Power, Authorization. Seller is duly formed, validly existing, and in good standing entity under the laws of the state of its formation and in good standing in the Commonwealth of Virginia, with all requisite powers and all governmental authorizations to conduct its business and to enter into and perform its obligations hereunder. This Agreement is duly authorized, executed and delivered by all necessary action on the part of Seller, constitutes the valid and binding agreement of Seller, and is enforceable in accordance with its terms. This representation and warranty shall also be deemed to have been made by a corporation, limited liability company, partnership, joint venture or limited partnership that is a manager, or joint venture partner with Seller in connection with the Property.

(b) No Conflict or Defaults with Other Agreements The execution and delivery of this Agreement, the completion of the transaction(s) contemplated hereby, and the fulfillment of the terms hereof, will not result in a breach of any of the terms or provisions of, or constitute a default under, or conflict with, any agreement, indenture, or other instrument to which Seller is a party or by which it or the Property is bound, or any judgment, decree, order, or award of any court, governmental body or arbitrator, or any law, rule or regulation applicable to Seller or the Property.

(c) Title; Permits. Seller is the sole owner of good and marketable fee simple title to the Property. Seller possesses all licenses, permits and approvals (the "Authorizations"), required by any governmental, non-governmental or quasi-governmental body having jurisdiction over the Property, for the ownership, operation and use of the Property for the Current Use.

(d) Books and Records. Seller has made (or, during the Due Diligence Period, will make) all books and records in its possession or control concerning the Property available for review by Purchaser.

(e) Pending Litigation; Solvency. There are no actions or suits in law or equity, or proceedings by any governmental agency, now pending, or, to the knowledge of Seller, threatened against Seller in connection with the Property, and there is no outstanding order, writ, injunction or decree of any court or governmental agency affecting the Property. Seller has received no notice of any pending or threatened litigation, or other judicial proceeding, affecting the Property, including without limitation, condemnation, exercise of the right of eminent domain or bankruptcy. There is not now pending any appeal or application to appeal current or past real or personal property tax assessments. Seller is not now insolvent nor will Seller become insolvent as a result of the transactions contemplated by this Agreement.

(f) Zoning and Regulations; Condemnation. The Property is properly zoned by the jurisdiction in which the Property is located, and Seller has no knowledge of any federal, state, county or municipal zoning or other restrictions, rules, or regulations that prevent the utilization of the Property for the Current Use; there are no eminent domain or condemnation proceedings pending against the Property, and Seller has no knowledge of such proceedings or of any intentions or plans, definite or tentative, that such proceedings might be instituted. Seller has not made and will not make, without Purchaser's prior written consent, any proffers or other commitments relating to the Property which would impose any obligation on Seller, Purchaser or their successors and assigns, to make any contribution of money or dedications of land or to construct, install or maintain any improvements of a public or private nature on or off the Property.

(g) Environmental To the best of Seller's knowledge, information and belief, there have never been, nor are there now, any underground storage tanks on the Property; nor has there been any activity on the Property that has been conducted, or is being conducted, except in compliance with all statutes, ordinances, regulations, orders, permits and common law requirements concerning (1) handling of any toxic or hazardous substances, (2) discharges of toxic or hazardous substances to the air, soil, surface water or groundwater, and (3) storage, treatment or disposal of any toxic or hazardous substances at or connected with any activity on the Property; nor is there any contamination present on or in the Property; nor is there any of the following present on or in the Property: (i) polychlorinated biphenyls or substances containing polychlorinated biphenyls; (ii) asbestos or materials containing asbestos; (iii) urea formaldehyde or materials containing urea formaldehyde; (iv) lead or lead-containing paint; or (v) radon. The term "contamination" shall mean the unconfined presence of toxic or hazardous substances on or in the Property, or arising from the Property, which may require remediation under any applicable law. For purposes of this Agreement, "hazardous substance(s)" shall have the meaning of "hazardous substance" set forth in 42 U.S.C. §9601(14), as amended, and of "regulated substance" at 42 U.S.C. §6991(7), as amended, and of any other substances that may be the subject of liability pursuant to any environmental law of the United States or the Commonwealth of Virginia. Seller agrees to indemnify and hold Purchaser harmless from any and all claims, suits, judgments, damages, fines, penalties, liability, costs and expenses (including for costs and expenses for any required abatement, environmental cleanup or remediation, reasonable fees for costs and expenses for any required attorneys, consultants and experts) resulting or arising from the discovery of any toxic or hazardous substance on, in or arising from, or contamination of, the Property, as defined above, except those that are a result of any activity of Purchaser.

(h) Other Adverse Facts. Seller knows of no materially adverse fact, affecting or threatening to affect the Property that has not been disclosed to Purchaser in writing. Between the date Seller executes this Agreement and Settlement, Seller will promptly notify Purchaser in writing of any events that occur or any facts of which it becomes aware that would make any of its representations or warranties false or misleading.

## ARTICLE VI

### Conditions Precedent

Purchaser's obligations hereunder are subject to the satisfaction of the following conditions precedent and the compliance by Seller with the following covenants:

6.01 Title. Seller shall, at Settlement, convey good and marketable fee simple title to the Property by general warranty deed, in form and substance satisfactory to Purchaser, which shall include the approval required section 3.03 (the "Deed"), and which the Settlement Agent will insure at regular rates, free and clear of all liens, and subject to only the exceptions to title to the Property found without objection by Purchaser in the Due Diligence Period (the "Permitted Exceptions").

6.02 Contract Period. Prior to Settlement, Seller covenants and agrees:

- (i) not to create any new liens, contracts or encumbrances against the Property, or proffers or other commitments relating to the Property which would impose obligations on the owner of the Property, without the prior written consent of Purchaser;
- (ii) to operate, repair, and maintain the Property in the same manner as prior to the date of this Agreement such that the Property is in substantially the same condition on the Settlement Date as on the date Seller executes this Agreement;
- (iii) to notify Purchaser promptly in writing of any litigation, arbitration or administrative hearing (including any appeal or application to appeal the current real or personal property tax assessment for the Property) before any court or government agency concerning or affecting the Property that is instituted or threatened after the date of this Agreement;
- (iv) that Purchaser and its representatives shall have the right to make a further inspection of the Property immediately before Settlement to verify the condition of the Property and Purchaser's obligation to proceed to Settlement is specifically subject to the condition of the Property complying with all the provisions of this Agreement.

## ARTICLE VII

### Settlement

7.01 Settlement. Closing of the transaction contemplated by this Agreement shall be held on the Settlement Date at the offices of Settlement Agent or as otherwise agreed by the parties. Possession of the Property shall be delivered to Purchaser at Settlement, subject only to Permitted Exceptions.

7.02 Prorations. All rents and other income from the Property, and real estate and personal property ad valorem taxes, shall be prorated on the basis of a 365 day year through the day preceding the day of Settlement. If Settlement is extended by mutual agreement, all adjustments shall be made as of the day prior to the extended date. Those incomes and expenses for which actual bills are available at Settlement shall be prorated at Settlement based on such actual bills. Those items for which actual bills were not available at Settlement shall be prorated based upon good faith estimates of the previous month's or year's bill(s), as applicable. Any post-closing adjustments shall be made within sixty (60) days after Settlement.

7.03 Seller's Deliveries. Seller shall deliver original executed counterparts of the following documents to Purchaser or its agent at Settlement:

- (a) The Deed;
- ;
- (c) Evidence satisfactory to Purchaser of Seller's authority to close the transactions contemplated by this Agreement;
- (d) An affidavit in form and substance satisfactory to the Settlement Agent sufficient to remove any exception for mechanics' and materialmen's liens and parties in possession and appropriate lien waivers, if necessary;
- (e) An affidavit certifying that Seller is not a foreign entity under the Foreign Investment in Real Property Act or similar requirement of the Commonwealth of Virginia;
- (f) Seller's certificate, in the form attached as **Exhibit F**, certifying the truth and accuracy of the representations and warranties contained in this Agreement as of the date of Settlement;
- (g) A "Settlement Statement" reflecting the Purchase Price, all prorations and adjustments and all closing costs for the transaction;
- (h) All such other documents that are normally delivered at Settlement in the jurisdiction in which the Property is located or are reasonably requested by Purchaser, its title company or its counsel.

7.04 Purchaser's Deliveries. Purchaser shall deliver the following to Seller at Settlement:

- (a) The Purchase Price;
- (b) The Settlement Statement; and

(c) All such other documents that are normally delivered at Settlement in the jurisdiction in which the Property is located or are reasonably requested by Seller or its counsel.

## ARTICLE VIII

### Risk of Loss; Default

8.01 Risk of Loss. Until Settlement, all risk of any loss or damage to all or part of the Property, including eminent domain, shall be and remain on Seller. In the event that such loss or damage shall occur, Seller shall give Purchaser written notice pursuant to this Agreement of such loss or damage along with its estimate of the amount of the loss or damage, within five (5) calendar days after such event occurs. Purchaser shall have the option, in its sole discretion, to (i) terminate this Agreement or (ii) proceed to Settlement without reduction in the Purchase Price provided Seller assigns all its interest in insurance or other payments for loss or damage to the Property. In the event of condemnation or threatened condemnation of all or any part of the Property prior to Settlement, Purchaser shall have the option, in its sole discretion, to (i) terminate this Agreement or (ii) proceed to Settlement without reduction in the Purchase Price provided the rights to any condemnation award are assigned, credited or paid to Purchaser at Settlement.

8.02. Default by Purchaser. If, prior to Settlement, Purchaser defaults in performing any of its obligations under this Agreement, including its obligation to purchase the Property, despite the readiness and willingness of Seller, Seller's remedy for such default shall be to terminate this Agreement and pursue any legal remedies Seller may have. Nothing in this Agreement shall be construed as a waiver of the sovereign immunity of Purchaser or of the Commonwealth of Virginia.

8.03 Default by Seller. If Seller fails or refuses to consummate the sale of the Property to Purchaser pursuant to this Agreement or fails to perform any of Seller's other obligations hereunder for any reason other than Purchaser's failure to perform Purchaser's obligations under this Agreement, then Purchaser shall have the right to (i) specific performance of the Seller's obligations under this Agreement, or (ii) terminate this Agreement by giving written notice thereof to Seller prior to or at Settlement, whereupon neither party hereto shall have any further rights or obligations hereunder, and the Escrow Agent shall deliver the Deposit to Purchaser, and/or (iii) pursue action against Seller for damages.

## ARTICLE IX

### Miscellaneous

9.01 Brokerage. Each party represents to the other that it has not engaged the services of any real estate broker or agent in connection with the Property and/or this Agreement

9.02 Closing Costs. Seller shall pay for the preparation of the Deed and any other

documents it is required to provide hereunder, its own attorney's fees, and any other charges customarily paid by a seller of real estate in the jurisdiction in which the Property is located, including applicable recordation taxes and clerk's fees. Purchaser shall pay for its own due diligence costs, any owner's title policy, any recordation fees that lawfully apply to Purchaser and its attorneys' fees.

9.03 Prior Agreements. This Agreement supersedes any and all prior understandings and agreements between the parties and constitutes the entire agreement between them. No representations, warranties, conditions or statements, oral or written, not contained herein shall be considered a part hereof. This Agreement may not be amended, altered, or modified except by an instrument in writing signed by the party sought to be charged therewith in the same manner as the party signed this Agreement.

9.04 Successors and Assigns. Subject to the provisions hereof, this Agreement shall bind and inure to the benefit of the parties hereto, their heirs, personal representatives, successors and permitted assigns. No assignment of this Agreement shall be permitted except with the written consent of the other party, which consent shall not be unreasonably withheld.

9.05 Survival; No Merger into Deed. The warranties, representations and terms of this Agreement shall survive delivery of the Deed and shall not be merged therein.

9.06 Notices. Any notices required or permitted to be given hereunder shall be deemed to have been properly given if sent by (i) United States certified or registered mail, return receipt requested, postage prepaid; (ii) a nationally recognized overnight delivery service; or (iii) personal delivery. Notice shall be addressed to the party's address listed in Article I or to such other persons or addresses as the parties may hereafter direct by written notice. Notices sent by (i) the United States Postal Service shall be deemed delivered two (2) days after being deposited with the United States Postal Service; (ii) notices delivered by a nationally recognized overnight delivery service shall be deemed delivered one day after depositing with such carrier; and (iii) hand delivered notices shall be deemed delivered upon actual delivery to the recipient.

9.07 Governing Law; Va. Code; Consent to Jurisdiction. Notwithstanding the place where this Agreement may be executed by any of the parties hereto, the parties expressly agree that all terms and provisions hereof shall be construed and enforced in accordance with the laws of the Commonwealth of Virginia. All references to "Va. Code." shall be deemed to be references to the Virginia Code section referenced in effect as of the date of this Agreement, and if appropriate, as updated or amended after the date hereof. Seller hereby consents to the jurisdiction of the courts of the Commonwealth of Virginia.

9.08 Days. If any action is required to be performed, or if any notice, consent or other communication is given, on a day that is a Saturday or Sunday or a legal federal or Commonwealth of Virginia holiday, such performance shall be deemed to be required, and such notice, consent or other communication shall be deemed to be given on the first business day following such Saturday, Sunday or legal federal or Commonwealth of Virginia holiday. Unless otherwise specified herein, all references herein to a "day" or "days" shall refer to calendar days and not business days. A "business day" shall mean any day other than a Saturday, Sunday or legal federal or Commonwealth of Virginia holiday.

9.09 Presumptions. The parties acknowledge that each party and its counsel have participated in the negotiation and preparation of this Agreement. This Agreement shall be construed without regard to any presumption or other rule requiring construction against the party causing the Agreement to be drafted. No presumption shall be created in favor of or against Purchaser with respect to the interpretation of any term or provision hereof due to the fact that this Agreement may have been prepared by Purchaser or by the Office of the Attorney General of the Commonwealth of Virginia.

## ARTICLE X

### Additional Conditions of the Sale Agreed to by Both Parties

10.01 Demolition of Structure. As a condition of the property sale, the Seller stipulated and the Purchaser agreed to demolish a masonry garage located on the Purchaser's property at 4 Riverview Avenue (Lot 3 Block D) by no later than September 2019.

10.02 Line of Sight Agreement. As a further condition of the property sale, the Seller stipulated and the Purchaser agreed not to build or put anything on the property that would obstruct the line of site to the water from the Seller's sister's residence (Ms. Yvonne H. Dix, 26 Brooklyn Avenue). This line of site agreement will expire on September 1, 2041.

[Signatures Page to follow]

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals.

SELLER:

HAMPTON ROADS SANITATION DISTRICT,  
a Political Subdivision of the Commonwealth of  
Virginia

\_\_\_\_\_

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

COMMONWEALTH OF VIRGINIA  
CITY/COUNTY OF \_\_\_\_\_, to wit:

The foregoing Agreement was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_,  
20\_\_, by \_\_\_\_\_, Property Owner and Seller .

My commission expires: \_\_\_\_\_  
My commission number: \_\_\_\_\_

\_\_\_\_\_  
Notary Public



PURCHASER:

COMMONWEALTH OF VIRGINIA

\_\_\_\_\_  
WILLIAM & MARY

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

Title: Senior Vice President for Finance &  
Administration

Date: \_\_\_\_\_

COMMONWEALTH OF VIRGINIA

CITY/COUNTY OF \_\_\_\_\_, to wit:

The foregoing Agreement was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by Samuel E. Jones, acting as Senior Vice President for Finance & Administration of the Commonwealth of Virginia, William & Mary, on behalf of the agency.

My commission expires: \_\_\_\_\_

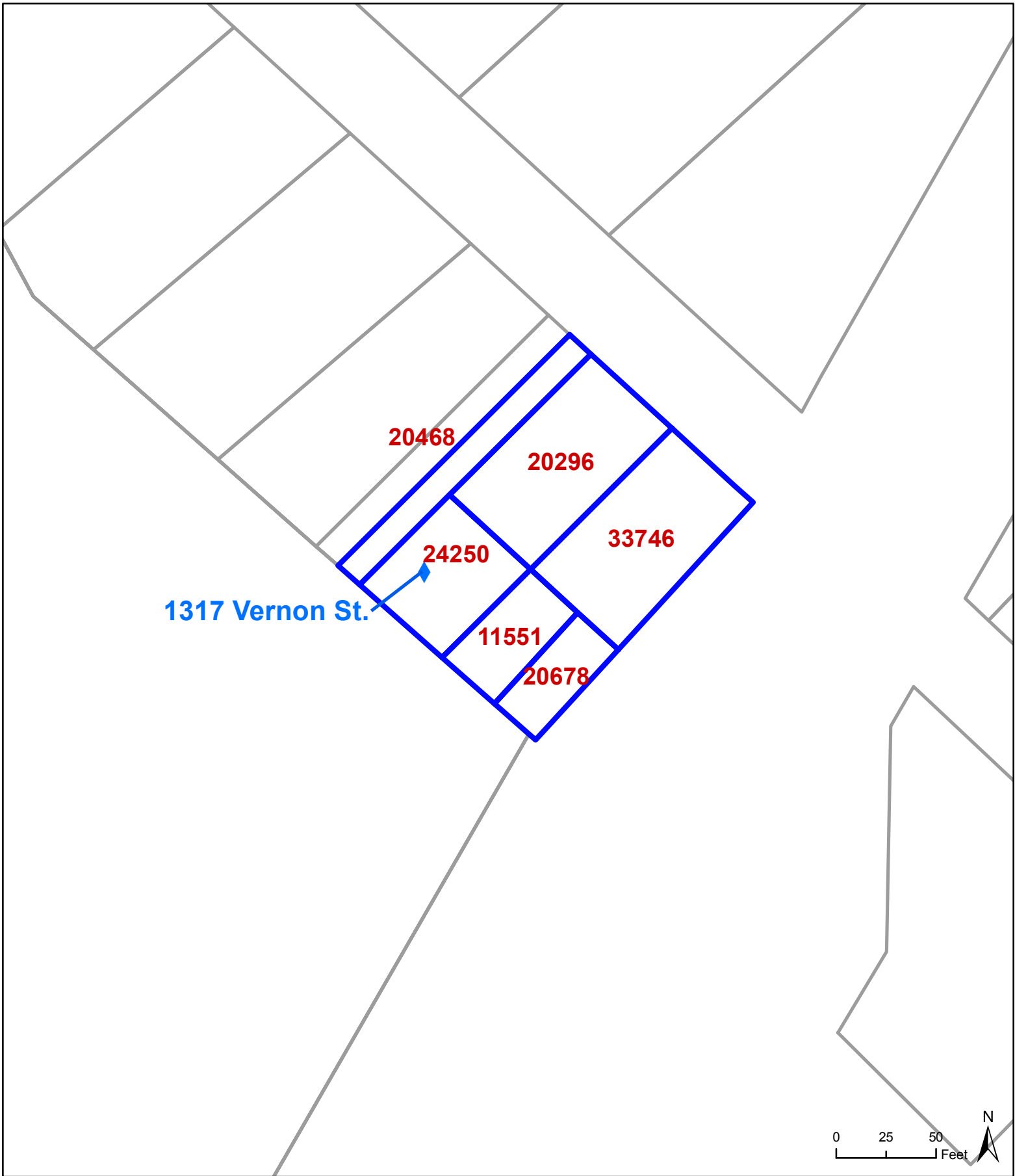
My commission number: \_\_\_\_\_

\_\_\_\_\_  
Notary Public



APPROVED AS TO FORM on this \_\_\_\_ day of \_\_\_\_\_, 2016.

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

University General Counsel



# Gloucester Parcel Detail

-  Parcels for Potential Sale to VIMS
-  Gloucester Parcels

HRSD COMMISSION MEETING MINUTES  
November 28, 2017

ATTACHMENT #4

AGENDA ITEM 12. – Informational Items

- a. Management Reports
  - (1) [General Manager](#)
  - (2) [Communications](#)
  - (3) [Engineering](#)
  - (4) [Finance](#)
  - (5) [Information Technology](#)
  - (6) [Operations](#)
  - (7) [Special Assistant for Compliance Assurance](#)
  - (8) [Talent Management](#)
  - (9) [Water Quality](#)
  - (10) [Report of Internal Audit Activities](#)
- b. [Strategic Planning Metrics Summary](#)
- c. [Effluent Summary](#)
- d. [Air Summary](#)



November 21, 2017

Re: General Manager's Report

Dear Commissioners:

HRSD business demanded a significant investment of your time in October. With WEFTEC, the Virginia Forever Bridge Builder dinner, the "Imagine a Day without Water" Open House at Nansemond Treatment Plant (NTP), the Finance Committee's review of the Comprehensive Annual Financial Report (CAFR), and our regularly scheduled October meeting, HRSD business commanded a large part of your schedules throughout the month. The region, the Commonwealth and the environment are extremely fortunate to have such engaged Commissioners willing to give so much of their time to the business of governing HRSD.

HRSD assumed operational responsibility for the Surry facilities at the beginning of October. A team led by Jeff Sparks from North Shore Operations spent a long Sunday at the Town of Surry Treatment Plant on October 1, documenting the condition of the facility and making immediate safety and operational repairs. I had the opportunity to visit the facility on October 11 with representatives from the Department of Environmental Quality (DEQ). It was amazing what had been accomplished in less than two weeks. The level of activity was impressive, but more impressive was the sense of urgency and personal ownership our staff exhibited as they worked to get the plant to produce the highest quality effluent possible given the initial condition of the facilities when HRSD assumed operations. It is this sense of pride that can be felt throughout HRSD that really makes HRSD special.

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

- A. **Treatment Compliance and System Operations:** All plants met all Virginia Pollutant Discharge Elimination System (VPDES) and air permit requirements during the month with the exception of the Town of Surry Treatment Plant, which experienced a number of permit issues. As we received the Surry Plant in a condition that makes it incapable of meeting permit, we are not including the Surry permit exceedances in our strategic metrics at this time. 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](http://www.hrsd.com)

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

1. A meeting to discuss exterior finish selections for the Bridge Street pump station
2. A meeting to review materials to be presented to the Finance Committee
3. A meeting to review work to identify sources of salt water in the interceptor system that is impacting treatment efficacy
4. A meeting to discuss options and actions related to the Turnpike Road project in Portsmouth
5. A briefing about the Newport News Transportation Center and potential impact to HRSD facilities
6. A meeting to select interior finishes for the Sustainable Water Initiative for Tomorrow (SWIFT) Research Center
7. A meeting to review the impact of substituting a storage solution for peak flow management related to the Chesapeake-Elizabeth Treatment Plant closure plan
8. The kick-off meeting for the internal audit review of organizational ethics policies
9. A presentation on potential regionalization priorities

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

1. Multiple conference calls related to trademark investigation for the SWIFT logo and the term SWIFT Water
2. A call to discuss the panel presentation for World Water Tech
3. A tour of the Town of Surry Treatment plant with DEQ representatives
4. A call with the National Association of Clean Water Agencies (NACWA) Targeted Action Fund (TAF) Task Force
5. A briefing for Ann Jennings (Chesapeake Bay Commission) on the status of SWIFT
6. Attended the Virginia Forever Bridge Builder dinner and award ceremony
7. Conducted tours of the SWIFT Research Center at NTP during the Imagine a Day without Water event
8. Attended and took part as invited participant in a conference focused on removing the barriers to potable reuse hosted by The United States Environmental Protection Agency (EPA) and Reinventing the Nation's Urban Water Infrastructure (ReNUWI) (University of California, Berkeley)
9. Presented SWIFT to the Virginia Environmental Health Association
10. Took part in a call with Virginia Tech to discuss their potential role in a SWIFT monitoring program

11. Attended the NACWA Fall Board retreat and related committee meetings
12. Met with Doug Powell of James City Service Authority (JCSA) by telephone to discuss groundwater modeling needs
13. An interview on regional resiliency efforts by a PhD candidate from Massachusetts Institute of Technology (MIT)
14. Attended a second meeting with senior leadership of the City of Portsmouth to discuss issues related to SWIFT

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, November 28, 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 October 2017  
DATE: November 15, 2017

A. Publicity and Promotion

1. "Deltaville may be top priority for sewer," October 4, 2017 | Southside Sentinel  
[http://www.ssentinel.com/index.php/news/article/deltaville\\_may\\_be\\_top\\_priority\\_for\\_sewer/](http://www.ssentinel.com/index.php/news/article/deltaville_may_be_top_priority_for_sewer/)
2. "Cullipher, Eastep: Imagine a Day without Water," October 7, 2017 | Daily Press (Op/Ed)  
<http://www.dailypress.com/news/opinion/letters/dp-edt-culliphereastep-oped-1008-story.html>
3. "National Advocacy Day Promotes Water Infrastructure Investment," October 10, 2017 | Municipal Sewer & Water  
[http://www.mswmag.com/online\\_exclusives/2017/10/national\\_advocacy\\_day\\_promotes\\_water\\_infrastructure\\_investment](http://www.mswmag.com/online_exclusives/2017/10/national_advocacy_day_promotes_water_infrastructure_investment)
4. "2017 Top 40 Under 40 Honoree: Christel Dyer," October 13, 2017 | Inside Business, The Hampton Roads Business Journal  
[https://pilotonline.com/inside-business/special-reports/top-40-under-40/top-under-honoree-christel-dyer/article\\_79256b86-c8fb-59eb-920e-635d3440d062.html](https://pilotonline.com/inside-business/special-reports/top-40-under-40/top-under-honoree-christel-dyer/article_79256b86-c8fb-59eb-920e-635d3440d062.html)
5. "HRSD talks water this Tuesday," October 14, 2017 | Suffolk News Herald  
<http://www.suffolknewsherald.com/2017/10/14/hrsd-talks-water-this-tuesday/>
6. "River Talk on aquifer concerns," October 19, 2017 | Suffolk News Herald  
<http://www.suffolknewsherald.com/2017/10/19/river-talk-on-aquifer-concerns/>
7. "DEQ: Cutting groundwater draws likely to stabilize supply" | October 24, 2017 | Daily Press  
<http://www.dailypress.com/news/politics/dp-nws-groundwater-permits-20171024-story.html>
8. "A SWIFT Response to Groundwater Issues" | October 24, 2017 | Wateronline.com  
<https://www.wateronline.com/doc/a-swift-response-to-groundwater-issues-0001>

9. “Groundwater Permit Reduction Impacts in Eastern Virginia Discussed at State Water Commission Meeting on 10/24/17” | October 26, 2017 | Virginia Water Central News Grouper  
<https://vawatercentralnewsgrouper.wordpress.com/2017/10/26/groundwater-permit-reduction-impacts-in-eastern-virginia-discussed-at-state-water-commission-meeting-on-102417/>

B. Social Media and Online Engagement

1. Facebook Reach: 2,447
2. Twitter: 7,654 impressions
3. SWIFT website visits: 540
4. LinkedIn: 2,480
5. Construction Project Page Hits: 58,006

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

1. News Releases/Advisories: 0
2. Advertisements: 1
  - a. Providence Storage Tank Open House
3. Project Notices: 5
  - a. [Kecoughtan Road Gravity Sewer Pipeline Replacement](#) (Hampton)
  - b. [Chesapeake Avenue Force Main Replacement](#) (Hampton and Newport News)
  - c. [Mercury Boulevard at Ferguson Park Sanitary Sewer Pipeline Replacement \(Newport News\)](#)
  - d. [Elm Avenue Force Main Replacement \(Portsmouth\)](#)
  - e. South England Street ( Williamsburg)
4. New Project Web Pages/Blogs/Videos: 3
  - a. [Newport News](#) – Ferguson Park Sanitary Sewer Pipeline Replacement
  - b. [Newport News](#) – Warwick Boulevard Sanitary Sewer Pipeline Replacement - Thorncliff Drive to Lucas Creek Road
  - c. [Virginia Beach](#) – Woodstock Park Wet Weather Storage Tank



#### D. Special Projects and Highlights

1. The Director of Communications attended meetings with members of the Elizabeth River Project to discuss design concepts for the Paradise Creek restroom facilities sponsored by HRSD.
2. Director attended WEFTEC, focusing most time on technical sessions in community outreach, public relations, education and social media engagement while also gaining a greater understanding of the industry, HRSD's role and influence in advancing technologies.
3. Director accompanied Chief of Planning and Analysis in providing an update about the Sustainable Water Initiative for Tomorrow (SWIFT) to the Norfolk Environmental Commission.
4. Director continued planning efforts with customer care for the implementation of a communication plan related to HRSD's new online billing system.
5. Community educator provided a presentation to the Virginia Association for Environmental Education (VAEE) at their annual conference.
6. Director and staff coordinated and facilitated an open house for the Woodstock Park Wet Weather Storage Tank and Park Renovation Project in conjunction with City of Virginia Parks and Recreation staff.

#### E. Internal Communications

1. The Director of Communications and IT staff continue meeting weekly with web designers, advancing the redesign of the HRSD.com website.
2. Director participated in meetings for SWIFT Research Center finish selection.
3. Director and staff finalized planning and coordination for the SWIFT Research Center construction progress tours and open house held on October 12 to observe "Imagine a Day without Water."
4. Director participated in Asset Management's Management of Change and communications planning workshops for the new Asset Management program.
5. Director met with the Project Manager and consultants working on the Atlantic Treatment Plant (ATP) Cambi Project to begin developing a communications plan and timeline for public outreach and involvement.

F. Metrics

1. Educational and Outreach Activities: 6

- a. Greenbrier Intermediate School, What Not to Flush activity for FIRST Lego Team – 10/3
- b. What Not to Flush activity for Homeschool group at Brickheadz – 10/4
- c. Lynnhaven River NOW Fall Festival – 10/7
- d. Deep Creek Central Elementary, What Not to Flush activity for FIRST Lego Team – 10/24
- e. Providence Storage Tank Open House partnered with City of Virginia Beach Department of Parks and Recreation – 10/25
- f. Hampton FIRST Lego Team, Washing Water Activity – 10/26

2. Number of Community Partners: 5

- a. Chesapeake Public Schools
- b. FIRST Lego Team
- c. Lynnhaven River NOW
- d. Brickheadz Enrichment Center
- e. City of Virginia Beach

3. Additional Activities Coordinated by Department:

- a. Materials for Sherman Pressey for CHROME Launch – 10/3
- b. Hampton City Schools Tour at Boat Harbor Treatment Plant – 10/11
- c. Imagine a Day Without Water Open House/Tour – 10/12

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
M-1.4a	Total Training Hours per Full Time Employee (2) - Current Month	Hours / #FTE	7.5
M-1.4b	Total Training Hours per Full Time Employee (2) - Cumulative Fiscal Year-to-Date	Hours / #FTE	32.5
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Number of Community Partners	Number	5

Respectfully,

Leila Rice

Director of Communications

TO: General Manager

FROM: Director of Engineering

SUBJECT: Engineering Monthly Report for October 2017

DATE: November 12, 2017

A. General

1. Capital Improvement Program (CIP) spending for the third month of Fiscal Year 2018 continues to lag behind planned spending. CIP project spending is expected to increase in the coming months as some of the lagging projects move forward.

CIP Spending (\$M):

	Current Period	FYTD
Actual	\$10.53	\$24.64
Plan	\$18.30	\$48.42

2. The Engineering Department held their Annual Planning Day on October 13. The majority of the day was spent brainstorming ideas to improve the department. The session used the HRSD Strategic Planning focus areas of People, Infrastructure, Environmental Impact, Operations and Partnerships. This format promoted suggestions for improvement that were in alignment with the long-term goals of HRSD. Fifty-six new initiatives and six action items were proposed to improve the Engineering Department. There were also 30 improvement suggestions for HRSD to consider as a result of the discussions held by the Engineering Department.
3. The Engineering Department is working to coordinate the upcoming HRSD SWIFT Tours to be held at the Nansemond Treatment Plant in the coming months. This effort will involve a presentation by the General Manager followed by a briefing by Engineering Department staff. The briefing will focus on the Engineering Department's role with SWIFT and how a project is successfully delivered. A construction tour of the SWIFT Research and Educational Center will then be held. This is the third phase of discussions with staff on the importance of SWIFT and how each department at HRSD plays an important role in the success of this important program.

## B. Asset Management Division

1. HRSD's Corrosion Consultant, POND & Company, continues work on a Corrosion Manual. The manual includes best practices related to cathodic protection and coatings systems. The manual will be used by staff to better design, construct and maintain corrosion protection systems. The manual is at the 35 percent completion level and is currently under review by staff.
2. The HRSD Force Main Assessment Program will be managed by the Asset Management Division starting November 1. This program began as part of the initiative related to the Consent Decree with the United States Environmental Protection Agency (USEPA) to address sanitary sewer overflows in the region. HRSD's consultant, Brown & Caldwell, has managed this task for the last eight years. Staff has been meeting with the consultant to better understand this effort and to be able to take over this responsibility in the near future. Portions of this work were paid using funds from the Capital Improvement Program and will be charged to the Engineering Department Operating Budget in future years.

## C. North Shore and South Shore Design & Construction Divisions

1. Construction efforts continue for the Bridge Street Pump Station Replacement project located in the City of Hampton. Recent work includes completion of the wall sections and placement of the roof beams. Site work and utility work adjacent to the pump station are also underway. Once the roof is completed the interior mechanical and electrical work can begin. A delay in the adjacent bridge project has impacted our ability to close and detour traffic on Bridge Street as originally planned. This will require a re-design of a portion of the sewer work located in Bridge Street. Construction efforts continue with a planned completion in the spring of 2018.
2. Progress continues on construction of the VIP Nutrient Reduction Improvements project. The first part of the project (Group 1) involves the nutrient reduction portion. This segment of the project reached substantial completion in March 2017. The versatile bioreactor was placed into service in 2017 and the plant is now feeding methanol. Excellent total nitrogen (TN) removal has been achieved with concentrations averaging 4.2 mg/l for the last three months. The second part of the project (Group 2) involves construction of the plant peak flow capacity improvements. Ongoing work includes construction of the Preliminary Treatment Facility, Equalization Basin and Raw Water Influent Pump Station. Electrical improvements and large-diameter yard piping installation are also underway as part of this phase. A change to improve the electrical redundancy of the critical raw influent pumping has been recently approved. This change will further

reduce the likelihood of sewage spills caused by interruptions from the local power grid. The substantial completion date for this part of the project is June 28, 2018, with a final completion date of August 27, 2018. This is HRSD's largest single CIP project, and work will continue through the end of 2018. The project team is working well together and this effort is an example of good planning and communication. This project is partially funded through a Water Quality Improvement Fund (WQIF) grant and HRSD should receive \$46 million as part of the cost sharing agreement with the Virginia Department of Environmental Quality (VDEQ).

#### D. Planning & Analysis Division

1. Staff continues to lead an interdepartmental team investigating sources of saltwater entering the interceptor sewer system. The team includes members from the Engineering, Operations and Water Quality departments. Twelve conductivity sensors have been installed in the interceptor sewer system with six sensors located in the Boat Harbor system. The Boat Harbor system is of particular concern since this plant has had high total dissolved solids levels which have impacted treatment efficiency in the past. Grab samples have also been taken during various wet weather events to determine the source of the infiltration into the system. A sensor has also been placed at the 33<sup>rd</sup> Street Pump Station located in Newport News. This location was chosen to better understand the possibility of saltwater entering the system from Newport News Shipbuilding. This is an ongoing effort to locate areas of infiltration, inflow and industrial discharges of salt water into the sanitary sewer system.
2. Geographic Information System (GIS) staff members continue to work with the Hampton Roads Planning District Commission (HRPDC) on a regional GIS effort. The first information to be developed includes land parcel and use data. A programming tool was developed to automate the large amounts of data to be uploaded. An on-line regional GIS data sharing group was established at both HRSD and HRPDC to facilitate the exchange of commonly referenced GIS data. Many of the localities of Hampton Roads are also active with this effort and can benefit by sharing information with adjacent cities/counties and for academic research into issues of common concern such as recurrent flooding.

## E. Strategic Planning Metrics Summary

### 1. Educational and Outreach Events: 9

- a. Staff moderated a technical session at the Water Environment Federation Technical Exhibition and Conference (WEFTEC) 2017 entitled, *Leadership in Action: How To Be An Employer Of The Future* on October 3.
- b. Staff participated in a classroom lecture at Randolph Macon College for an environmental group studying the HRSD SWIFT Program on October 5.
- c. Staff attended the Lynnhaven River NOW Fall Festival and participated at HRSD's Information Booth on October 7.
- d. Staff assisted with the HRSD Day Without Water - SWIFT Hard Hat Tour at the Nansemond Treatment Plant on October 12.
- e. Staff made a presentation at the Hampton Roads Adaption Forum on HRSD's SWIFT Program on October 13.
- f. Staff participated in the Greenbrier Intermediate School STEM Night on October 19.
- g. Staff participated in the Old Dominion University Civil and Environmental Engineering Speed Networking event on October 25.
- h. Staff provided a tour of the York River and Nansemond Treatment Plants to representatives of the Jackson County Utility Authority on October 27.
- i. Staff participated in the Virginia American Water Works Association Model Water Tower Challenge on October 28.

### 2. Number of Community Partners: 8

- a. WEF
- b. Randolph Macon College
- c. Lynnhaven River NOW
- d. Hampton Road Adaption Forum

- e. Greenbrier Intermediate School
- f. Old Dominion University Civil and Environmental Engineering Department
- g. Jackson County Utility Authority
- h. Virginia American Water Works Association

3. Number of Research Partners: 0

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
M-1.4a	Total Training Hours per Full Time Employee (39) - Current Month	Hours / #FTE	3.24
M-1.4b	Total Training Hours per Full Time Employee (39) - Cumulative Fiscal Year-to-Date	Hours / #FTE	12.49
M-5.2	Educational and Outreach Events	Number	9
M-5.3	Number of Community Partners	Number	8
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 October 2017  
DATE: November 15, 2017

A. General

1. Both the House and Senate released Tax Reform bills essentially eliminating advanced refundings for tax-exempt entities after December 31, 2017. Typically municipal bonds have a ten-year call (earliest date on which a bond can be redeemed before maturity). The current tax code allows one advanced refunding of tax exempt municipal bonds prior to the bonds' call date. HRSD financial policies lay out the conditions under which HRSD would consider an advanced refunding to ensure HRSD maximizes the potential present value savings with each advanced refunding. In the last five years, HRSD has saved almost \$34 million using advanced refundings to refinance our debt at lower rates. Staff is working on an advanced refunding before the proposed deadline which could save upwards for \$5 million. Our financial adviser informed us that even if the Tax Reform bill is delayed, the advanced refunding market will freeze as investors would not be willing to risk buying refunding bonds with the uncertainty.
2. Staff delayed the "Go-Live" date for the new billing and payments vendor to November 14, to ensure the new system is fully tested and functional.
3. Revenues continue to exceed budget as water consumption is flat compared to this same period last year and the three year average. Interest Income is higher than budgeted as interest rates continue to climb. Expenses remain generally lower compared to budget. Personal services are slightly above budget at 35% and in-line with last year. Since HRSD has twenty-six bi-weekly pay periods, expenses were higher during months like September that have three pay periods; we anticipate that the cumulative expense percentages will be back in line with budget in the near future.
4. In October, the Customer Interaction Center experienced a service level decline due to increased interactions and some unanticipated staffing issues. In October, they handled 25,462 interactions, which is second highest number of interactions in the last 12 months and an 18 percent increase compared to October 2016. Two events that contributed to the increased interactions were the "Welcome to HRSD Communications" for the County and Town of Surry and increased field activities with the localities for Isle of Wight and Windsor. Call center service levels continue to be a challenge and staff is focused on making improvements in this area during the coming year.
5. In the Procurement section, the "Cycle Time per Method of Procurement and Complexity" column graph includes the highly complex Banking Request for



Proposal (RFP). In this RFP, a number of vendors were selected for: banking services, bill print and payments, lockbox, and custodial services. From selection to final negotiated contract award took an unusually long time, but we do not foresee future RFP's taking this long to award.

## B. Interim Financial Report

### 1. Operating Budget for the Period Ended October 31, 2017

	Amended Budget	Current YTD	Current YTD as % of Budget (33% Budget to Date)	Prior YTD as % of Prior Year Budget
Wastewater	\$ 265,662,693	\$ 93,852,677	35%	36%
Surcharge	1,900,000	528,606	28%	43%
Indirect Discharge	2,500,000	932,706	37%	36%
Norfolk Sludge	90,000	23,848	26%	21%
Fees	2,935,000	930,807	32%	36%
Municipal Assistance	700,000	301,747	43%	25%
Miscellaneous	720,000	487,595	68%	58%
<b>Total Operating Revenue</b>	<b>274,507,693</b>	<b>97,057,986</b>	<b>35%</b>	<b>36%</b>
<b>Non Operating Revenues</b>				
Facility Charge	6,000,000	2,186,670	36%	31%
Interest Income	1,800,000	899,726	50%	13%
Build America Bond Subsidy	2,400,000	1,168,524	49%	50%
Other	845,000	724,290	86%	21%
<b>Total Non Operating Revenue</b>	<b>11,045,000</b>	<b>4,979,210</b>	<b>45%</b>	<b>32%</b>
<b>Total Revenues</b>	<b>285,552,693</b>	<b>102,037,196</b>	<b>36%</b>	<b>35%</b>
Transfers from Reserves	9,760,286	3,253,429	33%	33%
<b>Total Revenues and Transfers</b>	<b>\$ 295,312,979</b>	<b>\$ 105,290,625</b>	<b>36%</b>	<b>35%</b>
<b>Operating Expenses</b>				
Personal Services	\$ 53,773,327	\$ 18,757,493	35%	34%
Fringe Benefits	24,700,569	8,385,499	34%	33%
Materials & Supplies	7,399,704	2,461,401	33%	28%
Transportation	1,423,974	378,854	27%	30%
Utilities	11,973,115	3,327,761	28%	27%
Chemical Purchases	10,620,594	2,821,980	27%	26%
Contractual Services	36,900,038	9,620,721	26%	27%
Major Repairs	10,429,168	1,991,973	19%	20%
Capital Assets	1,716,528	676,436	39%	17%
Miscellaneous Expense	2,396,234	907,727	38%	35%
<b>Total Operating Expenses</b>	<b>161,333,251</b>	<b>49,329,845</b>	<b>31%</b>	<b>30%</b>
<b>Debt Service and Transfers</b>				
Debt Service	59,949,120	18,783,249	31%	34%
Cost of Issuance Bonds	900,000	69,869	8%	0%
Transfer to CIP	58,802,000	19,600,667	33%	33%
Transfer to General Reserve	14,068,608	4,689,536	33%	0%
Transfer to Risk management	260,000	86,670	33%	33%
<b>Total Debt Service and Transfers</b>	<b>133,979,728</b>	<b>43,229,991</b>	<b>32%</b>	<b>33%</b>
<b>Total Expenses and Transfers</b>	<b>\$ 295,312,979</b>	<b>\$ 92,559,836</b>	<b>31%</b>	<b>31%</b>

## 2. Notes to Interim Financial Report

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

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

Transfers represent certain budgetary policy designations as follows:

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

## 3. Reserves and Capital Resources (Cash and Investments Activity) for the Period Ended October 31, 2017

	General	Risk Management	Reserve	Capital
<b>Beginning of Period - July 1, 2017</b>	\$ 169,127,728	\$ 3,000,520	\$ 30,760,330	\$ 37,452,225
<b>Add: Current Year Sources of Funds</b>				
Cash Receipts	104,624,972			
Capital Grants				772,729
Line of Credit				-
Bond Proceeds (includes interest)				273,602
Transfers In	494,006	86,670		19,600,667
<b>Sources of Funds</b>	<u>105,118,978</u>	<u>86,670</u>	<u>-</u>	<u>20,646,998</u>
<b>Total Funds Available</b>	<u>\$ 274,246,706</u>	<u>\$ 3,087,190</u>	<u>\$ 30,760,330</u>	<u>\$ 58,099,223</u>
<b>Deduct: Current Year Uses of Funds</b>				
Cash Disbursements	73,680,175			32,562,509
Transfers Out	19,687,337		494,006	-
<b>Uses of Funds</b>	<u>93,367,512</u>	<u>-</u>	<u>494,006</u>	<u>32,562,509</u>
<b>End of Period - October 31, 2017</b>	<u>\$ 180,879,194</u>	<u>\$ 3,087,190</u>	<u>\$ 30,266,324</u>	<u>\$ 25,536,714</u>

4. Capital Improvements Budget and Activity Summary for Active Projects for the Period Ended October 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	\$ 55,245,711	\$ 39,641,464	\$ 131,778	\$ 39,773,242	\$ 828,911	\$ 14,643,558	
Army Base	158,584,000	120,527,300	967,648	121,494,948	5,279,061	31,809,991	
Atlantic	119,731,914	42,154,292	974,943	43,129,235	63,887,662	12,715,017	
Boat Harbor	86,913,683	42,142,558	1,299,327	43,441,885	12,081,378	31,390,420	
Ches-Eliz	137,496,317	6,729,890	852,927	7,582,817	2,190,708	127,722,792	
James River	75,114,256	50,821,444	1,655,127	52,476,571	5,043,590	17,594,095	
Middle Peninsula	48,482,269	6,398,032	529,616	6,927,648	4,245,663	37,308,958	
Nansemond	76,560,570	33,846,838	968,181	34,815,019	5,330,927	36,414,624	
Surry	3,236,000	-	-	-	61,455	3,174,545	
VIP	272,689,561	229,739,637	7,598,671	237,338,308	16,518,823	18,832,430	
Williamsburg	16,156,843	8,937,934	(319,318)	8,618,616	947,953	6,590,274	
York River	45,537,761	39,366,402	177,674	39,544,076	3,078,505	2,915,180	
General	243,278,797	166,626,066	10,148,513	176,774,579	36,124,703	30,379,515	
	<u>\$ 1,339,027,682</u>	<u>\$ 786,931,857</u>	<u>\$ 24,985,087</u>	<u>\$ 811,916,944</u>	<u>\$ 155,619,339</u>	<u>\$ 371,491,399</u>	

5. Debt Management Overview

	Debt Outstanding (\$000's)				
	Principal Sept 2017	Principal Payments	Principal Draws	Principal Oct 2017	Interest Payments
<b>Fixed Rate</b>					
Senior	\$ 426,563	\$ -	\$ -	\$ 426,563	\$ (109)
Subordinate	296,654	(387)	-	296,268	(21)
<b>Variable Rate</b>					
Subordinate	50,000	-	-	50,000	(35)
<b>Line of Credit</b>	-	-	-	-	-
<b>Total</b>	<u>\$ 773,217</u>	<u>\$ (387)</u>	<u>\$ -</u>	<u>\$ 772,831</u>	<u>\$ (165)</u>

Series 2016 Variable Rate Interest Summary - Variable Rate Debt Benchmark (SIFMA) as of 10/27/17

	SIFMA Index	HRSD	Spread to SIFMA
Maximum	0.94%	0.93%	-0.01%
Average	0.24%	0.23%	-0.01%
Minimum	0.01%	0.01%	0.00%
As of 10/27/17	0.92%	0.90%	-0.02%

\* Since October 20, 2011 HRSD has averaged 23 basis points on Variable Rate Debt

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

	Current YTD	Policy Minimum
Capital % Cash Funded	42%	15%
General Reserve as % of Operations	112%	75-100%
Risk Management Reserve as % of Projected Claims Costs	25%	25%

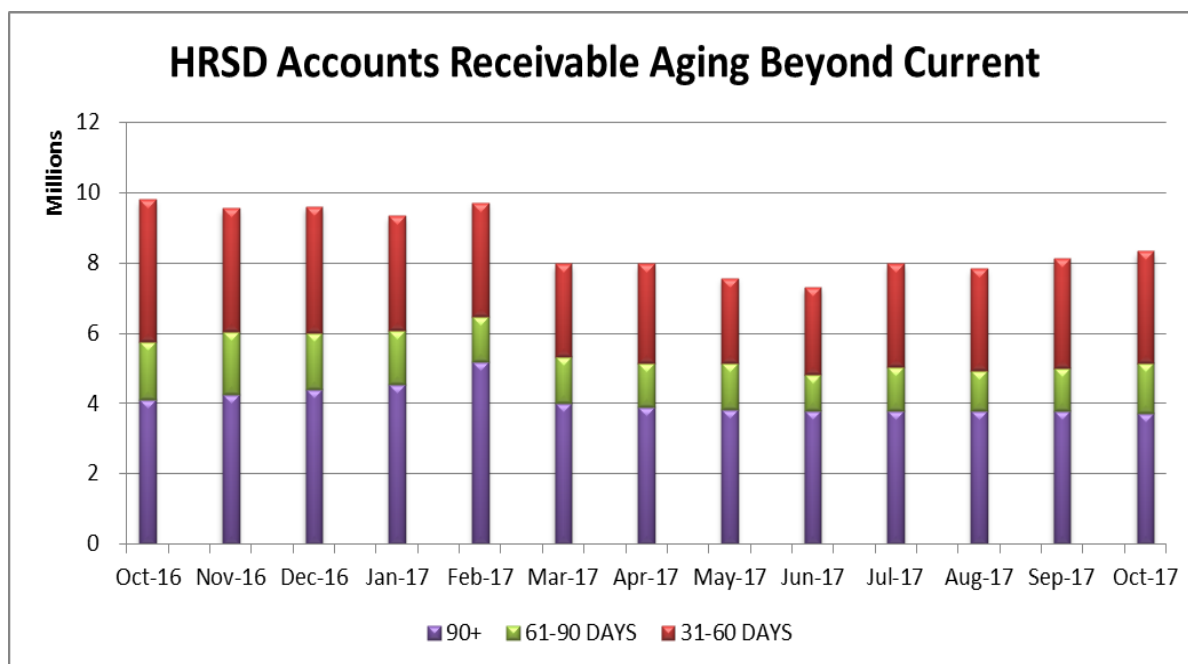
Total Return Strategy					
	Market Value June 30, 2017	YTD Buy/Sell	YTD Change in Market Value	YTD Adjustments	Market Value October 31, 2017
Investment Activity	\$ 123,844,438	\$ 646,901	\$ (224,959)	\$ -	\$ 124,266,380
Unrestricted Debt Service Reserve Fund	30,760,330			(494,006)	30,266,324
	\$ 154,604,768	\$ 646,901	\$ (224,959)	\$ (494,006)	\$ 154,532,704

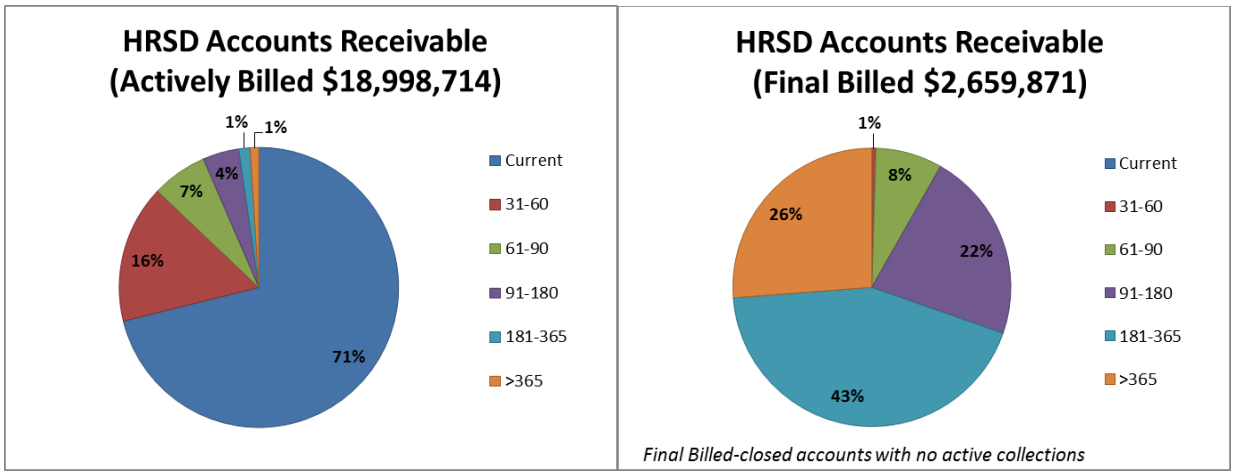
## 7. Summary of Billed Consumption

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	14,632	10.3%	14,227	2.8%	14,215	2.9%
Oct	17,689	19,006	7.4%	19,017	-0.1%	18,999	0.0%
Nov	22,104	-	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

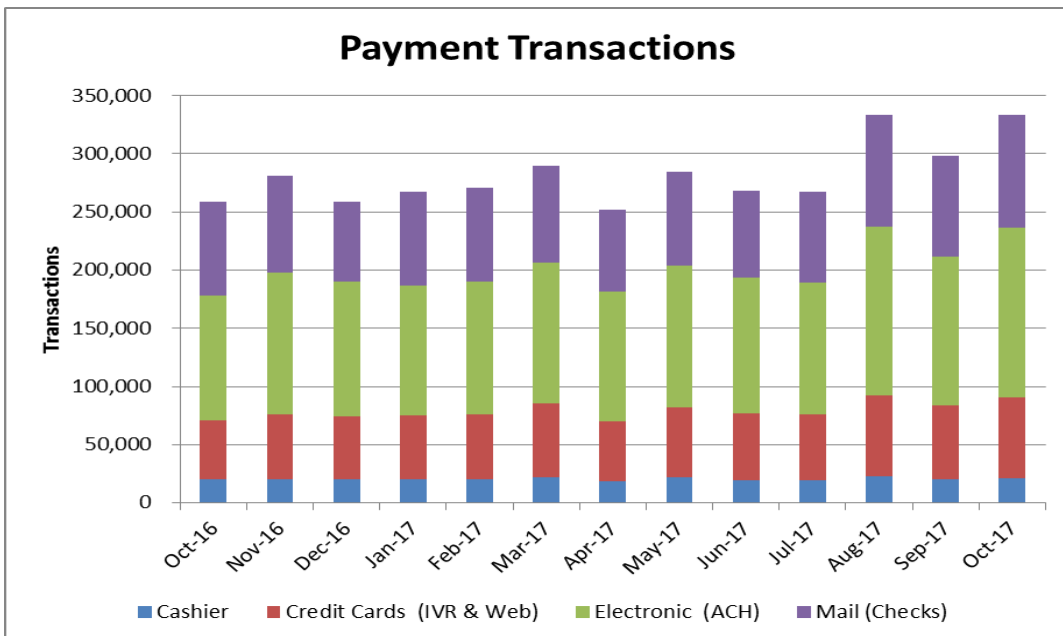
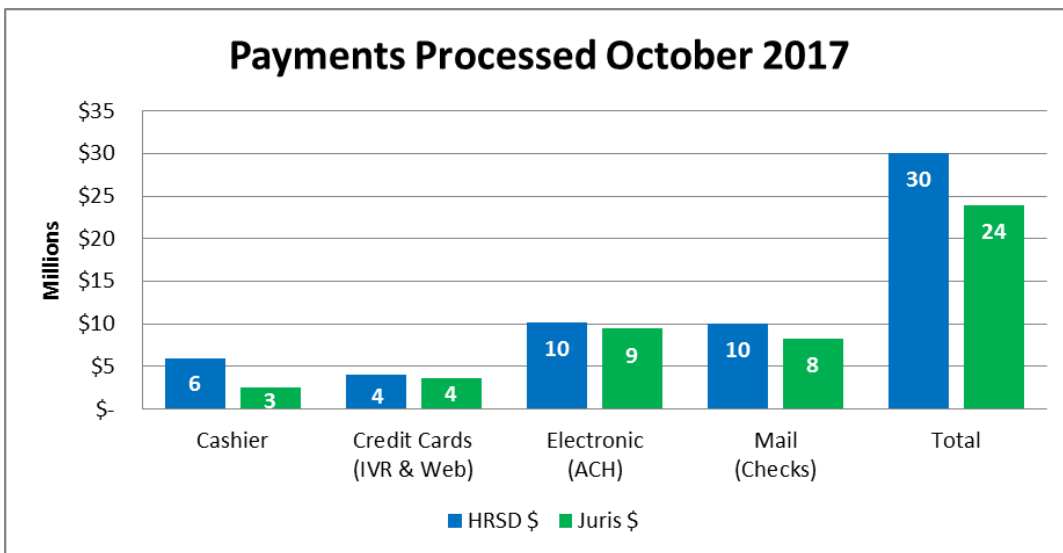
## C. Customer Care Center

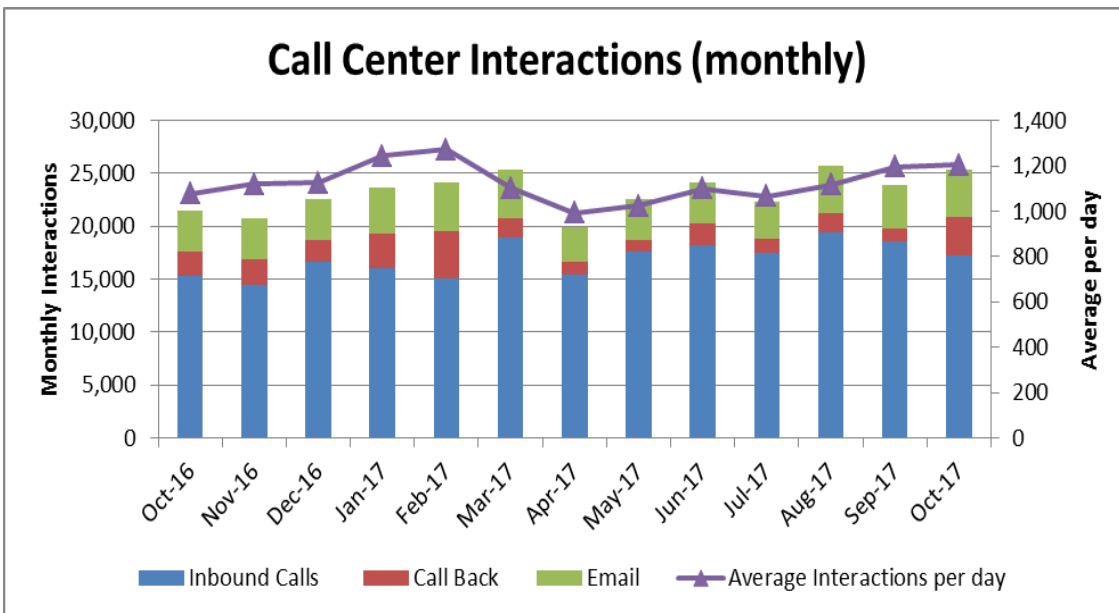
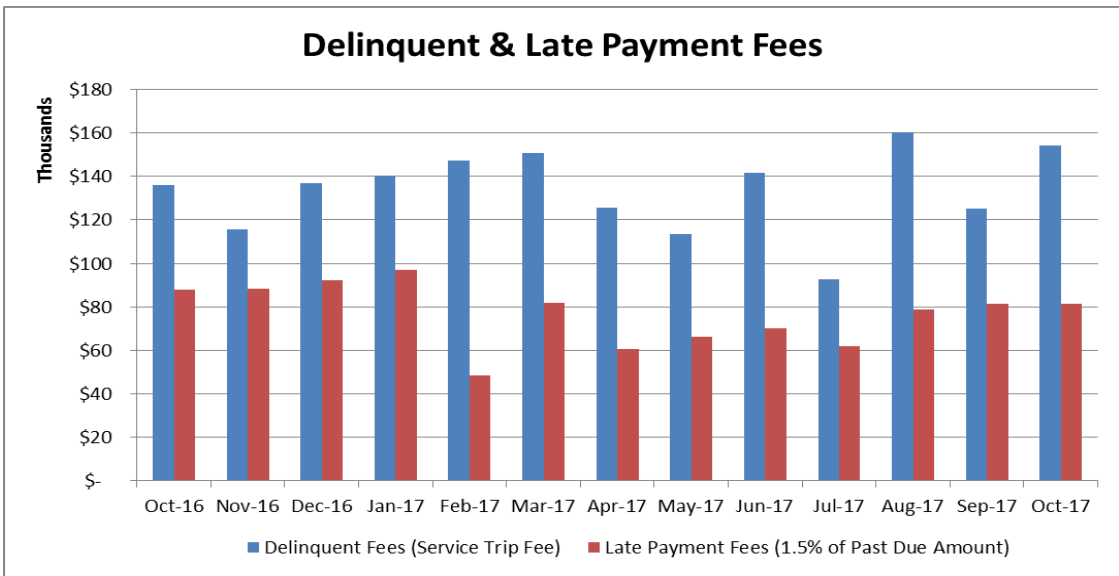
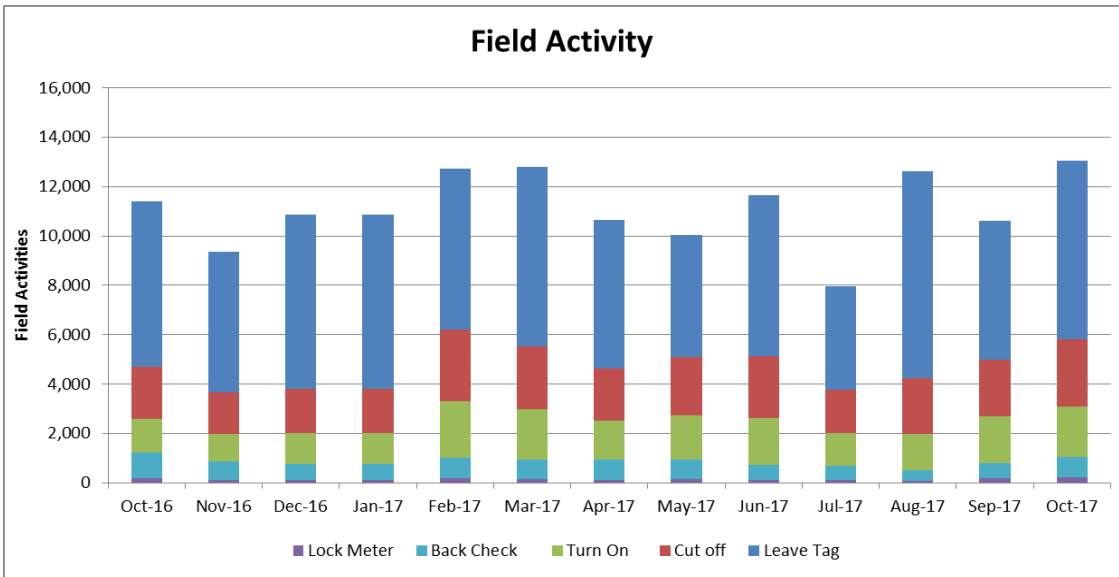
### 1. Accounts Receivable Overview

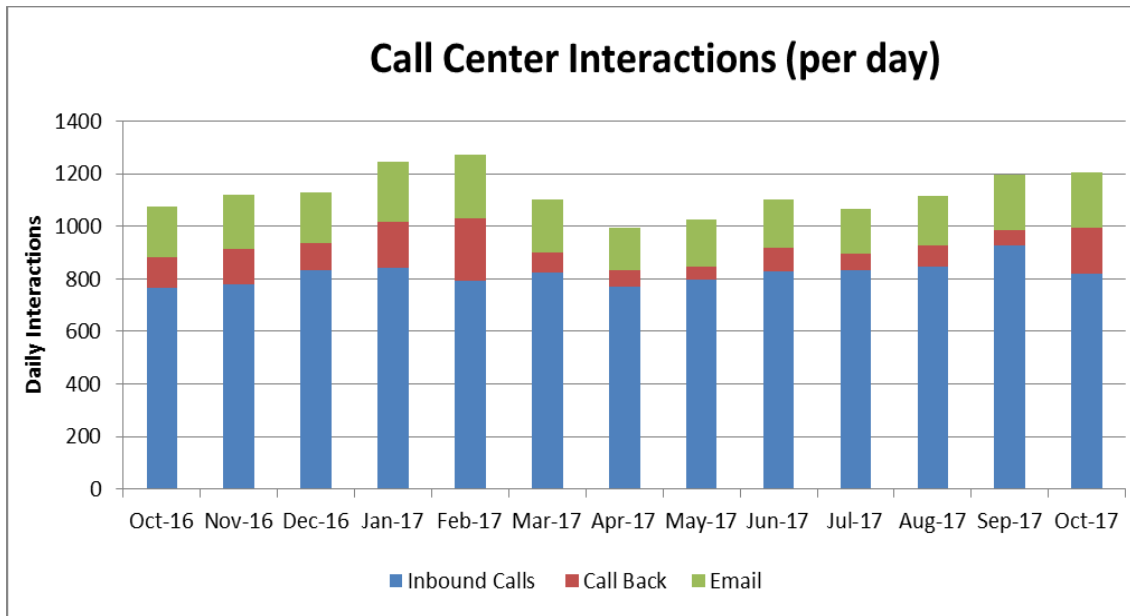




## 2. Customer Care Center Statistics







Customer Interaction Statistics	May	Jun	Jul	Aug	Sep	Oct
Calls Answered within 3 minutes	80%	70%	78%	75%	81%	58%
Average Wait Time (minutes)	1:37	2:25	1:46	2:04	1:33	3:51
Calls Abandoned	7%	9%	8%	8%	7%	13%

D. Procurement Statistics

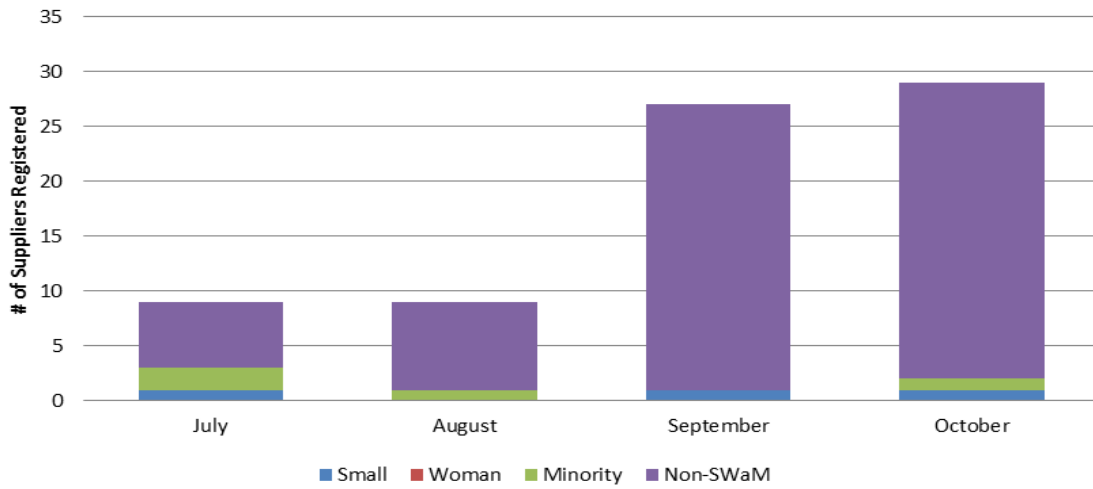
Savings	Current Period	FYTD
Competitive Savings <sup>1</sup>	\$34,711	\$278,226
Negotiated Savings <sup>2</sup>	\$97,472	\$377,508
Salvage Revenues	\$376	\$22,754
Corporate VISA Card - Estimated Rebate	\$19,764	\$82,208

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

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

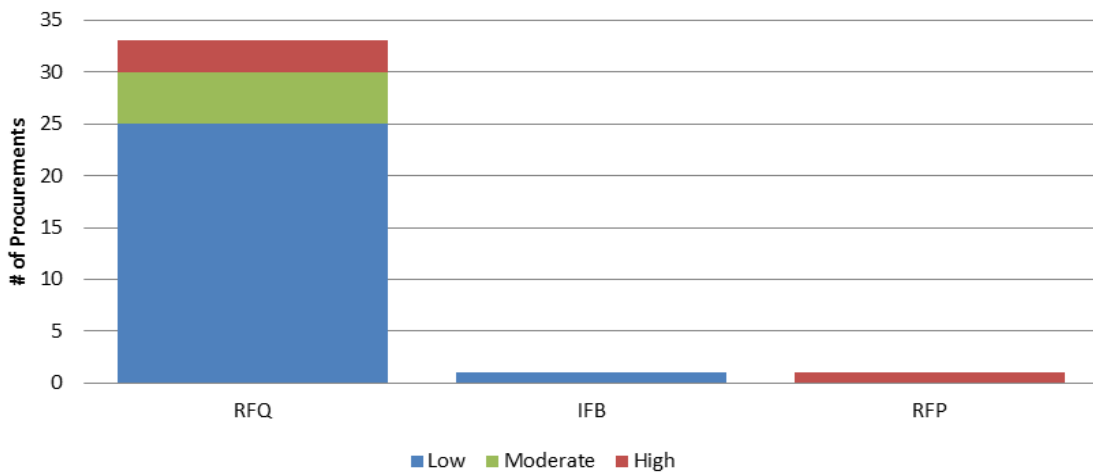


### New Suppliers Registered in ERP

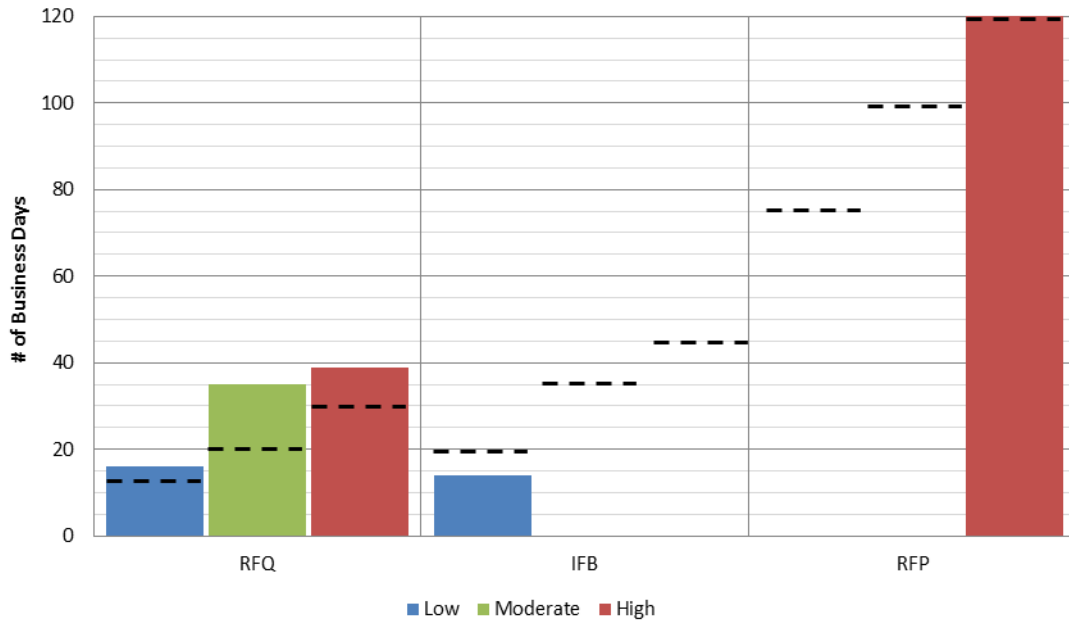


*\*Increased supplier registration due to supplier outreach at NIGP Forum 8/29/17, Water Jam 9/13/17, VASCUPP@ SWAMFest 10/4/17, City of Richmond OMBD and CVMSDC, Procure Your Business Conference 10/18/17*

### Procurements Completed Based on Complexity



## Cycle Time per Method of Procurement and Complexity

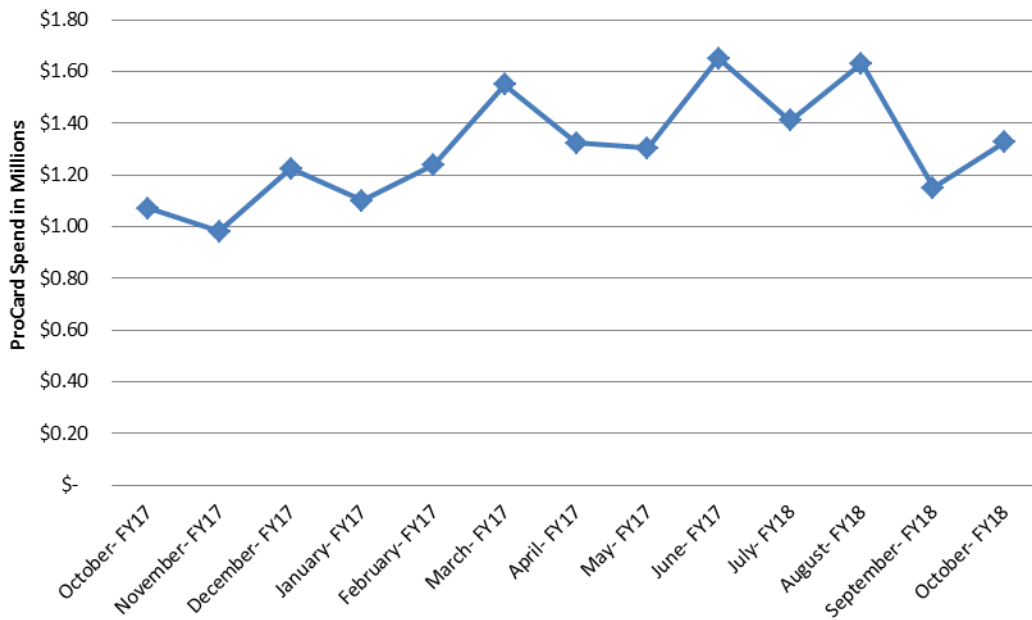


**Dashed Line:** Target Service Level Cycle Time

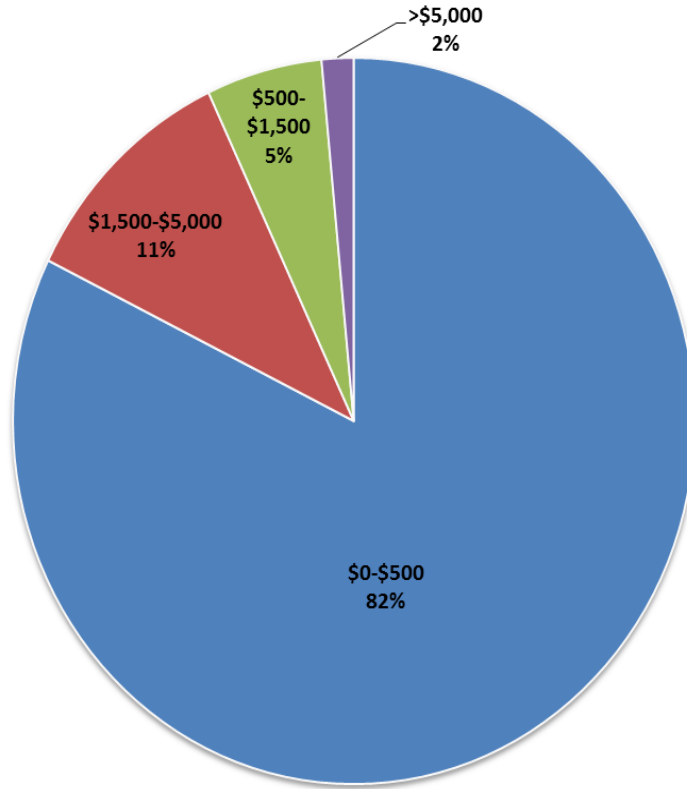
	High	Moderate	Low
RFQ	30	20	12
IFB	45	35	20
RFP	120	100	75

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

## ProCard Spend



**October ProCard Transaction Dollar Amounts**



Procurement Client Training		
	October 2017	YTD
ProCard Policy and Process	6	15
Procurement Cycle	0	10
Additional Training Provided	0	0
<b>Total</b>	<b>6</b>	<b>25</b>

**E. Business Intelligence – Enterprise Resource Planning (ERP)**

1. ERP Helpdesk currently has 326 open work orders in the following statuses: 6 escalated, 74 in progress, 16 on hold, 225 open, 5 waiting on user. ERP Helpdesk received 245 work orders in October. In October, 204 work orders were closed and 76 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: 2
  - a. 2017 VASCUPP® SWaMFest
  - b. Procure Your Business Conference and Vendor Expo
  
2. Community Partners: 2
  - a. Virginia Association of State College and University Purchasing Professionals (VASCUPP®)
  - b. City of Richmond Office of Minority Business Development (OMBD), and Carolinas-Virginia Minority Supplier Development Council (CVMSDC)
  
3. Monthly Metrics

Item #	Strategic Planning Measure	Unit	October 2017
M-1.4a	Training During Work Hours Per Full Time Employee (101) – Current Month	Hours / #FTE	2.83
M-1.4b	Total Training During Work Hours Per Full Time Employee (101) – Cumulative Fiscal Year-to-Date	Hours / #FTE	23.69
M-5.2	Educational and Outreach Events	Number	2
M-5.3	Number of Community Partners	Number	2
	Wastewater Revenue	Percentage of budgeted	106%
	General Reserves	Percentage of Operating Budget less Depreciation	112%
	Accounts Receivable (HRSD)	Dollars	\$21,658,585
	Aging Accounts Receivable	Percentage of receivables greater than 90 days	17%

4. Annual Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>FY-2017</b>
M-2.4	Infrastructure Investment	Percentage of Total Cost of Infrastructure	5%
M-4.3	Labor Cost/MGD	Personal Services + Fringe Benefits/365/5-Year Average Daily Flow	\$1285
M-4.4	Affordability	6.5 CCF Monthly Charge/Median Household Income <sup>3</sup>	0.59%
M-4.5	Operating Cost/MGD	Total Operating Expense /365/5-Year Average Daily Flow	\$3592
	Billed Flow	Percentage of Total Treated	73%
	Senior Debt Coverage	Cash Reserves/ Senior Annual Debt Service	3.10
	Total Debt Coverage		1.93

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

<sup>3</sup> 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 October 2017

DATE: November 13, 2017

A. General

1. IT staff, Asset Management staff, and ERP business analysts are working to further integrate and automate work order processing and the related procurement of goods and services.
2. Programming for the Sustainable Water Initiative for Tomorrow (SWIFT) distributed control system is progressing according to schedule, in anticipation of a March 2018 go-live.
3. OSIsoft, Inc. is working with staff to upgrade and configure an externally facing server which will permit customer jurisdictions greater access to HRSD telemetry pressure and flow data.
4. Servers, software, and network communications are configured, tested, and ready for next month's cutover to our new online billing services providers, Utilitec and InvoiceCloud.
5. REW, the prime contractor for the Supervisory Control and Data Acquisition (SCADA) project, submitted a revised cost estimate to reflect the replacement of licensed frequency radio transceivers with the recently tested and approved Verizon cellular broadband equipment. Staff is currently reviewing the cost and pricing data submitted.
6. Electrical testing and inspection of the Small Communities Division network and communications facility is complete. Installation and relocation of new and existing equipment is scheduled to begin next month.

B. Strategic Planning Metrics Summary

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

C. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
M-1.4a	Training During Work Hours Per Full Time Employee (50) – Current Month	Total Training Hours / # FTE	3.70
M-1.4b	Total Training During Work Hours Per Full Time Employee (50) – Cumulative Fiscal Year-to-Date	Total Training Hours / # FTE	10.23
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 October 2017  
DATE: November 15, 2017

A. Highlights

1. On October 12, HRSD hosted an “Imagine a Day without Water” event at the Nansemond Treatment Plant (NTP). Staff did a great job in completing the administration building renovation in time for the event. Staff also worked hard in cleaning and restoration efforts throughout the entire plant site. The event went very well with employees providing plant tours and manning the wastewater process and Ostara tables.

2. Surry Systems

County of Surry (County) – HRSD took over operations of the County plant effective October 1. Those operations are handled by our contractor – the Sussex Service Authority (SSA). SSA has successfully operated the plant on behalf of the County for many years.

Town of Surry - HRSD took over operations of the Town of Surry Treatment Plant on Sunday October 1. When the crews walked in, they encountered a facility that was in a state of significant disrepair in need of major maintenance and equipment repairs. The facility also had significant safety issues and concerns. Over the course of one month, a team effort from across HRSD has already made significant progress on this facility.

- a. Major efforts included: a safety inspection and resolution of most major safety issues; electrical panel upgrades; establishment of communications and connection to HRSD’s network; documentation of existing equipment and conditions; assessment and documentation of all treatment processes; physical upgrades to improve treatment processes; establishment of sampling and laboratory testing procedures; and training for Miss Utility needs.
- b. Treatment process upgrades completed or initiated during the month included cleaning and providing redundancy for the Ultra Violet (UV) disinfection system, installing a chemical feed system to remove zinc and copper, getting the blower system partially fixed and back into operation, confirming and establishing plant generator power



redundancy, removing excessive solids from the primary 'Imhoff' tank.

- c. A loss of power necessitated emergency response to the Surry County Industrial Park Pump Station (PS). Staff worked with Dominion Virginia Power to restore service.
- d. Due to the condition of the plant when we began operation, meeting all permit limits has proven to be very challenging and may not be possible. We continue to work with DEQ to identify the appropriate path forward. During the month, staff reported 11 permit exceedances as follows:

Limit Type	Unit	Permit Limit	Reported Value	Number of Exceedances	
TKN	Monthly average	MG/L	3.0	4.8	1
		G/DAY	680	780	1
	Weekly average	MG/L	4.5	9.1	1
		G/DAY	1000	1300	1
Ammonia	Monthly average	MG/L	1.72	6.73	1
	Weekly average	MG/L	1.72	6.73	1
Total Zinc	Monthly average	UG/L	37	38	1
	Weekly average	UG/L	37	38	1
Total Copper	Monthly average	UG/L	3.8	8.9	1
	Weekly average	UG/L	3.8	8.9	1
E.coli	Monthly geomean	#/100 ML	126	155	1
			Total	11	

## B. Interceptor Systems

### 1. North Shore (NS) Interceptor Systems

- a. A Sanitary Sewer Overflow (SSO) occurred on Warwick Boulevard on October 25. The damage occurred when a contractor failed to spot our pipeline and hit the bottom with a boring drill. A total of 49,862 gallons of sewage was lost. Staff completed the emergency repairs, working through the night to repair the line and patch the roadway prior to morning rush hour the next day.
- b. There was one odor complaint, one interceptor complaints, and six system alarms during the month. The majority of the system alarms were pump fail alarms that were quickly resolved. The odor and

interceptor complaints were investigated and found to be on infrastructure not owned by HRSD.

- c. Emergency work was completed on the Williamsburg Pump Station (PS) creek crossing where the soil surrounding the pipe had washed-out. The pipeline is now active. This project successfully relocated the pipeline beneath the creek when the line-stops were pulled in October. Site work for final restoration continues.
- d. Staff spent two weeks locating and gathering appurtenance data on all County and Town of Surry water meters.

## 2. South Shore (SS) Interceptor Systems

- a. There were two SSOs reported this month.
  - (1) On October 19, a contractor was working near the intersection of Hampton Boulevard and Trouville Avenue in Norfolk. While excavating adjacent to our 10-inch cast iron force main, the contractor noticed a leak. Staff pumped and hauled flow from the upstream pump station, isolated the damaged force main, and provided the contractor the materials for the repair. The contractor replaced the damaged section of force main within a few hours. The leak released approximately 4,500 gallons.
  - (2) On October 25, staff was replacing a galvanized air vent at the Washington District Pump Station in Chesapeake. While removing the riser pipe, the corporation stop failed. Staff inserted a plug through the failed corporation stop and installed a new saddle and corporation stop. The leak released approximately 80 gallons.
- b. Staff removed approximately 380 cubic yards of sand and grit from a digester at the Atlantic Treatment Plant (ATP) to allow internal maintenance. In total, staff removed approximately 620 cubic yards of material and approximately 7,700 gallons of liquid from the digester.
- c. Staff removed a blockage in a pipeline at the Army Base Treatment Plant (ABTP).

## C. Major Treatment Plant Operations

### 1. ABTP

- a. There were five reportable incidents for the month of October. Two incidents required adjustment of the total hydrocarbon analyzer. A third incident required operators to adjust the caustic feed supply to the incinerator to correct a low pH. The fourth reportable incident resulted from required maintenance on Odor Scrubber B. A fifth incident occurred when staff did not record a chlorine analysis. The chemical feed remained constant during this time and residuals before and after showed permit compliance.
- b. Incinerator One received a full cleanout, inspection, and repair. To comply with the new air permit regulations, we must operate our incinerators at higher temperatures than previously operated. As a result, the incinerators will require more frequent repairs.
- c. Staff completed installation of the second of two induced-draft fans for the Odor Control System at the plant's headworks.
- d. Staff completed work on several projects including: band screen controls; power for primary clarifier gate actuators; power for nitrified recycle valve actuators; instrumentation for the effluent ammonia feed tank; photo sensor for the aeration tank lights; and installation of new heating and air conditioning units for the administration building.
- e. A contractor drew soil samples from the area surrounding the methanol tank for analysis. The analysis will serve as documentation to determine if site remediation is necessary.

### 2. ATP

- a. There were three reportable issues related to the plant's air permit.
  - (1) On October 13, Odor Control Station C reported a Hydrogen Sulfide (H<sub>2</sub>S) level above five parts per million (ppm) which occurred while solids were pumped into the digester solids storage tank. Staff increased the non-potable water (NPW) spray levels and the problem was resolved.
  - (2) On October 26, a caustic pump failed to the "On" position causing the pH in the sump to increase which created foaming problems. The pump was reset and the sump was drained and filled with fresh NPW.

- (3) On October 31, the digester gas for the Combined Heat and Power (CHP) engine had an H<sub>2</sub>S level above 50 ppm. The CHP engine was immediately turned off. This occurred when the bioscrubber was down for its bi-annual cleaning.
- b. Construction of the Thermal Hydrolysis Process (THP) project continues to progress. Utilities are being relocated to make room for the new THP system.
- c. Construction of the new administrative building is progressing. The concrete slab has been poured and the walls are being put up.
- d. The contractor is making good progress in spot repair coating of the six secondary clarifiers.

### 3. Boat Harbor Treatment Plant (BHTP)

- a. On October 10, there was an air permit deviation for use of bypass for three minutes when an off gas scrubber water supply line failed. Staff isolated the line break and restored scrubber water flow.
- b. Staff installed a ferric mixer at the grit tank effluent chamber. The mixer should improve the settling performance for the chemically enhanced primary treatment system, which helps the plant to continue to nitrify through the winter months.
- c. Contractors completed the coatings rehabilitation project for the incinerator ash hopper.
- d. Contractors completed ash and slag removal of # 2 Incinerator. HRSD staff inspected the incinerator for repairs and modifications to convert it to a Zero Hearth Afterburner which should help reduce carbon monoxide and nitrogen oxides discharges.

### 4. Chesapeake-Elizabeth Treatment Plant (CETP)

- a. On October 16, a temporary loss of power caused the induced draft fan to shut down resulting in the use of the Emergency Bypass Stack and an air permit deviation.
- b. Staff installed a new polymer mixing chamber in the solids handling dewatering polymer system. It is designed to reduce polymer usage by 10 to 15 percent.

5. James River Treatment Plant (JRTP)

- a. There was one reportable wastewater event when loss of de-chlorination occurred for approximately twenty minutes when a chemical feed pump failed. The problem was resolved by switching to a stand-by chemical feed pump.
- b. Staff completed the Nitrified Recycle (NRCY) pipeline modifications to Integrated Fixed Film Activated Solids (IFAS) tank #2. The pipeline changes were completed to create an anaerobic zone at the IFAS tank influent for biological phosphorus removal. NRCY pipeline modifications are scheduled for the remaining three IFAS tanks in upcoming months.
- c. Staff worked on converting IFAS tank #1 from its use as a centrate equalization tank back to an IFAS tank. This work involves cleaning solids from the tank, reinstalling pumps and mixers, and removal of struvite from the air grid, piping and other equipment. IFAS Tank #1 is no longer needed for centrate equalization after two preaeration tanks were converted to centrate equalization tanks during the JRTP Hydraulic Improvement Project.
- d. Staff finished replacing digester gas piping to digester gas pressure regulators in the digester building basement. The regulators maintain digester gas system pressure.

6. NTP

- a. On October 27, there was a reportable spill of NPW. The spill occurred at a leaking fire hydrant that was in use by a contractor. The hydrant was turned off and flow secured; an estimated 500 gallons of NPW was lost to the ground and could not be recovered.
- b. NTP staff continues work to overhaul and repair multiple plant processes, including replacing the belt on gravity belt thickener #3 to alleviate ponding of water on the belt. Staff is also making repairs to the rectangular primary clarifiers.
- c. The Struvite Recovery Facility operation has stabilized in its ability to remove phosphorus.
- d. The influent water quality needs of the Sustainable Water Initiative For Tomorrow (SWIFT) research facility will require the plant to achieve a total nitrogen (TN) level of 3 milligrams per liter (mg/L) in its

final effluent. Normal TN concentrations for the plant effluent are 7 mg/L. Flows to the SWIFT facility will be from the plant's secondary clarifiers. Lowering the final TN concentration will require the addition of a significant amount of methanol (supplemental carbon) to the aeration process. Carbon is the food source for the microorganisms responsible for removing nitrogen from wastewater. In an effort to try and optimize the use of the supplemental carbon, only two out of four primary clarifiers available are in use. This will allow for the removal of less carbon in the primary clarifiers, which will then provide more carbon to remain in the plant flow. By allowing more carbon to remain in the primary effluent to the aeration process, less supplemental carbon (methanol) should be required.

- e. HRSD received a warning letter from the Department of Environmental Quality (DEQ) issued for the ash bulking storage facility with dust collector. The warning letter addressed the atmospheric discharge from the dust collector as not being properly exempted nor permitted prior to construction in 2013. Staff independently discovered and self-reported this to DEQ on May 18, 2017. Staff completed corrective action by re-routing the dust collector discharge back into the storage building. HRSD provided a letter response to DEQ that identified the corrective measures. No further actions are expected by DEQ or HRSD.

## 7. Virginia Initiative Plant (VIP)

- a. The plant experienced one air permit deviation when a power loss caused the incinerator bypass damper to open for 16 minutes.
- b. Staff relocated the dissolved oxygen sensors to the second aeration tank cells, allowing for better control of the VIP process.
- c. Staff replaced the ash bucket elevator chain system after problems were identified during a preventive maintenance inspection. Failure of the ash removal system shuts down the entire incinerator.

## 8. Williamsburg Treatment Plant (WBTP)

- a. On October 9, there was one air permit deviation when the main breaker for the incinerator building tripped, causing a one hour and 14-minute use of the incinerator bypass stack. The cause of the issue is under investigation.

- b. Staff continued work on a coatings project in the secondary clarifier, which should be completed within the next month. This clarifier was last coated about 25 years ago.
- c. Staff continued work on aeration tank #2 to help optimize the existing treatment process. The tank will be returned to service next month.

9. York River Treatment Plant (YRTP)

- a. There was one reportable issue when a power loss to the odor scrubber sump pump caused approximately 250 gallons of scrubber sump water to overflow the containment wall. About 150 gallons were recovered with the remainder soaking into the ground.
- b. The transition to the Environment Data Management System (EDMS) Daily Plant Operating Report has been relatively seamless. Staff continues to identify issues and document for resolution. The November Monthly Plant Operating Report will be generated by the new system.

D. Small Communities Division (SCD)

1. SC Treatment:

a. West Point Treatment Plant (WPTP)

The stairs and platform were installed on the tertiary filter and testing on the existing programmable logic controller (PLC) will be scheduled in the near future.

b. Urbanna Treatment Plant (UBTP)

Framing work continued on the new lab at the plant. Bathroom fixtures and electrical rough began as well. Substantial preparations were made at the plant in anticipation of the annual Oyster festival in Urbanna, which for this time of year typically coincides with an increase of approximately 200 percent more flow than a typical day through the first weekend of November.

c. King William Treatment Plant (KWTP)

The required frequency of E. Coli sample collection for the reuse discharge outfall was not met during the week of October 15. Extended maintenance at the Nestle-Purina plant precluded sample

collection using the normal schedule. Reuse water was sent to Nestle-Purina for four calendar days during this week, but E. Coli was only collected for three of them. The permit requires four E. Coli samples per week, when Reuse is utilized for four or more days.

During this calendar week, two E. Coli samples were collected for the King William Moncuin Creek outfall 01. Those samples, collected for Outfall 01 permit compliance, show that effluent quality remained constant during this calendar week. In total, five E. Coli samples were collected and analyzed for the facility, all with values of 1 or <1 #/100mL and all were under the permit E. Coli limits (Reuse 10, Outfall 100 #100mL).

It should be emphasized that not only were sampled E. Coli limits below both the plant's reuse and outfall permit levels that a total five samples (amounts that individually exceed each permit's frequency requirements) for E. Coli were collected that week.

Zinc media operational testing began in order to try and extend the life expectancy of the granular activated carbon. Additionally, test trials are being arranged for different forms of activated carbon and liquid precipitants/coagulants as well. The expended media was changed out and replaced this month. The membranes were also taken out of the active train and swapped with clean membranes this month as part of our store-in-place procedure.

## 2. Central Middlesex Treatment Plant (CMTP)

The influent grinder at the plant was removed this month due to the bypass line being set a higher elevation than the grinder. We are currently waiting for a price on a rebuild kit from the supplier. The permanent Ultra Violet system rack/stand was fabricated and installed.

## 3. Lawnes Point Treatment Plant (LPTP)

Small Communities performed one pump and haul operation of LPTP this month.

## 4. Operations Center:

- a. The Supervisory Control and Data Acquisition (SCADA) room construction is complete and operational.
- b. The mezzanines construction is complete.



- c. Staff participated in the West Point Crab Carnival parade on Saturday, October 7, with the VacCon and one of the new Utility Body Trucks.
- d. Staff performed the semi-annual cleaning of their Adopt-A-Highway spot in Mathews County. They collected approximately 300 pounds of trash/litter from our section.

## E. Support Systems

### 1. Automotive

- a. Staff surveyed the Town of Surry's plant and PS generators. The plant generator was tested and operated with plant load. Both PS generators were found non-operational. The generator at PS #6 was repaired and tested on October 13. Staff is working to replace the controller and retest the generator at PS #7.
- b. The Automotive and Electrical staff performed generator building load tests at the NS Operations and the SS Operations Main Office Complexes. All generators operated as designed and were returned to service.
- c. The Automotive and Electrical staff performed load bank tests at Claremont Avenue, Lodge Road, North Avenue, and Victoria Boulevard pump stations. All generators operated as designed and were returned to service.

### 2. Carpentry Shop

The SS Carpenters completed 11 projects to include the construction of a mixer frame for the reactor as part of CETP Pilot Program; a deck at Sheppard Avenue to raise a storm box, and a Clean Metals Building for the Technical Services Division (TSD). Carpenters also repaired various locks throughout the Central Environmental Laboratory (CEL).

### 3. Condition Assessment (Coatings and Concrete)

- a. The SCADA project continues. Condition Assessment (CA), through use of Closed-Circuit Television (CCTV), inspected 2,717 linear feet (LF) of gravity force main, completing one line, and inspected 42 manholes. CA Superintendent also collaborated with Information Technology (IT) and Engineering to update Wi-Fi capabilities for CCTV vehicles.

- b. Staff performed daily inspection assessments on coatings projects occurring at ATP, BHTP, and NTP.
- c. Contractor completed the restoration of the steel tank exterior at ABTP. Coating of the flumes and #1 and #2 contact tanks at ATP is complete. Rake arm assembly repairs on ATP's #1-3 secondary clarifiers are 100% complete and set-up has begun for work in tank #4.
- d. Rehabilitation of the ash hopper at BHTP is 100% complete.
- e. Coating of the attic space in the #2 digester at NTP is complete; the roof has been staged for work and the interior of the tank has been cleaned. Contractor also completed cells D, E, and F of the #4 Aeration Tank.

#### 4. Facilities Maintenance

Renovation of the lunchroom at NTP continues.

#### F. Electrical and Energy Management (EEM)

- 1. Staff continues to restore the full functionality of the equipment in the Town of Surry Treatment Plant and pump stations. The scope of work included implementing a remote monitoring and alarm system to allow staff to monitor critical alarms and effluent flow data, repairing one of two UV disinfection systems, removing obsolete outdoor electrical panels, replacing motor contactors for the rotating biological contactors (RPCs), repairing the drum filter controller and ordering parts for the second drum filter controller. Additionally, the team assisted Information Technology (IT) and a contractor with the installation of Verizon and IT communication equipment.
- 2. Vandals damaged the control cabinet and solar panels at Master Metering Program Site (MMPS) 279, Salem Road and Ferrell Parkway in Virginia Beach. Staff rebuilt the panels and returned them to service.
- 3. Staff continues to work with consultant HDR on a design for emergency distribution switchgear at WTP. The switchgear will provide a means of powering the plant in the event a failure occurs in the existing main utility switchgear or generator switchgear.
- 4. A contractor cut wiring to the effluent pumps while installing a metal cover over the contact tanks at Surry County TP. Staff repaired the wiring and returned the system to operation.

5. Staff participated in a presentation to the Environmental Protection Agency's (EPA) Alternative Test Procedure Program Team regarding the total residual chlorine automation project at NTP.
6. Staff completed program modifications to the PLC and human machine interface (HMI) program for the effluent pumps at YRTP. The modifications enabled the controls on the local PLC to match the controls on the distributed control system (DCS).
7. Electrical and Instrumentation Specialist Teams worked with the TP staff and the contractor to complete infrared (IR) inspections of electrical equipment at ATP, CETP, JRTP, SCD, and YRTP. IR inspections identify anomalous heat signatures in electrical equipment which, if left alone, would continue to escalate until the equipment failed.

#### G. Water Technology and Research

Planning and preparation to startup the SWIFT Research Center (SWIFTRC) began in earnest in October. Staffing needs have been identified, and positions have been filled. The SWIFTRC operations and maintenance manual is being prepared, along with detailed response procedures associated with critical control point deviations. Equipment is being purchased, and the Operations team is participating with CH2M and the Crowder/Hazen design/build contractor to develop commissioning, startup, training, and testing plans. The programming of the DCS is being performed internally by HRSD Industrial Automation and Control staff, and the Operations team has been meeting regularly to review control system development and DCS graphics. It is expected that most of the advanced treatment processes will commence in January, with initial recharge slated to begin in early April. The pilot test of the aluminum chloride conditioning of aquifer clays in the Lower Potomac monitoring well appears to have been successful, and this method will be performed on the recharge well in the December timeframe.

#### H. Strategic Measurement Data

1. Education and Outreach Events: 21
  - a. NTP Tour for Nansemond River Preservation Alliance (NRPA) Water Quality Committee
  - b. Plant tour for Virginia Institute of Marine Science (VIMS) graduate students
  - c. Plant tour for Gloucester High School Science Technology Engineering and Math (STEM) students

- d. Charles Bott provided a SWIFT Briefing at WEFTEC
- e. Ramola Vaidya provided a podium presentation at WEFTEC on SWIFT Emerging Contaminant Removal
- f. Germano Salazar and Tyler Nading provided a podium presentation SWIFT Briefing at WEFTEC
- g. Peter Buehlmann provided a podium presentation on SWIFT Bromate Control at WEFTEC
- h. Charles Bott provided a podium presentation on inDENSE Process Development and Testing at WEFTEC
- i. Amanda Ford provided a podium presentation on inDENSE Process at WEFTEC
- j. Steve de Mik spoke at a leadership forum at WEFTEC.
- k. BHTP tour for Hampton High School
- l. VIP plant Tours for HRSD personnel in Asset Management and TSD -2
- m. West Point Crab Carnival Parade (Two Trucks)
- n. The NS Electrical Manager and the NTP EIS participated in the Cooperating Hampton Roads Organization for Minorities in Engineering (CHROME) Sponsor Launch 2017 that was held at Norfolk State University (NSU) on October 7.
- o. SS Ops Staff participated in a Touch-A-Truck event at Chesapeake Square Mall sponsored by Children's Hospital of The King's Daughters
- p. NS Operations completed an Adopt-A-Highway event during the month where staff and friends collected 15 bags of garbage along Rt. 17.
- q. Tidewater Community College Diesel Advisory Committee
- r. EEM met with the Energy Manager for the U.S. Navy to discuss energy conservation measures on October 17.
- s. The NS Material Operations Coordinator (MOC) attended the United Way Women United luncheon on October 11.
- t. The NS MOC participated in a United Way campaign meeting at WTP on October 12.
- u. The Boat Harbor Treatment Plant participates in the oyster gardening program through the Chesapeake Bay Foundation (CBF). Each year they grow out the oysters throughout the year and drop them off to CBF during the month of June. The oyster cages must be maintained on a monthly basis in the cooler months and a bi-weekly basis in the warmer months.

2. Community Partners: 11

- a. Virginia Institute of Marine Science
- b. Old Dominion University

- c. Chesapeake Bay Foundation
- d. VDOT Adopt-A-Highway
- e. U.S. Navy
- f. United Way
- g. Tidewater Community College
- h. Nansemond River Preservation Alliance
- i. Gloucester High School
- j. CHROME
- k. Children's Hospital of The King's Daughters

Item #	Strategic Planning Measure	Unit	October 2017
M-1.4a	Training During Work Hours per Full Time Employee (FTE) (511) – Current Month-	Hours / FTE	3.64
M-1.4b	Total Training During Work Hours per FTE (511) – Cumulative Year-to-Date	Hours / FTE	12.13
M-2.3a	Planned Maintenance Total Maintenance Hours	Total Recorded Maintenance Labor Hours	32,380
M-2.3b	Planned Maintenance – Preventive and Condition Based	% of Total Maintenance Hours	42.31
M-2.3c	Planned Maintenance - Corrective Maintenance	% of Total Maintenance Hours	24.57
M-2.3d	Planned Maintenance-Projects	% of Total Maintenance Hours	33.12
M- 4.1a	Energy Use: Treatment <b>*reported for September 2017</b>	kWh/MG	2,279
M-4.1b	Energy Use: Pump Stations <b>*reported for September 2017</b>	kWh/MG	188
M-4.1c	Energy Use: Office Building <b>*reported for September 2017</b>	kWh/MG	108
M-5.2	Educational and Outreach Events	Number	21
M-5.3	Number of Community Partners	Number	11

Respectfully submitted,

**Steve de Mik**  
Director of Operations

TO: General Manager  
FROM: Special Assistant for Compliance Assurance  
SUBJECT: Monthly Report for October 2017  
DATE: November 9, 2017

A. General

The management of condition assessment and prompt repair work transitioned to the Operations Department as of October 30, 2017. This work will be incorporated into the annual operations budget and continue to inform our capital planning efforts. Brown and Caldwell will continue to manage work that commenced prior to the transition and remain under contract to respond to EPA and DEQ comments on the Integrated Plan.

B. Submittals Completed in October 2017 – The Fiscal Year 2017 Annual Report was submitted to the U.S. Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) on **October 30**.

C. Activities

1. **Phase 6 – Rehabilitation Plan.**

On-going system rehabilitation work (associated with Prompt Repairs or other items in the Sewer Repair [SR] contract) is 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: Project complete.

2. **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.

3. **Phase 9 – Supplemental Services.** A quarterly compliance program review meeting was held with HRSD staff on **October 18**. Management, Operations and Maintenance (MOM) Program elements are ongoing, including the Hydrogen Sulfide (H<sub>2</sub>S) 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 October with data collection and analysis being performed as part of the MOM Program.

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

- FMP2 039 Bowers Hill: Work is in progress.
- FMP2 043 Kempsville Road: Project complete.
- FMP2 049 Shore Dr. (Reservoir Group): Work order under development

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

- GMP2 SCD 014 Rappahannock Pump Station (PS) was completed during October.
- Additional SCD work orders are currently in draft and under review:
  - GMP2 SCD 026 Main PS
  - GMP2 SCD 027 Commerce PS
  - GMP2 SCD 028 Central Crossing
  - GMP2 SCD 029 McCauley Park PS
  - GMP2 SCD 030 Kennington PS
  - GMP2 SCD 033 School PS

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

#### D. Next Submittals

1. Annual Public Meeting – January 2018
2. Annual Newsletter – February 2018

#### 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: 1
  - a. Attended WEFTEC conference in Chicago, Illinois.
2. Number of Community Partners: 0

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
M-1.4a	Total Training Hours Per Full Time Employee (1) – Current Month	Total Training Hours / # FTE	20
M-1.4b	Total Training Hours Per Full Time Employee (1) – Cumulative Fiscal Year to Date	Total Training Hours / # FTE	40
M-5.2	Educational and Outreach Events	Number	1
M-5.3	Number of Community Partners	Number	0

Respectfully submitted,

*Phil Hubbard, P.E.*

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



## Consent Order State & EPA Expenditures

	<b>Total Appropriation</b>	<b>October 2017 Obligations</b>	<b>Available Balance</b>
<b>Regional Consent Order and Other Consent Order Requirements</b>			
Regional Hydraulic Model	\$108,931,987	\$108,551,628	\$380,359
Manhole Rehab/Replacement Phase I & North Shore Siphon Chamber	\$2,834,000	\$423,088	\$2,410,912
Locality System Monitoring and Condition Assessment	\$21,219,146	\$20,287,625	\$931,521
Subtotal - In progress	\$132,985,133	\$129,262,341	\$3,722,792
<b>Completed Work</b>			
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	
<b>Total</b>		<b>\$144,896,116</b>	

TO: General Manager  
FROM: Director of Talent Management  
SUBJECT: Monthly Report for October 2017  
DATE: November 9, 2017

A. Human Resources (HR)

1. Recruitment Summary

New Recruitment Campaigns	10
Job Offers Accepted – Internal Selections	6
Job Offers Accepted – External Selections	8
Internal Applications	24
External Applications	128
Average Days to Fill Position	67

2. Enterprise Resource Planning (ERP)

- a. HRSD worked with the Managed Services consultant on benefit program setup.
- b. Staff worked with Oracle Support on the following:
  - (1) Reporting functionality for the recruitment module
  - (2) Flexible spending account setup
  - (3) Hiring functionality
- c. Staff worked with Information Technology on interface updates.

3. Benefits and Compensation

- a. HRSD's Health Care Provider presented *Total Health Insight* to HR and Finance Staff and HRSD's Benefits Consultant. The presentation provided a review and detailed analysis of Fiscal Year-2017 medical, pharmacy, health engagement and cost data.
- b. HRSD's Benefits Consultant presented the Health Plan Performance Dashboard on medical and pharmacy data through September 2017 in preparation for annual renewal.
- c. Several proposals were reviewed and initial rankings completed for Benefit Consulting services.

- d. The Compensation and Classification team conducted interviews and evaluated one position.
- e. Compensation information was provided to James City County Service Authority.
- f. HR worked with Finance on administrative issues with the long-term disability benefits provider.

4. Wellness

a. Participation Activities

<b>Year 3 Participation Activities</b>	<b>Unit</b>	<b>October 2017</b>	<b>Year to Date (March 2017–February 2018)</b>
Biometric Screenings	Number	3	13
Preventive Health Exams	Number	12	44
Preventive Health Assessments	Number	22	235
Coaching Calls	Number	0	0
On-Line Health Improvement Programs	Number	54	462
Web-MD Online Health Tracking	Number	105	1097
Challenges Completed	Number	0	0
Fit-Bit Promotion	Number	2	84

- b. The Wellness Specialist managed sixteen onsite Flu & Tetanus clinics.
- c. The Wellness Committee, with assistance from Communications staff completed an exercise demonstration video for the January challenge.
- d. 2018 biometric screenings were scheduled with the work centers.

5. Workers Compensation

- a. Seven new cases were opened with 20 cases remaining active.

- b. HR staff conducted five training sessions for 90 managers and supervisors on HRSD's Workers Compensation Program. The training covered general information, procedures and insurance carrier, HR and supervisor roles. A final session will be held in November.

## 6. Employee Relations

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

## 7. General

- a. Staff continued to assist employees with obtaining new Defense Biometric IDs for access to military installations.
- b. Staff participated in the following training:
  - (1) *Transitioning from Short-Term Disability to Long-Term Disability* webinar presented by HRSD's vendor
  - (2) HRSD Workers Compensation Program training
  - (3) HRSD ProCard Policy training
  - (4) Society of Human Resource Management's Diversity and Inclusion Conference

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

- 1. The Quality Facilitators are in the final phase of conducting FY 2019 Annual Planning Days. The facilitators have effectively partnered with work centers to provide customized events to be completed in November. Parking Board items will be submitted for QST review in early December.
- 2. The HRSD University team completed work with consultants to finalize two e-learning modules and will begin developing a QST presentation.
- 3. The Supervisor and Leadership training year began including *Basic and Advanced Coaching, Online Learning and Chief and Leadership Forums*. An *Emotional Intelligence Intensive* will begin in November.
- 4. The OD&T Manager continued working with the Chesapeake-Elizabeth Treatment Plant (CETP) Manager on an abridged Supervisor Workshop to provide specific skills for Lead Operators.

5. Work continued with engineering staff on developing an *Effective Collaborative Meeting Workshop*. A case study component was added to assist learners in identifying the behaviors emphasized by the training.
6. The Project Management Team met and developed a framework for a project management skills workshop. Team members continued work on individual assignments.
7. The first quarter of the 2017- 2018 Apprenticeship School Year successfully began. A meeting was held with instructors to share program changes and potential Apprenticeship Manual updates.
8. Staff continued to add historical training and apprenticeship program information into the ERP Learning Management system.
9. The Training Superintendent participated in an on-line training, *Operation of Wastewater Treatment Plants*, provided by Sacramento State Office of Water Programs.

C. Safety

1. Mishaps and Work Related Injuries

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

	<u>2016</u>	<u>2017</u>
<b>Mishaps</b>	42	36
<b>Lost Time Mishaps</b>	8	10
<i>Numbers subject to change pending HR review of each case.</i>		

b. Management Operation and Maintenance (MOM) Program Year Performance Measure Work Related Injuries

<b>October 2017 Injuries For Operations</b>	<b>October 2017 Injuries for Other HRSD Departments</b>	<b>Total Lost Time Injuries Since July 2017</b>	<b>Total HRSD Injuries Since July 2017</b>
6	1	5	16

c. Follow-up investigations were performed on seven reported work-related injuries and one auto accident.

## 2. HRSD Safety Training

<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
Total Safety Training Hours per Full Time Employee (830) All HRSD – October 2017	592.3 Hours / 830 FTE	0.71
Total Safety Training Hours Per Full Time Employee (830) – Cumulative July 2017	1990.6 Hours / 830 FTE	2.40

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

- a. Six external briefings for contractors working at TPs and pump stations
- b. Forklift Safety training for Atlantic TP employees
- c. Chain Saw Safety training for Chesapeake Elizabeth, Nansemond and York River TP employees
- d. Two sessions of Aerial Lift training for North Shore Electrical and Virginia Initiative Plant (VIP) employees

## 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) VIP
  - (3) Atlantic TP *Cambi* Project
- b. Quarterly safety inspections of the following work centers:
  - (1) Army Base TP
  - (2) Boat Harbor TP
  - (3) North Shore Automotive, Carpentry, Electrical, Machine and Maintenance shops
  - (4) North Shore Interceptors
  - (5) North Shore P3

- c. Monitoring and testing for the following:
  - (1) Monthly hood velocity tests on Central Environmental Laboratory and Technical Services lab hoods
  - (2) Air sampling and evaluation of a sodium bisulfite leak at Williamsburg TP
  - (3) A lighting survey at Army Base TP
- d. The following was performed for the Town of Surry TP
  - (1) An initial evaluation and inspection of the Town of Surry TP.
  - (2) Coordinated pick up and testing of an unlabeled chemical drum
  - (3) Coordinated disconnection and capping of a chlorine cylinder
  - (4) Evaluated and developed confined space permits
  - (5) Worked with the fire protection contractor on installation of fire extinguishers at the treatment plant and pump stations
- e. Staff evaluated a new platform within the VIP Incinerator building

## 5. Safety Programs

- a. The following was performed for the Electrical Safety Program:
  - (1) Staff attended a meeting with Electrical Managers to finalize a safety notice distributed to employees
  - (2) Finalized and launched the *All Things Arc Flash* SharePoint site
- b. Staff continued to review audiometric testing results.
- c. Safety and Operations staff continued to implement an on-line MSDS program to be introduced at several work centers.
- e. The following was performed for the Confined Space program:
  - (1) Evaluated several confined space permits for the York River TP
  - (2) Assembled confined space permit communication materials for Coatings Inspectors and Supervisors
- f. The Safety Coordinator continued maintaining the Operations Safety Accident Tracking report.

## 6. General

- a. Began identifying requirements for Request for Proposals for a Prescription Safety Glasses program and employment related physicals.
- b. The Safety Manager met with Virginia State Troopers to discuss air brakes and Commercial Driver's License requirements.
- c. The Safety team met to discuss the MSDS Online Program, Town of Surry TP safety, the 2018 Safety Calendar, Dominion Power Live Wire Training, and upcoming team activities
- d. Staff attended the following training:
  - (1) Virginia Occupational Safety and Health Annual Conference
  - (2) Liberty Mutual's Industrial Hygiene Measurement Institute

## D. Monthly Strategic Planning Metrics Summary

### 1. Education and Outreach Events: 6

- a. Water Environment Technical Education Conference Students and Young Professionals Networking and Career Fair
- b. Virginian Pilot Career Connection Job Fair
- c. Norfolk State University Career Fair
- d. Tidewater Community College Customer Service Job Fair
- e. City of Newport News Woodside High School Senior Planning Day
- f. Virginia Apprenticeship Council Peninsula Open House for Registered Apprenticeships



2. Community Partners: 5
  - a. Virginian Pilot
  - b. Norfolk State University
  - c. Tidewater Community College
  - d. City of Newport News Public Schools
  - e. Virginia Apprenticeship Council

3. Monthly Metrics

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>Oct 2017</b>
M-1.1a	Employee Turnover Rate (Total)	Percentage	0.63
M-1.1b	Employee Turnover due to Service Retirements	Percentage	0.20
M-1.4a	Total Training Hours Per Full Time Employee (15) – Current Month	Total Training Hours/ FTE	6.93
M-1.4b	Total Training Hours Per FTE (15) Cumulative Fiscal Year-to-Date	Total Training Hours/ FTE	14.96
M-5.2	Educational and Outreach Events	Number	6
M-5.3	Community Partners	Number	5

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

TO: General Manager

FROM: Director of Water Quality (WQ)

SUBJECT: Monthly Report for October 2017

DATE: November 15, 2017

A. General

1. Pretreatment and Pollution Prevention (P3) division staff assessed no civil penalties this month.
2. The Director attended the 2017 WEFTEC conference in Chicago, IL and co-chaired/developed/implemented a one day workshop on integrated planning. A session including program updates by various United States Environmental Protection Agency (EPA) water offices was attended. This session included statements by Lee Forsgren, the new Deputy Assistant Administrator (DAA) for EPA's Office of Water. This Office is responsible for, among other topics, developing water quality criteria that are adopted by states as water quality standards regulations. The EPA water quality criteria program has included recommendations by EPA to the states regarding the level of protection to be provided by these criteria. Over the past 20 years these recommendations have evolved into requirements, which was not the intent of the Clean Water Act (CWA). In the interest of cooperative federalism the DAA made clear that as long as the states take actions within the boundaries of the CWA, EPA will avoid interfering with those actions. This is a significant course change for EPA; the Water Quality Department will monitor EPA actions relative to Virginia CWA-related decisions as well as those of other states as a check on this course and identify when EPA has deviated from this course.
3. The Director attended the National Association of Clean Water Agencies (NACWA) Strategic Leadership meeting in Salt Lake City, UT. Funding for aging infrastructure projects is a common theme for these meetings, but from the perspective of state and federal government officials responsible for this funding, the question has been asked: has the wastewater treatment community done everything it can to be effective and efficient, ensuring that the limited funds available are used in the best way possible? One way to be more efficient and effective, as evidenced by HRSD during its attempt to take responsibility for a greater percentage of the Hampton Roads wastewater collection system is to regionalize various wastewater functions under one organization. NACWA leadership discussed the benefits and challenges of regionalizing wastewater treatment within this context and committed to further pursuing the concept as a way to improve wastewater organizational effectiveness and efficiency.

4. The Central Environmental Laboratory (CEL) and Whole Effluent Toxicology Section of the Technical Services Division (TSD) compiled extensive data records for submission to the Division of Consolidated Laboratory Services (DCLS) in preparation for the Virginia Environmental Laboratory Accreditation Program onsite assessment scheduled for January 2018. The request made by DCLS included raw analytical data from all sections of the laboratory, quality assurance documentation, and sample receipt records. The investment of time in gathering this information was significant, with the full electronic submission representing over 1000 pages of data and information.

B. Quality Improvement and Strategic Activities

1. The Sustainability Advocacy Group (SAG) did not report activity for the month of October.
2. The TSD Technology Team has completed an evaluation of the ESRI ArcGIS Data Collector application that will aid in field data and post laboratory data capture needs. The TSD Stormwater section began using the application for all sample site location, identification and data capture needs in October.
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 the City of Hopewell and the Town of Callao to support their respective Virginia Pollution Discharge Elimination System (VPDES) permit application processes.

D. Strategic Planning Metrics Summary

1. Educational and Outreach Events: 2
  - a. TSD staff provided a Pathogen Program presentation during the Virginia Institute of Marine Sciences Aquatic Health Sciences Seminar Series.
  - b. P3 staff participated in the Lynnhaven River NOW Fall Festival at the Brock Environmental Center.
2. Community Partners: 11
  - 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. Old Dominion University
- f. City of Suffolk
- g. Elizabeth River Project
- h. Virginia Department of Health Office of Epidemiology
- i. Hampton Roads Planning District Commission
- j. Lynnhaven River NOW
- k. United Way

<b>Item #</b>	<b>Strategic Planning Measure</b>	<b>Unit</b>	<b>October 2017</b>
M-1.4a	Training During Work Hours Per Full Time Employee (109) (Current Month)	Total Hours / # FTE	3.61
M-1.4b	Total Training During Work Hours Per Full Time Employee (109) (Cumulative Fiscal Year-to-Date)	Total Hours / # FTE	20.89
M-2.5	North Shore/South Shore Capacity Related Overflows	# within Level of Service	0
M-3.1	Permit Compliance	# of Exceedances: # of Permitted Parameters	0:17,745
M-3.2	Odor Complaints	#	0
M-3.4	Pollutant Removal	Total Pounds Removed	62,651,908
M-3.5	Pollutant Discharge	% Pounds Discharged/Pounds Permitted	16%
M-5.2	Educational and Outreach Events	#	2
M-5.3	Community Partners	#	11
	Average Daily Flow	Total MGD for all Treatment Plants	130.56
	Industrial Waste Related System Issues	#	0

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



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

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

---

### **Engineering Procurement Process Review**

- **Tasks Completed (October 2017)**
  - Finalized fieldwork and testing
  - Drafted final report, including observations and recommendations
  - Conducted exit meeting with process owners
  
- **Upcoming Tasks (November 2017)**
  - Deliver final draft report to process owners
  - Obtain and review management action plans
  - Finalize report for delivery to HRSD Management and Commission

### **IT: Network Security/ Cybersecurity**

- **Tasks Completed (October 2017)**
  - Completed Fieldwork
  - Confirmed findings with client
  - Began draft report
  - Held exit meeting with client
  
- **Upcoming Tasks (November 2017)**
  - Finalize management action plan and obtain agreement with client
  - Finalize report
    - Determine communication method

### **Corporate Governance: Ethics Function**

- **Tasks Completed (October 2017)**
  - Held entrance meeting with process owner
  - Prepared project planning materials
  - Communicated initial documentation requests
  
- **Upcoming Tasks (November 2017)**
  - Review documentation obtained
  - Schedule on-site walkthrough discussions with process owners
  - Finalize audit objectives and prepare audit program
  - Perform fieldwork

### **Risk Assessment: Year 3 Refresh**

- **Upcoming Tasks (November 2017)**
  - Prepare risk assessment questionnaires and supporting materials
  - Schedule process owner discussions
  - Perform risk assessment interviews



---

## **II. Upcoming Projects (FY2018)**

---

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

- 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)

### **Design and Construction: CIP Project Management Review MAP Status**

- Audit Report Date: October 8, 2016
- Next Follow-up: November 2017; met with team October 31, 2017
- Total Recommendations: 8
- Recommendations Closed: TBD- validation in process
- Recommendations Open: TBD- validation in process

### **Upcoming MAP Monitoring**

- HR Administration of Employee Health Insurance
  - Report Date: November 22, 2016
  - Planned MAP Follow-up: November 28, 2017
- Inventory Management
  - Report Date: April 20, 2017
  - Anticipated MAP Follow-up: April 2018

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

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

Monthly Updated Metrics												FY-18	FY-18
Item	Strategic Planning Measure	Unit	Target	FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	Sep-17	Oct-17
	Average Daily Flow	MGD at the Plants	< 249		136	146.5	158.7	156.3	153.5	155.8	153.5	146.7	130.6
	Industrial Waste Related System Issues	Number	0		3	6	6	6	2	4	7	0	0
	Wastewater Revenue	Percentage of budgeted	100%		97%	96%	98%	107%	102%	104%	103%	108%	106%
	General Reserves	Percentage of Operating and Improvement Budget	75% - 100%		72%	82%	84%	92%	94%	95%	104%	106%	112%
	Accounts Receivable (HRSD)	Dollars (Monthly Avg)			\$ 17,013,784	\$ 17,359,488	\$ 18,795,475	\$ 20,524,316	\$ 20,758,439	\$ 22,444,273	\$ 22,572,788	\$24,407,910	\$21,658,585
	Aging Accounts Receivable	Percentage of receivables greater than 90 days			21%	20%	18%	19%	21%	20%	18%	15%	17%
M-2.5	Capacity Related Overflows	Number within Level of Service	0		25	1	30	5	11	16	6	2	0
M-3.1	Permit Compliance	# of Exceedances to # of Permitted Parameters	0		12:55,045	1:51995	2:52491	1:52491	2:52491	2:52,491	9:53236	2:13309	0:17745
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	47,087,593	62,651,908
M-3.5	Pollutant Discharge (% of permitted)	Pounds Discharged/Pounds Removed	< 40%		25%	22%	25%	22%	20%	22%	20%	16%	16%
M-5.2	Educational and Outreach Events	Number			302	184	238	322	334	443	502	46	54
M-5.3	Number of Community Partners	Number			280	289	286	297	321	354	345	42	45

### EFFLUENT SUMMARY FOR OCTOBER 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	8.22	46%	3	3.3	3	1	0.38	0.61	8.6	7.4	NA	NA	5
ATLANTIC	22.92	42%	13	5.9	5	1	NA	NA	NA	NA	NA	NA	15
BOAT HARBOR	11.94	48%	4	4.8	6	2	0.77	0.54	19	14	NA	NA	1
CENT. MIDDLESEX	0.015	62%	<2	2.1	<1	<1	NA	NA	NA	NA	0.81	0.09	NA
CHES-ELIZ	16.38	68%	10	11	17	4	0.88	1.2	31	31	NA	NA	4
JAMES RIVER	11.69	58%	2	2.0	1	1	0.31	0.48	9.7	9.1	NA	NA	0
KING WILLIAM	0.044	44%	<2	<1.0	NA	1	0.05	0.039	0.43	0.75	0.31	NA	NA
NANSEMOND	17.09	57%	4	4.6	2	1	1.2	0.91	5.0	6.9	NA	NA	5
URBANNA	0.057	57%	3	8.4	2	3	3.1	5.3	6.2	20	NA	0.06	NA
VIP	22.95	57%	0	2.2	9	1	0.92	0.85	3.0	6.7	NA	NA	1
WEST POINT	0.307	51%	22	13	4	5	3.7	3.1	17	17	NA	9.2	0
WILLIAMSBURG	7.44	33%	1	1.9	11	4	1.1	0.72	2.5	4.3	NA	NA	5
YORK RIVER	11.52	77%	2	1.5	<1	3	0.29	0.27	1.7	2.0	NA	NA	1
	<u>130.56</u>												

	% of Capacity
North Shore	52%
South Shore	53%
Mid Peninsula	49%

<b>Tributary Summary</b>						
	<u>Annual Total Nitrogen</u>			<u>Annual Total Phosphorus</u>		
	Discharged		Operational	Discharged		Operational
	YTD	Projection	CY17	YTD	Projection	CY17
<b>Tributaries</b>	%	Lbs	%	%	Lbs	%
James River	71%	3,995,674	88%	70%	289,365	91%
York River	29%	124,566	43%	61%	14,388	74%
Rappahannock	201%	NA	NA	776%	NA	NA

Permit Exceedances: Total Possible Exceedances, FY18 to Date: 0:17,745  
Pounds of Pollutants Removed in FY18 to Date: 62,651,908  
Pollutant Lbs Discharged/Permitted Discharge FY18 to Date: 16%

	<b>Rainfall (inch)</b>		
	<u>North</u>	<u>South</u>	<u>Small</u>
	<u>Shore</u>	<u>Shore</u>	<u>Communities</u>
	(PHF)	(ORF)	(FYJ)
Month	4.02"	5.06"	4.57"
Normal for Month	4.09"	3.88"	3.89"
Year to Date Total	41.69"	45.59"	41.58"
Normal for YTD	44.04"	43.51"	41.38"



## AIR EMISSIONS SUMMARY FOR OCTOBER 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 (F)	12 hr ave (in. WC)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	12 hr ave (GPM)	pH 3 hr ave	Bypass Stack Use	Mo. Ave (PPM)	DC (%)	Daily Ave Days >Max
ARMY BASE	0	0	0	0	0	0	1	0	18	99	0
BOAT HARBOR	0	0	0	n/a	0	0	0	1	15	73	0
CHES-ELIZ	0	0	0	0	0	0	0	1	11	99	0
VIP	0	0	0	n/a	0	0	0	1	71	99	0
WILLIAMSBURG	0	0	0	n/a	0	0	0	1	9	98	0

### ALL OPERATIONS

DEQ Reportable Air Incidents:	1
DEQ Request for Corrective Action (RCA):	0
DEQ Warning Letter:	1
DEQ Notice of Violation (NOV):	0
Other Air Permit Deviations:	0
Odor Complaints Received:	0
Odor Scrubber HRSD Exception Events:	4